

2009

5-Year Review and Recommendations

The Sumter National Forest's Revised Forest Land
and Resource Management Plan

September 30, 2010

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I. Introduction

In January of 2004, the *Revised Land and Resource Management Plan* (Forest Plan) for the Sumter National Forest was put into effect. Alternative Modified G from the *Final Environmental Impact Statement* (FEIS) was selected to develop as the Revised Plan. As stated in 36 CFR 219.10(g) [1982 Planning Regulations], the Forest Supervisor shall review the conditions on the land covered by the plan at least every 5 years to determine whether conditions or demands of the public have changed significantly. Now, after five years of implementing the 2004 Revised Plan, this new *2009 5-Year Review and Recommendations* report is being prepared.

II. Area of Analysis

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 Andrew Pickens Ranger Station is located on Stumphouse Mountain eight miles north of Walhalla, SC.
- The Enoree District is located east of Interstate 26 in Chester, Fairfield, Laurens, Newberry, and Union Counties. The Enoree Ranger District has two offices: one located off US Highway 176 nine miles north of Newberry, SC and the other is located off US Highway 176 five miles south of Union, SC. There are plans to move to one centrally located office near Whitmire, SC.
- The Long Cane District lies east of the Savannah River and J. Strom Thurmond Lake in Abbeville, Edgefield, Greenwood, McCormick, and Saluda Counties. The Long Cane Ranger Station is located in Edgefield, SC.

The Francis Marion and Sumter National Forests are administered by a Forest Supervisor stationed in Columbia, SC. The Revised Land and Resource Plan for the Sumter was signed by the regional forester on January 30, 2004. The Francis Marion National Forest is covered by a separate forest plan.

The Forest Plan defines forest-wide goals, objectives and standards and sections with specific goals, objectives and standards. The "Management Prescriptions" section provides 27 unique land allocations on the Sumter. Each prescription includes an emphasis, desired condition, objectives (if needed) and standards (if needed).

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 management prescription with its associated activities, practices, standards, and guidelines is the operational link in achieving the *desired future condition* (DFC) for a particular management area.

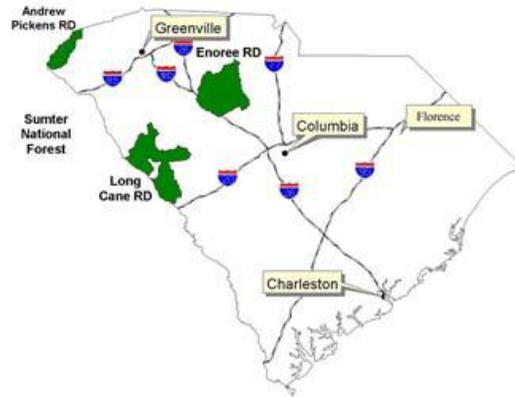


Figure 1 - Locations of Sumter National Forest Ranger Districts

III. Management Review of Comprehensive Evaluation

A. Summary of Findings

1. Area of Analysis

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.

The Sumter NF is within an hour and half drive of several major metropolitan areas, including Charlotte, NC, Greenville, SC, and Columbia, SC. The State of South Carolina is experiencing rapid population growth particularly along the I-85 corridor.

2. Roles and Contributions

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 that began to assist in restoring 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.

3. Ecological

(1) Vegetative Communities

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.

As stated in the FEIS for the Revised Forest Plan, although existing allocations on the Sumter in mixed mesophytic and river floodplain forests appear to be adequate, acreage in dry-xeric forest, woodland, and savanna types is extremely low. Ongoing efforts to actively restore shortleaf pine and oak forest types and herbaceous understory communities will help promote future old growth communities within desired community types and should continue to be pursued on the forest. See Table 1 on page 22 for a breakdown of forest-types on the Sumter NF.

The Desired Conditions for the Sumter is to maintain fire adapted ecosystems utilizing a fire return interval of once every three to five years. The current levels of treating 29,287 acres per year exceed forest plan of prescribed fire of 25,000 acres annually. Fire is critical to restoring and maintaining fire-adapted communities, thus strategies to increase the number of acres burned annually are needed. Rising operational costs coupled with flat budgets will put even more stress on an organization that is already extremely efficient. All three Districts shared personnel and equipment to help achieve this forest-wide objective. The forest-wide objective has been achieved even with the additional complexity of burning and smoke management issues. Also, the fire organization for the Sumter has been reorganized in an effort to be more productive and efficient.

(2) Wildlife and Fish

Year-to-year trends in MIS population indices are difficult to interpret. First, changes in observer ability over time and differences between observers can affect the analysis of population trends. Second, it is typically assumed that detectability is constant for a species over time and across habitats independent of observer differences, but this is rarely the case. It is therefore more useful to examine the total number of observations across the 5-year monitoring period (in Tables 7 to 9), although the same caveats apply. For example, on the piedmont Districts the relative abundance of pine warblers compared to the relative scarcity of scarlet tanagers reflect the dominance of loblolly pine forest types versus hardwood forest types in the piedmont. On the other hand, the relative abundance of hooded warblers and the relative scarcity of brown-headed nuthatches on the Andrew Pickens District reflect the opposite forest type conditions.

The relatively moderate number of observations of prairie warblers on the Enoree and Long Cane Districts indicate that short-term (temporary) early successional habitat conditions are a fairly common component of the piedmont Districts. Prairie warblers will use temporary early successional habitat conditions created during timber regeneration treatments. The relatively small number of field sparrows, on the other hand, suggests that more permanent early successional habitats, such as woodlands,

grasslands, and savannas, are less common. Both short- and long-term early successional habitat appear to be lacking on the Andrew Pickens District.

All fish species present in Hunting Creek were ranked secure (G5) or apparently secure (G4) by NatureServe (2009). The flat bullhead is listed as Vulnerable by the American Fisheries Society (Jelks et. al. 2008). This indicates that the species is in imminent danger of becoming threatened throughout all or a significant portion of its range due to present or threatened destruction, modification, or reduction of its habitat or range. Of the 19 species captured in Hunting Creek, two are considered non-indigenous or introduced species to the watershed (Warren, et al. 2000). These include the green sunfish and yellowfin shiner. The remaining species captured are native to the watershed.

The SC Comprehensive Wildlife Conservation Strategy (Kohlsaet et. al., 2005) includes the South Carolina's Priority Species List. These species warrant conservation concern to maintain diversity in South Carolina waters. The species are ranked in priority as moderate, high and highest. Of the species that occur in Hunting Creek, the Santee chub is ranked with a high priority and the flat bullhead is ranked with a moderate priority.

(3) Soil and Water, Riparian Habitat

There are many opportunities to reduce legacy and ongoing erosion, sediment delivery, aquatic habitat and stream and water quality impacts on the National Forest from private lands through authorizations under the Wyden Amendment. However these typically need funding and technical service time to develop and implement. It is difficult to develop or take advantage of opportunities under the current conditions when funds are limited and continuing needs exist within the National Forest.

Forest and district staffs are implementing the riparian prescription. Riparian identification, delineation, functions and values are considered in field assessments. Activities are often adjusted, reduced or eliminated in response to the resources within these areas. Issues brought forward such as invasive species, undesignated or user created trails, camping, areas affected by actively eroding hillslopes or channels, and associated resource damage are being evaluated for appropriate response. Continuing integrated interaction and periodic review of field implementation of the riparian guidance and prescription are desired.

(4) Wildfire Protection and Air Quality

The number of acres in condition class 1 is increasing because of increased prescribed fire use and non-commercial and commercial mechanical treatments of forest stands. Stewardship contracts and timber sales are providing more opportunities for treating fuels than existed a few years ago.

Although most air quality monitors near the Sumter National Forest show that ozone and fine particulate matter concentrations meet air quality standards, at least three monitors have measured concentrations above the air quality standards for both ozone

and fine particulates over the past three years. Thus, negative impacts to vegetation within the Forest may be occurring. Nonattainment designations for ozone may occur in late 2010, and it is likely that most, if not all, of the Sumter National Forest will fall into ozone nonattainment. It is uncertain when EPA will again make nonattainment designations for fine particulate matter. Coordination between the Forest and SC DHEC will be necessary to ensure that emissions from prescribed fires are included in the State Implementation Plan (SIP) to improve air quality concentrations throughout the area.

4. Social and Economic

(1) Recreation and Scenery

Recreational uses have increased on the Chattooga Wild and Scenic River during the last 5 years. Due to an appeal on the 2004 Sumter Forest Plan, a review of recreation uses on the river above Highway 28 is being evaluated. A forest plan amendment may change the allocation of recreation uses.

Off-trail use has led to concerns about resource impacts from user-created trails. A forest plan amendment may be needed to address these resource concerns.

(2) Heritage

The Forest continued government-to-government relations with two federally recognized tribal nations: the Eastern Band of the Cherokee and the Catawba Indian Nation.

The Sumter has a large number of unevaluated sites that are in protected status. These sites should be evaluated and it is the current thought that the majority of these will prove to be ineligible and therefore removed from protective status. Most of the inventory has been conducted in support of various timber activities, land exchanges, road construction, and recreation development.

The Sumter National Forest has completed a programmatic agreement with the South Carolina State Historic Preservation Office. One aspect of this agreement streamlines the reporting process for compliance with Section 106 of the National Historic Preservation Act. Under provisions of the programmatic agreement some projects or project types can be excluded categorically from full review procedures. This means that the Forest is able to schedule its heritage resource workforce to better concentrate accomplishments on higher-impact projects on the Forest. This would be important in future efforts to fill in data gaps, especially in non-project related portions of the Forest.

(3) Forest Products

Within the Sumter National Forest, demand for timber products is strong. Products such as poles are in high demand. The pulpwood market has remained stable to increasing in most of the area due to new oriented-strand board mills coming on line. The demand for plywood is down due to imports, but sawtimber still sells well. Carbon credits, biomass, bioenergy, and other products from forests are expected to become more important as issue, such as climate change and the need for energy independence gain

momentum. These emerging markets may affect the demand for non-traditional wood products from national forest lands.

Within the Agency, there is a great need for timber sales to remove trees in areas that are overstocked. The amount of timber offered is limited by the personnel who can prepare the sales, and the funds to pay personnel for sale preparation. Forest-wide, there are enough signed Decisions to prepare and sell at the current rate for more than three years. Concerns are that we may get so far ahead on shelf volume that NEPA decisions may become out of date, particularly on the Enoree Ranger District.

(4) Landownership and Special Uses

The economic climate is changing in landownership patterns in South Carolina. Many owners of large private tracts within the Forest boundary had been nationally-based timber companies (International Paper, Bowater) who have recently decided to divest their land holdings to TIMOs (timberland investment management organizations) and REITs (real estate investment trusts). Forest neighbors who were once large timber companies with similar goals are now becoming subdivisions of private homes.

The population of South Carolina is expected to grow from four million in 2000 to over five million by 2030. The increased population and associated development make forest management more difficult. The wildland-urban interface and its associated complexities with smoke management and fuel loading are upon us. It makes many management tools more difficult to employ (like fire suppression and prescribed burning). Any reduction in budgeting for landline maintenance may have far-reaching effects, such as increases in trespass problems.

The increased population growth is causing a new list of concerns such as increased encroachment, whether intentional or not. There are less-visible effects such as increased non-commercial traffic on Forest system roads and increased maintenance needs. As properties are subdivided and developed, the demand for special uses permits have increased. These special uses are primarily for driveways and utility corridors.

The Forest recently completed a land ownership adjustment strategy (LOAS) in 2005 to prioritize tracts for exchange or acquisition. Due to declining budgets, the forest has switched emphasis from purchases to exchanges to implement the LOAS. The Forest is using tripartite land exchange to take advantage of excess timber receipts to acquire land.

(5) Access/Travel Management

While budgets have continued to decline, there has been a significant increase in road maintenance costs in recent years. There has also been a worldwide increase in the demand for construction and maintenance materials, resulting in increased costs of road maintenance. Per direction in the 2005 National Travel Management Rule, the Sumter National Forest is implementing direction to complete a Travel Management Analysis and identify the "minimum road system". The Travel Management Analysis is currently being completed on the Andrew Pickens Ranger District.

Per direction in the 2005 National Travel Management Rule, the Sumter National Forest implemented new restrictions to prohibit motorized use off the designated routes. The decision is implemented when the motor vehicle use map (MVUM) showing designated routes with type of motorized use is published and made available to the public. The designated roads for motorized travel will be indicated on the ground with a route marker that will match the road number on the MVUM. Seasonal roads will be signed identifying the type of vehicle and season of use dates. The MVUM is the law enforcement tool, and each Forest visitor will be responsible for obtaining and complying with the MVUM.

(6) Collaboration

Federal and state agencies were consulted as new proposals were developed and underwent the NEPA process. SHPO and THPO (Tribal Historic Preservation Officials) contributed during the preparation and analysis done for Environmental Assessment (EAs). The US Fish and Wildlife Service (USFWS) and SC Department of Natural Resources (SCDNR) provided consultation for game and non-game animals potentially affected by project proposals. The Heritage Trust Program provided comment on the effects of proposed actions on rare plants in general, and/or at known locations.

Memorandas of Understanding, cooperative agreements, partnerships and challenge cost share agreements were developed, and participation of groups and individuals were encouraged in the following:

- The Forest has an agreement with USC to provide 2 students to work in the GIS shop in the Supervisor's Office in Columbia, SC
- Indian Creek Wildlife Habitat Restoration Initiative MOU
- Native Grass Seed Collection MOU
- Challenge Cost Share Agreement with the National Wild Turkey Federation.

Some non-profit organizations and state agencies have seen a tremendous decline in their budgets. This affects their ability to participate in activities with the Sumter NF. Currently the existing trend for most cooperative relationships has remained stable and the economy has begun to improve. Some public involvement activities, like the Forest's participation in Wood Magic Forest Fair and the SC Teachers Tour, have continued.

(7) Jobs and Income

The area's economy is relatively slow-growing and predominantly rural. Poverty is higher than the national rate. The 2008 Census data shows that 15.5% of people in the state live in poverty and 2008 poverty rates range from 16.1% to 21.7% in the counties of the Sumter NF. Due to the recession that began in December 2007, poverty rates have increased since 2000 (See Table 3). Although timber-related employment and income are not large proportions of the state's total employment and income picture, they do constitute a significant portion of the area's manufacturing activity in South Carolina's wood and paper products industries.

In FY2008, the "Secure Rural School and Community Self-Determination Act" was reauthorized. As a result, the Forest counties elected to receive their payments in terms

of the state payment, which is not linked to recent yearly timber harvest levels. This act covers county payments through 2011. In response to county elections, the Francis Marion Sumter Resource Advisory Committee has been formed and is scheduled to hold its first meeting in August 2010.

5. New Information

For this 5-Year Review of the Revised Plan, the 14 significant issues addressed in the Revision were re-examined. Ranger District and Supervisor's Office personnel were consulted and correspondence was reviewed. Project-level scoping notice and 30-day public comment period responses were also reviewed. Section IV, E of this report reviews each of the Revised Plan issues, examines their current status, and identifies issues and concerns that have been raised since Forest Plan Revision implementation.

6. Evaluation of Need to Change Existing Direction

The 2004 Revised Plan allocated land and assigns management direction to four management areas (MAs) and 27 Management Prescriptions. No changes in the four management areas have occurred. An on-going analysis may change standards in Management Area 2 Chattooga Wild & Scenic River. A review of recreation management in the upper Chattooga River (above Highway 28) is on-going and may result in a forest plan amendment. Some additional review is needed of the direction in Management Area 1 in relation to the amount of Carolina heelsplitter habitat, which may lead to a forest plan amendment. No other changes were needed to the Desired Future Conditions (DFCs) or standards for the MAs after five years of Plan implementation.

The forest-wide goals, standards & guidelines and Management prescription standards have not been altered in the first five years of the Revised Plan implementation. The forest has identified a need to add a management prescription that provides for the establishment of longleaf pine. Off-trail use by equestrians has created concerns about resource impacts, which may result in a forest plan amendment. In addition there is a need to update the 2004 Revised Forest Plan as terminology has changed in the areas of fire, heritage, and herbicide use. These changes would probably require a non-significant forest plan amendment. These changes are listed in Section IV of this report.

The results of monitoring over the first 5 years of Revised Plan implementation are described in detail in Section IV of this document. As with the DFCs and goal statements, no changes have occurred in the Plan's goals and objectives or standards and guidelines. However, some of the goals and objectives and standards and guidelines have brought about some concerns both internally (within the Forest Service) and externally (the public). Those goals and objectives and standards and guidelines with concerns are listed in Section IV of this report; along with a description of the concern/issue.

Almost as soon as implementation of the Revised Plan began (January 2004), national and regional changes in budget planning and accounting began. Many of the assumptions used in developing the estimated annual budgets under the Revised Plan

began to lose relevance, making true comparison difficult. Some of the changes that affected comparisons, along with the charts comparing budgets, are described in Section IV of this report.

In the past, a 10-year “Order of Entry” was developed to help plan site-level stand examinations and provide a level flow of timber output and road work. This order of entry was tied primarily to timber sale planning. In the Revised Plan, an ecosystems management approach was taken, with forest-wide emphasis placed predominately on maintaining/enhancing rare plant communities and restoring native plant communities.

7. Science Consistency

In the preparation of this 5-Year Review of the Revised Forest Plan, best available science was used to update some of the information provided in the 2004 Revised Plan. Section IV of this report lists some ways best available science was used to provide quality information for preparing this document.

8. Risk and Uncertainty

The management direction (goals, objectives, DFCs, standards and guidelines) in the Revised Plan makes the basic assumption that our desired outcomes will remain “desirable” for at least a decade, and that any unplanned natural or man-made events will be at a scale small enough to not be a significant threat to achieving the planned objectives. The Forest relies predominately on its annual monitoring reporting to assess changing conditions and new risks as they develop, and adapts management direction as necessary to reach the Plan’s desired outcomes.

B. Need for Change Determination

1. Introduction

The Sumter National Forest (Sumter) has completed the 5-Year Review of the 2004 Revised Land and Resource Management Plan (Revised Forest Plan). This document provides some key relevant information on current activities associated with the Sumter and addresses key topics or considerations related to potential amendments or a revision of the Forest Plan. Finally, this document provides the Forest Supervisor's overall determination relative to the 5-Year Review of the Forest Plan.

2. Approach Used to Conduct 5-Year Review

Direction or guidance to conduct the 5-Year Review came from the regulations found in 36 CFR 219.10 (g) [1982 Planning regulations], which states, "*The Forest Supervisor shall review the conditions on the land covered by the plan at least every 5 years to determine whether conditions or demands of the public have changed significantly.*"

The Revised Forest Plan was completed in 2004. The 5-Year Review addresses concerns that have accumulated since 2004 regarding the Forest Plan and its interpretations and applications. Also, it summarizes the monitoring work done on the Forest during FY2004 through FY2009 and evaluates the existing condition and trends and factors that affected or may affect these trends.

The Sumter identified a number of potential issues or concerns related to the Forest Plan by assessing information provided by Forest Service employees, as well as information provided by the public, as part of past and ongoing Forest Plan and project-related public involvement efforts (see Section VI in this report). Specific reviews were completed:

- An integrated resource review in 2005 on the Andrew Pickens RD,
- A general management review on the Francis Marion and Sumter National Forests was completed in 2007,
- A prescribed burn review in 2009 and
- An Integrated Resource Review in 2009 on the two Piedmont districts.

Recommendations and Action Items from these reviews were used to complete findings in this Comprehensive Evaluation Report. Many of the potential concerns were related to policy and procedures for implementing the Forest Plan. Other potential concerns could lead to a Forest Plan amendment or revision. The most relevant issues of this latter group are discussed in this document, including key factors related to the conditions on the land.

3. Potential Change Agents

This section briefly describes current activities or programs that potentially affect conditions on the land relevant to the Sumter and the Revised Forest Plan.

a) Timber Harvest

The Revised 2004 Sumter Forest Plan Final Environmental Impact Statement (FEIS) developed an allowable sale quantity (ASQ) in million cubic feet (MMCF) as required by the Forest and Rangeland Renewable Resources Planning Act. The ASQ is the maximum amount of timber that may be programmed, sold, and harvested per decade. The amount of programmed timber sold and harvested on the Forest will vary from year to year. Volumes of timber that were offered, sold, and harvested ranged from 3.7 MMCF in FY05 to 8.7 MMCF in FY09. The average annual amount of the ASQ is 13.9 MMCF. See Table 38 for more information.

The current levels of timber offered, sold, and harvested are not at or near the 2004 Forest Plan ASQ ceilings. The effects of timber harvest are below the amount analyzed in the 2004 Forest Plan FEIS and/or the 2004 Record Of Decision (ROD). Due to a tendency to defer regeneration (clearcut, seed-tree, and shelterwood) harvests, the Forest is offering a level of timber for sale that is substantially below that analyzed and permitted under the Forest Plan ASQ calculation and planned programmed harvest.

Biodiversity analyses within the Revised Forest Plan FEIS assumed the maximum level of harvest each year for 150 years. An ASQ of 13.9 MMCF equates to an annual harvest (all final harvests and thinnings) of about 7,998 acres for the first decade of the Plan (Plan FEIS 2004, Table 3-111, p. 3-320). Since harvests based on past decisions are not a fair implementation gauge for the Revised Plan, acres *sold* (rather than harvested) during 2005 through 2009 were calculated for comparison (Table 29). About 3,667 acres were sold annually on the Sumter from 2005 to 2009. This is below the amount analyzed in the 2004 FEIS.

There is no indication the Forest Plan, including the allowable sale quantity, needs to be revised at this time because of lower levels of timber harvest, even with the fluctuations of timber volume sold or harvested from year to year. Also, the trend in sale volume appears to be slowly getting closer to that expected.

b) PETS Species

Many of the PETS species described in this report are dependent on frequent fire to maintain habitat conditions. Many of them are located in areas difficult to burn because they are adjacent to Wildland Urban Interface (WUI) areas including major roadways such as US highways 176 and 72. Some of the habitats defined by some species are very small, sometimes less than an acre. On-going efforts to restore woodlands will provide habitat for many of these rare species. Prescribed burning is required to maintain woodland habitats, and the increased urbanization may affect the forest's ability to prescribed burn, particularly during the growing season. During the warmer months, air pollution resulting from ozone is a concern.

c) Prescribed Burning

Prescribed burning on the forest is critical for developing and maintaining desired habitat conditions for Management Indicator Species (MIS) as well as other threatened, endangered and sensitive species. Periodic prescribed burning is also needed to reduce hazardous fuel loadings, especially in the WUI. Small or inaccessible areas on the forest are not being burned on a regular basis due to concerns with smoke hazards on roads and current forest stand conditions. Desired conditions, especially for woodlands, are closely tied to frequent burning to maintain the desired understory conditions.

4. Summary of Forest Plan Amendments

Between approval of the 2004 Forest Plan and now, no Forest Plan amendments have been completed. A review of recreation uses within the Chattooga River Wild & Scenic River corridor is currently under review, and a forest plan amendment may be needed to change the mix of allowable recreation uses. Some additional needs to amend the forest plan are discussed in Section VII of this report.

5. Implementation of the Forest Plan

Some intervening events between 2004 and 2009 either prominently affected or could potentially affect the implementation of the Forest Plan:

On October 3, 2008, the Secure Rural Schools and Community Self-Determination Act of 2000 (Act) was amended and reauthorized in P.L. 110-343. This law ensures that for the next four years (2008 –2011), counties across the country can continue to count on stable transition of payments that provide funding for schools and roads, make additional investments in projects that enhance forest ecosystems and improve cooperative relationships. Under this act payments to counties will gradually decline over the next four years based on sliding scale. Due to changes in the legislation, four counties elected to use Title II funds and the forest formed a Resource Advisory Committee in 2010. The authority to initiate Title II and III projects terminates on September 30, 2011. Funds not obligated by September 30, 2012, will be returned to the U.S. Treasury.

Former Forest Service Chief Abigail R. Kimbell, re-enforced the national commitment to reducing the Four Treats within the overall USDA Forest Service Strategic Plan FY2007–2012 issued in July 2007. The national strategic goals and objectives for fiscal years 2007–2012 are:

1. Restore, sustain, and enhance the Nation's forests and grasslands.
2. Provide and sustain benefits to the American People.
3. Conserve Open Space.
4. Sustain and Enhance Outdoor Recreation Opportunities.
5. Maintain Basic Management Capabilities of the Forest Service.
6. Engage Urban America with Forest Service Programs

7. Provide Science-Based Applications and Tools for Sustainable Natural Resources Management.

Forests and Grasslands are implementing projects using the planning rule issued in 2000 or existing plans that were developed, amended or revised under the 1982 rule. The Sumter's Revised Plan was developed under the 1982 rule. In 2008 the Forest Service issued a new planning rule for developing, amending or revising forest land management plans. The 2008 rule was challenged in court and an injunction was issued prohibiting its use. As a result, a Notice of Intent to prepare an environmental impact statement for a land management planning rule was published in the Federal Register in February of 2010. A final planning rule and Final EIS are expected in December 2011.

In October 2008, the Forest Service introduced a "Strategic Framework for Responding to Climate Change". In January 2009, the Washington Office issued guidance regarding evaluating impacts to climate change at the project and forest levels. At the forest level, five-year review should include past, present and projected future climate conditions and trends and identify the need for change in the current forest plan. As field units began to implement the framework, the need emerged for a national roadmap to help the agency move from what it was already doing in response to climate change, through a range of additional short-term initiatives, to longer term investments in the future of America's forests and grasslands. The National Roadmap for Responding to Climate Change is expected to be released in July 2010.

The new USDA Strategic Plan for 2010-2015 sets a departmental goal to "Ensure our national forests and private working lands are conserved, restored, and made more resilient to climate change, while enhancing our water resources." As a measure of this goal, all National Forests are to come into compliance with a climate change adaptation and mitigation strategy.

6. Subjects Potentially Related to Forest Plan Amendment or Revision

The following sections describe subjects that are most often discussed in terms of potential reasons to amend or revise the Forest Plan. Section IV and Appendix B Action Plan of the 5-Year Review lists many other less prominent issues that could potentially initiate a Plan amendment if not resolved by other means (site-specific direction, change in administrative procedures, etc.).

(1) Management Indicator Species

The Forest Plan identified 12 avian and 1 mammalian management indicator species (MIS) to represent other wildlife species in a variety of habitats across the Forest. These MIS are listed in pages 5-4 through 5-7 in the Plan. The Revised Forest Plan identified monitoring strategies for each of these species. If our monitoring indicates the list should be changed, the forest supervisor may initiate a proposed action and appropriate NEPA analysis to change the MIS list and amend the Forest Plan. Such an amendment is not expected to be significant, nor require a revision of the Forest Plan.

(2) Allowable Sale Quantity

The Allowable Sale Quantity (ASQ) is the calculated amount of timber that can be sold from the available land base over the next decade at a rate that is sustainable over the long term. The purpose of the ASQ calculation is to look at the timber harvest rate from the available land base and ensure that the amount of timber being harvested will not have to decline over the very long term, such as a century or more, due to a disproportionate harvest in the first decade. Thus, the quantity of timber that can be harvested from the Sumter from the available land base in the 2004 Forest Plan is 139 million cubic feet (MMCF) in the first decade, and that volume of timber could also be harvested each decade over the next century or more without running out of timber from the Forest Plan's available land base. The ASQ is officially calculated on a ten-year basis, but it is most often presented as an annual average. Thus the ASQ for the Sumter Revised Plan is officially 139 MMCF for the first decade but is usually referred to as 13.9 MMCF per year.

(3) Off-road Use

On the Sumter National Forest, motorized recreation trails have been designated for trail riding. The rest of the national forest was closed to cross country trail, except with a special use permit. A Motor Vehicle Use Map is used to identify roads and trails designated for motorized vehicle use. A seasonal closure and wet-weather closures have reduced the costs for OVH trail maintenance and improved the quality of the OHV trail riding experience.

(4) Biological Diversity

Heelsplitter mussel: A federally threatened mussel occurs on the Long Cane Ranger District and falls within Management Area 1 (MA1). The US Fish and Wildlife Service (USFWS), in accordance with the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended, 16 U.S.C. 1531 et seq.) is consulted on projects occurring in MA1. Internal concerns about the direction in MA1 have arisen, and forest staff will consult with the Fish and Wildlife Service about these concerns.

Bald Eagle: On August 9, 2007, the USFWS removed the bald eagle from the federal list of threatened and endangered species. This species is still protected under the Bald and Golden Eagle Protection Act and the Neotropical Migratory Bird Treaty Act, in addition to other federal and state laws. The National Bald Eagle Management Guidelines (USFWS, 2007) recommends the following: (1) Avoid clear cutting or removal of overstory trees within 330 feet of the nest at any time; (2) Avoid timber harvesting operations, including road construction and chainsaw and yarding operations, during the breeding season within 660 feet of the nest; and (3) Selective thinning and other silvicultural management practices designed to conserve or enhance habitat, including prescribed burning close to the nest tree, should be undertaken outside the breeding season.

(5) Prescribed Burning

Recent changes in wildland fire terminology at the national level have created a need to update the 2004 Revised Sumter Forest Plan. This forest plan amendment would be

non-significant and does not affect the forest's ability to meet targets, plan goals & objectives, and standards & guidelines.

7. Determination

Based on the 5-Year Review and implementation of the Forest Plan to date, and as summarized above, I have determined that conditions on the land and demands of the public have not changed significantly since 2004. Accordingly, the Forest Plan does not need to be revised at this time. However, the 5-Year Review identified potential items of work that could lead to minor adjustments or amendments to the Plan. These work items will be addressed as we continue to implement and monitor the Forest Plan, and evaluate the results to determine whether adjustments need to be made to keep the Plan current.

/s/ Paul Bradley
PAUL BRADLEY
Forest Supervisor

9/30/2010
Date

IV. Comprehensive Evaluation

A. Roles and Contributions

1. Ecological

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.

Located within the Forest boundaries are five broad historically terrestrial plant or forest communities: *Mesic Deciduous Forest*, *Eastern Hemlock and White Pine Forests*, *Oak and Oak-Pine Forest*, *Woodlands*, *Savannas*, and *Grasslands* and *Pine and Pine-Oak Forests*. The FEIS for the Revised Forest Plan describes typical characteristics of these major forest communities. Rare plant communities, such as Canebrakes, Caves, and Table Mountain Pine are found embedded within the major landscape forest communities. See Table 1 below.

The Forest's five major landscape forest communities have been altered or reduced from what historically occurred. The greatest changes occurred in the uplands, where few remnant patches of old-growth forest remain. The loss of old-growth conditions over most of the Forest has generally resulted in the reduction of old cavity trees, snags, and rotting logs. Hemlock Woolly Adelgid is causing wide-spread mortality of Eastern Hemlock. The hemlock forest will be replaced by species present in the understory, such as maple or rhododendron. It is estimated that 55-70% of the landscape on the Sumter National Forest was once dominated by fire-influenced savannas and woodlands. These forest communities are primarily limited to roadsides and powerline rights-of-way. Also, introduced and native weeds have increased across the Forest. Non-native species, such as privet, impact biodiversity not only on national forest land, but on state and other federal lands too.

