



United States  
Department of  
Agriculture

Forest Service  
Southern Region

# **Fiscal Year 2001-2002**

## **Monitoring and Evaluation Report**

### **Chattahoochee-Oconee National Forests**



October 28, 2003



Cover Photograph: *Fisheries habitat improvement work  
Being conducted on Sarah's Creek.*  
Photo by USDA Forest Service.





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**October 28, 2003**

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## **FOREST SUPERVISOR'S ADEQUACY STATEMENT**

I have evaluated the monitoring results and recommendations in this report. The recommendations will be implemented, unless new information or changed resource conditions justify a change. I have considered and am making funding shifts in the budget necessary to implement these actions. In addition, additional funding has been requested from the Regional Office in response to these recommendations.

With the recommendations taken into account, the current Forest Plan is sufficient to guide management of the Chattahoochee-Oconee National Forests, unless ongoing monitoring and evaluation identify further needs for change.

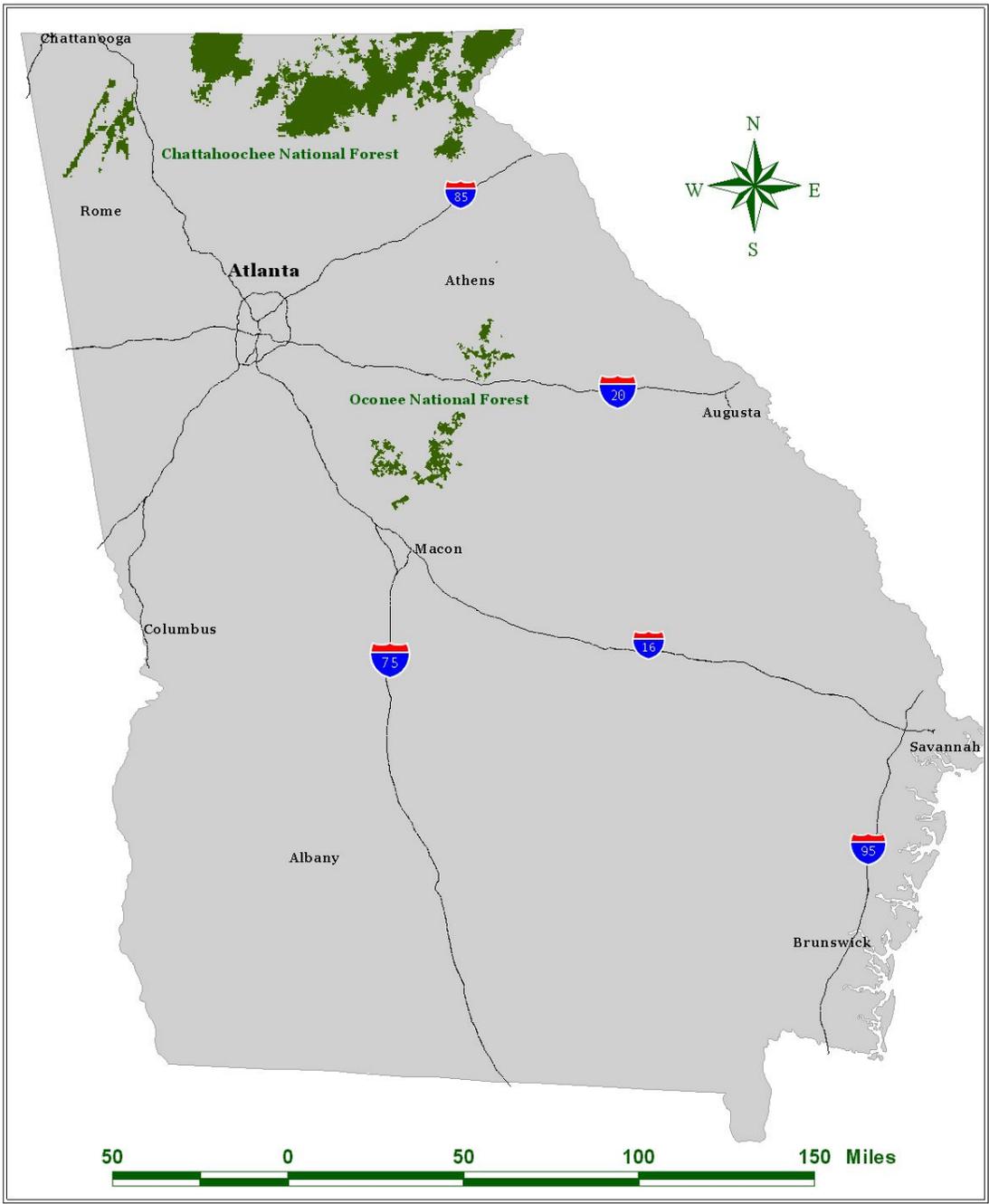
We will begin implementing monitoring and evaluation requirements associated with our revised Forest Plan in the near future. However, the recommendations made in this document will continue to guide our priorities until the first report is due under our approved revision of the Forest Plan.

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**KATHLEEN ATKINSON**  
**Forest Supervisor**

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**Date**



## INTRODUCTION

This report documents the results of the Chattahoochee-Oconee National Forests Monitoring and Evaluation (M&E) program for Fiscal Years (FY) 2001 and 2002. Monitoring and evaluation is defined as periodic evaluation on a sample basis of Forest Plan management practices to determine how fully objectives have been met and how closely management standards have been applied. Three types of monitoring are recognized:

- **Implementation monitoring** - checks that actions were carried out as planned.
- **Effectiveness monitoring** - checks that actions as carried out did what they were suppose to do.
- **Validation monitoring** - checks whether any assumptions made in planning remain valid in actual experience.

M&E documents progress and results of implementing the Forest Plan. This report is for the administrative unit of the Chattahoochee National Forest and the Oconee National Forest considered together as the Chattahoochee-Oconee National Forests.

## MONITORING AND EVALUATION PROCESS

This is the 14th year of this annual report. Only those monitoring items listed in Table 5-1 of the Forest Plan that have a reporting period of annually and 2, 5, and 10 years, or where the Forest Monitoring & Evaluation Team had sufficient data to discern trend patterns were evaluated for this report. Some items are covered in later reports depending on their reporting periods. See page 5-2 of the Forest Plan for the goals of monitoring and evaluation.

### The Process

Forest Plan monitoring is an ongoing task. Examples of formal monitoring are reviews, functional assistance trips, integrated resource reviews (also called monitoring/quality reviews), and specific data collection and analysis. Examples of informal monitoring include daily site visits to projects and visits, telephone calls, and letters to or from the public.

### Integrated Resource Review

The Integrated Resource Review (IRR) is a primary formal monitoring tool.

**Timing:** IRRs are scheduled for three or four ranger districts each year, which means that each ranger district is reviewed biannually.

**Participants:**

From the Forest Supervisor's Office  
Forest Supervisor or Deputy Forest Supervisor  
Pertinent Resource Staff  
Staff Officers – optional  
Region 8 specialists

From the Ranger District office:  
District Ranger  
District staff as needed  
Invited public

**Objectives**

Objectives are (1) to field examine a sample of activities associated with implementation of the Forest Plan with a full interdisciplinary team and (2) to document resource-specific and activity-specific monitoring results. Monitoring involved is both implementation monitoring and effectiveness monitoring. The reviews focus on answering such questions as:

- Were activities as planned consistent with the Forest Plan?
- Were the activities implemented according to what was planned?
- Upon completion of the activities, were the assumptions correct in both the planning of the project and the Forest Plan?
- Are Standards and Guidelines (S&Gs) being applied appropriately, and are they doing what they are expected to do?
- Are mitigations being applied appropriately and working?

**Evaluation**

The Monitoring & Evaluation Team evaluates the findings of each IRR and decides if action is needed, what the action would be, and how to go about it. Needed actions might include training of personnel and writing letters of clarification and a Forest Plan amendment. Even if items are in compliance, monitoring may lead to changes in implementation of future projects.

**Functional Assistance Trips**

Within a function (such as wilderness, soil and water, or reforestation), Staff Officers and assistants from the Supervisor's Office or Regional Office conduct their own reviews of their areas. These reviews are carried out very much like IRRs and checked for consistency with the Forest Plan. The results are documented and used in Forest Plan monitoring.

**Specific Data Collection and Analysis**

A great deal of routine data collection and analysis is done on the forests. Examples are mentioned in the detailed monitoring discussions of this report. Shown next are mostly

additional examples by resource areas. These are only examples and are not intended to be a complete listing of data collection efforts on the forests. Keep in mind that to monitor you first must have baseline data (inventories) to which to make comparisons.

### ***Archaeological/Cultural/Historic Resources***

Forest personnel carry out archaeological investigations year-round at any forest location that has the possibility of ground disturbance; plus, they perform formal excavations at some previously discovered historic or prehistoric sites.

### ***Recreation***

**Fee Collections** – Fee collections at developed recreation sites are valuable to monitor recreation-use levels.

**Inventories** – Mapping of dispersed (concentrated streamside camping, not informal campgrounds) recreation sites and collecting data on their characteristics is getting increasing attention across the forests. Inventories are used to plan and carry out rehabilitation work and use patterns.

**Traffic Counts** – Annual, routine traffic counting on forest roads is an indicator of use patterns, destinations, seasons of use, numbers of visitors, and types of use. Traffic counts prioritize road maintenance needs.

**Visitor Contacts** – Conversations with forest visitors at campgrounds, at Wildlife Management Area check stations, at trailheads, at visitor centers, at district offices, and through telephone calls help to quantify and qualify use in situations where fees and trail registers do not give all the information needed to improve the condition of the forest recreation sites.

### ***Soil, Water, and Air***

**Air Quality** – Forest personnel are sampling the effects of ozone and atmospheric deposition on forest resources—such as vegetation, water, and soils—in the vicinity of the Cohutta Wilderness. They have collected and analyzed water samples from the Jacks River to assess effects of pollutants. Permanent plots with annual vegetation assessment are used to monitor ozone impacts.

**Ecological Classification** – Forest personnel conduct integrated resource sampling on several areas on the forests to develop a multiresource classification for ecosystem management. Examples of parameters sampled include aquatics, climate, geology, landform, soils, and vegetation.

