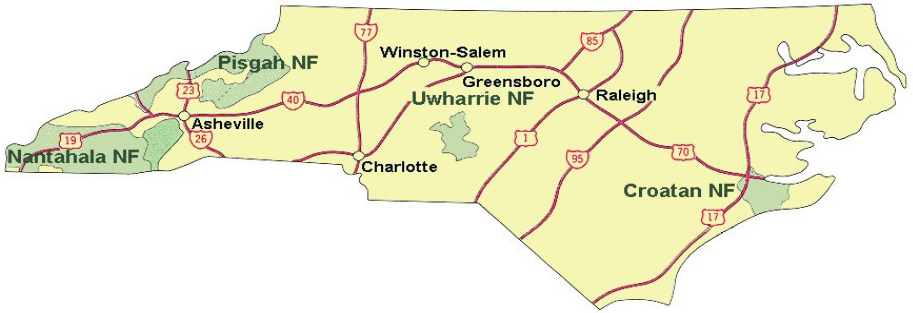
National Forests in North Carolina

FY 2001 Monitoring and Evaluation Report

Nantahala * Pisgah * Uwharrie * Croatan



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CONTENTS

PREFACE

Forest plan monitoring and evaluation reports are essential elements for maintaining valid, effective and implementable Land and Resource Management Plans (LRMPs). Nantahala and Pisgah National Forests (N/P Forests) operate under an LRMP signed in 1987 and significantly amended (Amendment 5) in 1994. The LRMP for Uwharrie and Croatan National Forests was signed in 1986.

The Annual Monitoring and Evaluation Report for FY 2001 is organized into three chapters, with an introduction and links to additional reports. The first chapter summarizes the historical context detailed in FY 2000 M&E Report and answers the question, "Where have we been?" Chapter 2 discloses the results of FY 2001 monitoring. Chapter 3 evaluates those results and answers the questions, "What does it mean and what will we do about it?"

Boardwalk at Cedar Point – Croatan National Forest

The organization of Chapter 1 generally follows the seven Criteria from the Montreal Process Criteria and Indicators for the Conservation and Sustainable Management of Temperate and Boreal Forests, endorsed by the United States in 1995. See http://www.mpci.org

The organization of Chapters 2 and 3 broadly follows three main emphasis areas of the Government Performance and Results Act (GPRA) as outlined in the USDA Forest Service Strategic Plan (2000 Revision). Those emphasis areas are Ecosystem Health, Multiple Benefits to People, and Effective Public Service. See http://www.fs.fed.us/plan/.

KEY FINDINGS AND CERTIFICATION

Ecosystem Health

- Hemlock woolly adelgid, a non-native pest that kills hemlock trees over several years, was discovered within the boundaries of Pisgah and Nantahala National Forests. The level of infestation was heavy in some areas indicating the insect had been present for 3 or 4 years. Experimental release of a beetle that preys on the adelgid was undertaken and results will be monitored over time.

- The unprecedented outbreak of southern pine beetle in the mountains shows no indications of abating.

- The second best hard mast crop (primarily acorns) reported since surveys began in 1983 occurred in the fall of 2001. Summer soft mast was below average, while fall soft mast was above average.

- Monitoring for suspended sediment in the Upper Tellico Watershed indicates extensive OHV trail system runoff control work has been successful in reducing sediment levels at nine of ten monitoring stations.

- Overall trends in trout, associated nongame fish, and aquatic invertebrate species populations across the Nantahala and Pisgah National Forests have remained stable during the last 10 years.

- Monitoring of ground disturbance during timber sales demonstrates disturbance levels are well below the 15% maximum set by Region 8 Soil Quality Standards. This indicates there is little risk to long term soil productivity from current timber management practices.

- Bald eagles have been confirmed as nesting on the Croatan National Forest.

Multiple Benefits to People

- Recreation use during FY 2001 was up from FY 2000. Approximately $1,100,000 was collected in the Fee Demonstration Program and used to help fund a variety of recreation improvements.

- Approximately 1,280 acres received timber harvest treatments during FY 2001, producing 10.2 million board feet of timber for market. Two-age regeneration cutting continued to be the most commonly used harvest method on the Nantahala and Pisgah National Forests, while thinning was most common on the Croatan.

Effective Public Service

- No new road construction occurred during FY 2001. Nine miles of system roads were decommissioned.

- Overall, heritage resources have not been impacted by implementation of Forest projects. However, historical structures are deteriorating at an alarming rate and are in need of maintenance.

- Continued dialogue, coordination and consultation with American Indians has been positive for all parties, creating increased awareness of issues, concerns and opportunities.

Forest Supervisor's Certification

I have evaluated the monitoring results and I have directed that the Action Plan be implemented according to the time frames indicated, unless new information or changed resource conditions warrant otherwise. I have considered funding requirements in the budget necessary to implement these actions.

With these completed changes, the LRMPs are sufficient to guide forest management for FY 2002, unless ongoing monitoring and evaluation identify further need for change.

Any amendments or revisions to the Forest Plans will be made using the appropriate NEPA procedures.

John F. Ramey 8/9/02

JOHN F. RAMEY Forest Supervisor

GENERAL INFORMATION ON THE NATIONAL FORESTS IN NORTH CAROLINA

Nantahala and Pisgah National Forests

Located in the Blue Ridge province of the Appalachian Mountains, these National Forests together contain 1.1 million acres dispersed across the 21 mountain counties of western North Carolina. This western 5.7 million acres of the state is seventy-five percent forested, but most of the forests are privately owned. The lands that today make up Pisgah and Nantahala National Forests were purchased from private landowners, mostly during the early 1900's.

Photo of the Appalachian Mountains

The elevations are typically from 2000 to 5000 feet, with numerous higher peaks. The trees are largely deciduous and highly diverse. Rainfall averages 30 to 45 inches per year and there are abundant perennial streams.

The 21-county area where the Forests are located has a resident population of 770,000, with the great majority within four counties: Buncombe, Burke, Caldwell, and Henderson. The largest metropolitan area is Asheville, with an area population of 215,000. However, the Forests are within a day's drive of population centers such at Atlanta, Charlotte, Cincinnati, and Nashville.

Uwharrie National Forest

Uwharrie National Forest is located in the rolling hills of the Piedmont of North Carolina. A variety of hardwood and pine forests are found here. The 50,000+ acre land base consists of many small public land tracts surrounded by private lands, with the largest public land block adjacent to Badin Lake. The National Forest is named for the Uwharrie

Mountains, some of the oldest in North America. The Uwharrie is located at the crossroads of both prehistoric and historic settlements. Its legacy is one of the greatest concentrations of archeological sites in the Southeast. The first gold in the American colonies was found nearby in 1799 and old mining sites still remain. Today, the National Forest is situated within a 2-hour drive from the largest population centers in the State. Recreation use is growing, especially in the Badin Lake area and along the 20-mile Uwharrie National Recreation Trail.

Croatan National Forest

Croatan National Forest is comprised of over 159,000 acres located in North Carolina's coastal plain. The land base is more consolidated than the other National Forests in North Carolina, and bounded on all sides by water bodies – White Oak River to the west, Neuse River and its tributary, the Trent, to the north and east, and Bogue Sound and the Atlantic Ocean to the south. Water-related recreation is popular on the Forest. Cherry Point U.S. Naval Reservation is adjacent to the Forest and the population of the three-county area where the Forest is located is 159,000.

Chapter 1. The Historical Context for Monitoring

This chapter will set the stage for monitoring by briefly describing the history, condition, and management of the forests.

1. Historical Context - The Forests' Contribution to the Conservation of Biological Diversity

The LRMP for **Nantahala and Pisgah National Forests (N/P)**, as amended in 1994, states three broad goals related to the conservation of biological diversity:

1) Maintain, and where possible, enhance the diversity of plant and animal communities. Maintain viable populations of existing native wildlife, fish, and plants.
2) Threatened and endangered plant and animal species are protected, managed or recovered consistent with the Endangered Species Act; and sensitive species are conserved.
3) Attributes and resources of special interest areas including wilderness, research natural areas, and areas registered by the North Carolina Natural Heritage Program are maintained.

Goals for the **Uwharrie and Croatan National Forests (U/C)** are nearly identical, plus special emphasis is placed on the unique pocosin environment of the Croatan.

THE DIVERSITY OF VEGETATION

Nantahala and Pisgah National Forests are remarkable for the variety of woodland communities that exist along elevational and moisture gradients: red spruce and Fraser fir at the highest elevations; downslope, northern hardwood communities grading into upland mixed oak forests at mid-elevations; with mixed cove forests containing many tree species in the moist hollows; and pine communities on the lower, drier sites.

- Approximately 68 pteridophytes, 1501 grasses and forbs, and 52 vine species have been identified on the Forests.
- **Uwharrie National Forest** in the piedmont supports many of the same tree species found in the mountain forests, but is lacking those high-elevation communities. It contains more lowland pine communities such as loblolly, shortleaf and longleaf. A higher proportion of the Uwharrie is in pine, and more of the hardwoods are mixed with pines.
- Upland ponds are a unique feature of the Uwharrie Mountains where depressions have an impervious subsoil layer. Surrounding these impoundments are plant communities of species typically found on large river flood plains of the area. Species include ash, water oak, willow oak, button bush, greenbriar, wire grasses, and sedges.
- **Croatan National Forest** is ecologically part of the Atlantic Coastal Flatwoods Section and contains many unique plant communities such as pocosins (raised peatlands), forested wetlands, longleaf pine savannas, swamps, interstream flats, and estuaries. Pond pine, loblolly pine and longleaf pine are the most frequent tree species, with small amounts of hardwood forest.

THE DIVERSITY OF ANIMALS

- References from the 1970's and 80's document the following species diversity on the Nantahala and Pisgah National Forests:

Mammals	65 species
Reptiles	36 species
Amphibians	44 species
Birds	159 species
Fish	108 species

- **Uwharrie National Forest** also provides productive, diverse habitat for a wide variety of species. Most of the mammalian species in North Carolina are present in the Piedmont. Sixty species of reptiles and amphibians are present. This diversity is in part supported by the upland ponds where breeding sites remain relatively undisturbed.
- **Croatan National Forest** supports 46 mammals, 122 birds, and 94 reptiles and amphibians.