The *Fiscal Year 2005 Monitoring and Evaluation Annual Report* states that in 2005 there were 205,240 acres in the "loblolly pine and Virginia pine" forest type and that 55,640 acres occurred in the "oak" forest type across the piedmont Districts. An analysis of the FSveg GIS database (May 2010) indicates that there are 205,344 acres in the loblolly pine forest type and 45,180 acres in oak forest types (See Table 1 below). This difference is primarily due to changes in database management and is not due to management activities.

Table 1. Loblolly Pine and Oak Forest Types on the Piedmont Districts of the Sumter National Forest.		
Description	Forest Type	GIS Acres
Loblolly Pine	Pine ¹	208,651
Oak, Oak-Pine, and Pine-Oak	Hardwood ²	34,520
	Hardwood-Pine ³	5,397
	Pine-Hardwood ⁴	5,263
	Total Oak Types	45,180

¹ Pine forest type (code): loblolly (31)

² Hardwood (oak only) forest types (code): post oak-black oak (51), chestnut oak (52), white oak-red oak-hickory (53), white oak (54), northern red oak (55), yellow poplar-white oak-red oak (56), scarlet oak (59), swamp chestnut oak-cherrybark oak (61), and laurel oak-willow oak (64)

³ Hardwood-Pine forest types (code): oak-eastern red cedar (43), southern red oak-yellow pine (44), bottomland hardwood-yellow pine (46), white oak-black oak-yellow pine (47), and northern red oak-hickory-yellow pine (48)

⁴ Pine-Hardwood forest types (code): shortleaf pine-oak (12) and loblolly pine-hardwood (13)

2. Social and Economic

The Sumter National Forest directly affects, and is predominantly influenced by, citizens of 13 north and central South Carolina counties containing national forest land (See Table 30). These counties have had a rapid population growth particularly along the I-85 corridor and to a lesser extent along the I-26 corridor. Accompanying the rapid population growth, are land use conversions: forested lands are cleared for development. The landscape is changing from a mixture of light residential and industrial, agricultural, and lightly managed forest systems to a heavily developed and urbanized landscape and more intensively managed forest systems. More detailed demographic and business information for each county is located in Appendix A of this report.

The area's economy is relatively slow-growing and predominantly rural. Poverty is higher than the national rate (See Table 2 and Appendix A). The 2008 Census data shows that 15.5% of people in the state live in poverty and 2008 poverty rates range from 16.1% to 21.7% in the counties of the Sumter NF. Due to the recession that began in December in 2007, poverty rates have increased since 2000 (See Table 31).

While the national forest's impact on the statewide economy is minor, forestry has emerged as the number one manufacturing industry in the state, the number one employer, and the leader in wages paid to support South Carolina families (SC Forestry Commission 2007). The SC Forestry Commission reported that the number of forest product mills remained stable in 2007 at 75 mills. Although four sawmills closed, the State gained three new shavings mills and one composite panel mill. While pulpwood is the leading forest product by volume, sawtimber is the most valuable.

B. Ecological

1. Vegetative Communities

a. Comparison of Existing Conditions/Trends to Desired Conditions

(1) Landscape Ecosystems

Concentration of timber harvesting activities is moving the Sumter Forest closer to the desired condition for restoration of rare forest communities, such as Woodlands, Grasslands, and Savannas. In the Piedmont, forest plan objectives recommend restoration of dry-mesic oak, oak-pine, and pine-oak forest communities shortleaf pine and shortleaf pine/oak communities. For the mountains, forest plan objectives include restoration of native communities on sites occupied by loblolly pine and increasing plant diversity on sites occupied by white pine. Below are forest plan objectives directed toward managing vegetative communities that dominate landscape ecosystems.

- **Objective 8.01** is to 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** is to provide 8,000 - 11,000 acres of woodlands in the piedmont and 4,000 – 5,000 acres of woodlands in 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** is to create conditions to restore dry-mesic oak, oak-pine, and pine-oak forest communities on 20,000 acres currently in loblolly pine forest in the piedmont over the 10-year planning period.
- **Objective 8.04** is to increase shortleaf pine and shortleaf pine/oak communities on 2,000 - 10,000 acres in the piedmont. This will be done on sites with low risk of littleleaf disease.
- **Objective 8.05** is to increase structural diversity by creating canopy gaps in one to five 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 designed to release mast-producing species, particularly hard mast (e.g., oak, hickory, walnut) and soft mast bearing trees (e.g. cherry, black gum, persimmon) over the 10-year planning period.
- **Objective 8.06** is to restore more diverse native communities on 1,000 - 2,000 acres currently occupied by white pine stands. Prioritize xeric to intermediate sites over the 10-year planning period.

Objective 8.01. The *Fiscal Year 2005 Monitoring and Evaluation Annual Report* states that in 2005 loblolly pine occupied 6,832 acres on the Andrew Pickens District. Beginning in 2004, loblolly pine forest types have been restored to native communities with the following NEPA Decisions: Village Creek, Chauga

River, Cedar Creek, and Ross Mountain/Tamassee. There are currently approximately 5,600 acres occupied by loblolly pine, a decrease of 1,232 acres since 2005. The Andrew Pickens District is in the planning stages of a District-wide loblolly pine removal project that would remove loblolly pine across the remaining 5,600 acres over a 5- to 10-year period. The forest has completed 780 acres through FY 2009. With the EIS in process on the AP, we should reach the objective within another 3-4 years.

Objective 8.02. Since 2005, approximately 2,634 acres have been managed as woodland habitat on the Sumter National Forest (Table 2 below).

Table 2. Woodland Habitat Projects on the Sumter National Forest, 2005-2009.		
Ranger District	Project Name	Acres
Andrew Pickens	Garland Tract	360
Andrew Pickens	Cedar Creek	207
Andrew Pickens	Compartment 61	144
	Total	711
Enoree	Lower Enoree/Indian Creek	447
Enoree	Lower Tyger (Comp. 24)	224
	Total	671
Long Cane	RENEW	1,198
Long Cane	Post Oak Savanna	54
	Total	1,225
Forest Total		2,634

In 2010, an additional 1,023 acres are planned: 202 acres on the Andrews Pickens District as part of the loblolly pine removal project, and 821 acres on the Enoree District as part of the Indian Creek woodlands project. These projects will be implemented over the next several years.

Objective 8.03. During 2004-2009, several activities have taken place on the Sumter National Forest to create conditions to restore dry-mesic oak, oak-pine, and pine-oak forest communities. These activities are primarily commercial thinnings that release hard mast trees. See Table 3. No data were collected relative to trends in hard mast production capability on the Enoree or Long Cane Districts. Table 4 lists the 5-year trend data for hard mast crop quality on the Andrew Pickens District.

The *Fiscal Year 2005 Monitoring and Evaluation Annual Report* states that in 2005 there were 205,240 acres in the “loblolly pine and Virginia pine” forest type and that 55,640 acres occurred in the “oak” forest type across the piedmont Districts. An analysis of the FS Veg GIS database (May 2010) indicates that there are 205,344 acres in the loblolly pine forest type and 45,180 acres in oak forest types (Table 1). These differences are primarily due to database management and management activities.

Table 3. Management Activities to improve oak habitat.		
Fiscal year	Acres	Management Activity
2004	2,738	2,699 acre of thinning + 39 acre of oak planting
2005	2,786	2,786 acre thinning
2006	2,657	2,482 thinning + 175 ac precommercial thinning
2007	1,757	1,757 thinning + 209 ac precommercial thinning
2008	2,695	2,571 thinning + 124 ac precommercial thinning
2009	<u>3,550</u>	<u>3,039</u> thinning + 511 ac precommercial thinning
Total	16,183	15,334 acres

In the future, large acreages of release activities to favor oak species are expected. All silvicultural prescriptions, whether in Management Prescription 9.G.2 or not, generally emphasize release of desirable oaks and hickories where possible.

Table 4. Hard mast crop quality on the Andrew Pickens District, Sumter National Forest, 2005-2009 ¹ .					
Hard Mast Species	Crop Quality				
	2005	2006	2007	2008	2009
White Oak	Fair	Fair	Poor	Poor	Poor
Red Oak	Fair	Poor	Poor	Poor	Poor
Hickory	Good	Poor	Poor	Poor	Fair

¹ Source: South Carolina Department of Natural Resources

Objective 8.04. The GIS database currently shows 3,034 acres of shortleaf pine on the piedmont. In 2009, 240 acres of shortleaf pine were planted in the RENEW project on the Long Cane District and approximately another 100 acres in various stages on Enoree and Long Cane. Based on current soil condition, it is anticipated that the forest may restore 300 to 500 acres of shortleaf pine in the piedmont during the 10-year planning period.

Objective 8.06. The GIS database currently shows 7,115 acres of white pine type on the Andrew Pickens Ranger District. However, no management activities have taken place to change this figure.

Objective 8.05 No projects were implemented during 2005-2009 to specifically increase structural diversity by creating gaps in closed canopy mid- and late-successional mesic deciduous forests. However, the Andrew Pickens District has planned a project (Compartment 61 Wildlife Habitat Improvement project) which includes the creation of fifteen 2-acre gaps. This project is expected to be implemented in FY 2010-2011.

(2) Prescribed Burning

The prescribed fire accomplishments were between 80%-124% of the targets. This target includes treatments for hazard fuels reduction, wildlife and TES habitat improvement, and timber stand improvement. The most acres burned occurred in FY 2009 with 29,287 acres treated. This was due to organizational changes in leadership and environmental conditions that allowed growing season burning to occur through June. During this five year period 114,973 acres were treated with prescribed fire which is 97% of the total target of 118,000 acres. See Table 5 and Figure 2. During 2009, the Sumter National Forest conducted prescribed fire on 18,905 acres. Estimated fine particulate matter emissions from those fires are 624 tons. The breakdown of prescribed fire within each ranger district is as follows:

- *Andrew Pickens RD.* 1,963 acres burned, with an estimated 65 tons of particulate matter emissions released.
- *Enoree RD.* 7,904 acres burned, with an estimated 261 tons of particulate matter emissions released.
- *Long Cane RD.* 9,038 acres burned, with an estimated 298 tons of particulate matter emissions released.

Table 5. Sumter Prescribed Fire Accomplishments by Fiscal Year.

FY	Total Acres
2005	19,052
2006	21,841
2007	25,841
2008	18,952
2009	29,287

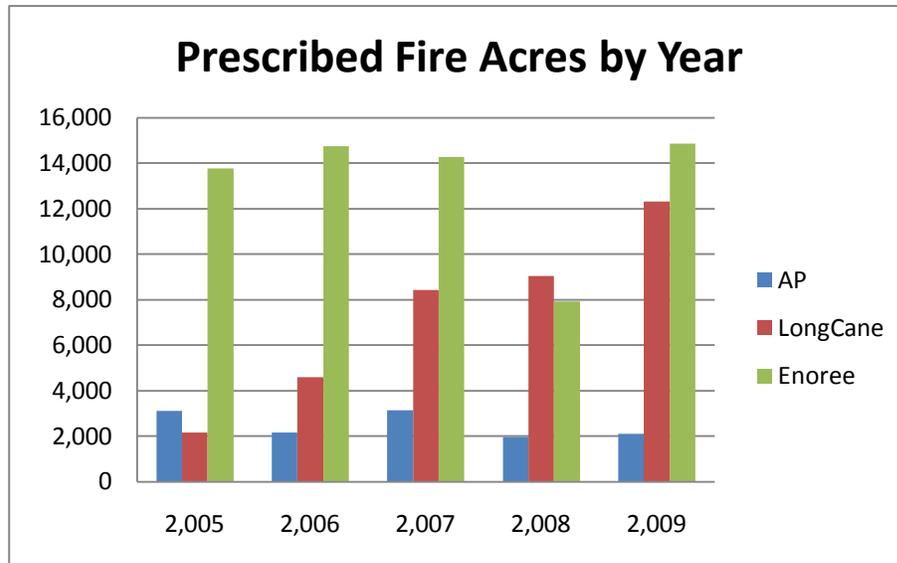


Figure 2. Sumter prescribed Fire Accomplishments by District

(3) Old growth

Only minimal work was done in old growth patches during the first five years of Plan implementation. Therefore it is still too early to make a meaningful comparison to expected DFCs for these areas.

(4) Imbedded Communities

Restoration of rare plant communities have focused on table mountain pine in the mountains and canebrakes across the entire Sumter National Forest.

- **Objective 12.01** includes restoring 500 to 2,500 acres of table mountain pine over the 10-year planning period. Approximately 25 acres of table mountain pine restoration have been planned on the Andrew Pickens RD. In addition prescribed burning helps restore the species.
- **Objective 12.02** is specific to the Piedmont and includes restoring the canebrake community on slopes less than 8 percent. Privet is a non-native invasive plant that rapidly spreads within the riparian corridor and will exclude cane. Activities to restore include efforts to control privet in the riparian corridor.

(5) Exotics

Sumter had a non-existent or sporadic approach to controlling and eradicating Non-native, Invasive Species (NNIS) prior to 2005. With the budgeting of regular annual funds from the Region, the Forest has begun an active NNIS program, and is now treating for kudzu, Japanese climbing fern, privet, bamboo, trifoliolate

orange, princess tree and tree of heaven. The forest has completed two EAs on the control of Non-native invasive plant species.

Contractors working with the Forest Service surveyed 6500 acres of the Sumter for invasive plants using American Recovery and Reinvestment Act (ARRA) Funding in 2009. On the Enoree RD, contractors mapped with a global positioning system (gps) and flagged invasive plants within 100 feet of roads and 200 feet of streams (extending further if needed; these are common areas for their introduction and spread) within the Indian Creek and Long Lane Analysis Areas (AA). On the Long Cane RD, they mapped invasive plants along roadsides and riparian areas within the Upper Curtail AA, and along Turkey Creek from Key Bridge to the confluence with Turkey Creek. On the Andrew Pickens RD, they mapped invasive plants along portions of the Garland Tract, the Chattooga River Corridor, and a recent thinning and wildlife opening near Lake Cherokee Road. On all districts, no mapping of sericea lespedeza, Japanese honeysuckle, and Japanese stiltgrass was required due to their abundance, unless they were associated with other invasive plants.

b. Results from Past Management Reviews, Audits, Annual Monitoring and Evaluation Reports

(1) Landscape Ecosystems

During the first five years of Revised Plan implementation, projects primarily focused on basic silvicultural needs, such as pre-commercial thinning, first thinning, regeneration and woodland management objectives. Almost all projects were designed to restore, maintain or improve the forest ecosystems and plant communities of the Forest. The number and size of timber final harvesting projects fell below the Plan's expected intensity for restoration. Project decisions for harvest treatment of longleaf and shortleaf/oak-hickory communities continued to backlog, due partially to limitations in budgets for implementation.

In FY2005, as the Forest was still transitioning to the Revised Plan, there were few projects developed to achieve the new desired future conditions, with the exception of prescribed burning.

In FY2005, management practices designed to achieve the desired future conditions as presented by the Revised Plan began to again be planned on the Forest. Decisions signed in FY2005 through FY2009 included a variety of prescribed treatments. As a result, most treatments were limited to mainly woodlands, shortleaf restoration and thinnings. These included the following:

Objective 8.02. Since 2005, approximately 2,634 acres have been managed as woodland habitat on the Sumter National Forest (Table 2). In 2010, an additional 1,023 acres are planned: 202 acres on the Andrews Pickens District as part of the loblolly pine removal project, and 821 acres on the Enoree District as part of the Indian Creek woodlands project. These projects will be implemented over the next several years.

Objective 8.04. While acres identified for shortleaf pine was below estimated annual average of 200 to 1000 acres of shortleaf restoration, project decisions with restoration cuts increased over the five year period. Although slow at the beginning, more project decisions under the Revised Plan have begun to be implemented. The GIS database currently shows 3,034 acres of shortleaf pine on the piedmont. In 2009, 240 acres of shortleaf pine were planted in the RENEW project on the Long Cane District and approximately another 100 acres in various stages on Enoree and Long Cane.

The Sumter has been evaluating soils for areas suitable for shortleaf pine on all recent projects. This includes not only establishment, but also the long-term likelihood that it will remain free of littleleaf disease. We are finding very few areas of size to allow conversion to shortleaf pine. Shortleaf pine needs good soil depth (approx 8"+ topsoil) with well-drained to moderately well-drained soils. Past erosion has generally left such soils in very few places. The areas found thus far tend to be very small, usually isolated parts of certain ridges or flats. They are usually too small for significant operational conversion. Based on current soil condition, it is anticipated that the forest may restore 300 to 500 acres of shortleaf pine in the piedmont during the 10-year planning period. This objective is unlikely to be fully achieved during the planning period.

Recommendations have been to perform post-implementation field checks on thinnings to ensure sufficient shortleaf emphasis and evaluate species compositions changes. We continue restoration treatments on shortleaf/hardwood sites where there is high priority for regeneration such as stands damaged by disease, insect or storm damage. For mixed hardwood-loblolly forest types, prescribe regeneration cuts on off-site stands where there is a high priority for regeneration (such as stands damaged by disease, insect or storm damage). Continue to monitor management practices being implemented within streamside and riparian area protection zones for compliance with the Forest Plan, through timber sale contract administration, and other field checks. Continue to consider selective thinning treatments within riparian areas to encourage hardwood component.

During the 2009 Sumter Integrated Resource (IRR), restoration of native habitats, woodland management and how these goals and objective fits within different management prescriptions was addressed. For more detail see Appendix C in this report. Some of the findings included:

- The RENEW and Indian Creek Woodlands projects will establish and maintain woodland habitat in the 8B2 prescription. Piedmont woodland objective is likely to be achieved in the next five to ten year period. It is unlikely that shortleaf pine communities can be reestablished at Forest Plan levels due to poor soil conditions. Only small scattered areas for shortleaf restoration have so far been identified during project planning. Thinning and precommercial thinnings are used to improve conditions for oaks and restore oak and oak/pine communities on the districts.

- Another concern was the relationship of the 8B2 management prescription on the Enoree and the Indian Creek Wildlife Habitat Restoration Initiative on the Enoree RD. The proposed action for the Indian Creek Wildlife habitat proposal was modified and no forest plan amendment is needed. The footprint for the 8B2 management prescriptions on the Enoree will be reviewed during the next forest plan revision.
- One question related to how much woodlands management is appropriate in the 10B and 9G2 management prescriptions. Specific woodland projects have not yet been identified in these two management prescriptions as emphasis has been focused on forest health issues and increasing the amount of early forest habitat. Recommendations included creating woodlands for Georgia Aster habitat, for T&E species habitat or to meet wildlife habitat requirements.
- Discussion focused on how to balance the amount of woodlands in the 10B and 9G2 management prescription. Woodland management is limited by prescribed burning, which is critical for maintenance. Woodlands should be distributed across the landscape, but should be prioritized when managing for rare plant communities. During landscape assessments, district and SO personnel will look for opportunities to create sustainable woodlands that emphasize management for rare plant species.

The 2007 General Management Review (GMR) addressed the Forest's process for integrating the vegetation management programs. Specific questions included: How are the priorities determined? How are the forests priorities aligned with regional priorities? Discussion centered on the use of resource advisory teams (RATs) that typically consist of program specialists from the Supervisor's Office and program and technical staff from each ranger district. One recent change in the process is that the FMS has developed a new "rapid assessment" process that will be initiated this fiscal year. This process involves looking at all resources within a landscape (analysis area). Each program specialist analyzes the area using a common template and all the information is brought together and a field visit conducted.

Findings from the 2007 GMR reported that the Long Cane and Enoree Ranger Districts have implemented a number of vegetation management projects at the 5th and 6th level watershed scale. Much of the piedmont is in mature to old loblolly pine forest. Therefore, vegetation projects can be planned virtually anywhere. The need for treatment vastly exceeds our ability and capacity to implement projects on-the-ground. Long Cane and Enoree uses order of entry based on watershed. Other resource areas (wildlife and fire) provide input during the development of the project proposal. 7E2 & 9G2 prescriptions require more involvement from fire personnel to establish a hardwood component. The

emphasis has been primarily in upland areas given the large number of acres. Little restoration work has been done in riparian areas given the sensitivity and the amount of work involved in design of projects in this management prescription. However, dense loblolly pine stands in riparian corridors represent the best opportunities for restoration to more native hardwood species.

(2) Prescribed Burning

Many variables influence the Forest's ability to meet the current prescribed fire goals. The fluctuation in year-to-year accomplishments is mainly attributed to weather constraints along with smoke management restrictions. The expanding Wildland Urban Interface (WUI) also limits burning opportunities. At times, budget constraints also limit the availability of personnel and equipment. The zone fire organization has allowed the forest to increase the number of acres prescribed burned over the last few years.

An aggressive prescribed burning program was applied on the Sumter landscapes. However, continued use of growing season burns must be implemented to achieve the desired future conditions. Recommendations have been to increase acreage of growing season burns on longleaf (Long Cane only) and shortleaf pine/oak-hickory landscapes, and continue to work with research to determine effects. Air quality concerns will probably limit the forest's ability to prescribed burn, especially during the growing season.

(3) Old growth

A geographic information systems (GIS) theme showing the location of old-growth patches on the Sumter National Forest was developed. Recently, little more has been done to develop the Forest's designated old-growth patches. Personnel should continue to complete field visits and review NEPA documents involving old-growth patches to determine compliance with the Forest Plan.

(4) Imbedded Communities

No Forest-level information was reported in annual monitoring reports. Site level assessments were made as part of environmental documentation for individual projects. In most cases, mitigation measures were used to protect these communities. In a few cases, particularly in stream enhancement, development opportunities were implemented.

Projects are now being submitted annually to open the overgrown midstory on inclusionary communities such as prairies, and woodlands, allowing the herbaceous layer – rich in rare plants – to thrive. Methods used include clearing by hand and chainsaw, herbicide application, and increased use of fire.

(5) Exotics

Site level assessments were made as part of environmental documentation for individual projects. The Forest is gradually becoming more aware of the presence of NNIS and proposing mitigation or treatment where needed.

NNIS are surveyed on Sumter lands regularly, including project-specific walking surveys by botanists, and random driving surveys. Of these species, the Sumter is actively eradicating kudzu, privet, bamboo, trifoliolate orange and tree of heaven.

Cogon grass has not been found on the Sumter at this time, but has been reported from land adjacent to the Sumter in Oconee County, SC. Cogon grass surveys are ongoing and if found on Sumter National Forest land it will assume the highest priority for eradication.

2. Animal/Plant Habitats

a. Comparison of Existing Conditions/Trends to Desired Conditions

(1) MIS

Management prescriptions for providing habitat for wildlife species including the following desired conditions:

- **Mgmt RX 9G2** - 4 to 10% early successional habitat and 20% late successional habitat
- **Mgmt RX 10B** - 10 to 17% early successional habitat and 10% late successional habitat
- **Mgmt RX 8B2** - 10 to 17% early successional habitat

Five-year trends in MIS population indices in relationship to major forest communities/conditions are listed below in Table 6 for the Enoree and Long Cane Districts and for the Andrew Pickens District.

Frequency of occurrence data are not available for 2005-2009. General Technical Report NRS-9, *Population Trends and Habitat Occurrence of Forest Birds on Southern National Forests, 1992-2004*, summarizes frequency of occurrence data for the 13-year period beginning in 1992. These data are still useful for examining trends in occurrence frequency for MIS (see Table 7).

Five year trends in MIS population indices in relationship to habitat associations are listed below in Tables 8 and 9 for the Enoree and Long Cane Districts and for the Andrew Pickens District.

Table 6. Trends in management indicator species population indices in relation to habitat association on the Sumter National Forest, 2005-2009.

		Observations ¹					
Enoree and Long Cane Ranger Districts		2005	2006	2007	2008	2009	Total
Management Indicator Species	Habitat Association						
Acadia Flycatcher	Riparian forests	48	9	48	57	35	197
Brown-headed Nuthatch	Mid- and late-successional Pine and pine/oak forests	13	3	21	26	20	83
Hooded Warbler	Mesic deciduous forest	43	1	28	26	15	113
Pine Warbler	Pine/pine-oak forests	198	80	221	268	206	973
Scarlet Tanager	Oak forests	9	3	8	11	12	43
Andrew Pickens Ranger District		Observations ¹					
Management Indicator Species	Habitat Association	2005	2006	2007	2008	2009	Total
Acadia Flycatcher	Riparian forests	7	-	24	32	3	66
Brown-headed Nuthatch	Mid- and late-successional Pine and pine/oak forests	-	-	-	3	-	3
Hooded Warbler	Mesic deciduous forest	46	-	71	92	21	230
Pine Warbler	Pine/pine-oak forests	22	-	61	37	2	122
Scarlet Tanager	Oak forests	24	-	29	38	12	103

¹ Observation data were collected during District landbird monitoring

Table 7. Frequency of occurrence of management indicator species by physiographic region, 1992-2004.

Management Indicator Species	Physiographic Area¹	
	Southern Blue Ridge	Southern Piedmont
Acadia Flycatcher	Declining	Increasing
Brown-headed Nuthatch	Level to slightly declining	Increasing
Hooded Warbler	Declining	Declining
Pine Warbler	Declining	Declining
Scarlet Tanager	Slightly increasing	Increasing

¹ The Andrew Pickens District is in the Southern Blue Ridge physiographic area; the Enoree and Long Cane Districts are in the Southern Piedmont physiographic area

Table 8. Trends in management indicator species population indices in relation to habitat association on the Sumter National Forest, 2005-2009.

		Observations ¹					
Enoree and Long Cane Ranger Districts		2005	2006	2007	2008	2009	Total
Management Indicator Species	Habitat Association						
American Woodcock	Early successional riparian	-	-	-	-	-	-
Field Sparrow	Woodland/grassland/savanna	13	14	18	7	3	55
Prairie Warbler	Early successional forests	56	19	58	76	61	270
Swainson's Warbler	Early successional riparian	1	-	1	2	-	4
Andrew Pickens Ranger District		Observations ¹					
Management Indicator Species	Habitat Association	2005	2006	2007	2008	2009	Total
American Woodcock	Early successional riparian	-	-	-	-	-	-
Field Sparrow	Woodland/grassland/savanna	8	-	7	6	-	21
Prairie Warbler	Early successional forests	4	-	3	6	2	15
Swainson's Warbler	Early successional riparian	-	-	3	3	-	6

¹ Observation data were collected during District landbird monitoring

Table 9. Trends in management indicator species population indices in relation to habitat association on the Sumter National Forest, 2005-2009.

		Observations ¹					
Management Indicator Species	Associated Habitat Attribute	2005	2006	2007	2008	2009	Total
Pileated Woodpecker ¹	Snag abundance	66	17	70	62	32	247
Pileated Woodpecker ²	Snag abundance	24	-	44	59	5	132

¹ Enoree and Long Cane Districts

² Andrew Pickens District

(2) PETS

The following table is a summary of the status of known information of status and distribution of PETS on the Sumter National Forest.

Table 10. Status and Distribution of Threatened, Endangered and Sensitive Species on the Sumter National Forest		
Species	Ranking	Status
Bald Eagle	Federally Threatened	Three nests; including two active nests within the Broad River on the Enoree, and one nest on the Long Cane abandoned since 1999
Wood Stork	Federally Endangered	No known roost sites on the Forest; wetlands used for late summer foraging
Carolina Heelsplitter	Federally Endangered	Critical habitat on the Forest includes stream reaches within two watersheds on the Long Cane
Smooth Coneflower	Federally Endangered	Known from ten populations and 2,227 rosettes in 2007, an increase from 1,388 rosettes in 2004 and 1,153 in 1993. Of the ten populations, 1 has excellent viability, 1 good, 6 fair, and 2 poor.
Small Whorled Pogonia	Federally Threatened	On the Andrew Pickens RD, species has gone from a high of 53 known plants from 3 sites in 1995, to eight plants from 2 sites in 2004, but then increased in 2008 to 36 plants from 3 sites.
Florida Gooseberry	Federally Threatened	Seven colonies occur within one site spread through an approximately 150 acre hardwood stand on the Long Cane; colony area has expanded from 33.85 m ² in 1994 to 178.65m ² in 2007
Persistent Trillium	Federally Endangered	Not known from the Forest; known from the Tugaloo watershed adjacent to the Andrew Pickens RD
Relict Trillium	Federally Endangered	Not known from the Forest; known from land adjacent to the Long Cane RD
Southern Appalachian Salamander	Sensitive	Hybridizes with <i>Plethodon jordani</i> and <i>Plethodon glutinosus</i> . Common on the Andrew Pickens.
Webster's Salamander	Sensitive	Census in 2002-2003 documented 252 individuals on the Long Cane, with a capture rate of 8.5 salamanders/hour
Bachman's Sparrow	Sensitive	Few species records; species is rare on the piedmont due to lack of habitat
Migrant Loggerhead Shrike	Sensitive	No species records; agricultural habitat preferred by the species is lacking on National Forest system lands
Chauga Crayfish	Sensitive	Located by Eversole, in 23 % of streams sampled for crayfish within Chattooga and Chauga River basins
Carolina Darter	Sensitive	Not known from the Forest but range includes the Broad River on the Enoree
Robust Redhorse	Sensitive	Stocked in the Broad River in 2004; Known historically from the Savannah River below Augusta, GA
Diana Fritillary	Sensitive	Two locations documented on the Andrew Pickens within open, fire-maintained woodlands; thought to be common
Rafinesque's Big-Eared Bat	Sensitive	Five roost sites documented from the Andrew Pickens RD.
Eastern Small-Footed Myotis	Sensitive	Two records from the Andrew Pickens
Brook Floater	Sensitive	Large population in the Chattooga River;

Rayed Pink Fatmucket	Sensitive	Not currently known from the Forest but ranges within the Saluda River watershed on the Long Cane
Indigo Bush	Sensitive	Two populations known from the Forest, one on the Enoree and one on the Long Cane
Fort Mountain Sedge	Sensitive	Four sites known on the Andrew Pickens
Radford's Sedge	Sensitive	Common on the Andrew Pickens
A Liverwort)	Sensitive	Conserved in waterfall spray communities on the Forest
Spreading Pogonia	Sensitive	Common on the Andrew Pickens but not well documented
Whorled Horsebalm	Sensitive	Common on the Andrew Pickens
Mountain Witch Alder	Sensitive	Three sites known from the Forest
Shoal's Spider Lily	Sensitive	Three sites known historically from the piedmont districts on the Forest; none relocated in 2004
Butternut	Sensitive	Nine sites known from the Forest
Fraser's Loosestrife	Sensitive	Several locations (35 based on 1995 monitoring) known from roadsides and powerline rights-of-ways within the administrative boundary of the Andrew Pickens; 1,724 plants identified at that time; threatened by roadside maintenance activities
Sweet Pinesap	Sensitive	Known from eight sites on the Forest, common on the Andrew Pickens
A Liverwort	Sensitive	Conserved in waterfall spray communities on the Andrew Pickens
A Liverwort	Sensitive	Conserved in waterfall spray communities on the Andrew Pickens
Carolina Plagiomnium	Sensitive	Conserved in waterfall spray communities on the Andrew Pickens
Oglethorpe Oak	Sensitive	35 sites on the Long Cane confirmed; the majority comprised of only sprouts and small trees; species appears to be infected with fungus similar to chestnut blight
A Liverwort	Sensitive	Conserved in waterfall spray communities on the Andrew Pickens
Hartwig's Locust	Sensitive	Known from one site on the Andrew Pickens
Sun-Facing Coneflower	Sensitive	Locally common along roadsides near Lake Cherokee
Southern Oconee Bells	Sensitive	Common near Lake Jocassee where it is known from three sites on the Forest
Georgia Aster	Federal Candidate; Sensitive	9 populations known from the Enoree and Long Cane Ranger districts, including 2 on the Long Cane RD (1 poor and 1 excellent viability) and 7 on the Enoree RD (3 with poor viability, 4 with fair viability, and 1 with excellent viability)
Ashleaf Goldenbanner	Sensitive	No sites documented on the Andrew Pickens Ranger district but species thought to be common
Lanceleaf Trillium	Sensitive	Two sites known on the Long Cane Ranger district
Nodding Trillium	Sensitive	Four sites documented on the Forest, including two on the Andrew Pickens, one on the Long Cane, and one on the Enoree
Jeweled Trillium	Sensitive	Six sites known on the Andrew Pickens including one at Station Cove
Piedmont Strawberry	Sensitive	34 sites documented on the Andrew Pickens

b. Results from Past Management Reviews, Audits, Annual Monitoring and Evaluation Reports

(1) MIS

Year-to-year trends in MIS population indices are difficult to interpret. First, changes in observer ability over time and differences between observers can affect the analysis of population trends. Second, it is typically assumed that detectability is constant for a species over time and across habitats independent of observer differences, but this is rarely the case. It is therefore more useful to examine the total number of observations across the 5-year monitoring period (in Tables 3 to 6), although the same caveats apply. For example, on the piedmont Districts the relative abundance of pine warblers compared to the relative scarcity of scarlet tanagers reflect the dominance of loblolly pine forest types versus hardwood forest types in the piedmont. On the other hand, the relative abundance of hooded warblers and the relative scarcity of brown-headed nuthatches on the Andrew Pickens District reflect the opposite forest type conditions.

