Upper Chattooga River
Visitor Capacity Analysis

Implementation Plan
for Data Collection Methods

USDA National Forest Service
Sumter, Chattahoochee, and Nantahala National Forests

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Executive Summary

In 1974, the 57-mile Chattooga River was designated Wild and Scenic for its "outstandingly remarkable" fish, wildlife, recreation, scenic, and historic values. A 2004 revision of the Sumter National Forest Land and Resource Management Plan (Forest Plan) addressed several recreation issues in the corridor; among the management actions, the plan retained a 1976 ban on boating use upstream of Highway 28 (about 21 miles). This ban was later appealed by American Whitewater (AW), and the Forest Service (USFS) agreed to reassess that decision as part of broader examination of visitor capacity issues on the Upper Chattooga River.

The Forest Service is employing a modified "Limits of Acceptable Change" (LAC) planning framework for evaluating visitor use and potential impacts on the environment. This document describes data collection and analysis to be used as part of the LAC effort. The Forest Service response to the AW appeal (Forest Service, April 28, 2005) and the LAC framework provide specific objectives of the data collection and analysis:

- Describe current and potential recreation opportunities, use levels, and associated impacts in the Upper Chattooga River. Existing and potential opportunities include angling, camping, hiking, swimming, whitewater boating, wildlife viewing, and similar activities.
- Develop information to help choose indicator variables for important social or biophysical conditions that may be affected by recreation use or impacts.
- Assess relationships between use levels and key indicators.
- Develop information about potential standards for indicator variables.
- Identify advantages and disadvantages of use limits or other management actions that could be used to address impacts that exceed acceptable levels for specific opportunities.
- Develop additional information about the "decision environment" for capacity issues on the Upper Chattooga, including a history of the initial boating prohibition and related issues, and how capacity issues have been addressed on other rivers with Wild and Scenic or Wilderness designations.

Additional considerations from the Appeal Response or other sources guided analysis choices:

- The analysis should link capacity-related management actions to protection of "outstandingly remarkable" river or Wilderness values.
- The analysis should explore potential impacts and management actions related to the full range of existing and potential uses, not just boating.
- The analysis should examine potential impacts from different uses, then narrow the focus on ones that are likely to be limiting factors for capacity decisions.

- Information collection methods are designed to avoid pre-judging any decision regarding the allowance, prohibition, or limitation of boating or any other use.
- Research conducted for the analysis is designed to minimize impacts on current users and to avoid any long-term adverse effects on the river's natural and experiential resources.
- Information will be organized by user groups, geography of the corridor, and season.
- Encourage public participation and input as part of the LAC process.

Data collection and analysis will be conducted through a phased approach. Phase I includes summarizing information about the Chattooga "decision environment," literature reviews about impacts, potential standards, and management actions from the Chattooga or similar rivers; monitoring existing use levels, biophysical impact conditions, and upper river hydrology; and developing more precise information about flow needs for flow-dependent activities (boating and angling). Specific Phase I "elements" include:

- ***A History of Chattooga Recreation Decision-making*** to document the basis for the 1976 boating ban and similar issues in order to help frame issues in the current analysis.

- ***A Review of Capacity Issues on Other Rivers*** to help decision-makers understand how other groups, agencies, and courts have interpreted laws and mandates, conducted analyses, or arrived at capacity decisions on other rivers. Decisions for other rivers are not necessarily precedents, but could provide some guidance.

- ***Existing Use Information and a Use Estimation Workshop*** to help consolidate and summarize use information by capitalizing on extensive agency knowledge as well as some existing user surveys and creel surveys.

- ***Limited Use Monitoring*** to improve limited existing use information and help "triangulate" information developed from previous studies and the use estimation workshop. This element has a public component (volunteers will count vehicles and people on a self-selected schedule) and an agency component (counts will be conducted systematically over the course of a year). Analysis will describe seasonal, weekday/weekend, and other use patterns.

- ***Future Recreational Use Assessment*** to summarize general information about regional population or recreational use trends to consider with existing use information. The goal is to anticipate future recreation use or demand over the life of the plan.

- ***Literature Review – Recreation-Related Social Impacts***. Social impacts such as encounters and potential conflicts between users are among the most important Chattooga capacity issues. This element will examine relationships between use and impacts based on previous studies on the Chattooga or similar settings.

- ***Literature Review – Recreation-Related Social Standards***. This provides information related to the "evaluative side" of the social impacts issue, including which impacts are most important, tolerances for those impacts, and which management actions tend to be used and supported to address them. Information will come from reviews of existing studies on the Chattooga or studies /planning from other similar settings.

- ***Biophysical Impact Information***. Potential biophysical impacts from increasing or potential recreation use (e.g., eroding user-created trails, litter, wildlife disturbance, removing logs that pose navigation hazards, or impacts from potential search and rescue operations) have been a focus of stakeholder debate. This element will provide information about current conditions in the corridor, including maps of existing trails, percent of time they are in sight of the river, and other biophysical issues relevant to Chattooga capacity issues.

- ***Literature Review - Recreation Related Trail/Site Impacts***. This element will provide information about relationships between use and biophysical impacts measured above, review potential standards for those impacts, and review the acceptability of management actions to address them. There have been few existing studies on this topic in the Chattooga corridor, so this element relies on a literature review from similar settings.

- ***Literature Review – Recreation-Related Wildlife Impacts***. This element will explore relationships between recreation use and wildlife impacts, review potential standards for those impacts, and review the acceptability of management actions to address them.

- ***Flow Monitoring***. This element is a technical task focused on developing improved recreation-relevant hydrology information for the upper Chattooga River.