**Inventories** – Forest personnel complete soil surveys on the forests to identify soil types and their properties. They use survey data to develop alternatives for management actions and implement appropriate mitigation techniques to minimize impacts.

**Soil Productivity** – Forest personnel examine areas with management activities—that is, timber harvest, prescribed burning, road construction, and recreation uses—during the life of projects to assess impacts on productivity. Surveys provide indication of the amount of area in degraded conditions in need of restoration.

### *Vegetation*

**Forest Cover** – Each year forest personnel inventory a portion of the forests for forest cover composition and condition and the information is updated in a computer database. In the future, this information will be matched with NTMB survey results, PETS species results, and fish/aquatic habitat conditions.

**Reforestation** – Forest personnel examine each area reforested at least twice in the first 5 years to ensure that it has been successfully reforested. The results are formally reported to the Secretary of Agriculture.

### *Wildlife*

**Bear Surveys** - Forest personnel cooperate with the Georgia Wildlife Resources Division (GAWRD) in an annual bait station survey for bears. Visitation has shown a steady increase from 1983 through 2002. Likewise, legally harvested black bear numbers have increased (a record 245 bears harvested in 2000) and the population has probably reached carrying capacity. At the same time, nuisance bear reports to Georgia wildlife officials have begun to increase.

**Fisheries/Stream Aquatics Inventory and Monitoring** – Forest personnel monitor several streams across the forests for fish populations and conditions each year. A subset of the streams sampled have been originally sampled in the 1950s and 1960s. In addition, some streams that are sampled have had, or will have, fish habitat improvement structures constructed to measure the fish response to these efforts.

**Hunting Check Stations** – Forest personnel cooperate with Georgia Department of Natural Resources – Wildlife Resources Division (GAWRD) in staffing check stations on Wildlife Management Areas (WMA's) across the forests. They collect data on animal conditions, hunter success ratios, and age structure of game species populations. This is used in Forest Plan monitoring.

**Neotropical Migrant Birds (NTMB) and Breeding Bird Surveys** – Wildlife Staff and qualified bird identification personnel collect and evaluate population and occurrence data as it relates to habitats, abundance, numbers of species, and effects of management on the neotropical migrants. In recent years, these birds have been a focus of concern because of population declines in various parts of the nation. The Forest is currently monitoring 200 bird points annually.

**Proposed, Endangered, Threatened, or Sensitive (PETS) Species Surveys** – Forest personnel have surveyed thousands of acres of the forests for PETS species; and they

survey more acres each year. The knowledge gained from these surveys has been used to develop risk assessments and Biological Evaluations for parts of the forests and for projects. This data is being integrated into the Geographic Information System (GIS) mapping coverage—such as forest cover, PETS species, and soils—to develop predictive models throughout the forests and to show where further inventories are necessary across the forests.

## SUMMARY OF RESULTS

summarizes forest compliance by monitoring item and the nature of any noncompliance. Following the table is a narrative that gives a more detailed description of what the team found and its recommendation.

**Table 1 - Summary of Forest Plan Compliance by Monitoring Item  
Fiscal Years 2001-2002**

Monitoring Item No.	Brief Description	In Compliance	Not In Compliance					
			Prescription	Standard & Guideline	Management Direction	Allocations	Outputs	Costs
A2-2	Swim area water	X						
A4	Mgmt Area 4	X						
A5	Visual quality	X						
A6	OHV trail status	**		X	X			
A7	OHV area status	X						
A8	Cultural resources	X						
B1	Wilderness	X						
C1	Wildlife	X						
C3	MIS, T & E	X						
D-1	Grazing use	X						
E2	Reforestation	X						
E3	Silviculture	X						
E4	Harvest areas	*					X	
E5	Timber suitability	X						
E6	Forest conversion	X						
F1	Water quality	X						
F2	Stream protection	X						
G1	Minerals	X						
K2	Soil productivity	X						
L2	Road standards	X						
P1	Wildland fires	X						
P2	Prescribed burns	X						
P3	Air quality	X						
P4	Insects/disease	*			X			
P5	Wilderness LE	X						
P6	Total LE	X						

\*\* Non-compliance is limited to the Anderson Creek Trail system (see page 13 for narrative). Heavy maintenance as well as closure of illegal trails is planned for Fiscal Year 2004, resulting in compliance with the Forest Plan.

\* See narrative section on this item. Some portion of this item needs additional work.

OHV – Off-highway vehicles; MIS – Management indicator species; T & E – Threatened or endangered species as listed by the U.S. Fish and Wildlife Service; LE – Law enforcement



The following is a list of possible recommendations:

- No changes needed; monitoring indicates that goals, objectives, management area (MA) direction, standards and guidelines are being achieved.
- Refer recommended action to the appropriate line officer for improvement in application of management area direction and standards and guideline interpretation.
- No Forest Plan Amendment required.
- Modify the management area prescriptions by Forest Plan amendment.
- Revise the schedule of outputs with a Forest Plan amendment.
- Revise the cost per unit of output with a Forest Plan amendment.
- Forest Plan direction has been changed or clarified by amendment.

## **DETAILED MONITORING AND EVALUATION REPORT**

### **A2-2 – Developed Recreation**

- Water Quality at Swim Sites - Ensure compliance with Federal, State, and local standards for water quality.

Forest swim areas (beaches) were monitored during this period through contract weekly beginning the week before Memorial Day and ending near Labor Day (about 90 total samples per year). Forest swim areas include:

- Lake Russell
- Rabun Beach (Lake Rabun)
- Lake Conasauga
- Morganton Pont (Lake Blue Ridge)
- Lake Winfield Scott
- Lake Sinclair

In each of the two years, there were occasional samples that failed to meet state water quality standards for fecal coliform bacteria. In these cases, the areas were re-sampled the next day, and in all of the cases the areas returned to normal readings. No swim beaches were closed. Bad samples are typically attributed to high levels of visitor use of the beach and reduced inflow of freshwater during low flow periods or drought conditions.

*Recommendation:* No changes needed; monitoring indicates that goals, objectives, management area direction, and standards and guidelines are being achieved.

#### **A4 – Management Area 4**

- Ensure that MA-4 management direction is followed.

*Recommendation:* No changes needed; monitoring indicates that goals, objectives, management area direction, and standards and guidelines are being met. No additional MA-4 plans have been completed in fiscal years 2001-2002.

These areas will be addressed in the ongoing Forest Plan Revision, scheduled for finalizing in January of 2004.

#### **A5 – Visual Quality**

- Ensure that visual quality objectives (VQOs) are being applied according to standards and guidelines.

The Forest Service Manual 2300, Chapter 2380 – Landscape Management, was amended and approved as follows:

*2380 - Revises direction throughout the chapter to be consistent with the procedures and guidance in Agriculture Handbook (AH) 701 (Vol. 2, ch. 1 in the National Forest Landscape Management Series), “Landscape Aesthetics: A Handbook for Scenery Management,” and to reflect the transition from the Visual Management System to the Scenery Management System.*

With this new direction, Forest Supervisors have the responsibility to:

1. Inventory and maintain a database of aesthetic and scenery resources.
2. Develop landscape character goals for National Forest System lands on the unit.
3. Identify and map scenic integrity objectives for National Forest System lands on the unit.
4. Conduct and document a scenery assessment for all activities that may affect scenic resources and that require analysis under the National Environmental Policy Act.
5. Ensure application of the principles of landscape aesthetics, scenery management, and environmental design in project-level planning.
6. Ensure that Forest and District personnel, including, but not limited to, ecologists, wildlife biologists, silviculturists, recreation planners and managers, landscape architects, timber sale planners and administrators, engineers, land management planners, special use authorization administrators, and range specialists, have an appropriate awareness and understanding of laws, regula-

tions, and direction related to the management of landscape aesthetics and scenery.

7. Establish and implement a method for monitoring, recording, and documenting changes in scenic integrity, landscape character, and constituent information.

With the analysis of the Forest Plan Revision, a complete inventory of forest resources was performed for the Chattahoochee-Oconee National Forest for the scenery resource. This inventory produced Scenic Classes and Scenic Integrity Objectives. These have been used as a base for Plan Revision. Each Prescription has been refined with standards for Scenery, and these have been input into the Plan Revision documents.

During the 2001-2002 period, project-level plans were reviewed by the landscape architect for visual impact. Input was given to keep projects within the Forest Plan-designated VQO and the Scenery Management System (SMS). The landscape architect pointed out any potential adverse impacts and recommended changes. Forest personnel reviewed projects in an area with a VQO of Retention (R) or Partial Retention (PR) for compliance on the ground.



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Figure 1 – Prescribed Leave Trees in a Firewood Gathering Area

*Recommendation:* Monitoring indicates that all aspects of the plan are being met.

#### **A6 – Off-Road Vehicles (Roads and Trails)**

- Compare uses, problems, and solutions to off-road vehicles (ORV) use, abuse, and overuse.

Illegal OHV trails have been closed across the Forest, implementing the recommendation from the Fiscal Year 2000 Monitoring and Evaluation Report. Monitoring of these closures show that while some of them were effective, others have required further work to complete stabilization, control erosion, and eliminate illegal access. Posting illegal trails with “road closed” signs along with extensive law enforcement surveillance of active illegal trails in some areas as well as recently closed sites has provided increased effectiveness. Citations issued to violators have provided direct enforcement of the closures and deters other possible violations.

Despite these closures, new illegal trails continue to become established and some closures are breeched. While some of these trails are used a few times and abandoned, others have become heavily used.

The Chattahoochee – Oconee National Forests currently have 133 miles of designated OHV trails. Below is a summary of the conditions at each of the trail sites:

***Anderson Creek OHV Trails (near Ellijay, Georgia):*** Currently, there are approximately five miles of legal designated trails and approximately 15+ miles of illegal, poorly designed, user-created trails, which are continuously increasing. Trails often originate on adjacent private lands, making controls challenging.

In order to manage the increase of illegal trail problems, the Toccoa Ranger District applied for state funding (TEA-21) in 2001. The money was granted to assist in the maintenance, environmental restoration of the eroded trails and posting to confine all OHV activity to designated trails.

