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# Environmental Assessment

## Chattooga Wild & Scenic River Recreational Boating Use Amendment 14

Andrew Pickens Ranger District, Sumter National Forest  
Oconee County, South Carolina

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# CHAPTER 1.0 PURPOSE OF AND NEED FOR ACTION

## 1.1 INTRODUCTION

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The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. This Environmental Assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the proposed action and alternatives.

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the Andrew Pickens Ranger District in Mountain Rest, South Carolina.

## 1.2 BACKGROUND AND LOCATION

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The Chattooga River is located on the Andrew Pickens Ranger District of the Sumter National Forest in Oconee County, South Carolina. Congress designated 57 miles of the river as a component of the National Wild and Scenic River System on May 10, 1974. The river and its immediate surroundings offer many recreational uses such as boating, fishing, swimming, floating, hunting, hiking, horseback riding, and sightseeing in remote settings. Recreational boating (kayaking, canoeing, and rafting) has been a popular use of the river and includes both commercially guided and self-guided users.

The Chattooga River is divided into four sections.

Section I: Begins at the West Fork of the Chattooga River in Georgia and ends at the main river channel.

Section II: Begins at the Highway 28 bridge and ends at Earl's Ford.

Section III: Begins at Earl's Ford and ends at the Highway 76 bridge.

Section IV: Begins at the Highway 76 bridge and ends at Lake Tugaloo.

The project area for this analysis includes Sections I through IV of the Chattooga River, as well as the permitted areas within the corridor such as put-in/take-out areas, campgrounds, and lunch stops. *Please refer to the analysis area map in Appendix A.*

### **1.2.1 Commercially-Guided Boaters**

The recreating public continues to ask for a diversity of experiences, settings, and opportunities on National Forests. Many are capable of total self-sufficiency, but those selecting an outfitter want help. They may not be able to do it on their own, or want an introduction to such experiences to help them get started. They may not have the skill and equipment to be successful in remote and challenging environments or they may wish to devote full time to a specific activity such as hunting, fishing, photography, or viewing scenery. The public lands belong to them, just as much as they belong to the residents living at the mouths of the rivers and canyons. From their visits to the wild lands, they get the same benefits as those living with the wild lands at their back door. Without someone to outfit them, the Forest Service would be unable to meet this public demand.

The Forest Service works closely with river outfitters to provide high quality, safe, and responsible visitor services for those wanting the guided experiences. Guided boating is defined here as any boating use where one individual or group of individuals receives payment for guiding, instructing, or otherwise transporting any other individual or group on the river through the use of boats.

### **1.2.2 Self-Guided Boaters**

Self-guided boaters, also referred to as private boaters, are another important component of boating use on the river. Self-guided boating is defined here as any and all boating use on the river that does not meet the criteria consistent with “guided boating.” This includes those who may be using rented equipment.

Self-guided boaters are those who have developed the necessary skills and who are able to provide or obtain for themselves the equipment and transportation necessary to be successful in meeting the challenges presented by the river. Self-guided boaters appreciate the ability to make their trek to the river on short notice and to respond to changing water levels throughout the year.

### **1.2.3 Land and Resource Management Plan**

The existing Sumter National Forest Land and Resource Management Plan (Forest Plan) gives direction and authority for managing the Sumter National Forest. Currently, this Forest Plan is undergoing revision. The revision process, begun in August 1996, will set broad, landscape level direction for all three Districts on the Forest for the next 10 to 15 years. It will likely take at least another 2-3 years to complete the revision.

Any decision resulting from this environmental analysis will result in modifications to the current Forest Plan. However, these and all other land management goals, objectives, and direction will be subject to change during the revision process.

## 1.3 PROPOSED ACTION: RECREATIONAL BOATING ON THE CHATTOOGA RIVER

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The Sumter National Forest proposes to change the Forest Plan as it relates to recreational boating on the Chattooga River.

The proposed changes are summarized below. For a complete description of the Proposed Action, see Chapter 2.2.2.

### Self-guided Use

- The establishment of year-round allocations for self-guided use at all water levels.
- The establishment of procedures for the enforcement of self-guided use allocations.
- The allowance for more than one shuttle permit.
- The elimination of hourly capacities.

### Guided Use

- Change the definition of rafts to include other craft such as inflatable kayaks.
- Increase the flexibility of commercial outfitters by:
  - ✓ allowing additional craft on trips under certain conditions
  - ✓ allowing trips to move between sections under certain conditions
  - ✓ allowing over 30 clients/trip under certain conditions
  - ✓ allowing additional inflatable kayaks on guided hardboat trips
  - ✓ allowing a guided hardboat trip in Section IV in place of a scheduled Section IV guided inflatable trip

None of the proposed changes for guided use increases (or decreases) the current daily limits for clients allocated to commercial outfitters.

These proposed Forest Plan language changes would take effect immediately.

## **1.4 PURPOSE OF AND NEED FOR THE CHANGE TO RECREATIONAL BOATING ON THE CHATTOOGA RIVER**

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### **1.4.1 Inadequacies in the 1985 Forest Plan**

#### **1.4.1.1 Daily limits for self-guided boaters**

The Forest Plan established daily limits for both guided and self-guided boating (Sumter National Forest Plan, Appendix M-10). While guided use is enforced through the administration of special-use permits, those limits associated with self-guided boaters have never been enforced. Current use exceeds Forest Plan allocations for self-guided boaters on some days – primarily in Section IV and on weekends during high-use seasons. Most people have commented that these current use levels and experiences are acceptable. It is generally accepted that some of the current Forest Plan allocations are low, and that there is room for an increase in self-guided boater use on some days. The existing Forest Plan needs to be changed to accommodate existing self-guided boater demand.

#### **1.4.1.2 Flexibility of existing use allocation for guided boaters**

Increased flexibility is needed within existing use allocations to enable river outfitters to more effectively and economically provide the services sought by the guided public. Without these, customer service could suffer. Examples include the flexibility to experience the river in a variety of craft at all water levels as is already enjoyed by the self-guided public and to accommodate various trip sizes under existing daily use limits.

#### **1.4.1.3 Shuttle permits**

The Forest Plan allows only one permit for the shuttling of self-guided boaters to and from the river. This situation does not allow for competition that generally facilitates better service to the public.

## 1.5 DECISION TO BE MADE ---

This analysis will provide the Forest Supervisor of the Sumter National Forest with the basis to make an informed decision regarding recreational boating on the Chattooga Wild and Scenic River. Possible decisions could include:

1. Select one of the alternatives, including the No-Action Alternative.
2. Require the development of an EIS or other NEPA document.

## 1.6 PUBLIC INVOLVEMENT ---

This proposal first appeared in Issue 33 of the Sumter National Forest Quarterly Report (October-December 2000).

A scoping letter dated July 16, 2001 was sent to over 2,000 interested public and other agencies. The letter requested comments on the proposed action. On August 10, 2001, another letter was sent to the public extending the deadline to provide comments from August 16 to September 17, 2001. This 60-day comment period resulted in 213 comment letters via postal service or e-mail.

In addition, the agency placed a notice of ongoing project scoping on the Sumter National Forest web page and a legal notice in the Seneca Daily Journal on September 1, 2001.

An Environmental Assessment was mailed to those responding to the scoping letter on May 7, 2002. The agency received 158 additional comments during a six-week period. After reviewing these comments, some changes were made in Alternative 4, the preferred alternative, as well as some editorial changes that were not detected prior to mailing.

Using the comments from the public and from other agencies, the IDT developed a list of issues arising from the potential implementation of the proposed action. This analysis addresses the following issues.

## 1.7 ISSUES ---

The agency separated the issues that arose as a result of the scoping into two groups: those significant to the decision to be made and those considered as other issues. Significant issues are defined as those directly or indirectly caused by implementing the proposed action. Other issues were identified as those 1) outside the scope of the proposed action; 2) already decided by law, regulation, Forest Plan, or other higher level decision; 3) irrelevant to the decision to be made; or 4) conjectural and not supported by scientific or factual evidence. The Council for Environmental Quality NEPA regulations require this delineation in

Sec. 1501.7 "...identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review . . . (Sec. 1506.3)". A list of non-significant issues and reasons regarding their categorization may be found at the end of this section. Other issues raised by the public were also used to analyze potential environmental effects.

Amendment 1 (March 24, 1986) already dropped the seasonal differences in the Daily Limitations for Self-Guided (private) boaters as the Proposed Action proposed, but retained the people per hour and groups per hour limitations. With this clarification, this analysis proposes to eliminate only the hourly limits for people and groups for both Sections III and IV for Alternatives 2-5.

### 1.7.1 Significant Issues

Each of the significant issues listed below is followed by an "indicator". These indicators are the measures used to evaluate the environmental consequences of each alternative.

Issue	Indicator
<b>Self-Guided Boating</b>	
The numbers used in the development of the Proposed Action are underrepresented because of recent low water years and non-compliance of self-registration.	Number of self-guided boaters allowed (By section)
The implementation of a reservation system would reduce/eliminate the freedom of self-guided users.	Number of reservations required
The Proposed Action would not increase self-guided use enough.	Number of self-guided boaters allowed (By section)
The Proposed Action would increase self-guided boater use to the point of crowding, particularly on holidays and weekends.	Number of self-guided boaters allowed (By section)
<b>Shuttle</b>	
Increasing the number of shuttles would increase the potential for crowding on the river and at launch sites.	Number of boaters shuttled and number of permits
Increasing to two shuttle permits would reduce the potential for either permit holder to run an economically viable operation.	Number of boaters shuttled and number of permits
How would an increase in shuttle permits impact the quality of service provided to the boaters?	Number of boaters shuttled and number of permits
More than one shuttle permit would limit local self-guided use.	Number of boaters shuttled and number of permits

Issue	Indicator
<b>Guided Boating</b>	
It is unfair to allow the self-guided boater the use of inflatable kayaks anywhere on the river while banning outfitters from offering inflatable kayaks to their customers.	Amount of inflatable kayak use permitted to outfitters
By including inflatable kayaks in the definition of raft, safety would be compromised, crowding would increase, and the wilderness experience would be diminished.	Number of inflatable kayaks
The Proposed Action, as it relates to guided boating, would not afford enough flexibility to improve customer satisfaction, economic viability, or operational efficiency.	Number and types of boats available, maximum number of clients per trip.
The Proposed Action would increase congestion and crowding, and diminish the boating experience.	Number of people in each sections by self-guided vs. guided
<b>Guided Hardboat</b>	
Allowing inflatable kayaks in Section IV of the river would be dangerous and unsafe.	Number of inflatable kayaks
Allowing inflatable kayaks on guided hardboat trips would detract from the wilderness experience.	Number of inflatable kayaks

### 1.7.2 Other Issues

The following other issues were identified:

**Boater Access above Highway 28** We received many comments requesting the Forest Service consider either opening these sections of the river to boaters, or to make sure these sections remained closed to boaters. This issue is outside the scope of the Purpose & Need and Proposed Action for this project. At this time, we are only analyzing recreational boating use on Sections I – IV of the Chattooga River.

**Water Quality as it relates to tributaries** Many respondents expressed a strong desire for the Forest Service to analyze the water quality associated with the tributaries of the Chattooga River. This issue is outside the scope of the Purpose & Need and Proposed Action for this project. We will be analyzing the effects on the water quality of the river that is associated with any change in use proposed in the alternatives.

**Scope of the Purpose & Need** Respondents voiced concern regarding the scope of the Purpose & Need. Some consider the scope too broad; that the proposal is attempting to address too many issues in one analysis. Others believe the scope is too narrow; that it should be broadened to include the two issues described above, as well as the number of hikers and horseback riders allowed in the river corridor. Because of the perceived inadequacies of the current Forest Plan as it relates to boating and the need for a more timely response; because these other issues involve other National Forests; and because Forest Plan Revision is underway but on a more extended timeline, the agency determined that the scope of proposed activities should be limited to only recreational boating on Sections I – IV for guided and self-guided use.

**Issues related to the outfitter's operating plan, the number of outfitters, waivers, etc.** Several respondents wanted modifications made to the commercial outfitter's operating plan. Operating plans are a part of the Special Use Permits that administer direction included in the Forest Plan; and therefore, are not a part of this analysis. Some wanted a different number of outfitters than currently exist. This is outside the scope of the Purpose & Need and is irrelevant to the decision being made.

**Adjust the commercial outfitter's allocation** Although there were a number of respondents wanting this considered in this analysis, it is not considered an inadequacy of the current Forest Plan.

**Reduce the number of commercial outfitter permits** Although there were a number of respondents wanting this considered in this analysis, it is not considered to be an inadequacy of the current Forest Plan. Flexibility exists at the administrative level to determine whether fewer permits are needed to address management issues.

**Use of fees** Some respondents felt that the use of fees was inappropriate on public lands and that boaters would be unfairly targeted if other users did not have to pay fees. Any fees required in association with the proposed actions are for the securing of advance reservations only, rather than user fees.

**Rental and shuttled users** Some respondents felt that a third category of boating use allocations should be established for those boaters utilizing rented equipment and/or being shuttled to and from the river under a commercial special-use permit. It is commercial use of the river if boaters are paying a fee for services while boating on the river. This use is managed as commercial or guided use in the Forest Plan. It is *not* commercial use of the river if boaters are not paying a fee for services while boating on the river. This use is managed as private or self-guided use in the Forest Plan.

A shuttle permit is required to authorize the transportation of people and/or equipment for a fee because this constitutes commercial use of National Forest

lands for ingress and egress. Therefore, self-guided boaters who choose to pay a fee to be shuttled across National Forest lands to and/or from their put-ins fall within self-guided use. Finally, the Forest Service has no authority to manage differently those self-guided boaters who choose to rent boats for use on the Chattooga River. Therefore, these issues are outside the scope of this analysis.

## **1.8 RELATED DOCUMENTS THAT INFLUENCE THE SCOPE OF THIS EA**

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The Sumter National Forest Plan, Appendix M contains direction for the management of the Chattooga River. We have tiered this Chattooga River Amendment 14 Environmental Assessment to the Forest Plan and Appendix M.

All of Appendix M, except for those conditions proposed to change under this amendment, would remain in effect, as would Amendments 1 and 11, both of which relate to the management of the Chattooga River.

## **CHAPTER 2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION**

An IDT representing various resources and uses of the Forest developed alternatives to the Proposed Action. The IDT identified key issues that were presented during public scoping and formulated alternatives to the Proposed Action in response to these issues. The Forest Plan goals and objectives for the project area were also considered.

All alternatives proposed for implementation will meet the requirements of the National Forest Management Act. All action alternatives attempt to satisfy the Purpose and Need. The Environmental Consequences chapter of this report describes the likely environmental effects associated with implementation of each alternative. A comparison of the key effects provides the deciding official with the information needed to make an informed choice.

### **2.1 ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL**

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Some comment letters received during the scoping process suggested alternatives to the proposed action. Some of these suggestions and ideas were incorporated into the action alternatives and are being analyzed later in this document. The following are those suggested alternatives and concepts that are not being considered further and the reasons for not considering them.

#### **2.1.1 Limit physical access to the river**

This alternative would limit physical access to the river as the means of controlling the number of people using the river. No shuttle would be allowed and no reservation system would be needed.

Limiting physical access would include closing and/or gating roads, reducing the size of parking lots, etc.

This alternative was not carried forward in the analysis because it would fail to meet the purpose and need. Existing parking and access distances already regulate use to some extent. The Purpose and Need are more about allowing acceptable levels of use and flexibilities rather than making the river less accessible to users.

## 2.1.2 No-Action Alternative with enforcement

The IDT considered an alternative that would continue with the current conditions (i.e. No Action), but would enforce the existing regulations as described in Appendix M of the Forest Plan.

This alternative was not fully developed because it would not respond to the Purpose and Need. Specifically, this approach would not allow increases in self-guided use nor flexibilities within existing guided use allocations.

## 2.1.3 Additional concepts considered

### 2.1.3.1 Self-Guided Boating/Reservations

- Do not use "triggers" to initiate reservation system, but begin an hourly launching reservation system for each launch site immediately. This was dropped from further study due to its complexities and because immediate enforcement of use is considered to be not needed.
- Apply reservations only at specified times (e.g. 10 AM to 2 PM) on an hourly basis or on a first come- first served basis. For example, have 50% of the daily limit between those hours. This was abandoned due to increased complexities associated with hourly regulations as opposed to daily.

### 2.1.3.2 Shuttle Service

- Do not allow any shuttle permits. Shuttle permits improve access issues for some boaters and help to reduce congestion along roads and in parking areas. This was not carried further because it would eliminate the benefits associated with those services and is inconsistent with the Purpose and Need.

### 2.1.3.3 Guided Boating

- On inflatable raft trips at water levels at or above approximately 1 foot at the Highway 76 gauge, allow 20 boats on all trips. This was dropped due to the extent to which guided raft trips would increase in size and linear distances along the river, reducing the capacities to minimize contact with other boaters and users.
- Move all Section III trips to Section IV with seven rafts or inflatable kayaks at low water levels (below approximately 1 foot at the Highway 76 gauge). This would prevent the loss of four trips as is currently happening at low water. This was dropped because it would essentially result in an

increased allocation at low water levels in Section IV, which is inconsistent with the Purpose and Need.

- Allow up to 20-25 people/trip plus more trips/day. This was abandoned because it would require an increase in allocations of trips per day, which is inconsistent with the Purpose and Need to stay within the existing allocations for guided use.

#### **2.1.3.4 Hardboat Trips**

- Allow inflatable kayaks and hardboats to be interchanged on hardboat trips. Some flexibility is needed with respect to the use of inflatable kayaks on hardboat trips, but this was dropped to better manage the clear differences between a hardboat trip and what could essentially end up being another guided inflatable trip.
- Do not allow any inflatable kayaks on hardboat trips. This was eliminated because this is currently allowed and has not caused problems. Our desire is to consider expanding this flexibility to other sections of the river, and this is analyzed to varying degrees among the alternatives.

## **2.2 ALTERNATIVES ANALYZED IN THIS EA \_\_\_\_\_**

### **2.2.1 Alternative 1 – No Action**

Alternative 1 analyzes the likely effects of carrying the current management direction into the future. Guided and self-guided allocations and allowances for types and numbers of craft would remain the same as described in the current Forest Plan. Daily guided use allocations would continue to be regulated and enforced through the administration of permits and self-guided use allocations would not be enforced, allowing unrestricted self-guided use. These allocations are as follows:

#### **2.2.1.1 Inflatable Raft Trips**

Tables 2-1 and 2-2 summarize the current Forest Plan direction pertaining to guided raft use in Sections III and IV on the Chattooga River. *Low* water levels are defined as those below approximately one foot on the Highway 76 gauge, *moderate* levels are from approximately 1 - 2.5 feet, *high* levels are from approximately 2.5 - 3 feet, and *very high* levels are those above approximately 3 feet.

<b>Table 2-1 Current Guided Rafting Allocations Section III</b>					
<b>Water Levels</b>	<b>Capacity Permitted</b>	<b>May – September</b>		<b>October - April</b>	
		Weekdays	Weekends*	Weekdays	Weekends*
Low	Trips/day	0	0	0	0
	People/day+	0	0	0	0
Moderate	Trips/day	7	4	7	4
	People/day+	280	160	280	160
High	Trips/day	7	4	7	4
	People/day+	280	160	280	160
Very High <small>Denominator indicates portion of trips allowed from Hwy 28 to Earl's or Sandy Ford</small>	Trips/day	13/3	8/3	13/3	9/3
	People/day+	520	320	520	360

\* Includes Holidays

+ Includes Guides

<b>Table 2-2 Current Guided Rafting Allocations Section IV</b>					
<b>Water Levels</b>	<b>Capacity Permitted</b>	<b>May – September</b>		<b>October - April</b>	
		Weekdays	Weekends*	Weekdays	Weekends*
Low <small>Denominator indicates portion of trips allowed in Five Falls</small>	Trips/day	9/6	8/4	9/6	9/5
	People/day+	360	320	360	360
Moderate	Trips/day	6	4	6	5
	People/day+	240	160	240	200
High <small>These trips may put in at Thrift's Ferry</small>	Trips/day	6	4	6	5
	People/day+	240	160	240	200
Very High	Trips/day	0	0	0	0
	People/day+	0	0	0	0

\* Includes Holidays

+ Includes Guides

- Allocations for guided, inflatable raft trips are currently limited to Sections II, III, and IV of the river only.
- A raft is defined as capable of holding 4-6 people, over 4 feet wide, and not including the inflatable kayaks.

