



The Chattooga Quarterly

Summer



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Powderhorn Maps the Chattooga in 1761



Carved powderhorn (now at the Museum of the Cherokee Indian in Cherokee, NC) commemorates the Grant Expedition against Native American villages in our tri-state area.

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Director's Page

Buzz Williams, CRWC Executive Director

In our last newsletter, I wrote about how there may be some opportunities for raising public awareness as a result of the all out assault on environmental regulations currently underway in congress. The rationale for taking advantage of this new political landscape is based on the premise that if people really understand how bad the situation is in congress, they will become actively engaged in sending a message to our political leaders that dismantling laws which protect our environment is not a viable solution to fiscal problems.

This represents a radical shift on the part of the conservation community - to a real grassroots approach. Since our Coalition formed in 1991, we have been actively implementing this shift in our program. Other groups are

jumping on this bandwagon, in an effort to shed their image as "inside the beltway" players. I'd like to offer some ideas, to help stimulate thought on how to implement this strategy shift.

1) **Believe in the power of the people.** For too long, we have worked utilizing a "reform the bureaucrats" strategy. Now, it should be obvious to everyone that agencies like the Forest Service are handcuffed by congress. Here, big corporations like the timber, mining, grazing, and yes, even recreation industries contribute generously to "war chests", aiming to re-elect congress people who go to Washington and represent industry - not the people. Congress controls the Forest Service through the appropriation of funds for the agency. These funds are often dispersed conditionally. For example, the Forest Service receives money if they meet timber quotas. The quotas are influenced, you guessed it, by the timber industry. Because these quotas are politically (not scientifically) dictated, they result in the overcutting of the public's forests. Yet poll after poll reveals that the public does not want congress to dismantle laws which guide environmental protection. A recent poll (by an independent organization) of the American people, cited by Chief of the Forest Service Jack Ward Thomas, found

that "only 17% agreed that the consumer needs of the American public should be satisfied even if the natural resources on public forests are eventually depleted". But now our problem is: powerful industry lobbyists have convinced some of the public and the majority of congress that recent legislative mandates, such as the Timber Salvage Rider that was attached to the 1995 Rescissions Bill, are necessary for improving forest health, and also address our nation's fiscal crisis. When we eventually debunk this propaganda, we hope that the public will prove

the survey and vote for leaders who represent their views, and not those of resource extraction industries. This attacks the current problem at its heart, instead of futile attempts to change agencies that have limited latitude to change themselves.

2) **We must give people the facts.** Our role as a conservation organization must be to ensure that

citizens have access to credible and factual information.

3) **We must recast our image, in order to be seen as responsive to the public's views.** The conservation strategy of the 1980's -which was based "inside the Beltway" in Washington DC - didn't work. Large organizations, whose top executives garnered salaries of up to \$350,000 per year, and their boards, who met in posh resorts to fashion compromises in order to achieve a progressively nebulous "greater good", have suffered from the public's decision that they lack credibility, and many of these organizations have fallen from power. Let us change our image by shifting to a community-based approach. For example, we may not agree with the timber industry, but we can be sensitive to the plight of small logging operators who may feel threatened by cut-backs in timber harvesting in sensitive areas. If the Forest Service were not forced to meet timber quotas by congress, it could be beneficial to smaller-scale loggers, who oftentimes harvest timber with smaller equipment, resulting in less impact on the environment.

4) **Offer real solutions.** "Think tank" groups are in a prime position to formulate viable ways to cut government



(Asheville Citizen-Times, March 18, 1995)

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Forest Service's "Tuckaluge Project" Threatens the Crucial Rabun Bald Area

This spring the Forest Service's Tallulah Ranger District in Georgia released a lengthy, 136 page Environmental Assessment that proposed to construct and "re-construct" 9.1 miles of roads, and harvest over 8 million board feet of timber in one of the largest areas of mature forest remaining in the entire Chattooga River watershed. This area is located entirely within the Warwoman Creek drainage (a major tributary of the Chattooga River), and partially within the Rabun Bald Inventoried Roadless Area. The Forest Service calls the proposal the "Tuckaluge Ecosystem Management Demonstration Project", and asserts that it's the first large project in the watershed to incorporate several aspects of the knowledge and data acquired from the three year, 1.5 million dollar (tax payer funded) "Chattooga River Basin Ecosystem Management Demonstration Project". Many residents of the Warwoman - Tuckaluge Community, along with the membership of the Chattooga River Watershed Coalition, have written to Tallulah District Ranger Jensen, expressing reasons why they are in opposition to this project. Public comments on this proposal were due on June 26, and the Tallulah District has not yet issued a final decision (Decision Notice) on their proposed activities.



A black bear track in the Rabun Bald area, 9" by 4", demonstrates the importance of interior forest habitat



Yellow Lady's Slipper

Marie Mellinger on Rabun Bald

A botanical excursion to Rabun Bald is a delight at any time, especially from early spring to late autumn. Rabun Bald is the second highest peak in Georgia at 4696 feet. It has a high forest with basswood, and yellow birch (betula allegheniensis), a lot of mountain sweet pepperbush, and striped maple (acer pensylvanica) in the understory.

In spring the rich coves of the area contain such beauties as

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The "Chattooga...Project's" study of sediment sources currently degrading the water quality of the Chattooga River clearly concludes that the primary source of stream sediment in the river is from various road building activities. Further deterioration of water quality should be of primary consideration for any proposed activity in the Tuckaluge area, yet the anticipated effects of the proposed roading and logging activities are dismissed as inconsequential in the Forest Service's Environmental Assessment! The construction of even more roads, and the fragmentation and disturbance that would occur with the proposed harvesting of over 8 million board feet of timber in this location (no matter how carefully accomplished) would in our opinion effectively destroy the integrity of this area. For an in-depth and detailed analysis of this proposed project, please contact the CRWC office. We will provide copies of our written comments to interested folks.

Update:

The Forest Service at Work on Our Land

Big Creek timber sale (compartment 05)

The headwaters of Big Creek are to be impacted by the construction of over 5 miles of gravel road and the extraction of 5.7 million board feet of sawtimber and pulpwood. Local residents of the Satolah Community, as well as the Chattooga River Watershed Coalition, strongly opposed this project which threatens to damage the springs and creeks they use for drinking water and fishing, as well as the woods they use for hunting. Sixtyfive residents of this small community signed a letter to District Ranger Dave Jensen requesting modification of the sale before it's put out for bid. The District Ranger has made no changes in response to the requests contained in their letter.