(2) PETS

Objective 10.01 is to maintain or restore at least eight self-sustaining populations for smooth coneflower, and if possible, four populations for small whorled pogonia on the Andrew Pickens, including the habitat to support them.

Objective 10.02 is to maintain or restore at least eight self-sustaining populations for Georgia aster and one population for Florida gooseberry on the piedmont districts and the habitat to support them.

(a) Plants

Enoree/Long Cane - Of ten populations for Georgia aster on the piedmont districts of the Sumter National forest, 2 has excellent viability, 4 fair, and 4 poor (based on definitions by Natureserve). Ideal habitat is open shortleaf pine – oak woodlands. In order to restore and maintain these areas, canopy removal and mid-story control is sometimes needed, combined with frequent low intensity fire or mowing. A forest-wide management plan was developed in 2009, and the forest is participating in a 4 state conservation agreement with USFWS, the Atlanta Botanical Garden, and other participating National Forests (AL, GA, NC, and SC) and stakeholders across the range of the species. A more comprehensive NEPA decision is being planned to restore woodlands on 1200 acres for Georgia aster on the piedmont districts.

Mechanical chipping adjacent to Chester County sites for Georgia aster was initiated on the Enoree RD in partnership with SC Department of Natural Resources. Treatments in two stands within the Lower Tyger Analysis area and adjacent to the new population for Georgia Aster, were modified to

propose thinning to low basal areas to maintain woodland conditions. Prescribed burning within Compartment 314 on the Long Cane occurred to restore and maintain habitat for Georgia aster within applicable stands.

Monitoring of one site for the sensitive shoal's spider lily was conducted on the Long Cane by FS personnel. This site has exhibited a decline which appears to be related to alterations in hydrology occurred by drought and/or water level alterations on the Savannah River; only one patch for the plant was found.

Andrew Pickens – Of ten populations for the endangered smooth coneflower on the Andrew Pickens RD, 1 is considered excellent viability, 1 good, 6 fair, and 2 poor (based on definitions by Natureserve). Ideal habitat is open pitch pine/table mountain pine/shortleaf pine – oak woodlands located along the Brevard Geologic Belt. In order to restore and maintain these areas, canopy removal and mid-story control is sometimes needed, combined with frequent low intensity fire or mowing. To achieve the forest plan objective of maintaining 8 self-sustaining populations for smooth coneflower, a more comprehensive management plan or NEPA decision is being planned. Some woodlands restoration is planned within the AP loblolly pine removal project.

Of primary concern are the loss of grasslands and oak forests. These two community types can be considered amongst our rarest. Although an aggressive prescribed fire program has been reinstated on the Sumter, the severely overgrown areas on certain prairies are often not penetrated by fire, and continue to “succeed” to a heavily woody aspect. This is a serious concern for PETS plant populations.

(b) Animals

Based on acres sold from FY2005 to FY2009, approximately 1,031 acres of early-successional habitat was created by clearcutting, seed-tree and shelterwood regeneration. However, due to some GIS data loss, we are unable to give more specific acreages on mid-successional and older successional pine. It is estimated that mid-successional pine habitat has stayed approximately the same since 2004; and older successional pine habitats have increased since the base year.

Recommendations have been to adhere to the land management practices described in the Forest Plan for the Sumter NF, which calls for relatively older timber stands.

Populations of Bald Eagles on Sumter National Forest are at least slightly increasing. Other PETS species exist in relatively low numbers and not enough information exists to estimate a current trend for these species. Summarily,

Sumter National Forest habitat conditions seem to be acceptable to Sumter PETS species (MIS Report 2005).

On August 9, 2007, the USFWS removed the bald eagle from the federal list of threatened and endangered species. This species is still protected under the Bald and Golden Eagle Protection Act and the Neotropical Migratory Bird Treaty Act, in addition to other federal and state laws. The National Bald Eagle Management Guidelines (USFWS, 2007) recommends the following: (1) Avoid clear cutting or removal of overstory trees within 330 feet of the nest at any time; (2) Avoid timber harvesting operations, including road construction and chainsaw and yarding operations, during the breeding season within 660 feet of the nest; and (3) Selective thinning and other silvicultural management practices designed to conserve or enhance habitat, including prescribed burning close to the nest tree, should be undertaken outside the breeding season. Recommendations from the Comprehensive Evaluation Review were to update language as needed during the next forest plan revision.

Artificial impoundments only occur on the Enoree Ranger District. While there are records of wood storks using these impoundments, it is not very common. Water levels are manipulated for the cultivation of wildlife grains and to provide habitat predominantly for wintering waterfowl.

A more specific management plan for the endangered Carolina heelsplitter on the Long Cane would further conservation for the species on the district. This management is being developed by the Fish & Wildlife Service.

3. Fish and Wildlife

a. Comparison of Existing Conditions/Trends to Desired Conditions

(1) *Terrestrial Species*

Every year since 1988 the South Carolina Department of Natural Resources has conducted the Bobwhite Quail Hunter Survey. The purpose of the survey is to collect quantitative information on hunter success which aids biologists in tracking quail population trends. Table 11 shows the statewide average covey size from the 2004-2005 season to the 2007-2008 season. Data are not available for the 2008-2009 season. White-tailed deer harvest and population estimates are included in Table 12. Wild turkey harvest and population estimates are listed below in Table 13. Data for the number of turkey tags issued is not available.

The number of black bears harvested and the number of permits issued from 2005 to 2009 are listed in Table 14. Estimating the size of the black bear population in South Carolina is very difficult. South Carolina Department of Natural Resources estimated that the 2007 population was 1,500. All indicators suggest a rapidly expanding population, both geographically and numerically.

Season	Average Covey Size	Quail Harvested per Hour
2004-2005	11.1 ²	0.55
2005-2006	10.5	0.42 ²
2006-2007	11.2 ²	0.43
2007-2008	12.1 ²	0.33 ²

¹ Source: South Carolina Department of Natural Resources

² Significantly different from the previous year (P<0.05)

Year	Harvest ²	Population Estimate
2005	244,047	765,504
2006	221,320	738,840
2007	239,193	772,207
2008	248,778	801,532
2009	231,703	719,060

¹ Source: South Carolina Department of Natural Resources

² Includes the harvest of bucks and does

Table 13. Statewide South Carolina wild turkey harvest and population estimate, 2005-2009¹.

Year	Harvest	Population Estimate
2005	22,376	100,000
2006	20,125	100,000
2007	19,289	95,000
2008	17,304	90,000
2009	16,234	90,000

¹ Source: South Carolina Department of Natural Resources

Table 14. Statewide South Carolina black bear harvest and numbers of permits issued, 2005-2009¹.

Year	Harvest ²	Permits Issued
2005	34	1,140
2006	51	1,275
2007	58	1,404
2008	44	1,461
2009	91	1,535

¹ Source: South Carolina Department of Natural Resources

² Includes the harvest of males and females

(2) Lake/Ponds

Existing population conditions for macroinvertebrate communities are unknown. Refer to the Sumter National Forest 2005 Monitoring and Evaluation Annual Report (2005 Monitoring Report) for more detailed inventory information on crayfish and mussels. Aquatic insect surveys were conducted in the Chattooga River watershed in October 2007 and September 2008. Results will be available in 2010.

Mussel surveys were conducted on the Andrew Pickens Ranger District in the Chattooga and Chauga River watersheds in 2008. Surveys were also conducted on the Enoree Ranger District in the Broad River watershed. Mussel species collected are listed in Table 15.

The Carolina lance and brook floater are rated as G3 by NatureServe (2009). The rating denotes that a species is at moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors. The brook floater is listed as Threatened by the American Fisheries Society (Williams, et. al. 1992). This listing refers to a species that is likely to become endangered throughout all or a significant portion of its range.

Table 15. Mussel species collected in 2008.	
Scientific Name	Common Name
Enoree Ranger District	
<i>Elliptio angustata</i>	Carolina lance
<i>Elliptio complanata</i>	Eastern elliptio
<i>Villosa delumbis</i>	Eastern creekshell
Andrew Pickens Ranger District	
<i>Alasmidonta varicosa</i>	Brook floater
<i>Elliptio angustata</i>	Carolina lance
<i>Elliptio producta</i>	Atlantic spike

The SC Comprehensive Wildlife Conservation Strategy (Kohlsaet et. al., 2005) includes the South Carolina's Priority Species List. These species warrant conservation concern to maintain diversity in South Carolina waters. The species are ranked in priority as moderate, high and highest. All of the mussel species listed in the table are ranked in the SC Comprehensive Wildlife Conservation Strategy. The brook floater is ranked with a highest priority. The Atlantic spike, Carolina lance, Eastern creekshell and Eastern elliptio are ranked with a moderate priority.

Freshwater snails, *Elimia catenaria*, *Helisoma anceps*, *Physa* sp. and *Campeloma decisum*, were also sampled in the Broad River.

Of the 3 mussel species found on the Andrew Pickens Ranger District, the brook floater (*Alasmidonta varicosa*) population within the Chattooga River is of global significance. From Georgia through at least Maryland, this is the best extant population within this range (Alderman, 2008). No mussels were present at the most upstream survey site in the vicinity of Burrell's Ford Road. No mussels were present at survey sites in the Chauga River. However, *Elimia proxima*, a freshwater snail was sampled in the Chauga River.

In addition, *Corbicula fluminea*, the introduced Asian clam was present in the Broad River watershed and the Chauga River watershed.

Stream fish inventory and monitoring surveys in Sumter National Forest streams were conducted in 2002-2005 for all the Districts (refer to the 2005 Monitoring Report). In addition, fish monitoring was conducted on Hunting Creek in 2008 on the Enoree Ranger District. See Table 16

Table 16. Fish species surveyed in Hunting Creek, 2001 and 2008			
Scientific Name	Common Name	2001	2008
Catostomidae	Suckers		
<i>Erimyzon oblongus oblongus</i>	Creek chubsucker	x	x
<i>Moxostoma rupiscartes</i>	Striped jumprock	x	x
Centrarchidae	Sunfishes		
<i>Centrarchus macropterus</i>	Flier		x
<i>Enneacanthus gloriosus</i>	Bluespotted sunfish		x
<i>Lepomis auritus</i>	Redbreast sunfish	x	x
<i>Lepomis cyanellus</i>	Green sunfish	x	x
Cyprinidae	Carps and Minnows		
<i>Cyprinella chloristia</i>	Greenfin shiner	x	
<i>Cyprinella zanema</i>	Santee chub	x	
<i>Nocomis leptocephalus</i>	Bluehead chub	x	x
<i>Notemigonus crysoleucas</i>	Golden shiner		x
<i>Notropis lutipinnis</i>	Yellowfin shiner	x	x
<i>Notropis procne</i>	Swallowtail shiner	x	x
<i>Notropis szepticus</i>	Sandbar shiner	x	x
<i>Semotilus atromaculatus</i>	Creek chub	x	x
Esocidae	Pikes		
<i>Esox americanus.</i>	Redfin pickerel	x	x
Ictaluridae	Bullhead Catfishes		
<i>Ameiurus natalis</i>	Yellow bullhead	x	x
<i>Ameiurus platycephalus</i>	Flat bullhead	x	
Percidae	Perches		
<i>Etheostoma olmstedii</i>	Tessellated darter	x	x
Poeciliidae	Livebearers		
<i>Gambusia holbrooki.</i>	Eastern mosquitofish	x	x

All fish species present in Hunting Creek were ranked secure (G5) or apparently secure (G4) by NatureServe (2009). The flat bullhead is listed as Vulnerable by the American Fisheries Society (Jelks et. al. 2008). This indicates that the species is in imminent danger of becoming threatened throughout all or a significant portion of its range due to present or threatened destruction, modification, or reduction of its habitat or range. Of the 19 species captured in Hunting Creek, two are considered non-indigenous or introduced species to the watershed (Warren, et al. 2000). These include the green sunfish and yellowfin shiner. The remaining species captured are native to the watershed.

The SC Comprehensive Wildlife Conservation Strategy (Kohlsaas et. al., 2005) includes the South Carolina's Priority Species List. These species warrant

conservation concern to maintain diversity in South Carolina waters. The species are ranked in priority as moderate, high and highest. Of the species that occur in Hunting Creek, the Santee chub is ranked with a high priority and the flat bullhead is ranked with a moderate priority.

Stream fish inventory and monitoring surveys were conducted on the Andrew Pickens District in 2008. A total of 10 sites were sampled in seven streams (Table 17). Eighteen different streams were sampled in 2002-2008. A total of 17 species were captured in both cool and cold water habitats in 2008 (Table 18).

All fish species surveyed were ranked secure (G5) or apparently secure (G4) by NatureServe (2009). The flat bullhead is listed as Vulnerable by the American Fisheries Society (Jelks et. al. 2008). This indicates that the species is in imminent danger of becoming threatened throughout all or a significant portion of its range due to present or threatened destruction, modification, or reduction of its habitat or range. Of the 29 species (2002-2008) captured in Andrew Pickens Ranger District streams, five are considered non-indigenous or introduced species to the watershed (Warren, et al. 2000). These include the green sunfish, yellowfin shiner, yellow perch, rainbow trout and brown trout. The remaining species captured are native to the watershed.

The brook trout is designated as a S2 species by the SC Heritage Program. It has also been identified as a species of conservation concern in South Carolina by the South Carolina Department of Natural Resources (Kohlsaet et. al., 2005). Additional species of conservation concern in South Carolina are the redeye bass, turquoise darter, blacknose dace, central stoneroller, flat bullhead, longnose dace, mirror shiner, rosyface chub, snail bullhead, Tennessee shiner and warpaint shiner. The population status of these species is considered to be currently stable throughout all or a significant portion of their range. The fish species diversity of the Management Indicator Community in the Chattooga River watershed has not changed in more than 20 years of sampling the main stem of the river. Brook trout populations are considered stable in two recently restored streams. In one of those streams where brown trout were removed, the brook trout population is higher in density and biomass than other SC brook trout streams.

Table 17. List of Fish Surveys Sites on the Andrew Pickens Ranger District

Stream	Site #	Watershed	# Species Captured						
			2002	2003	2004	2005	2006	2007	2008
Chauga River	2	Chauga River	10		10				
Chattooga River									
Big Bend Site		Chattooga River					11		14
Ellicott Rock Site		Chattooga River					12		14
Spoonauger Site					14			16	
East Fork Site					9				
Highway 28 Site								17	
Pigpen Branch	1	Chattooga River	3	3				4	3
	2		2	3				3	
Tamassee Creek	1	Chattooga River	9	9					
	2			5					
	3							1	1
Crane Creek	1	Cheohee Creek	1		1		1		1
	2				1	1	1	1	
Left Trib Site								1	
Jacks Creek	1	Chattooga River		1				1	
Townes Creek	1	Cheohee Creek		7					
Yellow Branch		Coneross Creek		4					
Bee Cove Creek		Whitewater River		1					1
Howard Creek		Whitewater River		1					
Limber Pole Creek		Whitewater River		1					
Moody Creek		Cheohee Creek		1					
Wilson Creek		Cheohee Creek		0					
East Fork Chattooga River	1	Chattooga River		12					
	2			4			3	2	
	3			3					
King Creek	1	Chattooga River			5	5		1	
	2		1	1	1	1	1	1	1
US Burrells Ford Rd	3								1
Indian Camp Branch	1	EF Chattooga River							1
	2								1
Ira Branch		Chattooga River						1	
Fall Creek		Chattooga River			4				

Table 18. Species Captured in Andrew Pickens Ranger District Streams								
Species	Common Name	2002	2003	2004	2005	2006	2007	2008
Catostomidae								
<i>Catostomus commersoni</i>	White sucker		x			x	x	x
<i>Hypentelium nigricans</i>	Northern hogsucker	x	x	x			x	
<i>Moxostoma rupiscartes</i>	Striped jumprock	x	x	x	x	x	x	x
Centrarchidae								
<i>Lepomis auritus</i>	Redbreast sunfish	x	x			x	x	x
<i>Lepomis cyanellus</i>	Green sunfish			x				
<i>Lepomis gulosus</i>	Warmouth			x				
<i>Lepomis macrochirus</i>	Bluegill	x	x			x	x	
<i>Micropterus coosae</i>	Redeye bass						x	
Cottidae								
(a) <i>Cottus bairdi</i>	Mottled sculpin		x	x	x	x	x	x
Cyprinidae								
<i>Campostoma anomalum</i>	Central stoneroller		x	x		x	x	x
<i>Clinostomus funduloides</i>	(2) <i>Rosyside dace</i>		x		(3)	x	x	x
<i>Cyprinella nivea</i>	Whitefin shiner						x	
<i>Hybopsis rubrifrons</i>	Rosyface chub	x	x				x	
(4) <i>Luxilus coccogenis</i>	(5) <i>Warpaint shiner</i>		x	x	(6)	x	x	x
<i>Nocomis leptocephalus</i>	Bluehead chub	x	x	x		x	x	x
<i>Notropis leuciodus</i>	Tennessee shiner						x	
<i>Notropis lutipinnis</i>	Yellowfin shiner	x	x	x		x	x	x
(7) <i>Notropis spectrunculus</i>	(8) <i>Mirror shiner</i>			x			x	x
(9) <i>Rhinichthys cataractae</i>	(10) <i>Longnose dace</i>		x	x	x	x	x	x
<i>Rhinichthys atratulus</i>	Blacknose Dace		x	x			x	x
<i>Semotilus atromaculatus</i>	Creek chub	x	x	x			x	x
Ictaluridae								
<i>Ameiurus brunneus</i>	Snail bullhead			x			x	
<i>Ameiurus platycephalus</i>	Flat bullhead	x						
Percidae								
<i>Etheostoma inscriptum</i>	Turquoise darter	x	x	x		x	x	x
<i>Perca flavescens</i>	Yellow perch	x						
<i>Percina nigrofasciata</i>	Blackbanded darter	x		x				
Salmonidae								
<i>Oncorhynchus mykiss</i>	Rainbow trout	x	x	x	x	x	x	x
<i>Salmo trutta</i>	Brown trout	x	x	x	x	x	x	x
<i>Salvelinus fontinalis</i>	Brook trout	x	x	x	x	x	x	x

b. Results from Past Management Reviews, Audits, Annual Monitoring and Evaluation Reports

(1) Demand Species

Bobwhite quail numbers continue to decline statewide but appear to have stable to upward trends on portions of the Enoree and Long Cane Ranger Districts. Bobwhite quail have probably never occurred in high numbers on the Andrew Pickens District. Stable to upward trends for bobwhite quail on the piedmont likely reflect an increase of fire-maintained forests. In particular, the RENEW project on the Long Cane District and the Indian Creek Woodlands project on the Enoree District have done much to improve conditions for quail on the Sumter National Forest. However, woodland habitat is still less than one percent on the piedmont Districts. Continued emphasis needs to be placed on woodland habitat management, pine thinnings, regeneration harvests, and the use of prescribed fire. As with bobwhite quail, wild turkey benefit from projects that increase early successional habitats, including woodlands. Pine thinnings and prescribed fire will also improve habitat for this species.

Turkey populations have declined in both the Southern Blue Ridge and Southern Piedmont physiographic regions. Key habitat components for the species are mature hardwood bottoms, scattered openings, and open uplands that are maintained with prescribed fire. Early successional habitat, including woodlands, is in very limited supply across the Districts. Turkey populations are closely associated with brood-rearing habitat.

The population of black bear is expanding geographically and numerically. Breeding populations of this species are known to occur in the Southern Blue Ridge and Southern Piedmont physiographic regions. Historically, black bear occurred throughout the entire state of South Carolina. By the early 1900s, over-harvesting and detrimental habitat changes restricted them to the most remote mountains and coastal swamps. The upward trend for black bear statewide suggests that habitat conditions for this species have improved statewide. While the South Carolina Department of Natural Resources reports that sustainable populations exist in the northwest and southeast portions of the state, transient populations are known to occur statewide.

Continued effort is needed to develop and maintain woodland and savanna habitats. Bobwhite quail, white-tailed deer, wild turkey, and black bear would benefit from the early-successional conditions provided by these habitat types. The use of prescribed fire and mast-producing silvicultural practices are also important tools for shaping and improving habitat used by these demand species.

(2) Lake/Ponds

There are 11 recreational fishing ponds totaling 89 acres on the Sumter National Forest. Largemouth bass and bream are the primary fish in the ponds. A few of the ponds have been stocked with catfish. Pond maintenance and/or improvement activities during 2005-2009 include: stocking with sterile grass carp for aquatic plant control, adding woody debris for habitat enhancement, and conducting population monitoring and water chemistry assessments. Population monitoring was conducted on 40 acres in 2008. Water chemistry was assessed in 54 acres. Habitat improvement occurred in 75 acres of ponds. In addition, habitat improvement occurred in 75 acres of Strom Thurmond Reservoir on the Long Cane Ranger District.

4. Soil and Water

a. Comparison of Existing Conditions/Trends to Desired Conditions

On the whole, existing soil and water conditions on the Forest compare well with DFC. With the noted exception of undesignated roads, road conditions are continually improving. As the travel management plan is implemented the pace of that trend should increase.

Timber harvest activities are monitored by sale administrators and inspectors to ensure the implementation and effectiveness of erosion control and water quality protection measures. Contract language is consistent with the intent of BMPs. Field inspections during activities and a final review are required of all measures upon sale closure. The inspection forms are included with the other sale documentation collected. Harvesting is one of several areas monitored by forest watershed specialists to help spot check quality control. The forest has maintained a strong adherence to and intends to fully implement BMPs to limit water quality and other effects on the land. This intent is also formalized in the Forest Plan revision in forest-wide standards FW-1, FW-2 and others that include specific measures that are intended to protect water quality and address associated soil and water conservation issues.

An agreement with the SC Forestry Commission (SCFC) has been formalized to conduct BMP checks and determine consistency when requested. In addition, interaction and cooperation to address non-point source pollution and BMPs are part of the Memorandum of Understanding among the SCFC, SC Department of Health and Environmental Control and the USFS. We need to renew and update the MOU content. The SCFC continues to provide group training of forest and technical staff on BMPs when requested. The Forest Hydrologist worked with the state BMP foresters and other industry representatives to discuss the adequacy and application of BMPs on a number of projects within the state. We intend to continue to pursue both the field and office interaction between the state BMP foresters and USFS personnel on the Sumter NF.

In 2008, a total of 67 acres were treated to improve soil and water conditions. This included 35 acres of gully restoration including site reshaping and erosion control, 25 acres of closing and stabilizing user created trails, 3 acres of streambank stabilization and 4 acres of native grass enhancement for seed production for erosion control and soil recovery needs. Native grasses are used for erosion control on treated gullies, trails and other exposed areas. This level of implementation is somewhat below the plan level indicated in Objective 1.01 of 1,500 acres over a decade. There continues to be areas needing treatment. User created horse and All Terrain Vehicles (ATV) trails are expanding and causing erosion and other impacts that need to be addressed.

A total of 791 acres of severely eroded, low site lands in poor watershed condition were fertilized including 45 acres of soil and water improvement (NFVW) funding and 746 acres of sale area improvement (CWKV) funding. All areas were reviewed and/or sampled in the field prior to treatment to be sure that they met the criteria for needing fertilization. The annual treatment amount of soil productivity improvements is on track and close to the planned level of 8,000 acres over a decade.

There were no accomplishments from 2005 to 2009 toward developing a protocol process to work on reaching objective 2.01 relative to determining instream flow needed to protect streams, habitats, recreation and aesthetic values. No funding was allocated to this task or to get started on the protocol for determining in-stream flows. However, substantial effort was made to address sand mining and bank instability issues within the Broad River.

b. Results from Past Management Reviews, Audits, Annual Monitoring and Evaluation Reports

BMP compliance checks with the SC Forestry Commission on areas with ground disturbance or streamside management with the SC Forestry Commission have been developing into a regular activity. When the checks are made, assistance from the forest soil and water specialists and districts personnel occur when possible to help evaluate the BMPs to ensure their implementation and effectiveness. Special attention should be placed on ground disturbing practices that occur in sensitive soil areas, wetlands, riparian corridors or when ground disturbing activities concentrate over substantial areas of the landscape or within specific drainages.

The 67 acres of soil and water improvements under Objective 1.01 was only 46% of the 150 acre annual average needed to meet plan direction. Even though this was an increase over 2007, this is again substantially below the plan level needed to meet plan goals and what has historically been accomplished toward the watershed improvement backlog. Since funding and priority shifts seem to be continuing, CWKV or other funding sources may be pursued to help with the plan objectives for addressing poor soil and water conditions due to eroding

gullies and barrens (galls), abandoned or unclassified roads, user-created trails and unstable streambanks.

In 2008, there was some progress toward treatment of 25 acres of All Terrain Vehicles (ATV) and associated unauthorized ground disturbing uses. Due to continuing problems with user created trails, there is an ongoing backlog of work that may be increasing in extent and severity. We will continue to work toward closing, stabilizing and/or treating illegal trails within a year of their being found, but improved funding and other mechanisms may be needed to achieve this. Currently the extent of the problem remains poorly inventoried, rapidly changing and growing. System trail maintenance has increased and new trails are better designed. Trails are closed for wet weather or other damaging conditions. Temporary or seasonal closures are producing benefits to trail quality and reducing environmental impact and maintenance costs. Many of the horse trails are not receiving the same attention and have issues with user created design, wet soil damage, lack of maintenance and inability to monitor effectively.

There are many opportunities to reduce legacy and ongoing erosion, sediment delivery, aquatic habitat, stream and water quality impacts on the National Forest from private lands through authorizations under the Wyden Amendment. However these typically need funding and technical service time to develop and implement. It is difficult to develop or take advantage of opportunities under the current conditions when funds are limited and continuing needs exist within the National Forest.

The Enoree Ranger District is currently implementing the Hunting Creek stream enhancements. Future stream enhancements will be considered as part of landscape assessments. There has been limited activity in riparian with timber management emphasis placed in upland areas. The Andrew Pickens (AP) Ranger District has done in-stream habitat structures in trout streams. Bank stabilization on the Tyger and Enoree rivers and fertilizing and restoring gullies to improve soil productivity are on-going. The use of "bare ground" LIDAR to identify erosion problems and gullies looks very promising. Other uses of LIDAR, such as measuring tree heights or determining species composition are on-going.

Attention to water rights and in-stream flow methodologies and determination is needed to be consistent with plan direction in the future (Goal 2, Objective 2.01). For the last several years, developing a protocol to fit the forest needs was put on hold due to other priorities and lack of funding. There is still no overriding need to obtain this information immediately, but continuing to postpone it indefinitely will insure that the information will not be available when needed to identify and address critical water needs. Funding, increased emphasis and dedicated resources are needed if the intent has not changed.

During the 2009 Sumter Integrated Resource Review, questions came up how the districts were implementing guidance on streamside management zones.

Issue 7 stated: *Are we meeting the standards along ephemeral, intermittent, and perennial streams during timber harvesting, fireline construction, OHV layout? Are these guidelines being implemented correctly on the ground?* (See Appendix C). Recommendations included a field review with silvicultural prescriptions and timber sale review with silviculturists, NEPA coordinators, and Forest planner, which has been completed. Training with new FS personnel on riparian corridor and BMP guidelines will be completed as needed.

5. Riparian Habitats

a. Comparison of Existing Conditions/Trends to Desired Conditions

Assessment of riparian condition is typically made during project planning. Occasionally the riparian condition is evaluated and actions initiated to address riparian health and function. Some of these analyses address the presence of unwanted exotic species, lack of woody debris, active erosion from slopes, gullies, unstable or eroding streambanks, excessive sediment, fecal coliform, damage from unmanaged recreational uses, or a desire to restore certain types of native species, such as canebrakes. Projects are designed to maintain riparian/stream vegetation and avoiding activities that contribute to stream bank failure. Herbicide or pesticide uses to address exotic or invasive species are carefully selected and applied to limit effects to streams and non-target organisms.

Most riparian corridors in the piedmont are infested with Chinese privet and other non-native invasive species (NNIS). The treatment of NNIS within riparian corridors can be used to restore native riparian plant communities, such as canebrakes. Cane has been added to the native plant materials program.

b. Results from Past Management Reviews, Audits, Annual Monitoring and Evaluation Reports

During 2005-2009, there were no NNIS treatments within riparian corridors on the Long Cane District with money from the American Recovery Act (ARRA). Approximately 500 acres of NNIS are planned to be treated within riparian areas on the Long Cane District in 2010 with ARRA dollars.

No NNIS treatments occurred within riparian corridors on the Enoree District in 2005. From 2006-2009, approximately 60 acres of NNIS were treated within riparian areas on the Enoree District. In 2010, 234 acres of NNIS are planned to be treated within riparian corridors on the Enoree District.

In 2009, several thousand acres were inventoried on the Enoree and Long Cane Districts for NNIS. Many of the inventoried areas included riparian areas.

In 2009, canebrake inventories were conducted on 1,530 acres within riparian areas on <8% slopes on sections of the Long Cane District. Canebrakes were

ranked as high, moderate, or low in quality based on the abundance of giant cane (*Arundinaria gigantea*), the abundance of non-native invasive plants (particularly Chinese privet), and forest structure and composition. Floodplain canebrakes were common on the piedmont historically and are considered an endangered ecosystem by NatureServe, and other state and conservation groups. They play an important role in stream bank stabilization and native habitat for over 50 species of mammals, reptiles, birds, and invertebrates.