- Guided, inflatable raft trips are limited to 12 boats, 40 people per trip consisting of no more than 30 paying guests per trip.
- No more than seven client-carrying rafts are allowed on guided, inflatable raft trips.
- Some Section III trips are permitted to take out at Woodall Shoals, which is approximately 2 miles below the Highway 76 bridge.

**2.2.1.2 Instructional Canoe/Kayak (Hardboat) Clinics**

Table 2-3 summarizes the current Forest Plan direction pertaining to instructional clinic use on the Chattooga River in Sections I, II, and III. Instructional clinics are for the training of individuals in white water skills associated with hardboats, primarily on short river segments. They are not intended as guided float trips employing rafts.

<b>Table 2-3 Current Clinic Use Allocations</b>			
<b>Day of the Week</b>	<b>Capacity Permitted</b>	<b>River Section</b>	
		<b>I &amp; II</b>	<b>III</b>
Weekdays	Trips/week	20	28
	Trips/day	6	7
Weekends	Trips/day	2	

No more than five clinic permits (canoe and kayak) are currently permitted, and;

- Clinics are restricted to the portions of river above the Highway 76 Bridge (sections I, II, and III).
- A limited number of clinics may be authorized by the operating plan to use the one or two person inflatable crafts (inflatable canoe/kayak). These are only permitted on weekdays and above Sandy Ford. Their use can only be a percentage of the entire trip, as they are intended to provide a training opportunity for some members of the clinic who lack the skill to safely handle a hard shell canoe or kayak. However, these are not to become float trips dominated by inflatables.
- Total number of clinics by all companies combined cannot exceed two clinics per section/day on weekend days.
- Clinics are restricted to no more than 24 people per trip and no more than 12 craft.

**2.2.1.3 Current Forest Plan Direction for Self-Guided Boating Use**

Tables 2-4 and 2-5 summarize the current self-guided boating use on Section III and IV on the Chattooga River.

<b>Table 2-4 Current Self-Guided Boating Use Allocations Section III</b>		
<b>Capacity Permitted</b>	<b>All Year</b>	
	<b>Weekdays</b>	<b>Weekends</b>
Boaters/day	125	175
Boaters/hour	40	50
Groups/hour	4	6

<b>Table 2-5 Current Self-Guided Boating Use Allocations Section IV</b>		
<b>Capacity Permitted</b>	<b>All Year</b>	
	<b>Weekdays</b>	<b>Weekends</b>
Boaters/day	50	80
Boaters/hour	20	30
Groups/hour	3	4

- Self-guided boaters are asked, but not required, to limit group size to no more than 12 boats per group.
- Self-guided boaters are limited to no more than 24 boaters per trip.

**2.2.1.4 Shuttle of Self-Guided Boaters**

A single, long-term shuttle service is allowed to meet the needs of the public desiring the transportation of themselves and/or equipment to and/or from river access locations. The last, single shuttle permit that expired in 2000 authorized launch opportunities for up to 40% of the daily self-guided use on Sections III and IV. The Forest Plan does not currently limit the levels of self-guided use that can be authorized to shuttle permit authorities.

## 2.2.2 Alternative 2 – Proposed Action

Alternative 2 analyzes the likely effects of carrying the Proposed Action into the future. The Proposed Action was described in a July 16, 2001 letter mailed to interested persons and suggested the following changes in the management of recreational boating on the Chattooga River:

### 2.2.2.1 Self-Guided Boating

The proposed amendment would:

1. In Section III, establish year-round allocations for self-guided use at all water levels at 175 people per weekend day and at 125 people per weekday, holidays included. Hourly capacities would be dropped (boaters and groups per hour).
2. In Section IV, increase year-round allocations for self-guided use at all water levels to 160 people per weekend day and to 75 people per weekday, holidays included. Hourly capacities would be dropped (boaters and groups per hour).
3. Establish a procedure for the enforcement of self-guided use allocations in Sections III and IV should use increase substantially in the future.

Specifically, in Section III between April 1 and August 31, should daily self-guided use ever reach 175 people per weekend day for 20 weekend days (roughly half of the time), reservations would be required for self-guided boaters (including shuttled boaters) on Section III on weekends during those months beginning the following year. Similarly, should daily self-guided use ever reach 125 people per weekday for 50 weekdays (roughly half of the time), reservations would be required for self-guided boaters (including shuttled boaters) on Section III on weekdays during those months beginning the following year.

Since 1996, self-guided use between April 1 and August 31 in Section III has reached 175 people per weekend day for an average of 4 days/year and has not reached 125 people per weekday.

In Section IV between April 1 and August 31, should daily self-guided use ever reach 160 people per weekend day for 20 weekend days (roughly half of the time), reservations would be required for self-guided boaters (including shuttled boaters) on Section IV on weekends during those months beginning the following year. Similarly, should daily self-guided use ever reach 75 people per weekday for 50 weekdays (roughly half of the time), reservations would be required for self-guided boaters (including

shuttled boaters) on Section IV on weekdays during those months beginning the following year.

Since 1996, self-guided use between April 1 and August 31 in Section IV has reached 160 people per weekend day for an average of 2 days/year and 75 people per weekday for an average of 4 days/year.

Whatever reservation system is used, the goal is for them to be made on a first come-first served basis and be available on a same day basis—if possible—to allow boaters to respond to changing water conditions that can occur daily. A fee would be required for each reservation.

4. Allow more than one shuttle permit.

### **2.2.2.2 Guided Boating**

The proposed amendment would:

1. Change the definition of rafts to include other craft such as inflatable kayaks.
2. On inflatable raft trips at water levels at or above approximately 1 foot at the Highway 76 gauge, allow the use of up to 12 craft on 3 trips per day.
3. Allow inflatable raft trips in Sections III and IV to be moved to Sections I or II.
4. On Section III inflatable raft trips at low water levels (below approximately one foot at the Highway 76 gauge), allow the use of up to twelve craft.
5. Allow inflatable raft trips to exceed 30 clients, as long as each trip does not exceed 40 total and as long as the total number of clients served per section and per day does not exceed the current daily limits for clients.
6. Allow the use of up to two inflatable kayaks on guided hardboat trips (previously referred to as clinics).
7. Allow a guided hardboat trip in Section IV in the place of a scheduled Section IV guided inflatable trip.

## 2.2.3 Alternative 3

Alternative 3 analyzes a variation of the Proposed Action that responds to issues identified from public comments. Alternative 3 responds primarily to self-guided boater issues including those that suggest the Proposed Action may not have gone far enough in responding to the Purpose and Need associated with increasing carrying capacities and flexibilities associated with self-guided boating. Alternative 3 analyzes the following changes in the management of recreational boating on the Chattooga River (for better tracking of differences among the alternatives, the Proposed Action is restated, then any deviations from that in this alternative are shown in **bold underline**):

### 2.2.3.1 Self-Guided Boating

1. In Section III, establish year-round allocations for self-guided use at all water levels at **200** people per weekend day **and holidays** and at 125 people per weekday. Hourly capacities would be dropped (boaters and groups per hour).
2. In Section IV, increase year-round allocations for self-guided use at all water levels to **200** people per weekend day **and holidays** and to **125** people per weekday. Hourly capacities would be dropped (boaters and groups per hour).
3. Establish a procedure for the enforcement of self-guided use allocations in Sections III and IV should use increase substantially in the future.

Specifically, in Section III between April 1 and August 31, should daily self-guided use ever reach **200** people per weekend day for 20 weekend days (roughly half of the time), reservations would be required for self-guided boaters (including shuttled boaters) on Section III on weekends during those months beginning the following year. Similarly, should daily self-guided use ever reach 125 people per weekday for 50 weekdays (roughly half of the time), reservations would be required for self-guided boaters (including shuttled boaters) on Section III on weekdays during those months beginning the following year. Section III reservations would allow take-outs to Woodall Shoals.

**Since 1996, self-guided use between April 1 and August 31 in Section III has reached 200 people per weekend day for an average of 3 days/year and has not reached 125 people per weekday.**

In Section IV between April 1 and August 31, should daily self-guided use ever reach **200** people per weekend day for 20 weekend days (roughly half of the time), reservations would be required for self-guided boaters (including shuttled boaters) on Section IV on weekends during those

months beginning the following year. Similarly, should daily self-guided use ever reach **125** people per weekday for 50 weekdays (roughly half of the time), reservations would be required for self-guided boaters (including shuttled boaters) on Section IV on weekdays during those months beginning the following year.

**Since 1996, self-guided use between April 1 and August 31 in Section IV has reached 200 people per weekend day for an average of 2 days/year and 125 people per weekday for an average of 1 day/year.**

**The difference in Alternative 3 is that whenever the second level of use reaches the frequency that would require a second system of reservations the following year, the Forest would re-evaluate the need to initiate additional reservations rather than begin requiring additional reservations. In other words, the first “trigger” would remain in place, but the second “trigger” would initiate new analysis rather than automatically initiating reservations.**

Whatever reservation system is used, the goal is for them to be made on a first come-first served basis and be available on a same day basis—if possible—to allow boaters to respond to changing water conditions that can occur daily. A fee would be required for each reservation.

4. Allow **no more than two** shuttle permits **and limit the combined number of boaters shuttled per day to no more than 30% of the daily allocation for self-guided boaters in each section of the river when there is no reservation system. For example, if the daily allocation is 200 in Section III and 200 in Section IV and there are two shuttle permits, each permittee would be authorized to transport no more than 30 boaters to Section III and no more than 30 boaters to Section IV on that day.**

### 2.2.3.2 Guided Boating

1. Change the definition of rafts to include other craft such as inflatable kayaks.
2. On inflatable raft trips at water levels at or above approximately 1 foot at the Highway 76 gauge, allow the use of up to 12 craft on 3 trips per day. **This would not be allowed in Alternative 3.**
3. Allow inflatable raft trips in Sections III and IV to be moved to Sections I or II.
4. On Section III inflatable raft trips at low water levels (below approximately one foot at the Highway 76 gauge), allow the use of up to twelve craft.

5. Allow inflatable raft trips to exceed 30 clients, as long as each trip does not exceed 40 total and as long as the total number of clients served per section and per day does not exceed the current daily limits for clients.
6. Allow the use of up to two inflatable kayaks on guided hardboat trips (previously referred to as clinics). **No inflatable kayaks in Section IV under Alternative 3.**
7. Allow a guided hardboat trip in Section IV in the place of a scheduled Section IV guided inflatable trip.
8. **Under Alternative 3, Plan B would be cancelled. Currently, under Plan B, at water levels below about 1 foot, all but four Section III trips are moved to Section IV to take advantage of the higher water levels in Section IV. This alternative would not allow any Section III trips to move to Section IV – they must stay in Section III.**

## 2.2.4 Alternative 4

Alternative 4 analyzes a variation of the Proposed Action that responds to issues identified from public comments. Alternative 4 responds primarily to issues that suggest the Proposed Action may not have gone far enough in responding to the Purpose and Need associated with increasing flexibilities associated with guided boating. Alternative 4 analyzes the following changes in the management of recreational boating on the Chattooga River (for better tracking of differences among the alternatives, the Proposed Action is restated, then any deviations from that in this alternative are shown in **bold underline**):

### 2.2.4.1 Self-Guided Boating

1. In Section III, establish year-round allocations for self-guided use at all water levels at 175 people per weekend day **and holidays** and at 125 people per weekday. Hourly capacities would be dropped (boaters and groups per hour). See Table 4, Appendix B, p. B-4 to see how this would compare to current allocations.
2. In Section IV, increase year-round allocations for self-guided use at all water levels to 160 people per weekend day **and holidays** and to 75 people per weekday. Hourly capacities would be dropped (boaters and groups per hour). See Table 5, Appendix B, p. B-4 to see how this would compare to current allocations.
3. Establish a procedure for the enforcement of self-guided use allocations in Sections III and IV should use increase substantially in the future.

Specifically, in Section III between April 1 and August 31, should daily self-guided use ever reach 175 people per weekend day (**holidays included**) for 20 days **per year** (roughly half of the time) **for two consecutive years**, reservations would be required for self-guided boaters (including shuttled boaters) on Section III on weekends **and holidays** during those months beginning the following year. Similarly, should daily self-guided use ever reach 125 people per weekday for 50 weekdays **per year** (roughly half of the time) **for two consecutive years**, reservations would be required for self-guided boaters (including shuttled boaters) on Section III on weekdays during those months beginning the following year.

Since 1996, self-guided use between April 1 and August 31 in Section III has reached 175 people per weekend day for an average of 4 days/year and has not reached 125 people per weekday.

In Section IV between April 1 and August 31, should daily self-guided use ever reach 160 people per weekend day (**holidays included**) for 20 weekend days **per year** (roughly half of the time) **for two consecutive years**, reservations would be required for self-guided boaters (including shuttled boaters) on Section IV on weekends **and holidays** during those months beginning the following year. Similarly, should daily self-guided use ever reach 75 people per weekday for 50 weekdays **per year** (roughly half of the time) **for two consecutive years**, reservations would be required for self-guided boaters (including shuttled boaters) on Section IV on weekdays during those months beginning the following year.

Since 1996, self-guided use between April 1 and August 31 in Section IV has reached 160 people per weekend day for an average of 2 days/year and 75 people per weekday for an average of 4 days/year.

Whatever reservation system is used, the goal is for them to be made on a first come-first served basis and be available on a same day basis—if possible—to allow boaters to respond to changing water conditions that can occur daily. A fee would be required for each reservation.

4. **Allow no more than two shuttle permits. No more than 30% of the daily self-guided allocation by section would be authorized for shuttle services before and after reservations may be required.**

#### 2.2.4.2 Guided Boating

1. Change the definition of rafts to include other craft such as inflatable kayaks.

2. On inflatable raft trips at water levels at or above approximately 1 foot at the Highway 76 gauge, allow the administrative flexibility to authorize the use of up to 12 craft **on all trips**.
3. Allow inflatable raft trips in Sections III and IV to be moved to Sections I or II.
4. On Section III inflatable raft trips at low water levels (below approximately one foot at the Highway 76 gauge), allow the use of up to twelve craft.
5. Allow inflatable raft trips to exceed 30 clients, as long as each trip does not exceed 40 total and as long as the total number of clients served per section and per day does not exceed the current daily limits for clients.
6. Allow the use of up to two inflatable kayaks on guided hardboat trips (previously referred to as clinics).
7. Allow a guided hardboat trip in Section IV in the place of a scheduled Section IV guided inflatable trip.

## 2.2.5 Alternative 5

Alternative 5 analyzes a variation of the Proposed Action that responds to issues identified from public comments. Alternative 5 analyzes a different mix of options that have been considered to some extent in other alternatives to offer a wider range of alternatives to consider and to provide a more meaningful comparison of effects. Alternative 5 analyzes the following changes in the management of recreational boating on the Chattooga River (for better tracking of differences among the alternatives, the Proposed Action is restated, then any deviations from that in this alternative are shown in **bold underline**):

### 2.2.5.1 Self-Guided Boating

1. In Section III, establish year-round allocations for self-guided use at all water levels at **200** people per weekend day **and holidays** and at 125 people per weekday. Hourly capacities would be dropped (boaters and groups per hour).
2. In Section IV, increase year-round allocations for self-guided use at all water levels to **200** people per weekend day **and holidays** and to **125** people per weekday. Hourly capacities would be dropped (boaters and groups per hour).
3. Establish a procedure for the enforcement of self-guided use allocations in Sections III and IV should use increase substantially in the future.

Specifically, in Section III between April 1 and August 31, should daily self-guided use ever reach **200** people per weekend day for 20 weekend days (roughly half of the time), reservations would be required for self-guided boaters (including shuttled boaters) on Section III on weekends during those months beginning the following year. Similarly, should daily self-guided use ever reach 125 people per weekday for 50 weekdays (roughly half of the time), reservations would be required for self-guided boaters (including shuttled boaters) on Section III on weekdays during those months beginning the following year.

**Since 1996, self-guided use between April 1 and August 31 in Section III has reached 200 people per weekend day for an average of 3 days/year and 125 people per weekday for an average of 0 days/year.**

In Section IV between April 1 and August 31, should daily self-guided use ever reach **200** people per weekend day for 20 weekend days (roughly half of the time), reservations would be required for self-guided boaters (including shuttled boaters) on Section IV on weekends during those months beginning the following year. Similarly, should daily self-guided use ever reach **125** people per weekday for 50 weekdays (roughly half of the time), reservations would be required for self-guided boaters (including shuttled boaters) on Section IV on weekdays during those months beginning the following year.

**Since 1996, self-guided use between April 1 and August 31 in Section IV has reached 200 people per weekend day for an average of 2 days/year and 125 people per weekday for an average of 1 day/year.**

Whatever reservation system is used, the goal is for them to be made on a first come-first served basis and be available on a same day basis—if possible—to allow boaters to respond to changing water conditions that can occur daily. A fee would be required for each reservation.

4. Allow **no more than two** shuttle permits **and limit the combined number of boaters shuttled per day to no more than 30% of the daily allocation for each section of the river when there is no reservation system.** For example, if the daily allocation is 200 in Section III and 200 in Section IV and there are two shuttle permits, each permittee **would be authorized to transport no more than 30 boaters to Section III and no more than 30 boaters to Section IV on that day.**

#### 2.2.5.2 Guided Boating

1. Change the definition of rafts to include other craft such as inflatable kayaks.

2. On inflatable raft trips at water levels at or above approximately 1 foot at the Highway 76 gauge, allow the administrative flexibility to authorize the use of up to 12 craft on **all trips**.
3. Allow inflatable raft trips in Sections III and IV to be moved to Sections I or II.
4. On Section III inflatable raft trips at low water levels (below approximately one foot at the Highway 76 gauge), allow the use of up to twelve craft.
5. Allow inflatable raft trips to exceed 30 clients, as long as each trip does not exceed 40 total and as long as the total number of clients served per section and per day does not exceed the current daily limits for clients.
6. Allow the use of up to two inflatable kayaks on guided hardboat trips (previously referred to as clinics).
7. Allow a guided hardboat trip in Section IV in the place of a scheduled Section IV guided inflatable trip.

## **2.3 MITIGATION AND MONITORING MEASURES COMMON TO ALL ALTERNATIVES**

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In response to public comments on the proposal, mitigation and monitoring measures were developed to ease some of the potential impacts the action alternatives may cause. These mitigation measures would be applied to any of the action alternatives that may be selected for implementation.