Tuckaluge timber sale proposal (compartments 37, 42, 43, 44)

Encompassing the riparian area of Tuckaluge Creek, the project area would heavily impact the crucial Rabun Bald Roadless Area. The Rabun Bald area is one of the very few relatively intact and unroaded forest communities in the Chattooga watershed, and serves as a refuge for species that are in decline due to forest fragmentation and disturbances due to intensive timber extraction activities. The CRWC is working to connect these refuges with protected wildlife corridors in order to form a pattern of habitats that can sustain viable populations of sensitive species. The timber sale proposal includes construction of 9.1 miles of roads and the extraction of 8.2 million board feet of timber. Local residents of the Warwoman community have voiced their strong opposition to this sale. Over 100 residents of this small community have signed petitions and letters expressing their concerns to Tallulah District Ranger Dave Jensen. Road building and timber harvesting in a previously inventoried Roadless Area without completing a full Environmental Impact Statement violates the National Environmental Policy Act.

Stekoa Creek timber sale (compartment 59)

Located directly adjacent to Southeastern Expeditions, Stekoa Creek, the Chattooga Wild and Scenic River Corridor, and in an extremely narrow corridor of public land which connects the northern and southern portions of the watershed, this project was poorly placed from the beginning. Not only will the project adversely affect a vital wildlife corridor, trees are marked for cutting right next to the bungalows of some raft guides. Also, timber cutting is planned directly upslope from Stekoa Creek, threatening further siltation of a creek already designated as an "impaired waterway" by the Georgia EPD. The project calls for 1.5 miles of road construction accessing 154 acres of public land for timber extraction. Strong opposition was expressed during the official USFS comment period, and meetings were convened by South Carolina Forest Watch to discuss strategies to prevent the sale. The Forest Service responded by withdrawing the sale temporarily. Jim Kidd (Forest Service) and Buzz Williams (CRWC) created a tentative compromise that would have: dropped two stands directly adjacent to the river corridor, created a buffer around the property line of Southeastern Expeditions, changed all even-aged management (clearcutting, seed tree and shelterwood) to uneven-aged management (single tree selection and small group selection), and split up the sale units into smaller ones that local, small-scale loggers would be able to bid on. District Ranger Jensen declined to implement the compromise.

Holden Branch and Laurel Branch timber sale (compartments 27, 28)

This project includes road building and timber extraction in two stands of trees (currently being harvested) directly adjacent to the river corridor, and completely in riparian areas. After the project decision was made, another mile of road building was added.

Rock Creek timber sale (compartments 48 and 50)

Also calls for intensive even-aged management directly adjacent to the river corridor. These stands are mistakenly identified by the Forest Service as pine, when in fact the stands are a mix of hardwoods and pines. Under protest from the CRWC, a road has been built directly across the Bartram Trail, to access 22 acres of timber. This area is currently being harvested.

"Crop Tree" release

Across the Tallulah district, a total of 275 acres are to be spot-treated with the herbicide "Arsenal" to eliminate all vegetation within a four foot radius of "commercial" species of oaks, hickories and pines.

The cumulative effects of these projects, along with other projects either planned or ongoing in the watershed are:
road building activities: 35.7 miles of roads; estimated sediment: 487 tons of soil.

Powder Horn Map of Chattooga Country

Suzanna Felder

Between 1758 and 1761, in the area roughly defined by the Chattooga watershed and the South Carolina piedmont, a series of conflicts between the local Cherokee nation and the British settlers and authorities led to a campaign by the British "to Chastise the Cherokees and reduce them to the absolute necessity of suing for pardon." Lt. Col. James Grant was selected to conduct the expedition because he was familiar with the territory, and in January 1761 he landed in Charlestown, SC with roughly 1,200 British regulars.

The Grant campaign is documented and commemorated on a carved powderhorn which came to light in 1976 and now rests in the Museum of the Cherokee Indian in Cherokee, NC. The skillfully engraved powderhorn provides the only known map of the Grant campaign, which took place in and around the area where GA, NC and SC meet.

After spending nearly three months in Charlestown, waiting for good weather, Grant and his Soldiers set off for the uplands, arriving at Congarees on April 22, where they were joined by some Carolina Provincials and a battalion of Royal Scots. The trail indicated on the powderhorn shows the troops stopping at Fort Ninety-Six, where they were joined by some Chickasaw and Catawba warriors, so that the entire force totaled about 2,800 by the time it continued on its way across the 12-Mile River and a series of hills to Fort Prince George. On June 7th, in a column two miles long, the army began the 70 mile march to the first of the "middle settlements" of the Cherokee. Following the traders' path over Oconee Mountain and

down Warwoman Creek, the expedition bivouacked at Estatoe on June 9.

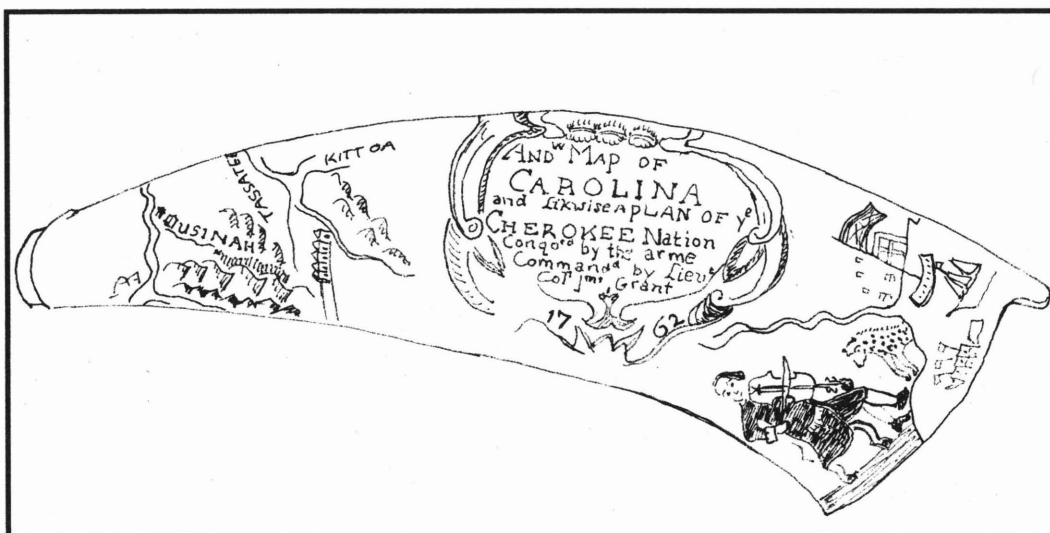
The next day, five miles from Estatoe, in sight of the Cowee Mountains, the army began to encounter Cherokee scouts. Many hours of fighting followed, and that night the army reached Etchoe, with ten men dead and 53 wounded.