Also, the district has put together a strategy to manage the situation that is occurring in this area and additional funding has been granted from the Regional Office.

Implementation of plans for this area is expected to begin in fiscal year 2004. This plan will include, but not limited to rehabilitation of the riparian area, reconstruction of existing designated trails, closure of illegal trails, and environmental education.

***Houston Valley OHV Trails (near Dalton, Georgia):*** Current condition of the 24-mile trail system is good. Visitor use is heavy estimated at 40,000 visitors annually. Annual maintenance contracts have been performed. Routine annual maintenance and/or replacement have been performed on directional and difficulty level signing. The trailhead information board has been replaced. A large Southern Pine Beetle hazard tree removal contract was completed in 2002. Illegal side trails have been closed. Law enforcement surveillance for illegal activity is undertaken each year especially right after the trails open for the season.

***Cohutta OHV Trails (near Chatsworth, Georgia):*** OHV trail system includes the following trails: Windy Gap Cycle Trail, Milma Creek, Tibbs, Rocky Flats, Rock Creek, and Tatum Lead, totaling over 30 miles. Current condition of the trail system is good. Use is considered moderate overall with somewhat heavier use recorded during the winter months. About 1.5 miles of the Rocky Flats Trail was closed due to resource damage and watershed impacts. Annual maintenance by force account or contract has been performed. Sign inventory and maintenance/replacement has been accomplished. Trailhead information boards have either been refurbished or replaced. Bear-proof garbage bins have been installed at all trailhead parking areas. A trailhead parking area and off-loading ramp was constructed at the top of the Tibbs Trail. Illegal side trails have been closed. Law enforcement action has been limited; surveillance and patrol is stepped up during the annual deer hunting season.

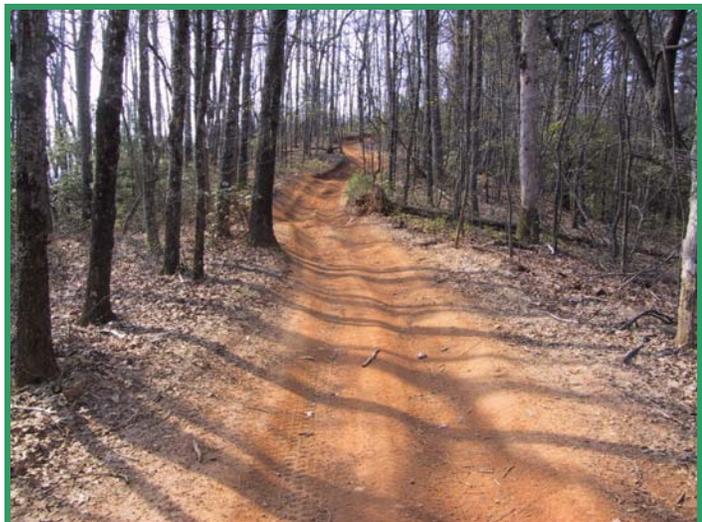
***Locust Stakes OHV Trails (near Toccoa, Georgia):*** Conditions at this trail site are good. Approximately 15,000 riders use this area each year, with a total of 20,000 visitors annually.

Continual work has taken place here based on visual monitoring by users and Chattooga Ranger District personnel. Routine maintenance has taken place each month by trail volunteers. The trail system has been closed to users on four separate occasions due to weather.

Evaluations based on the monitoring indicated repair and maintenance was needed to sustain the site as a trail system for OHV users. Actions taken have included felling of hazard trees, cleaning wing ditches, installing silt fence, putting up trail markers with difficulty levels, picking up litter, re-grading selected segments of trail, re-grassing exposed areas, and marking the location of a toilet for the area.

Law enforcement continues to warn users about properly paying at the site and violation notices continue to be issued for possession of an OHV off of the designated trail location.

***Oakey Mountain/Moates Knob OHV Trails (near Batesville, Georgia):*** Maintenance on the trail system is completed two times each year. Drainage structures have been reconstructed or maintained as needed, hazard trees removed, signs replaced, and all illegal trails have been closed. To date, no new illegal trails have been identified since the last closure project took place in November of 2001.



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Figure 3 – Oakey Mountain OHV Trail

***Town Creek OHV Trail***

***(near Greensboro, Georgia):*** The 16 miles of designated trails at this site have been maintained by felling hazard trees, rehabilitating the parking areas, and protecting known archeological sites nearby. Maintenance has also included work on wet spots and closure of shortcut trails. The trail has been closed to the public due to weather several times throughout the time period.

A maintenance contract will begin in the Fall of 2003 and will include reshaping, resurfacing, and spot graveling of existing designated trails and closure and restoration of illegal trails in the vicinity.

**Whissenhunt OHV Trails (near Dahlonega, Georgia):** Trail system conditions within this area are considered good. Maintenance under a contract has been completed and hazard trees have been removed as needed. Approximately 2,500 riders use the area each year. Law enforcement personnel have increased their presence, and approximately one mile of illegal trails have been closed, including the posting of signs to allow more effective law enforcement. The District plans to continue effective closing of illegal trails as well as implementation of an overall maintenance plan.

*Recommendation:* Continue effective closing of illegal trails that are directly impacting water quality or aquatic habitat. Maintenance should continue at all designated trail systems with a priority for treatment of the Anderson Creek OHV Trails.

#### **A7 – Off-Road Vehicle Use (Areas)**

- Compare use, problems, and solutions to ORV use, abuse, and overuse.

There are no OHV areas on the forests. This classification has been changed to riding designated trails only (see A6 above.)

#### **A8 – Cultural Resources (Heritage Resources)**

- Evaluate the progress and success of cultural heritage activities in relation to national forest management.

**Support Services:** This section deals with the Section 106 activities that occurred on the Forest during these two years. During FY 2001 and FY 2002 the archeologists were involved with surveying for:

- prescribed burning
- plowlines, marking sites and recording new sites
- southern pine beetle, surveying new spots, and locating and marking sites
- recreation projects
- soil and water rehabilitation projects
- roads
- trails
- forest health
- wildlife
- special use permits
- land exchanges

During FY 2001, the Heritage Program personnel conducted surveys on planned activities as noted above. The 87 surveys and office inventories covered 48,378 acres with and without physical survey, as permitted under the categorical exclusion of the Programmatic Agreement and Memorandum of Understanding with the Georgia State Historic Preservation Officer and the Advisory Council on Historic Preservation. A total of

1,220 acres were physically surveyed, and 47,158 acres were inventoried without physical survey. In all, 20 new sites were recorded, and 17 previously recorded sites were found and relocated, of which 23 of these were recommended for protection and further investigation. These were marked on the ground and are noted in the project files. Most of the acres inventoried were large blocks of prescribed burning and most of these were on the Oconee District. Plowlines were surveyed and any known sites within the blocks that could be harmed from burning were excluded from the burn

During FY 2002, 67 surveys and inventories were completed on 4,012 acres, and of that total, 822 acres were physically surveyed. The other 3,190 acres were large blocks of prescribed burning that were not physically surveyed. A total of 15 new sites were located and 4 previously recorded sites relocated within project areas

**Heritage Activities:** During FY 2001 and FY 2002, we began the tribal consultation process with identifying and contacting 14 affiliated southeastern tribes. The Heritage Program manager met with the Eastern Band of Cherokee Indians, along with program managers from the National Forests in North Carolina and South Carolina to establish draft protocols for 106 consultations. This involves sending Early Coordination forms for all projects to the Eastern Band for comments. The forest opened government-to-government communications with Tribal Nations through phone calls and letters between the Forest Supervisor and tribal leaders, this is an ongoing and evolving process.

During FY 2002, the Heritage program manager began preparing the Forest EIS effects analysis and Forest Plan background, objectives, and standards and guidelines. This is continuing into FY 2003.

The forest issued six ARPA permits in FY 2001 for projects crossing the Chattahoochee National Forest, a fiber optic line crossing the Oconee NF, GTC transmission line, private road widening in Rabun County, Phase II testing near Track Rock, a pump station in Stephens County, and a road widening project in White County. In FY 2002, six ARPA permits were issued for the Rabun County school land grant, GTC transmission line realignment, Cooper Creek bridge replacement, Highway 441 widening, and Highway 83, as well as for the UGA field school.

During FY 2001 and continuing into FY 2002, an historic building evaluation was contracted and completed on the recently acquired Nicholson Tract in Rabun County. This is a family farmstead



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Figure 4 – Nicholson House burned by Arsonist - 2001

on Highway 28 east of Clayton, GA. The report presents the historic and family background, building descriptions, and a discussion of the eligibility of the buildings as historic resources for the National Register of Historic Places. Alternatives and recommendations are presented and a MOU with the Georgia SHPO was completed. Unfortunately the house burned in August 2001 after the evaluation was completed.

The curated (preserved, or archived) archaeological and records collections continued to grow, at the rate of 10-12 cubic feet each year. There are now about 220 cubic feet being stored in the Supervisor's Office in Gainesville. During FY 2002, we moved the collections to the University of Georgia, under an Memorandum of Understanding, with the Laboratory of Archeology, which maintains a federally approved curation facility, and whose managers are willing and able to accept our collections for permanent curation.

**Public Outreach / Partnerships & Passport in Time/ Friends of Scull Shoals:** Heritage personnel conducted slide shows and other presentations to schools, and civic groups throughout the two fiscal years. This year, many of the outreach efforts went to the Scull Shoals activities, such as tours, volunteer excavations, and the Greensboro Heritage festival- Southland Jubilee. We worked with the Boy Scouts to help with a cemetery clean

up, as well as talks to the local historic groups, and we worked up exhibits for various activities, such as Georgia



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**Figure 5 – Scull Shoals Dig**

Archeology Month in May, promoting the historic and cultural resources the state has to offer.



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**Figure 6 – Scull Shoals Activities**

The Passport in Time project at Scull Shoals on the Oconee National Forest has been going strong now for several years, and from 2001 – 2002, we have started working one weekend a month from fall through spring, with a break in the summer due to the heat. The staff

has also been busy with laboratory sessions in order to wash and

analyze the artifacts from the testing project. We average approximately 50 volunteers over the course of the season with over 1000 or more hours of volunteer time. The Friends of Scull Shoals assists with the tours of the site as well as work on fundraisers for enhancement of the site.

