V DESCRIPTION OF THE RIVER

A. Ownership of River Bed - Jurisdiction of River Surface

The Attorney General of North Carolina states the opinion that since the Chattooga River in North Carolina is very shallow with constant ripples showing every few feet, the State Supreme Court would probably find that it is not navigable in fact, and therefore not navigable in law. In North Carolina, the riparian owners own the streambed of unnavigable streams to the center of the stream. The private landowner can sell, lease or otherwise dispose of the minerals underlying the streambed, provided he does not cause sedimentation or pollution of the stream. There is now no mineral activity within the proposed boundary of the river in North Carolina.

Where the river is the boundary between Georgia and South Carolina with no islands in the river, the location of the line between the two states is on the water midway between the main banks of the river when the river is at ordinary stage. Where there are islands, the state line is midway between the island bank and the South Carolina shore when the water is at ordinary stage. Any islands in the Chattooga River are reserved completely to Georgia.

The South Carolina Constitution declares the Chattooga River to be navigable in fact and law, and as a boundary river the state has title to the riverbed and water from the mean high water mark to the middle of the river. The South Carolina State Budget and Control Board requires a permit for any construction or excavation below the mean high water mark. The State would also have the right to issue mineral or gravel permits.

In Georgia, navigability and therefore ownership, have not been legally established for the Chattooga River. If the river is non-navigable, land ownership extends to the center of the main current. If it is determined to be navigable, ownership of the bed lies in the State; and adjacent land ownership extends only to the low-water mark in the bed of the River. Application of navigability tests by the study team seems to indicate navigability and therefore State ownership of the riverbed. In the case of State owned lands, mineral permits would be issued by the Georgia Mineral Leasing Commission. Agencies having regulatory power over the use of waterways in Georgia are the Water Quality Control Board and the Game and Fish Commission.

Regular peace officers and the enforcement divisions of the three State Wildlife Commissions have police power on the surface of the Chattooga River.

B. Water Rights

North Carolina operates under the riparian rights doctrine. Although the riparian owner owns the streambed to the center of the stream, the State owns the water, which may be shared in a reasonable manner by the various riparian owners, subject of course, to interpretation by the courts.

The South Carolina Constitution declares, "The State of South Carolina holds the beds and waters of the rivers, streams, and lakes of the State in trust for and subject to the public purposes and rights of navigation, commerce, fishing, bathing, recreation, or enjoyment, other public and useful purposes, and such other rights as are incident to public waters at common law, free from obstructions and interference by private persons."

In Georgia law, ownership of water is dependent upon navigability and since navigability of the Chattooga River has not been established at law, no single statement as to water rights can be made. If the river is navigable, as appears to the study team, water rights rest with the State. If it is non-navigable, however, the owner is "entitled to the same exclusive possession thereof as he has of any other part of his land" (Georgia Code Sec. 2210 (1863); Georgia Code Sec. 85-1305 (1933); Georgia Code Ann. Sec. 85-1305 (1955 Rev.)).

There are no interstate agreements concerning the use of the waters of the Chattooga. No municipal water supplies are taken directly from the river, but private developments take water from tributary creeks to supply their domestic needs. No industrial use is made of the waters within the proposed river boundary.

The present exercise of water rights on the river and tributaries has no measurable effect on the river's rate of flow. There are no Forest Service proposals to modify river flows or use water from the river for domestic needs.

C. Water Quality, Quantity and Flow

Water Quality information on the Chattooga River came from:

--water quality criteria for National Wild and Scenic Rivers agreed upon by the Departments of Agriculture and Interior.

--water quality studies by the U. S. Geologic Survey, the Environmental Protection Agency (formerly the Federal Water Pollution Control Authority), and the States of North Carolina, South Carolina and Georgia prior to May, 1969.

--A water quality study by Dr. Gordon Howard, Clemson University, February, 1969.

--an intensive water quality study initiated by the U.S. Forest Service in 1969, in cooperation with the States of Georgia, North Carolina and South Carolina.

--a biological investigation of the Georgia tributaries of the Chattooga River and the river proper by the Georgia Water Quality Control Board and submitted for the record of the March 17, 1970, Clayton meeting.