At Etchoe the army destroyed Cherokee homes, which had been abandoned earlier in the day. The army moved on, destroying every Cherokee town they came to, including Tassie, Nockase, Cowee, Usinah and Kittoa, the ancient mother town. In the process they destroyed any crops they

found standing, even chopping down extensive peach orchards.

The trail on the powderhorn, and contemporary newspaper accounts of the campaign, indicate that

Grant's army wrought destruction of all buildings and crops (totaling about 1500 acres) in about 15 towns and settlements, most of them along the Little Tennessee River, the



One side of the powderhorn, showing the inscription which reads: "And with Map of Carolina and likewise a plan of ye Cherokee Nation, Conqord by the arme Commanded by Lieut Col James Grant. 1762." On the right you can see a picture of a well dressed gentleman playing a viola. This is in the same area of the horn with the map of Charlestown and a picture of a small band playing flutes and other instruemnts. Presumably the artist wanted to show that there is more to life than destroying Cherokee towns.

Cullasaja and the Tuckasegee. By the time they were finished, however, due to their own losses, their own ineptness, and the difficult conditions, they were in no shape to continue. Grant proceeded south, passing Etchoe, crossed the Chattooga at Earl's Ford, and camped again at Estatoe old fields. They arrived back at Fort Prince George on July 9.

They had spent 33 days in the heart of Cherokee country. They were so intimidated by the mountains that one of the officers, Capt. Christopher French, wrote in his journal:

"...the mountain [in the 4,800 foot high Cowee range] which is upwards of two miles to the top and extremely steep which made a fatigue beyond

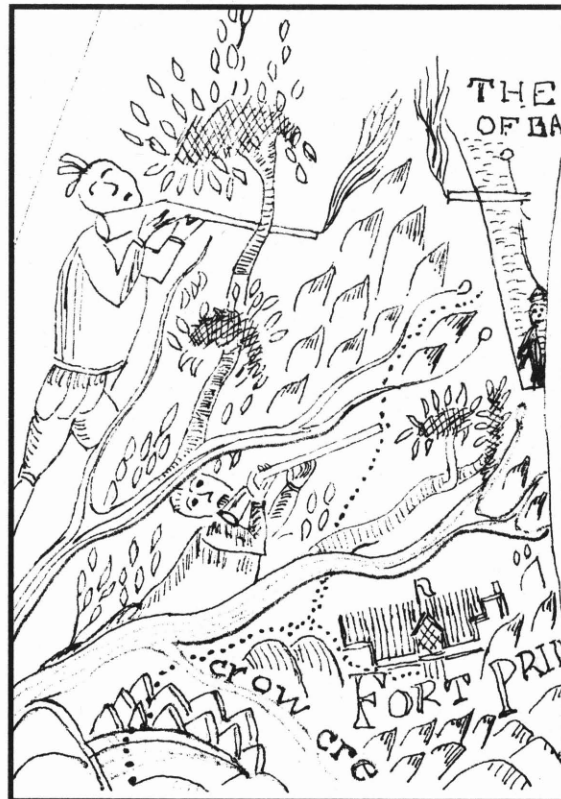
Powderhorn continued...

description to get up it... [was] the strongest country I ever saw, anything we had yet passed being nothing in comparison to it... [the] mountain was so very steep, and made slippery by some rain... that it was nearly as difficult to get down as up... we expected to be attacked at any moment."

In Grant's report to his commanding officer, General Amherst, he called the Cowee mountains "one of the highest and perhaps steepest in America."

The trail marked on the powder horn, and other details, rendered with great accuracy, gives us a unique glimpse of the life in pre-Revolutionary America, and a rare look at a part of colonial America that is very close to home.

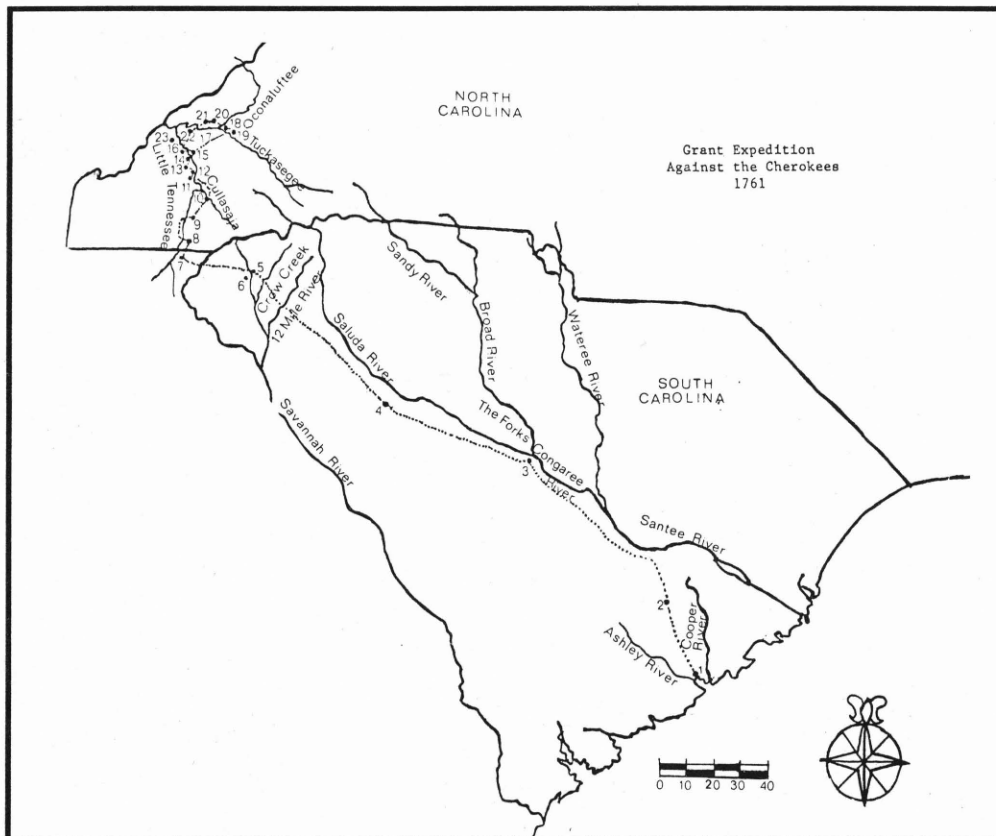
Two Cherokees are firing on a column of British soldiers (just out of the picture on the right), in an ambush which took place north of Estatoe, near the Cherokee town of Etchoe. The dotted line marks the trail followed by Grant's army. Fort Prince George appears in the lower right. The artist managed to squeeze an amazing amount of information and detail onto this small powderhorn! Line drawing by Suzanna Felder made from enlarged photo of the powderhorn.



