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July 10, 2007

Dr. Jerome A. Thomas
Supervisor, Sumter National Forest
USDA Forest Service
ATTN: John Cleeves, Chattooga Project Coordinator
4391 Broad River Road
Columbia, South Carolina 29212-3530

Dear Dr. Thomas,

Georgia ForestWatch appreciates this opportunity to formally comment on the USDA Forest Service's Upper Chattooga (modified) Visitor Use Capacity Analysis and to supplement the public guidance and input you seek for this effort.

As you know, Georgia ForestWatch is a not-for-profit forest conservation organization dedicated to preserving and protecting the wild values of national forestlands in Georgia, and, by extension, the Wild and Scenic Chattooga River corridor that demarks the state's easternmost boundaries in this region.

Georgia ForestWatch volunteers, advisors, district leaders and/or board members have attended every public forum and meeting held in conjunction with the Sumter National Forest's Chattooga boating study, as well as supplemental meetings held with the Friends of the Upper Chattooga organization, and closely analyzed the huge cascade of words and paperwork the Forest Service and its consultants have showered on the public since beginning this exercise. We also previously have filed numerous written statements regarding this study.

Frankly, though, all that past is prologue to the real meat of the situation -- which is to see what the Forest Service actually will propose regarding the huge push for unrestricted boating on the nearly pristine, 21 miles of the North Fork of the Chattooga. We do look forward to seeing the agency finally put its cards on the table -- you've been playing all this very close to the vest so far -- and commenting on your proposals and alternatives thereafter.

But we can tell you of one sure thing even before the Forest Service finally comes out with its intentions: Georgia ForestWatch believes the agency made the right decision 31 years ago to "zone" all boats and horses and bikes and ATVs out of the Upper Chattooga and nearby corridor. It is a decision that has stood the test of three decades -- in preserving the wild resources of this area for this and future generations; in limiting "user conflicts;" in protecting any number of threatened and endangered species and habitats; in maintaining water quality and aquatic habitat for trout, fish and other aquatic species; in safeguarding a variety of historical and archeological sites, and, perhaps most of all, in providing the American public a refuge and an experience that it can hardly duplicate anywhere on the east coast of the United States.

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This is a very good thing that should be stretched out into the future, we believe.

Georgia ForestWatch thus urges the USDA Forest Service to vigorously defend your current management of this part of the river – both in the upcoming “standards workshop” on July 14, and in the subsequent plans that you must bring forward under the National Environmental Policy Act.

It is time for the agency to stick to its guns. And as you do so, we ask the Forest Service to closely consider and analyze the following significant issues, many of which have been given short shrift in the analysis made public so far:

- 2 1) The USDA Forest Service must analyze the conditions and effects of boating on the lower 36 miles of the Chattooga River in order to properly understand and analyze what might happen on the Upper Chattooga. 95
- 3 2) The agency must conduct new biological and archeological surveys of the 21 miles of the Upper Chattooga and its tributaries, provide the public the results of the findings and disclose how it intends to protect these resources. 134
- 4 3) When it comes to pre-European settlement archeological resources, the Forest Service must confer with Native American tribes and groups to ascertain proper treatment of sensitive sites. 113
- 5 4) The agency, *a priori*, must work to fix all the “bio-physical” problems identified in the Ellicott Rock Wilderness and adjacent forestlands that are being degraded by overuse, before it even considers the notion of boats, kayaks, tubes, canoes or rafts on this part of the river and its tributaries. The notion of “adaptive management” demands no less. 56
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- 6 5) The Forest Service can and should consider amendment of the current Chattahoochee, Sumter and Nantahala forest management plans to better protect the Upper Chattooga – including possible recommendations to creatively expand the Ellicott Rock Wilderness, perhaps from Chattooga Cliffs all the way down to Reed Creek, or recommending realignment of the wild, scenic and recreation sections of the Upper Chattooga. The agency can and should reconsider its prior decision to keep the bridges on Bull Pen and Burrell’s Ford roads open. 7
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- 7 6) The Forest Service must commit to providing the necessary resources, and the budget to support them, to provide proper law enforcement on the Upper Chattooga (including all three states and all three national forests involved.) 116
- 8 7) The agency, as part of its upcoming scoping notices, must inform the American public whether it believes the Upper Chattooga is legally navigable. If it’s not, the case is closed. 118
- 9 8) The agency must clearly promulgate a rule that *no* large woody debris shall ever be removed from the Upper Chattooga and its tributaries – just as is done for the Upper Rogue and Metolius rivers in Oregon. 64
- 10 9) A further word about the tributaries: The Forest Service should reconsider the current management rules that apparently permit boating on the Upper Chattooga’s tributaries, particularly if the north Fork remains closed. 138
- 11 10) The agency must consider the current experiences and safety of hunters, hikers, anglers, naturalists, photographers, picnickers, swimmers, bird watchers, campers, amateur archeologists and just plain old citizens out for a family outing in the Upper Chattooga – and how those might be degraded by the vast numbers of boaters – and the 66

crowds that come with them -- who likely would come to the upper reaches if the agency opened it up to unrestricted boating.

- 12) 11) The agency must consider all reasonable, long-term cumulative effects that would arise if boating were allowed on the Upper Chattooga and its tributaries – especially the likely push you will receive from the commercial river outfitters to provide their clients access to this part of the river. (Experience on the Lower Chattooga clearly shows the Forest Service has little stomach for limiting the reach of the licensed outfitters – particularly when they arrive with the heady lure of ready cash and user fees for a cash-strapped federal agency.) 85
- 13) 12) The Forest Service must confer with other federal agencies, including the U.S. Fish and Wildlife Service (regarding preservation of habitat for threatened and endangered species such as the mountain lion,) and the National Park Service (whose management of whitewater streams and rivers in Yellowstone National Park will come under attack if boating is allowed here.) 22 119
- 14) 13) The Forest Service should not countenance the vast increase in vehicles and visitors that will occur if boating is allowed on this stretch of river. (This increase is well predicted in the agency’s recent “integrated analysis” of Capacity and Conflict on the Upper Chattooga River of June 2007, which also ably describes that the Upper Chattooga, in many regards, has reached its “carrying capacity.” 107
- 15) 14) That same report documents well how boaters on the Upper Chattooga would be spooking fish and bothering backcountry anglers in the same stretches of river, a situation that also must be addressed in the scoping notice. 112
- 16) 15) Finally, for every proposal and alternative brought forward in the scoping notice, the Forest Service must identify how much each would cost the public and how the federal government intends to pay for them – and whether, in fact, the agency can afford them. 87

We respectfully ask that such details be given close attention as the Forest Service promulgates its formal scoping notice for the Upper Chattooga project. Please feel free to call if you have any questions. Please forward any further correspondence or questions regarding this matter to me at these coordinates: 2489 Glade Road, Clayton, Georgia, 30525, Telephone: 706.782.9944. E-mail: jgatins@alltel.net

Sincerely,

Joseph Gatins

Joseph Gatins
Co-district leader
Georgia ForestWatch

CC: Friends of the Upper Chattooga
Various U.S. Forest Service officials
News media

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Friends of the Upper Chattooga
2368 Pinnacle Drive
Clayton, Georgia 30525

June 29, 2007

Supervisor Jerome Thomas
Sumter National Forest
USDA Forest Service
ATTN: John Cleeves
4391 Broad River Road
Columbia, South Carolina 29212-3530

Dear John:

Friends of the Upper Chattooga individually and collectively closely have reviewed the details of the "Current and Future Management Standards" document handed out at the recent "open house" meetings held as part of the USDA Forest Service's Upper Chattooga River Visitor Use Capacity Analysis. I must tell you we are pleased to learn that the indicators, standards and possible management actions listed therein are "hypothetical examples only."

We trust the Forest Service is going to use the standards and management action workshop on July 14 to delve into the very real and pressing issues facing the Upper Chattooga, including all the issues identified at your November, 2005, public meeting, as well all the biophysical and social issues identified by Forest Service personnel since then. Just to make sure, we attach below a list of what we believe needs to be discussed and analyzed at the meeting.

As you know, Friends of the Upper Chattooga include many of the premier conservation and recreation groups in the three affected states: Georgia Wildlife Federation, Chattooga Conservancy, Georgia ForestWatch, North Carolina Wildlife Federation, South Carolina Wildlife Federation, Wilderness Watch, Jackson-Macon Conservation Alliance, the Georgia Council of Trout Unlimited, the South Carolina Council of Trout Unlimited, the North Carolina Council of Trout Unlimited, the Atlanta Fly Fishing Club, and the Whiteside Cove Association.

Our primary goal is to help protect the Chattooga's wild and scenic values, to educate the public about threats to these values and assist the Forest Service in arriving at a reasonable decision in connection with the visitor capacity use analysis that, above all, protects this river's outstandingly remarkable resources for future generations.

Please feel free to call if there are questions.

Sincerely,



Joseph Gatins

As a spokesman for Friends of the Upper Chattooga

CC: Various Forest Service officials. NRLI

Attachment: List of issues meriting discussion and analysis at the July 14 priority standards and management action workshop.

Biophysical issues

- 64 • Large Woody Debris on North Fork and tributaries
- 140 53 • Water quality
- 26, 21 • Trail conditions (both system trails and user-created)
- 24 54 • Damage to trees and bank erosion
- 54, 53 • Litter in the river and "on" the riverbeds (i.e. ugly plastic marks and heavy metal scrapings)
- 27, 25 • Campsite conditions (both authorized and user-created)
- 22 • Campsites and user trails in Ellicott Rock Wilderness (especially above Burrell's Ford) are not "wilderness-compliant"
- 22 • Protection of Ellicott Rock Wilderness, generally
- 104 • Protection of PETS species (such as shortia, saxifrage, rock gnome lichens, mountain lions, spray zone flora, etc.)
- 22 • Wildlife protection and populations
- 22 • Disturbance of birds and breeding bird counts
- 112 • Invertebrates and other aquatic resources
- 112 • Fish populations and fish "spooking"
- 112 • Protecting fish habitat
- 99, 98 • Acceptable and ideal water levels for birding, swimming, hiking, fishing
- 10, 79, 27 • Management of wild, scenic and recreational segments of Wild & Scenic Chattooga River
- Adaptive management generally. Sunsetting any new management proposals. ?

Social issues

- 66, 60 • Forest Service law enforcement and visitor safety
- Access to river and banks ?
- 142, 25 • Trail encounters and total encounters
- 141 • Size of groups
- 28 • Noise
- 24 • Litter at campsites
- 41 • Number of overnight campers
- 142, 25 • Overall solitude (few, or no encounters, user conflicts)
- 138 • Use of tributaries by boaters
- 66 • Safety of swimmers
- 40 • Parking at trailheads and bridges
- 132, 112 • Back-country fisheries experience and fishing disturbances
- 132 • Competition for "fishing water"
- 114 • "Place attachment" and visitor surveys
- 5, 115 • The "Lower Chattooga" – increase in boating there is a connected action affecting the Upper Chattooga
- Adaptive management generally. Sunsetting any new management proposals. ?