Federal/State water quality standards have been established on all interstate portions of the river. These standards are adequate to protect the aesthetics of the area and health of the users.

The current standards are:

--Recommended Wild and Scenic River

Stream Classification	Standards
Wild	Fecal Coliform (MPN/100 ml.) Log mean of 200 and shall not exceed 400 in over 10% of samples in any 30 day period. (Except as these might be exceeded by natural background conditions.)

--South Carolina

Stream Classification	Standards
Class A or better	Fecal Coliform (MPN/100 ml.) Not to exceed a geometric mean of 200 nor shall more than 10% of the total samples exceed 400 in any 30 day period.

--Georgia

Stream Classification	Standards
Recreation	Fecal Coliform (MPN/100 ml.) Not to exceed a mean of 1000 based on at least 4 samples taken over a 30 day period, and not to exceed 4000 in more than 5% of the samples taken in any 90 day period.

--North Carolina

Stream Classification	Standards
Trout Waters, Class C	Fecal Coliform (MPN/100 ml.) Log mean of 1000 based upon at least 5 consecutive samples in a 30 day period, and not to exceed 2000 in more than 20% of the samples examined. (Not applicable during and immediately following periods of rainfall.)

Clemson Water Quality Study

Dr. Gordon Howard's February, 1969 study of the Chattooga was the first extensive water quality study done on the river. Since human waste seemed to be the major possible source of pollution in the Chattooga, this study was concerned with measuring fecal coliform counts at 20 stations along the river and its major tributaries in South Carolina and Georgia. Two samples were taken at each site.

Dr. Howard's study indicated that the West Fork and the river proper down to State Highway 28 were free of human waste pollutants. The river from State Highway 28 to U. S. Highway 76 recorded a small level of pollutants (MPN-20/100 ml.), but well within the limits for primary contact waters. Below U. S. Highway 76, fecal coliform counts increased measurably (MPN 230-280/100 ml.), to above primary contact standards. The study indicated that Stekoa Creek might be a possible source of pollution into the main river, and suggested that further sampling would be desirable.

Forest Service - State Water Quality Study

During 1969 the Forest Service and state water quality agencies organized a water quality sampling program of the Chattooga and its tributaries. The Georgia Water Quality Control Board, South Carolina Pollution Control Authority and North Carolina Department of Water and Air Resources assisted in this program.

A series of 13 sampling points was set up on the river; eight on the river proper below major tributaries and five on suspect tributaries. Figure V-I shows the location of monitoring stations. Monthly samples were taken from May, 1969, to January, 1970. Based on this sampling, a revised monitoring plan was developed in February, 1970. Under this plan stations 2, 3, 4, 5, 7, 9 and 10 will continue to be sampled monthly, April through October each year, to assure continued water quality surveillance on the river.

A Biological Investigation of Streams of the Chattooga River Basin (Savannah)

An Aquatic Biology study was conducted by the Georgia Water Quality Control Board and U.S. Forest Service in October 1969.

Conclusions of the investigation are:

"The Chattooga River and its tributaries possessed a highly diverse macroinvertebrate fauna in terms of species. Many intolerant species were present. The faunae of the river stations and the reach investigated on Warwoman Creek were characteristic of unaltered streams. Water quality at these stations was healthy.

"While a very diverse macroinvertebrate fauna was present at the Stekoa Creek Station, a great increase in the number of hydrophsychid caddisfly larvae was indicative of greater plankton productivity, a reflection of high nutrient concentrations. A slight reduction in the number of intolerant species was observed in the collection from this stream. Water quality was assessed as healthy-enriched. Advanced recovery was evident in this reach more than four miles upstream from the confluence of this stream and the river.

"Steoka Creek does not affect the macroinvertebrate community of the Chattooga River adversely. The composition and relative abundance of components of the benthic community were similar to that of the communities observed in reaches upstream of the confluence with Stekoa Creek. It is highly unlikely that, after installation of the waste treatment facility at Clayton, wastes from that city can be detected in the river, either chemically or biologically.

"Generally, the Chattooga River at all stations was a natural stream in its chemistry and biology."