- Proposals relating to additional flexibilities for guided use are viewed more as removing the language in the current Forest Plan that prohibit such flexibilities in the future rather than as a direct and immediate change in what actually would occur on the river. Any actual changes to guided use would be considered, implemented, and monitored at the permit administration level. For example, even though a decision may be made to remove language that prohibits the use of inflatable kayaks below Sandy Ford, or the use of up to 12 client-carrying craft per trip, this would not necessarily mean that a decision has been made to begin immediately allowing inflatable kayaks below Sandy Ford nor to allow the use of up to 12 craft for clients on trips. These decisions would be made at the permit administration level.
- To assess the current and future impacts of boating uses on the river, focused monitoring is needed on the water quality areas of sedimentation and fecal coliform. The fecal coliform monitoring would address the direct

and indirect impacts of recreational boating and the effects of mitigation measures on water quality on Sections I – IV of the river. The spatial locations of the river sections and tributaries where swimming or health advisories might be necessary would also be evaluated. Sediment problems should be identified primarily by site and activity surveys to address conditions of active erosion and likely sediment entry into streams. Problem areas should be assessed for location relative to any sensitive aquatic or other resources.

- The current locations of camping, picnicking and other concentrated uses should continue to be evaluated. As the use levels change, these evaluations may need updating. River users should continue to be provided information on active human solid waste disposal sites and proper methods of disposing wastes if not at a disposal site.
- For those sources of pollution beyond the scope of this analysis, the Chattooga Watershed Restoration Project, the Stekoa Creek Water Quality Committee, and other initiatives would continue to generate proposals for corrective actions on public and non-public lands within the watershed.
- Known water quality problem areas should be targeted first until we get better information. Stekoa Creek has been and continues to be the most contaminated tributary within the Chattooga Watershed. Estimates are that Stekoa Creek may also have about 2/3 of the total fecal (and sediment) loading for the Chattooga Watershed. Warwoman Creek, West Fork Chattooga River, and Whetstone Creek have periodic fecal contamination. Many of the smaller tributaries have not been analyzed.
- The information gathered from the monitoring of any of the alternatives described would be used to determine effectiveness of mitigation measures and to determine effects on water qualities relative to the actions considered in this analysis. The information gathered would be used to determine if changes are needed to the Decision Notice or to initiate additional mitigation measures.

## 2.4 COMPARISON OF ALTERNATIVES ---

Table 2-6, on the following page, provides a summary of the alternatives analyzed in this EA. Information in the table is focused on activities where different outputs can be distinguished quantitatively or qualitatively among alternatives.



**Table 2-6**

	<b>Alternative 1 No Action (Existing Condition)</b>	<b>Alternative 2 Proposed Action</b>	<b>Alternative 3</b>	<b>Alternative 4</b>	<b>Alternative 5</b>
<b>Self-Guided Boating</b>					
Section III at all water levels and year-round	Not Regulated	175 weekend <sup>1</sup> 125 weekday	200 weekend/holiday 125 weekday	175 weekend/holiday 125 weekday	200 weekend/holiday 125 weekday
		Hourly capacities dropped			
Section IV at all water levels and year-round	Not Regulated	160 weekend <sup>1</sup> 75 weekday	200 weekend/holiday 125 weekday	160 weekend/holiday 75 weekday	200 weekend/holiday 125 weekday
		Hourly capacities dropped			
Reservation System	None	<p><b>Section III April 1 – Aug. 31</b></p> <p>If there are 175 people/weekend day for 20 weekend days, reservations would be required on Section III on weekends during those months beginning the following year.</p> <p>If there are 125 people/weekday for 50 weekdays, reservations would be required on Section III on weekends during those months beginning the following year.</p>	<p><b>Section III April 1 – Aug. 31</b></p> <p>If there are 200 people/weekend day for 20 weekend days, reservations would be required on Section III on weekends during those months beginning the following year.</p> <p>If there are 125 people/weekday for 50 weekdays, reservations would be required on Section III on weekdays during those months beginning the following year.</p>	<p><b>Section III April 1 – Aug. 31</b></p> <p>If for 2 consecutive years there are 175 people/weekend/holiday for 20 days, reservations would be required on Section III on weekends during those months beginning the following year.</p> <p>If for 2 consecutive years there are 125 people/weekday for 50 days, reservations would be required on Section III on weekdays during those months beginning the following year.</p>	<p><b>Section III April 1 – Aug. 31</b></p> <p>If there are 200 people/weekend day for 20 weekend days, reservations would be required on Section III on weekends during those months beginning the following year.</p> <p>If there are 125 people/weekday for 50 weekdays, reservations would be required on Section III on weekdays during those months beginning the following year.</p>

<sup>1</sup> Holidays are considered to be the the same as the day they fall on (i.e. a holiday on a Monday is a weekday trip and a holiday on Saturday is a weekend trip).

	<b>Alternative 1 No Action (Existing Condition)</b>	<b>Alternative 2 Proposed Action</b>	<b>Alternative 3</b>	<b>Alternative 4</b>	<b>Alternative 5</b>
		<p style="text-align: center;"><b>Section IV April 1 – Aug. 31</b></p> <p>If there are 160 people/weekend day for 20 weekend days, reservations would be required on Section IV on weekends during those months beginning the following year.</p> <p>If there are 75 people/weekday for 50 weekdays, reservations would be required on Section IV on weekends during those months beginning the following year.</p>	<p style="text-align: center;"><b>Section IV April 1 – Aug. 31</b></p> <p>If there are 200 people/weekend day for 20 weekend days, reservations would be required on Section IV on weekends during those months beginning the following year.</p> <p>If there are 125 people/weekday for 50 weekdays, reservations would be required on Section IV on weekdays during those months beginning the following year.</p> <p>If the 2<sup>nd</sup> level of use reaches a frequency that would require a 2<sup>nd</sup> system of reservations, the Forest would re-evaluate the need to initiate additional reservations rather than begin requiring additional reservations.</p>	<p style="text-align: center;"><b>Section IV April 1 – Aug. 31</b></p> <p>If for 2 consecutive years there are 160 people/weekend/holiday day for 20 days, reservations would be required on Section IV on weekends during those months beginning the following year.</p> <p>If for 2 consecutive years there are 75 people/weekday for 50 weekdays, reservations would be required on Section IV on weekdays during those months beginning the following year.</p>	<p style="text-align: center;"><b>Section IV April 1 – Aug. 31</b></p> <p>If there are 200 people/weekend day for 20 weekend days, reservations would be required on Section IV on weekends during those months beginning the following year.</p> <p>If there are 125 people/weekday for 50 weekdays, reservations would be required on Section IV on weekdays during those months beginning the following year.</p>

	<b>Alternative 1 No Action (Existing Condition)</b>	<b>Alternative 2 Proposed Action</b>	<b>Alternative 3</b>	<b>Alternative 4</b>	<b>Alternative 5</b>
Shuttle Permits	1	Allow more than 1	Allow no more than 2 <sup>2</sup>	Allow no more than 2 <sup>6</sup>	Allow no more than 2 <sup>2</sup>
<b>Guided Boating</b>					
Definition of raft	Raft ≠ inflatable kayak	Raft = Inflatable Kayak			
Number of crafts/trip when water ≥1 foot <sup>3</sup>	7 rafts <sup>4</sup>	12 craft on 3 trips/day	7 rafts on 3 trips/day <sup>5</sup>	Maximum of 12 craft on all trips	Maximum of 12 craft on all trips
Sections III and IV inflatable raft trips	May move trips to different sections, <u>except Section 1</u> , based on water levels.	Inflatable raft trips can move from Sections III & IV to Sections I or II.			
Section III inflatable raft trips when water <1 foot <sup>3</sup>	7 rafts <sup>4</sup>	Allow the use of up to 12 craft as deemed appropriate at the administrative level.			
Number of clients allowed on inflatable raft trips	30	Allow trips to exceed 30 clients as long as each trip does not exceed 40 total and the total number of clients served per section per day does not exceed the current daily limits for clients.			
<b>Guided Hardboat Trips (previously referred to as clinics)</b>					
Inflatable kayaks on guided hardboat trips	12 to Sandy Ford, 0 below	12 to Sandy Ford, 2 below Sandy Ford.	12 to Sandy Ford, 2 to Highway 76.	12 to Sandy Ford, 2 below Sandy Ford.	12 to Sandy Ford, 2 below Sandy Ford.
Hardboat trips and inflatable raft trips	No clients allowed in hardboats on inflatable raft trips	Allow a guided hardboat trip in Section IV in place of a scheduled Section IV guided inflatable trip.			

<sup>2</sup> The combined number of boaters shuttled per day would be limited to no more than 30% of the daily allocation for each section of the river *if there is no reservation system*.

<sup>3</sup> As measured at the Highway 76 Bridge.

<sup>4</sup> This is based on the Operating Plan. The Forest Plan allows 12 boats/trip, 7 rafts and an additional 5 boats designated as safety boats.

<sup>5</sup> Current Forest Plan and Operating Plan guidelines would remain in effect.

<sup>6</sup> The combined number of boaters shuttled per day would be limited to no more than 30% of the daily allocation for each section of the river *with or without reservation system*

## CHAPTER 3.0      AFFECTED ENVIRONMENT

### PHYSICAL ENVIRONMENT

#### 3.1 SOILS, WATER, AND RIPARIAN RESOURCES \_\_\_\_\_

##### 3.1.1 Soils Description, Landform, and Effects

There are four soil series mapped in the Chattooga River watershed, which are Evard, Toccoa, Edneyown, and Brevard Series. Evard soils are deep, well drained, fine sandy loam soils and located on ridgetops to steep sideslopes. The surface soil textures ranges from 12% to 17% in clay. The subsurface soil textures ranges from 18% to 35% in clay. The soil thickness from the surface through the subsurface is about 40 inches. All of these soils have some Mica content throughout the soil profile but some have very high levels. Soils containing high Mica content have the potential of increasing the rate of erosion on exposed soils especially when vegetation is not present. The average slope along the Chattooga River ranges from 25 to 80%. Campsites along the Chattooga River can be located on slopes generally averaging 0 to 5 percent. Campsites and picnic areas can also be located on areas where cutting, filling, and extensive grading are used to reduce the slope. Soils next to the riverbank can be highly erosive.

Toccoa soils are deep, well drained or moderately well drained, fine sandy loam soils and located on first bottoms along the small to large streams, normally in a floodplain. Individual areas range from 50 to 400 feet wide and 3 to 50 acres. Slopes generally range from 0 to 5 percent. There are a few small areas included within the map unit that are more poorly drained, contain more than 18% clay and have a pebble content of 70% or more by volume within 40 inches of the surface. Areas that are included with slopes higher than 3% only make up about 8% of the map unit. Toccoa soils that are located within the 100-year floodplain are poorly suited for recreation uses such as campsites because of the high flood potential. Where flood-retarding structures are installed, camp areas can be used on this soil. Soils next to the Riverbank can be highly erosive.

Edneytown soils are deep, well-drained, fine sandy loam soils located on slopes ranging from 2 to 80 percent. This soil is found in areas with slopes ranging from 2 to 7 percent. They are well suited for recreation uses including campsites, picnic areas, and paths and trails. In areas where slopes range from 7 to 15 percent, this soil is fairly well suited for campsites and picnic areas and may need

some grading to reduce the slope. In areas with slopes of 15% and greater this soil is poorly suited to campsites and picnic areas. Extensive grading, cutting, and filling should be used when developing campsites and picnic areas to reduce the slope. Soils next to the Riverbank can be highly erosive.

Brevard soils have the same soil characteristics and effects as Evard soils but are different in soil thickness. The soil thickness from the surface through the subsurface is greater than 60 inches. Similar to Evard soils these soils have poor suitability for campsites in areas of steep slopes. Extensive grading, cutting, and filling to reduce the slope are needed when developing campsites and picnic areas. Soils next to the Riverbank can be highly erosive.

### **3.1.2 Water Resources**

The two primary water quality issues identified relative to the river uses were fecal coliform and fine sediments. Temperature is a secondary concern within the Chattooga watershed as elevated temperatures affect trout and other aquatic species distribution.

The sources of fecal contaminants include cattle, livestock, pets, wildlife and people. Major sediment sources include agriculture, development and roads. In the past, Stekoa Creek has produced over one-half of these pollutants within the Chattooga Watershed.

#### **3.1.2.1 Fecal Coliform**

Fecal coliform is a water quality indicator of pollution associated with warm-blooded animals including humans. Fecal material deposited on the landscape may get into solution during storm events and may move to streams if not absorbed within filter strips, and filtered through soil. The fecal coliform levels within the Chattooga River and tributaries found during storm events are often high enough to be of concern to swimmers and for other water contact sports that is often present when floating the river. This is especially true of storms that are intense or that follow dry periods. The water quality in Stekoa Creek suggests that even non-storm periods are intermittently or perhaps even regularly contaminated by fecal materials.

The actual extent of contamination by potential sources has not been documented. The RNA methods are available to verify the types of contamination between human, cattle, geese, beaver, wildlife and other sources. These tests involve analyzing specific coliform levels in water samples to differentiate RNA indicators found from different fecal sources. This type of sampling and analysis is expensive, but may be needed to help qualify the prominent type of contamination, help determine where the coliform pollutant sources are and the types of activities causing most of the problem.

Storm sampling for fecal contamination is also needed to better characterize the Chattooga River and West Fork conditions. This would help determine the frequency and extent of storm contamination provide information needed to advise the public on possible health risks, focus efforts on ways to mitigate the types and locations of contamination.

### **3.1.2.2 Sedimentation**

Sediment is a concern within the Chattooga Watershed because of its effects to water quality, aquatic life and recreation uses of the river. Erosion and sediment levels are naturally high to some extent due to the high rainfall, well-weathered soils and steep and dissected slopes. The Chattooga River has high sediment levels as a result of roads, developments, agriculture, and other land disturbing activities (Van Lear et. al., 1995). In some locations, the banks of the river are entrenched and steep, with bank erosion problematic due to past or current disturbance. Recreational impacts include trails in the channels, stream banks, and immediate vicinity. Recreational activities may expose soils and/or dislodge fine particles from the streambank and streambed. River users may stir up some fine sediment in the margins of the channel as they get in and out of rafts, which can contribute to localized turbidity and sediment levels. This disturbance is most noticeable during lower flow levels, and generally quickly dissipates in most cases, as the particles move downstream to redeposit on the margins or in pool areas.

Streams have the ability to move and transport particles, especially during storm events. Large particles suspended for short durations during storm events are often termed bed load. Finer particles are suspended for extended periods during and following storm events, and are most commonly referred to as suspended sediment. Sediments that are smaller in size than medium sands are especially impactful to a variety of aquatic species (Braatz, 1993). These sands are mobile, abrasive to algae and other organisms, and can clog and limit benthic flow properties that are needed for the health of some organisms.

From the Van Lear study (1995), only small portions of the total suspended solids in tributaries were made up of fine sand and smaller materials. Sediment levels within Stekoa Creek is of special concern because it has produced over one-half of the Chattooga Watershed sediment load and produces visual turbidity and sediment contaminants during and immediately after storms. Sediment plume and excessive sediment cover the channel and marked accumulation on all depositional features as point and side- bars are also evident after storm events.

### **3.1.2.3 Temperature**

The temperature concern relative to the river is related to the extent of trout habitat and other aquatic species. Rafting could contribute to temperature

change if it provided either a substantial loss in riparian shading or increased turbidity that could contribute to solar absorption during summer months.

Much of the current main channel character for the Chattooga watershed is Rosgen channel type F. This channel type has a high width to depth ratio, and therefore is shallow and very hard to shade due to its width during the summer low flow periods. Some areas with very steep slopes may get some topographic shading, while most stream sections get some shading from trees along the margins during portions of the day. So most of the temperature increases are normal for the stream conditions, and not a result of loss of riparian shading. Generally, in the non-storm periods of the summer months, streams are clear and turbidity is low.

There are no observations or data to support that current river floating uses are increasing the low flow sediment or turbidity levels which would increase solar absorption and stream temperatures. Temperature was therefore not included as an issue to consider as affected by the river uses for any of the action alternatives and will not be discussed further in this analysis.

### **3.1.3 Riparian Resources**

Riparian Areas are transition areas between the aquatic and terrestrial ecosystems and typically include all lands with direct land-water interactions, which may affect abiotic and biotic structure, function and composition. This includes all land adjacent to surface water, which have hydric soils or distinctive vegetation communities that require free or unbound water. Riparian areas extend outward from stream channels to include floodplains and moist terraces. Due to the geomorphic development of much of the Chattooga channel and tributary system as a Rosgen F, A and B types, floodplains are generally narrow and limited in extent. Terraces are also generally limited in extent in the mountainous terrain, but local deposits of alluvial materials are several hundred feet in width.

Wider portions of the floodplain and terraces that are accessible are sought out by river floaters and used for picnics and camping. Except for the river access points that must cross riparian areas, these camping and picnic areas are the most likely to be impacted by river users. Impacts include soil exposure, damage to riparian vegetation from compaction and sometimes soil erosion.

There are some floodplain areas contained within the extent of riparian areas, but probably no wetlands. Most if not all of the riparian areas are well drained and do not develop wetland soil and plant communities. None of the activities being evaluated in this analysis would likely damage or limit the extent of floodplains, but some elements of EO 11988 may be appropriate to consider if facilities are located within the floodplain portion of riparian areas and in protection of river

and other uses by signing floodplain hazards either on the ground or by displaying flood hazard zone in river maps or other materials.

## **BIOLOGICAL ENVIRONMENT**

### **3.2 THREATENED, ENDANGERED, AND SENSITIVE SPECIES**

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No federally listed species are known from the Chattooga River, with the exception of the bald eagle which may be seen foraging over the river corridor. Sensitive species known from the area include fraser's loosestrife, *Lysimachia fraseri*, the sensitive mollusk brook floater, *Alasmidonta varicosa*, a rare liverwort *Plagiochila caduciloba*, and the Diana fritillary butterfly, *Speyeria diana*. Historic locations for the sensitive Chauga crayfish, *Cambarus chaugaensis*, have been noted but not confirmed in recent years. Habitats for threatened, endangered, and sensitive species are moderate to high in quality.

A biological evaluation has been completed and can be found in Appendix D. See Chapter 4 for a summary of the conclusions.

### **3.3 MANAGEMENT INDICATOR SPECIES (MIS)**

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The Chattooga River supports a variety of habitats for aquatic and terrestrial plant and animal species as it flows through a forested corridor characterized by high rainfall, ancient geology, and a history of human occupation. Transitional between the piedmont and southern Blue Ridge physiographical provinces, the Chattooga River contains a mix of species with origins ranging from tropical to species much more northerly in distribution.

#### **3.3.1 Aquatic Habitats**

The Chattooga river is one of the longest free-flowing rivers in the southeast and one of the best-known trout streams in the Southern Appalachians, though temperature becomes a limiting factor for trout below Pigen Falls. With headwaters in the mountains of North Carolina, the river follows an elevational gradient through the Blue Ridge Escarpment until being impounded at the Tugaloo Reservoir at its' southern end. A 1989 study of the macroinvertebrates in the Chattooga, suggest that the river's condition is average for the Southern Appalachian region. Active stocking of brown and rainbow trout, occurring above the Hwy.28 bridge, perpetuates large non-reproducing populations. The South Carolina Department of Natural Resources currently maintains a fish hatchery at the headwaters of the East Fork of the Chattooga River just outside the Wild and Scenic River Corridor. Largemouth bass, bluegill, redear sunfish, and catfish occasionally swim upstream from Lake Tugaloo.

### 3.3.2 Terrestrial Habitats

Terrestrial habitats occurring in the Chattooga River and adjacent corridor are primarily late-successional hardwood and mixed pine-hardwood forests, but also include early-successional shrub thickets and streamside forests (including open savannas and woodlands) and mixed mesic forests or coves. Streamside forests or shrub thickets, natural disturbance zones dominated by alders, sycamore, sweet pepperbush, and a variety of herbaceous perennial and annual plants, occur on gravelly sandbars and streamside areas where quartz sands are deposited with shifts in water levels. Mixed mesic forests and coves in the area are not particularly rich, dominated by eastern hemlock, tulip poplar and white pine, with understories of Christmas fern, rhododendron, and mountain laurel. Higher on the adjacent slopes various species oaks, hickories, magnolias, tulip popular, with understories of ferns including Southern lady fern and New York fern, predominate.