Text excerpted, with permission, from "A Powderhorn Commemorating the Grant Expedition Against the Cherokees," by Duane H. King, The Journal of Cherokee Studies, Vol. 1 No. 1, Summer 1976.

A reconstructed map of the Invasion route and place names (by Dawnena Walkingstick)

1. Charlestown
2. Monks Corner
3. Congarees
4. Fort Ninety-Six
5. Fort Prince George
6. Keowe
7. Estatoe Old Field
8. Field of Battle (near Etchoe Pass)
9. Etchoe
10. Tassie
11. Nockase
12. Watoga
13. Ayoree
14. Cowhee
15. Usinah
16. Cowitche
17. Cowhee Gap
18. Stickoe
19. Conutory
20. Kittoa
21. Tuckorithe
22. Tassatee
23. Alejoy



History of Research in the Chattooga Shows Patterns in a Natural Laboratory

Trevor Rundle
Department of Biology
Western Carolina University

As an ecologist transplanted from Ithica, NY to Western Carolina, I was anxious to learn as much as possible about the Chattooga River and its environs. But for all my tramping through the area, most of what I know about the Chattooga has come to me in a rather unusual way. In 1994 the Highlands Biological Station and the Chattahoochee/Oconee National Forest entered into an agreement to produce an annotated bibliography of research - specifically biological research - done in the Chattooga River and the adjacent watersheds that drain the southeast Blue Ridge escarpment. It fell on me to produce a document to serve as a guide to the scientific literature of the Chattooga River, as a way of disseminating what is known about the unique biological features of this region. The resulting document, 'An Annotated Bibliography of Research in the Chattooga River and Adjacent Watersheds', describes over 150 publications, government reports, theses and dissertations that, as a body of work, represent the essence of scientific exploration in this region.

One essential element of science is the search for repeated patterns, since there is little predictive value in something that happens only once. In nature patterns often emerge from the careful study of model systems. Geneticists, for example, study fruit flies not because they are so unique but because of the general patterns of inheritance, mutation, gene expression, etc. that are revealed in an easy to study model animal. In ecology the use of model systems to reveal patterns in nature is no less important, and it is here that the Chattooga River area shows its greatest scientific worth. It is a laboratory, already fully assembled, stocked and ready for exploration. The Chattooga sits at the heart of what is arguably the center of biodiversity for the temperate deciduous forest, no less central to that biome than the Amazon basin is to the tropical rain forests. It stands to reason that discoveries in the Chattooga have relevance for a much wider area. For example, the most common technique of harvesting timber is clear-cutting, accounting for about two thirds of the timber harvested in the United States. Now, there is some measure of controversy over clear-cutting, so it is illuminating to know that, like a skinned cat, there are several ways to arrive at a clear-cut forest. Donald Shure

and his students at Emory University have been looking at clear-cuts of various sizes in a test forest in the upper Chattooga River. They have been following patterns of succession, plant competition, nutrient limitation and diversity of plant and animals in patch size openings from small to large to see what differences are revealed. Work like this, while of interest to those of us concerned with management of the Chattooga corridor, is important well beyond our little corner of the world. It is a model system with broader applications.

Likewise for the broad distribution patterns of some of the plants. In 1787 Andre Micheaux discovered Oconee Bells (*Shortia Galacifolia*) the most famous endemic plant of the region. It was 'lost' for over a 100 years until being rediscovered by George Hyams in McDowell County, NC. The original site of Micheaux's Oconee Bells now lies at the bottom of Lake Keowee, but thanks to the work of David Dumond and V. E. Vivian we not only know that it exists in the Chattooga gorge (where it reaches its highest altitude of 2100 feet), but also why it grows only here and not elsewhere: it is a poor competitor, occurring in numbers only where no shrub cover or other herb species are present, and where there is

"The first rule of
 intelligent
 tinkering is to
 save all the
 pieces"
 - Aldo Leopold

some evidence of prior disturbance. Since the steep and highly dissected topography of the escarpment region is susceptible to earth slides, this area is one of the rare places where Oconee Bells have a chance to flourish. A whole series of other plants have been discovered in the gorges that would seem to have no business being here at all. They are tropical plants living in refuges such as spray cliffs and grottoes in the Chattooga and adjacent gorges. Several species of ferns - two filmy ferns, a spleenwort and some truly strange ferns living only as gametophytes - and dozens of mosses are tropical species a good 1500 miles 'out of place'. Clearly the explanations of such patterns requires broad perspectives of time and space - warming during the Pleistocene expanded the range of tropical plants into the southern Appalachians. Subsequent cooling made conditions unfavorable for the tropical invaders, and they retreated to warmer climes - except for a few which survive in sheltered refugia.

Patterns over other time intervals show the value of old discoveries re-explored. One of the nicest pieces of research done in this region was a 1950 study by Eugene Odum to determine nesting bird population densities in the southern Appalachians, then to relate these population patterns to plant succession, and finally to compare these

History of Research continued...

results to other regions. Subsequent work in the same study sites by Jane Holt have shown changes in the bird densities during various stages of succession. Today, 45 years after the initial study, there is no hotter topic in conservation than the decline of neotropical migratory birds, and work is beginning in the Ellicott Rock Wilderness to trace the distribution and abundance of nesting birds in different forest types through time. Studies from Odum's to the present form a vital continuum made possible only by the constancy of the study area itself.

It should be pointed out that most of the descriptive work took off in the 1960's when the National Science Foundation awarded gorge research grants to the Highlands Biological Station to support and coordinate the growing body of knowledge

of the plants and animals in the escarpment. Subsequent descriptive and analytic work continues to this day, and

since researchers, including myself, are finding the Chattooga to be an inexhaustable source of discovery, it is certain that the bibliography, at least in its present form, is destined to quick obselescence. And that is precisely as it should be. Nonetheless, it is a snapshot of where we have been, where we stand at present, and what remains to be done in one of the finest laboratories money can't buy.

For those who are interested, a copy of the bibliography is available from the Highlands Biological Station, Highlands, NC or from the author at the Department of Biology,

Western Carolina University, Cullowhee, NC 28723-9024.
Phone: (704) 227-7244.

"Today, 45 years after the initial study, there is no hotter topic in conservation than the decline of neotropical migratory birds..."