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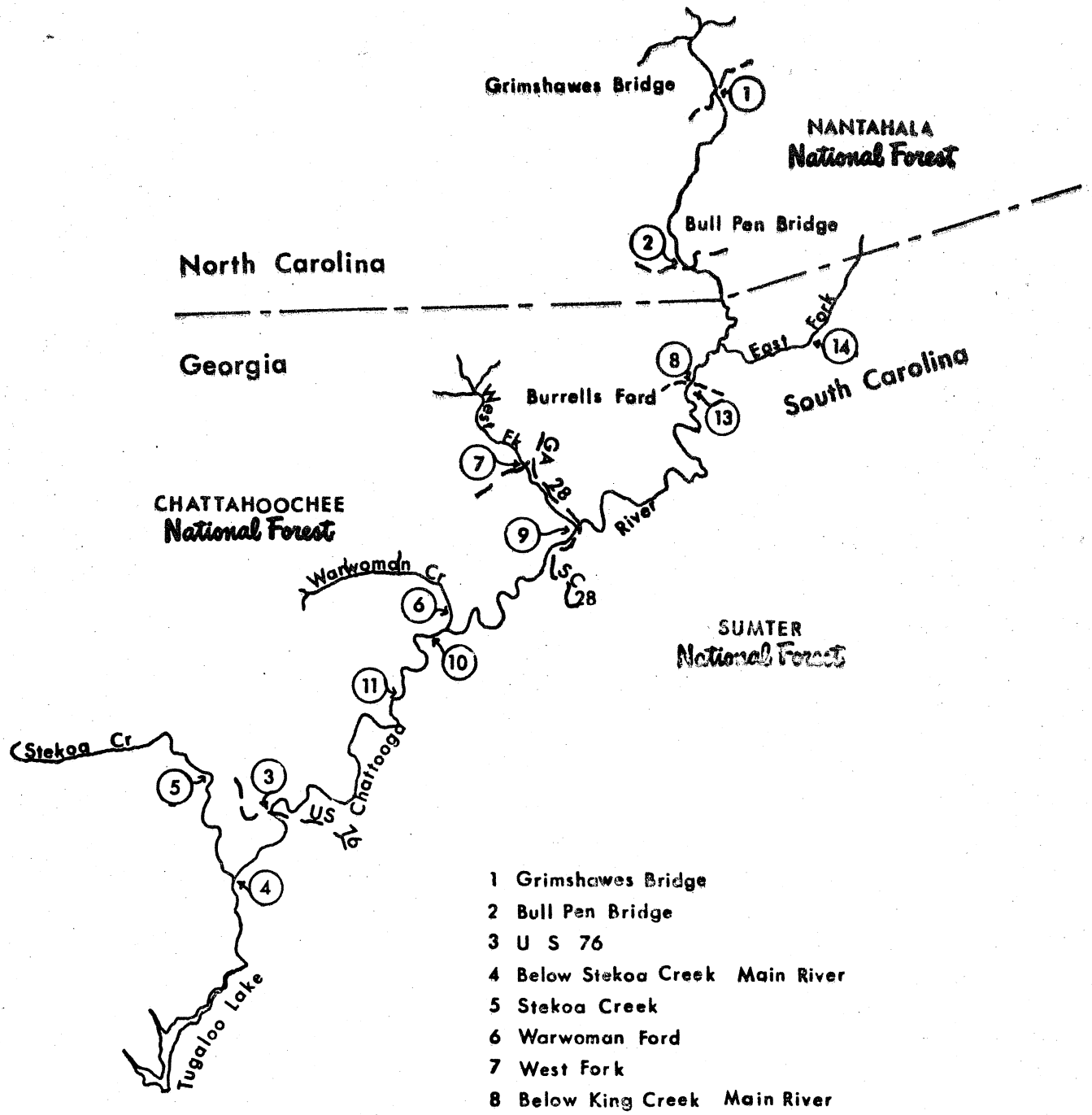
Figure V-1

Water Quality Monitoring Stations Chattooga River



1 Grimshawes Bridge
2 Bull Pen Bridge
3 U S 76
4 Below Stekoa Creek Main River
5 Stekoa Creek
6 Warwoman Ford
7 West Fork
8 Below King Creek Main River
9 Below West Fork Main River
10 Below Warwoman Creek Main River
11 Below Whetstone Creek Main River
13 King Creek below Recreation Area
14 East Fork

Rates of Flow

The 65 year record maintained by the U. S. Weather Bureau at Clayton, Georgia shows an average yearly minimum rainfall of 4.22 inches in October and a maximum average yearly rainfall of 7.18 inches in March. The annual rainfall ranges from 53 to 80 inches, with average runoff ranging from 27 to 37 inches.