Rare communities in the area include waterfall spray zones, occurring at waterfalls and rock grottos including Long Creek Falls, Opossum Creek, and various locations along the river corridor, supporting a high diversity of mosses and liverworts. Some pitch pine/table mountain pine communities occur along ridgelines at higher elevations.

## SOCIAL ENVIRONMENT

### 3.4 HERITAGE RESOURCES ---

Heritage Resources include historic properties that are on or are eligible for the National Register of Historic Places, archeological sites, cultural landscapes, and Native American traditional cultural or religious practices which may include specific places such as sacred sites, resource gathering sites, or objects of cultural patrimony. The primary effects to heritage resources from recreational boating use are associated with activities which cause soil disturbance.

There is one National Register eligible historic property, the Chattooga Town archeological site, which borders the Chattooga River on the South Carolina bank in northern Section II. This is a seventeenth and eighteenth century historic Cherokee village site which may contain human remains, sacred objects or objects of cultural patrimony. Currently boaters float by the site. There are no boating related uses on the site.

There are currently forty-three permitted use locations for guided and self-guided boaters on the Chattooga River. These are river access points, lunch spots, and primitive campgrounds. Lunch spots are located on river-disturbed beaches and rocks. These disturbed areas are unlikely to contain archeological sites. All of

the campground and access points in South Carolina were examined by a Forest Service archeologist to determine if heritage resources are being affected by current use. No historic properties or archeological sites were identified in these areas. Access points are long established. Many are old dirt road crossings on the river which predate the establishment of the national forest. The campgrounds were found to be small and causing minimal ground disturbance. Disturbances were limited to some surface sheet erosion and fire rings. No latrines or holes were found. The ferry barge used at Thrifts Ferry until the mid 1960s is pulled on to the South Carolina shore near that boat access point. It has not been disturbed by current boating use and is not old enough to be considered an archeological site or historic property.

Under current use, no archeological or historic properties eligible or on the National Register of Historic Places are being affected on the South Carolina side of the river. No known traditional cultural properties, sacred sites, or objects of cultural patrimony are being affected. The Cherokee Tribe has been consulted to determine if there are any Native American concerns.

On the Georgia side, eight locations exist including access points, such as old roads, horse/hiking trails, or established put-ins or river crossings. Along the Chattooga River on the Georgia side, past surveys and observations along the river have shown indications of sites being present mostly outside the immediate river corridor with a few exceptions along the river banks, or on the beaches, or access points used by the boaters. There are no known National Register eligible sites on the Georgia side of the river.

## **3.5 RECREATION**

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### **3.5.1 Remoteness and Solitude**

A sense of remoteness and solitude is part of the recreation experience on a Wild and Scenic River (WSR). It varies depending on the degree of naturalness (unmodified natural environment) on the river, access to the river, and the expected number of encounters with other individuals or groups on the river.

In an analysis of 48 rivers within a 250-mile radius of the Chattooga, only three others were found to provide quality whitewater in a natural setting where a governmental agency can protect scenic and isolation qualities. It just so happens that isolation, remoteness, and a sense of solitude were major reasons for recommending the Chattooga River for National designation, and therefore, protecting these attributes becomes all the more important.

Over the past 30 years, the river has become more remote and isolated because of several road closures. However, opportunities to experience solitude on the river have decreased due to increased use, especially from April 1 through Labor

Day. A major part of this increase is due to boating occurring in Sections I through IV, but most heavily in Sections III and IV.

This analysis focuses on the part of the Chattooga that is open to boating, which like the rest of the WSR, is classified into Wild (22.1 miles), Scenic (1 mile) and Recreational sections (9.1 miles), all varying in the level of remoteness and solitude they offer. Wild sections should have the highest degree of naturalness, most difficult access, and the fewest number of encounters with other individuals or groups. Recreational sections can have a lesser degree of naturalness, easier access, and higher level of encounters. Scenic sections are “in-between”, although the natural environment still dominates.

The Wild sections extend 15 miles from Turnhole Rapid to Bull Sluice, and 7.1 miles from a point below US Highway 76 Bridge to Lake Tugaloo. One Recreational section extends from a point above Overflow Bridge on the West Fork to the confluence with the main stem of the Chattooga, and then downstream to Turnhole Rapid, a distance of 9.1 miles. Finally, one Scenic section extends from Bull Sluice Rapid to a point  $\frac{3}{4}$  miles below US Highway 76 Bridge.

Furthermore, this analysis will utilize visitor use a proxy measure to compare the effects of the various alternatives on solitude. Other factors comprising the experience of remoteness and solitude (degree of naturalness and access) are not affected by the alternatives.

Self-guided boaters have not seen a dramatic increase in total annual use in the last 20-30 years. However, the number of days they have exceeded Forest Plan daily use allocations has increased in the last 10-12 years (particularly on weekends and weekdays in Section IV), and leveled off in the last 6-7 years. Much of the weekend daily use occurs between the hours of 10 AM and 2 PM.

Even though guided boaters are regulated by Forest Plan daily capacities, total annual use has increased within the prescribed allocation since the early seventies, leveled off in the last 10-12 years, and experienced a decrease in the last 4 years. Implementation of a Guided Use Operating Plan has generally distributed these trips evenly over a use day striving to minimize encounters with other boating groups. On weekends, during the highest use time for self-guided boaters, the operating plan schedules guided trips outside the 10 AM to 2 PM window preferred by self-guided boaters.

### **3.5.2 Scenery**

The scenery of the Chattooga Wild and Scenic River was one of the outstandingly remarkable values that led to its designation into the national wild and scenic rivers system in 1974. The visual characteristics that led to this designation include a variety of visual experiences and play a large role in one's

experience of the river. Studies done since the designation conclude that visitors are pleased with the scenery of the river. In addition, the lack of man-made features added to the enjoyment of the experience for most guided and self-guided boaters.

The Forest Service uses a system of classifying the scenery and aesthetics of the forest. This system, describes different degrees of acceptable alteration of the natural landscape based upon the importance of aesthetics. There are five levels of alteration, preservation (the most sensitive to alteration), retention, partial retention, modification, and maximum modification (the least sensitive to alteration). These are referred to as *Visual Quality Objectives* and are decided upon in the Sumter Land and Resource Plan.

For most of the river there are little signs of civilization. The beauty of the river and the scenery of the surrounding environs are unsurpassed in the Southeast. Different visual experiences include a small and fast river flowing through densely forested slopes to a river of narrow gorges with huge boulders to a river of self-cut rocks and flat deep pools to a river of calm slow stretches flowing through pastoral settings.

The wild and scenic sections of the river are less developed with relatively few signs of man. Currently these sections have a Visual Quality Objective of Retention, meaning management activities are not evident to the casual observer.

In the recreational sections of the river there are more signs of man's presence with roads paralleling the river for a while and some views of pastoral fields. These sections are assigned a Visual Quality Objective of Partial Retention, meaning management activities remain visually subordinate to the characteristic landscape.

### **3.5.3 Challenge, Adventure, and Self-Reliance**

Recreation settings can be classified from the most urban to the most primitive. The Forest Service uses the recreation opportunity spectrum (ROS) to classify the recreational settings across national forests. The Chattooga Wild and Scenic River has three different ROS classes, including wild sections classified as semi-primitive nonmotorized, scenic sections classified as semi-primitive motorized and recreational sections classified as roaded natural. These ROS classes have different visitor expectations.

The settings semi-primitive nonmotorized and semi-primitive motorized both have visitor expectations that include experiencing self-reliance through the application of outdoor skills in an environment that offers challenge and risk. Self-testing and risk-taking are important for self-development and a sense of accomplishment. Human improvements are few as comfort and satisfaction

become dependant on personal ability and outdoor skills. Signage and managerial controls are limited and a sense of adventure is very important. These settings would describe the majority of the river below Highway 28 with the exception of the West Fork.

The setting roaded natural has visitor expectations that include less opportunity for self-reliance through the application of outdoor skills but practice and testing of skills would be important. Human improvements are more convenient as comfort and satisfaction become more important. Signage and managerial controls such as maps are common and a sense of adventure is less important. This setting describes the West Fork of the river, in Georgia.

In addition to the ROS settings, the water levels of the river influence the challenge, adventure and self-reliance as do which sections of the river people choose to boat. If the water level is higher the river generally becomes more dangerous and offers more challenge. Also, the lower sections of the river, have more higher level rapids with Section IV of the river being very challenging in higher water. Sometimes in extremely high water the river is not boatable.

### 3.5.4 Allocation and Fairness

Currently, guided and self-guided boating uses have the following allocations:

<b>Table 3-1 Current Daily Allocation Maximums Guided Rafting And Self-Guided Boating Section III People per day</b>					
<b>Water Levels</b>	<b>Capacity Permitted</b>	<b>May – September</b>		<b>October - April</b>	
		<b>Weekdays</b>	<b>Weekends*</b>	<b>Weekdays</b>	<b>Weekends*</b>
Low	Guided+	0	0	0	0
	Self-Guided	125	175	125	175
Moderate	Guided+	280	160	280	160
	Self-Guided	125	175	125	175
High	Guided+	280	160	280	160
	Self-Guided	125	175	125	175
Very High	Guided+	520	320	520	360
	Self-Guided	125	175	125	175

\* Includes Holidays

+ Includes Guides

<b>Table 3-2</b> <b>Current Daily Allocation Maximums</b> <b>Guided Rafting And Self-Guided Boating</b> <b>Section IV</b> <b>People per day</b>					
Water Levels	Capacity Permitted	May – September		October - April	
		Weekdays	Weekends*	Weekdays	Weekends*
Low	Guided+	360	320	360	360
	Self-Guided	50	80	50	80
Moderate	Guided+	240	160	240	200
	Self-Guided	50	80	50	80
High	Guided+	240	160	240	200
	Self-Guided	50	80	50	80
Very High	Guided+	0	0	0	0
	Self-Guided	50	80	50	80

\* Includes Holidays                      + Includes Guides

<b>Table 3-3</b> <b>Current Daily Allocation Maximums</b> <b>Guided Rafting And Self-Guided Boating</b> <b>(Sections III and IV Combined)</b> <b>People per day</b>					
Water Levels	Capacity Permitted	May – September		October - April	
		Weekdays	Weekends*	Weekdays	Weekends*
Low	Guided+	360	320	360	360
	Self-Guided	175	255	175	255
Moderate	Guided+	520	320	520	360
	Self-Guided	175	255	175	255
High	Guided+	520	320	520	360
	Self-Guided	175	255	175	255
Very High	Guided+	520	320	520	360
	Self-Guided	175	255	175	255

\* Includes Holidays                      + Includes Guides

<b>Table 3-4 Current Clinic/Hardboat Use Allocations</b>			
<b>Day of the Week</b>	<b>Capacity Permitted</b>	<b>River Section</b>	
		<b>I &amp; II</b>	<b>III</b>
Weekdays	Trips/week	20	28
	Trips/day	6	7
Weekends	Trips/day	2	

### 3.5.5 Convenience, Spontaneity, and Reliability

Since allocations for self-guided boaters have not been enforced, self-guided boaters have been able to float the river at their own convenience at all water levels, locations, day, and time. During periods of rising waters especially, it is very important to paddlers that they be able to access the river to have that experience. The only administrative requirements are that they complete a Chattooga Wild and Scenic River Self-Registration Permit at the put-in or take-out location on the day(s) of the trip and that paddlers adhere to conditions of that permit. A parking fee is currently required in Georgia at the Highway 76 and West Fork put-ins. Only one shuttle permit is authorized. Other factors that affect convenience, spontaneity, and/or reliability of trips include weather, water levels, availability of transportation and/or parking, personal schedules, and equipment.

Guided boaters use of the river is restricted to times when the outfitters are operating, and when they have vacancies on their allocated trips. The outfitters are permitted to run trips all year long, but typically, they do not run any trips in December, January, or February. Their trips are frequently near capacity on most days in the summer, and on weekends in the spring and early fall. During these heavily used times, guided boaters are less likely to get a reservation on a short notice. Guided experiences are also limited by factors such as weather, water levels, and personal schedules, but not so much by the availability of transportation and/or parking or equipment since the outfitters provide these. Other factors that affect convenience, spontaneity, and/or reliability of trips include the daily allocations established by the Forest Service for a particular section of the river at specific times of the year or at particular water levels. At low water levels, even when reservations are in place, rescheduling or cancellations become necessary due to reduced allocations. At very high water levels when the river is essentially closed to all guided use, rescheduling or cancellations become necessary even though advance reservations have been made.

### 3.5.6 Safety

The portions of the Chattooga River currently open to boating are free-flowing, dropping approximately 1,500 feet in elevation from the beginning of Section I to the end of Section IV. The river has an ever-changing bottom ranging from accumulations of sand and sediments to rough and rocky bottom with a substantial distribution of large and irregularly-shaped boulders within its banks. The river is considered world-class for the natural whitewater challenges it offers. Whereas the combination of these attributes with recreational boating use results in inherent risks to the user, it also defines the challenge, adventure, and satisfaction that comes as a result of successfully negotiating the obstacles in a raft, kayak, canoe, or other similar craft.

Since 1970, there have been thirty-seven fatalities on the Chattooga River. Twenty-nine of these are directly or indirectly associated with boating. All but one of these boating fatalities were self-guided boaters, the other one being a guide on a commercially guided training trip. Nine fatalities are known to be associated with the use of rafts, eight are known to be associated with the use of kayaks, four with canoes, two with inner tubes, and one with an inflatable kayak.

Factors contributing to concerns about safety include but are not limited to the following:

- The river is dynamic, with difficult chutes and rapids having the potential to be different every time they are experienced as water levels can vary quickly and obstacles change above and below the surface.
- Individual skill gaps where boaters may not have the knowledge, skills, or abilities at the time to negotiate a difficult rapid or other challenge resulting in being capsized, entrapped, or thrown out. Due to the expertise, proximity, instruction, and oversight of guides on guided trips, these concerns are most relevant to self-guided use.
- The mixtures of boaters possessing different levels of skills and/or operating different types of craft on an individual trip or when multiple trips come into contact with each other presents a limited amount of risk between boaters.

The Forest Service promotes safety on the river in a variety of ways including requiring protective equipment in certain sections; by prohibiting some kinds of craft in some sections; by restricting paddling alone in some sections; by posting pertinent information on maps, brochures, and signs; and by requiring specific knowledge, experience, oversight, and procedures on guided trips.

### 3.5.7 Flexibility and Variety

For comparison in this analysis, self-guided boaters are allowed to use canoes, kayaks, inflatable kayaks, rafts, inner tubes, and any other craft that is not deemed unsuitable by the Forest Service. Currently, self-guided use includes the following restrictions:

- The use of inner tubes below Earls Ford is prohibited
- Rafts must have a minimum of two air chambers
- Life saving devices must be worn or available
- A minimum party size of two persons and two craft is required below Earls Ford
- All persons using decked craft and floaters below Woodall Shoals must wear a helmet
- Groups are voluntarily limited to twelve boats per trip and one trip per organization per day

Guided boaters on raft trips are limited to the use of seven inflatable rafts no less than four feet wide. Guided hardboat trips are limited to the use of canoes, kayaks, and two inflatable kayaks above Sandy Ford. The use of inflatable kayaks are not permitted on raft trips and the use of hardboats by clients is not permitted in Section IV. Guided raft trips are also limited to no more than 30 clients per trip.

### 3.5.8 Costs and Affordability

Recreationists receive many benefits from the Chattooga River corridor. People would not spend so much of their personal time and income on recreation activities if the rewards were not commensurate with the experience. However, given this, the demand for recreation opportunities is often in direct relation to the prices that the consumer must pay for the recreation experience and/or the cost of getting to the area. Cost and affordability are important components of recreational activity selection for most people.

## 3.6 ECONOMIC RESOURCES ---

The economy of the area around the Chattooga River is diverse and growing. The mountains that once slowed development are now attracting people for retirement and a better quality of life. Improved road systems make it easier to commute to incorporated communities and urban centers. Tourism, manufacturing, wood products and agriculture are some of the major industries.

The Chattooga River provides boating opportunities for around 25,000 self-guided boaters and around 50,000 guided boaters annually. These numbers vary depending on water levels, public preferences, general economic conditions and outlook, and other factors.

Self-guided boaters have not seen a dramatic increase in total annual use in the last 20-30 years. In the last four years, use has taken a downturn. Three rafting companies service the guided boating public. Even though guided boaters are regulated by Forest Plan daily capacities, total annual use has increased within the prescribed allocation since the early seventies, leveled off in the last 10-12 years, and experienced a decrease in the last 4 years.

Dry conditions in the area are partly to blame for the decline in use over the last four years. Specifically related to the guided boater market, another factor that may be contributing to the downturn involves a lack of flexibility to provide the kinds and variety of experiences sought by the public.

Despite the local downturn in recent years, demand for self-guided and guided boating opportunities is expected to increase in the future (Cordell, et. al., 1999). This is particularly true of the Chattooga, where world-class whitewater opportunities abound in an island of natural and remote settings – a rare gem to be found in an increasingly developed South.

### 3.7 ENVIRONMENTAL JUSTICE

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The proposed action and alternatives were assessed to determine whether they would disproportionately impact minority or low-income populations, in accordance with Executive Order 12898.

Category	Rabun-GA	Habersham-GA	GA	Macon-NC	Jackson-NC	NC	Oconee-SC	SC
Minority	6.8	15.1	37.4	4.0	15.2	29.8	12.0	33.9
Low-Income	13.9	11.2	14.7	13.2	16.1	12.6	11.1	14.9

Percentage of Minority and Low-Income Populations by Counties and Respective States

Based on 2000 census data, the percent of minority and low-income populations in these counties is less than twice that of the States of Georgia, North Carolina, and South Carolina, respectively. This demographic information indicates that these five counties do not qualify as environmental justice communities. Therefore, no further analysis is required.

## **CHAPTER 4.0 ENVIRONMENTAL CONSEQUENCES**

This section summarizes the physical, biological, and social environments of the affected project area and the potential changes to those environments due to implementation of the alternatives. It also presents the scientific and analytical basis for the comparison of alternatives presented in the chart above. Literature citations made in this section can be found within the individual resource reports located in the project file.

### **PHYSICAL ENVIRONMENT**

#### **4.1 SOILS, WATER, AND RIPARIAN RESOURCES \_\_\_\_\_**

Potential effects associated with each alternative had to be compared to some baseline. For this analysis, the potential effects are compared to current use levels provided in Alternative 1. The reader should note that there is potential for large increases in use from within current use levels. Because of this, the potential exists for large increases in effects because the current annual use numbers are well below the maximum allowed.

##### **4.1.1 Soils**

###### **4.1.1.1 Alternative 1**

###### Direct and Indirect Effects

Direct and indirect effects would include limited but continued compaction, displacement, erosion, and some loss of vegetation on established paths, put-ins/take-outs, campsites, lunch stops, and trails along the river. These would be negligible, however, since they are already established, monitored, and maintained to varying degrees. The continued use of Best Management Practices such as armoring the soil, fertilizing, mulching, etc. would mitigate these impacts. Regular assessments, maintenance of roads, trails, and camping areas would continue to maintain soil conditions, stability, and productivity.

###### **4.1.1.2 Alternatives 2, 3, 4, and 5**

###### Direct and Indirect Effects

Effects would be similar to Alternative 1 with the potential for minor yet additional impacts associated with any new uses of Section I by the guided public. Since

any new areas (e.g. campsites, lunch spots, etc.) would be specifically proposed and analyzed in a separate, site-specific project analysis before becoming established, impacts to soils from any additional disturbance would likely be negligible.