- ***Expert Panel Field Assessment***. This element will provide information about boating and angling opportunities on the upper Chattooga River, with particular attention to flows by conducting on-site reconnaissance by expert panels at one or more flows. The assessment will describe angling and whitewater opportunities on the upper Chattooga segments, compare them with other opportunities within the region, estimate flow ranges, identify key access points, describe safety concerns related to flows and access, describe available angling and boating opportunities at different flows, review flow information needs and the ability of existing gages to predict fishable and boatable flows, and compare angler and boater flow preferences with the preferences of other recreational users. The reconnaissance trips will not be used to: 1) assess potential boating impacts on angling, hiking, or other recreation uses in the corridor, or 2) assess tolerances for boating or other uses. Both of these topics are being examined through literature reviews.

- ***Literature Review*** - Recreation Related Flow Preferences. This element can help triangulate information about opportunities and flow preferences on the Chattooga by comparing them to findings from other similar settings.

A Phase I report is expected by spring 2007. It will include "findings and implications" to be integrated into the LAC process, as well as a discussion of the need, if any, for Phase II information. Phase I information may be sufficient to make "provisional decisions" about use limits or other actions, which will initiate a NEPA review of LAC-related decisions (and alternatives) that could be completed by end of 2007.

If Phase II is determined to be necessary, potential elements could include:

- ***Recreational user survey.*** This element would include on-site and mail surveys of current and potential recreation users to obtain additional information about user characteristics, trip characteristics, impacts, impact priorities, impact tolerances, and acceptability of management actions to address "impact problems." It would include a more precise use monitoring program to assess use-impact relationships.
- ***Trial boating period*** – This element could be used to help indicate actual boating demand, impacts from or to boating, and to develop a sufficient sample size of potential boating users for the user survey (above).

If a Phase II effort is conducted, findings and implications will be integrated into the LAC process and will lead to a proposed action (and alternatives) to be reviewed through a National Environmental Policy Act (NEPA) process before implementation and monitoring.

Appendices include the Appeal Response, information about the LAC framework, or provide additional detail about protocols for individual elements.

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APPENDICES

I. INTRODUCTION

The 57-mile Chattooga River originates in the mountains of western North Carolina and forms a portion of the border between Georgia and South Carolina (see Figure 1). In 1974, the river's "outstandingly remarkable" fish, wildlife, recreation, scenic, and historic values were recognized by Congress through designation of a 15,432-acre corridor as part of the National Wild and Scenic River System. About five miles of the upper river is part of the 8,724-acre Ellicott Rock Wilderness, and the corridor also passes through three National Forests (the Nantahala in North Carolina, the Chattahoochee in Georgia, and the Sumter in South Carolina).

Accessible from several roads and trails, the Chattooga River provides important recreation resources for local, regional, and national users, offering high quality fishing, boating, hiking, swimming, camping, hunting, and related opportunities. The quality of these recreation opportunities has attracted substantial use, which in turn has led to concern about visitor impacts. A recent revision of the Sumter National Forest Land and Resource Management Plan (LRMP or Forest Plan) addressed several recreation issues in the corridor (USFS, 2004a, 2004b); among the management actions, the plan retained a 1976 ban on boating use upstream of Highway 28 (about 21 miles of the upper river). This ban was later appealed and the Forest Service agreed to reassess that decision as part of broader examination of visitor capacity issues on the Upper Chattooga. The Decision for Appeal (Forest Service, April 28, 2005) provides the need for this analysis (see Appendix A).

The Forest Service is employing a modified ***"Limits of Acceptable Change" (LAC) planning framework*** (Stankey, Cole, Lucas, Petersen, & Frissell, 1985) – in wide use within the Forest Service and other managing agencies – for evaluating visitor use and potential impacts on the environment (see Appendix B). This framework leads to capacity decisions by recognizing different ***types of recreation opportunities***, identifying ***indicators*** that represent important resource or experiential conditions for different recreation opportunities, setting ***standards*** that define when impacts are unacceptable (the "limit of acceptable change"), and establishing which ***management actions*** will be used to ***reduce impacts when they exceed standards.*** It encourages stakeholder and public input, and helps organize the collection and analysis of scientific information.

This document describes data collection and analysis (Step 4) to be used in the LAC effort (see Appendix B). Information from the data collection efforts will be integrated into the LAC effort to reassess the boating ban and other visitor capacity decisions on the Upper Chattooga. At the conclusion of the LAC effort, the Forest Service plans to develop a proposed action and alternatives for review through a National Environmental Policy Act (NEPA) process prior to implementation.