Flow data is based on average daily flows from 1940 through 1968 and shows flow less than 300 cfs about 25% of the time. Three hundred cfs is equivalent to a stage of 1.26 feet at the USGS stream gage on U. S. 76. About 50% of the time the flow is 450 cfs or greater. Four hundred fifty cfs is equivalent to 1.60 feet at the USGS gage. The mean daily flow for the period 1940-1968 is 621 cfs with a standard deviation of 156 cfs. The lowest average daily flow on record was 88 cfs in October 1954 and the highest flow was 29,000 cfs recorded in August, 1940.

Floods are of short duration, with sharp rising and falling limbs of the hydrograph. Highly turbid water accompanied by floating debris is characteristic of flood waters. Most of the maximum floods occur during periods of low recreation use.

Riverbed and Flow Characteristics

The riverbed characteristics are caused by many influencing factors such as geology, flow regime, land use in the watershed, gradients, etc. Sands and gneissic gravels are characteristic of slow moving and slack water portions. Sections with slightly higher velocities have mostly gneissic gravels and cobbles. Shoals, rapids and falls are predominately angular gneissic boulders and bedrock.

The channels are mostly stable because of the resistant nature of the bedrock. Channel degradation and aggregation are in local portions only. Channel side slopes are generally sandy with considerable coarse fragments (gravels, cobbles and stones) in alluvial areas. Trees, shrubs and vines protect these alluvial side slopes. The stream in many places has incised itself into bedrock. In these places, the channel side slopes are bedrock and are therefore stable.

D. Fisheries

Trout fishing on the Chattooga ranges from excellent in upper areas to extremely marginal in lowermost reaches. Offsetting the poor trout fishing in lower sections of the Chattooga is an increasingly good Redeye bass fishery.

Trout fishing in downstream tributaries in contrast to the mainstream trout fishery is very good. In general, tributary fishing in upstream areas is good to excellent. Stream productivity is best discussed by dividing the river and West Fork into 5 sections.

Headwaters to Bullpen Bridge - (7.7 miles)

The Chattooga River and its tributaries above this point are excellent trout waters, comparing favorably with the better streams in all three states. Brown trout are dominant, although rainbow are common in this section. Brook trout are present in most of the tributaries. No stocking is done above the Bullpen Bridge.

Bullpen Bridge to Highway 28 - (16.6 miles)

This section of stream is providing fair to good fishing for wild rainbow and brown trout, with brown trout the predominant species. Best fishing for wild fish is in the upper reaches.

No work has been done to determine whether existing populations of trout in the main stream are recruited from wild stock in the river and tributaries or whether they are sustained by the stocking program. North Carolina stocks only 2,500 fish per year at Bullpen Bridge. South Carolina in 1969 stocked 19,330 catchable-size trout and 35,000 fingerling brown trout in the section of stream between Burrells Ford and an access point two miles below the Highway 28 Bridge. Georgia in 1969 stocked 50,000 fingerling brown in this same section. Several of the tributaries between these points contain fair to good populations of wild fish, primarily brown trout, so it is logical to assume that these streams are also providing recruitment to the mainstream fishery and for that reason are extremely important.

This section of stream is of special interest from a wild river fishery standpoint since it is the only one providing high quality wild trout fishing that is large enough to float - canoeing is not feasible, but rubber rafts are suitable for this section.

Highway 28 Bridge to Highway 76 Bridge - (19.1 miles)

The Chattooga River in most of this section is considered marginal for trout, due to high water temperatures. However, large rainbow and brown trout are, occasionally taken in this stretch of stream. The upper portion of the section provides the best fishing, due primarily to a stocking program by the South Carolina Wildlife Resources Department. This section also contains some of the flatter, shallower, stretches of water suitable for wading fisherman. Although Redeye bass are common throughout the section, it should be classed as trout water.