#### **4.1.1.3 All Alternatives - Cumulative Effects**

Cumulative effects to soils may occur from other non-river users, such as hikers, campers, horse back riders, fisherman and their various modes of access to the river. These impacts would likely be negligible.

### **4.1.2 Water Resources**

#### **4.1.2.1 Fecal Coliform**

The primary fecal contamination issue is from a health and safety standpoint associated with water contact sports such as swimming. The river uses are contributing to the problem, but the extent of this contribution is not known.

The contamination of fecal material from the river use is difficult to estimate. It should be noted that during warm weather with moderate flow levels, the equivalent of 5-10 percent of the Chattooga watershed human population is floating and potentially disseminating human waste materials within the river corridor. Probably many river visitors use existing waste disposal facilities. However, signs of disposal of human waste within the dry portions of the stream channel, as well as within the floodplain or terrace are sometimes evident. The likelihood is high that some of the fecal material will find its way into the Chattooga River system. Storm events are connected to contaminant movement to the stream. Fecal coliform increases are well documented in association with storm events both in the Chattooga River and in streams that do not have the rafting uses. Hansen et al, 1998, discuss a summary of fecal problems and a variety of information sources relative to the Chattooga River, highlighting the past and ongoing fecal contamination associated with Stekoa Creek.

##### **4.1.2.1.1 Alternative 1 (No Action)**

#### Direct and Indirect Effects

Some background information is provided in the following section to clarify how the existing use fits in with the action alternatives being evaluated. The effects of existing self-guided, guided and clinic use levels and the forest plan direction are benchmarks by which to compare other alternatives. The assumption behind the comparisons is that as use increases, so will water quality, soil and riparian effects needed for monitoring and mitigation as use increases.

Currently, nearly 100,000 annual floating users are spread along most of the tributaries and the river. This situation constitutes a substantial potential and likelihood that there are some direct and indirect contributions to fecal coliform problems from these users.

Most of the time, direct fecal contributions from the river uses are probably minimal and associated with the rinsing of fecal contaminants from those swimming or otherwise immersed in the water. Indirect contributions from this activity occur relative to storm dislodgement and runoff from human waste contaminants. Current monitoring of water quality related to river use is inadequate to determine the location, duration and amount of contamination tied directly or indirectly to boating and associated water contact uses.

To summarize, under current management as described in alternative 1, we have limited data on water quality and a circumstance where the activity under analysis for change may have both some direct or indirect influence on existing water quality problems. Beyond that, the annual existing use levels are substantially below the potential use levels allowed under the forest plan. Therefore, as growth occurs, the potential for even greater water quality problems is higher with this activity. Monitoring information would be used to improve mitigation measures or, if necessary, reevaluate the decision following NEPA regulations.

### Cumulative Effects

In their report on the fecal coliform effects of Stekoa Creek upon the Chattooga River, Hansen et. al. (1998) summarize many of the past references and conditions associated with fecal coliform problems of the Chattooga River. Past problems that were identified stem from the waste treatment facility in Clayton, GA, and were assumed to come from cattle, septic systems, pets, wildlife and other dispersed potential sources within the watershed including public camping. In conducting this analysis, other data from the US Geologic Service from 1997 were evaluated, showing one or more storm periods on most tributaries have fecal contamination problems during storm events. The river uses and associated activities as swimming and camping are potential contributors to fecal contamination, but the extent is not specifically known. It is believed that the past fecal sources do not maintain viability for extend periods. However, many the same source activities of the past will continue in the present and future, and the associated contamination will occur if not identified and mitigated in some way.

The past water quality record is used as a basis for analyzing the current conditions. The fecal coliform information indicates that under certain circumstances, the water quality needed to support swimming and associated water contact sports is not present. Many conditions could be contributing to the on-again, off-again fecal contamination of portions of the river and contributing tributaries. Under some conditions, the Chattooga River and West Fork

Chattooga River are not suitable for swimming uses. The severity of these conditions also changes with location. The water quality problems generally coincide with storm events, but other circumstances may contribute to conditions that exceed the allowable water quality standards for swimming use.

Most septic and water treatment facilities used by the majority of the Chattooga human population of 15,400 (1990) are normally very effective at removal of fecal coliform. Failed sewer lines and septic systems can be suspect, but when properly managed and maintained, are unlikely to cause problems. Of special concern are the limited data that suggest that the Chattooga River, West Fork and Warwoman Creek are showing increased signs of fecal contamination during low flow periods, especially associated with storm events. Whetstone Creek also has fecal contamination problems that have been noted in reference materials. Areas of intensive use such as picnic sites and camping may show signs of fecal contamination if carefully monitored.

In comparison, the river activities may involve only 1,000 people in a day, but the activity involves access and close proximity to the river during the use. The river activities may contribute to fecal problems.

At this time, the data does not determine the sources of pollution. River uses are suspect along with livestock, beaver, wildlife, camping, communities and other potential sources. Streams with cattle access during hot summer days are especially likely to be contaminated since cattle reside for extended periods within the channel for water and shade. Storm runoff from other animal, pet and wildlife uses and industry are suspected as causing some of this problem. Other forest uses including camping, hiking, fishing, etc., that involve people temporarily residing on the landscape and especially near streams which may also contribute.

During non-storm conditions, Chattooga River sections I, II, III and the upper half of IV (i.e., above Stekoa Creek) normally have water quality suitable for swimming. However, during storms, fecal flushing often exceeds the water quality standard that supports swimming uses. Section I (West Fork Chattooga River) in 1997 has instances where the standard was exceeded by over an order of magnitude. Sections of the main stem of the Chattooga River are probably impacted at various times with excessive coliform levels.

Under frequent circumstances, Stekoa Creek greatly exceeds water quality standards for swimming. Stekoa Creek contains much of the watershed human population. The frequency of water quality problems in Stekoa Creek poses some ongoing degree of health risk after it combines with the lower half of Section IV of the Chattooga River. This is the section of the river where swimming limitations should be considered until the fecal records suggest the frequency and extent of contamination is greatly reduced.

Most of the main tributaries except the North Fork have occasional and substantial exceedances of the fecal coliform standard for swimming uses. Exceedances are primarily in association with storm events. These tributaries can produce localized contamination zones within the main stem of the Chattooga River below their confluence, until mixing and dilution occurs. Increased fecal coliform monitoring of conditions is needed to characterize the extent and duration of contamination within the river and main tributaries. Monitoring could help identify the specific problem reaches and recommended limitations for swimming activities. The effects of waste material improperly disposed of within the channel, floodplain and lower terrace can degrade both water quality and provide a health hazard.

To summarize, river uses, and particularly boating uses, have some measure of contribution toward the fecal contamination within the River, but the extent has not been fully determined. Connected uses that probably provide the most impact are the stops made for seeing sites, picnicking and camping. Other uses on and near the river that likely add to fecal contaminants include hiking, horseback riding, dispersed camping, fishing and developments. The timing of the contamination extent from the river uses is believed to be relatively short lived and contained primarily to storm events and associated flow periods.

As growth in the river uses occurs as projected, the likelihood is greater for fecal contamination and associated problems. Growth trends in Chattooga population and recreational uses also support continuing trends that fecal contamination may increase.

#### **4.1.2.1.2 Alternative 2**

##### Direct and Indirect Effects

Alternative 2 would allow a 20% increase in self-guided use annual maximum numbers which would be an overall 4% increase in potential use as compared to the current Forest Plan, as amended. Some increase in alternative floating methods are allowed to help meet this demand and growth for river floating experiences including allowing different types of crafts and moving some guided floating uses to sections that have more ideal floating conditions. There may be increased uses of channel and associated riparian conditions relative to these use changes, especially in sections I and II. There would be times during high water when all guided uses in section IV would move to and combine with section III uses, or alternatively move to section I or II. Under low water circumstances, the guided use in section IV takes on the normal use plus all of the guided use that normally would be in section III.

The types and extent of impacts are associated with increased daily and potential uses. The increased use of alternative types of crafts could have some effects as floating could occur during periods of high or low flow that may normally not

be undertaken. The impacts relative to these changes need to be monitored and mitigated.

The direct and indirect fecal contamination effects under alternative 2 would increase as use increases.

Most of the time, direct fecal contributions from the river uses are probably minimal and associated with the rinsing of fecal contaminants from those swimming or otherwise immersed in the water. Indirect contributions occur relative to storm dislodgement and runoff of contaminants that were deposited too close to streams and as a result may contribute to water quality contamination. Monitoring of water quality related to river use would be utilized to determine the location, duration and amount of contamination tied directly or indirectly to boating and associated water contact uses.

### Cumulative Effects

Past and present cumulative effects described in the No Action apply to this Alternative as well. River uses have some measure of contribution toward the fecal contamination within the River, but the extent cannot be determined without specific information. The connected uses that provide the most opportunity for impact are the stops made for seeing sites, picnicking and camping. These are the most likely times when fecal discharges could occur for guided and self-guided trips, but the timing of the contamination, location and extent is extremely difficult to determine. In general these sources of pollutants would not accumulate or extend contamination over long time periods. Contamination buildup from relatively short durations such as past days or months, rather than years, is expected to occur if storms do not flush these materials.

The connected uses that probably provide the most impact are the stops made for seeing sites, picnicking and camping. These are the most likely times when fecal discharges would occur, but the timing and location of the contamination is relatively difficult to determine, short lived and may be removed rapidly in storm events and associated flow periods. As growth in the river uses occurs as projected, the likelihood is greater for fecal contamination and associated problems.

#### **4.1.2.1.3 Alternative 3**

### Direct and Indirect Effects

The effects on water quality are the same as Alternative 2 with the following exceptions.

Some increase in guided uses may occur under specific circumstances due to increased opportunity to use a variety of watercraft and to change the floating

section to sections I and II during some high flow periods. With a proportionate greater increase in potential annual use (i.e., 10 percent increase over the forest plan benchmark and 5% over alternative 2 comparison) there would be a proportionate increase in fecal coliform contamination. The slight increase over the proposed action would not result in measurably different effects, but added monitoring and mitigation may be needed. The possible re-evaluation of the reservation system as the use in any day reaches the maximum numbers adds a control mechanism that would also trigger added monitoring, mitigation measures and review of conditions following the peak use.

#### Cumulative Effects

The additional use would slightly increase effects if the full potential use is achieved, but not add substantially in comparison to effects already described for alternative 2.

#### **4.1.2.1.4 Alternative 4**

#### Direct and Indirect Effects

The probable effects under this alternative are slightly higher impacts than the proposed action because of the increased flexibility and opportunity for guided use boating options with adjustments in the types and numbers of crafts, especially at low and high water conditions. The potential effects are the same as the total number of users is unchanged.

#### Cumulative Effects

The additional use would not add substantially to adverse cumulative effects already described for alternative 2.

#### **4.1.2.1.5 Alternative 5**

#### Direct and Indirect Effects

Some increase in guided uses may occur under specific circumstances due to increased opportunity to use a variety of watercraft and to change the floating section to sections I and II during some high flow periods. With a proportionate greater increase in potential annual use (i.e., 10 percent increase over the forest plan benchmark and 5% over alternative 2 comparison) there would be a proportionate increase in fecal coliform contamination, sedimentation and riparian impacts. The slight increase over the proposed action would not result in measurably different effects.

## Cumulative Effects

The additional use would slightly increase effects if the full potential use is achieved, but not add substantially in comparison to effects already described for alternative 2.

Alternative 5 is very similar to alternative 3, but is believe to be slightly higher in effects as the re-evaluation element present in alternation 3 would trigger a re-evaluation of the reservation system and probably other conditions if the maximum river use levels are reached in any day.

### **4.1.2.2 Sedimentation**

#### **4.1.2.2.1 Alternative 1 (No Action)**

##### Direct and Indirect Effects

Access and river use exposes and displaces some soil causing erosion and sedimentation to occur. Sites that are used for picnics, camping and/or boat “put-in” and “take-out” points have been identified on the ground and on maps (table provided previously) . Sites on the West Fork are somewhat more deteriorated than those on other sections of the river. Sites along the lower portion of section III and section IV receive the most use. In general, most sites are relatively small in size, stable and probably contribute some sediment, but nothing substantial. There may be localized aquatic habitats of concern that could be impacted.

##### Cumulative Effects

Past connected actions include the access points, picnic sites, camping locations, and trail locations along the river for portages that contribute to soil exposure, erosion and sedimentation. Most of these activities are located on relatively flat floodplains and terraces, so erosion and water quality effects are limited. Mitigation measures are used to limit effects before conditions get severe.

Cumulative actions of the past within the Chattooga Watershed include road and trail building, agricultural farming, residential and rural development, range, mining, logging, splash dams, skid trails and other soil disturbing activities that have contributed to erosion and sedimentation problems within the watershed. The effects of these activities and the associated erosion and sediment provide a lingering water quality problem for many streams within the watershed. The highly weathered and erosive soils and subsoil conditions contribute to not only the past, but also present and future erosion and sediment problems. Van Lear et al, 1995 provides a good summary of the sources and identified roads as one of the major causes of sedimentation within the Chattooga Watershed.

Present connected actions include the access points, associated roads, picnic sites, camping locations, and trail locations along the river for portages that contribute to soil exposure, erosion and sedimentation. Most of these activities are located on relatively flat floodplains and terraces, so erosion and water quality effects are limited. Most of the road access has improved drainage and surface armoring to help prevent erosion and sediment delivery to the streams. Mitigation measures are used with USFS activities to limit effects before conditions get severe. Cumulative actions ongoing within the Chattooga Watershed include some minimal road and trail building, road maintenance, farming, industrial, residential and rural development, range, logging, skid trails and other soil disturbing activities that contribute to erosion and sedimentation problems within the watershed. Most of current activities are within Best Management Practice (BMP) guidelines, so effects are generally minimized and mitigated. Some effects such as the excessive pulling of ditch drainages and lack of diversion of ditch water prior to stream entry contribute to sediment entry into streams. Excessive fine sandy materials in road surface aggregate mixes also has been identified as a problem on some roads.

In conclusion, the river use activity is probably only a minor contributor to the erosion and sedimentation issues within the Chattooga Watershed. However, instream sources of sediment may take decades or centuries to flush out.

#### **4.1.2.2.2 Alternative 2**

##### Direct and Indirect Effects

Access and river use exposes and displaces some soil, increasing the risk for erosion and sedimentation to occur. Increased use allowed is expected to increase potential for erosion and sediment, but effective mitigation measures would limit these effects. Problem areas would be “hardened” or designed to withstand the increased uses.

##### Cumulative Effects

Past connected actions include the access points, picnic sites, camping locations, and trail locations along the river for portages that contribute to soil exposure, erosion and sedimentation. Most of these activities are located on relatively flat floodplains and terraces, so erosion and water quality effects are limited. Cumulative actions of the past within the Chattooga Watershed continue to offer challenges including road and trail building, agricultural farming, industrial, residential and rural development, range, mining, logging, splash dams, skid trails and other soil disturbing activities that contribute to erosion and sedimentation problems within the watershed.

Present connected actions include the access points, picnic sites, camping locations, and trail locations along the river for portages that contribute to soil exposure, erosion and sedimentation. Most of these activities are located on relatively flat floodplains and terraces, so erosion and water quality effects are limited. Cumulative actions ongoing within the Chattooga Watershed include some minimal road and trail building, road maintenance, farming, residential and rural development, range, logging, skid trails and other soil disturbing activities that contribute to erosion and sedimentation problems within the watershed. Most of current activities are within Best Management Practice (BMP) guidelines, so effects are generally minimized and mitigated. Some effects such as the pulling of road ditches and lack of diversion of road and ditch drainage water prior to stream entry contribute to sediment entry into streams. Excessive fine sandy materials in road surface aggregate mixes also have been identified as a problem on some roads.

#### **4.1.2.2.3 Alternative 3**

Alternative 3 has potential effects somewhat higher than alternative 2, because it would allow for more growth in use, as compared to alternative 2. The potential river growth would include a 45% increase in annual self-guided users, resulting in an overall 10% increase in potential total river use in comparison to the forest plan levels allowed. Some increase in guided uses may occur under specific circumstances due to increased opportunity to use a variety of watercraft and to change the floating section to sections I and II during some high flow periods. The potential effects are somewhat higher than alternative 2 due to the increased potential for growth in use.

#### **4.1.2.2.4 Alternative 4**

Alternative 4 would have effects slightly higher, but similar to Alternative 2 associated with the same increases in self-guided limits, but with some more guided options that could also increase uses and the extent of impacts. This Alternative has less water quality effects than Alternative 3, because the potential uses are not as high.

#### **4.1.2.2.5 Alternative 5**

Alternative 5 has effects slightly higher, but similar to Alternative 3 as the same levels of increase of self-guided uses are allowed, but some added guided options that could also increase uses and the extent of impacts.

To summarize, the relative sediment effects of the action alternatives, from lower to higher are 2, 4, 3, and 5.

### 4.1.3 Riparian Resources

Relative to the proposed plan amendment 14, the effects to riparian areas would generally change as use levels increase. Assuming maximum allowed growth in river use, Alternative 1 with unrestricted use could ultimately produce infinite effects. The 5% increases in annual potential uses under Alternatives 2 and 4, and the 10% increase in total uses under Alternatives 3 and 5 suggests that potential effects would increase proportionately. Since the existing or actual use level is only about one-fourth of the potential use, the impacts from growth within the river corridor could become a major future issue to determine and evaluate. Limits of acceptable change need to be determined. The potential growth under any circumstances is so great compared to the existing use levels, that extent and magnitude of impacts are cannot be completely assessed. Monitoring and mitigation would be undertaken under any of the actions to assure that resources are properly managed and effects minimized and mitigated. Riparian resources in sections I and II would be increasingly effected by the added opportunities for use. Some of the effects due to the potential growth in use can be minimized by inventorying and mitigated by maintaining acceptable areas for access, picnic and camping uses, with waste facilities as appropriate.

There are some floodplain areas contained within the extent of riparian areas, but probably no wetlands. Most if not all of the riparian areas are well drained and do not develop wetland soil and plant communities. None of the activities being evaluated in this analysis would likely damage or limit the extent of floodplains. Some elements of EO 11988 concerning floodplains may be appropriate to consider if facilities are located within the floodplain portion of riparian areas and in protection of river and other uses by signing floodplain hazards either on the ground at camping or parking sites or by displaying flood hazard zone in river maps or other materials.

#### 4.1.3.1 Alternative 1 (No Action)

##### Direct and Indirect Effects

Access and river use exposes and displaces some soil, offering opportunity for causing erosion and impacts to riparian vegetation occurs. Sites that are used for picnics, camping and/or boat “put-in” and “take-out” points have been identified on the ground and on maps (table provided previously) . In general, sites on the West Fork are somewhat more deteriorated than those on other sections of the river. Sites along the lower portion of section III and section IV receive the most use and are most apt to deteriorate if adequate monitoring and mitigation do not occur. Most sites are relatively small, stable and are only a slight impact to riparian conditions overall. There may be localized aquatic habitats of concern that could be impacted by loss in vegetation due to heavy activity, but these problems are very localized.

## Cumulative Effects

Past connected actions include the access points, picnic sites, camping locations, and trail locations along the river for portages that contribute to soil exposure, site compaction, erosion and vegetation changes. Most of these activities are small and located on relatively flat floodplains and terraces, so water quality effects are limited. Mitigation measures are used to limit effects before conditions get severe. Due to limited monitoring, some conditions are not well known.