THREATENED AND ENDANGERED SPECIES

- As of FY 2000, there were 14 animals and 17 plants listed as T&E species that occur or might occur on the Forests. Table 1-1 lists these species, the year of listing, status (T=threatened, E=endangered) and occurrence on the Forests.

TABLE 1-1. FY 2000 STATUS OF T&E SPECIES

ANIMALS	YEAR LISTED	STATUS	ON FORESTS?
Appalachian Elktoe Mussel	1994	E	Occurs
Red Wolf	1967	E	Extirpated
Spotifn Chub	1977	T	Occurs
Peregrine Falcon	1970	E	Occurs
Eastern Cougar	1973	E	May occur
Carolina Northern Flying Squirrel	1985	E	Occurs
Spruce-fir Moss Spider	1995	E	Occurs
Noonday Snail	1978	T	Occurs
Indiana Bat	1967	E	Occurs
Little-Wing Pearly Mussel	1988	E	Occurs
Virginia Big-eared Bat	1979	E	May occur
Red cockaded Woodpecker	1970	E	Occurs

PLANTS	YEAR LISTED	STATUS	ON FORESTS?
Sensitive Jointvetch	1992	T	May occur
Spereading Avens	1990	E	Occurs
Swamp Pink	1988	T	Occurs
Dwarf-flowered Heartleaf	1989	T	May occur
Mountain Bluet	1990	E	Occurs
Mountain Golden Heather	1980	T	Occurs
Small Whorled Pogonia	1982	E	Occurs
Heller's Blazingstar	1987	T	Occurs
Bunched Arrowhead	1979	E	May occur
Mountain Sweet Pitcher Plant	1988	E	May occur
Green Pitcher Plant	1979	E	May occur
White Irisette	1991	E	May occur
Blueridge Goldenrod	1985	T	Occurs
Rough-leaved Loosestrife	1987	E	Occurs
Schweinitz Sunflower	1991	E	Occurs
Virginia Spirea	1990	T	Occurs
Rock Gnome Lichen	1995	E	Occurs

2. Historical Context - The Forests' Contribution to the Maintenance of the Productive Capacity of Forest Ecosystems

The LRMP goals related to maintaining the productive capacity of forest ecosystems:

1) A variety of silvicultural treatments are used to provide a continuous supply of wood products (with emphasis on high quality hardwoods for N/P Forests).
2) Utilization of mineral resources is provided in an environmentally sound manner.

FORESTRY

- For the N/P forests, upland hardwoods cover approximately 45 percent of the Forests, while cove hardwoods cover approximately 30 percent. The remaining 25 percent is made up of white pine, yellow pine, northern hardwood, and spruce fir communities. For C/U forests, loblolly, shortleaf, and longleaf pine are the major forest types on the Croatan, while the Uwharrie is about an even mix of hardwoods such as oaks and southern pine types such as loblolly and shortleaf.
- Of the 1,024,902 acres of N/P National Forest land, 275,798 acres (27%) are suitable for timber production (see LRMP, p. E-7). For C/U, approximately 68,000 of the 210,000 acres (32%) are suitable for timber production.

Photo of Log Truck

FOREST BOTANICAL PRODUCTS

- The two mountain Forests have administered a large program of issuing permits and collecting fees from collectors of botanical products. At the same time, studies are underway regarding sustainable levels of harvest and rates of growth and reproduction.
- Galax, moss, vines, ginseng, bloodroot, and black cohosh are among the most widely collected botanical products. Ginseng is thought to be much less prevalent than 100 years ago, while the comparative abundance of many others is not known.

Photo of Ginseng

MINERAL RESOURCES

- As of 1994 there were 5 active mine and lease areas on the N/P Forests. Olivine, limestone, dimension stone, and aggregate stone were the mining products.

- There was no oil, gas, geothermal, or other energy development within the Forests.
- A substantial amount of rock hounding was occurring for gem and mineral specimens including olivine, kyanite, gold, and a variety of semi-precious gemstones.
- Decades old abandoned mines were a safety concern.

3. Historical Context - The Forests' Contribution to the Maintenance of Forest Ecosystem Health and Vitality

FOREST HEALTH PROTECTION

- The major native forest insects and diseases affecting the Forests are southern pine beetle (SPB) and oak decline. A dozen species of plants, Gypsy moth, hemlock woolly adelgid, and dogwood anthracnose are the major non-native agents of concern.
- Large landscapes on the Forests are at risk of damage from these agents for a number of reasons: cohorts of similar-aged, mature upland oak stands that grew up after the elimination of the American chestnut are now affected by or susceptible to oak decline. Fire suppression and lack of regeneration harvests or thinning has resulted in dense, slow growing pine stands susceptible to SPB attack. Among non-native invasive plants, species such as princess tree, Japanese honeysuckle and multiflora rose may push aside native species, and kudzu and oriental bittersweet can hinder tree regeneration as well.

AIR QUALITY

- Air quality is also a factor in ecosystem health. A uniform haze frequently blankets the mountains, largely the result of sulfate particles emitted by fossil fuel fired power plants generating the electricity we Americans use. Low-level ozone is another threat to air quality. It is primarily a by-product of automobile exhaust, and can affect the growth of some plants and trees and make breathing difficult for susceptible humans. One management action that may affect air quality is prescribed burning.

4. Historical Context - The Forests' Contribution to the Conservation and Maintenance of Soil and Water Resources

The LRMPs state two broad goals related to the conservation and maintenance of soil and water resources:

1) Riparian areas, floodplains, wetlands, and their existing ecosystems are perpetuated and enhanced.
2) Water quality and soil productivity are maintained.

WATER RESOURCES

Generally, water quality across the Forests has met or exceeded the State water-quality standards for fresh water. State reports at the time of the LRMPs did not specify any water quality limitations associated with National Forest silviculture or other land management actions. However, in recent years a few stream segments have been identified as impaired due to erosion from nearby roads. These areas have been recognized as needing restoration activities.

SOILS

The LRMPs contain numerous standards and mitigation measures prescribed to prevent soil erosion and stream sedimentation. Also, in North Carolina, land-disturbing activities on the National Forests must comply with the intent of the North Carolina Sedimentation Control Act of 1973, which requires that measures must be sufficient to "restrain accelerated erosion and prevent visible sediment from entering intermittent and perennial streams and perennial water bodies."

5. Historical Context - Maintenance of Contribution to Global Carbon Cycles

This criterion is not currently monitored at the National Forest scale. Evaluations are underway to determine if there are appropriate indicators for national forests to monitor that would contribute meaningfully to a national evaluation.

6. Historical Context - The Forests' Contribution to the Maintenance and Enhancement of Long-Term Multiple Socio-Economic Benefits to Meet the Needs of Societies

The LRMP contains two broad goals related to this criterion:

1) Protect the beauty of the Forests through special attention to visually sensitive areas and the careful application of resource management activities.
2) Provide different environmental and social settings for outdoor recreation opportunities that range from primitive to developed. Provide for a variety of recreational activities appropriate to these settings and the forest environment. Provide all recreation visitors to the National Forests the opportunity to participate in activities and programs and use facilities to the highest level of access practicable.

SCENERY

During the 1980's, views of road construction and clearcut harvesting could be seen across the Forests. Members of the public found this objectionable, since it made the vistas appear less natural. The heavy reliance on clearcutting as the preferred regeneration method came under question, and this was addressed through NP LRMP Amendment 5 (1994) and changes to National policy. As a result, clearcutting was greatly reduced in favor of "two-aged" and "group selection" regeneration. The expected outcome would be that clearcut areas would blend in as the young stands got older, and new harvest areas would be less visible from the start.

RECREATION

The National Forests in North Carolina receive heavy recreation use. On the Nantahala and Pisgah Forests, the heaviest use occurs along the NC 276 corridor through the Pisgah District. Other hot spots are the Curtis Creek and Wilson Creek areas, the Nantahala River, the US 64 corridor from Franklin to Highlands (Cullasaja Gorge), and parts of

the Forests accessible from the Blue Ridge Parkway. On the Uwharrie, the heaviest use occurs along the fringes of Badin Lake. On the Croatan, the heaviest use occurs along the Neuse and White Oak River corridors.

- The type of recreation available in a particular area of the Forests depends in large part upon whether or not there are roads present, and if the roads are open to vehicular traffic. The types of recreation range from solitary backpacking and hunting in the most remote parts of the Forests, to high tech visitor centers, and everything in between.
- The original Forest Plans signed in the 1980's projected less emphasis on developed sites and more emphasis on "dispersed recreation" such as making loop hiking trails.
- Amendment 5 of the N/P LRMP(1994) placed additional acres into "backcountry" management, reinforcing the aim of dispersing recreation use across more areas, and away from high use areas. By increasing "backcountry areas" it was thought that some of the use could also be diverted from designated wilderness areas where the numbers of visitors were too high.
- Management also recognizes that disabled access was an issue to be dealt with in the developed sites.

HERITAGE RESOURCES

- The National Forests in North Carolina contain nearly 5,000 formally recorded heritage resources, prehistoric and historic archeological sites, historic structures, and traditional cultural properties.

- The coastal plain **Croatan National Forest** shows signs of human occupation from prehistoric times. The naval stores industry operated here throughout the 18th century and was important to the early growth of the state and source of the nickname "Tar Heels." Tar kilns found on the Forest warrant protection and interpretation. Rising sea levels had long before covered many of the earliest prehistoric sites, paleo-indian and early archaic. The largest prehistoric sites tend to be along the larger and deeper creeks and rivers where both aquatic and terrestrial resources were available. These sites are especially susceptible to shoreline and storm erosion, as well as recreational damage. Several civil war sites and early land conservation sites from the Civilian Conservation Corps located on the Forest are amenable to interpretation.

- The piedmont **Uwharrie National Forest** is extremely rich in prehistoric and historic sites. It contains the volcanic stone used for tools by American Indians for 10,000 years throughout the southeast. The area is also known to have been traditionally used by the Catawba Indians. Recreation use, including Off Highway Vehicles (OHV), mountain bikes and horses on the Uwharrie makes site protection difficult. The geology of the Uwharrie Mountains also led to America's first (1799) gold rush. The Forest has scattered gold mines that range from small family operations to larger industrial sites.