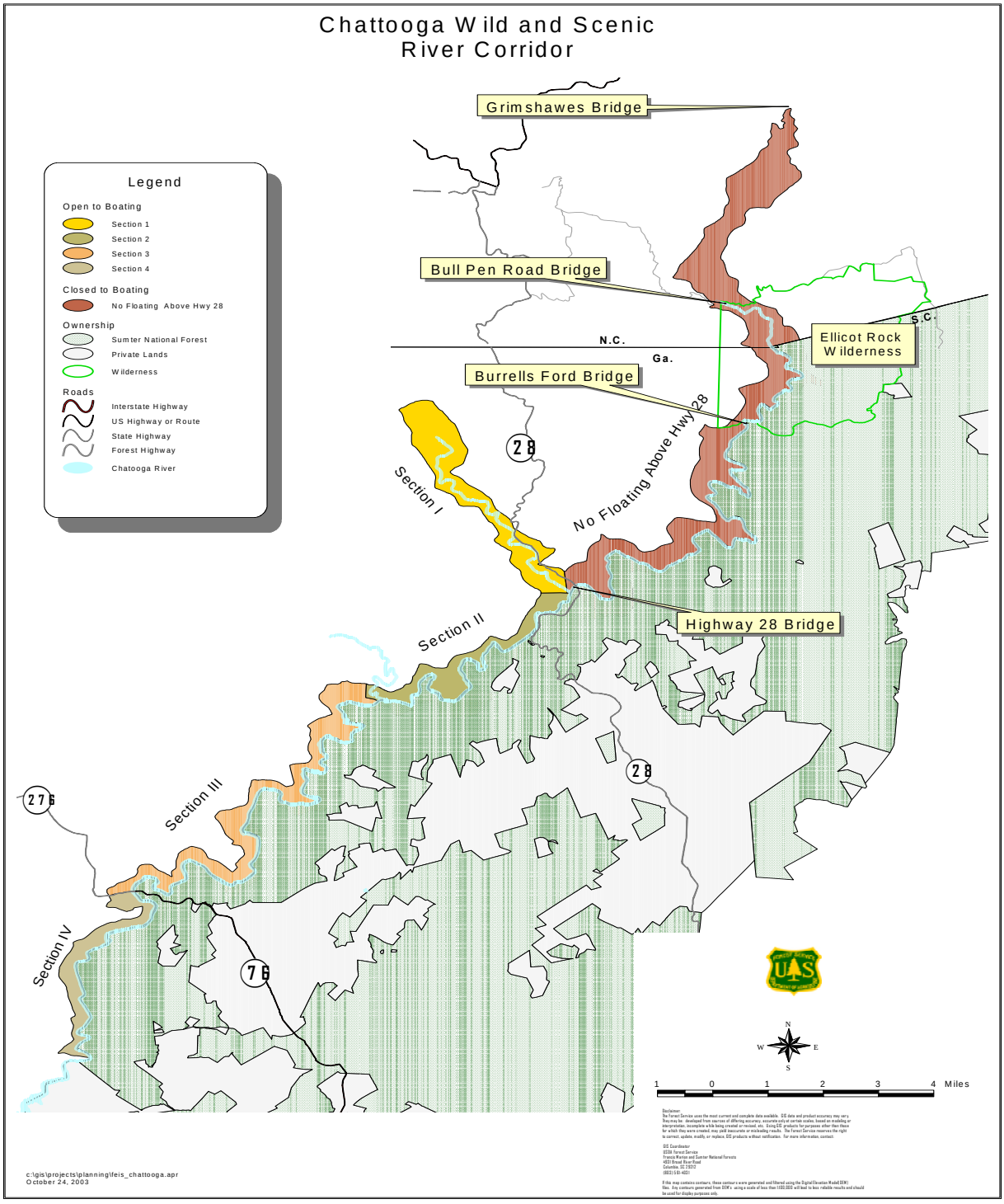

Figure 1. Chattooga River Corridor

A. CAPACITY ANALYSIS OBJECTIVES AND CONSIDERATIONS

The need for the capacity analysis derives from the Forest Service response to the American Whitewater (AW) appeal of the 1976 boating ban on the Upper Chattooga. The Decision for Appeal (Forest Service, April 28, 2005) (see Appendix A) provides the overarching goals to be considered in the capacity analysis. Briefly, the Appeal Decision requires an "appropriate visitor use capacity analysis" to review whether there is a basis for limiting (or banning) boating or other uses on the Upper Chattooga River. The Appeal Decision includes further direction regarding the appropriate basis for any use limits, prohibitions, or other management actions that might be used to protect the values of the designated Wild and Scenic River corridor and Wilderness area. These were considered in developing the following objectives and related considerations for the visitor use capacity analysis.

1. Objectives

Analysis objectives were developed considering the requirements put forth in the Appeal Decision and components incorporated in the Limits of Acceptable Change (LAC) planning framework (Stankey, Cole, Lucas, Petersen, & Frissell, 1985). A description of the details of the LAC process is beyond the scope of the present document, but basic concepts and steps of the LAC process are provided in Appendix B. Specific objectives for this analysis are given below:

- Describe current and potential recreation opportunities, use levels, and associated impacts in the Upper Chattooga River. Existing and potential opportunities include angling, hiking, camping, wildlife viewing, swimming, whitewater boating, and similar activities.
- Develop information to help choose indicator variables for important social or biophysical conditions that may be affected by recreation use or impacts.
- Assess relationships between use levels and key indicators.
- Develop information about potential standards for indicator variables.
- Identify advantages and disadvantages of use limits or other management actions that could be used to address impacts that exceed acceptable levels for specific opportunities. These may include recreation capacities for specific opportunities, areas, or seasons that are based on specific standards for biophysical health or experience quality.

The analysis will also provide additional information about the "decision environment" for capacity issues on the Upper Chattooga. This includes a review of the history of the initial boating prohibition and related issues, and how capacity issues have been addressed on other rivers with Wild and Scenic or Wilderness designations.

2. Other General Considerations

As this analysis was being developed, several additional considerations guided choices:

- Following from the Appeal Decision (and agency guidelines cited in that decision), capacity-related management actions must be linked to protecting "outstandingly remarkable" river or Wilderness values, and must consider "the capability of the physical environment, desires of present and potential users, diversity of recreation opportunities within the geographic area, and budgetary, personnel and technical considerations." The Appeal Decision notes that capacity decisions could "disallow or restrict the number of (private and commercial) on-river and in-corridor recreation users; determine the type of recreation use; or dictate the timing of such use," but "this authority should be exercised only with adequate evidence of the need for such restrictions." To address these considerations, the analysis is designed to provide information on "outstandingly remarkable" and Wilderness values, how use or impacts may affect those, and the full range of management actions that can be used to minimize those impacts.
- Language in the Appeal Decision specifically recognizes that "whitewater boating (canoeing and rafting)" is "one of the recreational opportunities available in this generally remote river setting" and that "if it becomes necessary to limit use, actions should ensure that all potential users have a fair and equitable chance to obtain access to the river." Methods accordingly explore potential impacts and management actions related to the full range of existing and potential uses, not just boating.
- The analysis should try to avoid a focus on "dueling impacts" (i.e., which group creates more impact) that has characterized some stakeholder debate. Instead, the analysis will examine the suite of potential impacts from different uses, and then narrow the focus on ones that are likely to be limiting factors for capacity decisions based on the literature and information specific to the Chattooga.
- When considering capacity issues, it is useful to distinguish "descriptive" from "evaluative" information (Shelby & Heberlein, 1986). Descriptive information describes how the system works, showing relationships between the amount of use and the impacts it causes. In contrast, evaluative information focuses on what the system should provide: which recreation opportunities are desirable, when impacts become unacceptable, and which management strategies are appropriate to address them. The most challenging parts of many natural resource decisions concern the evaluative side. Carefully organized evaluative information helps clarify the choices and consequences for different groups.
- The methods proposed in this analysis are consistent with a series of 2005-2006 Forest Service public involvement activities and announcements about the types of information collection that would be used. While there has been some evolution in the details and timing of various method "elements" due to several factors (e.g., public input, availability of agency staff and resources, schedule constraints), the following represents the current "best summary" of the Forest Service's analysis approach.
- The Forest Service used the LAC framework to guide several public meetings with stakeholders and users in October, November, and December 2005. These meetings