We have had four non-profit partners cooperating with the Heritage Program. They are the Georgia Mountains Archaeological Society (GMAS), the Friends of Scull Shoals, Inc. (FoSS), the Chenocetah Conservations Corps (CCC), and the Faded Footprints of Families and Friends of the Lake Russell Wildlife Management Area (4-F). Each one makes its own

special contributions to the Heritage Program.



Figure 7 – Sorting artifacts at Scull Shoals

*Recommendation:* Continue to evaluate and update the program and measure the success of cultural/heritage resources management activities in relation to national forest management. Make sure that the Heritage Program continues to guide, locate, monitor, evaluate, protect, educate, and enhance the cultural/heritage resources on the Chattahoochee-Oconee National Forests.

## B1 – Wilderness

- Determine if overuse problems are being eliminated.

Below is a summary of each wilderness area, including inventoried overuse areas and other considerations of problems:

**Big Frog** in Georgia receives little use as only 83 acres of this wilderness is located in Georgia. One trail system (Hemtop) leading from the Cohutta Wilderness adjacent to Big Frog leads past the southwest corner of the Big Frog, but trail users stay on the trail and rarely travel cross country.

**Blood Mountain Wilderness Area** receives heavy use along the Appalachian Trail corridor and it's associated feeder trails. Forty-seven campsites have been inventoried along the trail corridors within this wilderness area. Overuse is apparent at Slaughter Gap with the convergence of the Appalachian Trail, Coosa, Duncan Ridge, and Slaughter Creek Trails. A project is currently underway to reroute these trails away from the gap area, rehabilitate the large impacted area, and establish campsites in more suitable locations.

Jarrard Gap, the summit of Blood Mountain, and the area around Lance Creek are heavily impacted as well. Use at Blood Mountain is primarily day use, with the hikers departing from the B.H. Reese Memorial Trailhead near Neels Gap on U.S. Highway 129 and traversing the Appalachian Trail to Blood Mountain.

The campfire ban along a portion of the Appalachian Trail corridor across Blood Mountain to protect the character of the area and to discourage some overnight camping continues to be partially effective. Intensive efforts are required by volunteers and administrative personnel to remove any illegal fire rings. One limiting factor in this ongoing issue of illegal campfires is the lack of both administrative and enforcement personnel to cover the area in a timely manner.

Day use on the portion of the Appalachian Trail through the Blood Mountain Wilderness between Neels Gap and Woody Gap appears to be increasing. Working with the Georgia Department of Transportation, a no-parking area has been established along U.S. Highway 129 between Neels Gap and the B.H. Reese Memorial Trail parking area. Plans have been developed to limit the number of vehicles that can park at the trailhead. This action was identified in the Limits of Acceptable Change (LAC) process for the Blood Mountain Wilderness.

The Dicks Creek corridor along Forest Service Road #34 receives heavy use, and part of this corridor forms the wilderness boundary. Heavy use of campsites along Dicks Creek due to easy vehicle access and the popularity of the stream and its associated waterfalls has resulted in the establishment of a no-camping zone along the wilderness portion of the streamside. These campsites have been rehabilitated.

**Brasstown Wilderness** continues to receive some illegal mountain bike use on the Wagon Train Road. Annual boundary line monitoring around Bald Mountain Park and other private developments that adjoin the wilderness is ongoing with respect to the possibility of encroachment and illegal vehicular use. Thirteen campsites have been inventoried within the Brasstown Wilderness.

**Cohutta Wilderness** continues to receive very intense overuse. District personnel have inventoried nearly 400 campsites. Ground cover loss, soil compaction, and loss of vegetation is prevalent at most of these inventoried sites. Areas of concentrated use include Beech Bottom and Jacks River Falls, Brayfield, above Panther Creek Falls, the Jacks River and Conasauga River corridors, and portions of the Hickory Creek Trail. Bear and human interaction continues to be a problem particularly during the late summer due to a high bear population, heavy visitor presence and improper disposal and storage of food items.

Corrective measures include the following:

1. A CFR now in place requires visitors to properly hang or otherwise store food and other odorous personal items.

2. An intensive information and education program continues both in the field and in formal presentations to user groups and school groups. These are conducted by wilderness rangers and Forest Service volunteers.
3. A seasonal wilderness ranger was hired in 2002 to increase Forest Service presence in the wilderness.
4. Trail volunteers and employees rehab campsites and remove litter.
5. A "Leave No Trace" message continues to be conveyed through newspaper articles, a district volunteer newsletter, signing, information board posting, wilderness visitor contacts, district brochures, and formal presentations.
6. A wilderness Limits of Acceptable Change process using a citizen-led task force was began in 2001 and completed in 2002. The process concluded with a list of recommended actions to management to address human impact issues and protection of the wilderness character. NEPA was started in FY02 to consider implementation of the LAC recommendations.

**Ellicott Rock Wilderness** in Georgia received little use during the time period. This is due in part to the lack of a formal trail system in place within the Georgia side of the wilderness.

**Mark Trail Wilderness** continues to receive heavy use along the AT corridor and along the Chattahoochee River Road. The Bear Den Creek area has seen a drop in use due to the relocation of the Raven Cliffs parking area. A total of 108 campsites have been inventoried within this wilderness area.

**Raven Cliffs Wilderness** use has declined slightly due to the closure of the area to rappelling and the relocation and upgrading of the parking area. Before the closure of the area to rappelling the use was around 15,000 visitors per year. After the closure, use has dropped to about 12,000 visitors per year. A total of 50 campsites have been inventoried within this wilderness area.

**Rich Mountain Wilderness** continues to receive minimal use with most occurring during the big game hunts. Illegal OHV use in the area along with continual littering on the north boundary (county road) still poses concerns. Additionally, the south end of Rich Mountain Wilderness has experienced a lot of residential development on the adjoining private lands. Law enforcement personnel have increased patrols in the area and have also posted signs closing illegal trails and displaying wilderness boundaries.

**Southern Nantahala** in Georgia receives most of its use along the Appalachian Trail corridor through this Wilderness Area. There are no associated spur trails to the AT within the Georgia portion, which would increase use or create interest within this section of the wilderness. There is evidence of illegal vehicular access entering from North Carolina and the establishment of some user-created horse trails. Two campsites have been inventoried along the Appalachian Trail.

**Tray Mountain Wilderness** receives low to moderate use. The Appalachian Trail runs through this area with no associated spur trails. The AT is the primary visitor use of the

area. Twenty-five campsites along the AT have been inventoried within this wilderness area.

*Recommendation:* Monitoring indicates that goals, objectives, management area direction, and standards and guidelines are being achieved. However, in some cases, prompt actions need to be taken to provide protection for Wilderness Areas.

## C1 – Wildlife and Fisheries

- Ensure proper application of management standards and guidelines.

The Forest Plan and planning regulations contain 121 guiding statements that refer to biological resources. Compliance is determined through continued field visits and ongoing feedback from Forest Service and Georgia Department of Natural Resources Biologists who serve on interdisciplinary teams throughout the forests.

A majority of fisheries surveys in 2001 and 2002 have focused on brook trout streams. Streams were measured by habitat types (pools, riffles, cascades, waterfalls) for width, length, and depth. These streams were later surveyed by electrofishing to determine species present, population numbers, and individual lengths. These surveys aid in determining stream structure placement. In some streams, structures were installed in these streams with the help of partners from numerous agencies and private groups.

Aquatic macroinvertebrates are used as biological indicators on the forest. 52 sites were sampled with macroinvertebrate indicators in 2001 within the Conasauga River and Chattooga River watersheds. A total of 72 macroinvertebrate samples were taken in 2002 in the Chattooga River watershed.



©USDA – Forest Service

Figure 8 – Monitoring Streams using Electro-fishing

Habitat assessments were conducted in a number of watersheds, including the Chattooga, Conasauga, Chickamauga and Etowah watersheds. Streams were measured by habitat types (pools, riffles, cascades, waterfalls) for width, length, and depth. A total of 37 miles of stream were inventoried in 2001 and 61 miles in 2002.



© John Jensen

Figure 9 – Seals Salamander

Amphibian surveys occurred on a number of streams across the forests by forest personnel and others such as life history studies on hellbenders. Intensive salamander surveys were conducted in the Chattooga watershed in 2002. These surveys occurred in streams which were

listed by EPA to be sediment-impaired stream segments as well as those listed as reference streams.

Forest personnel and Dr. Ken Fahey continue surveys for the bog turtle. These have taken place in areas of known occurrence and for purposes of searching for possible new occurrences.

Mussels have been surveyed in the Conasauga River by Tennessee Aquarium biologists. Forest Service personnel, universities, and Conservation Fisheries are studying aquatic PETS in the Conasauga River Watershed to understand the distribution and their life history traits. These are multiyear surveys. In 2002, mussel surveys were conducted in 73 sites in the Chattahoochee and Oconee National Forests. 15 species of freshwater mussels were found on both forests including PETS representatives.

Stream bank restoration occurred on national forest, as well as adjacent private lands, in 2000 with the aid of partners and grant monies. Educational efforts included teaching at numerous schools and hosting tours for Best Management Practices (BMPs) and stream bank restoration work.

Efforts were also made through field inventories for listed sensitive and locally rare plant species within some planned project areas. More than 2,800 acres were surveyed in 2001 and 2002. These surveys result in important new information involving species occurrences, and when any of these species are found, modifications are made to project proposals.

*Recommendation:* No changes are needed. Goals, objectives, management area direction, and standards and guidelines are being met.

### **C3 – Management Indicator Species and Their Habitats**

- Ensure maintenance of plant and animal species diversity and viable populations of all existing vertebrate species.

The forest selected management indicator species (MIS) to be used as appropriate on a forest-wide basis. The implementation process requires the selection of all forest-wide MIS that geographically occur within a project area. This procedure ensures that special habitat considerations are taken into account in meeting viability objectives. Habitat condition is a primary factor influencing population levels for these species. A valuable tool for evaluating habitat conditions is the Continuous Inventory of Stand Conditions (CISC) database, which is compiled from periodic field inventories throughout the forests.