- The mountain **Pisgah National Forest** was the first National Forest in the eastern United States. The first tract of land purchased under the Weeks Act, the Curtis Creek Tract, is located on the Grandfather Ranger District near Marion, NC. The Grandfather RD is located between the rolling piedmont hills and the Appalachian Summit, making for rich and diverse ecozones, used extensively and intensively during prehistoric and historic times.

- The mountain **Nantahala National Forest** is similar to the Pisgah. However, its proximity to larger rivers and valleys made it a prehistoric and historic crossroad. The Eastern Band of Cherokee Indian Qualla Boundary is adjacent to the Nantahala National Forest. The Trail of Tears (1838) is located on the Wayah, Tusquitee and Cheoah Ranger Districts. National Forests in North Carolina (NFsNC) continue to work closely with the four federally recognized tribes with an interest in local national forest management. These are Eastern Band of Cherokee Indians, Cherokee Nation, United Keetoowah Band of Cherokee, and Catawba Indian Nation.

7. Historical Context - The Forests' Contribution to the Framework for Conservation and Sustainable Management

Planning/NEPA. The LRMP for Nantahala and Pisgah National Forests was signed in 1987, and significantly amended (Amendment 5) in 1994. The LRMP for Croatan and Uwharrie National Forests was signed in 1985. The Croatan draft plan revision was issued in FY 2000. Finalization of that revision is expected during FY 2002. Plan implementation has been proceeding at a variable rate and is documented in the Monitoring and Evaluation Reports.

Conservation Education. The Forest Discovery Center is the hub of on-site conservation education programs for the Forests. Programs designed to achieve specific curriculum objectives are presented to thousands of elementary students each year. Large numbers of additional interpretive programs and special events enable thousands of others to gain knowledge of forest ecosystems and the effects of human interactions with the environment. Outreach programs are conducted by ranger district and supervisor's office personnel and consist of conservation field days held in cooperation with other agencies, various school programs, teacher education, and a variety of specialized programs presented to requesting organizations.

Land Adjustment. At the end of FY 2000, the total acres of National Forest System land in North Carolina were 1,246,034 acres. Every year land trades and purchases have typically proceeded as opportunities become available, and when there is legislative and public support. Some objectives of the Land Adjustment program are to:

1. Consolidate property by acquiring inholdings when available and trading outlying parcels for adjacent parcels or administrative sites;
2. Acquire lands adjacent to the Appalachian Trail;
3. Acquire lands within the Chattooga watershed.

Infrastructure. The Forests provide approximately 190 developed recreation sites including visitor centers, campgrounds and picnic areas capable of serving over 22,000 persons at one time; over 1,700 miles of trails, 2,418 miles of Forest roads, and numerous "semi-developed" dispersed campsites. There is always a backlog of maintenance work and upgrades to meet accessibility standards. Generally, some progress is made each year on upgrades and maintenance depending upon available funds. However, the road maintenance backlog is quite large.

Chapter 2. FY 2001 Monitoring Results

Chapter II of this report will present the monitoring results through FY 2001 that pertain to the various elements of the environment discussed above. The chapter will be organized according to the goals of the Government Performance and Results Act (GPRA) that are also reflected in the Forest Service Strategic Plan. The goals are:

1) Ecosystem Health
2) Multiple Benefits to People
3) Effective Public Service

Key Event(s) Affecting Management of the National Forests in North Carolina During FY 2001

The discovery of infestations of hemlock woolly adelgid on the Pisgah and Nantahala National Forests has serious implications for future forest management strategies. Much will depend on the outcome of trial release of a predatory beetle that may prove useful for pest management. While hemlock makes up only a small percentage of forest trees, it is critically important in certain habitats such as riparian corridors. It is also important from an aesthetic standpoint, and losses could affect scenic drives, trails and overlooks throughout the Forests.

Hemlock woolly adelgid on eastern hemlock

Monitoring Results Related to Ecosystem Health

ECOSYSTEM DIVERSITY

Goal or Desired Condition: Maintain, and where possible, enhance the diversity of plant and animal communities.

<table>
<tr><th>Monitoring Item</th><th>Results</th></tr>
<tr><td>Creation of early successional habitat</td><td>
<table>
<tr><th rowspan="2">National Forests in North Carolina</th><th>Regeneration/Early Successional Habitat in FY 2001 (acres)</th><th>Desired Annual Amount per LRMPs (acres)</th></tr>
<tr><td>1,354</td><td>4,320</td></tr>
</table>
Early Successional Habitat Created Compared to Desired Level
</td></tr>
<tr><td>Selection of old growth restoration areas per plan direction</td><td>Currently, there are about 204,600 acres in designated old growth restoration areas. This includes 191,000 acres in 49 large and medium patches, and about 13,600 acres in 325 small-sized patches. The patches are distributed in 56 of the 60 administrative watersheds on the Nantahala/Pisgah. (MIS REPORT 9-25-01)</td></tr>
<tr><td>Status and management of major forest pests and diseases*</td><td>Southern Pine Beetle: SPB activity was low in the Piedmont and coastal plain during FY 2001. In contrast, SPB continued in outbreak status over most of the Pisgah and Nantahala. SPB populations have been so high that eastern white pine, not normally considered a host, is routinely being attacked. SPB spots were even noted in red and Norway spruce stands during 2001, a very unusual but not unprecedented occurrence. The total number of spots on Pisgah and Nantahala National Forests exceeded 1,000, with a total estimated affected area approaching 5,000 acres.</td></tr>
</table>

<table>
<tr><th>Monitoring Item</th><th>Results</th></tr>
<tr><td></td><td>Oak Decline: The advancing age of the upland oak forest results in more and more acres being vulnerable to oak decline. Oak decline susceptibility can be reduced with harvest and regeneration which decreases the overall age of the upland oak forest. Recent monitoring results indicate that oak composition in regenerated stands can be maintained with appropriate silvicultural treatments.</td></tr>
<tr><td></td><td>Gypsy Moth: The National Forests in North Carolina remain outside the generally infested APHIS quarantine zone, so outbreaks are eradicated when detected. No new outbreaks have been detected since 1996.</td></tr>
<tr><td></td><td>Non-native Invasive Plants: There are 152 non-native plant species, 14 of which are considered invasive. Japanese honeysuckle, the grass Microstegium vimineum and multiflora rose are thought to infest thousands of acres of NFsNC lands. The table below lists the most common invasives and the habitat potentially affected.
<table>
<tr><th>Scientific Name</th><th>Common Name</th><th>Habitat Affected</th></tr>
<tr><td>Ailanthus altissima</td><td>tree-of-heaven</td><td>forest openings, gorges</td></tr>
<tr><td>Albizia julibrissin</td><td>silk tree</td><td>forest openings, gorges</td></tr>
<tr><td>Celatrus orbiculata</td><td>oriental bittersweet</td><td>forest openings, mesic hardwood</td></tr>
<tr><td>Glechoma hederacea</td><td>ground ivy</td><td>mesic hardwood</td></tr>
<tr><td>Ligustrum sinense</td><td>privet</td><td>bottomland, riparian</td></tr>
<tr><td>Lonicera japonica</td><td>Japanese honeysuckle</td><td>forest openings, mesic hardwood</td></tr>
<tr><td>Microstegium vimineum</td><td>A grass</td><td>bottomland, riparian</td></tr>
<tr><td>Miscanthus sinensis</td><td>A grass</td><td>bottomland, riparian</td></tr>
<tr><td>Paulownia tomentosa</td><td>princess tree</td><td>rocky, dry cliffs</td></tr>
<tr><td>Poa compressa</td><td>Canada bluegrass</td><td>rocky, wet cliffs</td></tr>
</table></td></tr>
</table>

Monitoring Item	Results
	Pueraria montana — kudzu — lower elevation forest *Rosa multiflora* — multiflora rose — mesic hardwood *Rumex acetosella* — sheep sorrel — grassy balds *Spirea japonica* — Japanese spirea — rocky cliffs, hardwood understory
For complete Report on Forest Health Issues go to http://www.cs.unca.edu/nfsnc/me2001/fh.pdf	

Goal or Desired Condition: Attributes and resources of special interest areas including wilderness, research natural areas, and areas registered by the North Carolina Natural Heritage Program are maintained.

Monitoring Item	Results
Status of Wild and Scenic Rivers	The Forest began the process of developing a wild and scenic river management plan for Wilson Creek. The plan will be closely coordinated with landowners adjacent to the river, the County Commissioners, and the public.

SPECIES DIVERSITY

Goal (a.k.a. Desired Condition): Maintain viable populations of existing native wildlife, fish, and plants. Threatened and endangered plant and animal species are protected, managed or recovered consistent with the Endangered Species Act; and sensitive species are conserved.

Habitat and population status of Management Indicator Species (MIS)

An extensive analysis of forest community types and special habitats occurred during FY 2001. Each community type and special habitat is associated with one or more MIS. Results of the analysis are summarized in Tables II and III below:

TABLE II. Forest Community/MIS Associations, Amount of Community Type and Trend , if any.