were used to develop preliminary lists of Upper Chattooga recreation opportunities, potential "desired future conditions" for those opportunities, and key indicators of interest – early steps in the LAC process.

- Findings from these meetings, combined with input from Forest Service staff and contractors, formed the basis for a review of possible data collection efforts through the spring and summer of 2006. A public meeting was conducted in July 2006 to describe the basic elements formally presented in this document, but these have been refined through the fall of 2006 in response to agency considerations and public/stakeholder comment.
- Information collection methods are designed to avoid pre-judging any decision regarding the allowance, prohibition, or limitation of boating or any other use. The goal is to provide information so the Forest Service can make decisions about these issues, not to support or oppose any particular position.
- Research conducted for the analysis is designed to minimize impacts on current users to the extent possible, and to avoid any long-term adverse effects on the natural and experiential resources of the Chattooga River corridor.
- Information will be organized by user groups, geography of the corridor, and season to the extent that is possible and reasonable; methods recognize that impacts and tolerances may differ by segment, group, and season.
- All capacity analyses (including this document) are designed to be transparent about data collection methods and analysis and how this data is considered in the overall planning (LAC) process. This will allow decision-makers, stakeholders, and the public to evaluate the information as it is integrated into the LAC process and eventual management decisions.

B. DESCRIPTION OF DATA COLLECTION APPROACH

The visitor use data collection and analysis will be conducted through a phased approach. Recognizing time constraints in the Appeal Decision (which estimated that the analysis could be completed two years from the issuance of the Appeal Decision, April 28, 2005[1]), the Forest Service initiated and is currently conducting the Phase I data collection efforts. Key components of the Phase I data collection efforts were presented to the public during a public meeting in July 2006. The elements for Phase I and potential elements for Phase II are discussed in the following sections.

All elements put forth in this Implementation Plan are subject to change and may be revised as the Forest Service moves forward with the Phase I and, if needed, Phase II elements. As information is collected and assessed, additional information or revisions to the data

[1] In the Appeal Decision, the Reviewing Officer estimated that the capacity analysis could be completed within two years of this decision. In addition, the Reviewing Officer stated that if additional time, based on unforeseen circumstances, was needed, the Regional Forester along with the Office of the Chief of the Forest Service would establish a mutually agreed time for completion.

collection process may be determined to be necessary. The Forest Service intends to move forward as expeditiously as possible while ensuring that sufficient and reliable data is acquired in order to make an informed and prudent decision in terms of the development of potential management decisions for the Chattooga River.

A ***Phase I Summary Report*** will consolidate all Phase I information (see Section III), and include a section with ***findings and implications***. This section will integrate the various components of the Phase I effort, review how it informs decisions to be made in the LAC process, and suggest implications of potential "provisional decisions" regarding use limitations or other management actions. The report will conclude with recommendations about the need for, if any, (and focus of) any Phase II element, and how to integrate information collected as part of this effort into a NEPA process related to managing visitor use on the river.

C. RATIONALE FOR DATA COLLECTION EFFORTS

To address these objectives described above, the analysis will provide information in five basic areas as discussed below. These information needs are met through several specific analysis "elements" distinguished by different information collection efforts, as described in Section II of this document. The following briefly reviews the five information needs:

1. Information about the "Decision Environment"

Guiding legislation (e.g., the Wild and Scenic Rivers Act, the Wilderness Act), Wild and Scenic River planning guidelines, the revised Sumter National Forest LRMP, the Forest Service response to the AW appeal, and the LAC framework provide the "decision environment" for addressing capacity issues in the Chattooga River corridor. National goals for fishery resources and related recreation (e.g., the 1995 Federal Recreational Fisheries Executive Order 12962) may provide further "sideboards." Several existing documents (particularly several developed by the Interagency Wild and Scenic Rivers Council) can help Forest Service decision-makers interpret guiding legislation or other mandates, but information about two additional topics has been identified:

- Review the ***history of Chattooga recreation management,*** particularly the basis for the boating ban and fish stocking changes.
- Review ***capacity decisions on other rivers,*** which may offer insight into interpretations of the Wild and Scenic Act or other related legislation and guidelines that have addressed similar visitor use issues.

2. Information about Use and Demand

Any capacity study should pay attention to use information; the capacity concept suggests that impacts may be related to use, and standards that define unacceptable impact levels can help define "how much use is too much." Thirty years of capacity research has shown that other factors besides use affect impacts (and led to the development of LAC and similar planning frameworks), but use information remains an important variable.

Most recreation existing use information is collected for large areas (e.g., at the forest level) or for long periods of time (e.g., for the entire year), giving little insight about impacts during specific times or at specific locations. For most impacts of interest in capacity efforts, it is important to focus on more specific use measures, each of which must specify timing (e.g., at one time, per day, per week, per month, per season), location (e.g., at a launch area, in the entire segment, at specific attraction sites), and units (e.g., user days, people, or trips).