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Friends of the Upper Chattooga
2368 Pinnacle Drive
Clayton, Georgia 30525

June 19, 2007

Mr. Jerome Thomas, Supervisor
USDA Forest Service, Sumter National Forest
Attn: Mr. John Cleeves
4391 Broad River Road
Columbia, South Carolina 29212-3530

RE: Upper Chattooga River Visitor Capacity Analysis Implementation Plan

Dear Supervisor Thomas,

Friends of the Upper Chattooga individually and collectively wish to bring your attention to the attached white paper. We ask that it be made part of the administrative record in the Upper Chattooga Visitor Capacity Analysis.

Everything contained in these comments is meant to impart *constructive* critical perspective to the "decision environment" for visitor capacity issues and the LAC/NEPA process. Research documented herein seeks to expand understanding and consideration of recreation as an OR value (and recreation impacts) specifically pursuant to Interagency Guidelines which state that public use [of the Chattooga headwaters] should be "regulated and distributed where necessary to protect and enhance...the resource values of the river area." The comments are intended to aid in the identification of *factors to consider in developing direction for recreation visitor use in a wild and scenic (WSR) corridor*, specifically with regard to *the capability of the physical environment*. [FSM2354.41].

This paper expresses particular concern for the inadequate, narrow-gauge appraisal of the unique and rare Chattooga headwaters ecosystem that is apparent in the direction of the current analysis to date. In view of the increasing rarity of undisturbed natural habitats in the rapidly growing southeastern region and across the entire eastern US, the paper emphasizes the critical importance of the Chattooga river corridor (and watershed) as a central, core component in a group of comparatively undisturbed wild areas that lie on or near the Blue Ridge Escarpment, including the Ellicott Rock Wilderness, the Big Mountain Roadless area and other nearby USFS, state and private lands of high value to sensitive wildlife species. Together these remaining wild areas on the BRE comprise a landscape of national, even global conservation significance.

We are therefore concerned herein with some of what we believe are the highest resource conservation values at stake in determining the future management direction of the Chattooga. We believe that wildlife conservation values need immediate, full and comprehensive consideration in order to correct an apparent anthropocentric bias in the current analysis. A

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concern for non-degradation of the resource is uppermost in both the Wilderness and Wild and Scenic Rivers Acts, and a similar concern for protection of the resource takes priority in comments of almost all stakeholders. As we approach the key phases of the development of NEPA alternatives, we feel that the concerns expressed here must be addressed if we may hope to protect the unique natural and physical character of the Chattooga headwaters.

Please contact us if there are any questions.

Sincerely,

Butch Clay
Mountain Rest, S.C.
By JG, with express permission

Joseph Gatins
Co-District Leader
Georgia ForestWatch

Doug Adams,
Newsletter Editor, Rabun Chapter, Trout Unlimited
By JG, with express permission

Charlie Breithaupt,
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Buzz Williams,
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David Bates,
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Wyatt Stevens,
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George Nickas
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John Benbow,
President, North Carolina Wildlife Federation
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Jerry McCollum
Georgia Wildlife Federation
By JG, with express permission

Attachment

**Wilderness, wildlife and procedural concerns in the USFS Visitor Capacity,
LAC and NEPA analysis of the Chattooga River headwaters.**

By Butch Clay

Introduction

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The recently announced completion of the Data Collection phase of the LAC analysis marks an important milestone in the analysis of visitor capacity issues and in the larger LAC/NEPA process for determining the future direction of management for Chattooga headwaters resources.

Hitherto, the undersigned have mostly reserved judgment on agency efforts, trusting that USFS officials should be given ample time to effect a full and fair analysis of the Chattooga headwaters river resource. However, at this important juncture, we find significant cause for concern with regard to the overall management and apparent direction of the analysis, and feel compelled to comment.

Agency Responsibility

Charged with upholding the mandates of the far-sighted public lands protection acts of the 1960s—including the mandates to protect resources contained in the Wilderness and Wild and Scenic Rivers Act—federal agencies as a matter of record have tended to focus more upon the procedural aspects of management actions or challenges to management actions, when reviewing proposed changes to management direction.

Unfortunately, this historical tendency is apparent in the current USFS analysis, in which important substantive components of the analysis of the **irreplaceable** Chattooga headwaters resource have so far been given insufficient consideration. This letter is our attempt to help USFS/Sumter officials achieve a full, comprehensive and fair LAC review and NEPA analysis that is as sound in substance as it is in procedural form.

In view of the historical, ecological, and recreational significance of the Chattooga headwaters physical environment, in view of our patient, respectful investment in the Sumter analysis to date, and in view of the critical importance of these comments to the full, fair, and lawfully rigorous attention to the resource concerns we raise here, we respectfully request that these comments be given immediate attention prior to any further work on the Scoping phase of the NEPA analysis.

Overview

The USDA Forest Service's management to date of the environmental/visitor capacity analysis of the Upper Chattooga, directed as a result of the appeal brought against the existing Chattooga management plan by whitewater paddlers and members of the paddle-sports industry raises three major concerns:

- 1) Problems and limitations with USFS/Sumter management of a "modified" LAC (limits of acceptable change) methodology
- 2) Lack of analysis of the **wilderness character** of the headwaters, (of both the Chattooga Wild and Scenic Corridor and the Ellicott Rock Wilderness). Specifically, failure to understand and assess the enhancement of wilderness character (and wildness) that has been a direct result of prior zoning on the headwaters reach
- 3) Insufficient commitment to fully analyze and understand **the effects of recreation on wildlife** in the wilderness settings of the headwaters reaches of the Chattooga Wild and Scenic River Corridor, including all lands within the Ellicott Rock Wilderness and the Big Mountain

Roadless Area.

Background

Forest Service management of the initial stages of the LAC process has thus far encouraged the framing of the Chattooga headwaters debate and analysis as one of competing users and user experiences. Due largely to the agency's initial narrow focus on a small subset of users—boaters and fishermen—the public debate over the Chattooga headwaters has been mostly framed in the contentious terms of opposing sets of elite, well-outfitted recreational boaters and fishermen.

This exclusive focus is once again glaringly evident in the recent postings to the USFS web site link for the boating initiative which were attributed to Sumter Supervisor Jerome Thomas:

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"We have concluded that the data collected to date is adequate for us to move ahead with the public to develop specific alternatives for management of the Upper Chattooga...We have gathered a considerable amount of data on water flows, user preferences and current on-the-ground conditions. The expert panels we conducted in January gave us useful information about boating and fishing potential of the Upper Chattooga."

We certainly appreciate the efforts of the USFS to make important information available in this ongoing decision making framework, and our early commitment to work with the agency to resolve this important issue is as firm as ever. Nevertheless, USFS reports that Data Collection phase of this analysis is now completed compels us to assert that **critically important components of both the LAC review and the overall environmental analysis have been left out of both the public debate and the agency analysis.**

Lack of Inclusiveness

Ample precedent exists within the LAC methodology for a much more inclusive approach to the social/user aspects of this current debate—that is, to include all stakeholders, not just the most politically powerful, prominent or well-placed. However, management of this analysis has so far been narrowly focused on boaters and fishermen. We feel compelled to ask at this point: What about the other users? Why is such an apparent bias being so resolutely upheld?

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Also, ample information available within the historical LAC framework—as well as prior agency experience with LAC—calls for better, closer attention to research of the outstanding biological qualities and natural values of the resource itself, and to the development of adequate indicators and standards to protect the ecology of the headwaters resource from the increase in visitation that might occur in the future because of agency proposals and actions. Yet, so far in the current Chattooga analysis, there appears to be a troubling failure to establish goals, benchmarks and standards for the appreciation and protection of the unique Chattooga headwaters resource.

Comments on the "modified" LAC

Problems with LAC being issue-driven rather than goal-driven

It is a recognized shortcoming of the LAC process that the emphasis in the early stages upon identifying Issues and Concerns (before setting of management **Goals**) can be inherently negative, can pit one group against another, can create a narrow focus and foster conditions in which hot issues cause important ecological conditions to be overlooked. Although plans must address issues that are important to the public, *focusing* on issues tends to be negative and pits user groups against one another. This misdirects too much attention to the most current or inflammatory issue rather than the issues that may have the most impact on the health of the wilderness ecosystem.

This problem has been previously noted, *in Forest Service Proceedings RMRS-P-15-VOL-4. 2000.*

Manifestly negative at times, and highly polarized, the current situation on this river certainly seems to demonstrate again the already noted problems with the methodology. This unfortunate situation has not been ameliorated by the USFS emphasis upon exclusive "expert" teams of boaters and fishermen. Thousands of taxpayer dollars have been devoted to "expert" recreational paddling consultants, with no similar devotion to research by other "experts" such as expert birders, expert hunters or, most importantly, experts in scientific analysis of the ecology of this unique resource.

Just to present examples: Other activities represent the majority of user-types to the Chattooga. Participation rates for viewing nature or scenery, picnicking, swimming and birding are 60%, 53%, 46% and 32% respectively, while cold water fishing has a 14% participation rate and kayaking has a 3% participation rate. (*Oconee & Sumter NF Recreation Realignment Report, Overdevest and Cordell 2001.*) [Also see Sumter 2004 FEIS pg 3-267,8]

The numbers clearly show that this LAC effort is being focused on the minority of users, ignoring the majority of users.

Under NEPA, all publics have a right to equal, meaningful participation in this analysis.

This has demonstrably *not* been the case with this "modified" LAC process. However commendable may be the efforts of the USFS to enable communication and cooperation between the two large and highly polarized user groups, boaters and fishermen, and however important may be the study of flow rates and potential encounter rates between these two groups, the Expert Panel trials simply do not represent a sufficiently inclusive involvement of all

C Chattooga users and perspectives. FOTUC has previously noted this apparent bias, and noted in that context that ample comments were received to substantiate the basis for expanding the visitor capacity analysis, but to date the problem persists.

Lack of Scientific Perspective

C Moreover, the expert panels rightfully should contain biologists, wildlife biologists, botanists, hydrologists, landscape ecologists and other credentialed expert academics and resource professionals. The USFS lopsided approach to the analysis was earlier highlighted in the thoughtful editorial offered by Dr. James Costa, head of the Highlands Biological Station, a letter by now a part of the public record. Given the assertions made by such experts that the Chattooga headwaters is an area that contains critically important and irreplaceable wildlife habitat, and given the scientific interest and available scientific expertise, why has the USFS thus far devoted so much time and funds to an exclusive set of experts, some of whom possess historical and/or obvious current ties to the access lobbyists and recreational advocates that brought the appeal for review of the boating restrictions?

C Neither do the "Expert Panels" and the reports represent an adequate assessment of the unusually significant Chattooga headwater resource environment. Forest Service reliance on recreation specialists/advocates to determine appropriate indicators for user experience outstandingly remarkable values of the Chattooga, as has already been pointed out, "...focuses virtually all finances and attention on recreation while dismissing impact to the resource and associated wildlife." In view of the obvious conflict between the goals of protecting wilderness qualities and values versus the demands of recreational access, why have USFS managers thus far seemed to disregard the clear direction in the Wild and Scenic Rivers Act that mandates a non-degradation priority to resource protection above all else?