Within the riparian areas surveyed for canebrakes, giant cane was found typically along only a narrow band along the river, and was sparsely distributed throughout the remaining floodplain, sometime spreading upslope. Most of the cane was relatively short in stature (3-4 feet in height). Of the 1,530 acres surveyed, one 1-2 acre patch of giant cane was identified and 160 acres of moderate quality cane (25-50% cover). Of the 26 stands surveyed, 26 had Chinese privet, including 8 with a high abundance of privet (>50% cover), and 15 with moderate to low (>10%) abundance of privet.

Forest and district staffs are implementing the riparian prescription. Riparian identification, delineation, functions and values are considered in field assessments. Activities are often adjusted, reduced or eliminated in response to the resources within these areas. Issues are brought forward such as invasive species, undesignated or user created trails, camping, areas affected by actively eroding hillslopes or channels, and associated resource damages are being evaluated for appropriate response. Continuing integrated interaction and periodic review of field implementation of the riparian guidance and prescription is desired.

The widespread infestation of NNIS within riparian corridors is a threat to plant and animal biodiversity. Current riparian conditions need to be more formally assessed. Priority areas on the piedmont Districts need to be identified to be targeted for riparian restoration.

Riparian corridor condition assessments and inventories need to be included in the early stages of project planning.

During the 2009 Sumter IRR, Objective 9.01 "*Construct or restore wetlands on 600 acres in the riparian corridor on the Piedmont over the 10-year planning period*" was discussed. This 600-acre goal includes items, such as using existing ponds to provide habitat, beaver ponds, vernal ponds, etc. There are other ways to meet this objective besides constructing impoundments, such as installing water levelers in beaver ponds and restoring canebrakes. Maintaining constructed impoundments for waterfowl habitat is very labor intensive. One action item included a recommendation to better define this objective since 600 acres may not be realistic. Another action was to report the creation of vernal ponds in the annual monitoring report.

6. Insects and Disease

a. Comparison of Existing Conditions/Trends to Desired Conditions

The present lack of any noticeable southern pine beetles (SPB) in the last six years anywhere in South Carolina, Georgia, North Carolina, and many other states is unsettling. Available host material and suitable weather certainly are not lacking. In the last 40 years of tracking SPB in the south, such non-existent activity over such a large area is unheard of. Whether this can be construed as an “existing condition” is questionable. Obviously, such a condition would be desirable, but history speaks to the preceding years of periodic epidemics occurring every 7 years or so somewhere in the range of the insect.

The emphasis within the Sumter NF should be to press forward with extensive thinning and site conversions where necessary, thereby reducing the risk of future SPB outbreaks. Large tracts of forest are in need of treatment. A major bottleneck in accomplishing this goal is the lack of markets for small diameter wood.

Despite the absence of SPB over the last few years, it can be expected that insect mortality throughout the forests will continue and tend to escalate if stands mature and stocking within these stands increases. The absence of recent SPB outbreaks is an opportunity to accomplish as much thinning and conversion as possible before the SPB becomes a problem again.

Littleleaf disease, an introduced soil pathogen, is prevalent through the piedmont of the Sumter NF. The extensive erosion that resulted from past agricultural practices has created soil conditions favorable to the spread of the littleleaf disease pathogen. Littleleaf disease attacks the feeder roots of shortleaf pine and loblolly pine, but shortleaf pine is more susceptible to this disease. The presence of this pathogen has limited efforts to restore shortleaf pine in the Piedmont.

Other diseases, such as fusiform rust, within forested stands are generally slow to appear and often their impacts are masked by littleleaf disease, which is prevalent throughout the landscape. If a non-native exotic fungal pathogen such as oak decline should appear this may alter the picture.

Since 2001, the hemlock woolly adelgid (HWA) has spread onto the Forest. This non-native pest threatens to eliminate both eastern and Carolina hemlock. In response, the Forest completed a Categorical Exclusion and Decision Memo for the management of the HWA. Insecticidal and biological controls have been used in an effort to limit damage due to the HWA. Public safety in recreation areas and along travel routes is a priority and plans are underway to deal with future tree mortality.

b. Results from Past Management Reviews, Audits, Annual Monitoring and Evaluation Reports

The Forest continued working towards its goals for achieving healthy forest ecosystems. Much of this was accomplished through treatments planned for restoration of shortleaf pine on areas where off-site loblolly pine stands occur or creating woodland habitats.

From FY2004 to FY2009, approximately 15,334 acres were commercially thinned to reduce the risk of Southern Pine Beetle outbreaks. See Table 19.

Fiscal year	Acres	Management Activity
2004	2,699	thinning
2005	2,786	thinning
2006	2,482	thinning
2007	1,757	1thinning
2008	2,571	thinning
2009	3,039	thinning
Total	15,335	

The Sumter National Forest did not have any reported SPB spots or mortality from Annosus root disease between FY2005 and FY2009. Forest management practices to convert off-site species through regeneration and thinning are expected to help reduce any associated mortality.

HWA continues to be an on-going problem, and no cost-effective method of controlling has been developed. Hemlocks have been treated in very limited numbers at campgrounds and other recreation sites. Widespread mortality is expected over the next decade.

Findings from the 2010 Sumter Comprehensive review recommended completing additional documentation for the control of SPB outbreaks. (See Appendix C) Current decisions were prepared under the 1985 forest plan. Current decisions could either be updated or new decisions could be prepared.

7. Wildfire Protection

a. Comparison of Existing Conditions/Trends to Desired Conditions

The resources at hand (equipment and personnel) to control wildfire at this time are less than the Most Efficient Level indicated by the National Fire Management Analysis System outputs. Recent increases in accomplishment in hazardous fuels reduction have served to offset that shortfall to a great extent due to successful reduction of hazardous fuel loading. See Table 20 below.

Monitoring Element	FY05	FY06	FY07	FY08	FY09	Desired Condition
Annual acres burned	19052	21538	25841	18952	29287	Burn approximately 25,000 acres per year to maintain condition class 1
Annual treated acres in CC 1						See Objective 20.1
Trends in wildland fire, # of fires	16	18	25	38	9	Goal 19, Protect Life, property, and resources from unacceptable damage. Maintain historical IA success at 90-95 %
Trends in wildland fire, acres burned	111	386	253	338	259	Goal 19, Protect Life, property, and resources from unacceptable damage. Maintain historical IA success at 90-95 %

The resources at hand (equipment, personnel, and leadership) to control wildfire at this time are less than the Most Efficient Level indicated by the National Fire Management Analysis System outputs.

Wildland fire preparedness was still below the most efficient level. As a result, wildland fire losses were not being minimized due to the funding shortfall. The Forest still could not fill vacant positions in order to provide 7 day coverage, staff for multi-fire days, and provide an on-going prevention program. See Table 21.

Years	Number of Fires	Acres Burned
1999-2004	146	1578
2005-2009	106	1347

Shortages of fire fighting resources are also common when wildfires and prescribed fire operations occur on the same day. Recommendations have been to continue requesting wildland fire preparedness funding at the 100% efficiently level and staff accordingly.

Fires in the 0.1-10 acre size class are contained during the initial attack. Fires in the 10 plus acre size and require an extended attack, are more costly (suppression costs+ NVC), and tie-up resources in holding and mopping up. The larger fires also cause smoke hazard mitigation issues for both highway visibility and public health concerns. The largest fire of 310 acres occurred in 2006. The number of fires and acres burned is down from the previous five years mainly due to a decrease in arson caused fires. See Tables 21 to 22 and Figure 3 for more information on wild fires on the Sumter National Forest.

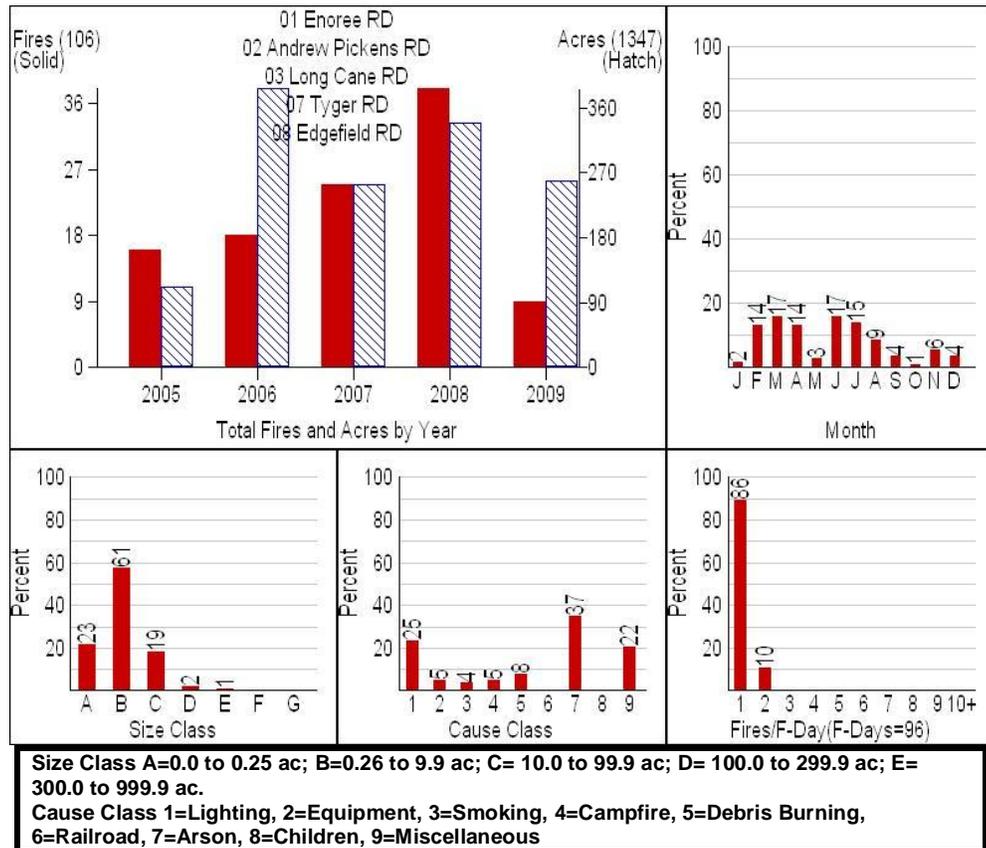


Figure 3 Displays Fire Occurrence Data 2005 - 2009.

b. Results from Past Management Reviews, Audits, Annual Monitoring and Evaluation Reports

Wildland fire preparedness was still below the most efficient level. As a result, wildland fire losses were not being minimized due to the funding shortfall. The Forest still could not fill vacant firefighter positions. Recommendations have been to continue requesting wildland fire preparedness funding at the 100% efficiently level and staff accordingly.

Recommendations have been to manage for productive and healthy forest ecosystems by utilizing prescribed fire to prevent and minimize resource losses to wildland fires. The number of acres in condition class 1 is increasing because of increased prescribed fire use and non-commercial and commercial mechanical treatments of forest stands. Stewardship contracts and timber sales are providing more opportunities for treating fuels than existed a few years ago.

8. Air Quality

a. Comparison of Existing Conditions/Trends to Desired Conditions

The two main activities that cause air pollution within the Sumter National Forest are motor vehicle use and prescribed fires. Both of these activities emit pollutants that can increase ozone and fine particulate matter concentrations. During 2009, the Sumter National Forest conducted prescribed fire on 18,905 acres. Estimated fine particulate matter emissions from those fires are 624 tons. The breakdown of prescribed fire within each ranger district is as follows:

- *Andrew Pickens RD.* 1,963 acres burned, with an estimated 65 tons of particulate matter emissions released.
- *Enoree RD.* 7,904 acres burned, with an estimated 261 tons of particulate matter emissions released.
- *Long Cane RD.* 9,038 acres burned, with an estimated 298 tons of particulate matter emissions released.

Particulate Matter. Ultra-small particles that can cause beautiful vistas to become murky and cause negative health impacts to visitors are called fine particulate matter, or PM_{2.5}. These tiny particles, less than 2.5 microns in diameter, include sulfates and nitrates from fuel combustion activities, particularly coal-fired power plants and highway vehicles, as well as organic and elemental carbon compounds from wild and prescribed fires, gasoline and diesel engines, and other fossil fuel combustion.

In order to reduce fine particulate matter concentrations, the United States Environmental Protection Agency (EPA) has developed two separate strategies. First, EPA has established a NAAQS for PM_{2.5}; the daily standard is set at 35 µg/m³, while the annual standard is set at 15 µg/m³. In addition to the NAAQS for fine particulate matter, EPA has also implemented the Regional Haze Rule

which calls for states and federal agencies to work together to improve visibility at all Class I areas. Although there are no Class I areas near the Sumter National Forest, emission reductions taken as part of the Regional Haze Rule will improve air quality throughout the Forest.

The South Carolina Department of Health and Environmental Control (DHEC) operates fine particulate matter monitoring sites throughout the state, including several near the three noncontiguous ranger districts of the Sumter National Forest. See Figures 5 to 7:

- *Andrew Pickens Ranger District.* This portion of the Sumter National Forest is located in the northwestern corner of South Carolina in Oconee County. The only wilderness area within the Sumter National Forest, Ellicott Rock, is located within this District. PM_{2.5} concentrations are measured at one adjacent monitoring site, also located in Oconee County.
- *Enoree Ranger District.* The Enoree Ranger District is located in north-central South Carolina; portions of the District fall within Chester, Fairfield, Laurens, Newberry and Union Counties. A nearby monitoring station in Spartanburg County (21.7 miles northwest of the District) measures PM_{2.5} concentrations in the area.
- *Long Cane Ranger District.* This District is located along the border between South Carolina and Georgia, with portions of the Forest falling in Abbeville, Edgefield, Greenwood, McCormick, and Saluda Counties. There are three PM_{2.5} monitoring stations currently situated nearby: one in Edgefield County, 8.1 miles east of the District; and two located south of the District in Richmond County, Georgia. These two monitoring sites are located 6.8 miles and 8.7 miles south of the District, respectively. Until recently, a monitoring site in Greenwood County, only 3.1 miles east of the District, was able to provide PM_{2.5} concentrations; however, in 2008 this monitor did not operate.

The best way to evaluate air quality status and trends as related to both forest health and wilderness character is to compare measured air pollutant concentrations to air quality standards. National Ambient Air Quality Standards (NAAQS) are set for pollutants considered harmful to both public health and the environment. If measured concentrations of an air pollutant in a particular geographical area exceed the NAAQS, then the air quality in that area is deemed unhealthy. Although there are six pollutants for which NAAQS have been set (carbon monoxide, lead, nitrogen dioxide, particulate matter, ozone, and sulfur dioxide), the pollutants of most concern in the southeastern United States (and thus within the Sumter National Forest) are ozone and fine particulate matter (PM_{2.5}). These two pollutants are monitored fairly extensively over the region,

with the measured concentrations compared to the respective air quality standard.

For PM_{2.5}, there is both a 24-hour (35 µg/m³) and an annual (15 µg/m³) NAAQS. Compliance with the 24-hour standard is determined by calculating a three-year average of the 98th percentile of the daily (24-hour) measured readings for each year, and comparing that value to the NAAQS of 35 µg/m³. Compliance with the annual standard is determined by first calculating an annual average of the daily measured readings for each year, and then averaging the annual averages over each consecutive three year period. That value is then compared to the NAAQS of 15 µg/m³.

There is currently just one ozone standard, set at 0.075 ppm. Compliance is determined by taking a three-year average of the fourth-highest 8-hour average ozone concentration for each year. That value is compared to the NAAQS of 0.075 ppm.

Each of the three Ranger Districts on the Sumter National Forest have both ozone and fine particulate matter monitors located nearby. The monitors indicate that from 2004 through 2009, air quality generally remained the same or improved slightly. The graphs below show how each of these monitored pollutants compared to its respective NAAQS during each three year period over that time frame.

As shown in the fine particulate matter graph in Figure 3, areas near or within the Andrew Pickens and the Enoree Ranger Districts have met the NAAQS for fine particulate matter over the past five years, and thus no violations have occurred. Conversely, areas near or within the Long Cane Ranger District exceeded either the 24-hour or the annual standard each of the 3-year periods since 2004.

Figures 5 to 7 below show annual PM_{2.5} emissions from prescribed fire in relation to daily and annual measured PM_{2.5} concentrations near each Ranger District of the Sumter National Forest.

Ozone. Exposure to elevated ozone levels can cause human health concerns as well as negative impacts to vegetation. As with fine particulate matter, a national air quality standard for protection of both public health and the environment has been set for ground level ozone. Previously, this standard was set at 0.08 parts per million (ppm). Effective May 27, 2008, however, the US EPA reduced the ozone NAAQS to 0.075 ppm. To attain this standard, the three-year average of the fourth-highest daily maximum eight-hour average ozone concentrations measured at each monitor within an area must not exceed 0.075 ppm. See Figure 8.

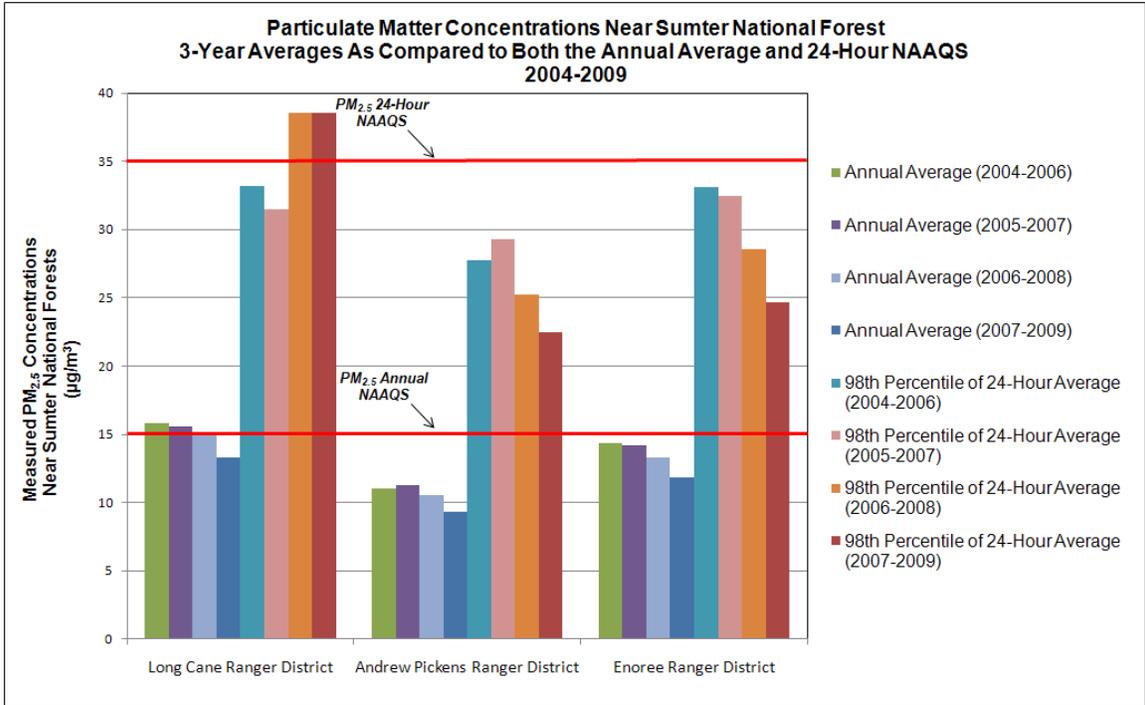


Figure 4. Particulate Matter Readings

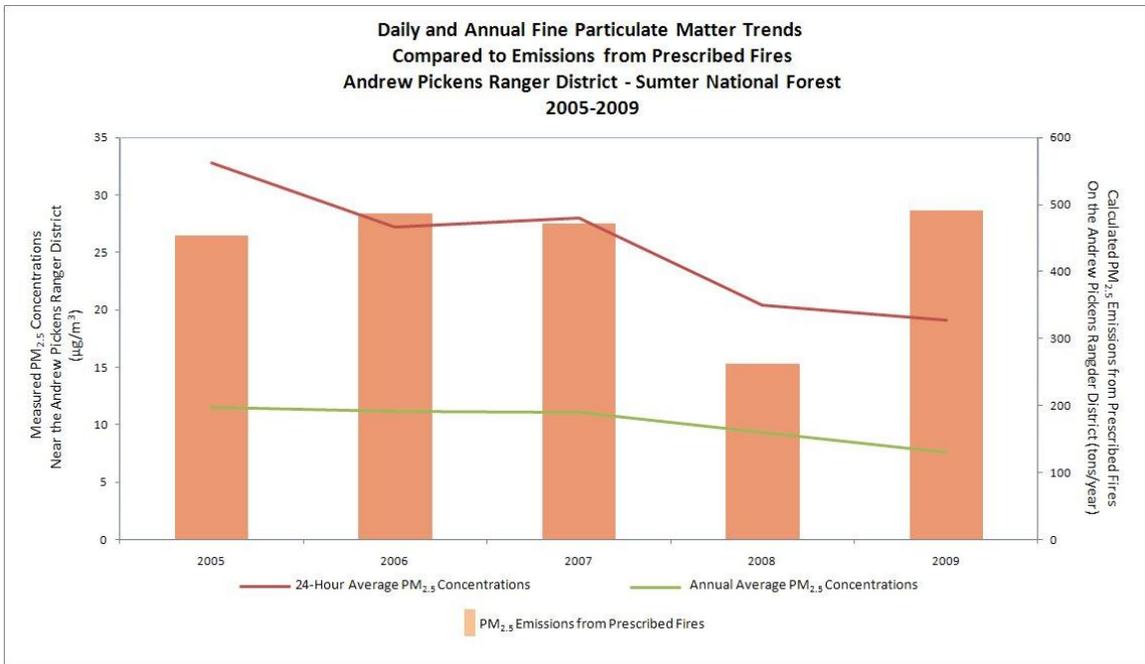


Figure 5. Particulate Matter Trends from 2005 to 2009 for the Andrew Pickens

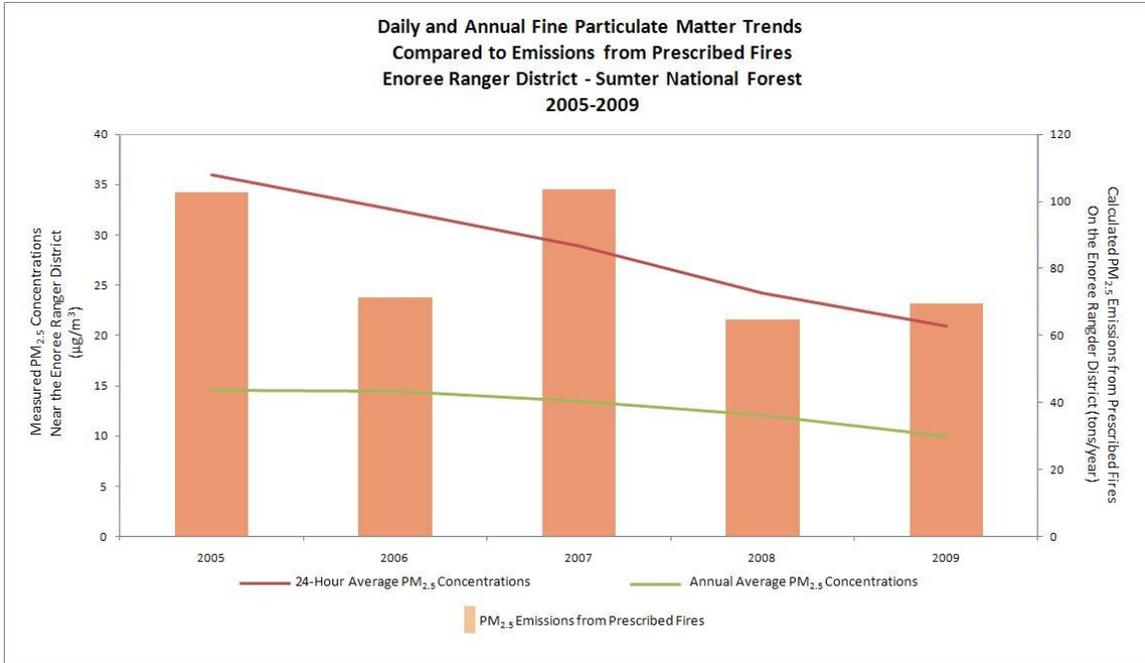


Figure 6. Particulate Matter Trends from 2005 to 2009 for the Enoree

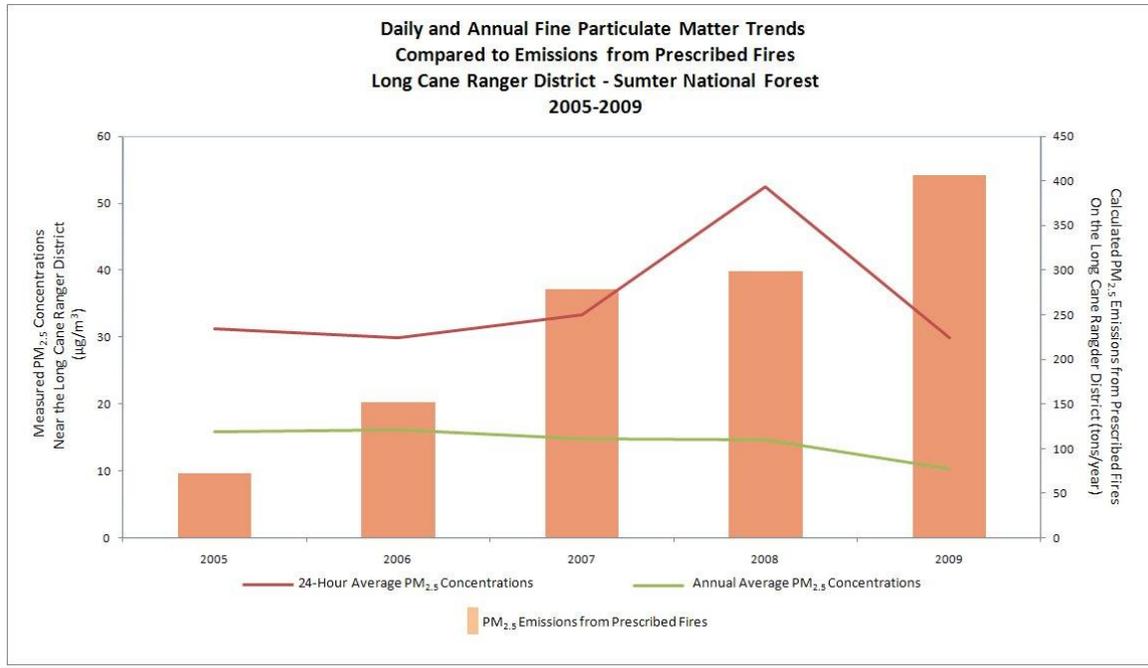


Figure 7. Particulate Matter Trends from 2005 to 2009 for the Long Cane

There are several monitoring sites that measure ozone near the three ranger districts of the Sumter National Forest. See Figure 8 for Trend Data for Ozone concentrations across the Sumter National Forest.

- *Andrew Pickens Ranger District.* Ozone concentrations are currently measured at two monitoring sites near the District. The ozone monitor in Oconee County is adjacent to the District, while an ozone monitor in Pickens County is located 17.4 miles east of the District.
- *Enoree Ranger District.* Only one nearby monitoring station currently measures ozone, although in 2007 there were three sites operating nearby. The currently operating site is located in Spartanburg County, 28 miles west of the District. Previously, there were monitoring sites located in Chester and Union Counties, 10.6 miles and 0.6 miles respectively from the District; however, these sites did not operate in 2008.
- *Long Cane Ranger District.* There are five ozone monitoring stations currently operating near the Long Cane Ranger District. A monitor in Columbia County is less than 0.6 miles west of the District. There are also monitors located in Abbeville County, 6.8 miles north of the District; Edgefield County, 8.1 miles east of the District; Aiken County, 21.1 miles south of the District; and in Richmond County, GA, 8.7 miles south of the District.

The Clean Air Act requires periodic review of the science upon which the NAAQS are based, as well as the standards themselves. If the science indicates a more protective and stringent air quality standard is necessary in order to protect public health or the environment, regardless of the cost of meeting such a standard, then EPA will propose and typically finalize the stricter standard. Thus, even if an area meets the current NAAQS, it may not meet future standards if they are strengthened. As an example, EPA recently proposed to strengthen the ozone standard from 0.075 ppm to somewhere between 0.060 and 0.070 ppm. As demonstrated in the graph below, while all three Ranger Districts meet the current ozone standard for the most recent 3 year period, none of these areas would meet a new standard that fell within the proposed range. EPA will make its final decision on what the new ozone standard will be sometime in late 2010.

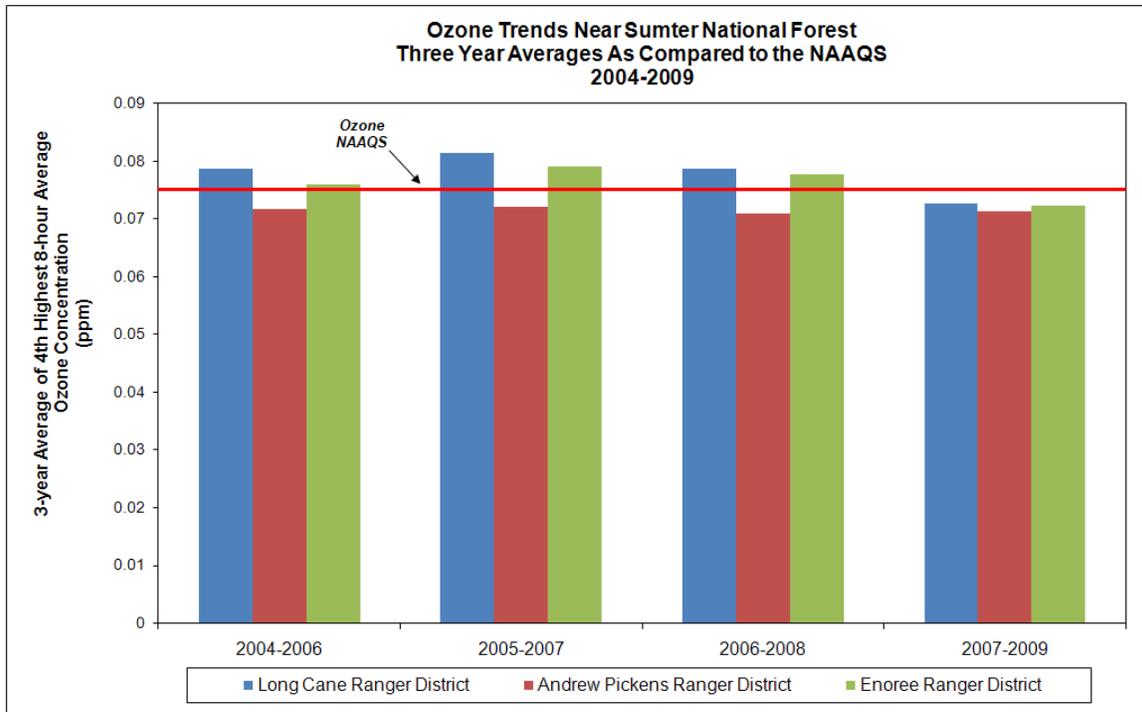


Figure 8. Ozone Trends from 2005 to 2009 for the Sumter National Forest

b. Results from Past Management Reviews, Audits, Annual Monitoring and Evaluation Reports

While fine particulate matter concentrations near the Forest generally meet air quality standards, ozone concentrations are elevated and do not meet the newly promulgated National Ambient Air Quality Standard for this pollutant. Negative impacts to vegetation within the Forest may be occurring. Non-attainment designations for ozone may occur in 2010, and it is likely that most, if not all, of the Sumter National Forest will fall into ozone non-attainment. Coordination between the Forest and SC DHEC will be necessary to ensure that emissions from prescribed fires are included in the State Implementation Plan (SIP) to improve ozone concentrations throughout the area.