Highway 76 to Tugaloo Lake - (7.8 miles)

This section of the mainstream is the only portion not suitable for classification as a trout stream. It is primarily a Redeye bass-redbreast sunfish stream, although, according to local fisherman, occasional trout are taken here. Stream temperature is definitely too high for trout but good for bass.

West Fork of Chattooga River - (7.3 miles)

The West Fork is a large stream furnishing fairly good fishing for rainbow and brown trout in its lower reaches. The wild trout fishery there is supplemented by a stocking program of approximately 3,000 catchable-size trout per year. The section of West Fork above Overflow Bridge to Three Forks provides better fishing for wild trout than the area below the bridge. This area is inaccessible and is not included in stocking programs.

The three tributaries joining at Three Forks include Holcomb Creek, Overflow Creek and Big Creek. All three are basically good streams providing excellent fishing for brown and rainbow throughout most of their length, and for brook trout in some of the upper tributaries.

Holcomb Creek, lying entirely in Georgia, is in relatively good condition, receiving only minor siltation from a gravel system road. It contains an excellent population of wild brook and rainbow above the upper falls, and brown and rainbow below the falls. Approximately 2,000 fish are stocked annually on the Billingsley Creek Section of Holcomb Creek.

Overflow Creek, originating in Blue Valley, North Carolina, is in excellent condition until it reaches the Georgia line where recent road construction just below the State line has created a serious siltation problem. The population of both brown and rainbow trout in this section was excellent prior to construction. Effects of the project on the trout population have not been evaluated. Only the headwaters in North Carolina are stocked with hatchery fish.

Big Creek also originates in North Carolina and then flows into Georgia. This stream carries a fairly heavy load of sand and fine sediment throughout much of its length but still provides a fairly good fishery for wild brown trout. Rainbow trout are present in much smaller numbers.

Present Fishing Regulations

South Carolina has a year-long season on tributaries and the main stream with a creel limit of 10 fish and no restriction on lures.

Georgia also has a year-long season on the mainstream and the West Fork upstream to Three Forks, and a season running from early April to early October on most tributary streams. Tributaries in the Warwoman Management Area are open only two days a week from May to Labor Day. Creel limit on all streams is eight per day with no restriction on lures.

In North Carolina the general trout season runs from the first Saturday in April through Labor Day with a seven fish creel limit and only single hook baits or lures allowed. They also provide a special fall season for the months of September and October during which time the creel limit is one rainbow or brown trout 16 inches or better, or one brook 12 inches or better, with bait restricted to single hook artificial lures only.

The South Carolina and Georgia Game and Fish Commissions recognize and accept either of the two State licenses for mainstream fishermen.

Present Fish Stocking Policy

At present, catchable size trout are being stocked in some sections of the Chattooga in all three States. These stockings of catchables are supplemented in South Carolina and Georgia with plantings of sub-adult or fingerling fish.

The Georgia Game and Fish Commission has stocked smallmouth bass in the lower reaches in the past; however, there have been no confirmed reports of survival from these plantings.