Marie Mellinger continued from page 3...

yellow lady's slipper (*Cypripedium calceolus*) and sarsaparilla (*Aralia hispida*). This place is home to the northern white trillium (*Trillium grandiflorum*), the nodding red trillium (*T. vaseyi*) and the wake robin trillium (*T. erectum*). *Trillium erectum* is definitely mixed up around here, for in addition to its usual dark red blossoms, it has green and creamy white color forms as well. Golden seal and ginseng were once common on the forested slopes, and may still exist away from the much traveled walking road.

Towards midsummer we find lady rue, mountain milkweed and the rare american Bugbane (*Cimicifuga americana*). Both carolina lily (*Lily michauxii*) and turk's cap (*Lilium superbum*) bloom on the mountain.

Fringed loosestrife (*Lysimachia fraseri*) grows along the road to the summit. Near the top we find mountain ash trees (*Sorbus*) and minnie bush (*Menziesia*).

On the north side of the mountain, nearly inaccessible cliffs (thank goodness) host the *Carex misera*, nicknamed miserable sedge because it is so hard to get to. With it on the rocks is fir clubmoss (*Lycopodium selago*) and patches of canadian mayflower (*Maianthemum*).

The entire Rabun Bald area is a unique biological resource, from the mountain's summit, across the sprawling ridges, and into the coves of the Tuckaluge, Sara's Creek, Finny Creek, Hood's Creek and Walnut Fork. One of the least fragmented, large areas of forest in the Chattooga watershed; it needs to be maintained for hunting and fishing, hiking and camping, and for its role as a core refuge for wildlife that

"The entire Rabun Bald area is a unique biological resource. ...it needs to be maintained for hunting and fishing, hiking and camping, and ... as a core refuge for wildlife that require deep woods habitat."

require deep woods habitat. Today the USFS is planning to fragment this special recreation area and wildlife habitat with the Tuckaluge timber sale (see Tuckaluge article page 3).



Streams Tell the Story of the Land: Volunteers Monitor Water Quality

Chris Kempton

What kid doesn't like to wade around in a stream with a net, turning over rocks and poking? How many grown-ups secretly wish they could be a kid again and do the same? This may be the underlying key to the success of a recent volunteer workshop on stream monitoring.

During a week in June, the Coalition hosted a group of 28 visiting high school students and their adult chaperones from Michigan. Over three days we visited five sites in the Stekoa Creek watershed upstream and downstream of Clayton, Georgia. We all learned how to sample the stream using nets to capture bottom-dwelling aquatic insects. These were all sorted, identified and counted. With this information, determinations could be made about the health of the stream being sampled. The students were also encouraged to make observations about what they saw going on around the stream and how it might affect water quality. They saw things like sediment from gravel roads, parking lot runoff, pastures along the banks, a sewage plant and common litter.

Many people will recall catching crayfish, snails, dragonflies and other "critters" in streams as a kid but never realized the important story they have to tell about water quality. In fact, these creatures which live in a stream can be used as "mini meters", monitoring water quality 24 hours a day. Using living organisms to evaluate water quality is known as "bioassessment" and aquatic insects may be the perfect organisms to look at for several reasons. First of all, they are abundant. In many streams, hundreds can inhabit a square yard of the bottom. Aquatic insects are also sedentary and this makes it relatively easy to collect large numbers of individuals in a few minutes with simple nets. They are also very diverse; in one intensively studied stream in South Carolina, over 1,000 species were found! By determining the number of species at a sample site and their relative proportions to each other an estimate of biodiversity can be made. In general, the more diverse the population is, the healthier and more stable it is. In other words, the more different kinds of "bugs" in a stream, the better!

Many trout fishermen are familiar with the types of insects that we were sampling (see sidebar on p. 10). They know



High school students can collect and sort aquatic insects as a basic measure of water quality

that clean, cool, fast-moving water supports a rich population of the insects that are favored by trout. Sediment-laden water buries the gravel and cobble habitats that are required by the insects and will not support many fish. The bugs are the bottom of a stream's food chain. No aquatic insects - no fish. Inputs of nutrients from agriculture and sewage plants also affect populations of aquatic insects. Extra nutrients may boost the "productivity" of a stream but typically they reduce the diversity of species living in it, making it less stable.

Many streamwatch groups have been organized across the country to do the kind of monitoring that we were learning. The information obtained is very useful to state natural resource agencies which are limited in their monitoring capacity. There is also a tremendous educational value in monitoring groups. According to Eleanor Ely, editor of Volunteer Monitor, a national newsletter of this rapidly growing activity: "...monitoring is almost unique in being value-neutral; a project can cut across not only barriers of age, race and class, but differences in opinion and political leaning. It engages... in an active, constructive, immediately satisfying way...people aren't just asked to send in a check or write a letter. By drawing a wide variety of people into active participation, increasing their knowledge about the local environment and giving citizens a meaningful voice in government processes, monitoring works to democratize environmentally-related decision-making."

Volunteers continued...

At the end of our sampling days, we were all damp and muddy but deeply satisfied from a job well done. We all look forward to seeing our new friends from Michigan return next year. We hope that the seed they've planted here grows to become a network of stream monitors in the Chattooga watershed, fostering a renewed awareness of the value of our local streams.

Our thanks go to Aysha Prather, a graduate student in entomology at Clemson University, and Charlene Niehardt, also a graduate student and U.S. Forest Service employee working on the Chattooga River Ecosystem Management project. Both were extremely helpful in teaching us field methods, identification of insects and putting all the information together and telling us what it meant. Eric Ericksen, one of the student's chaperones and mentor, made the whole experience possible and deserves special thanks. The author is a fisheries biologist at Clemson University.

THE EPT's are 3 groups of aquatic insects known to be useful as indicators of water quality.

Ephemeroptera: commonly known as mayflies. Over 200 species are known in North and South Carolina. The adults may show up at your back porch light on a summer evening.

Plecoptera: known commonly as stoneflies. About 130 species in this region. Turn over a flat rock in the Chattooga; you should see plenty. Important to stream ecology because they shred leaves and make nutrients available to other organisms.

Trichoptera: the caddisflies. 330 species are known in this area. Usually the best indicators of good water. Often live within a tube-like case of glued sand or twigs. Others build webs on rocks and filter food from the current.



CRWC Background Information

The National Wild and Scenic Chattooga River is one of the gems of the Southern Appalachians. All of the river and the greater part of its watershed is contained in three national forests adjoining in North and South Carolina and Georgia (the Nantahala, Sumter and Chattahoochee National Forests). The mountain physiography and cool, rainy climate of this area gives rise to one of the richest displays of flora and fauna in North America. The area also sustains unique opportunities for scenic beauty and recreation. Yet for many years the lands within the watershed have been managed primarily for intensive timber extraction.