Although many air quality monitors near the Sumter National Forest show that ozone and fine particulate matter concentrations meet air quality standards, at least three monitors have measured concentrations above the air quality standards for both ozone and fine particulate over the past three years. Thus, negative impacts to vegetation within the Forest may be occurring. Nonattainment designations for ozone may occur in late 2010, and it is likely that most, if not all, of the Sumter National Forest will fall into ozone nonattainment. It is uncertain when EPA will again make nonattainment designations for fine particulate matter. Coordination between the Forest and SC DHEC will be

necessary to ensure that emissions from prescribed fires are included in the State Implementation Plan (SIP) to improve air quality concentrations throughout the area.

C. Social and Economic

1. Recreation

a. Comparison of Existing Conditions/Trends to Desired Conditions

(1) Dispersed

The Sumter has designated trails and roads for motorized vehicle use. Wet weather closures on OHV trails continue to work well and are serving to mitigate much of the impact these trails have on riparian areas and other areas on or adjacent to the trails. Seasonal closures on OHV trails have also proven highly successional in reducing trail maintenance costs and improving the condition of OHV trails.

Recreational uses have increased on the Chattooga Wild and Scenic River during the last 5 years. Due to an appeal on the 2004 Sumter Forest Plan, a review of recreation uses above Highway 28 is being evaluated. A forest plan amendment may change the allocation of recreation uses.

Off-trail use has led to concerns about resource impacts from user-created trails. A forest plan amendment may be needed to address these resource concerns.

Trail maintenance continues to be a high priority for the recreation program on the Forests and is funded annually through appropriated, recreation fee, and grant dollars (the latter is used almost exclusively for maintaining/reconstructing OHV trails to increase financial and environmental sustainability). We continue to find ways, like volunteer work days and hosts, to leverage our limited resources while reducing the impacts associated with OHV activities.

(2) Developed

The first National Visitor Use Monitoring (NVUM) survey was completed on the Francis Marion Sumter Forest in FY02. Results that are reported are for both forests. Refer to the 2004 Sumter Monitoring Report for the results of the 2002 National Visitor Use Monitoring of the Francis Marion & Sumter National Forests. A new round of visitor use monitoring was conducted on the Forests in FY 2008 and findings are summarized in Tables 22-26 and Figures 9 to 10.

Table 22. Annual visitation estimate (thousands) for Francis Marion-Sumter National Forest in FY 2008.

Visit Type	Visits (thousands)	90% confidence interval width (%) ^e
Total Estimated Site Visits	1363.8	26.5
Developed Day Use Sites	255.6	23.3
Developed Overnight Use Site	36.6	32.5
General Forest Areas	1057.5	33.7
Wilderness	11.4	34.3
Special Events and Organizational Camp Use ^c	2.6	0.0
Total Estimated National Forest Visits	1283.7	27.3

^c Special events and organizational camp use are not included in the Site Visit estimate, only in the National Forest Visits estimate. Forests reported the total number of participants and observers so this number is not estimated; it is treated as 100% accurate.

^e This value defines the upper and lower bounds of the visitation estimate at the 90% confidence level, for example if the visitation estimate is 100 +/-5%, one would say "at the 90% confidence level visitation is between 95 and 105 visits."

Table 23. Number of individuals contacted by Site Type on Francis Marion-Sumter National Forest (FY 2008)

Site Type	Total Individuals Contacted	Individuals Who Agreed to be Interviewed	Individuals who were last exiting recreation
DUDS	351	273	212
GFA	331	276	161
OUDS	152	135	67
Wilderness	113	95	72
Total	947	779	512

Table 24. Breakdown by Gender of Visitors to Francis Marion-Sumter National Forest (FY2008)

Gender	Survey Respondents ^a	National Forest Visits (%) ^b
Female	380	24
Male	790	76
Total	1170	100

^a survey respondents were asked to give the gender and age of themselves plus up to 3 other people in their party, therefore there are more respondents here than the number of people who completed full interviews.

^b Calculations are computed using weights that expand the sample of individuals to the population of National Forest Visits.

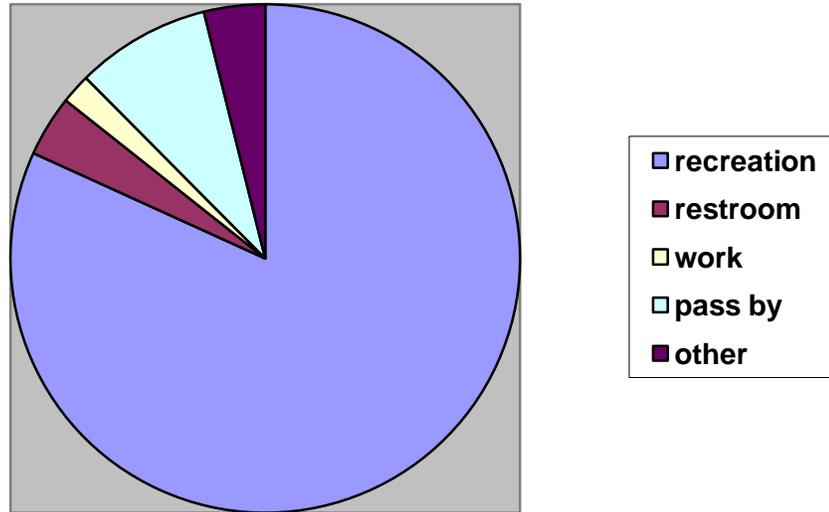


Figure 9. Purpose of visit by visitors who agreed to be interviewed on Francis Marion-Sumter National Forest (FY 2008).

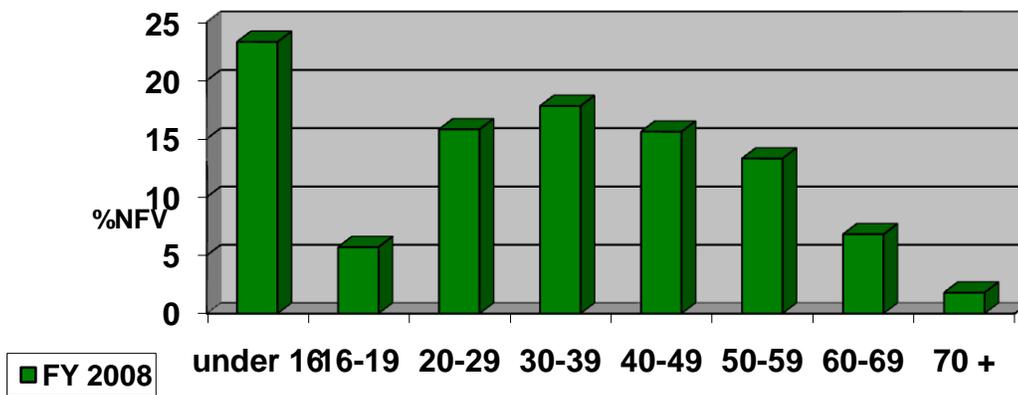


Figure 10. Age distribution for visits to Francis Marion-Sumter National Forest (FY 2008).

Table 25. Percent of National Forest Visits by race/ethnicity on Francis Marion-Sumter National Forest (FY 2008)		
Race/Ethnicity ^a	Number of Survey Respondents	National Forest Visits (%)
American Indian/Alaska Native	9	2.0
Asian	5	2.0
Black/African American	17	4.3
Native Hawaiian or other Pacific Islander	3	0.3
White	479	91.7
Spanish, Hispanic, or Latino	15	3.8
Total	528	104.1

^a "Spanish, Hispanic or Latino" was presented in a separate question because it is an ethnicity not a race. Respondents could choose more than one racial group.

Table 26. Percent of National Forest Visits by age on Francis Marion-Sumter National Forest (FY 2008)	
Age	National Forest Visits (%)
Under 16	23.3
16-19	5.7
20-29	15.8
30-39	17.8
40-49	15.6
50-59	13.3
60-69	6.8
70 and over	1.8
Total	100.1

b. Results from Past Management Reviews, Audits, Annual Monitoring and Evaluation Reports

(1) Dispersed

The policy of closing OHV trails during wet weather conditions has reduced impacts on riparian areas and other natural resources as well as the trail facility itself.

Increased emphasis on trail maintenance across the Sumter is paying off. Many of the trails are in the best condition they have ever been in.

(2) Developed

While the human population is increasing, the NVUM indicated a slight downward trend in recreation use and that there were some areas in user satisfaction that could be improved.

The overall satisfaction results showed that almost 79 percent of the people who visited were very satisfied with the overall quality of their recreation experience. Another 16 percent were somewhat satisfied. Less than 1 percent expressed any level of dissatisfaction. The composite index results were also quite good. Developed Sites and Wilderness scores showed that developed facilities, access and perception of safety all were above the 85% national satisfaction target. Access and perception of safety rated higher than 85% for Undeveloped Areas. The Percent Meets Expectation scores were also quite good. Developed Sites and Wilderness both showed scores higher than 85% for developed facilities, access and perception of safety. Access rated higher than 85% for Undeveloped Areas. Importance-Performance ratings were also good although there were a couple items that showed a need for attention for Overnight Use Developed Sites (availability of recreation information and adequacy of signage), General Forest Area (restroom cleanliness) and Wilderness (adequacy of signage). The majority of the visiting population is very satisfied with road condition and adequacy of signage forest-wide. Over three quarters of the visiting population also feel that road condition and adequacy of signage is very important.

2. Scenery

a. Comparison of Existing Conditions/Trends to Desired Conditions

The Forest is implementing the Scenic Integrity Objective (SIO) and the Recreation Opportunity Spectrum (ROS) as a component of the Revised Forest Plan. Conditions and trends are continuing to move favorably toward expected desired conditions.

b. Results from Past Management Reviews, Audits, Annual Monitoring and Evaluation Reports

Project and field review of ground disturbing activities are ongoing. Proposed projects on the Sumter National Forest met the established SIO standards and ROS objectives.

The recreation realignment process assisted the Recreation Staff in identifying suitable recreation niches for each district.

3. Heritage

a. Comparison of Existing Conditions/Trends to Desired Conditions

The Sumter has a large number of unevaluated sites that are in protected status. These sites should be evaluated and it is the current thought that the majority of these will prove to be ineligible and therefore removed from protective status. Efforts should be made to complete the evaluation (working with the Tribes) of these sites and get them listed on the NRHP.

b. Results from Past Management Reviews, Audits, Annual Monitoring and Evaluation Reports

All compliance reviews and consultations pursuant to Section 106 of the National Historic Preservation Act (NHPA) were completed prior to agency decisions. Since the forest has transitioned to landscape assessments for vegetation management activities, the demand for heritage surveys has increased over the last few years. To meet this demand, heritage staff is contracting survey work.

The Forest continued government-to-government relations with two federally recognized tribal nations: the Catawba Indian Nation and the Eastern Band of the Cherokee. Recommendations have been to continue working with interested tribes to establish required government-to-government relations and partnerships and to complete the Programmatic Agreement with the SHPO and Tribes.

Approximately 50 heritage sites are revisited each year to determine the extent of internal or externally caused damage. See Table 27. No evidence of damage due to Forest activities at these sites was noted, but external damage (unauthorized site looting) was recorded in a number of instances. Vandals and artifact collectors continue to use metal detectors to search historic sites and remove artifacts. Holes resulting from metal detector use were found at the historic house site 38NE38 on the Enoree Ranger District. A prehistoric lithic

scatter site was an unanticipated discovery in areas logged in the Mingo Analysis Area, Compartment 355, Long Cane Ranger District.

Total number of sites monitored	50
ARPA investigations	0
Other vandalism	5
Damaged by logging	1
Sites damaged by forest users	1
Sites damaged by fire	0
Sites undisturbed	43

Several sites are being damaged by water erosion along the shoreline of the Strom Thurmond Lake on the Long Cane Ranger District. Unauthorized use of woods roads, ATV, horseback riding and bike trails are causing erosion and disturbance on sites. Site 38CS167 was disturbed by a woods road on the Enoree Ranger District. The access road to 38CS124 on the Enoree District was blocked to protect the Woods Family Cemetery. Eight fire lookout towers are historic sites in need of repair, restoration and documentation. Metal detecting and digging for artifacts on historic period sites continues to be a concern.

There were insufficient funds for Law Enforcement Officers and Heritage Specialists to physically monitor all sites at risk. Recommendations have been to request and receive funding to increase monitoring efforts, with an eye towards using remote sensing-technology to supplement physical monitoring.

4. Forest Products

a. Comparison of Existing Conditions/Trends to Desired Conditions

(1) Timber

The sale of forest products on this Forest has steadily increased from a low 3.7 MCF in FY2005 to 8.7 MCF in FY2009. The Sumter NF is poised to start selling more forest products annually, but shortages in staff and targets will create a backlog of projects that require timber sales for accomplishment. The goals and objectives of the Forest Plan will not be met in a timely manner. The Forest used contract marking to accomplish our regular timber sale program of work.

The Revised Forest Plan FEIS developed an allowable sale quantity (ASQ) of million cubic feet (MMCF) as required by the Forest and Rangeland Renewable Resources Planning Act. The ASQ is the maximum amount of timber that may be programmed, sold, and harvested per decade. The amount of programmed timber sold and harvested on the Forest will vary from year to year. The following table displays the amount of timber that was offered, sold, and harvested during

fiscal years 2005 through 2009, and compares the total to the average annual amount of the ASQ (Table 28).

Activity	Unit of Measure	FY 05	FY 06	FY 07	FY 08	FY 09	10 Year Plan Estimate
Volume Sold	MMCF	3.7	6.0	7.1	7.1	8.7	13.9

The timber table shows that the current levels of timber offered, sold, and harvested are not at or near the 2004 Forest Plan ASQ ceilings. The effects of timber harvest are below the amount analyzed in the 2004 Forest Plan FEIS and/or the 2004 ROD. Due to a tendency to defer regeneration (clearcut, seed-tree, and shelterwood) harvests, the Forest is offering a level of timber for sale that is substantially below that analyzed and permitted under the Forest Plan ASQ calculation and planned programmed harvest.

Biodiversity analyses within the Revised Forest Plan FEIS assumed the maximum level of harvest each year for 150 years. An ASQ of 13.9 MMCF equates to an annual harvest (all final harvests and thinnings) of about 7,998 acres for the first decade of the Plan (Plan FEIS 2004, Table 3-111, p. 3-320). However, for the first 3 or 4 years of Revised Plan implementation, almost all harvesting was done based on decisions made under the original 1985 Forest Plan.

Since harvests based on past decisions are not a fair implementation gauge for the Revised Plan, acres *sold* (rather than harvested) during 2005 through 2009 were calculated for comparison (Table 29). About 18,336 acres were sold on the Sumter from FY2005 to FY2009.

Fiscal Year	Clearcut	Thinning	Seedtree	Shelterwood	Removal	Right-of-Way	Salvage	Total (Acres)
2005	0	2786	139	0	0	0	0	2925
2006	52	2702	701	0	279	0	0	3734
2007	72	1891	836	71	486	7	0	3363
2008	47	2338	980	0	789	0	0	4154
2009	130	2982	925	0	123	0	0	4160
Total	301	12699	3581	71	1677	7	0	18,336
Average	60	2540	716	14	335	1	0	3,667

There is no indication the Forest Plan, including the allowable sale quantity, needs to be revised at this time because of lower levels of timber harvest, even with the fluctuations of timber volume sold or harvested from year to year. Also, the trend in sale volume appears to be slowly getting closer to that target than expected.

(2) Other Products

Fuelwood collection is allowed in areas that have recently been harvested and when storms have blown down trees across roads. Limited fuelwood collection may be allowed. Limited pine straw raking has been allowed, but is discouraged.

b. Results from Past Management Reviews, Audits, Annual Monitoring and Evaluation Reports

(1) Timber

The Sumter NF continues to follow the Timber Theft Prevention Protocol and implement the National Paint Plan.

As shown in Table 28 above, sale levels have gradually increased over time. The Forest has project plans and EA's well in excess of what we can reasonably be expected to offer in the way of sold timber sales. It will likely require 2-3 additional years to reach the annual level estimated in the Forest Plan FEIS. However, it is unlikely that the Forest will get anywhere near the allowable sale quantity (ASQ) of 139 MMCF for the first period (FY2005 - FY2015).

(2) Other Products

The Sumter offers a Free-Use permit for Special Forest Products (SFP) to the occasional user of low-value products, such as pinestraw. Fuelwood is offered if it is in the best interest of the Government to do so, such as when windstorms have knocked the material across open roads that need to be cleared.

5. Minerals

There are the Mining Proposal Evaluation Process in Appendix G and Goals & Objectives and Standard FW-95 in the Sumter Forest Plan. We anticipate more interest in mining with gold around \$1000/oz. There is an additional prospecting proposal pending.

FS can issue prospecting permits for non-leaseable minerals, such as limestone. BLM issues prospecting permits for gold, silver, oil and gas, but gave FS authority to issue letters of authorizations for recreational gold panning. The process for prospecting and mining for gold is very complex and must go through BLM.

a. Comparison of Existing Conditions/Trends to Desired Conditions

The Sumter National Forest will continue to be responsive to requests for mineral development within its capacity to do so. Continue to issue letters of authorization for gold panning until new direction is established by the RO.

b. Results from Past Management Reviews, Audits, Annual Monitoring and Evaluation Reports

One new gold mine was opened on the Long Cane RD. Operations were reviewed for compliance with existing state and federal laws. Recommendations included updating guidance in the Revised Forest Plan for mining and completing an assessment of gold mining operations on the Long Cane RD.

Another proposal for gold mining has been received and is undergoing evaluation. Since gold prices at an all time demand for gold products are high and it is anticipated that other requests for gold mining maybe received.

6. Grazing

a. Comparison of Existing Conditions/Trends to Desired Conditions

The amount of grazing on the Sumter has declined. The desired condition is to close allotments. Today, there are no livestock owners holding grazing permits.

b. Results from Past Management Reviews, Audits, Annual Monitoring and Evaluation Reports

A 25-year trend of decreasing demand from the public for grazing resources continued. Grazing resources declined in acreage available due to the lack of management and lack of use. Management practices require NEPA documentation prior to being implemented and no documents were approved or renewed for implementation during FY2005 through FY2010.

7. Landownership and Special Uses

a. Comparison of Existing Conditions/Trends to Desired Conditions

A landownership adjustment strategy was completed for the Sumter NF in FY2005.

The true desired future condition for Special Uses on the National Forest is fewer of them and less public land encumbered by so-called private uses. We have seen some changes in how the NF land is being used by the public. Two different types of new requests have appeared: Geo-caching and Metal Detecting.

- Geo-caching has become very popular over the last 5 year. There are 43 sites on Enoree RD that we do not know of, but can be pulled off the internet. Based on review during the 2009 Sumter IRR, it was determined that a special use permit was not needed and geo-caching could provide an opportunity for interpretation.

- The popularity of metal detecting has grown and often people use metal detectors to find objects on NF land. Typically we have denied requests for metal detecting because of the potential impacts to heritage sites. Some damage is occurring to historic sites from people who are metal detecting and digging up historic artifacts.

The Forest is actively screening all applications and making sure no private alternatives exist.

Efforts are also being made to retire unnecessary permits and consolidate others.

b. Results from Past Management Reviews, Audits, Annual Monitoring and Evaluation Reports

The Forest is experiencing a rapid increase in requests for Special Use Permits for access and R/Ws to private land in holdings. Another effect is that it is increasingly difficult to get access across private land to “landlocked” NF. Development on private lands will impact our ability to complete timber harvests and prescribed burning on NFs.

There are no specific forest plan guidelines for land line maintenance, however we are not meeting the manual direction of maintaining our lines at least once every 10 years. The Sumter forest has approximately 2,379 miles of boundary lines. The recommended amount of miles of boundary to be maintained in a year should be 240 miles if the forest is to have a 10 year maintenance cycle. Targets have been only 62 miles per year. In part, due to the Forest’s inability to maintain landlines, we anticipate an increase in trespass, illegal trails, title claims, etc. In order to discourage encroachments, landlines continue to be established, maintained and protected as long as funding allows. This year the forest completed 97.851 miles of maintenance and 0.56 miles of land line location. In FY2010, The forest expects to complete an additional 48 miles of land line location with ARRA money and contract another 19 miles of maintenance by 09/30/2010

Land acquisitions were made for public benefit and to improve management. All right of ways were obtained to improve and enhance access to Federal lands for both better management and public utilization of these lands. All use authorizations were granted only after all other means and alternatives were thoroughly examined. Over the past 5 years, the forest has completed 2 tripartite exchanges: MS Recreation for 432 acres and Turkey-Stevens for 780 acres. Both are located in McCormick County on the Long Cane. Annual recommendations have been to pursue prioritized land acquisitions and exchange program as funding allows.

Findings from the 2009 Sumter IRR discussed how the forest is addressing the increasing pressure from population growth and increased urbanization. The Sumter NF has implemented Wyden agreements primarily in conjunction with prescribed burning on private lands. The Sumter NF is also looking for ways to coordinate with private landowners and state agencies to improve wildlife habitat and watershed conditions. One example is the Indian Creek Wildlife Habitat Restoration Initiative on the Enoree RD. Another example of this cooperative effort is the RENEW project on the Long Cane.

Special uses are evaluated on a case by case basis, but there is an increased demand primarily for driveways and utility corridors. The Forest recently went to a zone SU to ensure consistency on how SUP permits are evaluated and managed. It is anticipated that increased trespass problems will occur since land line maintenance is not adequately funded. ARRA funds were used for line re-establishment and some trespasses may be identified as a result of this work. Due to declining budgets, the forest has shifted from purchases to land exchange and tripartite to accomplish land adjustments.

8. Access/Travel Management

a. Comparison of Existing Conditions/Trends to Desired Conditions

The Andrew Pickens Ranger District is currently completing analysis of the district's transportation system following regulations adopted in January, 2009. Travel analysis was used to assess the current condition of Andrew Pickens Ranger District forest transportation system and associated travel management direction. Current condition and existing travel management direction were considered in the context of existing uses, other public and private transportation systems, and land ownership patterns. The objectives of the TAP are to

- a. Identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System (NFS) lands per 36 CFR 212.5(b)(1).
- b. Designate roads, trails and areas for motor vehicle use per 36 CFR 212.51.

b. Results from Past Management Reviews, Audits, Annual Monitoring and Evaluation Reports

The major portion of the road reconstruction/construction on the Forest was accomplished through the timber sale program. See Table 30. Presently, road work in timber sales is considered maintenance and is being accomplished using road maintenance provisions in the timber sale contract.

It is anticipated that the TAP on the Andrew Pickens will be completed this year and findings will be reported in the FY2011 monitoring report. Since the Sumter's transportation system is considered to be 'in place', road work is

primarily funded and accomplished as road maintenance. However, with the continued reduced funding levels for road maintenance, there will be an associated reduction in the serviceability of the road system. This could result in a future need for road reconstruction.

Table 30 Trend Data on Road Management Activities from FY2005 to FY2009							
Activity	Unit of Measure	FY 05	FY 06	FY 07	FY 08	FY 09	10 Year Plan Estimate
Road Construction	Miles	0.0	0.0	0.2	0.0	0.0	9.0
Road Reconstruction	Miles	4.3	3.6	3.2	6.0	0.9	342.0
Timber Roads	Miles	20.0	28.1	37.0	30.7	53.3	N/A
Roads Decommissioned	Miles	5.5	0.0	0.0	0.0	0.0	0.0
System Mileage	Miles	1,059	1,062	1062	1067	1065	N/A
Roads Maintained	Miles	782	734	754	720	738	8,450

9. Collaboration

a. Comparison of Existing Conditions/Trends to Desired Conditions

(1) Cooperative Relationships

The existing trend for most cooperative relationships has remained stable. Some public involvement activities, like the Forest's participation in Wood Magic, have either stopped or decreased. This trend does not track with the expected level of relationships and public interaction planned for the Forest's future. In most cases, this trend is due a decreasing level of funding for these types of activities.

(2) Plan Monitoring

Plan level monitoring has proceeded as expected.

b. Results from Past Management Reviews, Audits, Annual Monitoring and Evaluation Reports

(1) Cooperative Relationships

The Forest continues to provide funding for high-profile and effective interpretive programs such as Wood Magic and the Teachers Tour.

Other recommendations have been to continue to accommodate interested partners who wish to form partnerships, cooperative agreements, memorandums of agreements consistent to Forest Plan goals and objectives. The Forest currently has a Programmatic Agreement with the SHPO and will develop a

Programmatic Agreement with the Tribes concerning Heritage Resource Management.

(2) Plan Monitoring

No Forest Plan amendments have been completed. It is anticipated that a new planning rule will be released in 2012. Once new FSH direction becomes available, the forest will begin to transition from the 1982 Planning Rule and review changes needed for compliance with this new Planning Rule.

10. Jobs and Income

a. Comparison of Existing Conditions/Trends to Desired Conditions

The Forest Plan did not explicitly define a set of desirable conditions for local demographics and employment except to maintain a stable source of employment and payments to counties in lieu of taxes. Although timber harvesting on the Forest was not as high as expected, other jobs such as new highway construction projects created alternative opportunities for harvesting (ROW clearing) and construction contractors (road building).

Population and demographics is not a monitoring item reported in the Forest's Annual Monitoring and Evaluation Report. Because changes typically occur slowly, the Forest felt that 5-year updates in the Five-Year Review(s) would be adequate. The national recession that began in December 2007 has nearly doubled the number of unemployed people in the state. However, South Carolina shows signs of economic growth, capital investment, and improving labor market conditions in 2010. This recession has accelerated a shift in the state's economy that has been occurring over the last 30 years: the transition from labor-intensive lower wage manufacturing positions to higher technology, better paying employment in capital intensive manufacturing and services. To address the high unemployment rate, South Carolina created a new Department of Employment and Workforce and overhauled the unemployment insurance tax system. (SC DOC 2010).

The Sumter National Forest directly affects, and is predominantly influenced by, citizens of 13 north and central South Carolina counties containing national forest land (See Table 30). These counties have had a rapid population growth particularly along the I-85 corridor and to a lesser extent along the I-26 corridor. Accompanying the rapid population growth, are land use conversions: forested lands are cleared for development. The landscape is changing from a mixture of light residential and industrial, agricultural, and lightly managed forest systems to a heavily developed and urbanized landscape and more intensively managed forest systems. More detailed demographic and business information for each county is located in Appendix A of this report.

Table 30. 2000 to 2008 Population trends in Counties within the Sumter National Forest.

County/State	2008	2000	Change
Abbeville	25,404	26,226	-822
Chester	32,618	34,108	-1,490
Edgefield	25,546	24,538	1,008
Fairfield	23,435	23,530	-95
Greenwood	68,549	66,286	2,263
Laurens	69,681	69,692	-11
McCormick	10,093	9,985	108
Newberry	37,823	36,031	1,792
Oconee	71,274	66,410	4,864
Saluda	18,625	19,178	-553
Union	27,672	29,877	-2,205
South Carolina	4,479,800	4,023,396	456,404

From Table 1: Annual Estimates of the Resident Population for Counties of South Carolina: April 1, 2000 to July 1, 2008 (CO-EST2008-01-45), Source: Population Division, U.S. Census Bureau, Release Date: March 19, 2009

The area's economy is relatively slow-growing and predominantly rural. Poverty is higher than the national rate (See Table 31 and Appendix A). The 2008 Census data shows that 15.5% of people in the state live in poverty and 2008 poverty rates range from 16.1% to 21.7% in the counties of the Sumter NF. Due to the recession that began in December in 2007, poverty rates have increased since 2000 (See Table 31). Timber-related employment and income are not large

proportions of the state's total employment and income picture, they do constitute a significant portion of the area's manufacturing activity in South Carolina's wood and paper products industries.

b. Results from Past Management Reviews, Audits, Annual Monitoring and Evaluation Reports

The effects of timber harvest and sales on jobs continued to be difficult to measure. It can be estimated that an increase in timber sale offerings did have a positive impact on the potential number of local jobs and income. It is uncertain whether or not this trend will continue.

While the national forest's impact on the statewide is minor, forestry has emerged as the number one manufacturing industry in the state, the number one employer, and the leader in wages paid to support South Carolina families. The SC Forestry Commission reported that the number of forest product mills remained stable in 2007 at 75 mills. Although four sawmills closed, the State gained three new shavings mills and one composite panel mill. While pulpwood is the leading forest product by volume, sawtimber is most valuable.

Table 31. Changes in Poverty Levels from 2000 to 2008 within the counties of the Sumter National Forest		
State and County	2000	2008
South Carolina	12.8	15.5
Abbeville County	12.1	17.6
Chester County	14.2	19.7
Edgefield County	15.7	19.5
Fairfield County	15.8	21.7
Greenwood County	12.5	16.8
Laurens County	13.2	18.3
McCormick County	16.5	19.5
Newberry County	13.5	16.5
Oconee County	10.1	16.1
Saluda County	15.2	16.7
Union County	12.8	18.0
From http://www.census.gov/did/www/saipe/county.html ; Data pulled July 2010.		

D. Evaluation of New Information

1. Emerging Issues

The Sumter National Forest used a wide variety of techniques to identify public issues, management concerns, and opportunities during the Forest Plan Revision process. Public participation and consultation with other agencies, groups, and Native American tribes for the Forest Plan revision is described in detail in Appendix A of the Final EIS. Appendix K of the Final EIS (bound separately) contains copies of the comment letters received during the Forest Plan Revision process and the Forest Service response to them.

For the 5-Year Review of the Revised Plan, the 14 significant issues addressed in the Revision were re-examined. Ranger District and Supervisors Office personnel were consulted. The following discussion reviews each of the 14 significant Revised Plan issues, examines their current status, and identifies issues and concerns that have been raised since Forest Plan Revision implementation. See Appendix C for information on issues and results from the 2005 Integrated Resource Review, 2007 General management Review, 2009 Integrated Resource Review, and the 2009 Prescribed Burn Review.

Issues from 2004 Sumter Revised Forest Plan

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?

Discussion: Individual projects are evaluated for impacts to plants and wildlife. Projects over the last five years have included prescribed burning and silvicultural treatments to create a variety of habitat successional conditions. Early successional habitat is very limited on the Sumter National Forest. Emphasis has been placed on thinnings to improve forest health and reduce bark beetle risk on the Long Cane and Enoree Ranger Districts. The reduction in stocking has increased the growth of understory grasses and shrubs and increased habitat diversity and distribution. In addition, seedtree regeneration harvest in loblolly pine stands has increased the amount and distribution of early successional habitat. Several projects (Indian Creek on the Enoree and RENEW on the Long Cane) have focused on establishing woodland habitat. Prescribed fire use has increased and has helped to maintain open conditions as well as reduce hazardous fuels. The Andrew Pickens Ranger District has been removing off-site loblolly pine stands and replacing them with native vegetation.