Biological Community	Forestwide Estimate of Amount of Community	Associated Management Indicator Species
Fraser fir forests	See below (red spruce/fraser fir)	Fraser fir, golden-crowned kinglet, Carolina northern flying squirrel
Red Spruce/fraser fir forests	14,800 ac	Golden crowned kinglet, Carolina northern flying squirrel, solitary vireo
Grassy and heath balds	18 occurrences	Mountain oat-grass, Catawba rhododendron
Northern hardwood forests	52,100 ac	Carolina northern flying squirrel, twisted stalk, solitary (blue-headed) vireo
Carolina hemlock bluff forests	6 occurrences	Golden-crowned kinglet, Carolina hemlock
Cove forests	Rich= 107,500 ac Acidic= 174,500 ac Cove(other) =2,800ac	Ginseng, black cherry, buckeye, basswood, solitary (blue-headed) vireo
Oak and oak/hickory forests	High El R.Oak: 40,600 ac Mesic Oak/H: 283,340 ac Dry Mesic Oak/H: 21,7000ac	Red oak, white oak, hickories
White pine forests	White pine: 69,000 ac (plantations) WP/Oak : 17,600 ac (natural community)	White pine
Yellow pine mid-successional communities	SP-Oak/heath: 10,200 ac Yellow Pine: 30,377 ac	Pine warbler (low elevational shortleaf/Virginia pine)

Xeric yellow pine forests	29,000 ac 17,400 ac	Pine warbler (pine/oak/heath low elevation habitats) pitch pine, table mountain pine, turkey beard, mid-successional)
Reservoirs	36,000 ac	Index of biotic integrity, largemouth bass, bluegill
Forested seep wetlands	22,000 ac (high prob)	Golden saxifrage, umbrella leaf, mountain lettuce
Bogs	So. App. Bogs: 12 sites Swamp Forest Bogs: 13 sites	*Sphagnum spp.*
Mountain ponds and ephemeral pools	27 ponds/pools (22 ac) 9 Beaver Ponds (3 ac)	Spotted salamander (vernal pools)
Barrens and glades	1 occurrance (300ac)	Prairie dropseed, slender wheatgrass
Shaded rock outcrops and cliffs	66,282 acres (high probability)	Green salamander, Jordan's salamander, alumroots, saxifrages
Open rock outcrops and cliffs	141 occurrances (800 ac)	Raven, peregrine falcon, Biltmore sedge, wretched sedge, mountain oatgrass
Caves		Cave-dwelling bats
Alluvial forests	21,000 ac Alluvial Forest 55,000 ac other floodprone areas	Two-lined salamander, raccoon, mink
Coldwater streams	5,060 mi	Brook, brown, and rainbow trout, blacknose dace, *Cotus spp*.
Coolwater streams	400 mi	Smallmouth bass, white sucker, *Moxostoma spp*., index of biotic integrity
Warmwater streams	210 mi.	Index of biotic integrity, largemouth bass, bluegill

TABLE III. Special Habitat/MIS Associations, Amount of Special Habitat and Trend, if any.

Special Habitat	**Forestwide Estimate Of Amount**	**MIS**
Old Forest Communities (100+ years old)	171,000 ac	Black bear (dens, low levels of disturbance), bats (roosting and foraging habitats in mature forests), pileated woodpecker (cavities, foraging habitat), lung lichens
Early successional (0-10 years old)	26,800 ac (yr 2000) 2040 ac (5 yr av) downward trend	White-tailed deer (all communities and elevations), eastern wild turkey (all communities), ruffed grouse (early and mid-successional all communities) rabbits, rufous-sided (eastern) towhee, bobcat, field sparrow (brushy, riparian thickets)
Early successional (11-20)	46,290 ac (yr 2000) Peak of upward trend	Rufous-sided (eastern) towhee, ruffed grouse (early and mid-successional all communities)
Soft mast producing species	High Probability 5,800 ac downward trend	Wild grape (*vitus spp.)*, cedar waxwing (all communities soft mast)
Hard mast-producing species (>40 yrs)	681,000 ac increasing trend	Black bear, wild turkey, gray squirrel, white-tailed deer
Hard mast-producing species (>40 yrs)	681,000 ac increasing trend	Black bear, wild turkey, gray squirrel, white-tailed deer
Cove forests	Rich coves ac 107,500 ac Acidic cove ac 174,500 ac Other cove +/- 2,800 ac	Ginseng, black cherry, buckeye, basswood, solitary (blue-headed) vireo
Mixed pine/hardwood forest types (successional stage and hard mast)	52,521 increasing trend	Black bear, eastern wild turkey, gray squirrel, white-tailed deer
Contiguous areas with low disturbance (< 1 mile open travelway/4 square miles	160,832 ac	Black bear (all communities)
Contiguous areas with moderate disturbance levels (<1 mile open travelway/2 sq miles	576,240 ac	Eastern wild turkey (all communities)
Large contiguous forest areas	38 Patches (302,000 ac)	Ovenbird (in breeding range, moderately productive sites), northern parula warbler (in breeding range, requires cover and riparian habitats) veery, solitary (blue-headed) vireo
Permanent grass/forb openings	3,000 ac	Eastern wild turkey, eastern meadowlark, rabbits

Den trees (>36" dbh)	See below	Black bear
Snags and dens (>22" dbh)	See below	Pileated woodpecker, raccoon
Small snags and dens	Ave. at 80 yr. Cove= 4/ac Upland=3/ac Pine-2/ac	Gray squirrel, white-breasted nuthatch, yellow-bellied sapsucker
Downed woody debris – all sizes (foraging and cover habitats)	High Accumulation Small wood: 18,000 Large wood: 386,000 Low Accumulation (approx: 600,000)	Black bear, pileated woodpecker, ruffed grouse, Jordan's salamander

Habitat and population status of Management Indicator Species (MIS) [cont.]

Table IV. MIS species, estimated trend, and biological community or special habitat indicated by the species

Species	Estimated Population Trend	1	2	3	4	5	6
Black Bear	Increase	Old Forest Communities	Hard mast-producing species	Mixed Pine/hardwood forest types	Contiguous areas with low disturbance	Den trees (>36 dbh)	Downed woody debris-all sizes
Carolina northern Flying Squirrel	Static	Fraser Fir Forests	Red Spruce/fraser fir	Northern hardwood forests			
White Tailed Deer	Static To Decreasing	Early-successional (0-10)	Hard mast-producing species	Mixed pine/hardwood forest types			

(TABLE IV Cont.)

Species	Estimated Population Trend	1	2	3	4	5	6
Raccoon	Increase	Alluvial Forests	Snags and dens (>22 dbh)				
Rabbit	Decrease	Early successional (0-10)	Permanent grass/forb openings				
Gray Squirrel	Static	Hard mast-producing species	Mixed pine/hardwood forest types	Small snags and dens			
Bobcat	Static	Early successional (0-10)					
Mink	Static	Alluvial Forests					
Bats	Varies By Species	Caves	Old Forest Communities				
Pileated Woodpecker	Increase	Old Forest Communities	Snags and dens (>22 dbh)	Downed woody debris – all sizes			
Golden Crowned Kinglet	Decrease	Fraser Fir Forests	Red Spruce/Fraser Fir Forests	Carolina Hemlock bluff forests			
Veery	Static	Large Contiguous Forest Areas					

Species	Estimated Population Trend	1	2	3	4	5	6
Solitary (Blue headed) Vireo	Increase	Red Spruce/Fraser fir Forests	Northern Hardwood Forests	Cove Forests	Large Contiguous forests		
Northern Parula Warbler	Static	Large Contiguous Forest Areas					
Ovenbird	Decrease	Large Contiguous Forest Areas					
Yellow-Bellied Sapsucker	Decrease	Small snags and dens					
Rufous-Sided (Eastern) Towhee	Decrease	Early-successional (0-10)	Early successional (11-20)				
White-breasted Nuthatch	Increase	Small snags and dens					
Cedar Waxwing	Static	Soft mast-producing species					
Pine Warbler	Static	Yellow pine mid-successional forests					
Raven	Static	Open rock outcrops and cliffs					
Field Sparrow	Decrease	Early successional (0-10)					

Species	Estimated Population Trend	1	2	3	4	5	6
Eastern Wild Turkey	Northern Mtns = Increase; Southern Mtns = Decrease	Hard mast-producing species	Mixed pine/hardwood forest types	Contiguous areas with moderate disturbance	Permanent grass/forb openings		
Ruffed Grouse	Static	Early successional (0-10)	Early successional (11-20)	Downed woody debris			
Peregrine Falcon	Increase	Open rock outcrops and cliffs					
Eastern Meadowlark	Absent	Permanent grass/forb openings					
Green Salamander	Static	Shaded rock outcrops and cliffs					
Jordan's Salamander	Static	Shaded rock outcrops and cliffs					
Spotted Salamander	Static	Mountain ponds and ephemeral pools					
Blue Ridge two-lined salamander	Static	Alluvial Forests					
Brook, Brown and Rainbow Trout, sculpin	Static	Coldwater streams					

Species	Estimated Population Trend	1	2	3	4	5	6
Largemouth Bass, Bluegill	Static	Reservoirs					
Blacknose Dace	Static	Coldwater streams					
Freshwater mussels	Varies By Species	Warmwater streams					
Smallmouth Bass, white/redhorses	Static	Coolwater streams	Warmwater streams				
Spotfin Chub	Static	Warmwater streams					
Oak and oak/hickory forests (red oak, white oak, hickory)	Static						
Cove Forests (buckeye, basswood, cherry, ginseng)	Increase						
White Pine Forests	Increase						
Xeric Yellow Pine Forests (pitch & Table Mtn. Pine)	Decrease						
Fraser fir	Decrease						

Species	Estimated Population Trend	1	2	3	4	5	6
Grass/Heath Balds	Grassy Balds – Decrease Heath Balds - Increase						
Northern Hardwood	Increase						
Non-native Invasives	Increase						
Forested Seeps	Static						
Barrens & Glades	Increase						
Shaded Rock Outcrops	Increase						
Open Rock Outcrops	Downward						
Bogs	Static						

Coldwater stream fish populations trends	**Long-term monitoring continued on approximately 12 streams on FY 2001.** These efforts on 34 miles of streams within Nantahala and Pisgah National Forests continue to support earlier findings that while individual populations exhibit high annual variability in age class structure and biomass, **overall trends in trout and associated nongame species populations across the Nantahala and Pisgah have remained stable during the last 10 years**.
Odonate Diversity on the Pisgah National Forest	**Adult and nymphal odonates were collected from 200 sites during FY 2001.** This large-scale inventory effort is underway because of the proportion of odonate species appearing on the rare species list. Many of these species are thought to be on the list due to a lack of survey and habitat association data rather than actual rarity. Results of these efforts will be available by the FY 2003 M&E Report. Initial data analysis indicates several pockets of odonate diversity on the Pisgah National Forest.