Other sources of information that are utilized to monitor and evaluate MIS include, but are not limited to, annual harvest records of game species; statewide hunter surveys from Georgia Department of Natural Resources (GADNR), population estimates for various WMA provided by GADNR; bait station surveys for bears; bog turtle surveys in appropriate habi-

tats; various occurrence records and references; electro-fishing surveys; water quality monitoring; and red-cockaded woodpecker annual monitoring by roost checks at clusters.

Forest personnel continue to gather songbird data for trend analysis. Data on occurrences of neotropical migratory and resident land birds is collected annually during the breeding season. This data is helping to build a nation-wide database that will detect changes in populations over time. Forest Service biologists have been active in the “Partners in Flight” program and continue to maintain close contact with professional ornithologists (GADNR, Cornell University) and other bird experts to keep current and knowledgeable on management of these species.

Population trends for each of the 20 MIS follows: The MIS are acadian flycatcher (*Empidonax virescens*), indigo bunting (*Passerina cyanea*), pileated woodpecker (*Dryocopus pileatus*), pileated woodpecker (*Dryocopus pileatus*), red-cockaded woodpecker (*Picoides boreali*), rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), brook trout (*Salvelinus fontinalis*), redeye bass (*Micropterus coosae*), yellowfin shiner (*Notropis lutipinnis*), turquoise darter (*Etheostoma inscriptum*), Coosa darter (*Etheostoma coosae*), white-tailed deer (*Odocoileus virginianus*), black bear (*Ursus americanus*), eastern wild turkey (*Meleagris gallopavo*), ruffed grouse (*Bonasa umbellus*), bobwhite quail (*Colinus virginianus*), gray squirrel (*Sciurus carolinensis*), bog turtle (*Clemmy muhlenbergii*), yellow lady’s slipper (*Cypripedium calceolus*), and mountain pitcher plant (*Sarracenia purpurea*).

### ***Acadian Flycatcher***

Point count surveys conducted during fiscal year 2001 showed an increase (0.23 birds per point). However, the 2002 count was down to 0.15, a slight decrease in Acadian flycatchers heard and/or seen during the survey. This slight decline does not represent a significant change during the past 10 years; survey numbers have been relatively stable on the Chattahoochee and Oconee National Forests. The acres of riparian habitat are expected to remain constant over time. The use of streamside standards and guidelines on all projects, as well as designation of special protected areas, will maintain the quality and integrity of existing riparian corridors. These measures will ensure the continued viability of the Acadian flycatcher on the forest. We recommend no management change.



©Ohio Department of Natural Resources

### ***Indigo Bunting***

Populations continue to be relatively stable in the state of Georgia and the Chattahoochee and Oconee National Forests according to bird point count survey. The mean number of indigo buntings reported per point during the year 2001 survey shows 0.79 birds per point. However, a decrease to 0.58 was recorded in 2002 and we will need to continue to monitor this species. This species is closely tied to areas that are fairly open, usually along woodland



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Laboratory of Ornithology

edges and often associated with young forests, which are becoming more infrequent on the forests. Monitoring of this species will continue, but for now, viability of the indigo bunting is not a concern. We recommend no management change at this time. However, if decreases continue, initiating some early successional habitat areas for this species may be necessary to increase population numbers on the forest.

### ***Pileated Woodpecker***

The pileated woodpecker population on the Chattahoochee and Oconee National Forests has remained relatively stable, with no significant changes in occurrence over the past 10 years. During the past 15 years, the acres of older hardwood forests have increased on the overall forest, which helps maintain habitat for this mature forest associated species. This trend to have abundant older forest age structure is expected to continue. Therefore, viability of the pileated woodpecker is not a concern; and we recommend no management change.



©U.S. Army Corps of Engineers

### ***Red-cockaded Woodpecker***

During the 2001 and 2002 monitoring seasons, red-cockaded woodpecker numbers decreased slightly on the Oconee National Forest. The number of active cluster sites went from 19 in 2001 to 16 in 2002. Annual monitoring of the population will continue, along with continued habitat maintenance and structural and nonstructural habitat improvements. An ongoing commitment to management of this species will help ensure its viability on the Oconee National Forest. We recommend no management direction change at this time.



Courtesy James F. Parnell  
U.S. Fish & Wildlife Service  
Photo by ©James F. Parnell

***Brook Trout***

Overall, annual surveys indicate brook trout populations have been stable over the past 20 years. Stream conditions on the forest are good to excellent, providing adequate habitat for this fish. Brook trout have not been stocked in recent years. The majority of the headwaters hold brook trout. These are self-sustaining populations providing an excellent fishery. The brook trout is also a game fish in the Georgia mountains, so viability is not a concern. Georgia DNR estimates that there are at least 65 brook trout streams for a total of 86 miles on the Chattahoochee National Forest. We recommend no management change.



©Tennessee Aquarium

***Brown Trout***

This trout is a game fish harvested throughout north Georgia. Although this trout is primarily stocked, some streams support a self-sustaining population. Brown trout are the dominant trout in the Chattooga River and from yearly samples from 1986 to present, populations of this fish are stable. Therefore, viability is not a concern. We recommend no management change.



©Tennessee Aquarium

***Coosa Darter***

The Coosa darter is restricted to the Coosa drainage system. The Coosa darter is known from 98 sites within the Conasauga River watershed, most of these sites are in the upper sections of the watershed. Numerous surveys indicate that this species is relatively common in the specific streams where it occurs. It has been found to be one of the most common darters in suitable habitat. Viability is not a concern for this fish. We recommend no management change.

***Rainbow Trout***

From yearly samples of rainbow trout taken in several streams on the Chattahoochee NF, population levels remain healthy with fluctuations normally occurring from time to time. Cane Creek, a wild rainbow trout stream was sampled for 9 years from 1978 to 1995. This trout population fluctuated greatly in the absence of management activity in all sections of Cane Creek sampled. Fluctuations were



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Photo by Ken Hammond

mostly likely due to natural occurrences, as the numbers decreased in years of high floods or severe drought. Although rainbow trout were initially stocked, the majority of streams on the Chattahoochee carry self-sustaining populations. Reproduction indicates that the water quality is good to excellent for trout and therefore, viability is not a concern. Rainbow trout is a game fish that is harvested throughout north Georgia, supporting an excellent fishery. We recommend no management change.

### ***Redeye Bass***

Redeye bass are common in waters throughout the Chattahoochee National Forest, primarily occupying the transition zone between cold trout waters and the larger cool-water streams occupied by spotted bass and shoal bass. The main channels of the jacks and Conasauga Rivers were surveyed from 1995-2001. The number of redeye bass were low in these trout dominated stream sections. These numbers were expected in stream sections where water temperatures are lower than optimum for redeye bass. However, numbers of redeye bass in these samples and in warmer waters are within the density population objectives stated in the forest plan. It is a game fish and is well known in some forest streams for its fishery, therefore viability is not a concern. We recommend no management change.



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Photo by ©Noel M. Burkhead

### ***Yellowfin Shiner and Turquoise Darter***

Although restricted to the Savannah River watershed on the forest, populations of these two fish species are common in clean, cool small to medium sized downstream from trout waters. In 2001, 180 meters were sampled with the depletion method of 3 passes in Middle Fork Broad River, 1033 yellowfin shiners and 152 turquoise darters were collected. Upstream, within the Middle Fork Broad River, 75 meters were sampled with the depletion method and 401 yellowfin shiners and 41 turquoise darters were collected. Viability is not a concern for these fish. We recommend no management change.



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Photo by ©Noel M. Burkhead

### ***White-tailed Deer***

Deer harvest data indicates that populations in the mountains and ridge and valley are stable to increasing with some fluctuations primarily due to differences in the annual mast crops. Piedmont harvest data shows higher overall deer densities, and State regulations have been liberalized to help reduce population numbers to within capacity levels. Overall viability is well sustained for white-tailed deer on the Chattahoochee-Oconee National Forests. The forests will continue to monitor deer densities and deer populations are expected to remain relatively stable in the near future. We recommend no need for change.



Credit: Unknown

### ***Black Bear***

Black bear numbers continue to increase in Georgia. During 2002, bait station surveys conducted by GADNR and Forest Service personnel showed the highest percent of bait visits by black bear since the survey routes have been conducted (53.7% of the baits were taken by bear). Biologists are concluding that black bears are at or very near carrying capacity on the Chattahoochee National Forest. Information from GADNR harvest records, bait station visitation rates and the increasing number of problems associated with bear-human encounters all indicate that the black bear population is healthy and viable on the Chattahoochee National Forest. We recommend no management change.



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Naubinway, MI.

### ***Eastern Wild Turkey***

Eastern wild turkey populations continue to increase or at least remain stable on the Chattahoochee and Oconee National Forests. Data from the GADNR shows a reduction in the number of hours spent per number of gobblers harvested on the Oconee National Forest during the 2001 season. Slight fluctuations occur on the Chattahoochee National Forest from year to year with no significant upward or



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downward trends evident. Viability is ensured on the forest, and we recommend no need for management change at this time.

### ***Ruffed Grouse***

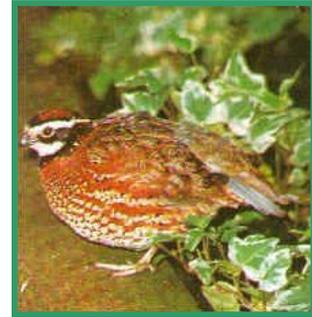
According to GADNR surveys, ruffed grouse populations on the Chattahoochee National Forest continue to show a slight decline based on the number of grouse harvested per hour 1999–2002 hunting season. Other sources of information also show a slight decline throughout the Southern Appalachians during the last 2 decades. Viability is still being maintained; however, if this trend continues, it may be necessary to create some early successional habitat to help increase ruffed grouse population numbers on the Chattahoochee National Forest.



U.S. Geological Survey  
Photo by ©Greg Lasley

### ***Bobwhite Quail***

Using several different approaches and sources of information, we can conclude there is evidence of declining populations of bobwhite quail on the forests. Breeding bird survey results for Georgia show a significant decline statewide during the past 30 years. While bird road surveys and point counts for the past 10 years show no drastic changes, numbers of quail reported remain low throughout the forests. A reduction in early successional habitat on the forests is at least partly responsible for low numbers of this species.