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?

Discussion: A need to create woodlands for Georgia Aster habitat has been identified. Development of a management plan for the Carolina heelsplitter mussel will be completed in the next one to two years. Bald eagle has been delisted, but it still must be protected under the Bald Eagle Protection Act.

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?

Follow-up: Potential old growth was identified in conjunction with the old growth analysis in the Revised Forest Plan. Management to restore and maintain old growth community types is encouraged. However, no new monitoring information on existing or potential old growth has been collected since the Revised Forest Plan was completed.

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?

Discussion: Hunting Creek stream enhancements are on-going on the Enoree Ranger District (RD). Future stream enhancements will be considered as part of landscape assessments. There has been limited activity in riparian corridors because timber management emphasis placed in upland areas. The AP has done in-stream habitat structures in trout streams.

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?

Discussion: The Sumter districts have completed NEPA documentation for multiple timber sale projects. The amount of volume and acreage currently exceeds capacity to offer for sale. Vegetation management needs are far greater given the extensive acreage of pine volume on the piedmont needing thinning and regeneration harvest. The Sumter NF wants to increase timber volume sold but lack personnel to complete work.

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?

Discussion: Individual projects are evaluated for scenery impacts. No changes needed.

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?

Discussion: Human populations are increasing, however, the 2008 NVUM report indicates a slight downward trend in visitor use and in some areas of visitor satisfaction.

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?

Discussion: No changes.

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.

Discussion: Over the last five years the forest has placed emphasis on thinning pine stands to reduce mortality risk from southern pine beetle (SPB). In addition, mature pine stands (60 to 80 years old) have been planned for regeneration harvest. This will help develop a better age class distribution and will increase structural diversity. The intent is to reduce susceptibility to insect and disease by varying stand composition and structure across the landscape. Off-site loblolly pine stands on the Andrew Pickens Ranger District (RD) are scheduled to be replaced with native mountain species of shortleaf pine, pitch pine and Table Mountain pine. However, there still is a great need to increase the amount of thinning to reduce SPB risk across the piedmont and to establish native stands on the Andrew Pickens Ranger District. Planned "decision" (projects through the NEPA process) volume/acreage is currently greater than our capacity to

implement projects on-the-ground. SPB populations are monitored by the SC Forestry Commission (SCFC). Several NNIS insects and diseases have the potential to impact forest health. Littleleaf disease continues to impact populations of shortleaf and loblolly pine. Fusiform rust occurs on the LC and EN RDs, but at a low-level.

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?

Discussion: Individual projects are evaluated for impacts to rare communities. Improve databases for tracking rare plant 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.

Discussion: Turkey-Stevens Creek and 7 rivers on the AP were identified as potential W&S rivers during the forest planning process. The suitability studies have not been completed. Potentially eligible rivers are managed as W&S rivers in the interim.

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?

Discussion: The Andrew Pickens Ranger District is currently completing analysis of the district's transportation system following regulations adopted in January, 2009. The transportation analysis process (TAP) includes identifying the minimum road system needed to meet resource and public access objectives.

Action Item: The other Sumter districts will complete a TAP to identify the minimum road system following a regional schedule.

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?

Discussion: The forest is currently evaluating visitor use capacity including boating use above Highway 28, which may involve amending the Sumter Forest Plan.

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.

Discussion: The Long Cane Ranger District recently completed an environmental assessment for a Bureau of Land Management (BLM) prospecting permit.

2. Changes in National/Regional Policy/Direction

Four basic levels of planning guide the overall management of national forests and grasslands:

Strategic planning which takes place at the highest level and identifies strategic priorities for the agency that are implemented over a period of time through annual agency budgets. The strategic priorities are based on national assessments of natural resources and are responsive to social and political trends.

Business planning by national programs, regions, research stations, and the Northeastern Area which translates broad strategic direction into regionally specific work that contributes to the agency's mission.

Unit planning (i.e. the Sumter's Revised Forest Plan) which provides an inventory of resources and their present conditions on a particular management unit. This inventory, coupled with the desired future condition for the resources, is the basis for annual work planning and budgeting.

Annual work planning which identifies the projects that units propose for funding within a fiscal year. This level of planning involves the final application of strategic direction into a unit's annual budget to move its resources toward its desired future condition.

Over the course of Plan Revision development and implementation there have been numerous changes in national and regional policy and direction.

In 2008 the Forest Service issued a new planning rule for developing, amending or revising forest land management plans. The 2008 rule was challenged in court and was overturned. The 2000 planning rule, including its transition provisions as clarified by the 2004 interpretive rule,¹ is now in effect. A final planning rule and Final EIS are expected in December 2011.

The issuance of the 2005 National Travel Management Rule has had a significant impact on the management of the Forest. The local decision designating which roads and trails will be open to public motor vehicle use has

¹ The Court's decision upheld the issuance of the 2004 interpretive rule, finding it was not subject to the notice and comment requirements of the APA.

been completed. The Motor Vehicle Use Map (MVUM) map will be made available to the public by March of each year. Currently, the Forest is completing Travel Analysis Planning, which identifies the minimum road system needed.

E. Evaluation of Need to Change Existing Plan Direction

1. Desired Conditions

A Desired Future Condition (DFC) is defined as a narrative description of the condition of land and resources expected to occur when goals and objectives and their associated standards and guidelines for an area are fully achieved. The forestwide DFC emphasizes the significant differences between the future Forest and the present. The Forest-wide DFC is described in Chapter 2 of the Revised Plan. This DFC has not been changed in the first 5 years of Plan implementation.

The DFCs in Management Areas (MAs and Management Prescription), described in Chapter 3 of the Revised Plan, focus on the ecological legacy and condition of each area along with their potential for human use and experience. Each MA and management prescription DFC includes a description of the landscape alterations, forest appearance, associated wildlife, and possible human experiences and interaction.

The 2004 Revised Plan allocated land and assigns management direction to 4 MAs and 27 management prescriptions. No changes were needed to the DFCs for the MAs and 27 management prescriptions after 5 years of Plan implementation.

2. Goals and Objectives

a. Goals

Goals are concise statements describing desired conditions to be achieved in the future. They are often expressed in broad general terms and are timeless, having no firm accomplishment date (36 CFR 219.3). Goal statements are the first step to making Forest-wide DFCs operational.

The Sumter's forest-wide goals are broad, strategic management statements written to provide a framework for balanced and integrated resource management designed to achieve the forest-wide DFC. The 30 forest-wide goals are listed in Table 32 with suggested edits from Forest Service personnel.

b. Objectives

Objectives are concise statements describing a specific result or condition desired that will contribute to goal achievement. Each goal has one or more objectives associated with it, defining how that goal will be accomplished. Objectives are the second step in making the forestwide DFC narrative description operational. Each objective in the Revised Plan is numbered in such a way that you can associate it with the appropriate goal. For example, objectives

1–1 through 1–6 contribute to the accomplishment of goal 1; objectives 2–1 through 2–8 contribute to goal 2, and so on.

As with the DFCs and goal statements, no changes have occurred in the Plan’s objectives. However, some of the objectives have brought about some concerns both internally (within the Forest Service) and externally (the public). Those objectives with concerns are listed below; along with a description of the concern/issue in Table 32.

Table 32 Forest-wide Goals and Objectives with Recommended Edits	
Soil and Water Forest-wide Goals and Objectives	Comments
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.	Keep Goal.
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.	Keep Goal.
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.	Keep Goal.
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.	Keep Goal.
Goal 3 Riparian ecosystems, wetlands, and aquatic systems are managed (and where necessary restored) to protect and maintain their physical, chemical, and biological integrity.	Keep Goal.
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	Keep Goal.

Table 32 Forest-wide Goals and Objectives with Recommended Edits	
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.	Emphasis has been placed on upland vegetation management because of the need and lower sensitivity to impacts from management. LWD has been added to approximately 6 miles of streams. Objective is unlikely to be met during the first 10-year planning period.
Goal 5 Maintain or restore soil productivity and quality.	Keep Goal.
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.	Keep Objective.
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.	Keep Goal.
Goal 7 Provide good air quality for people's health and the health of the forest environment.	Keep Goal.
Wildlife Habitat and Forest Vegetation Forest wide Goals and Objectives	Comments
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.	Keep Goal.
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.	Loblolly pine removal efforts began on the Andrew Pickens Ranger District in 2004 and have continued throughout the years on small parcels. Specific areas where these activities have occurred include the upper Chauga River drainage, Cedar Creek, Village Creek, and the Ross Mountain area. Approximately 780 acres have been treated through FY 2009. The district is currently working on a 6,000 acre loblolly pine removal EIS that will be implemented over the next 5-10 years. The objective should be met

Table 32 Forest-wide Goals and Objectives with Recommended Edits

	within another 3-4 years.
<p>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.</p>	Keep Objective.
<p>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.</p>	<p>Acres of commercial thinning and precommercial thinning in the piedmont are included in contributing to this objective. Accomplishments from FY04-FY09 are:</p> <ul style="list-style-type: none"> • 2004 2,738 ac 2,699 thinning + 39 ac oak planting • 2005 2,786 ac 2,786 thinning • 2006 2,657 ac 2,482 thinning + 175 ac precommercial thinning • 2007 1,757 ac 1,757 thinning + 209 ac precommercial thinning • 2008 2,695 ac 2,571 thinning + 124 ac precommercial thinning • 2009 <u>3,550</u> ac <u>3,039</u> thinning + 511 ac precommercial thinning • Total 16,183 ac 15,334 <p>The objective should be met soon, but it does not measure progress toward increasing the oak component. During regeneration, we are able to favor oak and hickory, but there is not a good way to measure the changes in the oak/hickory component. During the next plan revision we need to identify a better measure of the oak and hickory component.</p>
<p>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.</p>	Keep Objective.
<p>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.</p>	Keep Objective.

Table 32 Forest-wide Goals and Objectives with Recommended Edits	
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.	Keep Objective.
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.	Keep Goal.
Objective 9.01 Construct or restore wetlands on 600 acres in the riparian corridor on the piedmont over the 10-year planning period.	Keep Objective.
Proposed, Endangered, Threatened, Sensitive, (PETS) and Locally-rare species Forest-wide Goals and Objectives	Comments
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.	Keep Goal.
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.	Keep Objective.
Objective 10.02 Maintain or restore at least 8 self-sustaining populations for Georgia aster (<i>Symphyotrichum georgianum</i>) and 1 population for Florida gooseberry on the piedmont districts, and the habitat to support them.	Keep Objective.
Special Areas, Rare Communities And Old Growth Goals and Objectives	Comments
Goal 11 Those areas with special scenic, botanical, and/or zoological characteristics will be managed to protect those characteristics.	Keep Goal.
Goal 12 Protect or restore the rare communities found on national forest lands.	Keep Goal.
Objective 12.01 Restore 500 to 2,500 acres of table mountain pine forest over the 10-year	Approximately 25 ac of table mountain pine restoration has been planned on the Andrew

Table 32 Forest-wide Goals and Objectives with Recommended Edits	
planning period.	Pickens Ranger District in the Compartment 61 Wildlife Habitat Improvement Project. Prescribed burning in known locations of table mountain pine helps to restores the species and should be included in restoration efforts. This objective should also include pitch pine. However, changes to this objective could wait until the next forest plan revision.
Objective 12.02 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.	Keep objective.
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.	Keep goal
Forest Health Goals and Objectives	Comments
Goal 14 Manage forest ecosystems and associated communities to maintain or restore composition, structure, function, and productivity over time.	Keep Goal.
Goal 15 Minimize adverse effects from nonnative 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.	Keep Goal.
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.	Keep Objective.
Goal 16 Maintain or restore native tree species whose role in forest ecosystems is threatened by insects or disease.	Keep Goal.
Goal 17 Manage forest stands so they are less susceptible to insects and disease.	Keep Goal.
Objective 17.01 Improve forest health on 10,000 – 50,000 acres of pine forests by reducing stand density.	Approximately 15,688 acres of commercial thinning were accomplished in fiscal years 2004 – 2009.
Wood Products And Special Forest Products Goals and Objectives	Comments

Table 32 Forest-wide Goals and Objectives with Recommended Edits	
Goal 18 Provide a sustainable supply of wood products.	Keep Goal.
Fire Management Goals and Objectives	Comments
Goal 19 Protect life, property, and resources from unacceptable damage by fire through improved fire prevention, suppression, hazardous fuel reduction, and promoting community assistance.	Projects and targets for this goal are difficult to quantify and measure. Between 2005-2009, fire management suppressed 106 fires that burned 1,347 acres. Success can be measured by fire management's ability to contain 90-95 % of all wildland fires during initial attack. Acres treated can measure hazardous fuels reduction but it does not reveal how much risk has been reduced. At times, district personnel lack the ability to staff for both prescribed fire operations and initial attack.
Goal 20 Maintain and restore fire-adapted ecosystems by reducing hazardous fuels through the use of prescribed fire and mechanical fuels treatments.	Keep Goal.
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.	Between 2005-2009, 115,000 acres have been treated to reduce hazardous fuels. Currently limited funding and qualified fire personnel are the greatest limiting factor to reaching this objective, but next year, meeting air quality standards may be a limiting factor. Recent organizational changes in fire management leadership and structure have lead to increased acres being treated for fuels reduction. Additional funding and positions for operational positions are still needed to address shortages in qualified personnel.
Goal 21 Emissions from prescribed fire will not hinder the state's progress toward attaining air quality standards and visibility goals.	No changes to objective are currently needed, but eventually state air quality guidelines could affect our ability to prescribe burn. State air quality standards are close to non-attainment for ozone and fine particulate matter, since pollution from Charlotte and Augusta are affecting our air shed. Air quality concerns are greatest during growing season burning when temperatures are higher. Prescribed burning cannot take place when DHEC issues ozone alerts. If air standards are violated, then the DHEC will have to identify sources of these pollutants and this could further impact growing season burning.
Recreation—Developed, Dispersed, and	Comments

Table 32 Forest-wide Goals and Objectives with Recommended Edits

Backcountry Goals and Objectives	
<p>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.</p>	Keep Goal.
<p>Goal 23 Where financially and environmentally feasible, enhance the following opportunities:</p> <ul style="list-style-type: none"> • 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 	Keep Goal.
<p>Objective 23.01 Maintain or improve 150 acres of ponds/lake habitat for recreational fisheries.</p>	This objective is accomplish or exceeded on an annual basis.
<p>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.</p>	Keep Objective.
<p>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.</p>	Keep Goal.
<p>Objective 23.01 Maintain or improve 150 acres of ponds/lake habitat for recreational fisheries.</p>	Keep Objective.
<p>Goal 25 Provide a range of accessible recreation facilities and trails.</p>	Keep Goal.
<p>Roadless Areas and Wilderness Management Goals and Objectives</p>	<p>Comments</p>
<p>Goal 26 Maintain wilderness, wilderness study</p>	Keep Goal.

Table 32 Forest-wide Goals and Objectives with Recommended Edits	
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.	Keep Goal.
Wild and Scenic Rivers Goals and Objectives	Comments
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.	Keep Goal.
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.	Keep Goal.
Objective 29.01 A suitability analysis for Turkey and Stevens Creek will be completed by the year 2009.	Keep Objective.
Aesthetics/Scenery Management Goals and Objectives	Comments
Goal 30 Protect and enhance the scenic and aesthetic values of the national forest lands in the Southern Appalachians and piedmont.	Keep Goal.
Heritage Resources Goals and Objectives	Comments
Goal 31 Manage areas with special paleontological, cultural, or heritage characteristics to maintain or restore those characteristics.	Keep Goal.
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.	Keep Goal.
Minerals and Geology Goals and Objectives	Comments
Goal 33 Mineral resources will be managed to meet demands for energy and non-energy minerals consistent with Forest Plan management prescriptions.	Keep Goal.

Table 32 Forest-wide Goals and Objectives with Recommended Edits

Access and Road Management Goals and Objectives	Comments
Goal 34 Provide a minimum transportation system that supplies safe and efficient access for forest users while protecting forest resources.	Keep Goal.
Goal 35 Improve conditions of needed roads that are adversely affecting soil and water resources.	Keep Goal.
Lands and Special Uses Goals and Objectives	Comments
Goal 36 Acquire non-federal lands through purchase, donation or exchange to improve management effectiveness, support specific resource management objectives, and enhance public benefits.	Keep Goal.
Goal 37 Manage special uses in a manner that protects natural resource values and public health and safety.	Keep Goal.
Goal 38 Resolve all known title claims and encroachments affecting National Forest System lands.	Keep Goal.
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.	Keep Goal.

3. Standards and Guidelines

While goals and objectives define where we are headed for a particular area, standards and guidelines define the decision space within which we can operate to work towards achieving goals and objectives. Standards and guidelines are the specific technical resource management directions generated for a DFC. They provide the last link in making that DFC narrative description operational.

Standards are a definite rule, principle, or measurement. Standards define the operational space for achievement of Forest Plan goals and objectives, and assure compliance with laws, regulations, executive orders, and policy direction. Deviation from a standard requires a forest plan amendment.

Guidelines are used as a steering or preferred course of action. They promote the achievement of Forest Plan goals and objectives in a manner that permits necessary operational flexibility to respond to variations over time. Deviation from a guideline will usually not require an amendment to the Plan, but the rationale will be documented in the project decision document.

The standards and guidelines in Chapter 2 of the Plan apply Forest-wide, providing the basic foundation for all resource management. They constitute the bulk of the direction necessary to meet Forest-wide goals, desired future condition, and objectives. Additional specific direction pertaining to a particular Management Prescription is in Chapter 3 of the Plan.

No forest-wide standards and guidelines have been changed since the 2004 Revised Sumter Forest Plan was signed. See Table 33 for suggested edits to the forest-wide standards. Appendix B is the Action Plan needed to address these comments.

Table 33. List of Forest-wide Standards and Recommendations developed during the Comprehensive Review of the 2004 Sumter Revised Forest Plan	
Forest-wide Standards	Comments
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.	Keep standard.
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	Keep standard.

Table 33. List of Forest-wide Standards and Recommendations developed during the Comprehensive Review of the 2004 Sumter Revised Forest Plan	
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.	Keep standard.
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.	Is 40 percent adequate for protection? Comment: Site evaluations should be completed to determine if this standard is adequate.
FW-5 Water is not diverted from streams (perennial or intermittent) or lakes when an instream 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.	We have reviewed several projects concerning the damming of streams. Perhaps we should add "damming" during the next plan revision.
FW-6 Skidders will only be allowed within the channels at designated crossings.	Keep standard.
FW-7 For cable logging, at least partial suspension is required when yarding logs over ephemeral streams.	We have not done any cable logging since the revised Sumter Plan has been in place.
FW-8 Skid trail crossings will be located in a manner that minimizes stream channel and bank disturbance.	Keep standard.
FW-9 Fire lines are not constructed along the length of stream channels.	Keep standard.
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.	Keep standard.

Table 33. List of Forest-wide Standards and Recommendations developed during the Comprehensive Review of the 2004 Sumter Revised Forest Plan	
FW-11 Stabilize disturbed soils at channel crossings.	Keep standard.
FW-12 New mineral, oil, and gas leases will contain a controlled surface use stipulation for channeled ephemeral stream zones.	Keep standard.
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.	Keep standard.
FW-14 Trees and native vegetation on the stream bank should not be removed except at designated crossings.	Keep standard.
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.	Keep standard.
FW-16 Pesticide mixing, loading, or cleaning areas are not located within the channeled ephemeral stream zone.	Keep standard.
FW-17 Comply with South Carolina smoke management guidelines and Forest Service Region 8 smoke management guidelines.	Keep standard.
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.	Keep standard.
FW-19 Forests dominated by eastern hemlock are not subject to regeneration harvest during this planning period.	We have not had any proposals for regeneration in eastern hemlock. HWA is rapidly killing Eastern hemlocks. Drop this standard.
FW-20 During silvicultural treatments in all forest types, patches of hemlock greater than	Keep standard.

Table 33. List of Forest-wide Standards and Recommendations developed during the Comprehensive Review of the 2004 Sumter Revised Forest Plan	
0.25 acres are retained.	
FW-21 Oak forests on mesic sites are not converted to pine forests.	This standard is not needed since converting oak forest to pine forest contradicts the desired conditions in revised forest plan. Delete it.
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.	Keep standard.
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.	Keep standard.
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.	Keep standard.
FW-25 Permits for the collection of listed Regional Forester's sensitive species are not issued, except for approved scientific purposes or propagation.	Keep standard.
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.	Keep standard.
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.	Keep standard.
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	On August 9, 2007, the USFWS removed the bald eagle from the federal list of threatened and endangered species. This species is still protected under the Bald and Golden Eagle Protection Act and the Neotropical Migratory

Table 33. List of Forest-wide Standards and Recommendations developed during the Comprehensive Review of the 2004 Sumter Revised Forest Plan

<p>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.</p>	<p>Bird Treaty Act, in addition to other federal and state laws. The National Bald Eagle Management Guidelines (USFWS, 2007) recommends the following: (1) Avoid clear cutting or removal of overstory trees within 330 feet of the nest at any time; (2) Avoid timber harvesting operations, including road construction and chainsaw and yarding operations, during the breeding season within 660 feet of the nest; and (3) Selective thinning and other silvicultural management practices designed to conserve or enhance habitat, including prescribed burning close to the nest tree, should be undertaken outside the breeding season. Update language as needed during the next forest plan revision.</p>
<p>FW-29 In artificial impoundments used by foraging wood storks, water levels are managed to provide for and encourage annual use by this species.</p>	<p>Keep standard.</p>
<p>FW-30 Rare communities as described in this Forest Plan are managed under the Rare Community Prescription (9.F.) wherever they occur.</p>	<p>Keep standard.</p>
<p>FW-31 Project areas are surveyed for rare communities before implementing projects that have potential to adversely affect them.</p>	<p>All botanical surveys (internal and contracted) include an inventory for rare communities. Keep standard.</p>
<p>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.</p>	<p>Keep standard.</p>
<p>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 characteristic.</p>	<p>Keep standard.</p>
<p>FW-34 Apply pesticides according to label instructions, Forest Service policies and other federal regulations.</p>	<p>Keep standard.</p>
<p>FW-35 Areas treated with pesticide are signed.</p>	<p>Keep standard.</p>

Table 33. List of Forest-wide Standards and Recommendations developed during the Comprehensive Review of the 2004 Sumter Revised Forest Plan	
FW-36 Seeding with invasive non-native species (listed on the Regional Forester's invasive species list) shall not be conducted.	Keep standard.
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.	Keep standard.
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.	See Action Items requiring a forest plan amendment. While this standard should be retained, there needs to be a better method to determine plasticity.
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.	Keep standard.
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.	See Action Items requiring a forest plan amendment.
FW-41 Areas are not burned under prescription for at least 30 days after herbicide treatment.	Direction is provided on herbicide labels regarding the waiting period before burning is allowed. Delete standard.
FW-42 Weather is monitored and the project is suspended if temperature, humidity, or wind becomes unfavorable as follows:	Keep standard. See action items requiring a forest plan amendment or errata.

Table 33. List of Forest-wide Standards and Recommendations developed during the Comprehensive Review of the 2004 Sumter Revised Forest Plan	
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.	Keep standard.
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..	Keep standard.
FW-45 People living within ¼ mile of an area to be treated aurally are notified during project planning and shortly before treatment.	Keep standard.
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.	This standard may make it difficult to treat Non-native invasive plants located near private property. However, this standard has not limited the Forest Service's ability to broadcast spray as needed to date.
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.	Keep standard. Better define "open water" in next plan revision.
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.	Keep standard.
FW-49 No herbicide is aurally 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.	This standard is not relevant since we do not do any aerial application. Drop the standard.
FW-50 No herbicide is aurally applied within 100 horizontal feet of lakes, wetlands, or	This standard is not relevant since we don't do any aerial application. Drop the standard.

Table 33. List of Forest-wide Standards and Recommendations developed during the Comprehensive Review of the 2004 Sumter Revised Forest Plan	
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.	This standard is not relevant since we don't do any aerial application. Drop the standard.
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.	Keep standard.
FW-53 Special forest product collections are not allowed in botanical areas and rare communities, except for research or propagation. Keep standard.	Keep standard.
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.	Keep standard.
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. Keep standard.	Keep standard.
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	Keep standard.

Table 33. List of Forest-wide Standards and Recommendations developed during the Comprehensive Review of the 2004 Sumter Revised Forest Plan

<p>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.</p>	
<p>FW-57 Sell no more than 138.7 MMCF of chargeable timber from lands suitable for timber production during the 10-year planning period.</p>	<p>Keep standard.</p>
<p>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.</p>	<p>The word “protect” should probably be changed to “protect or improve”. Change could wait until next forest plan revision.</p>
<p>FW-59 The safety of firefighters and the public is the first priority in all fire management activities.</p>	<p>Keep standard.</p>
<p>FW-60 Suppress human-caused fires. Keep standard.</p>	<p>Keep standard.</p>
<p>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.</p>	<p>There has been a change in terminology. No longer use the term “Wildland Fire Use”. Need to amend forest plan.</p>
<p>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.</p>	<p>There has been a change in terminology. No longer use the term “Wildland Fire Use”. Need to amend forest plan.</p>
<p>FW-63 Prescribed fires will be implemented following the direction found in FSM 5140.</p>	<p>Keep standard.</p>
<p>FW-64 Prescribed burns are done so they do not consume all litter and duff and/or alter</p>	<p>Keep standard.</p>

Table 33. List of Forest-wide Standards and Recommendations developed during the Comprehensive Review of the 2004 Sumter Revised Forest Plan	
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.	Change wording from low intensity to low severity. Add to prescribed burn forest plan amendment.
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.	Keep standard.
FW-67 All managed burns will comply with Smoke Management Programs (SMP) for South Carolina.	Keep standard.
FW-68 Conform with the “State Implementation Plan” for any prescribed fire planned within EPA-designated “non-attainment” and “maintenance” areas. .	Keep standard.
FW-69 Limit OHVs and mountain bikes to designated routes.	Keep standard.
FW-70 Prohibit camping stays over 14 days, unless permitted.	Keep standard.
FW-71 No new OHV routes in the Turkey, Stevens, Chauga and Chattooga Watersheds..	Keep standard.
FW-72 Dispersed camping is not allowed on the Enoree and Long Cane ranger districts without a permit.	Keep standard.
FW-73 Motorized use of the trail system is permissible for administrative purposes and emergencies.	Keep standard.
FW-74 All management activities will be consistent with meeting or exceeding the condition associated with each Recreation Opportunity Spectrum (ROS) class.	Keep standard.
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.	Keep standard.

Table 33. List of Forest-wide Standards and Recommendations developed during the Comprehensive Review of the 2004 Sumter Revised Forest Plan	
FW-76 At developed recreational sites, water, wastewater, and sewage treatment systems meet federal, state and local water quality regulations.	Keep standard.
FW-77 At developed recreation sites high-risk conditions do not exist.	Keep standard.
FW-78 At developed recreation sites, utility inspections meet federal, state and local requirements.	Keep standard.
FW-79 When signed as accessible, constructed features meet current accessibility guidelines.	Keep standard.
FW-80 Trails, when signed accessible, meet current accessibility guidelines.	Keep standard.
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.	This standard may be changed with the Chattooga river analysis.
FW-82 Camping with horses may only occur in designated areas on the Andrew Pickens District.	Keep standard.
FW-83 No new road construction in wild sections..	Keep standard.
FW-84 No motorized boats or crafts are allowed on the wild sections.	Keep standard.
FW-85 No motorized trails are allowed.	Keep standard.
FW-86 No federal mineral leasing or mineral material authorization is permitted.	Keep standard.
FW-87 New utility corridors or communications/electronic sites will be discouraged.	Keep standard.
FW-88 Protect the outstandingly remarkable values and maintain the identified wild, scenic or in Aal classification.	Keep standard.
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	Keep standard.

Table 33. List of Forest-wide Standards and Recommendations developed during the Comprehensive Review of the 2004 Sumter Revised Forest Plan	
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.	Keep standard.
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.	Keep standard.
FW-92 Significant sites are evaluated for eligibility to the <i>National Register of Historic Places</i> and are submitted to the State Historic Preservation Office for review.	Drop standard. See Actions Items requiring a forest plan amendment in Appendix B.
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.	Drop standard. See Actions Items requiring a forest plan amendment in Appendix B.
FW-94 If cultural resources are encountered, regardless of whether the area has been previously disturbed, halt activities until the site significance is determined.	Drop standard. See Actions Items requiring a forest plan amendment.
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.	Keep standard.
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;	Keep standard

4. Suitability of Areas

During Forest planning, the Forest Service is required to identify lands unsuited for timber production (16 USC 1604(k); 36 CFR 219.14). This identification process involves three stages of analysis. Stage 1 analysis identifies lands tentatively suitable for timber production. Stage 2 analysis is designed to explore the financial attractiveness of varying intensities of timber management on lands identified as tentatively suitable for timber production. Stage 3 analysis identifies lands as unsuited for timber production under the alternative selected as the Revised Forest Plan. In the table below, a breakdown is shown of the acres classified as suitable for timber production. As can be seen in Table 34, no change has occurred.

5. Special Areas

a. Ecological Areas

Botanical Areas - Management prescription 4 contains direction on the management of botanical area. Currently 4,399 acres (approximate) are designated botanical areas and include the following:

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

No new botanical areas have been established during the first 5 years of Plan implementation.

Old Growth - Management prescription 6C contains direction on managing old growth forest. Currently 1,640 acres (approximate) are designated Old growth on the Sumter National Forest. No new old growth areas have been designated.

Table 34: Lands Classified as Suitable for Timber Production			
Management Prescription Description	Unsuitable for timber production (2004)	Suitable for timber production (2004)	Timber-suitable Acres Change
	Acres	Acres	
1A Designated Wilderness	2,855	0	No change
1B Recommended Wilderness	1,971	0	No change
2A1 Designated Wild River	3,290	0	No change
2A2 Designated Scenic River	224	0	No change
2A3 Designated Recreational River	977	0	No change
4D Botanical Zoological Areas	4,379	0	No change
4F Scenic Areas	9,979	0	No change
4G1 Calhoun Experimental Forest	908	3,111	No change
5A Administrative Sites	285	0	No change
5B Communication Sites	44		No change
5C Utility Corridors	2,480		No change
6C Old Growth	1,620		No change
7A Scenic Byway	2,754		No change
7D Concentrated Recreation Zones	235		No change
7E1 Dispersed Recreation Areas	6,545		No change
7E2 Dispersed Recreation Areas	51,381		No change
8A1 Mix of Successional Forest Habitats	35,232		No change
8B2 Woodlands/Grasslands/Savannas		6,630	No change
9A3 Watershed Restoration		9,646	No change
9F Rare Communities		622	No change
9G2 Restoration of Upland Oak-Hickory and Mixed Pine-Oak-Hickory Forests		36,448	No change
10B High Quality Forest Products		116,865	No change
11 Riparian Corridors	55,563		No change
12A Remote Backcountry Recreation	4,413		No change
Water	1,761		No change
Non-forest outside of 5A, 5B and 5C	2,672		No change
Total	103,537	259,313	

Rare Communities - Management prescription 9F contains direction on rare communities. Approximately 916 are designated in rare communities. Rare communities on the Sumter NF include:

Wetlands

Appalachian Highlands Bogs, Fens, Seeps, and Ponds

Appalachian Highlands Riverine Vegetation

Forest Communities

Table Mountain Pine Forest and Woodland

Basic Mesic Forests

Cliffs and Rock Outcrops

Cliffs and Bluffs

Rock Outcrops

Other Communities

Glades, Barrens, and Associated Woodlands

Canebrakes

Mines

No new rare communities have been designated.

b. Riparian Areas

Management Prescription 11 contains direction on riparian corridors and applies to an estimated 62,524 acres embedded in adjoining prescriptions. Riparian corridors include distinctive landscape features such as alluvial terraces, floodplains, bottomland hardwoods, and wetlands. Additional direction on riparian corridors are contained in Appendix C. Standards for the Ephemeral Stream Zone are found in Chapter 2, Forest-wide Standards, of the Revised Sumter Forest Plan. Provisions within the SMZ typically contain sediment filter strips, a base shade level, restriction on ground disturbance and protection of stream banks and streambeds.