The Forest Service currently monitors boating use on the Lower Chattooga through a mandatory permit system, but it does not monitor fishing, hiking, swimming or other uses on either the upper or lower river. Creel census efforts for the Upper Chattooga (e.g., roving creel observations in 1987-1989; front country angling surveys in 1999-2000 and 2004-2005) provide useful estimates, but they focus only on angling. While Forest Service staff possess knowledge about general use patterns and could probably develop broad estimates of average and peak use by season, that knowledge is not quantified or documented.

To address these information gaps, elements in Phase I will develop additional information related to existing and potential use, including:

- Conduct a "***use estimation workshop***" to review existing use information (e.g., creel surveys, the lower river boater registration program, use estimates from previous user surveys), then elicit and document "professional judgment" estimates about use levels and patterns from experienced agency staff.
- Develop and implement a ***limited use monitoring program*** with public volunteer and agency components.
- Review ***national or regional surveys of recreation use trends*** to anticipate changes in future use levels.

Potential Phase II elements related to use information needs include:

- More in-depth ***use estimation during a user survey*** to help distinguish use by various activities and link use levels with reported impacts.
- Indicate potential boating demand through "***trial boating experiments***."

3. Information about Impacts

Impact information is critical in any capacity analysis. LAC steps identify important impact indicators, monitor their levels (and their relationship with various types of use), and specify how much impact is too much (the "limit of acceptable change") for different groups or opportunities.

Social impacts such as encounters, competition for fishing or swimming areas, and potential conflicts between users are a key factor related to capacity issues on the Upper Chattooga. Stakeholder debate has centered on definitions of solitude for different groups or how the presence of one use may affect another. Elements of Phase I efforts focus on reviewing

literature (e.g., studies, plans, and related information) that document social impact priorities, impact-use relationships, or impact tolerances from the Chattooga and locations with similar characteristics. Phase II efforts (if determined to be necessary) would include a user survey which could collect additional information related to social relationships and potential impacts associated with recreational use on the Chattooga.

Stakeholder debate has also highlighted several potential ***biophysical impacts*** from increasing or potential recreation use (e.g., eroding user-created trails, litter, and wildlife disturbance). Addressing these issues requires information about current conditions and how those impacts are typically related to use.

Specific Phase I tasks related to social and biophysical impacts include:

- Review ***literature*** on important ***social impact indicators*** in a context similar to the Chattooga, and how those tend to be related to use.
- Review ***literature*** on potential ***social impact standards*** in a context similar to the Chattooga for different types of recreation opportunities.
- Conduct a ***trail and site inventory*** to assess the number and general condition of recreation use areas on the Chattooga.
- Review ***literature*** on important ***biophysical impacts*** in a context similar to the Chattooga, and how those tend to be related to use.
- Review ***literature*** on ***recreation-related impacts to wildlife*** in a context similar to the Chattooga, how those tend to be related to use.

Potential Phase II tasks related to impacts includes:

- Assess biophysical and social impacts from ***trial boating use***.
- Develop opportunity-specific impact priorities, assess impact levels, and characterize group tolerances (standards) through a ***survey of current or potential Upper Chattooga users.***

4. Information about the Acceptability of Management Actions

LAC processes recognize there may be several ways to address impact problems, and information about acceptability of management actions may help with such decisions. Phase I efforts focus on reviewing literature (e.g., studies, plans, and related information) that document public acceptability of management actions on the Chattooga (from the few existing studies) or from other locations with similar characteristics.

Specific Phase I tasks include:

- Review literature on the ***acceptability of management actions*** related to ***social impacts*** on the Chattooga or in a context similar to the Chattooga.
- Review literature on the ***acceptability of management actions*** related to ***biophysical impacts*** on the Chattooga or in a context similar to the Chattooga.
- Review literature on the ***acceptability of management actions*** concerning ***recreation-related impacts to wildlife*** on a context similar to the Chattooga.

Potential Phase II tasks focus on collecting more specific information about the ***acceptability of management actions*** related to several impacts through a ***survey of current or potential Chattooga users.***

5. Information about Flows and Recreation

In many river settings, recreation opportunities occupy different "niches" in the flow regime (e.g., anglers often prefer lower flows and whitewater boaters prefer higher ones). This may affect use levels and interaction between users. The hydrology of the Upper River is not as well understood because the only real-time gage with a long period of record is at Highway 76, more than 20 miles downstream of the Upper Chattooga.

To address this need, information about recreation-relevant hydrology and flow needs for different opportunities will be developed. Specific Phase I tasks include:

- Develop ***hydrology information for the Upper Chattooga***, with specific attention to developing a real time "proxy gage" that can be reliably used to estimate flows in the Upper Chattooga during flow assessment activities.
- Conduct an ***expert panel assessment of flow needs*** related to specific flow-related recreation activities.
- Review literature on the ***flow needs for boating and fishing on rivers similar to the Chattooga*** as a "check" on findings from the flow component of the expert panel assessment.

Potential Phase II work includes developing more specific information about ***user preferences for different flows*** through the ***survey of current or potential Upper Chattooga users***.

II. DESCRIPTION OF DATA COLLECTION ELEMENTS

The following "elements" were identified as data collection information needs for assessing recreational use capacity issues in the Upper Chattooga River corridor. As discussed in Section I, data collection elements are grouped into two phases. The Phase I elements are organized below by the key topic areas discussed in the previous section (Section I C).

Note: Elements described in this document (Phase I or II) may be revised to improve the quality of information or to address contingencies. Such revisions (or even the development

of new elements) will be assessed as information is collected and integrated into the larger LAC-based process.