✓ And, most of what about the resource itself, ostensibly protected under the strong mandates against resource debasement inherent in both the Wilderness Act and the Wild and Scenic Rivers Act, which has been clearly stated as one overriding concern by many stakeholders?

✓ In final effect, all of the foregoing only restates what has been stated elsewhere by others in letters of concern, but which *still* seems not to be sufficiently regarded by this agency:

F ***The LAC process to date has failed to adequately and comprehensively appreciate the biophysical conditions of the Chattooga headwaters. Under Section 10(b) of the WSRs Act, the Forest Service must protect the WSR environment above all competing demands or conflicting laws.***

✓ [Please also note: USFS action is also contrary to the resource values reported in the 2004 FEIS:

F "A public survey was conducted through the Southern Research Station in conjunction with the Human Dimensions Research Lab at the University of Tennessee (Cordell et. al. 2002). [The] findings of this public survey for the Sumter NF include a high value to market area residents for the protection of

sources of clean water; the legacy of passing along natural forests to future generations; the protection for wildlife and habitat, healthy forests, maintenance of places that are natural in appearance, and for protection of rare or endangered species." (Pg-3-363 Sumter 2004 FEIS) In this study the "legacy of passing along natural forests to future generations (85)" and "the protection for wildlife and habitat (75)" were rated far more important than providing "outdoor recreation (45)" pg 3-364.] Pg-3-363 Sumter 2004 FEIS]

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Importance of Biophysical Aspects

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When the Chattooga was recommended for inclusion within the Wild and Scenic River system, the whitewater sports industry was still nascent. Some notable early whitewater enthusiasts did figure importantly in appreciating the potential of the river as a whitewater playground, and figured as well in helping to effect protection. Nevertheless, it required a passionate and diverse chorus of voices, ultimately, to propel through Congress the far-sighted protections for this river that have allowed it to become the unique national treasure that it is. The common, unifying thread that bound together this diverse assemblage of believers was the recognition of the unique **biophysical** aspects of the Chattooga. The river was the longest, un-dammed, finest remaining free flowing mountain river available for preservation in the Southeast.

That recreational pressures now threaten the very qualities that made this river so outstanding is no surprise. The problem has been elsewhere recognized, in our burgeoning natural literature of wilderness and wildlands conservation. Though it is often (or usually) the biophysical characteristics of protected areas that constitute the basis for their special designation, "it has become quite clear that the values for which these areas were initially protected can be threatened by unmanaged or poorly managed recreational use." [McCool: **Limits of Acceptable Change: A Framework for Managing National Protected Areas**, 1996]

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Recreational demand and resource protection are conflicting goals. It is the absence of humans that define wilderness and therefore wilderness values. Section 10(b) mandates priorities for managers of WSRs; it is clear the resource related values must be protected above all others.

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Protective restrictions are the basis for the Wilderness and WSR acts. Without associated limitations there would be no purpose for such legislative acts. Protective limitations can legitimately preclude certain types of craft and vehicles, for the protection of the resource. The USFS must be equitable to all users, though not to all activities.

Under Section 10 (b) of the Wild and Scenic River Act, statutes clearly require protection of the resource over all other values. Given the outstandingly unique biophysical/ecological values of this resource, why has not an expert team to study the non-recreation-related values at stake been identified and appointed, to decide what goals should be in place, as well as to

recommend science-based indicators and standards to assess decisions tied to those values, and to produce an analysis to indicate effects of increased human visitation in the headwaters?

Is LAC methodology appropriate for this analysis?

Some have questioned the appropriateness of the LAC methodology for the current USFS Chattooga analysis. This seems altogether understandable, given that the Chattooga would seem to be guaranteed the strong protections against resource degradation within the mandates of the Wild and Scenic Rivers Act (*WSR ACT sec 10(b).*) And also in view of the Chief's language in the Appeal Decision (#04-13-00-0026) concerning the interpretation of Agency Guidelines (1982) for a "*non-degradation and enhancement policy for all designated rivers, regardless of classification.*"

Nevertheless, since the USFS has apparently tied its Chattooga capacity analysis to the LAC process, some comments are needed. In this context, it is worth reviewing the circumstances surrounding the inception of the LAC process. There are clear correlations between FOTUC concerns about current USFS employment of a "modified" LAC and similar concerns raised about resource impacts *by those who developed the LAC process.* It was Forest Service agency personnel who developed the LAC methodology, scientists with the Forest Service's Wilderness Management Research Unit in Missoula, Montana.

F Notably, they were concerned that "constantly growing" recreational use was resulting in "increasing impact and other management problems." Specifically, they were concerned with the "incremental nature of human induced change in wilderness and felt that inadequate attention to management planning was a poor way to protect the investment American Society had made in wilderness through the designation process." They were "particularly concerned that problems were expanding into parts of wilderness that had been relatively unused and undisturbed."

One of the shared beliefs among the USFS personnel that developed LAC had been that "objectives needed to be specific and achievable and that they "should describe ends rather than means—conditions rather than management actions." In other words, "ends"—objectives—should provide reliable descriptions of desired conditions (DFCs) that could be the basis first of identifying and providing viable management strategies, and secondly provide standards by which management actions could be monitored and evaluated.

Relative to desired [future] conditions, they were also concerned about the "inadequate knowledge of both existing conditions and trends..."

Fundamental to their concept of the LAC process was to "focus management on achieving specific management objectives, defined as staying within maximum acceptable deviations from (1) the 'natural range of variation' in ecological conditions and (2) a "pristine wilderness experience."

Cole and Stankey report the "shared belief" of early LAC development was originally in the

concept of limits of acceptable change as a way to “define a compromise between resource/visitor experience protection and recreation use goals.” They believed that “Recreation use has to be allowed, **but only to the extent that it is consistent with a high degree of resource protection.**” [emphasis added]

The unique value of the LAC approach, they report, was as “a method to compromise between goals.” But their shared vision about the management of compromise with the framework of LAC processes implicitly embraced concepts that were important at the inception of the LAC process—in tandem with “agency policy and much of the writing about wilderness” “which generally expressed the belief that wilderness conditions should provide the ‘bottom line’—not recreation.” They noted, by way of comparison, the 1977 amendments to the Clean Air Act, “in which air quality was to be maintained by not allowing the violation of ‘standards,’ defined as maximum allowable incremental deviations from established baselines for clean ‘air’.”

To conclude reference to LAC developers Cole and Stankey: “To be called LAC, therefore, a process must (1) contain standards that express minimally acceptable conditions, (2) require monitoring capable of determining whether or not standards have been met, and (3) base management prescriptions on evaluations of whether or not standards have been met.”

Historical Precedence for Zoning

Zoning, in the view of these LAC developers, was indeed controversial. Nevertheless, after much debate, they concluded that “zoning was useful in most wilderness situations, particularly as a means of guarding against the incremental degradation of conditions in the most remote and pristine portions of wilderness.”

In this context, it is worth noting that Cole and Stankey were concerned about the need at the time of the development of the LAC concept for the employment of “terminology of opportunity classes—derived from the Recreation Opportunity Spectrum—rather than zones, “ because it **“gave greater emphasis than we intended to visitor experiences, as opposed to environmental preservation.”** [emphasis added.] In sum, though controversial then as now, zoning was seen as being viable and perhaps necessary to preserve fragile natural resource environments.

Need for Accountability

In addition, according to Cole and Stankey, management plans “needed to provide accountability, through the specification of explicit and visible objectives that were essentially contracts, with success at meeting objectives evaluated with objective monitoring data.” These authors were also concerned that management plans sometimes appeared “arbitrary and capricious.”

(All of the foregoing quotes and references taken from Cole and Stankey: *Historical Development of Limits of Acceptable Change: Conceptual Clarifications and Possible Extensions*, 1998)

LAC is designed to help managers manage for desired resource and social conditions, and is designed to define what kind of resource conditions and social conditions are acceptable. It is supposed to focus on maintaining desired future conditions in resource, social and managerial conditions. It requires setting standards and monitoring conditions.

Accordingly to Cole and Stankey, Frissell (1963) had concluded in one of the first articulations of the LAC concept, "that if recreational use is to be allowed, deterioration is inevitable and must accepted. Even low uses of recreational use will cause some impact. Impact must be accepted, but a 'limit should be placed on the amount of change to be tolerated. When a site has reached this pre-determined limit of deterioration, steps should be taken to prevent further adverse change."

LAC and Principle of Non-Degradation

Another early concern within the LAC process was whether or not it was [is] valid in proceedings where Wilderness and the Wild and Scenic River carry the force of mandates that adhere to the Principal of Non-degradation. This disagreement cuts right to the very heart of the current situation we find ourselves in, with regard to USFS/Sumter administration of the LAC process.

In their treatment of this issue, McCool and Cole (*The Limits of Acceptable Change Process: Modifications and Clarifications, Cole and McCool, 1998*) discuss the important LAC component of the development of standards, and the extent to which the violation of standards have important implications for the principle of nondegradation.

They note: "In its strictest form, the nondegradation principle asserts that no place in wilderness should be allowed to degrade from its present state or its state when it entered the wilderness system." The LAC process does "provide a ready mechanism for enforcing this principle": LAC standards simply need to be developed that are always at least as stringent as the current condition or some more 'pristine' state." (Cole and McCool, 1998) "This implies, however, that most wildernesses must adopt a use limitation system to keep currently increasing use (Cole 1996) from causing further degradation." They go on, "If a management regime based on use limitations is considered unacceptable, then it is important for decision makers to realize that they will be violating a strict interpretation of the principle of nondegradation."

[Documents pertaining to this problem derived from the same Limits of Acceptable Change workshop that other documents referenced above derived from. (*Proceedings—Limits of Acceptable Change and related planning processes: progress and future directions; 1997 May 20-22; Missoula, MT. Gen. Tech. Rep. INT-GTR—371. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station*)]

The statements referenced above are best appreciated in view of the central purpose of both the workshop and the paper originating out of the workshop "to identify procedural modifications, if needed, to clarify LAC terminology and concepts, and to make recommendations about implementation details." (Cole and McCool, p.61.)

After noting that the traditional LAC process is to identify issues and concerns (as in the current Chattooga analysis) without necessarily specifying management goals and desired future conditions, Cole and McCool state that the original omission of goals and DFCs was simple oversight, not an intentional procedural specification. As has been noted previously here, these authors thereby recommended the addition of a new step to the LAC process—to involve defining goals and desired conditions upfront. ***“This step involves assembling the legal and policy mandates that will guide management of the area and developing a perspective on the significance of the area, its uniqueness, and its regional or national ‘niche.’”*** [emphasis added]. They note that such broad goals might stress “natural conditions, maintaining outstanding opportunities for solitude, and avoiding restrictions on recreation access and freedom of behavior.” These goals—which might vary from area to area—“would constitute the statements of desired conditions that are largely absent from the original description of the LAC process.”