Streamside zones and riparian corridors and appropriate management practices within them, have been established for the Forest to protect or enhance riparian associated resource values and characteristics. These zones provide:

- Important wildlife habitat components (key areas) such as hard and soft mast producers, water, snags and den trees, edge, and a variety of foods and cover;
- Unique habitats for a broad diversity of plants, some of which are rare, uncommon, sensitive, or restricted to a more moist, cooler environment;
- Vegetative cover for aquatic habitats;
- Corridors between habitat components within the home range of some species of wildlife and serve as important travel routes for nongame birds during migration; and,

- Genetic flow between potentially isolated populations in adjacent mature stands, thereby helping to maintain population genetic viability.

Dependent upon individual management area goals and objectives, assigned minimum Streamside management zone (SMZ) width is 50, 100, or 150 feet on each side of stream channels. Land allocations and management direction (standards and guidelines) provide coordination requirements for activities along designated and eligible Wild and Scenic Rivers, and protection measures for the heelsplitter mussel habitat.

c. Mining

Currently a gold mine is being operated on the Long Cane Ranger District. Forest Plan direction (standards and guidelines) helps to ensure an efficient and effective leasing process while minimizing potential effects to other resources. A No Surface Occupancy (NSO) stipulation is required on all mining operations in the following categories: administrative sites, eligible and designated wild & scenic rivers, management area 1 (heelsplitter habitat), cultural resource sites, jurisdictional wetlands, and developed recreation areas.

6. Management Areas/Management Area Direction

Chapter 3 in the Revised Plan defines management area goals, desired conditions, and standards and guidelines. Forest-wide goals, desired condition (DFC), and standards and guidelines are defined in Chapter 2, Forest-wide Direction. Management Areas are assigned on all acres of the Sumter. There are two types of management areas.

- One type has 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 areas 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— 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.” The Nature Conservancy has identified Stevens Creek watershed as one of national significance for conservation of aquatic biodiversity. It ranks in the top 15 percent of the entire nation’s watersheds for its significance in biodiversity. No major changes have occurred in the Plan’s management area allocations. Concerns about standards in Management Area 1 have arisen and a follow-up meeting to discuss these concerns will be scheduled after the plan for heelsplitter habitat has been prepared. See Table 35 for suggested edits and Appendix B for the Action Plan to address these comments.

Management Area 2—Chattooga River 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. Standards are contained in the management prescriptions for MA2. An on-going evaluation of visitor capacity may result in changes in standards for MA2. It is anticipated that a decision on visitor capacity will be made in FY2011.

Management Area 3—Blue Ridge Mountains and Foothills, Andrew Pickens District—outside the Chattooga Watershed 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 tulipifera*) and white pine (*P. strobus*) often dominate moist areas as coves and streambanks with dense understories of rhododendron (*Rhododendron sp.*) and mountain laurel (*Kalmia latifolia*).

Management Area 4—Piedmont, Enoree and Long Cane Districts, outside of the Turkey Creek and Upper Stevens Creek Watersheds 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.

Table 35. Potential Changes to Management Area 1 Standards	
Management Area 1 Standards	Comments
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.	The USFWS (personal communication with John Fridell, the biologist who wrote the Carolina Heelsplitter Recovery Plan) has informally suggested that the secondary zone along intermittent streams be increased from 100 to 200 feet. The rationale for this is that activities along intermittent streams are just as significant, if not more so, than activities along perennial streams in terms of water quality and aquatic organism health. Experience reviewing SMZs on Enoree district this year made it clear that standard Sumter plan riparian corridors (SMZs) are much more than adequate in the Sumter piedmont districts. These wider (secondary) SMZs do not make the water cleaner or cooler. Having any kind of harvest in a skinny strip that is different from the adjacent harvest is generally impractical in timber sales. Heelsplitter plan is being prepared. Follow-up meeting to discuss USFWS's informal recommendations.
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).	Same comments as for standard MA 1-1.
MA 1-3 No cutting within the natural floodplain except, as a last resort, for the control of pest.	This standard may be in conflict with direction on canopy gaps and canebrakes. Need follow-up meeting to discuss and consider possible forest plan amendment.
MA 1-4 No new roads are built within the secondary zone as defined in MA11 except where needed to cross streams.	This standard is unnecessary. It is redundant with standard FW-1 and standards 11-8 and 11-22.
MA 1-5 Commercial mining permits contain no surface occupancy or controlled surface use stipulations.	Keep standard
MA 1-6 No new OHV trails are allowed.	Keep standard
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.	Keep standard
MA 1-8 No motorized boats or craft are allowed on Turkey or Stevens Creeks.	Keep standard
MA 1-9 No road construction is allowed in the Turkey/Stevens Creek Botanical Area (4D).	Keep standard

7. Monitoring and Evaluation

Monitoring and evaluation provide information to determine whether programs and projects are meeting forest plan direction. Overall direction for the monitoring and evaluation of forest plans is found in FSM 1922.7; FSH 1909.12,6; and 36 CFR 219.12(k). Chapter 5 of the Revised Plan provides information on how the implementation of the Revised Forest Plan is monitored and evaluated.

When we monitor how well we are meeting our Forest Plan desired future conditions, goals and objectives, and standards and guidelines we are monitoring how effectively we have addressed the public issues and management concerns raised during the forest planning process. As detailed in Chapters 1 and 2 of the FEIS, public issues and management concerns were the foundation upon which desired future conditions, goals and objectives, and standards and guidelines were established. New issues that arise during the implementation of this Revised Forest Plan may result in additional monitoring items being added to our annual monitoring program.

Three types of forest plan monitoring were conducted: Implementation monitoring; Effectiveness monitoring; and Validation monitoring.

Implementation monitoring determines if plans, prescriptions, projects, and activities are implemented as designed and in compliance with forest plan objectives, requirements, and standards and guidelines. Evaluation of implementation monitoring may require adjustment of prescriptions and targets or changes in plan or project administration. (FSM 1922.7)

Effectiveness monitoring determines whether plans, prescriptions, projects, and activities are effective in meeting management direction, objectives, and standards and guidelines. Evaluation of the results of effectiveness monitoring is used to adjust forest plan objectives, targets, prescriptions, standards and guidelines, conservation practices, mitigation measures, and other best management practices and could result in change to or amendment of the forest plan. (FSM 1922.7)

Validation monitoring is designed to ascertain whether the initial assumptions and coefficients used in development of a forest plan are correct or if there is a better way to meet forest planning regulations, policies, goals, and objectives. Evaluation of this type of monitoring can result in amendment of forest plans and may be used to recommend changes in laws, regulations, and policies that affect both the plan and project implementation. (FSM 1922.7)

Monitoring task sheets were created from the monitoring questions in Appendix E in the Revised Plan detail how information was acquired to answer monitoring questions. Task sheets were used to further develop the details, priorities and budgeting for monitoring. Changes to task sheets do not require an amendment of the Forest Plan, unless the desired future conditions, goals and objectives, or standards and guidelines being monitored change, or the monitoring questions and/or monitoring level changes. Currently, the Forest addresses the monitoring questions applied to each of the Plan's goals and objectives. The task sheets

have been used each year to produce the information contained in the annual M&E Report.

a. Concerns Relevant to Monitoring (2004 to 2009)

The results of monitoring over the first 5 years of Revised Plan implementation are described in detail in Sections 4 and 5 of this document. During this period, however, some of the Plan’s directions have brought about some concerns both internally (within the Forest Service) and externally (the public). Those items are listed below; along with a description of the concern/issue. See the Action Plan in Appendix B.

b. Foreseeable Changes (2012 Planning Rule)

In February 2010, the Forest Service gave notice of its intent to prepare an environmental impact statement to analyze and disclose potential environmental consequences associated with a new National Forest System land management planning rule. The final environmental impact statement is expected in December 2011. At this point in time, a draft planning rule has not been published and it is unknown what will in the new forest planning rule.

An environmental management system (EMS) approach is planned to enhance adaptive planning was required under the 2008 forest planning rule. Since the 2008 planning rule was overturned, the requirement to complete an EMS review is not required.

8. Annual Budgets

The incremental implementation of Forest Plan management direction is accomplished through the annual program of work. Since outputs are not hard and fast decisions within a Plan, all conditions required for producing outputs, such as annual budget appropriations, are not controlled entirely by the Forest. Outputs and activities in individual years can vary significantly, depending on available funds. See Table 36. Upon approval of a final budget for the Forest, the annual program of work is adjusted to the final budget and then carried out.

Activity	Unit of Measure	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	10 Year Plan Estimate
*Annual Budget	MM\$	14.1	10.8	10.6	9.4	8.3	9.1	N/A

F. Science Consistency

1. Documentation of Best Available Science

Planning teams are required to “integrate knowledge of the physical, biological, economic and social sciences, and the environmental design arts in the planning process” (§ 219.5(a) of 1982 planning rule). The 2000 Planning Rule requires the responsible official to take into account the best available science. The Agency proposes the words “take into account” because this term better expresses that formal science is just one source of information for the responsible official and only one aspect of decision-making.

The Agency is committed to taking into account the best available science in developing plans, plan amendments, and plan revisions as well as documenting the consideration of science information. Under this proposed rule, the responsible official must: (1) Document how the best available science was considered in the planning process within the context of the issues being considered; (2) evaluate and disclose any substantial uncertainties in that science; (3) evaluate and disclose substantial risks associated with plan components based on that science; and (4) document that the science was appropriately interpreted and applied. Any interested scientists can be involved at any of the public involvement stages (36 CFR 219.11 of proposed 2007 Planning Rule).

With the above in mind, the following recommendations have been developed (June 21, 2007 Memo to Regional Planning Directors) for documenting consideration of best available science in planning and project level environmental analyses:

- What constitutes best available science might vary over time and across scientific disciplines. As a general matter, we show consideration of the best available science when we insure the scientific integrity of the discussions and analyses in the project NEPA document. Specifically, the NEPA document should identify methods used, reference scientific sources relied on, discuss responsible opposing views, and disclose incomplete or unavailable information, See 40 CFR, 1502.9 (b), 1502.22, 1502.24.
- The project record should reference all scientific information considered: papers, reports, literature reviews, review citations, peer reviews, science consistency reviews, results of ground-based observations, and so on. The specialists report in the record should include a discussion substantiating that consideration of the aforementioned material was a consideration of the best available science.
- The responsible official should include a statement in the record of decision, decision notice, or decision memo showing consideration of the best available science as the basis for the decision. For example: “My conclusion is based on a review of the record that shows a thorough review of relevant scientific information, a consideration of responsible opposing views, and the

acknowledgment of incomplete or unavailable information, scientific uncertainty, and risk” and then briefly mention specific things from the record.

In the preparation of this 5-Year Review of the Revised Forest Plan, best available science was used to update some of the information provided in the 2004 Revised Plan. The following lists some ways best available science was used to provide quality information for preparing this document:

- 2009 Census Data: Internet queries were used as a means to collect raw and interpreted data from the US Census Bureau for much of the demographic and income information in this Review.
- MIS Population Trends: Five-year trend data was prepared for the five-year review of the 2004 Revised Sumter Forest Plan.
- PETS List Updating: As species rankings change the Forest’s list of species are continuously updated. On August 9, 2007, the USFWS removed the bald eagle from the federal list of threatened and endangered species. This species is still protected under the Bald and Golden Eagle Protection Act and the Neotropical Migratory Bird Treaty Act, in addition to other federal and state laws.
- Climate Change: The global change website has up to date information on climate change.

2. Documentation of Risk and Uncertainty (Associated with Factors Influencing Conditions and Trends)

The 2000 Planning Rule states that the responsible official must take into account the best available science, and document in the plan that science was considered, correctly interpreted, appropriately applied, and evaluate and disclose incomplete or unavailable information, scientific uncertainty, and risk. This evaluation and disclosure of uncertainty and risk provide a crosscheck for appropriate interpretation of science and help clarify the limitations of the information base for the plan.

For any type of planning, some risk and uncertainty will exist when trying to predict unexpected events and the short and long-term consequences of those events. Catastrophic events like hurricanes, wildfire, flooding, and insect epidemics are hard to predict with any certainty. If these unplanned events occur, either separately, or concurrently, the Plan’s expected outcomes could change. Changes in public laws, court decisions, and budget appropriations could constrain or redirect planned outcomes. Also, events that occur on private lands may indirectly or cumulatively affect conditions needed to attain outcomes planned for the Forest.

The management direction (goals, objectives, DFCs, standards and guidelines) in the Revised Plan makes the basic assumption that our desired outcomes will remain “desirable” for at least a decade, and that any unplanned natural or man-made events will be at a scale small enough to not be a significant threat to

achieving the planned objectives. This assumption is also predicated upon many smaller resource-based cause-and-effect assumptions that need validation over time through the monitoring system developed for the Plan. For this reason, the Forest relies predominately on its annual monitoring reporting to assess changing conditions and new risks as they develop, and adapt management direction as necessary to reach the Plan's desired outcomes.

V. List of Preparers

Jim Bates	Forest Archaeologist
Bill Hansen	Forest Hydrologist
LaRue Bryant	Forest Engineer
Jason Jennings	Forest Soil Scientist
Robert Morgan	Forest Archaeologist
Jeff Magniez	Sumter Zone Wildlife Biologist
Gary Peters	Forest Wildlife Program Manager
Robin Mackie	Forest Ecologist/Botanist
Mae Lee Hafer	Natural Resources Staff Officer
Stephen Wells	Fire, Lands and Minerals Staff Officer
Tony White	Planning, Engineering, Recreation, GIS and Heritage Resources Staff Officer
Joe Robles	Recreation Specialist
Robbin Cooper	Landscape Architect
Jay Purnell	Forest Silviculturist
Dan Shea	Fuels Specialist
Vacant	Forest Fire Management Officer
Geoff Holden	GIS Specialist
Melanie Pitrolo	Air Resource Specialist
Jeanne Riley	Fisheries Program Manager
Jim Knibbs	Environmental Coordinator
Mary Morrison	Forest Planner
Peggy Nadler	Lands Program

VI. Literature Citation

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APPENDIX A
Demographic and Business Information for Counties within the Sumter National Forest

Table A-1. Demographic and Business Statistics for Counties within the Sumter National Forest.												
People QuickFacts	Abbeville County	Chester County	Edgefield County	Fairfield County	Greenwood County	Laurens County	McCormick County	Newberry County	Oconee County	Saluda County	Union County	South Carolina
Population, 2008 estimate	25,404	32,618	25,546	23,435	68,549	69,681	10,093	37,823	71,274	18,625	27,672	4,479,800
Population, percent change, April 1, 2000 to July 1, 2008	-2.9%	-4.3%	4.0%	-0.1%	3.4%	0.2%	1.4%	5.1%	7.6%	-2.9%	-7.4%	11.7%
Population estimates base (April 1) 2000	26,167	34,068	24,560	23,454	66,272	69,553	9,958	36,004	66,215	19,181	29,881	4,011,809
Persons under 5 years old, percent, 2008	5.7%	6.4%	5.1%	6.2%	6.5%	5.8%	3.9%	6.9%	5.9%	6.5%	5.7%	6.8%
Persons under 18 years old, percent, 2008	22.4%	24.0%	20.6%	23.4%	23.9%	22.7%	15.9%	23.2%	21.4%	22.7%	22.4%	23.8%
Persons 65 years old and over, percent, 2008	15.7%	14.0%	11.3%	14.1%	15.0%	14.2%	22.9%	14.7%	18.8%	15.2%	16.6%	13.3%
Female persons, percent, 2008	52.0%	51.9%	46.1%	52.6%	52.8%	51.4%	46.4%	50.9%	50.9%	49.2%	52.9%	51.3%
White persons, percent, 2008 (a)	69.8%	60.9%	58.9%	42.1%	65.9%	72.8%	52.0%	67.0%	90.4%	70.8%	67.5%	68.7%
Black persons, percent, 2008 (a)	29.1%	37.5%	39.6%	56.8%	31.6%	25.5%	47.0%	31.5%	7.9%	28.1%	31.3%	28.5%
American Indian and Alaska Native persons, percent, 2008 (a)	0.1%	0.4%	0.4%	0.2%	0.3%	0.5%	0.1%	0.3%	0.3%	0.3%	0.2%	0.4%
Asian persons, percent, 2008 (a)	0.3%	0.4%	0.3%	0.3%	1.2%	0.3%	0.3%	0.4%	0.5%	0.1%	0.2%	1.2%
Native Hawaiian and Other Pacific Islander, percent, 2008 (a)	Z	Z	Z	0.0%	0.1%	0.1%	Z	0.1%	Z	0.1%	Z	0.1%
Persons reporting two or more races, percent, 2008	0.7%	0.7%	0.7%	0.6%	0.8%	0.8%	0.7%	0.7%	0.9%	0.5%	0.8%	1.1%
Persons of Hispanic or Latino origin, percent, 2008 (b)	1.1%	1.2%	2.8%	1.6%	4.9%	3.4%	0.9%	8.4%	3.8%	14.4%	1.0%	4.1%
White persons not Hispanic, percent, 2008	69.0%	60.0%	56.7%	41.0%	62.0%	70.2%	51.3%	59.5%	87.0%	57.7%	66.8%	65.2%
Living in same house in 1995 and 2000, pct 5 yrs old & over	64.0%	66.0%	62.6%	70.5%	54.6%	61.4%	59.1%	63.9%	59.4%	67.7%	68.3%	55.9%
Foreign born persons, percent, 2000	1.0%	0.8%	1.3%	0.5%	2.8%	1.6%	0.6%	3.5%	2.4%	5.9%	0.6%	2.9%
Language other than English spoken at home, pct age 5+, 2000	3.8%	2.7%	4.4%	2.4%	4.8%	3.6%	3.2%	5.4%	3.8%	8.0%	2.0%	5.2%
High school graduates, percent of persons age 25+, 2000	70.1%	67.1%	71.4%	67.0%	73.1%	67.7%	66.1%	69.1%	73.9%	69.3%	66.9%	76.3%
Bachelor's degree or higher, pct of persons age 25+, 2000	12.8%	9.6%	12.5%	11.7%	18.9%	11.7%	16.0%	14.8%	18.2%	11.9%	9.8%	20.4%
Persons with a disability, age 5+, 2000	5,900	8,442	4,546	5,351	13,533	17,334	2,441	8,738	14,951	3,916	7,399	810,857
Mean travel time to work (minutes), workers age 16+, 2000	25.4	27.8	27.1	28.3	20.2	23.6	33.8	25.3	23.3	32.1	27	24.3
Housing units, 2008	11,930	14,868	9,988	10,913	30,035	31,427	4,914	17,678	38,000	8,815	13,501	2,056,127
Homeownership rate, 2000	80.5%	78.4%	80.5%	77.4%	69.2%	77.5%	81.0%	76.8%	78.4%	80.6%	76.7%	72.2%
Housing units in multi-unit	7.9%	6.5%	7.7%	7.3%	15.8%	6.7%	5.9%	7.3%	7.8%	2.6%	8.3%	15.8%

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structures, percent, 2000												
Median value of owner-occupied housing units, 2000	\$70,600	\$62,800	\$83,400	\$69,900	\$81,200	\$74,800	\$70,700	\$78,000	\$97,500	\$74,000	\$61,900	\$94,900
Households, 2000	10,131	12,880	8,270	8,774	25,729	26,290	3,558	14,026	27,283	7,127	12,087	1,533,854
Persons per household, 2000	2.51	2.62	2.66	2.63	2.49	2.55	2.39	2.5	2.4	2.65	2.44	2.53
Median household income, 2008	\$36,041	\$35,886	\$42,422	\$35,880	\$39,628	\$40,432	\$37,676	\$43,570	\$42,668	\$40,295	\$34,915	\$44,695
Per capita money income, 1999	\$15,370	\$14,709	\$15,415	\$14,911	\$17,446	\$15,761	\$14,770	\$16,045	\$18,965	\$16,328	\$15,877	\$18,795
Persons below poverty level, percent, 2008	17.6%	19.7%	19.5%	21.7%	16.8%	18.3%	19.5%	16.5%	16.1%	16.7%	18.0%	15.7%
Housing units, 2008	11,930	14,868	9,988	10,913	30,035	31,427	4,914	17,678	38,000	8,815	13,501	2,056,127
Homeownership rate, 2000	80.5%	78.4%	80.5%	77.4%	69.2%	77.5%	81.0%	76.8%	78.4%	80.6%	76.7%	72.2%
Business	Abbeville County	Chester County	Edgefield County	Fairfield County	Greenwood County	Laurens County	McCormick County	Newberry County	Oconee County	Saluda County	Union County	South Carolina
Private nonfarm establishments, 2007	364	551	362	370	1,504	984	108	784	1,642	275	486	107,893
Private nonfarm employment, 2007	5,016	8,292	4,768	5,160	27,074	17,497	1,206	11,939	20,720	3,641	6,932	1,648,146
Private nonfarm employment, percent change 2000-2007	-24.9%	-17.8%	-4.4%	-24.9%	-7.7%	2.0%	10.0%	4.4%	-7.0%	-13.2%	-8.5%	2.9%
Nonemployer establishments, 2007	1,612	1,500	1,505	1,203	3,543	3,099	595	1,978	4,723	982	1,119	287,197
Total number of firms, 2002	1,354	1,774	1,192	1,242	4,314	3,118	545	2,131	5,214	683	1,395	292,984
Black-owned firms, percent, 2002	F	S	23.0%	33.8%	7.1%	S	F	11.8%	F	F	S	9.8%
American Indian and Alaska Native owned firms, percent, 2002	F	F	F	F	F	F	F	F	F	F	F	0.5%
Asian-owned firms, percent, 2002	F	F	F	F	F	F	F	F	F	F	F	1.5%
Native Hawaiian and Other Pacific Islander owned firms, percent, 2002	F	F	F	F	F	F	F	F	F	F	F	0.0%
Hispanic-owned firms, percent, 2002	F	F	F	F	F	F	F	F	F	F	F	1.0%
Women-owned firms, percent, 2002	20.8%	13.9%	27.8%	19.8%	26.0%	31.9%	S	17.7%	S	F	20.4%	26.2%
Manufacturers shipments, 2002 (\$1000)	541,402	1,104,682	294,161	797,896	2,349,279	841,443	NA	658,343	1,244,950	85,456	470,360	81,132,781
Wholesale trade sales, 2002 (\$1000)	25,367	312,668	D	D	D	D	D	303,136	D	102,930	D	32,988,974
Retail sales, 2002 (\$1000)	79,390	174,409	100,897	116,561	668,408	292,432	24,689	256,446	590,603	65,848	156,402	40,629,089
Retail sales per capita, 2002	\$3,009	\$5,114	\$4,079	\$4,879	\$9,945	\$4,172	\$2,418	\$6,974	\$8,691	\$3,445	\$5,329	\$9,895
Accommodation and foodservices sales, 2002 (\$1000)	10,235	20,316	6,515	6,161	68,258	37,433	2,393	20,565	51,562	4,499	14,044	6,104,316
Building permits, 2008	33	54	70	37	126	129	45	151	1,025	46	29	25,918

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Federal spending, 2008	151,104	213,200	149,946	156,983	429,608	382,304	94,886	247,993	440,087	98,950	207,879	38,831,638
Geography	Abbeville County	Chester County	Edgefield County	Fairfield County	Greenwood County	Laurens County	McCormick County	Newberry County	Oconee County	Saluda County	Union County	South Carolina
Land area, 2000 (square miles)	508.03	580.52	501.89	686.59	455.52	715.11	359.56	630.77	625.41	452.48	514.12	30,109.47
Persons per square mile, 2000	51.5	58.6	49	34.1	145.3	97.3	27.7	57.2	105.9	42.4	58.1	133.2
Metropolitan or Micropolitan Statistical Area	None	Chester, SC Micro Area	Augusta-Richmond County, GA-SC Metro Area	Columbia, SC Metro Area	Greenwood, SC Micro Area	Greenville, SC Metro Area	None	Newberry, SC Micro Area	Seneca, SC Micro Area	Columbia, SC Metro Area	Union, SC Micro Area	
(a) Includes persons reporting only one race.												
(b) Hispanics may be of any race, so also are included in applicable race categories.												
FN: Footnote on this item for this area in place of data												
NA: Not available												
D: Suppressed to avoid disclosure of confidential information												
X: Not applicable												
S: Suppressed; does not meet publication standards												
Z: Value greater than zero but less than half unit of measure shown												
F: Fewer than 100 firms												
Source: US Census Bureau State & County QuickFacts												

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Action Items that do not require a Forest Plan Amendment

These action items are needed to implement forest plan direction, but do not require a forest plan amendment.

- 1. 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.**

The intent of this alternative is to provide structural habitat diversity for wildlife particularly migratory birds. It is most relevant on the Andrew Pickens Ranger District. The first project to establish GAPS was “Compartment 61 Wildlife Habitat Improvement Project” which called for the creation of 80 -120 acres of canopy gaps. Timber sales are not the most efficient way to implement this objective because the sales are not attractive to purchasers given the low volume per acre and small scattered nature of units.

Recommendations: This objective should be implemented using KV funding or as a stewardship project. Wildlife should assess where this could be implemented on the Andrew Pickens Ranger District taking advantage of likely funding sources and recommend a program of work.

Responsibility: SO and District Wildlife – FY 2011.

- 2. 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.**

This timber type occurs on the Andrew Pickens Ranger District.

Recommendations: District and SO specialists should identify likely areas for treatment and propose a program of work.

Responsibility: SO Timber and District Wildlife – FY 2011.

- 3. 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.**

We have completed the following:

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- a. AP 567 acres have been implemented
144 more acres through NEPA for a total of 711 acres
- b. AP 200 acres of woodland treatments planned in the “Loblolly Pine Removal and Restoration EIS”.
- c. Piedmont 1,465 acres in place (Renew, Post oak savanna, Indian Creek)
914 more acres in planning stages for a total of 2,379 acres
Georgia aster management plan includes 1,500 acres
Heelsplitter management plan includes woodland management

The most significant problem is maintaining woodlands with prescribed fire once the woodland is established. A 4,000-5,000-ac woodland target on the AP may be a little ambitious since prescribed burning is critical for woodland management maintenance. Biologists need to work with fire personnel on meeting this objective.

Recommendations: District and SO specialists should identify likely areas and amounts for woodland establishment on the AP. The piedmont Districts should continue to identify potential woodland habitat establishment during design of vegetation management projects.

Responsibility: SO Timber and District Wildlife – ongoing.

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

It was an oversight that language on weather conditions was left out. This is a typographical error and does not change any analysis or findings in the Environmental Impact Statement that accompanies the 2004 Revised Sumter Forest Plan.

Recommendations: Use an errata to update standard FW-42 to include the following.

Treatments	Temperatures	Humidity	(at target)
Wind	<u>Higher Than</u>	<u>Less Than</u>	<u>Greater Than</u>
Hand applied foliar spray	98°F	20%	15 mph
Mechanical foliar spray	95°F	30%	10 mph

Person Responsible: Forest Silviculturist, Forest Planner – FY 2011

5. **Objective 12.02 - 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.**

Management activities to restore canebrake communities include spraying privet that is competing with the cane.

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Recommendations: Develop project level decisions to restore canebrakes.

Responsibility: Sumter Zone Wildlife Biologist, Forest Ecologist – FY 2011.

Updates that require a Forest Plan Amendment

These recommended action items reflect changes in terminology at the national or regional level, but do not affect the forest's ability to meet forest plan goals & objectives standards & guidelines.

Wildfire and Prescribed Burning

Objective 20.01 Maintain condition class 1(CC 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.

This objective is still relevant, but needs to be reworded. One difficulty is that we cannot measure fire regime condition class² (FRCC) since it involves more than just fire frequency. FRCC includes vegetation composition and structure that may not be achievable even with an appropriate fire frequency. Air quality concerns also limit our ability to burn on a set interval as the airsheds of Charlotte, North Carolina and Augusta, Georgia affect the airshed over the forest. Air quality concerns relative to ozone levels reduce our ability to prescribe burn during the growing season. Fire personnel are currently building a GIS data base to measure prescribed fire accomplishments spatially and temporally. This will help determine our ability to achieve the objective.

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.

² FRCC is a classification of the amount of departure from the natural regime, in terms of the following ecological components: vegetation characteristics (species composition, structural stages, stand age, canopy closure, and mosaic pattern); fuel composition; fire frequency; severity, and pattern; and other associated disturbances (e.g. insect and disease mortality, and drought). The three condition classes are based on low (FRCC 1), moderate (FRCC 2), and high (FRCC 3) departure from the natural (historical) regime (Hann, Wendel, Havlina, Doug, Shlisky, Ayn, et al. 2003).

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There has been a change in terminology. We no longer use the term “Wildland Fire”. See attachment for changes in terminology.

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.

The term “low intensity” is misleading, since damage to plants and soil can occur with a low intensity prescribed burn. Change wording from “low intensity” to “low severity”.

Recommendations: We need to evaluate what is a realistic number of acres and a better way to measure and monitor the objective once Fire Staff personnel have completed the forest-wide prescribed burn maps. At the same time, we can update language in Standards FW-61, FW-62 and FW-65. These changes can be accomplished through a non-significant forest plan amendment.

Responsibility: Fire personnel – FY 2011

Heritage Resources

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.

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.

Need to change wording in some goals and standards to align the Sumter National Forest Heritage Program with national program goals and standards.

Recommendation: Replace current goals 31 and 32 and standards FW-92, 93, and 94 with goal and standards based on the National Heritage Program Managed to Standard that reflect FSM 2360 direction.

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Responsibility: Forest Archaeologist - FY 2014

Soils

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.

Recommendations: A non-significant forest plan amendment is needed to change wording. Specifically we need a better methodology to prove plasticity.

Person Responsible: Soil Scientist, Forest Planner

Herbicides

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.

This standard needs to be reworded. Context of this standard is the VMEIS, which is no longer our basis for risk assessment.

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

This standard is not needed, since herbicide labels provide direction on the amount of time that is needed to wait to burn after a herbicide has been applied. For instance, the Accord Concentrate label says that annual weeds may be burned 3 days after application.