Credit Unknown

Active management, including the prescribed burning and thinning conducted to provide optimal habitat for red-cockaded woodpeckers on the Oconee National Forest, also will benefit this species. Bobwhite quail are still considered a game species in Georgia, meaning state biologists are not concerned about the viability of the species.

### ***Gray Squirrel***

Gray squirrel habitat remains abundant on both the Chattahoochee and Oconee National Forests. Upland and cove hardwoods that are 50 years old and older continue to increase according to Continuous Inventory of Stand Conditions Data. No significant changes are expected in the future and an increase in habitat capability remains likely due to continued maturation of the forest. Viability is being maintained, so we recommend no need for management change.



©Microsoft Corporation

### ***Bog Turtle***

The bog turtle is extremely limited in distribution and range in northern Georgia, there is only one population on the Chattahoochee National Forest and sampling and monitoring efforts have resulted in the marking of seven individuals between 1979 and 2001. The site where this one small population occurs, along other sites with potential bog turtle habitat, is being managed specifically for the species. Potential new sites are sampled periodically to determine if bog turtle populations are present. Habitat manipulation seems to be improving conditions for this one site. Although it is doubtful this is a viable population, evidence of reproduction taking place is encouraging. We hope that future habitat improvement will encourage continued reproduction and the eventual establishment of a viable bog turtle population.



©U.S. Fish and Wildlife Service

### ***Mountain Pitcher Plant***

Inventories for the mountain pitcher plant continue to occur on the Chattahoochee National Forest. Currently, there still is only one location where these pitcher plants have been found. At this site, as well as the two established sites where plants were transplanted, there continues to be monitoring and habitat restoration work completed as needed. Recent monitoring information show the total number of plants has increased during the last decade. In April of 2000, mountain pitcher plants were noted to be producing fruit and seed for the first time in at least 12 years. Site visits in 2001 and 2002 revealed the plants were thriving and several were producing seed capsules. The Forest Service and Georgia Plant Conservation Alliance are working together to further increase the number of plants and expand their suitable habitat. Our goal is to eventually establish a more viable population of the mountain pitcher plant on the Chattahoochee National Forest. We recommend no change in management direction.



©North Carolina Department of Agriculture and Consumer Services

### ***Yellow Lady's Slipper***

As a result of botanical surveys on the Chattahoochee National Forest, the number of known yellow lady's slipper populations continues to increase. New populations have been and will continue to be documented and mapped. Management of this species consists of protection of all populations consisting of 10 or more individuals from all direct or indirect impacts. This will ensure continued viability for the yellow lady's slipper on the forest. We recommend no further management change for this species.



©University of Vermont

## **D-1 – Animal Unit Month Capacity**

- Assess the utilization as well as capacity of production of forage in order to determine stocking rates and the overall grazing use.

Allotment management plans specify the animal units (AU's) for each allotment. The health of the forage is determined by on-site inspections and soil analyses, both of which are completed twice a year. Inspections include counting of livestock and evaluations of fencing, riparian areas and cattle guards.

*Recommendation:* No changes are needed. All allotment inspections have complied with management plans. Forage is healthy based on soil analyses and visual checks.

## **E2 – Reforestation and Timber Stand Improvements**

- Ensure that harvested areas are adequately restocked within 5 years and that scheduled reforestation and Timber Stand Improvements (TSI) are accomplished.

During fiscal years 2001 and 2002, the 5-year restocking requirement was met. There were no planned timber harvests. Regeneration actions were conducted on areas where wildland fires, southern pine beetle infestations, and high winds created openings (73 acres) that were reforested by planting. Precommercial thinning was accomplished on 964 acres over the time period.

*Recommendation:* No changes are needed. A significant number of pine and pine-hardwood stands have been affected by the southern pine beetle epidemic, which lasted up to four years in some parts of the Forests. Reforestation in the next year should focus on these areas, making sure to prescribe species and densities that fall within the range of ecotypes that can be sustained on the specific site.

## **E3 – Management Prescriptions and Silvicultural Standards**

- Ensure that the following items are in compliance with the Forest Plan: size of openings, dispersal and shape of openings, timing of reentry, restocking standards, and systems of silviculture.

There were no planned regeneration harvests during this time period. All other planned activities were well dispersed, timing of reentry was within bounds, and restocking standards were met.

There were some areas where southern pine beetle infestations have occurred. A number of these natural occurring “clear-cuts” were partially or entirely harvested to control the spread of the infestation; reduce the hazardous conditions of the dead trees along roads and in and adjacent to recreation areas; reduce the risk of intense wildland fires, and provide some raw materials to the local market.

*Recommendation:* No changes are needed.

#### **E4 – Effects of Implementing management practices**

- Compare actual timber outputs with those in the Forest Plan for 1) acreage cut by method of cutting; 2) acreage cut by age class and productivity class; and 3) evaluate yield predictions.

During fiscal years 2001 and 2002 there have not been any planned timber removals; therefore projections have not been within the 20 percent of planned goals as stated within the Forest Plan.

*Recommendation:* The Forests should plan timber harvests consistent with ecosystem management principles and focused on wildlife (both game and non-game) habitat improvements as well as restoration or maintenance of forest health.

#### **E5 – Suitability of Silvicultural Systems, Especially Group Selection and Shelterwood Cutting Methods**

- Assure treatments by all silvicultural systems are compatible with all resource values and with multiple-use management principles.

None were implemented in fiscal years 2001 or 2002. See E4.

#### **E6 – Forest-type conversions**

No forest-type conversions have occurred 2001 or 2002. See E4.

#### **F1 – Water Quality**

- Ensure compliance with Federal, State, and local standards.

Water quality monitoring (other than swimming water) consisted mainly of implementation monitoring of ongoing projects and forest management activities. The focus of monitoring continues to be erosion and sedimentation, which can cause impacts to the stream system, aquatic habitats, and riparian areas.

Primary methods used include visual inspections of project areas and evaluations of nearby streams and adjacent riparian



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**Figure 10 – Water Quality Monitoring**

areas. A short list of typical projects evaluated includes road maintenance and obliteration, recreation trail maintenance, and prescribed burning. The emphasis of monitoring was to assess the implementation of Georgia's Best Management Practices for Forestry, and track conditions of streams on Georgia's 303d list.

In 1999, federal courts placed a deadline for U.S. Environmental Protection Administration (EPA) to comply with stream Total Maximum Daily Load (TMDL) issues in Georgia. Numerous streams in the NF were listed on the state's 303(d) list as a result of this mandated deadline. The forest has worked closely with EPA personnel to comply with TMDL mandates. Monitoring studies have been done on many of the listed streams. Some of these efforts had streams de-listed as impaired, other efforts have documented the results of practices installed to improve water quality of listed streams.

Intensive monitoring of six streams in the Conasauga River watershed (Cohutta Wilderness) in partnership with the U.S. Geological Service revealed that these streams were not appropriately listed by the State of Georgia on their 303d lists as streams impaired because of heavy metals. After two years of study, the streams were delisted.

Monitoring was conducted on several road maintenance projects undertaken as part of the Chattooga River Large-Scale Watershed Project. Roads were evaluated to identify specific problem segments prior to maintenance work.

Inventory was completed on 84 miles of streams and 68 stream reaches within the Chattooga River Watershed to establish baseline conditions. Inventory methods include characterization of stream channels, collection of aquatic insects, and classification of habitats. This information will also be used in addressing water quality issues on various stream segments within the watershed.

As in prior years, field visits were again conducted with water quality specialists from the USDA Natural Resources Conservation Service, Georgia Forestry Commission, U.S. Environmental Protection Agency (EPA) and the USDA Forest Service. The focus of the visits was the effectiveness of implemented BMP's and any needed changes. Emphasis was placed on disconnecting the effects of roads from watercourses across the landscape.

Numerous studies on total suspended solids have been conducted by the Coweeta Hydrologic Lab in the Chattooga Watershed. These studies will assist in the tracking of organic matter and sediment in streams and help determine the historic nature of the impacts of these solids on water quality.

*Recommendations:* No changes needed; monitoring indicates that goals, objectives, management area direction, and standard and guideline implementation is being achieved.

## F2 – Riparian Area Management

- Ensure compliance on wetlands, floodplains, and watercourse protection strips.



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**Figure 11 – Stream Bank Restoration on Little Creek at a Breached Dam Site**

A review of potential impacts of projects in proximity to stream channels, 100-year floodplains, riparian areas, and wetlands was conducted on a small sample of projects. Forest management activities (such as road maintenance and obliteration, prescribed burning, trail construction and maintenance, and stream bank restoration) are evaluated during the planning phase, construction phase, and after project completion. Projects are designed to minimize or mitigate impacts.

Monitoring results continue to emphasize disconnecting roads and trails from watercourses using properly placed broad-based dips, water bars, cross-culverts, and lead-off ditches. Road maintenance continues the use of coarse-sized gravel that is free of fines in order to armor road surfaces and reduce erosion and sedimentation. As funding is available, culverts are replaced to meet standards set by Best Management Practices for Forestry.

The Coweeta Hydrologic Laboratory also installed several field monitoring sites along a Forest Service System road in the Chattooga River Watershed. Evaluation of the movement of sediment and the methods used to minimize this impact are included in the study. The SRS manuscript from this study, “*Assessing Impacts of Forest Road Condition and Management Practices on Runoff Water Quality to Streams*” provided guidelines as to which BMP’s work for road conditions, corrective actions to be taken on some BMP’s, and the need to maintain existing BMP’s.

The lab also monitored the benefits of a Forest Service road reconstruction project at the headwaters of the Jacks River in the Conasauga River watershed on the Armuchee-Cohutta Ranger District. Their analysis evaluated the pre-treatment and post-treatment difference in the amount of sediment leaving the roadway. Significant reductions in sediment yield were noted after the treatment.

*Recommendation:* No changes needed; monitoring indicates that goals, objectives of management area direction, and standards and guidelines are being achieved.

## G1 – Minerals

- Evaluate effects of minerals and energy activity.

Mineral activity remained at a low level on the forests during fiscal years 2001 and 2002. The demand for oil and gas leases is nonexistent. Most activity is recreational-type mineral exploration (gold panning) and common variety mineral sales.