Anadromous and Catadromous Fish Species Utilization of the White Oak River System	**Eight miles of the White Oak River were monitored in FY 2001.** These studies focused primarily on identifying overall aquatic community health using the Index of Biotic Integrity, but will also elaborate on the seasonal use of coastal streams on the Forest by striped bass. At this point, it does not appear that striped bass use Forest streams in large numbers; however, the data suggests that **large streams on the Croatan National Forest may be more important as overwintering areas than as spawning areas for coastal striped bass**.
Reservoir Fish Communities	**Long-term monitoring of reservoir fish communities continued on approximately 160 acres of mountain reservoirs in FY01.** Reservoirs included in this monitoring are Hiwassee Lake, Fontana Lake, Santeetlah Lake, and Chatuge Lake on the Nantahala National Forest and Badin Lake on the Uwharrie National Forest. Based on the age of the reservoirs and results of long-term population monitoring efforts, it is thought that habitat enhancement is one key to maintaining reservoir fish population stability on the Nantahala National Forest. To this effect, approximately 120 acres of reservoir shoreline habitat were improved on the Nantahala National Forest during FY01. The same theory is currently being investigated on Badin Lake (Uwharrie National Forest). As with coldwater stream fish populations, reservoir fish communities exhibit high annual variability in age class structure and biomass, although **overall trends in reservoir fish species populations on the Nantahala and Uwharrie National Forests have remained stable during the last 10 years**.
American Eel populations	**American eel populations** were inventoried in approximately 20 miles of streams across the Croatan National Forest to continue mapping the utilization of Forest waters by this catadromous species. Data for this initiative is still considered preliminary, and will be reported in subsequent Monitoring and Evaluation Reports.
Aquatic rare species and habitat	**Approximately 160 miles of stream across the National Forests in North Carolina were evaluated for rare aquatic species presence and suitable habitat during FY01.** These inventories were done to maintain compliance with environmental laws and regulations during the NEPA process for forest management activities, as well as to further the science of individual species.

Aquatic invertebrate populations	**Aquatic** invertebrate populations were monitored in 20 streams across the Nantahala and Pisgah National Forests. As with fish populations, aquatic invertebrate populations tend to exhibit high annual variability in community structure and biomass; however, **overall trends in aquatic invertebrate populations across the Nantahala and Pisgah National Forests have remained stable.**
Freshwater mussel populations	**Freshwater mussel populations continue to be monitored in the Little Tennessee and Nolichucky Rivers** through cooperative efforts with the U.S. Fish and Wildlife Service and North Carolina Wildlife Resources Commission to implement the recovery plan for the endangered Appalachian Elktoe (*Alasmidonta raveneliana*). In addition, aquatic habitats suitable for all freshwater mussels continue to be inventoried to improve the reliability of mapped species' ranges and distributions across the National Forests in North Carolina. Despite regional declines in some species' populations, no declines have been documented on the Forests. In fact, **the known range and distribution of freshwater mussels on the Forests continues to expand** as inventories of suitable habitat are completed.
Channel habitat conditions	**Aquatic habitat conditions were mappe**d **at the channel unit scale along approximately 40 miles of mountain streams.** Part of this effort was to complete baseline inventories of "reference stream condition", while other miles were part of project-level monitoring. As this database grows in individual records and statistical reliability, it will allow Forest aquatic biologists to make accurate, scientifically valid presentations and decisions about resource conditions and potential effects during the land management process.
Progress being made toward recovery of T&E Species	**There were 32 Threatened and Endangered species that occur or may occur on the National Forests in North Carolina at the end of FY 2001. Highlights:** Peregrine Falcon was delisted by the US Fish and Wildlife Service. Discovery of our first Bald Eagle nest on the Croatan National Forest., fledged at least one bird. Continued coordination with US Fish & Wildlife Service. Monitoring and habitat restoration/protection are major activities. See table below.

T & E Common Name	Progress toward Recovery Objectives FY 2002	Forest
Sensitive Jointvetch	Still none found in project-level surveys	Croatan
Dwarf Wedge Mussel	Still none found in project-level surveys	Croatan
Appalachian Elktoe	coor. with FWS,TVA monitoring	N/P
Red Wolf	no specific action	C/N/P
Spotfin Chub	coor. with FWS, TVA monitoring	N/P
Smooth Coneflower	Still none found in project-level surveys	Uwharrie
Am. Peregrine Falcon	continued monitoring & protection - all pairs accounted for	N/P
Eastern Cougar	no specific action	N/P
Spreading Avens	site protection	N/P
Car. N. Flying Squirrel	continued habitat surveys, site protection	N/P
Rock Gnome Lichen	site protection, new sites found	N/P
Bald Eagle	new nest site, site protection	C/U
Swamp Pink	site protection	N/P
Dwarf-flw Heartleaf	Still none found in project-level surveys	N/P
Mountain Bluet	site protection	N/P
Mt. Golden-Heather	habitat maintenance, monitoring & protection	N/P

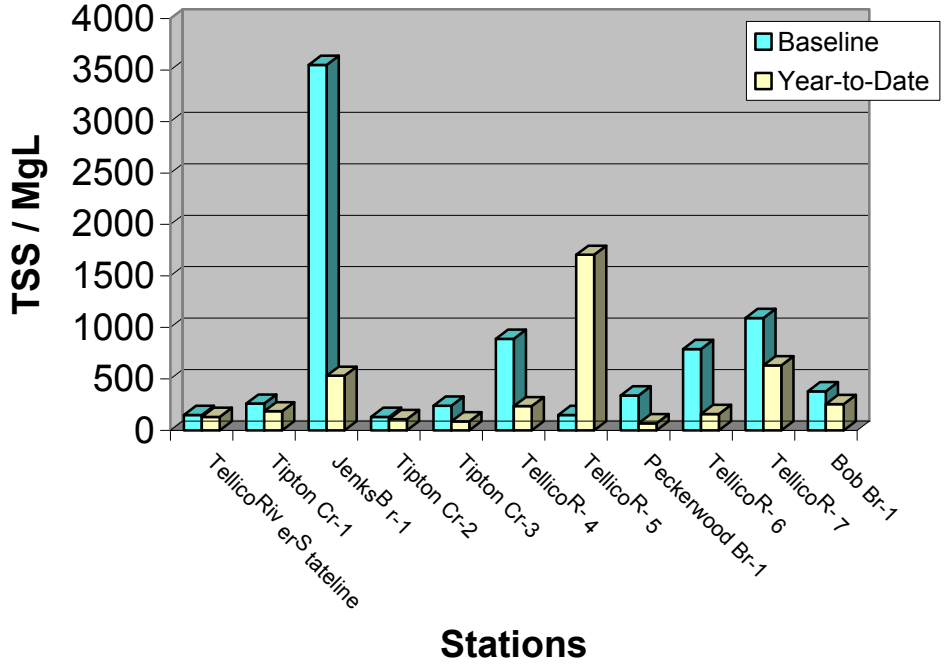
To read a report on Loosestrife monitoring on Croatan National Forest go to http://www.cs.unca.edu/nfsnc/me2001/loosestrife.pdf

The 2001 Red-cockaded woodpecker report is available at http://www.cs.unca.edu/nfsnc/me2001/rcw.pdf

WATERSHED CONDITIONS

Goal (a.k.a. Desired Condition): Riparian areas, flood plains, wetlands, and their existing ecosystems are perpetuated and enhanced. Water quality and soil productivity are maintained.

Monitoring Item	Results
Upper Tellico Watershed	**Monitoring for suspended sediment in the Upper Tellico Watershed, in cooperation with TVA, continued throughout 2001.** This sampling followed extensive OHV trail system runoff control work initiated in 2000. This work involved reconstructing existing water bars, constructing new water bars, and installing new culverts and bridges. A recent visual inspection of several trails showed that the treatment had diverted a large portion of the runoff away from streams, thus reducing sediment pollution. As shown in the following graph, suspended sediment concentrations decreased for all stations except Tellico R –5. The reason station R-5 increased has not yet been determined. The downward trend suggests that the runoff control work did accomplish some of its objectives. Since so much sediment was deposited in the stream channels, it may take some time before the streams are able to flush those sediments and restore the desired aquatic habitat conditions. Suspended sediment levels, while decreasing, are still above desired levels. Continued timely heavy maintenance will be required to keep the runoff control features properly functioning. If this is done, the stream system will have the energy necessary to continue flushing its channels.

Monitoring Item	Results
	Comparison of Baseline and Year-to-Date Suspended Sediment Median Concentrations Collected from 11 Stations in the Upper Tellico River Watershed  **Sediment runoff controls were completed on the Fletcher Creek and Spencer Branch Trails**. Approximately 4 miles of the trails were completed for runoff controls. The confluence of Fletcher Creek and Spencer Branch flows into the Hendersonville Reservoir where the North Fork Mills River begins. On the **South Fork Mills River** trail systems (i.e. South Fork Mills, Cantrell, Mullinax,

Monitoring Item	Results
	Bradley, and Wolf Ford Trails), runoff controls were completed in FY2000. Approximately 15 miles of trails were completed for runoff controls. Runoff controls on the Wolf Ford trailhead parking lot near the old USGS gaging station were improved in FY2000. A few dispersed campsites in various places along the South Fork Mills River may undergo improvements for runoff controls in FY2001 with the help of the Pisgah district recreation planner. Another proposed runoff controls project within the South and North Fork Mills River watershed systems will be the Yellow Gap road runoff controls project slated for completion in FY2001. Monitoring of streams for sediment concentrations continues on the **Tellico River** in conjunction with the help of the TVA. From June 1998, through December 2000, 97 samples have been collected. Over this period the amount of total suspended solids has been dramatically reduced through implementation of Best Management Practices inside the Off Highway Vehicle area. Actions such as certain trail closures, trail relocations, and culvert, bridge, and riparian area restoration have proven effective at reducing sediment transport to area streams.
Trail Runoff Control	**Suspended sediment monitoring continued in the South Fork Mills River** to monitor changes as the result of the trail runoff control project implemented in 1999 and 2000. However few samples were collected due to the extremely low water flows and infrequent significant rainstorms. The districts have continued to implement trail runoff control projects as resources have become available.
Changes in Land Productivity	Soil and water improvements were accomplished on approximately 48 acres. This work included closure/restoration on more than 14 miles of old roads or trails; several miles of open road runoff control; and 1,500 feet of shoreline stabilization on Chatuge Lake, at Jackrabbit recreation area, in partnership with the Tennessee Valley Authority (second year of a two year project).