Recommendations: Use a non-significant forest plan amendment to replace standard FW-40 standard and drop standard FW-41. Suggested wording for standard FW-40 is below.

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On-going Actions that require a Forest Plan Amendment

These action items are part of on-going activities.

Vegetation Management

Do we need to add a management prescription for longleaf pine?

This concern came up during an appeal on a proposal to plant longleaf pine on the Long Cane Ranger District. Language in the forest plan does allow for management for native tree species. Even though the southern end of the LC falls within the historic range of longleaf pine, it is not specifically mentioned in the 2004 Sumter forest plan. One option is to include a forest plan amendment with the Stevens Creek vegetation management proposal.

Recommendations: Planning personnel and Long Cane Ranger District silviculturist will discuss the need for a forest plan amendment with RO planning staff.

Responsibility: SO Planning and specialists, District – FY 2011

Recreation

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

Due to direction in an appeal ruling, an analysis of visitor use capacity on recreation use above the Highway 28 bridge is being completed.

Recommendations: Based on the analysis, a forest plan amendment may be completed for recreation management above the highway 28 bridge.

Person Responsible: Planning staff – FY 2011

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Actions that may require a Forest Plan Amendment

These action items need additional follow-up and review before a decision can be made if a forest plan amendment is needed.

Vegetation Management

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.

This objective is not achievable and may not be relevant. As noted in the annual monitoring reports, soil conditions are highly eroded on the Enoree and Long Cane Ranger District and personnel have had difficulty finding soils suitable for shortleaf pine where it could live for an extended period of time (40 years old or greater). A little over 200 acres have been planted on the Long Cane. Another 100 acres is in various stages of being established on the Enoree and Long Cane Ranger Districts. It is likely that only 300 to 500 acres of shortleaf pine would be established in the piedmont during the 10-year planning period. It may be better to rethink this objective and consider the benefits of short-term management (less than 40 years) of shortleaf pine from the perspective of maintaining the genetic pool and early successional habitat

Recommendations: Resource specialists need to evaluate this objective and determine what is achievable during the planning period. The forest plan would probably be updated through a forest plan amendment.

Responsibility: Forest Silviculturist, Forest Soil Scientist, Forest Planner – FY 2012

Wildlife Habitat Improvement

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

This may be a difficult target to achieve. Most wetland “creation” opportunities exist through ephemeral pond construction. These features are generally small as they rely on rainwater to keep them filled. Due to changes in federal and state regulations, creating impoundments of perennial or intermittent streams to create larger wetlands (like the four waterfowl management areas that currently exist on the Enoree Ranger District) are not as easy to implement as it was in the past. The management of existing beaver ponds and the restoration of cane-dominated riparian wetlands may help in achieving this goal. See the June 2009 IRR Final Report for a discussion of this topic.

APPENDIX B

Action Plan from the Sumter Comprehensive Review

Another concern is that language requires that work be completed in the riparian corridor. Flooding could damage any water control structures that are constructed or installed. It might be more feasible to do some work outside of the riparian corridor.

Recommendations: Resource specialists need to evaluate this objective to determine if it can be implemented. A non-significant forest plan may be needed to modify this objective.

Responsibility: Forest wildlife biologist in SO – FY 2012

Management Area 1—Turkey Creek and Upper Stevens Creek, Long Cane Ranger District

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.

Standard Sumter plan riparian corridors (SMZs) are much more than adequate to protect water quality in the Sumter piedmont districts. These wider (secondary) SMZs do not make the water cleaner or cooler. Having any kind of harvest in a skinny strip that is different from the adjacent harvest is generally impractical in timber sales.

However, the USFWS (personal communication with John Fridell, the biologist who wrote the Carolina Heelsplitter Recovery Plan) has informally suggested that the secondary zone along intermittent streams be increased from 100 to 200 feet. The rationale for this is that activities along intermittent streams are just as significant, if not more so, than activities along perennial streams in terms of water quality and aquatic organism health.

MA 1-3 No cutting within the natural floodplain except, as a last resort, for the control of pest.

This standard interferes with creating canopy gaps or managing for canebrakes along Turkey-Stevens Creek.

Recommendations: Heelsplitter plan is being prepared. Follow-up meeting to discuss USFWS's informal recommendations should be scheduled. A forest plan amendment may be needed to address one or both standards.

Person Responsible: Wildlife biologist in SO, Sumter Zone Wildlife Biologist

APPENDIX C
Issues and Action Items from Previous Reviews

Andrews Pickens RD 2005 IRR ISSUES

I. ISSUE – OUT YEAR PROJECTS

Background: Issue relates to gaining a better understanding of the districts out year program in order to meet the Forest Plan objectives primarily related to vegetation management. A discussion of the prescribed burning program would be useful along with the management of NTMB (cerulean warbler) and ruffed grouse.

Discussion: The district is presently planning on doing vegetation management in Cedar Creek and the Chauga Loblolly project. Out-year programs will alternate between similar project goals and objectives (loblolly removal/restoration of native species and wildlife habitat driven projects). FY 2006 would be another habitat project (NTMB) with another loblolly removal-type project in FY 2007. Had a discussion on the meaning of Objectives 8.01 – 8.06 in the Sumter Forest plan and whether or not they are mutually exclusive. Like all the objectives in the Forest Plan, they apply for a 10 year interval and are not mutually exclusive. The same acre of accomplishment may apply to meeting more than one objective.

Follow-up: Loblolly Pine Removal EIS should be completed in FY2011.

II. ISSUE – PERCENT OF EARLY SUCCESSIONAL HABITAT

Background: Issue relates to how and at what scale to apply the % early successional habitat as outlined in the Sumter Forest Plan. Should these be applied by management prescription, watershed, compartment or some other landscape definition? In general the smaller the scale the more constraining these percents are. In the past this percent has been applied by compartment.

Follow-up: Loblolly Pine Removal EIS should be completed in FY2011. Early successional habitat on the district is less than one percent.

III. ISSUE – WATER EFFECTS

Background: Issue relates to the not to exceed 25% disturbance within a Drainage Basin Response Unit (DBRU). Applied in the Upper Chauga EA related to removal of loblolly pine. The DBRU defined is approximately 620 acres in this EA. What is the appropriate scale to apply this requirement. This standard is not presently in the Forest Plan. Do we need to do an amendment. If so how will DBRU's be defined and what will the impact be?

Follow-up: During the AP IRR, this issue was discussed and it was concluded that this should be considered at the project level. Project planning considers impacts to water quality and quantity. Concerns with the loblolly pine removal project should be considered. The Enoree has some large landscape-level projects.

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Action Item: A follow-up meeting to review a need for forest plan guidance should be completed.

IV. ISSUE: UNMANAGED RECREATION – EQUESTRIAN USE

Background: The issue relates to resource impacts horses are presently causing on portions of the Andrew Picken’s district as well as the Long Cane and Enoree Districts. During the development of the Sumter Forest Plan it was discussed whether or not to limit horses to designated trails. It was decided at the time that the existing impacts were minor and a standard was not needed in the Forest Plan. Subsequently the district has noticed problems occurring along the Chattooga River Corridor, horse camps, adjacent landowners, and Rocky Gap horse trail related to erosion and sedimentation impacts.

Followup: Trails where impacts are occurring has been GPSed on FMS NF.

Action Item: AP RD plans to scope equestrian designated trail use in fall 2010

V. UNMANAGED RECREATION – SPECIAL AREAS

Background: Visitor impacts to sensitive plants and to rare communities are occurring in the vicinity of the waterfalls on the Andrew Pickens. Concerns related to public safety, water quality, and non-native invasive species invasions exist. Off-trail use and illegal trail use are occurring as visitation to the waterfalls increases. Other issues include revegetation efforts in botanical areas and other rare communities where native biodiversity is a primary concern.

Management Prescriptions specific to Brasstown Falls and other waterfalls such as Station Cove, Opossum Creek, Blue Hole on the Chauga, and Lee Falls: are 4D – Botanical/Zoological Area with imbedded 9F – Rare Communities (waterfall spray zones and basic mesic forests).

Brasstown Falls lacks an “official” trail, but an undeveloped campsite exists at the top of the falls. The waterfall is described in several publications which highlight scenic waterfalls in Oconee County and along the Blue Ridge Escarpment. Creation of an official trail in the area was approved by the resource RAT teams and the leadership team in FY05, but the project will not be implemented this year.

Action Items from IRR

- Develop a plan for each individual area that address resource impacts and current and future use. Station Cove serves as an example of how to begin process. Emphasize education and interpretation and involve partners
- Do an inventory of areas visited by the public and start with the Andrew Picken’s district first. This inventory may include fishing trails, trails in scenic areas, trails along the Chattooga River associated with guided trips, wilderness areas, camp site developed and undeveloped.

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- Remove the unauthorized bridge at (Done) AP District 4th Qtr FY05
Brasstown Falls.
- Correct the trail safety and access along AP District
Brasstown Falls.
 - - Plan and Design Trail 4th Qtr FY06
 - - Build the Trail 4th Qtr FY07

Follow-up: Work at Station cove has been completed. Need to look at Lee Falls, Brasstown Falls, and Long Creek falls for user-created trails. Inventory along Chattooga River for biophysical impacts has been completed.

VI. ISSUE – LONGNOSE FIRE

Background: Some of the rehabilitation efforts that took place after the Longnose fire were impacted by the hurricanes in the fall. The Longnose wildfire started on March 13, 2004 and was controlled on March 18, 2004. It burned approximately 800 acres with 750 acres being national forest system lands. Soils in the area were mostly Evard, Walhalla, and Edneytown. Streams were estimated to be 22.4 miles total with 12.6 miles ephemeral, 4.1 miles intermittent and 5.7 miles perennial. Burn severity was 400 acres low, 320 acres moderate and 80 acres high.

Follow-up: No additional action items were identified.

VII. ISSUE – RIPARIAN PRESCRIPTION

Background: Questions relate to the definition and implementation of this prescription. Definition of the Riparian Corridor, Ephemeral and Intermittent streams and how to apply the corresponding minimum widths and standards? How does this prescription relate to BMP's and is additional guidance needed?

Action Items from IRR: Natural Resources staff met with district personnel over a two-day meeting to gain a common understanding of riparian direction on the Andrew Pickens ranger district.

Follow-up: A meeting on riparian corridors was completed, which resulted in a better understanding of the riparian guidelines.

Action Item: Additional field review is needed to ensure that riparian direction is followed.

III. ISSUE – DECOMMISSIONING ROADS

Background: Issue relates to the difficulty the District has in decommissioning system and non-system roads in order to meet the national policy. This policy is reflected in a target the Forest and district is assigned each year. Goal 34 in the Sumter Forest Plan

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states “Provide a minimum transportation system that supplies safe and efficient access for forest users while protecting forest resources.” Need to discuss opportunities to decommission roads as well as make recommendations on how to better meet this national policy.

Action Items from IRR:

- Identify System Roads being managed As linear wildlife strips SO Wildlife/ Engineering 2nd Qtr. FY06
- Close or put under special use permit the unclassified road along Road #744 AP District 4th Qtr. FY06
- Re-issue Consideration for Temporary System and System Roads letter SO Engineering Done 07/20/05

Follow-up: Transportation analysis planning for the AP should be completed in FY2011. Decisions on road decommissioning would then be made in context of this analysis.

2007 Sumter NFs GMR Issues

Issue 4: Increased Recreation Pressure

Provide an update of the analysis being done on the Chattooga River including the timeline to have a decision within the agreed upon date.

The Forest’s assessment adequately addressed the issue as presented. The presentation provided by the Forest Planner and Laura Calandrella provided a thorough synopsis of the recent public meetings that were held in Georgia, North Carolina and South Carolina. There is pressure for the forest to meet the deadline agreed to with the Regional Forester and Washington Office. The forest also fully understands the risk associated with not meeting this deadline and that it centers on credibility with the interest groups and the public.

Follow-up: The environmental assessment is scheduled to be completed in fiscal year 2011.

Please provide an overview of the recently completed equestrian analysis and what was learned through the analysis that will aid the forests in addressing this use of NFS lands.

The write-up outlined the studies and analyses that have been undertaken on the forest in the past few years. The Price Waterhouse Coopers report provided a thorough analysis of the use and outlined recommendations for the Sumter NF in priority order that call for reducing or realigning facilities and the expansion of day use facilities

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Follow-up: The PricewaterhouseCoopers (PWC) helped us identify the appropriate recreation niche for the districts.

Action Item: The AP is scheduled to complete a Forest Plan Amendment for use of horses on designated trails.

With the increase in population there are increased demands on NFS lands to provide recreational opportunities for the public. Please explain the process that the forests are utilizing to address this increased demand as well as how the forests are insuring that the recreation program is viable in light of current budgets.

The Forest completed a recreation alignment process conducted in 2002, which allowed the district to establish their recreation niche and ultimately focus the limited dollars in this/these areas.

Follow-up: We continue to implement decisions that were identified. The 2008 NVUM report is available. More detailed information including trends in recreation can be found in the recreation section of the CER.

Issue 5: Urbanization/Loss of Open Space

The Forest is experiencing the effects of urbanization at a potentially higher level than other forests in the Southern Region. Explain the impacts this is having relative to the ability to meet land management plan objectives. Specifically identify those activities that are limited in their scope to implement. Loss of open space in the south, and the entire eastern half of the U.S., has been identified as a critical issue by the agency. Please describe the current or anticipated impact(s) to the forests from this loss as well as the rise in the number of TIMOs and REITs within and adjacent to NFS lands.

The Forest has substantially documented the issues (threats), limitation and opportunities posed by urbanization and loss of open space. The Forest is experiencing a rapid increase in requests for Special Use Permits for access and R/Ws to private land in holdings. Cases of trespass, illegal trails, title claims etc. are having a major impact on the Forest's lands and special uses program that are not adequately funded or staffed. In addition other factors outlined in the assessment such as prescribed burning and timber harvest will become increasingly difficult to implement because many of the new neighbors are not informed or aware of the important dynamics of living so close to the natural environment. All of these factors will have a significant negative impact on the forest ability to process and administer lands/SU cases and meet LMP objectives.

Follow-up: The Sumter NF has implemented Wyden agreements primarily in conjunction with prescribed burning on private lands. The Sumter NF is also looking for ways to coordinate with private landowners and state agencies to improve wildlife habitat and watershed conditions. One example is the Indian Creek Wildlife Habitat Restoration

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Initiative on the EN RD. Another example of this cooperative effort is the RENEW project on the LC.

Special uses are evaluated on a case by case basis, but there is an increased demand primarily for driveways and utility corridors. The Forest recently went to a zone SU to ensure consistency on how SUP permits are evaluated and managed. It is anticipated that increased trespass problems will occur since land line maintenance is not adequately funded. ARRA funds were used for line re-establishment and some trespasses may be identified as a result of this work. Due to declining budgets, the forest has shifted from LCWF purchases to LEX and tripartite to accomplish land adjustments.

Issue 9: Integration/Active Management

Please describe the Forest's process for integrating the vegetation management programs. How are the priorities determined? How are the forests priorities aligned with regional priorities?

Presently the Forest has established a series of resource advisory teams (RATs) that typically consist of program specialists from the Supervisor's Office and program and technical staff from each ranger district. The RATs meet on a quarterly basis and develop proposals. A Super RAT team coordinates the input for the integrated vegetation management plan. The Forest leadership team sets the Priorities for the Forest and they are aligned with the Regional Priorities.

One recent change in the process is that the FMS has developed a new "rapid assessment" process that will be initiated this fiscal year. This process involves looking at all resources within a landscape (analysis area). Each program specialist analyzes the area using a common template and all the information is brought together and a field visit conducted. This is truly an integrated approach.

Follow-up: The Long Cane and Enoree Ranger Districts have implemented a number of vegetation management projects at the 5th and 6th level watershed scale. Much of the piedmont is in mature to old loblolly pine forest. Therefore, vegetation projects can be planned virtually anywhere. The need for treatment vastly exceeds our ability and capacity to implement projects on-the-ground. LC and EN uses order of entry based on watershed. Other resource areas (wildlife and fire) provide input during the development of the project proposal. 7E2 & 9G2 prescriptions require more involvement from fire personnel to establish a hardwood component. The emphasis has been primarily in upland areas given the large number of acres. Little restoration work has been done in riparian areas given the sensitivity and the amount of work involved in design of projects in this management prescription. However, dense loblolly pine stands in riparian corridors represent the best opportunities for restoration to more native hardwood species.

How is dormant season versus growing season prescribed burning program determined? Are there opportunities to increase the growing season burning program without increasing effects to natural resources If not, why not?

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For the past two years the FMS has increased the acreage burned and exceeded their target. On the Sumter, the ranger districts now have a dedicated helicopter, have integrated funding sources and the use of personnel across the units. This has led to an improved safety record and increased accomplishments. The growing season burning program has increased to 15% of the overall acres treated on the Sumter while it is closer to 40% of the acres on the Francis Marion. Impacts to wildlife populations are minimal.

Follow-up: The Sumter NF has gone to a zoned fire program. The zone prescribed burning has proven to be very successful and has increased the number of acres that are prescribed burned annually. Air quality concerns will affect our ability to implement growing season burns. Need to look at guidelines in the piedmont EA on growing season burns. Need growing season burns to control sweetgum in quail areas. Integrate individual projects with the Piedmont burn EA on prioritizing needs.

What are the forests doing to address past damage associated with SPB and to be better prepared for future outbreak?

The FMS NF have experienced significant southern pine beetle (SPB) outbreaks, but not since the Sumter Revised Forest Plan was signed. Impacts to the pine resource on the Forest have been significant. The Forest has made good progress in reducing the large amount of acreage that is susceptible to SPB losses each year through commercial thinning. NEPA decisions on all districts are current for SPB, should treatments need to be implemented.

Follow-up: There have been no significant outbreaks on the Sumter since the Forest Plan was approved and the Decision Notices were signed for southern pine beetle suppression.

Action Item: The NEPA decisions for SPB control should be redone or updated to the 2004 Forest plan guidelines.

What is the status of hemlock woolly adelgid management on the forests and what precautions are being taken for public safety in recreation areas?

Since 2001, the hemlock woolly adelgid (HWA) has spread onto the Forest. This non-native pest threatens to eliminate both eastern and Carolina hemlock. In response, the Forest completed a Categorical Exclusion and Decision Memo for the management of the HWA. Insecticidal and biological controls have been used in an effort to limit damage due to the HWA. Public safety in recreation areas and along travel routes is a priority and plans are underway to deal with future tree mortality.

Follow-up: HWA continues to be an on-going problem and no cost-effective method of controlling has been developed. Hemlocks have been treated in very limited numbers at campgrounds and other recreation sites. Widespread mortality is expected over the next decade.

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What is the status of the FMS Watershed Improvement Program?

The FMS has one of the larger and more productive soil and water programs in the Region. Gully rehabilitation on the Sumter Ranger Districts is a large part of the program. This work has led to the improvement of site conditions for reforestation of areas that have been heavily eroded, however it needs to be integrated with the overall forest program of work. They have embarked on new approaches using LIDAR imagery to assist in the program.

Follow-up: The Enoree Ranger District is currently implementing the Hunting Creek stream enhancements. Bank stabilization on the Tyger and Enoree rivers and fertilizing and restoring gullies to improve soil productivity are on-going. The use of “bare ground” LIDAR to identify erosion problems and gullies looks very promising. Other uses of LIDAR, such as measuring tree heights or determining species composition are on-going.

Issue 10: Capacity

Please provide an overview of the Forest’s capability to complete the Chattooga River reanalysis, complete EMS, conduct normal monitoring and evaluation required for the current LMP, maintain the current LMP, and address the remaining LMP appeal issues?

The real question here is whether the Forest has honestly assessed its capability to meet the demands of the Chattooga River Analysis, plan amendments, EMS and eventual plan revisions. This question remains largely unanswered either in the written response to the question or in subsequent dialog with the Team. Yet the answer to this question is critical for the Forest to face future challenges and opportunities in a way that allows the Forest’s leadership to be in control of their own destiny.

Follow-up: The analysis of visitor use capacities in the upper Chattooga River is on-going.

**2009 Piedmont Districts -INTEGRATED RESOURCE REVIEW
ISSUES AND FINDINGS**

Issue 1. There are specific concerns related to prescribed burning and balancing the needs of other resources. Concerns relate to frequency of burning, season and the location of burns.

Findings from IRR: Forest plan direction on prescribed burning is adequate, but there were concerns about the impacts of hotter burns to tree mortality and soils. In general, the adverse impacts of these burns are limited to relatively small isolated spots and are within Region 8 guidelines. Unfortunately most of these hot spots are near roads and highly visible to the public. Roads tend to create drier conditions and wind eddies that

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make fires burn hotter. ,In addition, there have been drought conditions over the last several years that make trees more vulnerable to scorch.

Action Items from IRR: Develop clear integrated objectives specific to that burn to be part of burn plan. Need to address acceptable levels of mortality. The acceptable mortality levels should be set by a district ID team and should be burn-plan specific.

Follow-up: Burn objectives are identified in the burn plans. Need to input from other staff areas on burn objectives.

Issue 2. Are we meeting LRMP Goal 8 on “maintain and restore natural communities”?

LRMP Objectives include:

- **Objective 8.02** Provide 8,000-11,000 acres of woodlands in the Piedmont
- **Objective 8.03** Create conditions to restore dry-mesic oak, oak-pine, and pine-oak forest communities on 20,000 acres in loblolly pine in the Piedmont
- **Objective 8.04** Increase shortleaf pine and shortleaf pine/oak communities on 2,000 to 10,000 acres in the Piedmont.

Follow-up: The RENEW and Indian Creek Woodlands projects will establish and maintain woodland habitat in the 8B2 prescription. Piedmont woodland objective is likely to be achieved in the next five to ten year period. It is unlikely that shortleaf pine communities can be reestablished at Forest Plan levels due to poor soil conditions. Only small scattered areas for shortleaf restoration have so far been identified during project planning. Thinning and precommercial thinnings are used to improve conditions for oaks and restore oak and oak/pine communities on the districts.

2B. Is the foot print for the 8B2 management prescription within the 2004 Sumter LRMP adequate for both districts. Does the 8B2 foot print need to be modified to match the area identified in the Indian Creek Wildlife Habitat Restoration Initiative on the Enoree RD?

Follow-up: The proposed action for the Indian Creek Wildlife habitat proposal was modified and no forest plan amendment is needed. The footprint for the 8B2 management prescriptions on the Enoree will be reviewed during the next forest plan revision.

Issue 2B. A related question is how much woodlands management in the 10B and 9G2 management prescriptions? Specifically how much and where is it appropriate?

Follow-up: Specific woodland projects have not yet been identified in these two management prescriptions as emphasis has been focused on forest health issues and increasing the amount of early forest habitat.

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Action Item: A need to create woodlands for Georgia Aster habitat has been identified. There may be other opportunities to create woodlands to manage for T&E species or meet wildlife habitat requirements.

How do we balance the amount of woodlands in the 10B and 9G2 management prescription. Woodlands should be distributed across the landscape prioritizing management for rare plant communities. Woodland management is limited by prescribed burning, which is critical for maintenance.

Follow-up: Initial woodland establishment during the first five years of Forest Plan implementation has focused primarily on the 8B2 management prescription. There has been some woodland development in the 10B prescription as part of RENEW.

Issue 3 Are we violating Forest Goal 4 “Perennial and intermittent streams are managed in a manner that emphasizes and recruits large woody debris (LWD)”,

Action Items from IRR: Increased monitoring of cut log jams will be incorporated. This will allow FS to see how stable they are. Improve coordination and communication on between recreation and aquatic personnel.

Follow-up: Log jams on the Tyger and Enoree rivers on the Enoree Ranger District were cut out last year and new ones have been identified in 2010 by river users. The degree that log jams impact recreational users depends on water levels. If water levels are high then they are less of an obstacle and more easily gone around by boaters. Currently we meet Forest Plan guidelines for LWD and maintenance of canoe trails has been identified as an on-going need.

Action Item: Monitoring of impacts from log removals needs to be done periodically to assess impacts to this goal of providing sources of LWD recruitment.

Issue 4. Long Cane only - Management Area One consists of 41,653-acres and includes Turkey Creek and Upper Stevens Creek watershed areas above the confluence of Turkey and Stevens Creeks. This is approximately one-third of the Long Cane RD.

Findings from IRR: Forest plan direction on the size of MA1 is adequate, but could evaluate the size of the MA1 during next forest plan revision. Some concerns were raised about consulting with FWS within MA1 rather than just critical habitat for heelsplitter. However MA1 protects some rare plant habitats outside of heelsplitter critical habitat.

Follow-up: MA1 includes the entire Stevens-Turkey watershed, which is approximately one-third of the Long Cane Ranger District. MA1 standards are specific to heelsplitter habitat management, but are not needed throughout the entire watershed to meet habitat requirements. Concerns about standards on vegetation management in riparian corridors (SMZ) and MA1 need to be addressed.

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Action Item: Need a follow-up meeting to evaluate the standards in MA1 and develop a management plan for heelsplitter. See the Action Plan in Appendix B of this report for more information.

Issue 5. Do we need more Forest Plan direction on the minerals/mining operations on the LC or the Sumter NF?

Action Item from IRR: Initiate a request to the RO for funding to complete an EA that will identify areas of the LC district where we will consent to prospecting. This request would be based on the fact that we should have made this determination when we did the Sumter Revised LMP in 2004, therefore the FS should be responsible for this cost. J. Knibbs and R. Bergeron will develop cost estimate for the EA and draft RO request. If RO funding is not available costs associated with determining the consent to prospect will be borne by the proponent. Prepare Errata for Appendix G to correct prospecting permit process language. Continue to issue letters of authorization for gold panning until new direction is established by the RO.

Follow-up: The authority for consent to BLM minerals prospecting resides with the Regional Forester. The current thought is that consent to prospecting and approval of a site-specific prospecting plan should be done through one NEPA decision signed by the Regional Forester. Therefore, the action item identified above is no longer relevant.

Issue 6. Are we meeting Objective 12.02 “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”?

Action Items from IRR: Need better guidance on canebrake management: Need to figure out what activities are needed to recruit cane.

Follow-up: Cane has been incorporated into the native plant materials program.

Action Item: Develop project decisions to restore canebrakes.

Issue 7. Are we meeting the standards along ephemeral, intermittent, and perennial streams during timber harvesting, fireline construction, OHV layout? Are these guidelines being implemented correctly on the ground?

Action item: Follow-up silvicultural prescriptions and timber sale review with silviculturists, NEPA coordinators, and Forest planner has been completed. Functional assistance trip and follow-up training with new FS personnel on riparian corridor and BMP guidelines will be completed as needed.

Follow-up: The Forest Silviculturalist has followed up with district personnel on appropriate SMZs.

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Issue 8. Objective 9.01 states “*Construct or restore wetlands on 600 acres in the riparian corridor on the Piedmont over the 10-year planning period*”.

Findings: This 600-acre goal includes items, such as using existing ponds to provide habitat, beaver ponds, vernal ponds, etc. There are other ways to meet this objective besides constructing impoundments, such as install water levelers in beaver ponds and restoring canebrakes. Maintaining constructed impoundments for waterfowl habitat is very labor intensive.

Follow-up: Update monitoring report annually. Concerns are this objective should be better defined and 600 acres may not be realistic.

Action Item: Capture creation of vernal ponds for monitoring report. Need a follow-up meeting to determine what is a realistic number of acres for wetland management and clarify terminology.

Issue 10. We have seen some changes in how the NF land is being used. Two different types of new requests have the potential to impact NF land.

10A. Geo-caching has become very popular over the last 5 year.

Action Items: Post info on geo-caching on FMS website. Need guidance on appropriate sites to be developed with PAO and recreation team. Explore interpretative opportunities.

Action Item: Develop guidance on geo-caching as funding allows.

10B. The popularity of metal detecting has grown and often people use metal detectors to find objects on NF land.

Action Item from IRR: Follow-up on closure order to prohibit metal detecting. Heritage will develop proposal to present to FLT that would close the national forest unless authorized- see Cherokee closure order.

Action Item: Develop a closure order to prohibit metal detecting on national forest lands unless authorized.

Issue 11. Need more input from Engineering on roads/access issues before we complete EAs and implement.

Action Item: Engineering should be a part of the IDT during project planning and during implementation.

Issue 12. Are key successional stage habitats being provided?

Background: The Long Cane and Enoree RDs have implemented timber harvesting and wildlife projects to work toward these desired conditions.

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- **Mgmt RX 9G2** - 4 to 10% early successional habitat and 20% late successional habitat
- **Mgmt RX 10B** - 10 to 17% early successional habitat and 10% late successional habitat
- **Mgmt RX 8B2** - 10 to 17% early successional habitat

Findings from IRR: Due to some GIS data loss, unable to give acreages at this point in time. Forest plan guidance is adequate on 9G2 management prescription. Increased prescribed burning is anticipated to encourage oak establishment, but there are concerns about repeated top-killing.

Follow-up: Follow-up with district silviculturists to review past DNs to get acreages on early-successional habitats created. Monitor oak regeneration created in 9G2 management prescription. Need to update GIS database so we can have better numbers on acreages. There are some differences between the acres in the DN and actual timber sale acres. Migrating to FSVeg spatial will address some of the problems with GIS and database management.

Issue 13. Enoree only - Some loblolly pine stands have been dropped from regeneration activities to provide potential old growth in the 7E1 management prescription, but were not needed to protect scenic integrity.

Background: If we narrow the one-quarter mile corridor to the existing riparian corridor, it would mean that some pine stands that are not within the viewshed could be regenerated. However, a new analysis of potential old growth would be required.

Findings from IRR: Based on discussions, it was not determined that this concern would be revisited during the next Sumter Plan revision. While some pine regeneration has been dropped, thinnings are allowed under the current direction. Management activities that encourage hardwoods are preferred.

Followup: This concern will be revisited during the next forest plan revision. No Action Items were identified.

Issue 14. Are we meeting Forest Plan Goals & Objectives and Standards for managing for heritage sites?

- **Goal 32 states** “*Meet the demand for quality heritage learning and tourism opportunities.*”
- **Standard FS-92 states** “*Significant sites are evaluated for eligibility to the “National Register of Historic Places and are submitted to the State Historic Preservation Officer for review.*”

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Action Item: Heritage goals and objectives in the Forest Plan need to be updated to be consistent with national heritage goals and objectives. See the Action Plan in Appendix B for more details.

2009 Prescribed Burn Review

During the 2009 prescribed fire season there were concerns raised from FS employees and the public, about tree mortality in areas that were prescribed burned on the Francis Marion and Sumter National Forests. All Districts on the Forest were tasked with disclosing the areas where high intensity fire may have increased fire effects resulting in mortality. The review team did a site visit to these stands on 6/8/2009. Findings included that: Mortality in these stands did not exceed 3% in pole size loblolly pine. Hot burns or problem burns consistently have ignition times between 1400 and 1700. A commonality of burns where overstory mortality drew attention seems to be primarily due to a late day ignition on both piedmont and coast.

Findings from Review: Findings from the prescribed burn review were presented during the Sumter IRR. Recommendations included igniting prescribed burns earlier in the day and develop objectives specific to each burn plan.

Action Item: No additional actions have been identified to address this concern.