F *Only after the goals are articulated* can standards and indicators—the heart of LAC process—be developed.

In the author’s view, this recommended step has been conspicuously missing from the current Chattooga LAC process underway. It further can be argued that the management goals for the sections of the Chattooga above Highway 28, especially the Rock Gorge Roadless Area and the Ellicott Rock Wilderness Area, are explicit both within the Sumter management plan as well as in the Wilderness Act and the Wild and Scenic Rivers Act.

Any LAC process that ignores these management provisions fails to incorporate a recommended addition to the LAC methodology that has been called for by officials within the USFS itself. Furthermore, such omissions ignore the clear management direction explicit in the nondegradation clauses of the Wilderness and Wild and Scenic Rivers Act, as well as the management direction provided within the Chattooga management plan that originally zoned the river into separate sections.

Problem of inadequate inventory data

The LAC process, to be viable, credible and acceptable must incorporate all the values and uses, both recreational and non-recreational, must be founded on strong science and be managed with procedural rigor that comprehends and upholds the high standards and high-minded ideals that underlie creation of the Wilderness and the Wild and Scenic Rivers Acts, both of which represent investments and public capital for all US citizens, not just recreationists.

LAC was originally conceived as a process to manage recreation in wilderness, and its main premise is that recreation is the major source of impact to conditions. We believe that LAC does offer sufficient capability for increasing the compatibility between recreational and non-recreational wilderness values, but only if managed by a task force of impartial, rigorous professionals who can articulate and represent both recreational and non-recreational values. We believe that an independent task force is needed, to include the scientists, conservationists, educators and others who understand and appreciate values beyond the anthropocentric focus

which has so far dominated this debate. The employment of a "modified" LAC must be expanded beyond its current parameters, which is clearly based on a carrying capacity mindset that considers how many people could use the wilderness without causing damage. We need a new way of thinking, in keeping with the thinking of those that created the LAC approach, to focus on what wilderness conditions are present, which ones are desired, and how much change can be tolerated *on different portions* of the wilderness.

As stated by Stankey and others (1985), the LAC process should "recognize that the real concern is the effects of use, not how much use is occurring."

"LAC is designed to help managers manage for desired resource and social conditions, and is designed to define what kind of resource conditions and social conditions are acceptable. It is supposed to focus on identifying and maintaining desired future conditions in resource, social and managerial conditions. It requires identifying and inventorying area concerns, unique features of the area, setting standards and monitoring, and comparing conditions with standards. In order to accomplish this, managers must explicitly describe the setting in "terms of all wilderness values."

Additional valuable perspective on this issue is available in Reed and Merigliano, in **"Managing for Compatibility Between Recreational and Non recreational Wilderness Purposes"**:

"The wilderness resource is too valuable and too threatened by a multitude of human activities to let ourselves think that we are truly managing an enduring resource of wilderness if just campsite conditions or trail encounters are monitored. By doing so, we perpetuate the idea of wilderness as nothing more than a special type of recreation area..."

"Managers must develop baseline inventory information and monitor changes in conditions. So far too little attention has been paid to conducting comprehensive inventories of wilderness resources, with major emphasis so far expended on describing items relative to "boating and fishing potential."

Inventories should include characteristics that contribute to indices of biodiversity. This has been done in only a very general way so far for the current analysis. However, it should be done in a way that recognizes the specifically unique biological and ecological attributes of *this river* and *this wilderness*, with reference to qualified scientists and resource professionals who can operate outside the political parameters that have constrained this analysis so far.

To summarize, the USFS is deficient in their responsibilities for data collection and will not be able to accurately assess an adoptive management approach.

Lack of Data

In 1988 oversight hearings on Forest Service wilderness management, Congress requested that the GAO document the extent of resource damage in USFS wilderness areas. However, the GAO "found that they could not accurately document the extent or seriousness of problems because wilderness areas did not have any baseline data inventory and monitoring system in

place to track changes in conditions (Government Accounting Office 1989)."

According to Reed and Merigliano, the LAC process was originally conceived a way to manage recreation use in wilderness, based on the premises of its developers (Stankey and others 1985) that recreation use figures primarily in causing change. The same authors state that "as the importance of non recreation wilderness values grows, there is increasing interest among managers to **expand the LAC concept to address nonrecreational wilderness values.**"

The same authors recommend the formation of task forces whose members "can articulate and represent recreational and nonrecreational wilderness values."

Further: "Because nonrecreational wilderness values have received little attention, managers will have to actively seek out scientists, educators, conservationists, archeologists, etc...."

(Managing for Compatibility Between Recreational and Nonrecreational Wilderness Purposes, Reed and Merigliano, pp. 95-107, in Preparing to Manage Wilderness in the 21st Century, proceedings of the Conference, Athens, GA, 1990; General Technical Report SE—66.

Sumter managers must be able to explicitly describe the resource setting in terms of **all** of its wilderness, ecological and biological values. However, as noted, this analysis to date has narrowed its focus to recreational fishermen and boaters, without a similar interest and effort to put in place the baseline data needed to describe, understand and protect the resource.

Though significant efforts have been made toward assessing easy-to-quantify variables that have to do with boater/fishermen use of the headwaters trails and campsites, not enough interest and effort has gone into hard-to-quantify variables such as the ecological form and function of the headwaters reach. A central question remains: Have Sumter officials met their responsibilities to appreciate baseline resource conditions beyond the obvious ones of recreational fishing and boating? In our view, the record shows by now that they have not. We need far better representation of the headwaters ecosystem than we have seen. And toward that end, we need a careful selection of umbrella and habitat indicator focal species.

Effects of recreation on wildlife

Conspicuously absent from the USFS analysis to date is any adequate effort to gauge the historical biological importance and current national (even global) significance of the Chattooga headwaters as comparatively **undisturbed wildlife habitat.**

Perhaps the best way to introduce this issue is via the following quote, which is concerned with the effects of recreation on the larger goals of wildlife and habitat protection:

INTRODUCTION

The large increase in outdoor recreation activity over the last 50 years has been recognized as a potentially serious threat to North American wildlife populations. Threats to wildlife in wilderness are a concern to backcountry recreationists as well as the American public. The protection of wildlife habitat and the protection of endangered species was one of the most highly valued benefits of wilderness according to a telephone survey of approximately 1,900 people in the United States (Cordell and others 1998). Many backcountry recreation users cite the opportunity to view wildlife as an important part of their wilderness experience. Threats to wildlife in wilderness are also a concern for wildlife preservation. Wilderness often provides a refuge for wildlife amid a matrix of more intensively developed lands, and is especially valuable for wide-ranging species that are sensitive to human disturbance and those that depend on special habitats found predominantly in wilderness (Hendee and Mattson 2002).

Impacts of recreation on wildlife include increased energetic demands during critical periods of the year, loss of habitat through avoidance of areas of human activity, exposure to predators when avoiding humans, and loss of habitat through the alteration of vegetation by recreation activities (Knight and Gutzwiller 1995). If widespread, cumulative impacts on individuals of a species may ultimately affect local and regional populations. Changes in species populations may affect wildlife communities, especially if the impacted species have strong interactions with other species.

The management of wilderness recreation impacts on wildlife in designated wilderness is complicated by the potentially conflicting mandates of The Wilderness Act of 1964 [Public Law 88-577]. The Act mandates the preservation of natural conditions in wilderness, while also requiring managers to provide opportunities for primitive recreation. However, when recreation affects wildlife species, populations, or communities, it can hinder the preservation of natural conditions. To address the dual mandates, appropriate wilderness recreational activities must be provided but they must also be managed to minimize their impacts to wildlife, and more broadly, to wilderness ecosystems. Wilderness managers can use direct approaches such as restricting visitor numbers, activities, or access in some areas; in backcountry areas outside of designated wilderness, manipulating wildlife and wildlife habitat may be appropriate. Indirect approaches may also be used such as visitor education and the careful location and design of trails, trailheads, and adjacent roads and campgrounds.

Tempel, Douglas; Wright, Vita; Neilson, Janet; Mildenstein, Tammy. In Prep. Linking wilderness research and management—volume 5. Backcountry recreation impacts to wildlife: an annotated reading list. (Wright, Vita, series ed.) Gen. Tech. Rep. RMRS-GTR-79-Vol 5. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. XX p.

Elsewhere, wildlife researchers Cole and Knight weigh in on the issue of recreational impacts to wildlife:

“A number of reasons exist for thinking that recreational impacts on wildlife may be significantly compromising wildland preservation goals. The first reason...is that recreational use of these lands has increased dramatically in recent decades. Second, in contrast to impacts on vegetation and soil, which are highly localized, impacts to wildlife are likely to be more widespread. Since animals are mobile, it is possible for entire populations or entire habitats to be disrupted by recreational use.”

“The proportion of an area that is never visited and the proportion of the year that visitation is negligible have shrunk greatly over the last few decades.... The effect is that refuge from disturbance has decreased dramatically—if low levels of recreational use have a significant

impact.”

“Wildlands are important to our society and undisturbed wildlife populations are a critical indicator of the quality of wildlands. Managers can only be as effective as the knowledge they bring to bear on problems.”

Wildlife Preservation and Recreational Use: Conflicting Goals of Wildland Management, Cole, David N., and Richard L. Knight in Recreational Impacts on Wildlife in Wildlands. Knight and Cole (1991)

The need for more and better data on the impact of recreation on wildlife in wilderness and other high value wildlands

“The twin goals of nature preservation and provision of recreational opportunities inevitably conflict. Recreation causes impacts to the land and wildlife that inhabit the land. Management actions taken to mitigate these impacts *frequently restrict access and recreational activities.* (italics mine) The responsibility of the wildland manager is to determine the optimal mix of preservation and use, and to implement strategies to achieve this mix. To help the manager in this task, research on interactions between recreationists and the environment is needed.”

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“...our understanding of recreational impacts is still rudimentary. Goldsmith (1974) has commented that most recreational impact studies merely ‘record observations of a rather superficial nature and only a few describe specially designed experiments with detailed analysis of the resultant data.’”

Most research continues to merely document the obvious; time frames from studies are short; theory is lacking; few studies utilize experimental designs; and few studies produce results that lead to broader generalizations.”

From “Wildlife Preservation and Recreational Use: Conflicting Goals of Wildland Management”, paper by David N. Cole (USDA-FS) and Richard L. Knight (CO St. University, presented 1991 at 56th N.A. Wildlands and Natural Reserve Conference, Special Session 4.:

Specific information needs: (from Cole and Knight)

“In order to minimize conflict between recreation use and wildlife preservation goals, we need to: (1) understand the responses of wildlife to recreational activities; (2) understand the factors that influence the nature and magnitude of impacts; (3) improve research methods; and (4) develop and implement new management strategies.”