The Chattooga River Watershed Coalition formed during the summer of 1991 around the drafting of a proposal to manage the watershed as a coherent, functioning ecosystem. The driving force for this proposal was

the recognition that the national forest system surrounding the river was undergoing steady degradation due to the cumulative effects of intensive timber harvesting, excessive road-building and fragmentation from private inholdings. After persistent pressure on the Forest Service (FS) to adopt our management plan, all the while continuing to gather endorsements for it from the public, we were pleased to learn in January of 1993 that the Forest Service had secured significant funding to develop an ecosystem management plan for the Chattooga River basin. It became increasingly demanding for the widely separated volunteers steering the Coalition to monitor and perform oversight on Forest Service on-the-ground proposals, and the agency's "ecosystem management demonstration project", plus continue to develop our own

programs. The Coalition worked to establish an organizational structure to aid our effectiveness and enable us to become more proactive.

In July of 1994, the CRWC gained a full time executive director to develop the organization in accordance with its stated goals and objectives. With this guidance, programs have grown and solidified. Programs now in place include: volunteer "monitoring teams" organized to field-check and compile data about certain areas of the forest, public and media outreach, public workshops and a quarterly newsletter, monitoring and responding to FS on-the-ground proposals and to their "Chattooga River... Project", and conducting Coalition-sponsored research projects. We shall continue to pursue the goals outlined in our proposal, and work for implementation of our objectives in the entire Chattooga River watershed.

Score Card: How Did Our Representatives Vote?

Congress has been active over the past few months, predominantly trying to gut 25 years of environmental protections. Those with a shred of civic duty left in them have offered motions or amendments to either mitigate radically anti-environment provisions in the original bills or to strip the bills of amendments that exempt special interests from the law regarding the environment and human health. A few key votes are listed below along with a summary of how our representatives responded.

In the Senate:

1. Senate Conference Resolution 13. Fiscal 1996 Budget Resolution/Asset Sales. Domenici (R-NM) motion to table the Bumpers (D-AZ) amendment to strike the section of the resolution that would allow revenues from asset sales to be used to offset the deficit. Motion agreed to 52-47. May 24, 1995. (assets include public lands now managed by the National Park Service, USFS, BLM, etc.) This means our forests and parks can be sold to make payments on the national debt!

2. Senate Conference Resolution 13. Fiscal 1996 Budget Resolution/Arctic Oil Drilling. Domenici (R-NM) motion to table (kill) the Roth (D-DE) amendment to prohibit oil drilling in the Alaska National Wildlife Refuge. Motion agreed to 56-44. May 24, 1995. This means our nation's largest wildlife refuge can be exploited for private profit in oil extraction.

In the House:

1. House Resolution 1977. Fiscal 1996 Interior Appropriations/Timber Roads. Kennedy Amendment (D-MA) amendment to prohibit the Forest Service from constructing roads or preparing timber sales in roadless areas of 3,000 or more acres. Rejected 166-255. July 18, 1995.

2. House Resolution 1977. Fiscal 1996 Interior Appropriations/Fossil Energy Research. Miller (D-CA) amendment to transfer \$186.5 million from the Department of Energy's Fossil Energy Research Fund in order to provide \$184 million for land and water conservation and \$5 million for the Urban Park and Recreation Recovery Act. Rejected 170-253. July 13, 1995.

3. House Resolution 2099. Fiscal 1996 VA, HUD Appropriations/Environmental Enforcement. Stokes (D-OH) amendment to strike the bill's provisions prohibiting the Environmental Protection Agency from enforcing environmental laws, including sections of the Clean Water Act, the Clean Air Act, and the Delaney Clause of the Federal Food, Drug and Cosmetic Act regarding pesticides on food. Adopted 212-206. July 28, 1995.

4. House Resolution 2099. Fiscal 1996 VA, HUD Appropriations/Environmental Enforcement. Revote on the Stokes (D-OH) amendment to strike the bill's provisions prohibiting the Environmental Protection Agency from enforcing environmental laws, including sections of the Clean Water Act, Clean Air Act, and the Delaney Clause of the Federal Food, Drug and Cosmetic Act regarding pesticides on food. Rejected 210-210. July 31, 1995. (Previously the amendment had been agreed to in the Committee of the Whole.) This means "special" polluters are exempt from EPA law enforcement!

5. House Resolution 2099. Fiscal 1996 VA-HUD Appropriations/Passage. Passage of the bill to provide monies to the Veteran's Administration and the Housing and Urban Development. This included an EPA budget cut by 34% - a larger cut than almost any other agency of the federal government.

Voting records and conservation score:

watershed senators	1	2	score
Coverdell (R-GA)	-	-	0 %
Nunn (D-GA)	+	+	100 %
Faircloth (R-NC)	-	-	0 %
Helms (R-NC)	-	-	0 %
Thurmond (R-SC)	-	-	0 %
Hollings (D-SC)	+	-	50 %

watershed representatives	1	2	3	4	5	score
Deal (R-GA)	-	-	-	-	-	0 %
Graham (R-SC)	-	-	-	-	-	0 %
Taylor (R-NC)	-	-	-	-	-	0 %

+ is a pro-conservation vote
- is an anti-conservation vote

A History of Activism in the Chattooga Watershed

early 70's - Wild and Scenic River designation. Claude Terry, the Georgia Canoeing Assoc. and other paddling clubs lead the struggle to obtain the congressional mandate.

early 80's - USFS planned to build a large "viewing platform" at Bull Sluice, and proposed to move rocks, pour concrete and install guardrails. Buzz Williams, Claude Terry and Dave Perrin led the opposition. The River Community opposition culminated in a large protest, covered by the media, which prompted Forest Service decision-makers to cancel the project.

1988 - Blatantly illegal timber sale and road construction in the headwaters of Long Creek. Appeals to Forest Service officials produces no changes. River Community gathers in opposition, picketing the office of the Andrew Pickens Ranger District in Mountain Rest. Forest Green situates himself 50' up a white pine tree, directly in the path of new road construction to access the timber. Rafting company owners resist pressure from the Forest Service to "get those guides under control". Forest Green is arrested and taken to court where a Federal Judge admonishes the Forest Service: "Don't any of you set foot in that forest until you complete all required environmental reviews. Now, clear this court room of these arrogant bureaucrats!" He finishes with a stirring speech on how civil disobedience has shaped our country.