A. PHASE I ELEMENTS

1. Information about the "Decision Environment"

a. Historic Chattooga Recreation Decision-making

Documentation of the basis for the 1976 boating ban and management of other recreation use on the Upper Chattooga is limited. Such documentation (NEPA, etc.) was often less systematic in the 1970s, but it is likely that planners and managers discussed reasons for various choices at the time. Documenting these reasons does not suggest their validity under current conditions, but it could help frame the issues addressed in the current analysis. This information also may help verify or debunk stories about pre-ban conditions or the basis for the boating ban or fish stocking changes which continue to be part of stakeholder debate.

Objective: Describe the basis for the 1976 boating prohibition and other relevant capacity issues that informed initial management decisions for the Chattooga. This will include a description of the river's USFS management history from about 1970 to the present.

Approach: Identify and locate former planners and decision-makers at the Forest Service or other natural resource agencies with knowledge of Forest Service decisions during this time period. Compile this into a succinct account of pre-ban conditions and issues, the basis for the boating ban and stocking changes, or other capacity judgments at the time.

Topics to address include: 1) evidence of boater-angler conflicts prior to 1976; 2) reasons for developing the boating ban; 3) extent and reasons for fish stocking changes in this same period; 4) stakeholders consulted during decision-making; and 5) evaluations about impacts and capacities.

b. Capacity Issues on Other Wild and Scenic Rivers

Several other Wild and Scenic or similarly-managed backcountry or Wilderness rivers have had capacity and conflict issues similar to those on the Chattooga; information about how planners have addressed them could prove useful. Decisions for other rivers are not necessarily precedents, and the Wild and Scenic Rivers Act and Wilderness Act provide for agency discretion in choosing management strategies that fit the unique characteristics of a river and its users. However, it is often helpful to see how other groups, agencies, and courts have interpreted laws and mandates, conducted analyses, or arrived at decisions.

Objective: Provide illustrative examples of capacity decisions from other rivers, particularly those where use has been regulated to protect or enhance diverse types of recreation opportunities or other values.

Approach: Review examples of rivers with capacities or other related recreation regulations. Find illustrative examples with parallels to Chattooga issues. Describe the issues, basis for decisions, and other pertinent information (e.g., legal challenges, evaluations of success).

2. Information about Use and Demand

a. Existing Use Information and Use Estimation Workshop

This element provides measures to consolidate and summarize quantifiable use information, and capitalizes on extensive agency knowledge about use patterns as well as some existing user surveys and creel census studies.

Objective: Document existing agency knowledge about use levels and patterns on the Upper and Lower Chattooga.

Approach: A day-long workshop will be conducted with the most knowledgeable "on the ground" agency staff (e.g., rangers, state agency staff, fish and game stocking technicians). The workshop will be convened to review likely historical use patterns, summarize estimated current use, and develop assumptions for using "relative use" indicators such as the vehicle and user counts from the limited use monitoring programs (see below). The workshop will also review and "ground-truth" estimates based on those counts or other estimates developed from existing studies of Upper Chattooga users and other regional recreation use studies.

The overall goal is to develop, review, and compile knowledge of the agency staff regarding:

- Potential "multipliers" of people per vehicle to make vehicle counts more useful;
- Estimates of proportions of users participating in different primary activities by location and season;
- Length of stay estimates for different types of use;
- Group size estimates for different types of use; and
- Patterns of use (by season, segment, type of day, and time of day).

b. Limited Use Monitoring

This element helps triangulate information developed from previous studies and the use estimation workshop by monitoring current use over the course of a year. However, due to cost and time constraints, the use monitoring program will be limited in scope, and should be considered an indicator of relative use levels rather than a precise monitoring effort. If a Phase II user survey is conducted, more precise use estimates would be incorporated into its design.

Objectives: Describe seasonal, weekday/weekend, and other use patterns for different types of recreation opportunities, with a particular focus on "people at one time" (PAOT) estimates during peak use times (or other times when capacities may be reached).

Approach: Develop summary use pattern information and indicate relative use through limited vehicle and "people in sight" counts at major access areas. The element has two components: 1) public counts at self-selected sites and times; and 2) agency counts at systematically selected sites and times.

For the ***public component***, the Forest Service is requesting assistance from interested users to conduct the counts. The information includes vehicle counts (at all locations) and people counts (at some locations) at the primary parking areas and site access points above the Route 28 Bridge along the Upper Chattooga River corridor and at certain sites along the lower corridor. The primary objectives for these data collection efforts are to:

- Involve public in the Phase I Recreation Data Collection efforts.
- Improve recreation "relative" use estimates and patterns at multiple trailheads/sites in the Chattooga River Corridor.
- The ability to analyze use data by sorting by date, time, location, flow level, and other variables.

For the ***agency component***, the Forest Service will count vehicles and people at the same sites as with the public program, but on a systematic schedule that is stratified by high and low use sites, month, and day of the week (weekends and weekdays). High use sites will be monitored six times per month and low use sites will be monitored four times per month. High use sites include: Grimshawes/Sliding Rock, Fish Hatchery/Cherry Hill Area, Burrell's Ford Area, Earls Ford, Woodall Shoals, Highway 28 Bridge, and Highway 76. Appendix B provides more information about the Forest Service vehicle count data collection efforts.

c. Future Recreational Use Assessment

This element will summarize general information about regional recreational use trends to consider with existing use information for the Chattooga. The goal is to anticipate how future recreation use may change over the life of the planning cycle.

Objective: Provide context for assessing future demand and use levels for recreation opportunities in the Upper Chattooga corridor based on existing regional population and recreation trend information.

Approach: Future recreation demand will be assessed by reviewing regional recreation and population trends for a 20 year planning horizon. Regional population estimates will be obtained for the surrounding counties. Growth in recreation activities and the recreation use projections for the anticipated growth in recreational use will be obtained from "Outdoor Recreation in American Life: A National Assessment of Demand and Supply Trends" by Cordell (Cordell et. al., 1999) or similar recreation activity trend sources. Current use estimates will be projected with indexed values of expected changes in the number of recreation days for given activities to project future recreation use.