“Previous research has documented numerous cases where wildlife have responded negatively to recreational use: however, it is seldom possible to determine how **significant** those impacts are. An ungulate may run from an approaching skier, but does that reduce the fitness of that individual or significantly affect a population—either in the short or long term? We need more

research that documents the various effects of different recreational activities on wildlife: and more attention needs to be paid to impacts other than short term behavioral changes in individuals. Are there long-term impacts? How are behavioral responses by individuals manifested at the population or community levels? This type of research is challenging because it is difficult to distinguish between natural variability in populations and variability that results in recreation use (Boyle and Samson 1998, particularly where the effect of recreation is indirect and the response occurs far from the point of disturbance or after a time lag. (Goldsmith 1974)."

"The ultimate goal of this research is to see that management optimizes the twin goals of wildlife preservation and recreational opportunity."

"Wildlands are important to our society and undisturbed wildlife populations are a critical indicator of the quality of wildlands. Managers can only be as effective as the knowledge and information that they bring to bear on problems. The current, poor level of understanding is clearly an impediment to effective management." (emphasis added)

Vulnerability and Rarity of Headwaters Wilderness Habitat

The following study has much to inform our current headwaters biophysical decision environment:

Indirect Effects of Recreation on Wildlife, David N. Cole and Peter B. Landres in Knight and Gutzwiller, eds. 1995. Wildlife and Recreationists—Coexistence Through Management and Research. Washington DC: Island Press: Chapter 11, 183-202.

"The vulnerability and rarity of the habitat, and its importance to wildlife, should also be considered."

"Changes in habitat that alter living space, whether for breeding, feeding, or any other use, will have a large impact in wildlife communities."

"If recreation affects the density or distribution of species that functionally dominate a community or ecosystem, resulting impacts will be especially severe."

"In sum, the indirect effects of recreation on animal populations are likely to be substantial, but there is little rigorous documentation of these impacts."

"...the relationship between amount of use and amount of impact is highly curvilinear; as use levels increase, additional use has less and less effect on amount of impact. This suggests that limiting recreation is effective in reducing indirect impacts only when usage can be virtually eliminated."

Knowledge Gaps: "Two important questions remain, however: how significant are these impacts to wildlife populations and communities, and which habitat disturbances are most damaging to wildlife?"

“Significant impacts might be those that are both extensive and severe, those that affect rare or important habitat, and those that affect rare, threatened or keystone species.”

“Other examples of significant impacts include those that are long lasting and those that impact populations and communities rather than just the behavior of individuals.”

Lack of adequate understanding of wildlife effects evident from USFS Literature Review

We do recognize that your recently released Literature Review is not meant to be exhaustive. Nevertheless, as an “indicator” itself of your apparent management direction in this ongoing analysis, the Literature Review does deserve comment at this point. We are specifically concerned about apparent omissions and problems with your wildlife and biophysical data collection phase in this important formative period prior to NEPA Scoping and the release of a proposed action.

- 104 • Your discussion of potential negative effects of different types of recreation to wildlife in Section 5.1.2 fails to acknowledge the extent to which boating facilitates easy access through the heart of Chattooga headwater areas which are otherwise often inaccessible (and sometimes **extremely** inaccessible) to other forms of recreation in your list, all of which otherwise rely on foot travel. This should be recognized as a key consideration with regard to factors of predictability, frequency, timing, location and duration of wildlife disturbances. This is a glaring omission.
- 104 • While you do make reference to the potential for wildlife to avoid preferred habitat areas due to human disturbance **within** “refuge” areas, nowhere do you discuss the potential for long term negative effects to populations or viability of wide-ranging wildlife species due to human disturbance in habitat that is rare, critical or irreplaceable at regional or landscape scales. [i.e.: there is no discussion of the potential negative effects to highly mobile species such as black bear, a keystone species, (and a USFS Management Indicator Species) which need the kind of core refuge habitat currently available in numerous places along the river in the headwater reaches, but increasingly at a premium outside of public lands.] This is hinted at under 5.1.3 where you briefly discuss “reduced use of refuge.” However, no note is made of the specific geographical realities of wildlife habitat on the Blue Ridge Escarpment and/or on surrounding Chattooga watershed areas. Geographical specificity is key here.
- While you do note the potential for potential disturbance to breeding populations, no note is made of the key importance for areas of low human

disturbance for the breeding success of some species—i.e., for instance: black bear.

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- No mention is made of what is surely one of the most constant refrains to be noted in the literature of wildlife/recreation effects: the need for more information on the effects of recreation on wildlife, as well as the known difficulty in designing studies with adequate controls, that yield conclusive results. In short, there is much that we do not know and it is well known that there is much that we do not know about the effects of recreation on wildlife. Yet I see no reference to this research/data problem in your literature review.
- No reference to the ongoing research question that lies beyond the simple fact that wildlife may or do respond negatively to human recreation impacts—that is, the **significance** of these impacts.
- No mention made of another frequent refrain found throughout the literature on the effects of recreation on wildlife (and on wildlife studies in general), which is the potential scientific and ecological value of areas of low human disturbance to wildlife, as benchmarks for further study of natural ecosystems and their variability. The area in question—the headwater reach of the Chattooga watershed—is a critically important core study area within a larger, already existing study area, the Blue Ridge Escarpment.

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Failure to Adequately Assess Wilderness Character of Headwaters

Here the word “wilderness” is used to refer both to designated Wilderness, which enjoys the protections of the Wilderness Act, and as the wilderness river environment, protected by the non-degradation clauses of the Wild and Scenic Rivers Act.

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This section deals with the failure (within the overall USFS analysis of the Chattooga to date) to assess, or even acknowledge the **wilderness character** of the headwaters reach, values which are primary among those values which caused this river to be protected in the first place. Here, we refer to the Ellicott Rock Wilderness, but not only to the designated wilderness, but also the Rock Gorge Roadless Area, which is de facto wilderness at least as wild and viable as wildlife habitat as the Ellicott. The recently released USFS Literature Review mentioned the words “wilderness character” twice: both of those references were found in the bibliography/sources section. No mention of the term or concept in the text of the Literature Review.

An understanding of the importance of wilderness character was underscored by House member Bruce Vento in 1988, who as Chairman of the House Subcommittee on National Parks and Public Lands stated, “Congress does not designate wilderness primarily for recreation”:

“To date wilderness has often been treated as if recreation were the primary and sometimes

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only purpose of wilderness. However the Wilderness Act describes with equal status a variety of wilderness purposes, specifically, recreational, scenic, scientific, education, conservation and historical use. It does not acknowledge recreation as the most important purpose." (Vento)

A fundamental mandate of the 1964 Wilderness Act is that "each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area." Furthermore, Section 2(a) in the Wilderness act Statement of Policy states that wilderness areas "shall be administered for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character." [emphasis added].

Elsewhere, Rohlf and Honnold (1988) and McCloskey (1999) "assert that Section 4(b), Use of Wilderness Areas, gives the primary management direction for wilderness that 'each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area.'" Furthermore, "the Congressional Record (U.S. Congress 1983) reinforces this assertion, stating, 'The overriding principle guiding management of all wilderness areas...is the Wilderness Act (section 4(b)) mandate to preserve their wilderness character.'" The same sections states that "even when the agency administers for other purposes, the agency must also 'preserve its wilderness character.'"

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Also, Forest Service policy relative to the Wilderness Act in the Forest Service Manual (Chapter 2320.2, No.4) states that the agency should "protect and perpetuate wilderness character" and to evaluate via monitoring whether wilderness character is being degraded, sustained or improved over time. Still further, the Government Performance and Results Act of 1993 requires federal agencies to show accountability "by providing...information about program results and service quality."

(All references taken from Monitoring selected conditions related to wilderness character: a national framework. Gen.Tech. Rep. RMRS-GTR-151. Fort Collins, CO: U.S.D.A. Forest Service, RMRS, p.38).

All of the foregoing are referenced in the document from the Forest Service Wilderness Monitoring Committee, which was designed to provide tools to managers to monitor their actions relative to wilderness character and stewardship in a "conceptual foundation for a national assessment of how wilderness character is changing over time" (Monitoring selected conditions...). This monitoring "uses Section 2(c) Definition of Wilderness from the Wilderness Act to identify four statutory qualities of wilderness:

"Although wilderness character is not defined in the Wilderness Act or its meaning discussed in the legislative history of this Act, it may be described as the combination of biophysical, experiential and symbolic ideals that distinguish wilderness from all other lands." Section 2(c) of the act, in which is contained the definition of wilderness, states:

"An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements of human

habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable;"

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In order to uphold this definition of the statute, managers must understand and appreciate the status and trends of biophysical conditions and ecological systems and processes that are sensitive to human threats, both intended and unintended.

To quote from the USFS document referenced above:

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"One of the major themes running through the Wilderness Act is that the "earth and its community of life" in wilderness should be free from the effects of "an increasing population, accompanied by expanding settlement and growing mechanization" (Section 2(c) and 2(a) respectively, Wilderness Act of 1964). In today's terms this means that the native species composition, structures and functions of ecological systems in wilderness are protected and allowed to function on their own, without the planned intervention or even the unintended effects of modern civilization."

Management actions that cause ecological impacts should adhere to the Forest Service national policy (FSM 2320.6) which directs managers to improve or at least maintain wilderness character. A knowledge of baseline conditions and careful monitoring should be in place that should focus on these key questions:

- What is the current state of wilderness character?
- How is the wilderness character changing over time?
- How are stewardship actions affecting wilderness character?
- What stewardship priorities and decisions would best preserve wilderness character?

So far, there is no evidence that the USFS, in the current Chattooga analysis, is aware of the critical importance of "selecting and monitoring indicators of conditions and actions related to wilderness character. Information on wilderness character that is consistently gathered and reported offers managers a powerful tool to evaluate if wilderness character is stable, degrading, or improving over time, and to communicate progress towards fulfilling this central mandate of the Wilderness Act."

(Above reference from Executive Summary, "Managing Wilderness Character" Peter Landres, Aldo Leopold Wilderness Institute (<http://leopold.wilderness.net/htopics/monitor.htm>))

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FAILURE TO ASSES ECOLOGICAL CAPACITY: No apparent effort to understand the Rarity, Uniqueness and Significance of Chattooga headwaters wilderness habitat

There seems also to be no equal or adequate devotion to the stand-alone resource concerns identified by many Chattooga users, including those intrinsic values of wild and scenic wilderness character and ecology that have been the substance of many comments entered into the public record for this analysis. These concerns represent enduring, intrinsic,

irreplaceable Chattooga values which have been allowed to subside beneath a din and uproar that has drowned out

ANY increase in human traffic on the river headwater reaches now in question, largely isolated for the past thirty years, would clearly represent a fundamental change in the character of those sections and thus must be subject of a full, comprehensive environmental impact analysis.

Importance of Chattooga Core to the Blue Ridge Escarpment Complex of natural areas

The Chattooga flows through the heart of one of the largest blocks of forest interior habitats remaining on the Blue Ridge Escarpment. The Ellicott Rock Wilderness and the Rock Gorge Roadless area together comprise a wilderness reserve core of more than 15,000 acres, strategically as a reserve anchor within the larger wildlands habitat block on the Escarpment.