1989 - Big Wigs in Rabun County want an airport for their use -on public land. Forest Service says "sure, why not?" River Community says "this is why not": planned site is very close to Woodall Shoals and flight paths are directly over the Chattooga National Wild and Scenic River. Trip leaders request signatures from rafters on a petition in the lobby of Wildwater, Ltd. Activists voice opposition at Rabun County Commissioners' meetings. Petition is presented to the Forest Service. Public outcry led by David Carr of the Southern Environmental Law Center and Bruce Hare of the Chattooga Whitewater Shop defeats the airport proposal.

October 1994 - Federal Judge orders Tallulah District timber operations shut down for several months for failure to complete legally required Biological Evaluations. CRWC worked with the Rabun County Coalition to Save the Forest to prepare and file the lawsuit.

Today, July 25, 1995 - Now the time has come again for the public to voice their opposition to short-sighted USFS timber management policies exemplified by the specific projects (GA comp.'s 05, 48/50, 59, 27/28, and the Tuckaluge timber sale proposal) described in our update on page 4.

The Chattooga River Watershed is currently suffering from excessive road building and timber harvesting as a result of outdated management plans which were written in the early 80's to accommodate a powerful timber lobby.

The Forest Service claims that they are switching to a more benign "Ecosystem Management" timber extraction strategy. The CRWC has been monitoring this "new" way of managing the national forest, and we've discovered that "Ecosystem Management" as it is currently being practiced on public lands is a farce. Timber is still king. How do we know this? First of all, timber sales still follow guidelines from

the old Forest Plans which drastically over-estimate the suitable timber base. Second, congressionally mandated timber targets and performance evaluations based on "getting the cut out" continue to drive land management decisions. The Forest Service claims they have moved away from clearcutting; however, they've replaced clearcuts with other forms of even-aged management like "shelterwood" and "seed-tree" harvesting. Also, the Forest Service has entered Roadless Areas to meet timber targets, even when new science shows that these undisturbed areas are the last hope for providing habitat for species in decline, such as black bears and neotropical migratory songbirds.

We must demand protection of our national forest lands through "interim management" guidelines, while the old Forest Plans are being replaced with new ones. Public pressure and involvement could result in the new Forest Plans being based on the perspectives and good science of landscape ecology, conservation biology and real ecosystem management. We must act now, or what remains of our mature, native forest in the Chattooga River watershed will be lost.

The CRWC is dedicated to providing citizens with the facts they need to decide how their public lands should be managed. Join us!

**"Now, clear this
court room of
these arrogant
bureaucrats!"
-Federal Judge
Anderson**



From the Equator to Our Own Backwoods: Tropical Plants and the Waterfalls of the Chattooga

Chaz Zartman

"...well boys and girls...welcome to the Dog days of summer..."

--- the response of a twice-retired, but never defeated, veteran Chattooga raft guide upon observing the Hwy. 76 river gauge had dropped to 1.5': the upper cut-off level for "safely" running the notorious Soc-em-Dog rapid on commercial rafting trips.

The dog days of summer are upon us once again, and while the raft guides, with perpetually burned shoulders from the searing August sun, are mostly concerned with keeping their bodies in one piece as they hurl (i.e. get hurled) over the Dog's launching pad, the rest of us mere mortals are worried about how to keep cool in the heat. Well, we do have the opportunity to escape the heat, and tramp around in the woods all at the same time. It's as simple as getting oneself from point A to any one of the scores of waterfalls in the Chattooga Basin. These naturally "air-conditioned" sites, which are found in abundance on Chattooga tributaries from the upper headwaters to the lower gorge, are relatively easy to locate on even the most decrepit topographic maps. Just let your eyes wander over the topo. until you find a waterway drawn across "pinched" contours that are crowded so tightly that one line seems to bleed into the next. Now grab a compass, go find the ravine, and cool off in the spray!

It is no random coincidence that the mild, perpetually moist and misty enclaves surrounding the Chattooga's waterfalls are inhabited by a rich plant community. Many of the plants commonly occurring in proximity to waterfalls in the southern Blue Ridge are dependent on the distinctive environmental conditions of these "spray zones" for survival. The unique climate typical of steep gorges and waterfall sites in our region was originally investigated in an ecological study which primarily took place in the Horsepasture and Whitewater Rivers: two extremely steep gorges immediately east of the Chattooga watershed. In 1966 W.D. Billings and L.E. Anderson, the authors of the study, revealed that air temperature readings at the gorge/waterfall sites were more

moderated than readings on nearby ridge tops. These measurements were taken over a two and a half year period, and temperatures at the bottom of the gorges (as compared to nearby ridge tops) were nearly 10 F warmer in the winter, and almost 20 F cooler in the dead of summer. (This last bit of data is pertinent for those of us interested in spending a cool August in the mountains!) Moisture, the omnipresent ingredient at all waterfall sites, seems to be the feature which keeps the spray zone temperature relatively stable through the seasons. The constant spray not only keeps the surrounding plants nourished with water during the summer months, but it also saturates the air thus

reducing its capacity to fluctuate in temperature. And it is this unique "micro-environment" typical of Southern Appalachian waterfall sites that has been exploited by plants sensitive to the drastic annual temperature variance in the Mountains.

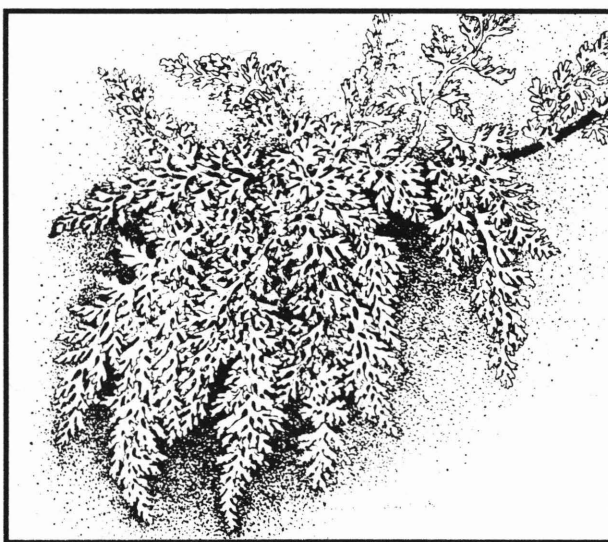
Ironically enough, most of the plants that have made certain waterfall sites of the Blue Ridge escarpment famous in botanical circles are relatively inconspicuous and, to the unenthusiastic eye, can be falsely accused of lacking charisma.

But nevertheless, the subtle shapes of the Dwarf Filmy Fern (*Trichomanes petersii*), and the Appalachian Filmy Fern (*Trichomanes boschianum*) will begin to

retain an exquisite beauty the more the beholder learns about the unique plight of these plants.