Cumulative actions to riparian areas of the past within the Chattooga Watershed include localized road and trail building, agricultural farming, residential and rural development, range, mining, logging, splash dams, skid trails and other soil disturbing activities that have contributed to erosion and riparian condition problems. The effects of these activities may constitute a lingering localized effect on the riparian habitat and water quality problem. Most of the riparian areas within the Chattooga watershed are forested with a low level of disturbance. The relatively flat riparian conditions tend to be forgiving if impacted, and in most cases stabilize and revegetate when the activity ceases.

Present connected actions include the access points, associated roads, picnic sites, camping locations, and trail locations along the river for portages that contribute to soil exposure, erosion, compaction and loss of or changes to riparian vegetation. Most of the intensive activities are located on relatively flat floodplains and terraces, so erosion and water quality effects are limited. Most of the road access has improved drainage and surface armoring to help prevent erosion and sediment delivery to the streams. Mitigation measures are used with USFS activities to limit effects before conditions get severe.

Cumulative ongoing actions within the Chattooga Watershed include some minimal road and trail building, road maintenance, farming, industrial, residential and rural development, range, logging, skid trails and other soil disturbing activities that contribute to localized erosion, sedimentation and vegetative cover changes within the riparian areas. Where current activities are within Best Management Practice (BMP) guidelines, effects are generally minimized and mitigated. Opportunities to reduce effects to riparian resources on private lands include providing a vegetated buffer and restricting intensive land use practices from the riparian areas.

In conclusion, the river use activity is probably only a minor contributor to the riparian issues within the Chattooga Watershed. Most of the riparian areas are forested, with minimal impacts from land uses. As problems are identified and cooperation with private landowners is increased, ongoing and continuing treatments with positive results are expected.

### 4.1.3.2 Alternative 2

#### Direct and Indirect Effects

Access and river uses exposes and displaces some soil, offering opportunity for erosion and sedimentation to occur. Riparian vegetation may be damaged or changed in some areas of concentrated use.

#### Cumulative Effects

Past connected actions include the access points, picnic sites, camping locations, and trail locations along the river for portages that contribute to soil exposure, compaction, erosion, sedimentation and vegetation changes. Most of these activities are located on relatively flat floodplains and terraces, so erosion and water quality effects are limited.

Cumulative actions of the past continue to offer challenges including road and trail maintenance, agricultural farming, residential and rural development, range, mining, logging, splash dams, skid trails and other soil disturbing activities that contribute to erosion and sedimentation problems within the riparian areas.

Present connected actions include the access points, picnic sites, camping locations, road and trail locations along the river for portages that contribute to soil exposure, compaction, erosion, sedimentation and vegetation change. Most of these activities are located on relatively flat floodplains and terraces, so water quality effects are limited, but still can develop into problems in the erosive soils if left unattended. Ongoing cumulative actions within the Chattooga riparian areas include some minimal road and trail building, road maintenance, farming, residential and rural development, range, logging, skid trails and other soil disturbing. Most of current activities are within Best Management Practice (BMP) guidelines, so effects are generally minimized and mitigated. Some effects such as the pulling of road ditches and lack of diversion of ditch water have localized impacts to riparian areas and streams. Areas of concentrated uses within riparian areas need regular evaluation and as needed, mitigation to reduce effects. .

Riparian development, farming and other activities continue to contribute disproportionately to fecal, sediment and habitat loss within the watershed. As increased BMPs are implemented into the future, the effects of these activities may eventually decrease. Increased land acquisition of riparian areas within the Chattooga watershed is also providing some benefits by restoring riparian areas to reduce the effects of more intensive management activities.

#### **4.1.3.3 Alternative 3**

Alternative 3 has potential riparian effects somewhat higher than Alternative 2, because it would allow for more growth in use. The potential river growth would include a 45% increase in annual self-guided users, resulting in an overall 10% increase in potential use in comparison to the forest plan levels allowed. Some increase in guided uses may occur under specific circumstances due to increased opportunity to use a variety of watercraft and to change the floating section to sections I and II during some high flow periods.

#### **4.1.3.4 Alternative 4**

Alternative 4 has riparian effects slightly higher, but similar effects to Alternative 2 associated with the same increases in self guided limits, but with some more guided options that could also increase uses and the extent of impacts. This Alternative has less water quality effects than Alternative 3, because the potential uses are not as high.

#### **4.1.3.5 Alternative 5**

Alternative 5 has effects slightly higher, but similar to Alternative 3 as the same levels of increase of self-guided uses are allowed, but some added guided options that could also increase uses and the extent of impacts.

To summarize, the relative riparian effects of the action alternatives, from lower to higher are 2, 4, 3, and 5.

## **BIOLOGICAL ENVIRONMENT**

### **4.2 THREATENED, ENDANGERED, AND SENSITIVE SPECIES**

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There would be no effect on any proposed or federally listed threatened or endangered species from the implementation of any of the alternatives associated with this environmental assessment.

This project may impact individuals of the sensitive mussels, the brook floater and yellow lance; but is not likely to cause a trend to federal listing or a loss of viability with a monitoring program that initiates mitigation measures if needed. The project area should be further inventoried to determine if there are other populations within the river. In addition, sediment input from use areas should be monitored to assess any sediment impacts on mussels from project implementation. Mussel populations should be monitored to assess any effects from the use of access areas close to known populations. If impacts increase,

mitigation measures would be implemented to reduce effects through erosion control and modification of use areas. Impacts to aquatic resources increase with the use of the river; therefore Alternatives 1, 2 and 4 would have the least impacts to sensitive aquatic species; with Alternative 3 having the most potential for impacts.

There would be no impact from the alternatives associated with this project on any other reviewed regionally listed sensitive species.

### 4.3 MANAGEMENT INDICATOR SPECIES (MIS) \_\_\_\_\_

As specified in the National Forest Management Act of 1982, the management indicator species (MIS) concept is used to address project and Forest Plan effects to biodiversity, as effects to wildlife and fish with commercial, recreational, or aesthetic values. A list of Sumter Forest MIS (identified through in the Sumter Land Management Plan of 1985) is included in Appendix C. The concept of MIS is to identify a few species that represent many other species and evaluate management direction through effects on habitat. The following Sumter and Chattahoochee Forest MIS have habitat in the proposed project area.

**TABLE 4-1. Management Indicator Species in the Chattooga River, Chattahoochee and Sumter National Forests**

<b>Management Indicator Species</b>	<b>Preferred Habitat Group</b>
Pileated Woodpecker (Both Forests)	Late Successional Hardwood Forest
White-eyed Vireo (Sumter NF)	Early Succession
Bobwhite Quail (Chattahoochee NF)	Early Succession
White-tailed Deer (Both Forests)	Early Succession
Ruffed Grouse (Chattahoochee NF)	Early Succession
Eastern King Snake (Sumter NF)	Open Savannas and Woodlands
Fraser’s Loosestrife (Sumter NF)	Open Savannas and Woodlands
Eastern Grey Squirrel (Both Forests)	Mixed Pine-Hardwood Forest
Eastern Wild Turkey (Both Forests)	Mixed Pine-Hardwood Forest
Black Bear (Chattahoochee NF)	Mixed Pine-Hardwood Forest
Small Whorled Pogonia (Sumter NF)	Mixed Mesic Forests
Mountain Camellia (Sumter NF)	Streamside Forests
Acadian Flycatcher (Chattahoochee NF)	Streamside Forests
Brown Trout (Both Forests)	Cold Water Streams
Rainbow Trout (Both Forests)	Cold Water Streams
Redeye Bass (Both Forests)	Cool Water Streams
Redbreast Sunfish (Sumter NF)	Cool Water Streams
Striped Jumprock (Sumter NF)	Cool Water Streams
Turquoise Darter (Chattahoochee NF)	Cool Water Streams
Yellowfin Shiner (Chattahoochee NF)	Cool Water Streams

## Direct Effects

Direct effects include effects above and beyond the No-Action Alternative (current management), predicted to impact species directly. For example, direct impacts could include the crushing or displacement of individuals which may be associated with increased use (self-guided boaters) allowed under Alternatives 2, 3, 4, and 5; the initiation of inflatable raft trips on Sections 1 and 2; and changes in the types of allowable crafts, sections floated at low water, and group size limitations. Increased use is predicted not only on the river itself, but also at the numerous put-in, take-out, lunch sites, and primitive campgrounds identified for the area.

Several wildlife species occur as transients within the Chattooga Corridor and could be displaced by the increased use predicted under the action alternatives. These include white-tailed deer, eastern king snake, black bear, Eastern grey squirrel, and birds such as Eastern wild turkey, pileated woodpecker, white-eyed vireo, bobwhite quail, ruffed grouse, and acadian flycatcher. This direct negative effect would be very small compared to current use (the No-Action Alternative), and would be greatest under Alternatives 3 and 5 followed by Alternatives 2 and 4.

The MIS plants, small whorled pogonia, fraser's loosestrife, and mountain camellia, should they occur adjacent to put-ins, take-outs, lunch spots, or campgrounds, could be crushed if users ventured off the existing trails, put-ins/take-outs, lunch spots, campsites, and paths but this is unlikely. Several populations of fraser's loosestrife are known to occur off-trail in the disturbance zone associated with the Chattooga River.

Habitat within the project area for aquatic MIS exists for brown trout (*Salmo trutta*), rainbow trout (*Onchorynchus mykiss*), redeye bass (*Micropterus coosae*), redbreast sunfish (*Lepomis auritus*), striped jumprock (*Moxostoma rupriscartes*), yellowfin shiner (*Notropis lutipinnis*) and turquoise darter (*Etheostoma inscriptum*). All of these species are known to occur in the main channel of the Chattooga River upstream the project area (Durniak 1989). Alternatives 2-5 have the potential of increasing the use of river access points, stopping points and campsite areas beyond what would normally occur under Alternative 1. This in turn could increase river sediment loads. Direct mortality to embryos and sac fry may occur from sediments that enter spawning beds (Waters 1995). Behavioral avoidance and dispersion by adults may occur during high use periods, but should not affect populations.

The river has good flushing capabilities in riffle areas during high velocity flows (Adkins 1995), but river gradient decreases within the project area resulting in pool deposition of fine sediments (Van Lear et. al. 1995). The potential for increased sediment loads can be minimized through the rehabilitation and maintenance of streamside use areas by defining those areas to foot traffic and

stabilizing stream banks. Sediment monitoring should be implemented to identify problem areas.

Alternatives 1, 2 and 4 would have the least impacts to aquatic species and Alternative 3 has the most potential for impacts. Alternative 5 would have greater impacts than Alternatives 1, 2 and 4 but less impacts than Alternative 3.

### Indirect Effects

Indirect effects are effects to habitats for MIS using the preferred habitat groups as identified in the Francis Marion & Sumter NF MIS Report (August 20, 2001) and displayed above. The terrestrial habitats include early succession, late successional hardwood forests, mixed mesic forests, open savannas and woodlands, mixed pine-hardwood forests, and streamside forests.

Since no vegetation management is being proposed under any of the action alternatives, it is predicted that there would be no or few indirect effects to terrestrial MIS habitat under any of the alternatives. A small chance for modification of existing vegetation could occur if users were to repeatedly venture off of designated trails, lunch stops, put-ins, take-outs, and campsites but this is unlikely.

Indirect effects to aquatic MIS from sediment deposits include the reduction of suitable spawning and rearing habitat and a reduced food base. These factors would influence the reproductive success of the fish species (Waters 1995).

The redeye bass and the turquoise darter are potential host fishes to a mussel species in the river project area (Adkins 1995). Declines in a host fish population may result in decreased reproduction success of mussel populations.

Alternatives 1, 2 and 4 would have the least impacts to aquatic species and Alternative 3 has the most potential for impacts. Alternative 5 would have greater impacts than Alternatives 1, 2 and 4 but less impacts than Alternative 3.

### Cumulative Effects

Cumulative effects take into account the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Results based on analysis conducted in association with the Forest-wide MIS report (2001) are summarized in Appendix D. This analysis suggests that populations and habitat are stable on the Andrew Pickens Ranger district for white-tailed deer, pileated woodpecker, Eastern gray squirrel, Eastern wild turkey, and mountain camelia. Populations for white-eyed vireo and small whorled pogonia are declining on the Andrew Pickens, and populations are thought to be stable for eastern king snake. Populations for eastern king snake are difficult to measure, but are thought to be stable Forestwide, and habitat is stable.

Twenty-one occurrences for Fraser's loosestrife occur on the district, including approximately 1375 plants in 1999. Of these, 71% occur in disturbance zones associated with roads or trails, and 24% occur along the Chattooga River. Populations are generally stable to increasing at this time.

On the Chattahoochee NF, black bear has shown population increases over the past 20 years and is now showing signs of stabilizing. The population is very healthy and viability is not a concern. Ruffed grouse has exhibited recent population declines within the Georgia mountain areas, but it is still considered to have a viable population within the project area. The proposed project would not have any direct or indirect effect on the ruffed grouse or its preferred habitat within the Chattahoochee National Forest. Bobwhite quail, as a result of declining early successional habitat, have also experienced a decline throughout the Southern Appalachian Region. This upland bird is still a game species in Georgia, which means viability is not of a concern at this time. The proposed project should have no effect on this MIS or its preferred habitat.

Acadian flycatcher is relatively stable on the Chattahoochee National Forest and acres of its preferred habitat (riparian zones) is expected to remain constant over time, due to protection measures that are in place. This protection around all water areas should ensure the viability of this species.

Since direct and indirect effects of the action alternatives are negligible for the terrestrial species addressed, there are no cumulative project effects to terrestrial MIS species predicted under any of the alternatives proposed. Few projects have affected terrestrial habitats within the Chattooga River Corridor, since the Chattooga was designated as a federal Wild and Scenic River. It is concluded following this analysis that there would be no effects to all other terrestrial MIS or associated habitat under any of the alternatives proposed within the Chattooga River Forest Plan Amendment proposal of 2001.

Direct and indirect effects to aquatic MIS within the project area have the potential to affect species year classes through reduced reproductive success. This should not affect upstream populations and the aquatic MIS are considered stable across their range. Yellowfin shiner and turquoise darter occur in the Savannah drainage and both are common within the upper drainage streams that run clear and cool. Water quality is being maintained in the watersheds where these species occur (Chattooga) and therefore, persistence is not a concern.

Alternatives 1, 2 and 4 would have the least impacts to aquatic species and Alternative 3 has the most potential for impacts. Alternative 5 would have greater impacts than Alternatives 1, 2 and 4 but less impacts than Alternative 3.

## SOCIAL ENVIRONMENT

### 4.4 HERITAGE RESOURCES ---

#### 4.4.1 Alternative 1

Continuation of the current uses would have no direct, indirect, or cumulative effects to cultural resources.

#### 4.4.2 Alternatives 2, 3, 4, and 5

The changes in boating use proposed under these alternatives would have no foreseeable effects on cultural resources. No new river use sites are planned. Proposed uses under these alternatives are similar to current uses which are having no effects. There were no heritage resources identified at the use points which could be affected by heavier or long-term use.

### 4.5 RECREATION ---

*See Appendix E, Social Effects Comparison Table for additional information.*

#### 4.5.1 Remoteness and Solitude

Assumptions across all alternatives: the South has a high rate of population growth, “normal” rainfall patterns ensue, and the economy is stable. All other things equal, both guided and self-guided boating use will increase on the river.

##### 4.5.1.1 Alternative 1 – No Action

##### 4.5.1.1.1 Guided Inflatable Use

###### Section I and II

There would be **little to no effect on solitude** from guided inflatable use in Sections I and II since this use is not permitted in these sections except in Section II at very high water.

###### Section III and IV

Guided inflatable use is expected to increase by moving actual use closer to Forest Plan allocations during high use days (Memorial Day to Labor Day), and also by filling some of the “shoulder” days outside the high use season (traditionally lower use days). Increased use during high use season days is not

expected to substantially increase number of trips per day, but simply fill existing trips more fully. Therefore, the **biggest impact to solitude for other groups coming into contact with guided inflatables is expected to be on the “shoulder” days.**

#### **4.5.1.1.2 Guided Hardboat Use**

##### Section I, II and III

Guided hardboat use is expected to increase within existing allocations, but still remain a very small part of the overall boating use on the river. **Negligible impact to solitude experiences are expected.**

##### Section IV

There is no guided hardboat use in Section IV under this Alternative. Negligible impacts to solitude are expected.

#### **4.5.1.1.3 Self-Guided Use**

##### Sections I-IV

Use is expected to increase in all sections, but especially between 10 AM and 2 PM on weekends and holidays in Sections III and IV. Use during these high use times would continue to expand, further diminishing opportunities for solitude. There would likely be some self-regulation with some boaters shifting out of high use days (and times) to “shoulder” days to experience more solitude, and consequently diminishing solitude on those “shoulder” days.

#### **4.5.1.1.4 Shuttles**

Demand for shuttle services (from one provider) is expected to increase on all sections of the river. This in-an-of-itself (beyond self-guided boater effects) is expected to diminish opportunities to experience solitude. This is because use that otherwise might not occur could be facilitated through a shuttle service.

### **4.5.1.2 Alternative 2 – Proposed Action**

#### **4.5.1.2.1 Guided Inflatable Use**

##### Section I and II

Under this Alternative, the opportunity exists to shift Section III and IV trips into Sections I or II. These shifts are not expected to occur very often, and are consequently not expected to have an impact on solitude. **Impacts to solitude are therefore expected to be very close to Alternative 1.**

If the shifting were to become a regular practice (something that is not expected), then opportunities for solitude in Sections I and/or II might suffer, but correspondingly, opportunities in Section III and/or IV would improve.

### Section III and IV

Increased flexibility to use up to 12 craft (including inflatable kayaks) during certain conditions, and the ability to exceed 30 clients per trip (without exceeding daily totals) is expected to move guided inflatable use closer to Forest Plan allocations on high use days, and fill shoulder days (traditionally lower use days) more than in Alternative 1. As in Alternative 1, increased use during high use season days is not expected to substantially increase number of trips per day, but simply fill existing trips more fully. So once again, the biggest impact to solitude for other groups coming in contact with guided inflatables is expected to be on the “shoulder” days. **Impacts to solitude are expected to be higher than Alternative 1 due to increased flexibilities** (all within existing allocations).

On the other hand, guided inflatable trips are expected to remain longer in Section III at low water due to these same increased flexibilities, reducing the impacts of Plan B on solitude experiences in Section IV during low water. **In this case, impacts to solitude in Section IV low water are expected to be less than in Alternative I.**

The potential also exists that daily allocations could be met earlier in the day (most likely outside the high-use days) due to the flexibility to exceed 30 clients per trip resulting in fewer boats per day, perhaps even fewer trips per day on some days.

#### **4.5.1.2.2 Guided Hardboat Use**

### Section I, II and III

As in Alternative 1, guided hardboat use is expected to increase within existing allocations, but still remain a very small part of the overall boating use on the river. Number of trips, and consequently, **impacts to solitude, are expected to be higher than in Alternative 1** (because of the increased flexibility of using up to two inflatable kayaks per trip), **but still negligible when compared to overall guided boating use on the river.**

### Section IV

The ability to schedule a hardboat trip in Section IV in place of a scheduled Section IV guided inflatable trip is **not expected to have any impacts on solitude – same as Alternative 1.** This is because this trip would simply replace an existing inflatable trip.

A positive and negative in the context of solitude is that hardboat trips can service a maximum of 24 people versus 40 in a guided inflatable trip – a positive if the number of boaters is the measure, but can use 12 craft instead of 7 (with the 3 trip/day exception for guided inflatables when they are allowed to use 12 craft) – a negative.

#### **4.5.1.2.3 Self-Guided Use**

##### Sections I-IV

Effects on solitude would progress the same as in Alternative 1 until use levels reach the “triggers.” At that point, self-guided use reservations would be phased in on weekends and/or weekdays in Section III and/or IV, but only during the high use season (April 1 - August 31).