This block of high quality interior forest habitat is in turn the heart of the 187,000 acre Chattooga watershed, nearly 70% of which is in public ownership, one of the only watersheds remaining in the Southeast that presents the opportunity for restoration to native ecological conditions. Moreover, this wilderness core, in combination with nearby wild areas including the Sarah's Creek Roadless area to the west and the Bee Cove roadless area and the Jocassee Gorges complex to the east, comprises a biological archipelago of sufficient size and de facto wilderness character to warrant recognition and analysis. [see Haney, WS, Ecosystems, p129].

Core habitats are unbroken areas of undisturbed natural habitat that can serve as home areas for source populations of animals. The connections between them, called corridors, are important travel zones that ensure both physical and genetic connectivity between different populations. Examples of core habitats might be an established wilderness area, or a large forested area with few or no roads. In either case, the habitat would encompass all the life requisites of the focal species, including water, food, shelter and cover.

From the Nature Conservancy, on the ecological values of the Blue Ridge Escarpment:

"Spanning three states (North Carolina, South Carolina and Georgia) and encompassing 859,000 acres, the Southern Blue Ridge Escarpment contains some of the highest natural diversity of rare plants and animals found anywhere in the world.

The Southern Blue Ridge Escarpment is home to more than 300 rare species and natural communities..."

<http://www.nature.org/wherewework/northamerica/states/northcarolina/preserves/art17380.html>

Although the Blue Ridge in South Carolina constitutes a small portion of the state's land area (328,500 acres or 1.69 percent of the total area), it supports the most extensive upland hardwood forest complex in the state. The region is rich in floral diversity best expressed in the mixed mesophytic forest vegetation community (Braun 1950), and described as moist broadleaved forests that can harbor over 30 different tree species and many more types of fungi and ferns. Other biological resources unique to the region include a viable black bear (*Ursus americanus*) population extending across the North Carolina, Georgia and South Carolina state lines, sustained nesting of peregrine falcons (*Falco peregrinus*) following reintroduction in the 1980's and self-sustaining populations of native brook trout (*Salvelinus fontinalis*).

Management must appreciate the regional importance of the habitat, as well as the impending threat to the larger habitat area represented by current and projected drastic increases in visitation:

"Although accounts of visitation trends are currently anecdotal, visitation and demand for services is increasing dramatically."

"Managing agencies face competing demands for access by users whose interests are not always compatible."

"Impacts of recreation uses on the resource base vary by intensity and type posing challenges to meeting resource-based management objectives."

<http://www.dnr.sc.gov/cwcs/pdf/habitat/BlueRidgeHabitat.pdf>

Elsewhere, further information exists to substantiate the importance of the interior forest habitat of the headwaters:

"The Blue Ridge Province is a land of contrast. Not only is there a wide disparity between poor and wealthy residents, there is a sharpening divide between rich and degraded habitats. **On one hand Dr. Kurt Riiters with the USFS Southern Research Station states "the southern Appalachians in eastern North America contain the only extensive region of interior forest at middle latitudes.** Until recently, this area was relatively undeveloped".*** On the other hand the recently released Forest Inventory Analysis (FIA - 2002) shows significant declines in forest land cover over much of the piedmont and mountain sections of North Carolina. Overcutting and land development are primary causes for the decline. This is the seventh such non-judgmental summary of forest conditions released by the US Forest Service since the process began in 1938."

* Rabinowitz, Alan *Ground Truthing Conservation: Why Biological Exploration Isn't History*, Conservation in Practice Fall 2002

** The Nature Conservancy and the Southern Appalachian Forest Coalition *Southern Blue Ridge Ecoregional Conservation Plan: Summary and Implementation Document* March 2000

*** Riiters, Kurt (etc.) *Global-scale Patterns of Forest Fragmentation* Conservation Ecology 4:3 2000

A map of the Blue Ridge Escarpment that shows the spatial relationships of the high biological value tracts may be accessed at: <http://www.polarismaps.com/portfoli/sbre.jpg>

Global Importance of Appalachian and Blue Ridge Forests

"The large variety of landforms, climate, soils, and geology, coupled with a long evolutionary history, has led to one of the most diverse assemblages of plants and animals found in the world's temperate deciduous forests (Stephenson et al. 1993)."

http://www.worldwildlife.org/wildworld/profiles/terrestrial/na/na0403_full.html

In this context, see especially in the above reference: *Biological Distinctiveness, Conservation Status, Habitat Loss, Degree of Fragmentation* ("Fragmentation and isolation of remaining blocks of undisturbed habitat is severe."), *Types and Severity of Threats, And Suite of Conservation Priorities*. A suite of "Priority Activities to Enhance Biodiversity Conservation" is recommended, to include:

- Identification and protection of larger blocks (greater than 100 km²) of relatively unfragmented and undisturbed forests.
- Linkage zones of appropriate habitats between larger blocks should be restored.
- Larger blocks need to be free of roads, powerline corridors, and other avenues for intrusions by cowbirds, raccoons, and other predators of songbirds. Road closures and prohibition of road-building is greatly needed, particularly on public lands.

The Chattooga analysis must appreciate the importance of the current regional system of natural area and wilderness reserves as a means to understand and safeguard the ecological attributes no longer found on surrounding, more intensively occupied and managed lands. Identification and protection of a regional system of large, undisturbed habitat blocks in order to maintain viable populations of migratory songbirds and other sensitive species is urgently needed.

At the same time, this analysis must appreciate the geographic importance of the Ellicott Rock Wilderness and the Upper Chattooga corridor as core areas within this system of reserves. [The Southern Appalachians contain the largest block of protected forest landscapes in the Eastern US, (Simons and others 1999)]. At the same time, the analysis should appreciate the value of these areas as benchmark areas for evaluating the status of natural functioning ecosystems and the long term capacity of the region to support and ensure biological diversity. To the extent that these Blue Ridge Escarpment areas are comprised of comparatively unfragmented, forests interior ecosystems, they are home to several species that are particularly sensitive to forest conditions, including black bear and certain songbirds such as, for instance, Swainson's Warbler.

Moreover, "Due to 'hostile conditions' now prevalent in anthropogenic landscapes (Askins 1995), wilderness area and other large forest reserves are particularly important because these refugial 'sources' promote elevated densities, pairing success and productivity for forest-interior

wildlife that subsidize the 'sink' habitats in more disturbed landscapes (Clark and Pelton 1999, Robinson and others 1995a, Van Horn and others 1995).

(Gauging the Ecological Capacity of Southern Appalachian Reserves: Does Wilderness Matter?, Haney, Wilbert, DeGroot, Lee, Thomson, in McCool, Cole, Borrie, O'Loughlin, Wilderness Science in a time of change conference—Volume 2: Wilderness within the Context of Larger Systems, 1999; Proceedings RMRS-P-15-Vol-2).

Lack of Understanding of Unique Ecological Attributes of Chattooga Headwater Core Areas

27 What is lacking in the Sumter analysis to date is the consciousness of the wild conditions that have developed in the Chattooga headwaters as a direct result of the first zoning measures. These current conditions represent a 30 year investment in the realization of the spirit and letter of both the Wilderness Act and the Wild and Scenic Rivers Act. Unfortunately, we find little evidence of any appreciation within the agency's analysis to date of *what could be lost* if those conditions are diminished by an increase in human traffic. Such wild conditions are now all the more rare in a landscape where wild areas have become islands in rising tide of humanity. It is those conditions which should be recognized as a biological imperative to transcend the wishes of any one "stakeholder" group...fisherman, paddlers or otherwise. This rare opportunity (coupled with the fact that the continued enhancement of wild conditions in the headwaters will come at very low cost) should be prioritized beyond any compromise that satisfies the "users" of any special interest group.

Putting Procedure over Substance

Let us be clear: it is not enough for this agency to simply go through the motions of describing environmental effects in some apparently reasonable way that frees it to make any decision it sees fit, or, similarly, of completing an arbitrarily delimited analysis that incorporates the narrow views of a subset of users but ignores other, critical environmental considerations.

The regulations promulgated by the Council of Environmental Quality (CEQ) under NEPA call for "accurate scientific analysis" [C.F.R. 1500.1(b)] as well as "scientific integrity" (40 C.F.R. 1502.24) in the analytic process.

Right now, what we have is an expensive investment of taxpayer funds in a narrowly delimited analysis based on artificially delimited expert panels, and on the analysis of expensive consultants with expertise in the narrow limits of recreation. The analysis conducted so far is therefore simply not adequate to serve as a legitimate basis to generate alternatives and thereafter disclose the effects of those alternatives.

In addition, if the agency feels that it has to limit its analysis because it can not obtain needed ecological information to accurately define indicators and foresee impacts to the Chattooga River ecosystem environment, regulations (40 C.F.R. 1502.22) direct that the federal agency disclose to both the public and to agency decision makers any "existing credible scientific

evidence" along with the agency's evaluation of adverse environmental impacts "based upon theoretical approaches or research methods generally accepted in the scientific community."

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However, **the letter and intent** of both the Wilderness Act and the Wild and Scenic Rivers Act enjoin these same agency officials to consider not only experiential factors in their analysis but ecological factors as well—they must fully and adequately consider biophysical factors as well as social. It is vital that USFS officials do this, not only to ensure that the full range of wilderness values of this irreplaceable wild river resource be preserved for all current users, but equally important that their analysis be full and comprehensive in order to ensure that all wilderness values (and future options) in this resource be transferred to future Americans fully, completely, fairly and without diminishment.

INSUFFICIENT DEDICATION TO SCIENTIFIC ANALYSIS

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Ample scientific evidence and theory avail to prioritize biological factors that have hitherto gotten short shrift in the current analysis—in studies that highlight the importance of large, core areas of wild land with minimal human impacts and disturbance, as well as in the educated predictions afforded by conservation biology.

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Studies that might adequately evaluate the adverse effects to the ecological environment of the Chattooga headwaters could take decades. However, that is no reason for this agency to abdicate its responsibilities, given the rarity of the habitat in question, and given that the habitat can not be replaced. It is absolutely critical that this analysis fully and completely weigh sound scientific predictions concerning the effects of human disturbance on this hitherto undisturbed natural environment. Our failure to appreciate and assess the ecological form and function of the headwaters might result in a permanent degradation of the ecology of the area even before we have even understood what is at stake, the loss coming at a time when such relatively intact landscapes are fast disappearing and can not be replaced.

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The foregoing arguments highlight the extent to which a rightful adherence to NEPA regulations not only elevates existing scientific opinion to a position of critical importance, but also specifically addresses instances where environmental effects are hard to foresee. In neither case has the current USFS analysis of the ecology of the Chattooga headwaters so far measured up.

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With further respect to inadequacies of the current analysis with respect to NEPA: The act emphasizes as one of its basic purposes an enrichment of "the understanding of ecological systems...important to the Nation" (42 U.S.C. 4321). Herein NEPA mandates a national environmental policy that recognizes the "profound impact of man's activity on the interrelations of all components of the natural environment, particularly the profound influences of resource exploitation..." and the "critical importance of restoring and maintaining environmental quality..." (42 U.S.C. 4331).