Although these two ferns are considered quite rare in regional plant manuals, they are fairly abundant in the lower Chattooga gorge behind waterfalls, in seeps and along major tributaries like Stekoa and Camp Creeks. Both plants, although difficult to find, are extremely easy to identify due to their characteristic "filmy" or translucent appearance. If you happen to think you've stumbled on one of these gems gently turn one of the fronds towards the bright light dancing off the falls and you should notice light passing through the plant-- distinctly highlighting the simple dividing vein patterns. These ferns, along with most other members of its family (the Hymenophyllaceae), are only one cell thick.

One of the most intriguing features of these two Filmy Ferns is that they are members of a genus (*Trichomanes*) that is primarily of tropical distribution. And their presence in the Chattooga Gorge, the greater



Appalachian Filmy Fern (Trichomanes boschianum)

Director's Page continued from page 2...

waste, and increase revenues from other sources, in order to supply money needed for proper stewardship of public lands. One example would be a check-off / contribution on tax returns, to replace the Land and Water Conservation Funds recently cut by congress.

5) Finally, we need to **motivate people to get involved** by convincing them that they can affect real change. In the past, many citizens rested assured that they could leave the work in the hands of large environmental

"We have allowed the great corporations to occupy with their own men the strategic points in business, social and political life. It is our fault more than theirs. We have allowed it when we could have stopped it. Too often we have seemed to forget that a man in public life can no more serve both the special interest and the people than he can serve God and Mammon."

- Gifford Pinchot, first Chief of the U.S. Forest Service.

organizations. Sorry, that has not proven to be the case. Now it's up to the grassroots.

Our successes with this "grassroots approach" is becoming evident in recent work. Public meetings are being attended by more and more folks who are alarmed by recent congressional assaults on environmental laws, and who care enough to take the time from their daily work and commitments to get involved. The pendulum is beginning to swing:

Power To
The People!



Tropical Plants continued...

southern Blue Ridge, and the Cumberland Plateau represents the northern most locality for sexually reproducing ferns of this tropical genus. Although the presence of this fern group in North America is considered highly unusual and extremely rare, a well-known Southern Appalachian botanist, who recently returned from a trip to the tropics, was amazed by the abundance of these rare ferns he observed in a tributary of the lower Chattooga: "Well," he exclaimed, "I've seen more Filmy Fern this afternoon on the Chattooga than I saw during my two weeks in Costa Rica!"

So, one might ask, why are these fern groups, along with an assortment of mosses and other reduced vascular plants, locally abundant in the Chattooga and other stations in the southern Appalachians yet essentially absent between here and tropical regions hundreds of miles south of us? The answer to this question is not so simple; in fact, over the past several decades it has left many scientists quite perplexed. The confusion ensuing from these initial discoveries in the early fifties is most aptly portrayed in a statement made by the bryologist Mr. E.B. Bartram in 1951:

"[these observations of tropical plant groups in the Southern Appalachians] bring up conjectures of misty outline that will probably have to wait for a clearer definition" (Anderson & Bannister, 1952).

The "clearer definition" of these baffling relationships could possibly be unlocked by looking back at the past - as far back as pre-glacial times, approaching

one and a half million years ago when a relatively warmer North American continent supported plants more characteristic of the present day tropical flora. As the glacial age ensued, the tropical element in North America was forced south to milder climates, or otherwise eliminated altogether except for certain "tropical" plants (like our two Filmy Ferns) that took refuge in the spray-infused air provided by waterfalls and steep gorges in the Southern Appalachians. Although this is only a simple interpretation of an extremely involved theory about the changing climate and the flora of the Southern Appalachians, it is bewildering to imagine that many of the falls in the Chattooga Basin host plants that represent a shattered image of North America's pre-glacial flora.

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Chattooga River Watershed Coalition

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Endorsing Organizations

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Atlanta Whitewater Club
Georgia Canoeing Association
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***Georgia Environmental
Organization, Inc.
Timber Framers Guild of North
America
Carolina Bird Club
Government Accountability Project
Turpin's Custom Sawmill***

Membership

Join the Coalition and help protect the Chattooga Watershed!

Your contribution is greatly appreciated. It will be used to support the Coalition's work and guarantee you delivery of our quarterly newsletter. We're a non-profit organization, and all contributions are tax-deductible.

Name _____
Address _____

Send to:
Chattooga River Watershed Coalition
P.O. Box 2006
Clayton, Georgia 30525

Individual: \$7.00

☐

Group: \$14.00

☐

Sustaining: \$45.00

☐

Donation:

☐

Thank You!

Chattooga River Watershed Coalition

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Our Purpose:

"To protect, promote and restore the natural ecological integrity of the Chattooga River watershed ecosystem; to ensure the viability of native species in harmony with the need for a healthy human environment; and to educate and empower communities to practice good stewardship on public and private lands."

Our Work Made Possible By:

The Grassroots and Volunteers

Turner Foundation, Inc.

The Moriah Fund

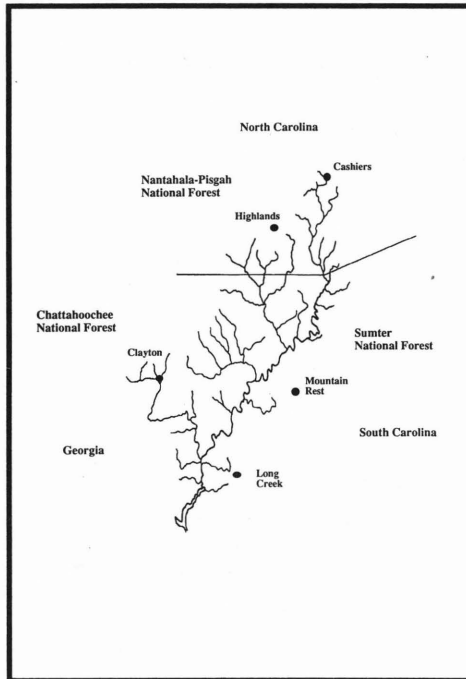
Merck Family Fund

Lyndhurst Foundation

Patagonia, Inc.

Frances Allison Close

South Carolina Trial Lawyers Association



Our Goals:

Monitor the U.S. Forest Service's management of public forest lands in the watershed

Educate the public

Promote public choice based on credible scientific information

Promote public land acquisition by the Forest Service within the watershed

Protect remaining old growth and roadless areas

Work cooperatively with the Forest Service to develop a sound ecosystem initiative for the watershed

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Non-Profit Organization
Bulk Rate Permit # 33
Clayton, GA