In addition to capping use on certain days, use allocations are expected to shift self-guided boaters out of the high use, “regulated” days into the “unregulated” shoulder days (traditionally lower use days). Increased controls in-and-of-themselves would shift people out of the “regulated” times, at least until controls become part of the culture. Some boaters may be displaced to other rivers that are not regulated.

All in all (***if triggers are reached***), impacts on the solitude experience are expected to be less than Alternative 1 for the high use/regulated days (Sections III and/or IV), but higher than Alternative 1 for the shoulder/unregulated days (Sections I-IV) during the April 1 to August 31<sup>st</sup> window.

#### **4.5.1.2.4 Shuttles**

Demand for shuttle services (from more than one provider) is expected to be higher than Alternative 1 (one provider) because of the expected increase in competition and marketing among the providers (the underlying assumption here is that enough of a market exists or is generated to support more than one shuttle service). ***Therefore, there would be more negative impacts on solitude than in Alternative 1.***

#### **4.5.1.3 Alternative 3**

##### **4.5.1.3.1 Guided Inflatable Use**

##### Section I and II

Under this alternative the opportunity exists to shift Section III and IV trips into Sections I or II. These shifts are expected to occur even less frequently than in Alternative 2, and consequently have less impact on solitude. This is because

the option to increase craft number to 12 is not available under this alternative, allowing less flexibility for boaters to experience the river, and therefore less demand. **Impacts on solitude are closer to Alternative 1 than 2.**

If the shifting were to become a regular practice (something that is not expected), then opportunities for solitude in Sections I and/or II might suffer, but correspondingly, opportunities in Section III and/or IV would improve.

#### Section III and IV

Flexibilities to exceed 30 clients per trip (without exceeding daily totals) and use up to 12 craft on Section III low water trips is expected to impact solitude similarly to Alternative 2, and for the same reasons. However, since the flexibility to use up to 12 craft on 3 trips per day (at water levels above 1 foot at the Highway 76 gauge) is not available under this alternative, **impacts to solitude on “shoulder” days are expected to be less than in Alternative 2, but higher than Alternative 1** (all within existing allocations) - this is because there is now less flexibility and opportunities than in Alternative 2 for guided inflatable boaters to experience the river, and therefore less demand.

Since Plan B is cancelled under this Alternative, opportunities for solitude would be improved in Section IV but potentially diminished in Section III at low water times. **In this case, opportunities to experience solitude in Section IV low water are the best of all the Alternatives.**

#### **4.5.1.3.2 Guided Hardboat Use**

##### Section I, II and III

As in Alternative 1, guided hardboat use is expected to increase within existing allocations, but still remain a very small part of the overall boating use on the river. Number of trips, and consequently, **impacts to solitude, are expected to be higher than in Alternative 1** (because of the increased flexibility of using up to two inflatable kayaks per trip) **and the same as Alternative 2, but still negligible when compared to overall guided boating use on the river.**

##### Section IV

The ability to schedule a hardboat trip in Section IV in place of a scheduled Section IV guided inflatable trip is **not expected to have any impacts on solitude – same as Alternative 1 and 2.** This is because this trip would simply replace an existing inflatable trip.

A positive and negative in the context of solitude is that hardboat trips can service a maximum of 24 people versus 40 in a guided inflatable trip – a positive,

but can use 12 craft instead of 7 (with the 3 trip/day exception for guided inflatables when they are allowed to use 12 craft) – a negative.

#### **4.5.1.3.3 Self-Guided Use**

##### Sections I-IV

Effects on solitude would progress the same as in Alternative 1 until use levels reach the “triggers.” At that point, self-guided use allocations would be phased in on weekends and/or weekdays in Section III and/or IV, but only during the high use season (April 1 - August 31). Reaching the triggers would take longer than in Alternative 2.

In addition to capping use on certain days, use allocations are expected to shift self-guided boaters out of the high use, “regulated” days into the “unregulated” shoulder days (traditionally lower use days). Increased controls in-and-of-themselves would shift people out of the “regulated” times, at least until controls become part of the culture. Some boaters would be displaced to other rivers that are not regulated.

All in all (***if triggers are reached***), opportunities to experience solitude are expected to be better than Alternative 1, but not as good as Alternative 2 (***because of the higher use “triggers,” and weekday holidays equated with weekends***) for the high use/regulated days during the April 1 to August 31<sup>st</sup> window (Sections III and/or IV).

On the other hand, impacts to solitude are expected to be greater than Alternative 1, but less than Alternative 2, for the shoulder/unregulated days during the April 1 to August 31<sup>st</sup> window (Sections I-IV). ***This is because the higher use allocation is not expected to displace boaters to the shoulder days as much as the lower use allocations would in Alternative 2.***

#### **4.5.1.3.4 Shuttles**

Demand for shuttle services (from a maximum of two providers) is expected to be higher than Alternative 1 (one provider) because of competition and marketing, and similar to Alternative 2 (before “triggers”). However, until the “triggers” are activated and shuttle services are restricted to 30% of the allocation, the ability to offer these services to the public could be hampered by economics and less shuttling opportunities would be available.

#### 4.5.1.4 Alternative 4

##### 4.5.1.4.1 Guided Inflatable Use

###### Section I and II

Under this alternative the opportunity exists to shift Section III and IV trips into Sections I or II. These shifts are not expected to occur very often, and are consequently not expected to have an impact on solitude. **Impacts to solitude are therefore expected to be slight.**

If the shifting were to become a regular practice (something that is not expected), then opportunities for solitude in Sections I and/or II might suffer, but correspondingly, opportunities in Section III and/or IV would improve.

###### Section III and IV

This alternative provides the highest flexibility to use up to 12 craft (including inflatable kayaks), in addition to the ability to exceed 30 clients per trip (without exceeding daily totals). Because of this greater flexibility, **impacts to solitude on “shoulder” days are expected to be the highest of all the Alternatives** (all within existing allocations). This is because this alternative provides the greatest flexibility and opportunities for guided inflatable boaters to experience the river, and therefore demand is expected to increase.

As in earlier Alternatives, guided inflatable trips are expected to remain longer in Section III at low water due to increased flexibilities, reducing the impacts of Plan B on solitude experiences in Section IV during low water. **In this case, impacts to solitude in Section IV low water are expected to be less than Alternative 1, and the same as Alternative 2.**

##### 4.5.1.4.2 Guided Hardboat Use

###### Section I, II and III

As in Alternative 1, guided hardboat use is expected to increase within existing allocations, but still remain a very small part of the overall boating use on the river. Number of trips, and consequently, **impacts to solitude, are expected to be higher than in Alternative 1, and the same as Alternatives 2 and 3** (because of the increased flexibility of using up to two inflatable kayaks per trip), **but still negligible when compared to overall guided boating use on the river.**

## Section IV

The ability to schedule a hardboat trip in Section IV in place of a scheduled Section IV guided inflatable trip is ***not expected to have any impacts on solitude – same as Alternative 1***. This is because this trip would simply replace an existing inflatable trip.

A positive and negative in the context of solitude is that hardboat trips can service a maximum of 24 people versus 40 in a guided inflatable trip – a positive, but can use 12 craft instead of 7 (with the 3 trip/day exception for guided inflatables when they are allowed to use 12 craft) – a negative.

### **4.5.1.4.3 Self-Guided Use**

#### Sections I-IV

Effects on solitude are the same as in Alternative 2. The 2-year requirement for reservations may delay achieving the levels of solitude desired for several years.

### **4.5.1.4.4 Shuttles**

Effects on solitude are the same as in Alternative 3.

### **4.5.1.5 Alternative 5**

#### **4.5.1.5.1 Guided Inflatable Use**

#### Section I and II

Effects on solitude are the same as in Alternative 4, which is expected to be very close to Alternative 1.

#### Section III and IV

Effects on solitude are the same as in Alternative 4.

### **4.5.1.5.2 Guided Hardboat Use**

#### Section I, II and III

Effects on solitude are the same as in Alternative 4.

#### Section IV

Effects on solitude are the same as in Alternative 4.

#### **4.5.1.5.3 Self-Guided Use**

##### Sections I-IV

Effects on solitude are the same as in Alternative 3.

#### **4.5.1.5.4 Shuttles**

Effects on solitude are the same as in Alternative 3.

### **Non-boating Users**

Non-boating use along the river would continue to increase, especially at hot spots like Bull Sluice in Section III, Woodall Shoals in Section IV, and others. ***Opportunities to experience solitude at these discrete locations would diminish.***

##### Cumulative Effects

Known future actions include a 1-mile relocation of Rocky Gap horse Trail, and the reconstruction of Highway 28 and Highway 76 Bridges. The relocation of the horse trail would increase solitude in Section II by moving riders farther from the river. The reconstruction of the bridges would cause a short-term, localized impact to solitude.

Overall, as recreational use increases, including hikers, anglers, boaters, and sightseers, solitude would be diminished where these user groups interact.

### Comparison of Alternatives

Effects on the opportunity to experience Solitude

		ALT 1	ALT 2	ALT 3	ALT 4	ALT 5
Guided Inflatable	<b>Sections I &amp; II</b>	1	2	2	2	2
	<b>Sections III &amp; IV</b>	1	2	1.5	3	3
	<b>Section IV Low water</b>	3	2	1	2	2
Guided Hardboat	<b>Sections I, II, &amp; III</b>	1	2	2	2	2
	<b>Section IV</b>	1	1	1	1	1
Self Guided	<b>Sections I-IV High Use days</b>	3	2	2.5	2	2.5
	<b>Sections I-IV “Shoulder” days</b>	1	2	1.5	2	1.5
	<b>Shuttles</b>	2	3	3	3	3
	<b>Shuttles after “triggers”</b>	N/A	3	1	3	1
Non-boating users		Same for all				

**Note:** Effects on solitude are rated from 1 to 3. “1” represents the least impacts to solitude while “3” represents the most impacts to solitude (where opportunities to experience solitude are most difficult) of the alternatives analyzed. These are relative ratings and can only be compared within corresponding rows.

## 4.5.2 Scenery

### 4.5.2.1 Alternative 1

#### Direct and indirect

All river users would continue to see natural settings (vegetation, rocks, riverbanks) in all of the wild, scenic and recreational settings on the Chattooga Wild and Scenic River. There may be additional visual impacts as self-guided use continues to increase. Indirect effects of additional use may include increased litter, trampling of the understory vegetation, human waste, and burning of downed wood at isolated locations such as campgrounds and lunch stops. These effects would tend to be in Sections III and Section IV, where the majority of the self-guided use takes place. These effects also are greater on holidays since these days currently have no limits.

The VQO would remain Retention in the wild and scenic sections and Partial Retention in the recreation sections. Overall, the visual resources remain

unchanged for all alternatives and visual qualities remain visually remarkable, an outstandingly remarkable value that was acknowledged at designation.

### Cumulative

Known future actions include a 1-mile relocation of Rocky Gap horse trail, reconstruction of Highway 28 Bridge and Highway 76 Bridge. The relocation of the horse trail would not impact scenery, but the reconstruction of the bridges and the trail would cause a short-term, localized impact to scenery. Considering these activities, there are no current or foreseeable activities that would cause any cumulative effects to scenery in any section.

#### **4.5.2.2 Alternatives 2, 3, 4, and 5**

### Direct and indirect

All river users would continue to see natural settings (vegetation, rocks, riverbanks) in all of the wild, scenic and recreational settings on the Chattooga Wild and Scenic River. There may be some visual impacts as self-guided use is limited to numbers between 175 and 200 boaters per weekend day and 125 per weekday, depending on the alternative. Indirect effects of additional use may include litter, trampling of the understory vegetation, human waste, and burning downed wood at isolated locations such as campgrounds and lunch stops. These effects would tend to be in Sections III and Section IV, where the majority of the self-guided use takes place.

The VQO would remain Retention in the wild and scenic sections and Partial Retention in the recreation sections. Overall, the visual resources remain unchanged for all alternatives and visual qualities remain visually remarkable, an outstandingly remarkable value that was acknowledged at designation.

### Cumulative

Known future actions include a 1-mile relocation of Rocky Gap horse trail, reconstruction of Highway 28 Bridge and Highway 76 Bridge. The relocation of the horse trail would not impact scenery, but the reconstruction of the bridges and the trail would cause a short-term, localized impact to scenery. Considering these activities, there are no current or foreseeable activities that would cause any cumulative effects to scenery in any section.

### 4.5.3 Challenge, Adventure, and Self-Reliance

#### 4.5.3.1 Alternative 1

##### Direct and indirect

Guided inflatable users have some sense of challenge, adventure and self-reliance, especially at higher water levels on Sections III and IV. They also rely on skilled river guides for instruction on rafting and safety. This dependence on river guides make the experience less self-reliant than self-guided boaters. There is no guided inflatable use in Sections I and II except at very high water in this alternative therefore no possibility to experience challenge, adventure or self-reliance on these sections of the river. Guided hardboat users in this section experience some challenge, risk and self-reliance especially at higher water levels.

Self-guided users have a sense of adventure, challenge and self-reliance on Sections II, III and IV. In Section I, the West Fork, self-guided boaters have somewhat less opportunity for self-reliance because of human improvements (such as roads that parallel the road). Typically (in most sections of the river) the self-guided user has a greater potential for challenge, adventure and self-reliance than the guided user because it is left up to that individual to assess his/her skills and make the correct decisions regarding a multitude of things. These decisions range from which sections to boat to which line to take to where to portage their craft. This person must apply learned boating skills in an environment that offers challenge and self-reliance. The self-guided boater experiences self-testing, risk-taking and a sense of adventure. The self-guided boaters can experience any section of the river, any day of the year, at any time of the day which leads to a greater sense of adventure. They do not have to pre-register for any trip and there are effectively no limits on any section of the river. (Most self-guided boaters, over 70%, plan their trip less than a month in advance, with 40% of those planning less than a week in advance.) This enhances the challenge, adventure and self-reliance by being able to make the decisions a few days before or the day of the trip depending on the water level of the river.

##### Cumulative

There are no cumulative impacts from current direction based on allowing use over time to increase for self-guided users and remain on a regulated amount of guided inflatable users.

### 4.5.3.2 Alternatives 2, 3, 4, and 5

#### Direct and indirect

Guided inflatable users would likely have additional opportunities for challenge, adventure and self-reliance due to the ability to utilize inflatable kayaks on guided raft trips. This would be less under Alternative 3 because they would not be permitted in Section IV. They can also experience Sections I and II, which can add to their sense of adventure giving them additional opportunities to experience different sections of the river. Guided hardboat trips in Section IV would also provide additional opportunities for challenge, adventure, and self-reliance.

Self-guided users have a sense of adventure, challenge and self-reliance on Sections II, III and IV. In Section I, the West Fork, self-guided boaters have somewhat less opportunity for self-reliance because of human improvements (such as roads that parallel the river). Typically (in most river sections) the self-guided user has a greater potential for challenge, adventure and self-reliance than the guided user because it is left up to that individual to assess his/her skills and make the correct decisions regarding a multitude of things. These decisions range from which line to take to their kayak through to where to portage. This person must apply learned boating skills in an environment that offers challenge and self-reliance. The self-guided boater experiences self-testing and risk-taking. One major difference in effects between these alternatives and Alternative 1 is the possibility in the future for self-guided users to have to register for certain trips on certain sections. The self-guided boaters would not be able to experience any section of the river, any day of the year, at any time of the day in all of these alternatives. This detracts from the challenge, adventure and self-reliance because some decisions (like which section to run) must be made days, weeks or months before depending on the water level of the river. There would be little to no effect on their experiences in Sections I or II since this proposal does not change any management actions in those sections for self-guided. There would be no direct or indirect effects on the ROS experiences.

Other users such as hikers, horseback riders and anglers experience self-reliance challenge and adventure on most sections of the river. There are trails that parallel the river for stretches of each section. Self-testing and risk-taking are important for self-development and a sense of accomplishment. Human improvements are few as comfort and satisfaction become dependant on personal ability and outdoor skills. Signage and managerial controls are limited and a sense of adventure is very important. In section I, there is less opportunity for self-reliance through the application of outdoor skills but practice and testing of skills might be important. Human improvements (such as a road that runs parallel to the river for a while) are more convenient detracting somewhat from a sense of adventure.

Cumulative

There are no cumulative impacts on the challenge, adventure, or self-reliance as described by ROS.

**4.5.4 Differences in Allocations**

There are only changes being proposed to the Self-Guided allocations, and those changes vary by alternatives. No changes in guided allocations are being proposed. The following tables summarize these allocations by alternative.

**4.5.4.1 Self-Guided Allocations by Alternative**

	<b>Alternative 1 No Action (Existing Condition)</b>	<b>Alternative 2 Proposed Action</b>	<b>Alternative 3</b>	<b>Alternative 4</b>	<b>Alternative 5</b>
Section III at all water levels and year-round	Unlimited due to Non-enforcement	175 per weekend <sup>1</sup> , 125/weekday	200 per weekend/holiday, 125/weekday	175 per weekend/holiday, 125/weekday	200 per weekend/holiday, 125/weekday
		Hourly capacities dropped			
Section IV at all water levels and year-round	Unlimited due to Non-enforcement	160 per weekend <sup>1</sup> , 75/weekday	200 per weekend/holiday, 125/weekday	160 per weekend/holiday, 75/weekday	200 per weekend/holiday, 125/weekday
		Hourly capacities dropped			

<sup>1</sup>Holidays are considered the same as the day they fall on (i.e. a holiday on a Monday is a weekday trip and a holiday on Saturday is a weekend trip).

**4.5.4.2 Guided Raft Allocations by Alternative**

Section III trips launch as far upstream as Earls Ford and take out as far downstream as Woodall Shoals, unless otherwise noted. Section IV trips launch as far upstream as Highway 76 and takeout as far downstream as Lake Tugaloo, unless otherwise noted. Thus, Section III and IV trips may overlap between Highway 76 and Woodall Shoals.

<b>GUIDED RAFTING ALLOCATIONS</b>					
<b>SECTION III</b>					
<b>ALL ALTERNATIVES</b>					
<b>Water Levels</b>	<b>Capacity Permitted</b>	<b>May – September</b>		<b>October - April</b>	
		<b>Weekdays</b>	<b>Weekends*</b>	<b>Weekdays</b>	<b>Weekends*</b>
Low	Trips/day	0	0	0	0
	People/day+	0	0	0	0
Moderate	Trips/day	7	4	7	4
	People/day+	280	160	280	160
High	Trips/day	7	4	7	4
	People/day+	280	160	280	160
Very High Denominator indicates number of trips permitted to launch from Hwy 28 with take-out at Earls or Sandy Ford	Trips/day	13/3	8/3	13/3	9/3
	People/day+	520	320	520	360

\* Includes Holidays

+ Includes Guides

<b>GUIDED RAFTING ALLOCATIONS</b>					
<b>SECTION IV</b>					
<b>ALL ALTERNATIVES</b>					
<b>Water Levels</b>	<b>Capacity Permitted</b>	<b>May – September</b>		<b>October - April</b>	
		<b>Weekdays</b>	<b>Weekends*</b>	<b>Weekdays</b>	<b>Weekends*</b>
Low Denominator indicates portion of trips allowed in Five Falls	Trips/day	9/6	8/4	9/6	9/5
	People/day+	360	320	360	360
Moderate	Trips/day	6	4	6	5
	People/day+	240	160	240	200
High These trips may put in at Thrift's Ferry but not run 5 Falls	Trips/day	6	4	6	5
	People/day+	240	160	240	200
Very High	Trips/day	0	0	0	0
	People/day+	0	0	0	0

\* Includes Holidays

+ Includes Guides

GUIDED HARDBOAT ALLOCATIONS ALL ALTERNATIVES			
Day of the Week	Capacity Permitted	River Section	
		I/II	III
Weekdays	Trips/week	20	28
	Trips/day	6	7
Weekends	Trips/day	2	

### 4.5.5 Convenience, Spontaneity, and Reliability

#### 4.5.5.1 Alternative 1

Direct, Indirect, and Cumulative

**Self-Guided Use**

If water levels are consistently favorable in the future, the only effects on convenience, spontaneity, and/or reliability would be decreased availability of adequate transportation or parking. A single shuttle operation could result in services not always being available when needed.