*Recommendation:* No changes are needed; monitoring indicates that goals, objectives, management area direction, and standards and guidelines are being achieved.

## K2 – Erosion Control Compliance

- Ensure success of erosion control practices on timber sale areas, roads, wildlife improvements, and construction sites.

Field evaluations of soil disturbance areas were conducted to assess the installation and effectiveness of erosion control practices in use.

Evaluations were conducted mainly on road maintenance and obliteration projects, illegal OHV trail closures, watershed restoration projects, prescribed burns and wildland fires.

Native species were seeded into several areas needing re-vegetation. Results have been mixed. Some species have competed and propagated well, others have died out completely. More instruction and guidelines are needed to further this program if it is to be a forest priority.

Native cane was transplanted into streambanks of the West Fork of the Chattooga River. These recently acquired areas were old fields farmed throughout the years all the way to the streambank. These bottom land soils have been heavily impacted.



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Figure 12 – Erosion Control Using Native Species After Road Obliteration

*Recommendation:* No changes are needed; monitoring indicates that goals and objectives are being achieved.

## L2 – Road Standards Compliance

- Ensure road construction, reconstruction, and maintenance complies with standards.

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All road construction, reconstruction, and maintenance activities comply with Forest Plan standards throughout all project phases. Supervisory personnel monitor compliance with standards during field inspections as part of the project implementation.

*Recommendation:* No changes needed; monitoring indicates that goals, objectives, management are direction, and standards and guidelines are being achieved.

**Figure 13 – Photo Monitoring of a Road After Heavy Road Maintenance**

## P-1 – Wildland Fire

- Acres and number of wildland fires by cause. Evaluate the extent and effects of wildland fires on national forest lands.

During 2001-2002, there were 210 fires on the Forest burning 3,972 acres of National Forest System lands and 786 acres of private lands. There were 123 wildland fires in 2001 and 87 in 2002, declining by approximately 30%. The acres consumed by wildland fires also declined from 2001 to 2002, going from 2,755 acres in 2001 to 1,217 acres in 2002.

Through the summer of 2002, Georgia suffered from the effects of a long term drought. Rainfall from mid-2002 has been closer to normal based the historical averages.

Fire in the urban interface continue to be a concern. Development of mountain top properties that are adjacent to National Forest System lands is increasing. Narrow, single-lane access roads and limited water supplies are factors that make protecting these homes from an uphill fire run very difficult.

Forest fuel loading, for the past four years, has increased due to severe southern pine beetle infestations along with storm damage. These sites will present a significant challenge to our wildfire suppression efforts due to greatly increased fuel loading and difficult access and fireline construction conditions. Fires in the next several years may be larger and more difficult to contain given the changing conditions.

*Recommendation:* Goals, objectives, and standards and guidelines were achieved during this time period.

## P-2 – Prescribed Fire

- Acres burned with prescribed fire. Evaluate the extent and effects of prescribed fire on national forest lands.



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**Figure 14 – Lighting a Prescribed Burn on the Chattahoochee National Forest**

In 2001, 13,358 acres were prescribed burned, with most of the acreage burned on the Oconee National Forest. In 2002, 17,630 acres were burned, with an increased proportion of the acres being burned on the Chattahoochee National Forest.

Post burn evaluations completed for all of these prescribed burns document that most of the burns fully achieved the objectives set by the interdisciplinary team during the planning of the treatment.

Smoke management has become an increasing concern over the last couple of years with several counties with National Forest System lands becoming part of the 45-county containment zone for air quality.

Work continues on the Chattahoochee and Oconee National Forests to monitor effects of prescribed fire. Establishment of photo points to monitor before and after effects of prescribed burning will increase the monitoring data available and refine our efforts in this area.

Of widespread concern is the shift in forest composition away from oak. Inventory and analysis data, vegetation data (collected as part of the Chattooga River Ecosystem Demonstration Project) and personal observations, demonstrate that the understory of both hardwood and pine cover types on both the Chattahoochee and Oconee National Forest are dominated by other woody species in the mid-canopy and shrub layers.

These understory species, white pine, hemlock, black gum, sourwood, dogwood, red maple, and holly, are typically tolerant of the modified environment under a canopy and intolerant of fire. Their current abundance is due to about seventy years of fire and grazing exclusion. Removal of the current canopy by natural causes or timber harvest will, without additional work, release these stems to become the new, but much different, forest.

Work has begun on the Oconee to monitor specific effects of eleven years of prescribed burning. The Athens Field Office of the Southern Research Station, students from Gainesville College, and personnel from the Georgia Wildlife Resources Division are involved along with District and SO personnel. The first step taken was to create a GIS data

layer and data tables. This information will be queried to quantify the acreage of pine and hardwood by each unique burning regime. From this information, field recon and published literature will be used to design a systematic sampling plan for field data collection. The data collected would then be analyzed relative to the effects of concern. This pilot effort is intended to be a template for future systematic inventory and monitoring sampling design efforts at landscape scale.

*Recommendation:* Plan burning strategically with public involvement as a program per District or per zone to address locations to include or exclude, burning cycle length, burn timing (dormant or growing season), monitoring items, and project-specific mitigations needed. Enter post-burn evaluation data in a corporate database with GIS display capability for long-term and large-scale analysis. Use the on-going plan revision effort to engage the public in crafting a Forest monitoring plan that is responsive to their concerns while meeting the demonstrated need for management.

### **P-3 – Air Quality**

- Report on Air Quality Management Program and assure compliance with air quality standards and guidelines for prescribed burning.

All prescribed burn plans identify acceptable values for mixing heights and transport winds. Acceptable transport wind directions are those that avoid carrying smoke toward identified smoke-sensitive areas. Smoke screening maps are prepared for each particular burn plan. An overall smoke screening map is prepared, updated, and posted on each district. Predicted mixing heights and transport winds in the weather forecast for the day of the burn are compared to the acceptable values of the burning plan.

When prescription parameters are in range, a burning permit number is requested from the Georgia Forestry Commission prior to ignition. This permit is granted or denied primarily on the basis of air quality. Ignition does not occur without this permit.

We expect that soon, after baseline data has been taken, the US EPA will be issuing particulate matter emission budgets. The Forest Service will have to apply for an emission amount which would then be compiled and adjusted with all other applications. We would be issued a budget and EPA air quality monitoring stations would be used to check how successfully the system is working. If budgets are cumulatively exceeded, new budgets would be drawn up by EPA and the Forest Service would get a new budgeted amount. Prescribed fire will be affected because the particulate sizes targeted by this procedure are a significant component of prescribed fire smoke.

*Recommendation:* Begin burning earlier in the dormant season when burning on private lands is less likely in order to avoid cumulative smoke problems. Begin burning earlier in the day to reduce the amount of smoldering material contributing smokes as humidity rises with darkness. Continue to work cooperatively with regulatory agencies, cooperating agencies, and the public on smoke management issues. Continue and increase the use

of fire information personnel contacting the public prior to and during large burns to explain the use of prescribed fire and answer questions.

#### **P4 – Insect and Disease**

- Determine acres and volumes of timber affected, and assess effect of forest management on insect and disease occurrence.

***Southern pine beetle:*** Infestations increased in the late summer of 2001 and peaked during the growing season of 2002. An estimated 6,500 acres of mostly southern yellow pine have been killed by an estimated 2,500 infestations across the Forests.

During fiscal years 2001 and 2002 there were small volumes of timber salvaged and a few direct control efforts of active infestations, but lack of an approved decision that complied with the National Environmental Policy Act (NEPA) prevented any substantial efforts to control the epidemic.

Close coordination continues with Forest Health Protection in determining the best strategy for control of the beetle. Districts continue to monitor and remove infested timber that are hazardous to roads, recreation areas, and facilities.

***Gypsy moth:*** Monitoring shows no outbreaks anywhere across the two Forests.

***Hemlock woolly adelgid (HWA):*** The HWA has infested hemlock trees in the very northeast corner of Rabun County on the Tallulah Ranger District. It may also be in portions of Towns County on the Brasstown and/or Tallulah Ranger Districts. The very northeast part of this area have heavy infestations, including some acreage within the Ellicott Rock Wilderness Area.



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The HWA feeds on plant fluids at all life stages of eastern hemlock and can kill a mature hemlock tree in about five to seven years. This insect is non-native and therefore has no natural enemies. The Tallulah Ranger District is planning for the release of predatory beetles that would feed on the HWA and reduce their populations, but there is no method currently known to eradicate the adelgid.

**Figure 15 – HWA Egg Masses from a Hemlock near Satolah**

***Recommendation:*** Reductions in the hemlock frequency within riparian corridors needs to be studied (HWA); continue close monitoring coordination with Forest Health Protection and the Georgia Forestry Commission. Processing of decisions in compliance with NEPA need to be planned so the Forest can react in a timely manner to insect and disease

epidemics. In addition, preventative efforts should be taken to reduce the risk of insect and disease damage across the Forests.

### **P5 – Status of Law Enforcement Problems at Parking Areas near Wilderness**

- Determine if concerns of personal safety and property security are improving.

Parking areas at most wilderness sites on the forest have continued to have a low level of law enforcement problems. However, several of the trailhead parking lots at some of the most popular wildernesses continue to experience high levels of vandalism and theft. Law enforcement officers (LEOs) have conducted extensive investigations and increased surveillance at these parking areas.

Chattahoochee-Oconee Recreation Fee Demo Program involves adding fee stations. These have created additional vandalism or theft of monies deposited in the fee tubes.

*Recommendations:* Monitoring indicates that goals, objectives, management area direction, and standards and guidelines are being achieved. Increased surveillance will continue at the problem areas until the break-ins of vehicles and vandalism of fee tubes subside. More law enforcement presence is needed in these areas, but is not currently available because of staffing levels. The Forest should consider having district staff in these areas during high visitation times, and collecting fees in a timely manner. Additionally, older fee tubes need to be replaced with current designs that prevent theft.

### **P6 – Status of Total Law Enforcement Program**

- Evaluate effectiveness of law enforcement efforts in resolving concerns identified in Plan issues.

The forest law enforcement program operates under three primary emphasis areas:

1. Public safety;
2. Property protection, including protection of resources, personal and government property, marijuana detection and eradication; and
3. Occupancy enforcement, including trespass cases.