Monitoring Item	Results
	There was additional storm damage in the Hickey Fork and other tributaries of the Upper Laurel River from storms and floods on two consecutive weekends. Emergency Relief for Federally Owned funds were approved for use in restoring the area. Research plots on the Croatan that were established as part of the Long-Term Soil Productivity Study (LTSP) network reached eight years of age during the reporting period. The LTSP is a major research endeavor that will yield valuable information on the effects of forest management over a period of several decades (see http://www.fs.fed.us/research/wfwasr/soils_brochure) **ONSITE monitoring.** ONSITE, a systematic procedure for monitoring and evaluating soil/site disturbances associated with management activities, was reinstituted, following a lapse of several years. Earlier years' ONSITE findings were generally favorable. FY 2001 ONSITEs are summarized below. **FY01 –** ONSITEs were conducted on thirteen units (thru early FY02). None exceeded acceptable standards for percent areal disturbance. Two units were well within acceptable limits for areal disturbance but warranted follow-up action relative to localized/site specific conditions; those units should be revisited during FY02 to evaluate effectiveness of follow-up action.

Monitoring Item	Results
	Aug thru Oct 2001 ONSITES on Pisgah, Nantahala, and Uwharrie, including both Dedicated and Temporary Disturbances:

.

Treatment/Method	# Units	% Avg.	Range	>15%/ >10%
Commercial Thinning/Rubber-tired Skidder	3	4.7	2.4 to 6.0	0 / 0
Shelterwood/Rubber-tired Skidder	2	5.7	5.5 to 5.9	0 / 0
Shelterwood/Tracked Skidder	1	12.2	NA	0 / 1
Two-age Shelterwood/Skyline Cable	2	7.9	6.5 to 9.2*	0 / 0
Two-age Shelterwood/Rubber tired Skidder	5	10.2	3.8 to 18.8*	1 / 3

Aug thru Oct 2001 ONSITES on Pisgah, Nantahala, and Uwharrie, including Temporary Disturbances only:

Treatment/Method	# Units	% Avg.	Range	>15%/ >10%
Commercial Thinning/Rubber-tired Skidder	3	4.1	2.4 to 5.8	0 / 0
Shelterwood/Rubber-tired Skidder	2	5.3	4.7 to 5.9	0 / 0
Shelterwood/Tracked Skidder	1	12.2	NA	0 / 1
Two-age Shelterwood/Skyline Cable	2	5.5	1.7 to 9.2*	0 / 0
Two-age Shelterwood/Rubber tired Skidder	5	6.9	3.8 to 9.3*	0 / 0

* In a few instances, disturbances associated with segments of temporary haul road, skid road, and/or landing that were outside the boundary of an ONSITE unit, but in place for the sole benefit of that unit (serving no other unit or area), were included in the areal disturbance estimates.

Data from earlier ONSITES (1993-1995) go to http://www.cs.unca.edu/nfsnc/me2001/onsite.pdf

Monitoring Results Related to Multiple Benefits to People

OUTDOOR RECREATION

Goal (a.k.a. Desired Condition): Protect the beauty of the Forests through special attention to visually sensitive areas and careful application of resource management activities.

Monitoring Item	Results
Scenery being maintained or enhanced.	**Scenery rehabilitation during FY 2001 included the following:** ***Uwharrie National Forest:*** Attractive split rail fencing is being used to close off illegal OHV access, instead of using unsightly earth mounds. ***Wayah Ranger District:*** Renovated/improved a picnic site at Ledbetter Creek in the Nantahala Gorge with steps, shaping, seeding, and saving an old historic bridge as a picnic pad. Also, added landscaping at Ferebee.

Goal (a.k.a. Desired Condition): Provide different environmental and social settings for outdoor recreation opportunities that range from primitive to developed. Provide for a variety of recreational activities appropriate to these settings and the forest environment. Provide all recreation visitors to the National Forests the opportunity to participate in activities and programs and use facilities to the highest level of access practicable.

Monitoring Item	Results
Amount and Types of Recreation Use	**The types of recreational activities enjoyed by forest visitors were unchanged during the past year.** The most popular activities continue to be driving for pleasure, picnicking, hiking, camping, and a wide variety of trail uses. Hunting and fishing continue to be popular, along with whitewater rafting and rock climbing. The National Forests in North Carolina continues to be the most visited National Forest in the Eastern United States. In order to better serve visitors, improvements have been made in the quantity and quality of opportunities at specific sites across the forest. **Overall, recreation use was up during FY 2001 due to good weather, and an increasing area population.** In response, we are trying to improve maintenance on our existing sites and trails, upgrade outdated facilities and, where funding is available, construct new trails and facilities. **The Fee Demonstration Program continues to support forest recreation**. As appropriated funding has dropped over the last decade, the fee demo program has become increasingly important in allowing the Forest to maintain existing services and fund site improvements. In FY 2001, the $1,100,000 collected in fee demo helped to fund the following projects: - An addition to the raft takeout along the Nantahala River - Reconstruction of the parking at the Ferebee Recreation Area - Reconstruction of the main access trail at Whiteside Mountain - Completing a picnic shelter at the Brown Mountain ORV area - Removed extensive dead vegetation (pine-bark beetle) at Tsali Campground - Reconstruction of campsites at Tsali Campground - Renovated the sliding area at Sliding Rock - Provided additional lifeguards and after hour toilet facilities at Sliding Rock

Monitoring Item	Results
	During the past year, work also was accomplished at several other recreation facilities: - Work was completed on the new 40-site Cane Break Horse Camp (Uwharrie). - The road into Lemmons Branch Boat Ramp was constructed. Parking area and ramp construction have begun. - Reconstruction of both interpretive trails at the Cradle of Forestry was started. Both trails will be fully accessible to the disabled when complete. - Replacement of the trail bridge to the Joyce Kilmer Wilderness was started. - Several water systems were replaced at developed recreation sites. - Several SST toilets were replaced on the forest at dispersed areas. - An extensive sewerage project was completed at Roan Mountain.

FORESTRY/SILVICULTURE

Goal or Desired Condition: A variety of silvicultural treatments are used to provide a continuous supply of wood products with emphasis on high quality hardwoods.

Monitoring Item	Results
Timber Stand Improvements (TSI), FY 2001	**TOTAL for FY 2001 = 2,865 acres LRMP PROJECTED = 2,487** **The Forests continue to excel in TSI efforts.**

<table>
<tr><th>Monitoring Item</th><th>Results</th></tr>
<tr><td>Acres Harvested in FY 2001 by Method, and LRMP Projected Harvest</td><td>
<table>
<tr><td>ALL NFsNC FORESTS</td><td></td><td></td></tr>
<tr><td>Method</td><td>FY 2001 Harvested Acres</td><td>LRMP Projections</td></tr>
<tr><td>Clearcut/Shelterwood</td><td>54</td><td>235</td></tr>
<tr><td>Two-Aged</td><td>555</td><td>2,532</td></tr>
<tr><td>Uneven-Aged</td><td>4</td><td>500</td></tr>
<tr><td>Thinning</td><td>647</td><td>-</td></tr>
<tr><td>Salvage</td><td>2</td><td>-</td></tr>
<tr><td>Special Cut</td><td>18</td><td>-</td></tr>
<tr><td>TOTAL</td><td>1,280</td><td>3,267</td></tr>
</table>
The Forests continue to harvest timber on less acres annually than projected in the LRMPs.
</td></tr>
<tr><td>Status of Timber Sale Volume in Relation to LRMP Maximum – FY 2001</td><td>
<table>
<tr><td>Allowable Sale Quantity (ASQ)</td><td>Volume Offered</td><td>Volume Sold</td></tr>
<tr><td>TOTAL = 43 MMBF/Year</td><td>8.4 MMBF</td><td>5.4 MMBF</td></tr>
</table>
*MMCF = Million Board Feet
The Forests continue to harvest less timber volume than projected in the LRMP’s.
</td></tr>
</table>

HERITAGE RESOURCES

General Direction: Heritage Resources, which are listed on or eligible for the National Register of Historic Places or the National Register of Historic Landmarks, are protected. Suitable sites are developed and/or interpreted for public use and enjoyment.

<table>
<tr><th>Monitoring Item</th><th>Results</th></tr>
<tr><td>Heritage Resource Sites Identified in Relation to Acres Surveyed</td><td>
<table>
<tr><th></th><th>Sites & Properties Identified</th><th>Acres Surveyed</th></tr>
<tr><td>FY 2001</td><td>119</td><td>2,994</td></tr>
<tr><td>TOTAL</td><td>4,725</td><td>163,809</td></tr>
</table>
</td></tr>
<tr><td>Tribal Relations</td><td>Continued dialogue, coordination and consultation with American Indians has been positive for all parties, creating increased awareness of issues, concerns and opportunities. Partnerships are being forged to preserve and interpret heritage resources.</td></tr>
<tr><td>Site Protection</td><td>Sixty-eight (68) heritage resources regarded as susceptible to vandalism or looting, potential impact from project implementation, visitor use, natural deterioration, and/or storm damage were visited and formally assessed and recorded.

Structural historical resources are deteriorating at an alarming rate. Condition assessments need to be completed and maintenance and restoration need to be implemented. National Register of Historic Places listed buildings at the Cradle of Forestry on the Pisgah National Forest are planned and budgeted for this work in FY 2002. The Thornburg House on the Uwharrie Ranger District and the Wilson Lick Ranger Station on the Wayah Ranger District are two other top priorities for the Forest. Others include the Cliffside Complex on the Highlands Ranger District, the Pine Cliff Picnic Shelter on the Croatan Ranger District and Forestwide Civilian Conservation Corps era shelters, bridges and lookouts.