3. Information about Impacts and the Acceptability of Management Actions

a. Literature Review – Recreation-Related Social Impacts

As discussed in Section I, social impacts such as encounters and potential conflicts between users are among the most important capacity issues on the Upper Chattooga. This element will provide information related to the "descriptive component" of the issue by examining relationships between use and impacts based on previous studies on the Chattooga or similar locations.

Objective: Provide information on recreational use social impact relationships within the context of what may occur within the upper Chattooga River corridor.

Approach: Review river studies that have documented recreational visitor use-impact relationships similar in nature to potential visitor-use issues that may occur within the study area. The focus of this literature review will be issues associated with recreational user type conflicts. Example issues could include, but would not be limited to: conflicts between different recreational user type categories (e.g., angling versus boating, hiking versus mountain bike use), recreational use encounters (e.g., number and type of encounters), and recreational use experience conflicts (e.g., urban versus wilderness experiences).

b. Literature Review – Recreation-Related Social Standards

This element will provide information related to the "evaluative side" of the social impacts issue, including which impacts are most important in river settings, likely tolerances for those impacts, and which management actions tend to be used and supported to address them.

Objective: Provide information on recreational use social standards and preferences within the context of what may occur within the upper Chattooga River corridor. The review will also examine the acceptability of common management actions used to address social impacts.

Approach: Review studies that have documented recreational user tolerances or preferences for impacts. The review will focus on threshold assessments of user tolerances and user preferences. Example issues could include, but are not limited to thresholds and user preferences related to geographic (spatial) limitations (e.g., proximity of other recreation users); type of use encountered (e.g., boating versus angling); user interactions (e.g., discourteous behavior), social perceptions of "signs of use" impacts (e.g., amount of trash/litter in area), recreational use encounters (e.g., number and type of encounters), and recreational use experience conflicts (e.g., urban versus wilderness experiences). The review will also explore the acceptability of management actions that are typically used to address impacts that exceed standards (e.g., use limits, education/regulations designed to change user behavior).

c. Biophysical Impact Information

As discussed in Section I, stakeholders have debated several potential biophysical impacts from increasing or potential recreation use (e.g., eroding user-created trails, litter, wildlife disturbance, removing large woody material (downed logs) that pose navigation hazards, or impacts from search and rescue operations). This element will provide information related to current biological and physical conditions.

Objective: Describe current biological and physical conditions in the corridor, including trail conditions, campsites, litter, and water quality.

Approach: Inventory the study area and quantify or define biophysical conditions through a assessment that can be used to explore potential standards or "limits of change" for management in the future. Data will be collected within the Chattooga River corridor on National Forest System lands only from Grimshawes Bridge to Tugaloo Lake including the West Fork. The assessment will include mapping designated and user-created trails, campsites, and conditions at those sites. The effort will include an assessment of the percent of time that designated and user-based trails are within close proximity of the river, which may help indicate the likelihood of encounters between hikers and anglers and/or boaters. Appendix C provides a summary of the specific data to be collected as part of the biophysical data collection efforts.

d. Literature Review -- Recreation Related Trail/Site Impacts

This element will provide information about relationships between recreation use and biophysical impacts measured above, review potential standards for those impacts, and review the acceptability of management actions to address them. There are a few existing studies conducted in the Chattooga corridor that may offer some information, but a larger literature review from other similar locations is the focus of this element.

Objective: Provide information on potential effects of trail and site impacts related to recreational use within the context of what may occur within the upper Chattooga River corridor. The review will also examine the acceptability of common management actions used to address trail and site impacts.

Approach: Review existing literature on trail and site impacts, particularly those from the Southeast, and summarize general findings about how use levels affect these impacts, and typical ways that managers address them (e.g., use limits, education/regulations designed to change user behavior, site hardening).

e. Literature Review – Recreation-Related Wildlife Impacts

A parallel literature review will explore relationships between recreation use and wildlife impacts, review potential standards for those impacts, and review the acceptability of management actions to address them.

Objective: Review literature on possible recreational use impacts on wildlife within the context of what may occur within the upper Chattooga River corridor.

Approach: Review literature on wildlife impacts from recreation activities and summarize general findings about how use levels affect these impacts and typical ways that managers address them (e.g., use limits, education/regulations designed to change user behavior).

4. Information about Flows and Recreation

a. Flow Monitoring

This element encompasses "descriptive" or technical task focused on better describing Upper Chattooga hydrology.

Objectives: Develop improved recreation-relevant hydrology information for the upper Chattooga River, and provide users and researchers improved information about the flows observed during the analysis period.

Approach: Develop user gages (staff gages on bridge piers) at the four upper river bridges including Grimshawes, Bull Pen, Burrels Ford, and Highway 28 as well as West Fork and develop rough rating curves (cubic feet per second [cfs] to stage tables). Install a water level data logger at Burrell's Ford to more precisely measure flows during the analysis period. Link the data logger site to the USGS gage at Highway 76 (which has a long period of record) and summarize lag times between peak events at various places on the upper river and the Highway 76 gage, or with other rain or stream gages in the area. Develop "rule of thumb" calibrations between flow conditions in the upper river and a "proxy" gage (which may not be the Highway 76 gage).

Targeted hydrology information to be produced by the flow monitoring program includes:

- Mean daily flow curves for each staff gage location on the upper river for example wet, dry, and average years (modeled from Highway 76 gage information and basin area calculations).
- Exceedence curves for each staff gage location.
- Real-time comparison of short term freshet flows at a single Upper Chattooga site and the Highway 76 gage (to compare the "flashiness" of each part of the river).
- Estimated "lag time" for flows between at least one site on the upper river and the Highway 76 gage.
- Flow-stage rating tables for any user gages.
- Flows and stages from the data logger for the period of analysis.

b. Expert Panel Field Assessment

This element will provide information about boating and angling opportunities on the upper Chattooga River, with particular attention to flows. The expert panels will include two separate panels, for whitewater boating and angling.