Law enforcement levels and priorities are meeting the needs of the visiting public to the extent possible with current level of LEOs/Agents.

*Recommendations:* Monitoring indicates that goals, objectives, area direction, and standards and guidelines are being achieved within current staffing capabilities. Increased visitation and increased crime statistics on the Forest has created a need for

additional law enforcement staff. The continued cooperation with State, local, and other Federal law enforcement agencies has helped with the increased burden on law enforcement staff.

## **RESEARCH**

### **Forest Monitoring Studies and Research**

The Forests have numerous on-going projects either designed specifically to give answers to monitoring questions or which provide monitoring data as part of wider objectives. Most, if not all are multiyear research projects.

***Fiscal Year 2001 Monitoring and Evaluation Report for the Chattooga Watershed Project:***

**A-6** 15 Acres of illegal ATV trails and roads were closed and blocked, reducing erosion and sedimentation in areas that impact stream water quality.



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**Figure 17 – Road Blockage with Gate**



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**Figure 16 – Illegal ATV Blockage**

**C-1 Wildlife and Fisheries**

**Stream Structure Workdays:**

More than sixty volunteers, some driving more than two hours, came to three Trout Unlimited workdays to repair and maintain stream structures in tributaries of the Chattooga River. Forty-two structures were repaired and eleven cover logs were strategically installed while the work was being completed. Many of the stream structures repaired date back to the 1960's.

The local Rabun County Trout Unlimited Chapter purchased the materials and equipment to make the structure repairs with a Trout Unlimited Embrace A Stream grant they received. The Embrace A Stream grant was for over 7000 dollars, and was matched with over 14,000 dollars of in kind services and materials. Improvement to the structures will enhance trout habitat by creating cooling pools and protective cover.



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Approximately eight miles of Chattooga River are stocked by helicopter with 25,000 to 60,000 fish annually. Financial assistance in this effort comes from the local Trout Unlimited Chapter and the Georgia Trout Unlimited Council.



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Figure 18 – Repairs completed on a K-dam structure over thirty years old

### F-1 Stekoa Creek and “Stream Team”

- Establishment of the Stekoa Creek Watershed Group, comprised of representatives from the local governments in Rabun County, logging, agriculture, development, recreation and environmental concerns. Their mission is to assist the local community in restoration efforts and Total Maximum Daily Load implementation in the Stekoa Creek watershed, an impaired stream and the first in Georgia to receive a TMDL standard for sediment in Georgia. Stekoa Creek is a sub-watershed of the Chattooga.



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Figure 19 – Group discussing Stekoa Creek

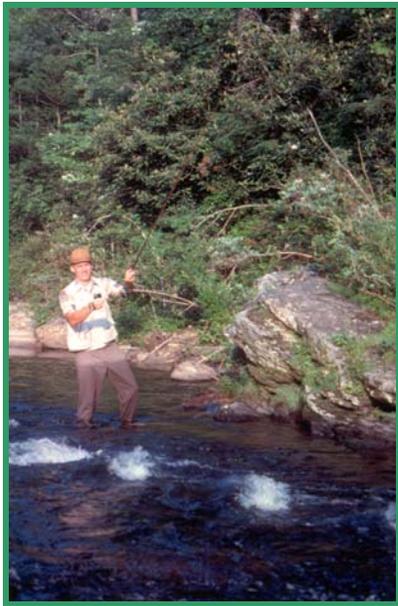
- Rabun Gap Nachoochee School has performed several community service projects including stream clean up days for Stekoa Creek in Georgia. Two dump truck loads of trash and debris were removed from a three-mile segment of the project this year.



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Figure 20 – Students from Rabun Gap Nachoochee School clean up Stekoa Creek

- The University of Georgia funded a \$16,566 graduate study of water quality and economic analysis for the restoration of the Stekoa Creek Watershed.



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- Received approval of a section 319(h) grant from Georgia Environmental Protection Division and EPA for the development of a watershed restoration action strategy for the Chattooga River Watershed, including Stekoa Creek. The grant totals \$183,208 and includes numerous partners. It will operate through the University of Georgia and under the direction of NRCS for the development of an Environmental Assessment. Upon completion of the assessment, funding for Best Management Practice (BMP) implementation will be sought from various resources.

The “Stream Team”, comprised of college students trained by the Center for Aquatic Technology Transfer, completed its second year of stream inventory and monitoring on impaired streams in the watershed. Monitoring of these streams was one of the recommendations made in the 1995 Van Lear report (Van Lear, et. al.). Teams have completed 20.4 miles of stream inventory; over 100 pebble counts in three stream segments of impaired streams, and conducted approximately 25 surveys for macro invertebrates in watercourses. This work is helping to establish baseline data.

## F-1 EPA

During 2001, US EPA Region 4 completed TMDL calculations for eight streams identified as impaired in the Georgia portion of the watershed. Adverse impacts to the biological community and habitat conditions in the streams were identified. The TMDL’s were developed to address the pollutant of concern, excessive sedimentation, in these streams.

Construction related runoff and runoff related to unpaved roads were identified as the primary sources of sediment in these watersheds. Information regarding these TMDL's can be found on the EPA Region 4 website at [www.epa.gov/region4/water/](http://www.epa.gov/region4/water/).

## F-2

19 miles of FS roads had maintenance on them to re-slope them and install broad base dips and cover with #4 gravel, as recommended in the Van Lear Report.



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Figure 21 – Completed Road Maintenance

Figure 22 – Hydro-seeding and mulching road edges

6 miles of County roads that directly effect water quality in the National Forest were maintained with the same treatments as above in partnership with Rabun County using the Wyden Amendment.

Figure 23 – Rabun County Commissioners receive award for water quality work



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Gabions were used to stabilize an eroding area on Sarah's Creek Road where the stream runs right next to the road. Sever erosion problems were occurring at this point.



Figure 24 – Gabion Work

## Coweeta Hydrologic Station Research

Coweeta Hydrologic Research Station has two studies nearing completion. The first is “Sediment and petroleum hydrocarbon production from forest roads”. The objectives of this study were to compare sediment production and movement across a range of road surface types and to quantify the amount and movement of petroleum-based hydrocarbons from paved surfaces. Four road surface types were identified for the study. They included a 2-yr-old paved surface, a graveled road section receiving routine maintenance levels, a graveled road section receiving high maintenance and sediment control features, and an unimproved graveled road section. Results indicate large differences in TSS among road surface types (paved < high maintenance < routine maintenance < unimproved). These data will be coupled with road sediment models to assess road restoration effectiveness at watershed scales.

**Manuscript in preparation:** Clinton, B.D., and J.M. Vose. In prep. Sediment and petroleum hydrocarbon production from forest roads in the Chattooga River Watershed. Southern Journal of Applied Forestry.

The second study, “Watershed Health: Stream Water Quality Monitoring Study” Seeks to determine the “fit” of EPA assessments to streams based upon short-term assessments of water quality and to determine the effectiveness of watershed restoration efforts on stream water quality. Coweeta is conducting detailed monitoring of water quality, biotic indices, and stream flow on four tributaries of the Chattooga River to determine how these relate to EPA 303(d) listing status. These streams include one benchmark stream, two threatened streams, and one impaired stream. Initial results indicate that TSS is not a good variable with which to represent stream impairment. Consequently, additional analyses to differentiate between suspended sediment and particulate organic matter has been initiated.

**Manuscript and Seminar in preparation:** Riedel, Mark S., James Vose. 2002. The dynamic nature of sediment and organic constituents in TSS. National Monitoring Conference, National Water Quality Monitoring Council, Madison, WI, May 21 – 23, 2002.

**Seminar:** Riedel, Mark S. 2001. Sediment Loading in the Chattooga River – Issues of TSS, SSC, Organic Matter and Bed Material Load. LTER Semi Annual Sciences Meeting, Athens, GA, June 2001.

## RESPONSE/FEEDBACK

Attached is a form you can use to give us your thoughts or comments on this report or on the subject of Forest Plan monitoring in general. Your comments can help us to do a better job. Send to: *Forest Supervisor, 1755 Cleveland Highway, Gainesville, GA 30501*. To reach us, you may call telephone number **770/297-3000**.

Please visit our web site at: <http://www.fs.fed.us/conf> for further information and forest news.





## **MONITORING & EVALUATION TEAM**

**Thomas H. Anderson**, Forest Fire Management Officer  
**Becky Bruce**, Forest Archaeologist  
**Deborah Byrd**, Forest Roads Engineer  
**Elizabeth D. Caldwell**, Wildlife Biologist, Oconee Ranger District  
**Mitzi G. Cole**, Forest Fisheries Biologist  
**Steven N. Cole**, Silviculturist, Tallulah Ranger District  
**William H. Elliott**, Forest Technician, Chattooga Ranger District  
**Ray M. Ellis**, Staff Officer  
**Kent Evans**, Conasauga River Watershed Project Coordinator  
**Thomas H. Fearrington**, Forest Recreation Planner  
**Jeff Ferguson**, Forest Technician, Toccoa Ranger District  
**Tamilyn K. Ferrier**, Patrol Commander  
**Dick (Randy) L. Fowler**, Chattooga River Watershed Project Coordinator  
**Carolyn D. Hoffmann**, Forest Landscape Architect  
**David G. Kuykendall**, Forest Technician, Brasstown Ranger District  
**Erika Mavity**, Forest Planner  
**Karen O. McKenzie**, Public Affairs Officer  
**Charlene Neihardt**, Forest Hydrologist  
**John J. Petrick**, M&E Team Leader - Forest Planner  
**Tony W. Rider**, Assistant Fire Management Officer  
**Dick Rightmyer**, Forest Soil Scientist  
**Allen Smith**, Resource Assistant, Tallulah Ranger District  
**Larry R. Thomas**, Resource Assistant, Armuchee-Cohutta Ranger District  
**Sandra E. Thomas**, Reality Specialist  
**David T. Vinson**, Forest Technician, Tallulah Ranger District  
**Cindy Wentworth**, Forest Botanist/Ecologist  
**James M. Wentworth**, Zone Wildlife Biologist, Brasstown Ranger District