Overall, implementation of Forest projects, recreation developments, timber harvest, road construction, etc., has not resulted in adverse impacts to heritage resources. However, monitoring has shown that better project implementation coordination is needed for wildlife field management activities and timber harvesting when allowed on archeological sites.</td></tr>
</table>

Monitoring Item	Results
	Off Highway Vehicle use continues to adversely impact sites on the Forest, specifically on the Uwharrie Ranger District. Horse Trail use on the Uwharrie is also affecting site preservation. The Forest needs to enforce trail use regulations, close some areas to use and reroute trails or mitigate their impacts.
To view the complete FY 2001 Heritage Resources Report go to http://www.cs.unca.edu/nfsnc/me2001/arch.pdf	

Monitoring Results Related to Effective Public Service

Monitoring Item	Results
Land Adjustment in Support of LRMP Goals	**Several significant land acquisition projects were completed during the past year: Chattooga Watershed.** Six parcels totaling 154 acres were purchased during 2001 in the Chattooga Watershed area on the Highlands Ranger District. The Chattooga purchase program, begun in 1992, is a multi-state project involving National Forests in North Carolina, South Carolina and Georgia. The program's goal is to protect this significant watershed which includes a federally designated Wild and Scenic River (the Chattooga River), unique rock bluffs which are home to several federally listed plant and animal species, and a federally designated Wilderness (Ellicott Rock).  Chattooga Watershed **Appalachian Trail.** 6 parcels totaling 468 acres were purchased during 2001 to protect the Appalachian Trail. 305 miles of the 2,150-mile National Recreation Trail pass through North Carolina. The program goal is to protect the trail and adjacent areas so it can continue to provide hikers with a unique recreation experience. **Other Projects**. Other significant land acquisition projects include the purchase of 219 acres of land on the Thompson River and 83 acres on the Horsepasture River, both located on the Highlands Ranger District, and 543 acres adjacent to Lake Logan on the Pisgah Ranger District

Monitoring Item	Results
Special Uses Compatible With LRMP Goals	Special use authorizations allow for the use of National Forest System lands for a wide variety of purposes. Some authorize facilities and services necessary for public health, welfare and safety while others authorize uses of a private nature. **In North Carolina we have approximately 1,315 Special Use permits authorizing use of National Forest System lands ranging from small spring developments and driveways to major federal highway systems and gas pipelines**. Of these permits, approximately 930 are for land-based uses and 385 permits are for recreation activities such as outfitting, guiding and whitewater rafting.  Whitewater Rafting on the Forest Key projects include: - 20 NC Department of Transportation Projects for the improvement of existing public roads. - Three Federal Highway projects for major multi-lane systems - Havelock Bypass (Croatan), Corridor K (Cheoah), NC 215 (Pisgah) - Relicensing of four hydroelectric projects involving 12 impoundments. Program emphasis will continue to be the monitoring of existing uses to ensure they are operated and maintained with minimal impact on the land. New applications are managed to ensure they are consistent with the Forest Land and Resource Management Plans and Forest Service Regulations.

Monitoring Item	Results
Resolution of Health & Safety Issues	**FA&O facilities are overall in fairly good condition in that all imminent and serious danger problems are funded and repaired.** There still exists a need for more funding to take care of preventative maintenance, accessibility, and non-serious danger problems.
Road Improvements/ Maintenance	**The overall condition of the forest's classified road system remains fairly constant; i.e., the Forest is not funded to the degree necessary to operate and maintain these roads to the level they were designed for.** The Forest receives approximately 15% of what is needed for annual road maintenance and approximately $15,000,000 is now required to sufficiently take care of existing deferred maintenance requirements on this Forest.
Road Initiatives	**There was no new road construction of system roads in FY 2001**. Approximately 3.5 miles were reconstructed. Major maintenance items were accomplished on an additional 20.0 miles. The Forest continues to decommission roads which are no longer required for forest management and/or are causing significant environmental damage, and when funding is available to do so. Most of the decommissioning has taken place on "unclassified" old woods roads. In FY 2001, nine miles of system roads were decommissioned. The Forest Service Public Road Program is in the developmental stage. The Program is expected to be approved and funded within the next Highway Bill (FY 2003). The Program will allow the Forest Service to designate a large number of roads as "public roads" and, in doing so, receive fuel tax funds that are directly tied to the use of national forests and grasslands. These funds will be used to better operate and maintain the Forest's transportation system.

Special Report – Fire Management

Implementation Action Items of the *2001 Federal Wildland Fire Management Policy* are to be incorporated as guides in addition to and concurrently with LRMP guidelines.

Action Item	**Status**
Develop a comprehensive, interagency strategy for fire management to help achieve ecosystem sustainability.	Currently the Forests have in place successful interagency relationships in the areas of fire suppression and prevention education. The increased success is hard to quantify but can be seen in the continued success in an increasingly difficult field of operations. Monitoring of both the Brushy Creek and Larman fires is currently being developed which will utilize pre-burn data collected for wildlife and botany.
Fire Management Plans and land management plans will appropriately incorporate mitigation, burned area rehabilitation, and fuels reduction and restoration activities that contribute to ecosystem sustainability.	Fire Management Plans for the Nantahala and Pisgah NF's and the Croatan and Uwharrie NF's are in the review stage. These plans update the previous plans to incorporate the changes in direction brought about by the National Fire Plan. Some of the changes include tying the use of fire as a tool more directly to the goals of the Forest Plans.
Complete, or update, Fire Management Plans for all areas with burnable vegetation.	Fire Management Plans in the internal review stage.

Action Item	Status
Develop an interagency strategy for wildland fire workforce management. *Review the structure of fire management and fire suppression organizations.*	As part of the NFP, direction to create a full time fire suppression force for the Forest is being analyzed. Current direction concerning analyzing costs doesn't allow for certain efficiencies to be factored in. Many of the cost savings coming from interagency cooperation, workforce efficiencies and equipment agreements cannot be adequately measured.
Provide full funding for fire management and associated programs to ensure successful implementation of the 2001 Federal Fire Policy	The National Fire Management Analysis System is an efficiency-based analysis of costs associated with fire suppression response as related to Net Value Change resulting from historic levels of fire damage or loss. This program only covers initial attack costs and past historic costs. Funding for the additional programs of fire management: fire prevention and education, hazardous fuels reduction, preattack and detection are not analyzed. Funding for those programs is discretionary and out of the control of the Forests.
Establish a mechanism for coordinated interagency and interdisciplinary oversight of implementation of the 2001 Federal Fire Policy. *Expand the regular and ongoing participation in fire management program management and implementation to all federal agencies with fire-related capabilities and responsibilities.* *Improve coordination among all federal, State, tribal and local organizations.*	At the Forest level a Fire Planner position, shared with the Chatt/O, was created and filled to increase the ability to provide management participation in the planning process both internally and in cooperation with other agencies. The Asheville Coordination Center is currently working to increase interagency representation with the addition of a dispatcher position to be filled by FWS. The Asheville Hotshot program continues to offer excellent training and interagency work opportunities.

Action Item	Status
Standardize and implement operational policies and procedures. *Develop a national plan for weather services that provides products, standards and services to support the full range of responses required by both federal and State wildland fire management agencies.*	
Develop a national, interagency communication and education program to enhance understanding of the fire management mission for both internal and external audiences.	To enhance cost efficiency the Forests work in a support role to the State agencies, this has been and continues to be a very positive role for the agencies and the customers. The Forests also work in a liaison role for the State in the national arena.
Establish clear mechanisms for evaluating the 2001 Federal Fire Policy and its implementation.	At the Forest level a Fire Planner position, shared with the Chatt/O, was created and filled to increase the ability to provide management participation in the planning process both internally and in cooperation with other agencies.

Monitoring Item	Results
Fuels Reduction	Prescribed Burns were monitored and the post burn data is being used on the District to customize Burn Plan prescriptions. Data collection is scheduled to be performed on a three-year rotation at this time. Data collection points have been entered into a GPS Data Dictionary and are available for future use and reference.

NATIONAL FIRE PLAN (NFP) UPDATE

We are proceeding at a fast pace, but with caution.

Items Accomplished by June FY 2001:

- Briefed line officers on the objectives of the NFP
- Informed all employees of the objectives, impacts and opportunities of the NFP
- Secured funding for the currently proposed actions (FY 2001)
- Identified workforce needs to meet NFP
- Requested nine developmental training positions, three were approved in FY 2001.
- Conducted 3 formal Job Fairs and numerous informal contacts
- Advertised and hired 16 new firefighter positions
  11 firefighters
  4 engine operators
  1 dispatcher
- Completed NEPA for 26,000 acres of fuels treatment by prescribed burning
- Completed NEPA for 300 acres of fuels treatment by mechanical methods
- Prescribe burned 24,535 acres for hazardous fuels treatment
- Conducted fuel treatment on 24,534 acres in the Wildland/Urban Interface (WUI)
- Coordinated with cooperating agencies on the NFP and 2001 fire seasons
- Asheville Hotshot Crew was trained, served and released (Jan 14 – May 21)
- Negotiated staffing and proposed activities with the Partnership Council
- Ordered vehicles and other fire equipment (engines and pickups)
- Requested additional communications equipment
- Contracted a helicopter for prescribed burning and fire suppression
- Completed fire suppression refresher training for current employees
- Completed physical fitness testing of fire management personnel
- Completed fire rehabilitation on all controlled wildfires
- Advertised mechanical fuel reduction contract for 250 acres
- Staffed the North Carolina Interagency Coordination Center (year-round)
- Requested funding to upgrade Asheville Air Tanker Base (Asheville Airport)
- Identified the Fire Fighter Production Capability (FFPC) for the Forest
- Secured additional firefighting resources (detailers, CWN and contract)
- Secured funding for fire tower maintenance
- Met the FFPC outlined in NFMAS for the 2001 fire seasons (MEL)

- Conducted outreach for pending fire management vacancies
- Provided for the safety of the public and firefighters

Items In Progress at the end of FY 2001:

- Updating plans and budgets for next three years (NFMAS, FMP and FLMP)
- Assessing fuels treatment needs in the Wildland/Urban Interface (WUI)
- Preparing NEPA documents for future fuel treatment projects
- Adjusting work assignments and job duties to meet NFP objectives
- Training and education of internals and externals about the NFP objectives
- Arranging temporary firefighting resources for upcoming fire season
- Fire management capabilities on the Forests are being increased to meet FFPC
- Upgrading weather stations to the newest technologies
- Adjusting training schedules to accommodate new hires
- Cross-training existing personnel to qualify for fire management positions
- Advertising fire management position vacancies (fire management officers)
- Awarding the mechanical fuel reduction contract
- Reporting NPF status and accomplishments
- Monitoring NPF efforts and budgets
- Responding to requests for information about the NFP efforts
- Assembling three new engines (proposed completion in July)
- Finalizing fire tower maintenance plans
- Providing for the safety of the public and firefighters

Chapter 3. Evaluation and Action Plan

This chapter provides a synthesis and interpretation of what monitoring reveals about the current contribution of the National Forests in North Carolina towards the GPRA Goals of Ecosystem Health, Multiple Benefits to People, and Effective Public Service.