In addition, particularly with respect to ecological conditions so far not evaluated in this analysis, CEQ regulations provide for adequate evaluation of the composition, structure, and

function of the [Chattooga] ecosystem:

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'Effects and impacts as used in these regulations are synonymous. Effects include ecological (such as the effects on natural resources and on the components, structures and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social or health, whether direct, indirect, or cumulative. (40 C.F.R. 1508.8)

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All of the foregoing collectively mandates that NEPA must take a hard look at the cumulative impacts to the Chattooga headwaters ecological environment in assessing the potential biological losses that might accrue to any proposal for increased human impacts in that fragile, unique, irreplaceable area.

The Forest Service Manual at Chapter 2320 (Wilderness Management):

"Manage the wilderness resource to ensure its character and values are dominant and enduring. Its management must be consistent over time and between areas to ensure its present and future availability and enjoyment as wilderness. Manage wilderness to ensure that human influence does not impede the free play of natural forces or interfere with natural successions in the ecosystems and to ensure that each wilderness offers outstanding opportunities for solitude or a primitive and unconfined type of recreation. Manage wilderness as one resource rather than a series of resources." (Sec. 2320.6)

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Section 2320.1 of FSM reminds us that the Wilderness Act of 1964 specifies Congressional policy to secure for the American people an enduring resource of wilderness for the enjoyment of present and future generations. It defines wilderness as areas untrammelled by people that offer outstanding opportunities for solitude and directs agencies to manage wilderness to preserve natural ecological conditions. (Sec.2320.6)

Section 2320.2 in Title 36 of the Code of Federal Regulations states the following **Objectives:**

- Maintain and perpetuate the enduring resource of wilderness as one of the multiple uses of National Forest land.
- Maintain wilderness in such a manner that ecosystems are unaffected by human manipulation and influences so that plants and animals develop and respond to natural forces.
- Protect and perpetuate wilderness character and public values including, but not limited to, opportunities for scientific study, education, solitude, physical and mental challenge and stimulation, inspiration, and primitive recreation experiences.
- Gather information and carry out research in a manner compatible with preserving the wilderness environment to increase understanding of wilderness ecology, wilderness uses, management opportunities and visitor behavior.

At 2320.3, Policy states that "Where there are alternatives among management decisions, wilderness values shall dominate over all other considerations except where limited by the

Wilderness Act, subsequent legislation or regulations.

**CHATTOOGA HEADWATERS WILDERNESS AS BENCHMARK:
Critical Importance of Undisturbed Habitat**

"Every region should retain representative samples of its original wilderness condition, to serve science as a sample of normality. Just as doctors must study healthy people to understand disease, so must the land sciences study the wilderness to understand disorders of the land mechanism."

Aldo Leopold, as quoted in *Aldo Leopold: A Fierce Green Fire*, Marybeth Lorbiecki (1996)

I We see an acute need to recognize the Chattooga headwaters as Wilderness Wildlife Habitat—to provide an undisturbed setting for plants and animals to thrive without having to compete with human ambitions, where species can survive in a place of refuge.

"Wilderness settings provide habitats that receive a minimal amount of human disturbance while providing the opportunity for natural disturbance and ecological processes to operate with minimal human interference (Starkey and Larson 1985). However, the price of maintaining undisturbed environments includes restrictions on use and access."

"..although wilderness areas seem to be non-essential for a majority of studies on the majority of species, they are essential for furthering our understanding of wilderness dependent species [bear, etc.]"

104 Before we enact the kind of changes that will ensue with this measure, we need to describe, analyze and map the critical wilderness habitat occupied by wilderness dependent species such as black bear, and assess the population change over time to document ecosystem-wide population trends.

"The presence of large areas with a high degree of integrity and continuity means that a wilderness harbors substantial information of benefit to science and society" (**Graber 1985, Noss 1991**).

I "Although wilderness wildlife research, for all practical purposes, is limited to the study of wilderness dependent wildlife and natural regulation, researchers should be aware of and make greater use of the opportunities to monitor wildlife populations in wilderness settings. Monitoring wildlife in wilderness ecosystems may be used to warn of impending environmental change across broad geographic areas. Davis and Halvorson (1998) considered the national park ecosystems to be 'miner's canaries' and the concept applies to many areas that are relatively undisturbed by human presence. (Peek 1999)."

(The Evolution of Wilderness Wildlife Research in North America. Wright and Garrett, in McCool, Cole, Borrie, O'Loughlin, Wilderness science in a time of change conference—

Volume 3: Wilderness as a place for scientific inquiry; 1999; Proceedings RMRS-P-15-Vol-3).

For example, consider the importance of the Chattooga headwaters to the North American Black Bear. Once numerous over almost the entire North American continent, then almost extirpated from even their last redoubts in the Southern Appalachians, their numbers are now healthier in this region than they have been in decades. Many researchers think that this fact owes to the maturation of the Southern Appalachian forests, which provide mast and escape cover, and to the preservation of breeding zones and other areas that function as biological refuges either by design or default.

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Black bear need large tracts of undisturbed habitat to thrive, especially for denning and reproducing. Undisturbed, interior forest habitat is therefore crucial to the species to maintain and increase its numbers. However, given the tidal wave of development rolling over the region, such interior, undisturbed tracts are increasingly few, increasingly fragmented, and increasingly confined to small islands of suitable habitat that are surrounded by human populations and activities. In light of human sprawl on private lands, the public lands—national forests, parks and other preserves—are ever more critical for providing the kind of backcountry where remote, wild conditions provide the high-quality habitat and freedom from human dominance needed to promote the survival and reproduction of species that are negatively affected by anthropogenic disturbance. This is true not only for black bear but also for some species of songbird.

Reproduction is a key process by which a species survives, thrives or becomes extirpated. The dynamics of bear and other wildlife populations are certainly tiered to their reproductive success, and the rate at which the young attain breeding status. Thus, some knowledge of the reproduction/denning ecology and survival of young should be a critical concern of wildlife managers (and river managers) for this area,

As the area population increases, the loss of bear habitat and fragmentation will likely continue. The long-term survival of the black bear depends upon the formulation and implementation of science-based management plans, which depend upon good data for all aspects of black bear ecology, especially the importance of areas of reduced anthropogenic disturbance for denning and reproduction.

Black bear reproductive ecology, cub survival and denning ecology has been investigated, and could be the basis for significant enhancement of our understanding of the importance of remote areas in the maintenance and survival of the species in the Chattooga watershed and on the Blue Ridge Escarpment.

Future long term black bear studies concerned with cub survival rates and rates of bear cub mortality among populations with different densities and various degrees of anthropogenic presence are needed, and would be significantly enhanced by retainment of wild, remote areas of the headwaters as benchmark data sources.

Such areas are key in understanding population dynamics in this area, developing demographic models and population viability analyses. Escape Cover has been recognized as an important

component of black bear habitat by several notable researchers (Pelton 1985, Rogers and Allen 1987, McLaughlin and others 1988). "Large expanses of contiguous forest or mountainous, inaccessible terrain serve to insulate bears from human disturbance. However, as forests become smaller and more fragmented, and as human encroachment and disturbance in bear habitat increases, escape cover will become even more vital to insulate bears from human activities.

Areas of dense or impenetrable vegetation that limits visibility and hinders travel by humans and dogs.... can provide high quality shelter for daybeds and escape cover for bears.

Above references from: ***Black Bear Ecology and the Use of Prescribed Fire to Enhance Bear Habitat, Keith M. Weaver: Proceedings: Workshop on Fire, People, and the Central Hardwoods Landscape GTR-NE-27***

The development of such high quality habitat is a slow process requiring decades, even centuries, while the rapid, ubiquitous spread of human infrastructure has diminished such habitat to a small fraction of its original extent. Parks, wilderness areas and defacto wilderness areas such as USFS roadless areas constitute our best and sometimes our only opportunity to provide such habitat.

Protection of Roadless Area Values

In a 1997 letter that grew out of the Interior Columbia Basin Ecosystem Management Project (ICBEMP), 169 scientists signed onto to recognize that roadless area protection is critical "Because they represent the least human-disturbed habitats in an almost universally disturbed landscape."

However, in this current analysis to date, there is little apparent appreciation of, let alone any sense of urgency evident among Sumter managers to understand the core area value of the Ellicott Rock Wilderness and the de facto wilderness that lies immediately south of it, the Rock Gorge Roadless area.

With regard to the Big Mountain Roadless Area, the November 2000 FEIS for the USFS Roadless Area Conservation rule also notes the importance of habitat to species that are sensitive to human disturbance: "Remoteness from human activity is a key characteristic of black bear habitat (Southern Man and the Biopshere 1996c) "Wilderness is vital to the conservation of wildlife species prone to conflict with humans as well as to species that require wilderness to provide an array of seasonal habitats necessary for survival."

Also, from the Wilderness Society's Economic Values of Protecting Roadless Areas in the United States":

"Natural environments such as roadless areas and designated Wilderness are often referred to as living laboratories. They serve as benchmarks of relatively unmodified natural conditions in which to observe unfettered ecological processes at work (U.S. Forest Service 2000). As such,

natural environments are often the subject of scientific research and publications. In some case, they are used as controls. In others, they are studies to improve understanding of the influence of natural conditions on flora, fauna, physical attributes in scientific journals related to Wilderness, primitive and roadless areas.

Economic Values Of Protecting Roadless Areas in the United States, John B. Loomis, Ph.D. and Robert Richardson, M.B.A., Department of Agriculture and Resource Economics, Colorado State University, Fort Collins, Colorado (analysis prepared for The Wilderness Society and Heritage Forests Campaign).

Importance of Roadless Areas as Hunting Reserves

The Theodore Roosevelt Conservation Partnership believes that proper management of roadless areas in our national forests can provide quality hunting and fishing opportunities for all Americans.

According to information found on their website http://www.trcp.org/ch_roadless.aspx:

“Inventoried roadless areas are commonly described as backcountry or unroaded wildlands and are places hunters and anglers know contain the best remaining fish and wildlife habitat. They are the public places on the maps where roads end and quality walk-in hunting and fishing begins.

Roadless areas generally provide large contiguous blocks of the best habitat for big game species like mule deer, elk, moose, bighorn sheep and mountain goats, and the least degraded streams and lakes where trout, salmon and other desirable fish species dependent on clean water, stable streamflows and consistent lake storage can thrive.