**Guided Use**

If low water conditions continue and demand remains about the same, the need to reschedule or cancel reservations would likely continue as well. If water levels improve greatly and if demand increases as a result, holidays and weekends especially could continue to fill up more quickly.

#### 4.5.5.2 Alternatives 2 and 4

Direct, Indirect, and Cumulative

**Self-Guided Use**

If water levels are consistently favorable in the future, the availability of adequate parking would likely be decreased. Should reservations become necessary, spontaneity and convenience would be negatively impacted during those months of the year. The impact of reservations on convenience and spontaneity would vary with demand for the available slots, and the efficiency of the reservation system. The Forest Service will attempt to make the system as easy to use and as inexpensive as possible. However, if demand increases substantially, self-guided boaters could expect being denied access to the most-desired sections of the river. Additional shuttle operations would likely result in services being more available when needed. Should demand for shuttles exceed the 30% maximum,

convenience and spontaneity would be decreased for shuttled use but maintained for non-shuttled use.

### ***Guided Use***

Guided boaters would be able to use inflatable kayaks on some inflatable trips, but this may, to a limited extent, tend to fill up trips more readily due to reduced capacities of individual craft. This would make it slightly less convenient to book that same trip, as compared to Alternative 1. However at water levels below one foot, the outfitters ability to use inflatable kayaks on Section III would allow them to stay in Section III longer, which would allow them to offer more trips as compared to Alternative 1. Thus at water levels below one foot, convenience and spontaneity for guided boater would improve. The ability to carry more than 30 clients on a trip using inflatable craft would increase convenience and spontaneity for larger groups. If water levels improve greatly and if demand increases as a result, holidays and weekends especially could continue to fill up more quickly. Overall, convenience and spontaneity would increase compared to Alternative 1 due to the added flexibilities proposed.

#### **4.5.5.3 Alternative 3**

##### Direct, Indirect, and Cumulative

### ***Self-Guided Use***

If water levels are consistently favorable in the future, the availability of adequate parking would likely be decreased. Should reservations become necessary in the future, it would not occur as soon as in Alternative 2 and would be limited to only one section of the river. A maximum of two shuttle permits would provide more convenience than Alternative 1, but not as much as in Alternative 2, which has an unlimited number of permits. Should demand for shuttles exceed the 30% maximum, convenience and spontaneity would be decreased for shuttled use but maintained for non-shuttled use.

### ***Guided Use***

The cancellation of Plan B would eliminate the reduction in allocation of four trips in Section III during low water that is currently in place. This would remove the administrative influence of having to cancel reservations associated with these trips, resulting in increased reliability for booked Section III trips. In time, however, the quality of the experiences on these trips may lead the outfitters and/or customers to elect to cancel these trips, resulting in similar effects to spontaneity and convenience associated with Alternative 1. The ability to carry more than 30 clients on a trip using inflatable craft would increase convenience and spontaneity for larger groups. If water levels improve greatly and if demand

increases as a result, holidays and weekends especially could continue to fill up more quickly which would reduce spontaneity, convenience, and reliability.

#### **4.5.5.4 Alternative 5**

##### Direct, Indirect, and Cumulative

###### ***Self-Guided Use***

If water levels are consistently favorable in the future, the availability of adequate parking would likely be decreased. Should the four separate reservations requirements become necessary in the future, it would not occur as soon as in Alternative 2 but sooner than Alternative 3. A maximum of two shuttle permits would provide more convenience than Alternative 1, but not as much as in Alternative 2, which has an unlimited number of permits. Should demand for shuttles exceed the 30% maximum, convenience and spontaneity would be decreased sooner than with Alternative 3.

###### ***Guided Use***

The effects would be the same as Alternative 2. The ability to utilize inflatable kayaks during periods of low water could reduce the need to reschedule or cancel reservations. The ability to carry more than 30 clients on a trip using inflatable craft would increase convenience and spontaneity for larger groups. If water levels improve greatly and if demand increases as a result, holidays and weekends especially could continue to fill up more quickly.

In general, for self-guided boaters, Alternative 1 would provide the greatest levels of spontaneity, convenience, and reliability followed by Alternative 3, then Alternative 5, then Alternatives 2 and 4. For guided boaters, the differences would be more nominal, with Alternatives 4 and 5 offering the higher levels of spontaneity, convenience, and reliability followed by Alternative 2, then 3, then Alternative 1 offering the lowest levels. Alternatives 2, 4, and 5 would provide similar levels of spontaneity, convenience, and reliability for guided hardboat users with Alternative 3 providing slightly less, then Alternative 1.

## 4.5.6 Safety

Under all alternatives, the wild nature of the river will continue to involve inherent risks to users as discussed in Section 3.5.6. The analysis that follows will highlight differences among the alternatives.

### 4.5.6.1 Alternative 1

#### Direct, Indirect, and Cumulative

Since there would continue to be no opportunities for guided hardboat trips in Section IV nor for guided inflatable kayak instruction below Sandy Ford, there would be little to no deliberate enhancement of public safety that would otherwise be available through the transfer of knowledge associated with guided use in these sections as provided in other alternatives. Due to the continued non-regulation of self-guided use in this alternative, it is reasonable to expect that, if self-guided use does increase over and above historic levels, accidents, injuries, and fatalities may increase proportionately. Risks associated with the use of up to twelve craft including inflatable kayaks on guided trips, although negligible, would not exist under this alternative. Other than that, there would likely be virtually no direct, indirect, or cumulative impacts on safety outside what has been considered historical influences and trends.

### 4.5.6.2 Alternative 2

#### Direct, Indirect, and Cumulative

Opportunities to provide guided hardboat trips in Section IV and inflatable kayak instruction below Sandy Ford could result in reduced risks by offering skilled oversight in the learning of individual skills and in negotiation of the river where previously not available. The use of inflatable kayaks on other trips may also increase risks due to unfamiliarity with their use. There is the potential for minor incidents early on as outfitters work to perfect techniques for offering these experiences. The potential increases in number of boats on guided trips would likely have negligible impacts to user safety. Keeping guided trips in Section III longer (at low water levels) would reduce risks associated with congestion in Section IV. Once reservations are required for self-guided boaters, there may be some increased risk should water levels be higher or otherwise new to the boater on the day of the trip. Since alternate days may be difficult to get last minute reservations for, the boater may feel compelled to go even though they have not negotiated the river at those levels.

### **4.5.6.3 Alternative 3**

#### Direct, Indirect, and Cumulative

Since there would continue to be no opportunities for guided hardboat trips in Section IV nor for guided inflatable kayak instruction below Sandy Ford, there would be little to no deliberate enhancement of public safety that would otherwise be available through the transfer of knowledge associated with guided use in these sections as provided in other alternatives. The use of inflatable kayaks on other trips may also increase risks due to unfamiliarity with their use. Due to the elevated allocations of self-guided use in this alternative, it is reasonable to expect that, if self-guided use does increase to these levels, accidents, injuries, and fatalities may increase proportionately. Risks associated with the use of up to twelve craft including inflatable kayaks on guided trips, although negligible, would not exist under this alternative. Once reservations are required for self-guided boaters, there may be some increased risk should water levels be higher or otherwise new to the boater on the day of the trip. Since alternate days may be difficult to get last minute reservations for, the boater may feel compelled to go even though they have not negotiated the river at those levels.

### **4.5.6.4 Alternatives 4 or 5**

#### Direct, Indirect, and Cumulative

Opportunities to provide guided hardboat trips in Section IV and inflatable kayak instruction below Sandy Ford could result in reduced safety risks by offering skilled oversight in the learning of individual skills and in negotiation of the river where previously not available. There is the potential for minor incidents early on as outfitters work to perfect techniques for offering these experiences. There would likely be only negligible differences in safety hazards due to potential increases in number of boats on guided trips, however these differences would have the potential to occur on all guided raft trips. Keeping guided trips in Section III longer (at low water levels) would reduce risks associated with congestion in Section IV. Once reservations are required for self-guided boaters, there may be some increased risk should water levels be higher or otherwise new to the boater on the day of the trip. Since alternate days may be difficult to get last minute reservations for, the boater may feel compelled to go even though they have not negotiated the river at those levels. Due to the increased allocation for self-guided use in Alternative 5, it is reasonable to expect that, if self-guided use does increase over and above historic levels, accidents, injuries, and fatalities may increase proportionately.

## 4.5.7 Flexibility and Variety

### 4.5.7.1 Alternative 1

#### Direct, Indirect, and Cumulative

Flexibility and variety associated with the types and numbers of craft available to guided and self-guided boaters would remain the same.

### 4.5.7.2 Alternative 2

#### Direct, Indirect, and Cumulative

##### ***Self-Guided***

Flexibilities and varieties associated with the types and numbers of craft would remain the same. Should reservations be required, and should demand exceed the maximum number of reservations allowed, the most popular sections of the river could become unavailable on certain days.

##### ***Guided***

Flexibility and variety would increase on inflatable raft trips due to the availability of inflatable kayaks, increased numbers of client-carrying craft allowed on 3 trips per day, increased numbers of client-carrying craft allowed at low water levels in Section III, Sections I and II being made available, and increased numbers of clients per trip. The availability of the use of hardboats in Section IV and the use of up to two inflatable kayaks on hardboat trips below Sandy Ford would also increase variety and flexibility by offering experiences not currently permitted.

### 4.5.7.3 Alternative 3

#### Direct, Indirect, and Cumulative

##### ***Self-Guided***

Flexibilities and varieties associated with the types and numbers of craft would remain the same. Should reservations be required, and should demand exceed the maximum number of reservations allowed, only the most popular section of the river could become unavailable on certain days, however, this would not occur as soon as Alternative 2.

##### ***Guided***

Flexibility and variety would increase on inflatable raft trips due to the availability of inflatable kayaks, increased numbers of client-carrying craft allowed at low water levels in Section III, Sections I and II being made available, and increased

numbers of clients per trip. The availability of the use of hardboats in Section IV and the use of up to two inflatable kayaks on hardboat trips as far as the Highway 76 bridge would also increase variety and flexibility by offering experiences not currently permitted, but not to the extent proposed in Alternative 2. The loss of Plan B would eliminate existing flexibilities to shift Section III trips into Section IV. The loss of the use of up to 12 craft on 3 trips per day would also negatively impact flexibility and variety.

#### **4.5.7.4 Alternative 4**

##### Direct, Indirect, and Cumulative

###### ***Self-Guided***

The effects would be the same as Alternative 2. Flexibility and variety associated with the types and numbers of craft would remain the same. Should reservations be required, and should demand exceed the maximum number of reservations allowed, the most popular sections of the river could become unavailable on certain days. This could be delayed several years, however, due to the 2-consecutive-year requirement before reservations become necessary.

###### ***Guided***

Flexibility and variety would increase on inflatable raft trips due to the availability of inflatable kayaks, increased numbers of client-carrying craft allowed on 3 trips per day, increased numbers of client-carrying craft allowed at low water levels in Section III, Sections I and II being made available, and increased numbers of clients per trip. The availability of the use of hardboats in Section IV and the use of up to two inflatable kayaks on hardboat trips below Sandy Ford would also increase variety and flexibility by offering experiences not currently permitted. An added flexibility with this alternative would be the ability to use up to twelve craft on all raft trips when water levels are at or above approximately one foot.

#### **4.5.7.5 Alternative 5**

##### Direct, Indirect, and Cumulative

###### ***Self-Guided***

The effects would be the similar to Alternative 3. Flexibility and variety associated with the types and numbers of craft would remain the same. Should reservations be required, and should demand exceed the maximum number of reservations allowed, the most popular sections of the river could become unavailable on certain days, but this would occur later than with Alternative 2 on weekends in Sections III and IV and on weekdays in Section IV.

## **Guided**

The effects would be the same as Alternative 4. Flexibility and variety would increase on inflatable raft trips due to the availability of inflatable kayaks, increased numbers of client-carrying craft allowed on 3 trips per, increased numbers of client-carrying craft allowed at low water levels in Section III, Sections I and II being made available, the ability to use up to twelve craft on all raft trips when water levels are at or above approximately one foot, and increased numbers of clients per trip. The availability of the use of hardboats in Section IV and the use of up to two inflatable kayaks on hardboat trips below Sandy Ford would also increase variety and flexibility by offering experiences not currently permitted.

In general, Alternatives 4 or 5 offer the most flexibility and variety followed by Alternative 2, then 3, then 1.

## **4.5.8 Costs and Affordability**

### **4.5.8.1 Alternative 1**

#### Direct and indirect

Alternative 1 includes minimal to no costs for self-guided users. There are parking fees at certain put-ins, mainly on the Georgia side of the river. Self-registration is required but free. There are no direct effects on self-guided users cost or affordability based on actions in Alternative 1, current management. Indirectly, limiting shuttles permits to one limits competition and could possibly have a negative effect on the costs of shuttling.

A small portion (approximately three percent) of the gross revenues associated with using guided services is a special use fee paid to the government. Guided users have overall costs based on the section of the river and day of week and can range from \$45 to over a \$100. The direct effects of current management are minimal on guided users. The indirect effects of continuing the current limits on types of craft, number of clients, number of craft and section of river could have negative effects on guided users by forcing cost increases to maintain the same level of service. During extended periods of low water, guided inflatable boating could continue to decline resulting in decreased affordability.

#### Cumulative

There are no cumulative effects to costs or affordability.

### **4.5.8.2 Alternatives 2, 3, 4, and 5**

#### Direct and indirect

Alternative 2, 3, 4, 5 includes some additional costs for self-guided users. There are parking fees at certain put-ins, mainly on the Georgia side of the river. At some point in the future, permits to use the river may be required and would involve a fee for booking the reservation. Costs for using the river may ultimately be greater which has negative direct effects self-guided users. Fifty-two percent of self-guided boaters oppose fees to use the river. Indirectly, additional shuttle permits in these alternatives may add some competition and bring down the cost of shuttling, which would have positive effects on self-guided users.

These alternatives would have similar effects on the costs as described in Alternative 1. Indirectly, the effects on adding flexibility to utilize more parts of the river and a wider variety of craft could positively benefit guided users by delaying any price adjustments for a time.

### Cumulative

There are no cumulative effects to costs or affordability.

## **4.6 ECONOMIC RESOURCES**

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### **4.6.1 Alternative 1**

#### **4.6.1.1 Economic Impacts from Guided Use**

This alternative provides the least amount of flexibility to the outfitters to offer the kinds of services and experiences desired by the guided boating public. The ability to provide these services sought by the public is therefore limited, which in turn negatively affects revenues to boating outfitters, other local tourism businesses, the agency, and local communities.

#### **4.6.1.2 Economic Impacts from Self-Guided Use**

This alternative provides the greatest flexibility to the self-guided boating public and allows this demand to manifest itself fully without constraints. This in turn facilitates the highest level of visitation of all the alternatives, and thereby provides the best revenue opportunities to local tourism economies. This alternative would be the least costly to administer for the agency.

### **4.6.2 Alternative 2**

#### **4.6.2.1 Economic Impacts from Guided Use**

Alternative 2 provides greater flexibility than Alternative 1 to offer the kinds of services and experiences desired by the guided boating public. The ability to provide these services is improved, which in turn increases revenues to

economies. There would be some additional costs to the agency to implement the changes in the permits and operating plans.

#### **4.6.2.2 Economic Impacts from Self-Guided Use**

Of all the alternatives, this one provides the lowest acceptable numbers of self-guided boaters and the most restrictive reservation system (should the triggers be activated). This may tend to result in a lower ceiling of incomes into economies of all the alternatives unless the limited nature of floating opportunities generates additional or unforeseen business ventures. This alternative would have increased administrative costs associated with the increased need for monitoring and, should the reservations become necessary, administration of the reservation system, and enforcement.

### **4.6.3 Alternative 3**

#### **4.6.3.1 Economic Impacts from Guided Use**

This alternative gives a little flexibility, but takes away more (by canceling both "Plan B" and the option to use up to 12 craft on 3 trips per day). The result is that the ability to provide the services and experiences sought by the guided boating public would be hampered. Revenues to boating outfitters, other local tourism businesses, local communities, and the agency are expected to be the least of all the alternatives. There would be some additional costs to the agency to implement the changes in the permits and operating plans.

#### **4.6.3.2 Economic Impacts from Self-Guided Use**

This alternative provides more flexibility than Alternative 2, but less than Alternative 1. Revenues to local economies are expected to be somewhere in-between Alternative 1 and 2. Costs to the agency for administration of this alternative would be less than Alternatives 2 or 4 but more than Alternative 1.

### **4.6.4 Alternative 4**

#### **4.6.4.1 Economic Impacts from Guided Use**

This alternative provides more flexibility to the outfitters to offer the kinds of services and experiences desired by the guided boating public. The ability to provide these services is improved, which in turn increases revenues to boating outfitters, other local tourism businesses, local communities, and the agency. Revenues are expected to be the highest of all the alternatives. There would be some additional costs to the agency to implement the changes in the permits and operating plans.

#### **4.6.4.2 Economic Impacts from Self-Guided Use**

Same as Alternative 2. The limits on shuttle permits may restrict economic growth should demand reach or exceed these levels.

#### **4.6.5 Alternative 5**

##### **4.6.5.1 Economic Impacts from Guided Use**

Same as Alternative 4.

##### **4.6.5.2 Economic Impacts from Self-Guided Use**

This alternative is very similar to Alternative 3, but a little more restrictive, since it does not drop the “second trigger” as does Alternative 3. Revenues are therefore expected to be somewhat less than Alternative 3.

#### **4.6.6 Shuttles**

##### **4.6.6.1 Alternative 1**

Alternative 1 allows only one shuttle service. The lack of competition may result in lower levels of marketing, which may result in relatively fewer dollars entering the local economy. The last, single shuttle permit that expired in 2000 authorized launch opportunities for up to 40% of the daily self-guided use on Sections III and IV. There would be no limitations on the percentage of self-guided use available for shuttles in the Forest Plan.

##### **4.6.6.2 Alternative 2**

This alternative would allow more than one permit but would not determine the maximum number of permits, nor would the levels of daily shuttles be determined at the Forest Plan level. This alternative may have the potential to generate more monies in the local economies more so than all other alternatives should advertising and marketing be increased.

##### **4.6.6.3 Alternatives 3 or 5**

These alternatives would allow more than one permit but would not allow more than two. Additionally, unless reservations become necessary, shuttle permit authorities would be limited to no more than 30% of the daily self-guided allocations for each section of the river. These alternatives may have the potential to generate more monies in the local economies more so than Alternative 1, but probably not to the extent of Alternative 2.

#### **4.6.6.4 Alternative 4**

This alternative would allow no more than two permits and would limit the total daily shuttles by section to no more than 30% of the corresponding allocation. This would be in place whether reservations are being required or not. This alternative would be similar to Alternatives 3 or 5.

#### **4.6.7 Cumulative Effects**

Considering local employment opportunities generated from the river along with those from other local businesses, Alternatives 2, 4 and 5 have the potential to create a few new jobs by increasing the flexibilities for the guided public to experience the river. On the other hand, Alternatives 1 and 3 (and especially 3) have the potential to decrease profitability of the outfitter guide businesses, and consequently cause a small decrease in employment opportunities.

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