Ecosystem Health

- Factors associated with Ecosystem Health include: biodiversity; the status of insect pests, diseases, and non-native invasive plants; water quality, soil productivity, and air quality. Monitoring shows the Forests retain their high biodiversity in terms of both species and communities. The forests have not lost species or communities in recent years. Indeed, new populations of species continue to be discovered. However, there are long-term biodiversity concerns, mainly due to the numerous insect pests, diseases, and invading foreign plant species. With the hemlock woolly adelgid discovered on the Nantahala and Pisgah, and other pests encroaching, additional resources will need to be focused on dealing with these threatening situations.

- Southern pine beetle has widespread effects every few years, and large acreages of biologically mature oaks are vulnerable to oak decline. These are both caused by agents native to southern forest ecosystems and as such, as natural parts of those ecosystems. Some observers contend that the threat these agents present is minimal because of their native origins, but this ignores the persistent nature of the changes they can cause in forest landscapes that are at odds with human values as expressed in the Nantahala-Pisgah LRMP.

- Additional information regarding Management Indicator Species (MIS) and habitats has been collected and documented in reports. While this information gives us a better idea of the status of species and their habitats, it has also led to the conclusion that the list of MIS may need adjusting.

- Water quality continues to be good across the Forests, and restoration work occurs in areas identified as perpetual sediment sources to nearby streams. Overuse by visitors in areas such as streamside campsites and trails causes some soil compaction, loss of streamside vegetation, and potential contamination of waterbodies. Work has also occurred to alleviate many of these situations, and more will continue into the future.

Multiple Benefits to People

- The items associated with this GPRA Goal are: scenery, recreation, forest products, and heritage resources. In regard to scenery, unsightly views are uncommon, and small scale scenery enhancement efforts occur each year. The Southern Pine Beetle outbreak will have impacts to the scenery as in some areas vistas will include swaths of dead pine trees and hemlock woolly adelgid could affect scenic views in the future if it is not controlled.

- In the area of forest products, timber production remains significantly below LRMP expectations. However, timber stand improvement work actually exceeds expectations. This will be a good investment for the long-term. Other forest products such as floral and medicinal herbs continue to provide income to members of surrounding communities, and studies are under way to determine sustainable levels of harvest for these resources.

- Heritage Resources survey work continues to uncover more archeological sites, including significant finds. However numerous sites are vulnerable to loss from natural processes and human activities, especially historical structures.

Effective Public Service

- Factors contributing to this goal include the condition, safety, and accessibility of facilities, roads, and trails; land adjustment and special uses. Over time and with more and more public use, there is a constant backlog of facility improvements that are needed. Maintaining adequate, functional, and pleasant toilet facilities is a constant challenge. Every year we make progress in upgrading campsites, visitor centers, and other facilities, but there will always be more to do. By improving trails and campsites adjacent to streams and rivers, and improving the condition of water based recreation facilities, we are able to address the quality of the recreation experience and the water quality issues at the same time. The Fee Demo Program has increased our ability to upgrade facilities.

- In regard to land adjustment, support from legislators and the public is essential for the Forests to consolidate the land base, and to add significant tracts that may come on the market. Currently, land acquisition is active on the Forests and generally well supported by the public, though it can be quite complicated. The program to acquire tracts adjacent to the Appalachian Trail has made great strides and is approaching completion. More land within the Chattooga watershed is still desired, and appropriate forest parcels in other areas become available each year.

- Administering special uses takes a huge amount of time, and can produce some of the most difficult situations to deal with. With an annual growth rate of 10 percent, forest managers may need to take a hard look at overall program needs and direction.

Evaluation of Forest Management in Meeting Forest Desired Conditions

Overall, the National Forests in North Carolina are moving toward their desired conditions, albeit more slowly than forest managers would like. In one area, silvicultural treatments, we are moving away from the LRMP goals, due to cut backs in timber production.

DC/Goal 1) *Maintain, and where possible, enhance the diversity of plant and animal communities. Maintain viable populations of existing native wildlife, fish, and plants*.

COMMENTARY: While the amount of older forest (late successional) communities is increasing, we are providing well below the amount of young forest (early successional) called for in the LRMPs. This is because our primary way of providing young forest is by regenerating areas where timber harvest has occurred. Since harvest levels are down, opportunities to provide this ecosystem component are minimal.

In regard to species, the Biological Evaluation process assures rare species population protection in areas where projects are taking place. Many remote areas where no management activities take place are rarely examined. While the N/P Forests appear diverse and resilient in that we are not losing species or communities, there are a number of concerns regarding long-term sustainability of certain ecosystems. These concerns include:

- **Invasive and pest non-native species. While the threat from invasive plants is still debatable, non-native fungi, insects, and diseases have potential to catastrophically affect forest communities.**

- **The need for more prescribed fire. Several N/P Forest communities are fire dependent, such as table mountain pine and pitch pine. Growing season burns are necessary on the Croatan for longleaf maintenance and restoration. Other communities may benefit from fire;**

DC/Goal 2) *Threatened and endangered plant and animal species are protected, managed or recovered consistent with the Endangered Species Act; and sensitive species are conserved.*

COMMENTARY: T&E species are a high priority, and the Biological Evaluation process assures rare species population protection in areas where projects are taking place. We could implement more conservation strategies if we had more staff. Currently, our staff specialists are stretched too thin. For most species our emphasis is on site protection with an occasional opportunity to make proactive habitat improvement work.

DC/Goal 3) *Attributes and resources of special interest areas including wilderness, research natural areas, and areas registered by the North Carolina Natural Heritage Program are maintained.*

COMMENTARY: No formal monitoring of attributes took place during FY 2001

DC/Goal 4) *A variety of silvicultural treatments are used to provide a continuous supply of wood products with emphasis on high quality hardwoods.*

COMMENTARY: We are not coming anywhere close to providing the continuous supply of wood products called for in the LRMPs. This is due to budget cuts, vacancies in key timber and planning positions, and increased fieldwork necessary for the environmental analysis. New national direction, appeals and lawsuits, along with interpretations of existing direction, have complicated the picture as far as exactly what level of field survey is required for wildlife, botanical, and fisheries analysis. The type of analysis required and the standards for documentation have also been redefined. The overall result is a lengthening of the amount of time for a project to go from the planning stage to the implementation stage.

DC/Goal 5) *Riparian areas, floodplains, wetlands, and their existing ecosystems are perpetuated and enhanced.*

COMMENTARY: LRMP standards are providing protection for these ecosystems, however there are some instances where overuse by forest visitors had compacted and denuded stream banks, or had eroded trail treads to the point where sediment was entering nearby streams. Efforts take place each year to alleviate some of these situations. Poorly maintained roads can also be a source of sediment, and road maintenance funds fail to keep pace with required maintenance. However we were able to decommission some old woods roads.

DC/Goal 6) *Water quality and soil productivity are maintained***.**

COMMENTARY: North Carolina Division of Water Quality results show NFsNC lands consistently have higher quality streams than are on private lands. We have generally been able to respond following incidents such as floods, wind storms, and fires where soil productivity or water quality is threatened, and reduce the threat in a timely manner. Soil and water improvement work each year effectively curtails erosion problems from localized areas. In FY 2001, repeated floods blew out previous improvement work to the Hickey Fork drainage. During FY 2002, this area will be reevaluated to decide a future course of actions in this newly flood prone area.

ONSITE measurements of soil disturbance following management activities show levels of disturbance well below the designated limits.

DC/Goal 7) *Protect the beauty of the Forests through special attention to visually sensitive areas and the careful application of resource management activities.*

COMMENTARY: Certainly the scenery is a big consideration when a potentially visually intrusive activity is being contemplated, such as timber harvest or road building. In these cases, mitigation measures are employed to reduce adverse impacts. Also, some proactive scenery enhancement work is occurring. However, there are many more opportunities for proactive scenery enhancement that could take place given adequate funding and staffing. Currently, impacts to scenery from the Southern Pine Beetle outbreak have not received much attention. Future impacts from losses of hemlock need to be considered in long-term planning efforts.

DC/Goal 8) *Provide different environmental and social settings for outdoor recreation opportunities that range from primitive to developed. Provide for a variety of recreational activities appropriate to these settings and the forest environment. Provide all recreation visitors to the National Forest the opportunity to participate in activities and programs and use facilities to the highest level of access practicable.*

COMMENTARY: Upgrading facilities and trails and increasing accessibility seems to be a main focus of management activities across the Forests. It appears more emphasis is on developed recreation sites than is the intent of the LRMP's. That is because developed sites require more attention to maintenance to meet safety standards, especially buildings and water systems, and fee demo funds have provided a significant source of revenue for improvements to specific developed sites where fees are charged.

FY 2002 Action Plan

The following action is needed to respond to monitoring results from FY 2001:

The Planning Staff Officer should address the following questions and determine the need for plan amendments:

- Are all the MIS appropriate considering recent court rulings and clarification of the planning rules pertaining to MIS?

- Should all uninventoried lands be allocated to management areas, and should electronic/communication sites be re-evaluated at the Forest Plan level?

- With recent changes in EPA standards for air quality, should air quality and prescribed fire objectives be re-evaluated?

- Should we assess the T&E species listed since the forest plan decisions at the plan programmatic level, or, are site-specific consultations adequate?

- Do we have the people with skills in NEPA compliance to meet the workload, and if not, how could we increase our capacity cost effectively?

Status of FY 2001 Action Plan

1) Request Forest Health Protection to do an assessment of the extent of damage across the Forests from the current Southern Pine Beetle outbreak and develop a longer range monitoring plan. This will be necessary to analyze short- and long-term effects to ecosystem diversity, and specifically to the pine communities.

Responsibility: Forest Supervisor, Forest Health liaison
Status: On hold

2) Develop an approach to increasing the efficiency of producing environmental documents in a timely manner in response to unexpected events, as well a regular project work. This may require the Forest Leadership Team to deal with critical personnel issues and vacancies across the Forests.

Responsibility: Forest Supervisor, Planning Staff Officer
Status: Discussions are underway

3) Finish the NEPA documentation necessary to pursue control measures for Southern Pine Beetle.

Responsibility: Planning Staff Officer
Status: Completed

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