Objectives: The objectives of the angler and boater panel assessment include the following:

- Describe angling and whitewater opportunities on the upper Chattooga segments and compare them with other opportunities within the region, including the lower Chattooga River.
- Estimate acceptable and optimal flow ranges for different types of fishing and boating activities.
- Identify key access points.
- Qualitatively describe safety concerns related to flows and access.
- Qualitatively describe available angling and boating opportunities at different flows.
- Review flow information needs and the ability of existing gages to predict fishable and boatable flows.
- Compare angler and boater flow preferences with the preferences of other recreational users.

The boater and angler panels will ***not*** be used to assess potential boating impacts on angling, hiking, or other recreation uses in the corridor, which are being examined through other "elements" in the Upper Chattooga capacity analysis effort (primarily the literature review elements during Phase I). Similarly, the panels are not being used to assess tolerances for various recreation impacts in the corridor. The focus in this element is to assess how flows affect these two highly flow-dependent activities.

Approach: Appendix D provides details of the expert panel field assessment protocol, including description of the panel member selection process, field assessment mobilization process, anticipated field assessment logistics, and implementation measures associated with the expert panel assessment.

NEPA Procedural Requirements: In applying this technique it was determined that the Expert Panel Field Assessment Protocol (see Appendix D) does not trigger the procedural requirements of the National Environmental Policy Act (NEPA) (specifically, 42 U.S.C. § 4332(2)). Therefore, neither documentation of an environmental assessment, nor the use of a categorical exclusion is necessary for the assessment. The activities outlined in the assessment do not constitute a major federal action, pursuant to 40 C.F.R. § 1508.18. As is evident from reviewing the scope and magnitude of the activities outlined in the assessment, there will be no tangible or perceptible effects to the human environment that can be meaningfully evaluated.

As part of the Chattooga visitor use capacity analysis, the purpose of the expert panel assessment is to make and record basic field observations regarding opportunities for whitewater boating and angling, with particular attention paid to various flow levels and how they might affect these opportunities. There will be no reasonably measurable removal of natural resources, no reasonably measurable alteration of the existing physical and natural conditions and no reasonably measurable destruction of the natural or physical environment. Specifically no large woody debris will be removed from the Chattooga River and no new river access points will be developed. Since effects on the natural and physical environment cannot be meaningfully evaluated and, therefore, do not trigger the procedural requirements of NEPA, it is, likewise, not necessary to analyze any potentially interrelated social and economic effects, pursuant to 40 C.F.R. § 1508.14. In addition, each element of the assessment is consistent with all applicable Forest Service directives and policies.

c. Literature Review -- Recreation Related Flow Preferences

This element can help triangulate information about opportunities and flow preferences related to different types of recreational use.

Objective: Review and summarize recreational use related flow preferences based on a sample of flow-recreation studies on rivers with characteristics similar to the Upper Chattooga River.

Approach: Identify and review rivers with characteristics similar to the upper Chattooga (in terms of river basin size, gradient, hydrology, etc.) where flow/recreation assessments have been conducted. Review assessed optimal flow ranges for whitewater boating, wading-based fly angling, and other types of fishing as identified by the flow assessment studies. Flow ranges for activities in other rivers usually depend on site-specific characteristics and objectives for those activities, so this review will provide a more general frame of reference.

B. POTENTIAL PHASE II ELEMENTS

As stated in Section I, a summary report will consolidate all of the information gathered as part of Phase I efforts. Based on that assessment, the Forest Service will determine if additional Phase II data collection efforts are needed. Potential data collection elements for Phase II may include, but are not limited to:

- ***Recreational user survey*** – This element would include on-site and mail surveys of current and potential recreation users to obtain additional information about user characteristics, trip characteristics, impacts, impact priorities, impact tolerances, and acceptability of management actions to address "impact problems." The objective would be to provide site specific information regarding the type and preferences of recreational use along the upper Chattooga River corridor.

- ***Trial boating period*** – This element could be used to help indicate actual boating demand, impacts from or to boating, and to develop a sufficient sample size of

potential boating users for the user survey (above). Objectives would be to: provide input from a knowledgeable boating sample to assess characteristics and flow needs, and provide information about boater preferences, impact priorities, impact tolerances, and acceptability of management actions; help indicate demand through responses to survey questions or by the number of boaters applying to participate in the trial boating program; and help estimate impacts by varying numbers of boaters on boatable days, observing impacts, and conducting onsite surveys of boaters and other users.

III. ASSESSMENT OF DATA COLLECTION EFFORTS

As discussed in Section I and II, this Implementation Plan describes data collection and analysis methods to be used in the LAC effort associated with the upper Chattooga River visitor use capacity analysis. As part of this process, information obtained and assessed as part of the Phase I (and if necessary, Phase II) data collection efforts will be compiled and assessed as part of an integrated report(s). Information from the report(s) will be used to help, as part of the LAC effort, reassess the boating ban and other visitor capacity issues on the Upper Chattooga River corridor. At the conclusion of the LAC effort, the Forest Service plans to develop a proposed action and alternatives and review it through a National Environmental Policy Act (NEPA) process before implementation and monitoring.

The Phase I Report will include a summary of the data collection results associated with the Phase I efforts, and a section with findings and implications. This section will provide recommendations as to whether additional data collection efforts (Phase II) are necessary. If Phase II data collection efforts are not needed, the Phase I findings and implications section will recommend specific information to be used in the LAC process (alternative opportunity zone allocations and corresponding indicators, standards, and potential management actions).

If Phase II data collection efforts are necessary, a Phase II Report would summarize information from Phase II efforts. This will also include a “findings and implications” section that would supplement information to be used in the LAC process.

IV. REFERENCES

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