The absence of roads prevents fragmentation of secure habitat that big game species need for population survival. Roadless areas in large blocks also reduce the vulnerability of both fish and wildlife species to excessive harassment and harvest and allow populations to thrive at levels supporting longer hunting seasons and easy-to- purchase tags. “

Economic Values of Inventoried Roadless Areas for Hunting and Fishing

Also, the Wilderness Society makes reference to the value of roadless areas for hunting and fishing:

“Relatively untrammled lands like unroaded backcountry are increasingly an economic asset, attracting hunters, anglers, new residents and visitors looking for open spaces, majestic scenery and outdoor recreation in pristine settings. A report, Backcountry Bounty: Hunters, Anglers and Prosperity in the American West, by TRCP and the Sonoran Institute, shows hunters and anglers nationally spend more than \$70 billion each year to hunt and fish. Hunting, angling and related industries in the West added nearly \$3 billion combined in 2001 to the

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 economies of Arizona, Idaho, New Mexico, Montana, Utah and Wyoming. Hunting and fishing licenses, fees and taxes fund state game and fish departments and their wildlife management programs. Many businesses, large and small, local and national, and hundreds of small, rural Western communities rely on money spent by hunters and anglers. Policies that conserve wildlife habitat protect valuable assets that enhance prosperity and quality of life now and into the future." <http://www.wilderness.org/Library/Documents/upload/Factsheet-RoadlessValues-ProtectingWildlife&HabitatinNorthernRockies.pdf>

Recreational Ecology of Human Disturbance: Frequency, Magnitude, Significance

According to Franklin (1990), p.250) "human activities can affect several key attributes of ecosystems. First they affect the *functional ability* of the ecosystem, the capacity to perform certain key actions—to fix and cycle energy, conserve and cycle nutrients, and provide suitable habitat for an array of inhabiting species. Second, they can affect the *structure*, or spatial arrangement of the parts, of the ecosystem—whether it is a savannah, meadow, or even-aged or uneven-aged forest, or some other type. Third, they can affect the *composition* and structure and *population structure*, that is, the number of species and their relative abundance as well as densities and age- and size-class distributions of individual species. Finally, human actions can alter the basis *successional patterns*, or trajectories, characteristic of a given site."

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 The Importance of Ecological Impacts (p 10)

"All of the aforementioned impacts occur, but so what? We can go out and measure most of the impacts, determine the *magnitude* of environmental change. It is a very different matter, however, to assess the *importance* or *significance* of these impacts. We might all agree that 95 percent of the spiders on the forest floor of a campsite have been eliminated by recreation use; we are unlikely to agree about how important a change this is. We might not even be able to agree on whether this is a positive or negative change. In a recreational context, impacts become good or bad, important or insignificant, only when humans make value judgments about them. Those judgments are determined by the type(s) of recreation an area is managed to offer, the objectives of various user groups, and the objectives of resource management."

"The effects of wildland recreation on wildlife have received little systematic attention, resulting in a knowledge base that is disparate and seldom definitive. This is because wildlife is not stationary, as are plants, and the effects of impacts are immediately obvious, direct, or easily measured. Nevertheless, numerous impacts to wildlife as a result of recreation have been documented, and in some cases well researched (Ream 1980; Boyle and Samson 1985; Knight and Gutzwiller 1995). These studies show that human disturbances result in changes in wildlife physiology, behavior, reproduction, population levels, and species composition and diversity. Studies also show that there are at least six factors of recreational disturbances that influence wildlife responses; type of recreational activity, recreationists' behavior, impact predictability, impact frequency and magnitude, timing, and location (Knight and Cole 1995). In many cases the major source of wildlife impacts is the recreationist who innocently produces stressful situations for wildlife, primarily through unintentional harassment of wild animals." (p68)

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Particular attention should be paid to the effects of *frequency and magnitude* of recreation disturbance on the nesting behavior and reproductive success of birds being negatively influenced when nesting areas are frequently visited. (p69).

Wildland Recreation: Ecology and Management (Second Edition) Hammit and Cole
"Increased use of recreation areas during the off-season may be particularly detrimental to wildlife."

"Only a handful of studies have directly examined the effects of recreation on wildlife (Ream 1980). Because adequate controls are lacking, and because animals are mobile, it is extremely difficult to design studies that will give definitive results. We know that recreationists disturb certain wildlife species, causing displacement and even death (Stalmaster and Newman 1978; Ream 1979; MacArthur and others 1982)

Disturbance during winter may be particularly detrimental, because animals frequently strive to conserve their energy during winter. (Moen 1976).

The following information derives from **Resource Impacts Caused by Recreation** David N. Cole, *A Literature Review, President's Commission on American Outdoors*]

"One of the most fundamental rationales advanced for protection of areas as wilderness is their immense potential value as baselines and places for comparing the effects of ever-advancing human development and impact (Brower 1960). In contrast to more developed areas, wilderness is characterized by lack of human development and related disturbances."

"By preserving relatively undeveloped areas, changes in biophysical and ecological conditions wrought by civilization can be better measured, assessed and evaluated. Through management regimes that allow natural processes to occur in a relatively unfettered manner, we will better comprehend their extent and variability."

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Wilderness as a Place for Scientific Inquiry, McCool and Cole, in McCool, Cole, Borrie, O'Loughlin, *Wilderness science in a time of change conference—Volume 3: Wilderness as a place for scientific inquiry*; 1999; Proceedings RMRS-P-15-Vol-3).

The Wilderness Act of 1964 mandates that wilderness areas be maintained in their natural condition and because wilderness areas provide valuable ecological benchmarks by which we can measure environmental change. protected areas provide excellent opportunities to understand naturally functioning ecosystems as well how those ecosystems are influenced by human activities.

As such, the importance of science to inform management decisions affecting the stewardship of protected areas as well as the value of such areas for science

Parsons, David J. 2004. Science and the management of protected areas. Pp. 36-40 in Harmon, D. and G.L. Worboys (eds.), *Managing Mountain Protected Areas: Challenges and Responses for the 21st Century*. Proceedings of the Mountain Protected Areas Workshop, 5th World Parks Congress, Durban, South Africa, September 2003. Colledara, Italy: Andromeda Editrice. Leopold Publication Number 536

Concluding Comments and "Collaboration"

The Forest Service understandably solicits "collaboration" and consensus, but appears to do so even as it apparently ignores the non-degradation mandates of the governing statutes and even as the agency employs a "modified" LAC analyses that appears to focus on a small subset of Chattooga "users." We believe that *all* stakeholders and participants in this analysis have a right to expect rigorous USFS adherence to laws and regulations designed to *protect or enhance* the Chattooga headwaters resource in question. And all deserve to be treated equally—which is demonstrably not the case thus far.

As was reported in the recently released "Situation Assessment," all respondents to the interviews conducted by the Natural Resources Leadership Institute voiced one common concern: "protection of the Chattooga River now and in the future...." As well, the NRLI found that a collaborative process must, among other goals, produce the "Attainment of a higher goal (protection of the resource), while also dealing with the immediate issue of boater access in the upper Chattooga." (p.v, NRLI, *Chattooga Situation Assessment*)

The "higher goal" of protection of the resource is the basis for our concern about the direction of the USFS analysis to date. We do recognize the importance of collaboration. We have cooperated extensively with the USFS throughout the protracted process of seeking an acceptable solution to the very difficult issues before us, and we may be expected to continue to engage this process in a positive, constructive fashion.

Nevertheless, our spirit of willing cooperation notwithstanding, we recognize the essential dilemma of the seemingly incompatible objectives of providing for human access while at the same time protecting a resource that is unique and special precisely because of prior limitations on human access.

Highly relevant to our current dilemma on the Chattooga is a publication by Mr. David N. Cole, Research Biologist, Aldo Leopold Wilderness Research Institute.

To quote from Mr. Cole:

"How we resolve two management dilemmas will determine the future nature and value of wilderness. "

"One dilemma...involves conflict between providing access to wilderness for its "use and enjoyment" [1964 Wilderness Act] and protecting the biophysical conditions and visitor experiences that constitute wilderness but are degraded by recreational use."

"Because compromises between value systems will tend to homogenize wilderness areas, such that no area will fully meet any goal, we should consider allocating separate lands to each goal. Expanding our conception of wilderness will help us develop a diverse system that satisfies multiple needs."

"In seeking resolutions to emerging management dilemmas, perhaps it is appropriate to expand our notions of what wilderness should be. Traditionally, dilemmas have been resolved by compromise. The result of this approach, 100 years hence, might be a system of wilderness lands that are all moderately used and impacted, somewhat wild and somewhat natural, with no lands close to the ideals of pristine, either natural or wild. This result is likely, given the federal land management agencies' decentralized decision-making tradition. In this tradition, [wilderness] conditions are shaped by countless independent decisions made over many years by hundreds of individuals. Buffeted by the polarized arguments of opposing sides on each issue, the system gravitates toward mediocrity and homogeneity.

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"One cost of this compromise will be diminution of the scientific value of wilderness as a reference area. [emphasis mine] Natural wilderness is useful as a reference for highly altered landscapes..."

Decisions about how to compromise between recreational access and wilderness protection, and between wild and natural ecosystems will determine the future value of the wilderness system.

Postponing these decisions will simply foreclose our options."

(in *Management Dilemmas That Will Shape Wilderness in the 21st Century*. David N. Cole)

Conclusion

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In closing, we would like to emphasize that even as the Friends of the Upper Chattooga welcome every opportunity for collaboration, we will continue to insist that this agency ensure that it is truly managing for ecological values and not political expediencies, that it is managing for a full range of social and physical values above and beyond those of the recreational elite that have dominated this debate, and that it is working to meet the challenge of human use management while diligently working to protect the wilderness resource. This is far from clear thus far.

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The analysis must appreciate the importance of the Blue Ridge Escarpment as a critically rare and irreplaceable block of comparatively undisturbed forest habitat, within the first rank of conservation priority, regionally, nationally, even globally. Likewise the USFS must appreciate and attempt to assess the importance of the Chattooga corridor and watershed as a critically important core area within that larger Blue Ridge Escarpment landscape. There is small evidence to indicate that such an appreciation current exists in officials managing this analysis.

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Nevertheless, in our view, a full and comprehensive attempt to assess the potential effects of increased recreation on the wilderness character and on the wildlife of the headwaters reaches should be central to the analysis. With that assessment will come, we believe, a greater understanding in all stakeholders of critical conservation values hitherto largely unacknowledged by officials conducting this analysis. Such an enhanced appreciation of those

conservation values is absolutely critical to attaining the "higher goal" of protecting the Chattooga resource.

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We believe that the original zoning of the Chattooga at its inception as a National Wild and Scenic River was a case where the Forest Service got it right the first time. Though not presented or conceived as such at that time, the decision to zone usage of this finite Chattooga river resource was a fitting and far-sighted accommodation of potentially different kinds of recreation and recreational users. As well, the initial zoning was, in effect, an amazingly prescient apportionment of a limited wilderness resource between social and biophysical, ecological values. The result of Chattooga zoning, in any event, was the creation of a world class wilderness wildlife refuge whose importance, though so far only incompletely appreciated, has only grown and will continue to grow as regional populations burgeon.

We owe it to our children (and to ourselves) to take the time and accept the trouble and expense to make full and fair assessments of the impacts that these new measures would have on the wild character and sensitive species of the upper Chattooga. Any compromise of this higher goal of full protection and enhancement of the wild natural values of the Chattooga headwaters is simply not acceptable.

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The author is a full time teacher and father, not a resource professional or an academic researcher. The long hours needed to generate this paper were expended over several months, with many breaks in the continuity of application to this task. Though every effort has been made to ensure the accuracy of bibliographic references and the correct attribution of quotes, some errors or inconsistencies could have crept into this effort. Any such errors are due to the imperfect efforts of the author and not to any of the signatories.