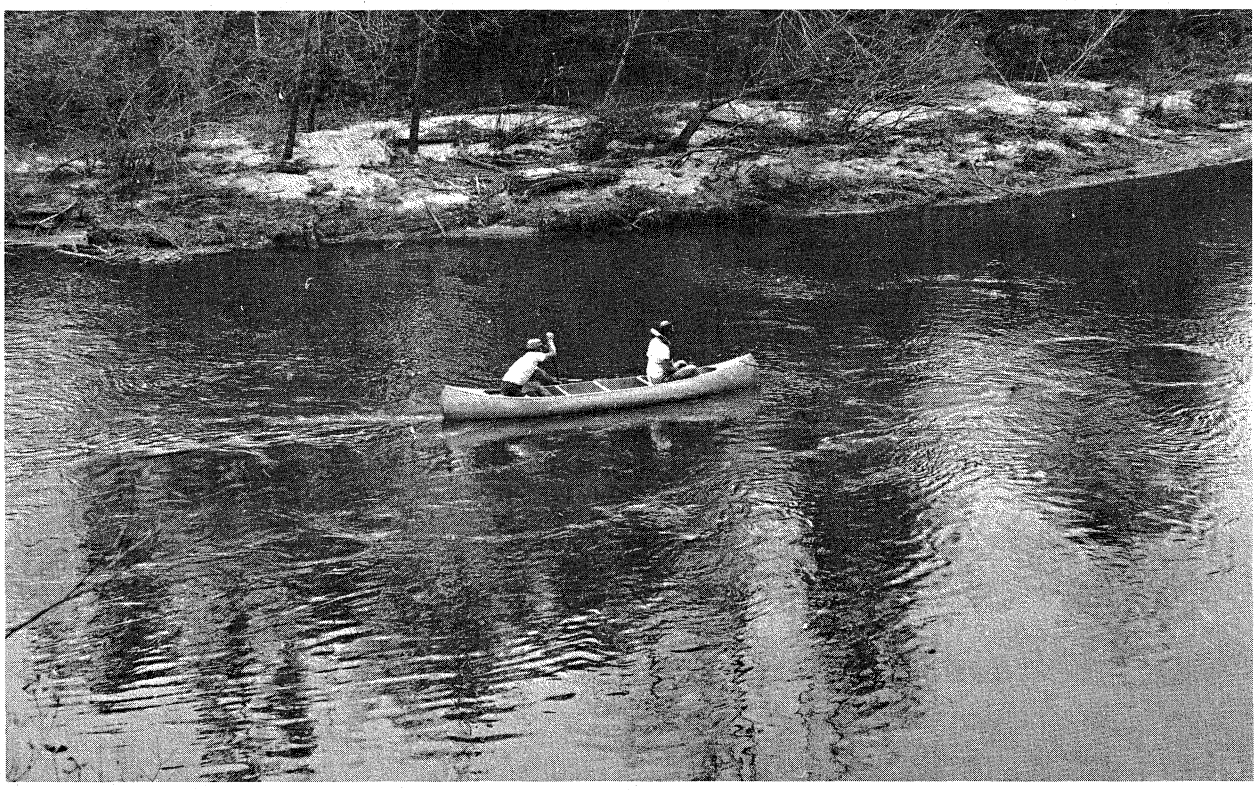
E. Recreation Opportunities

Although fishing accounts for most recreation use, there are other attractions to the river.

The canoeist and floater are showing up in increasing numbers to experience the challenge of the river. Sections of the river are ideal for floating in canoes and rubber rafts. Motorized boat use is impractical because of shallow water and rocks.

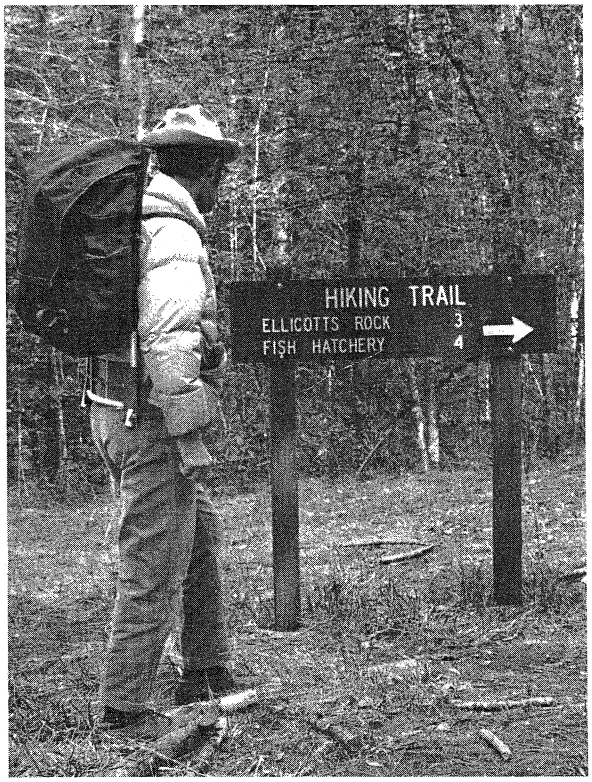
The only camping facilities along the river are provided at a campground near Burrells Ford in South Carolina. River runners on extended float trips can enjoy camping under primitive conditions at sites along the river.

Hiking provides another way of seeing the river. There is only one developed trail extending the four miles from Burrells Ford to Ellicotts Rock. However, most of the shoreline is accessible to those hikers willing to test themselves against the rugged country.

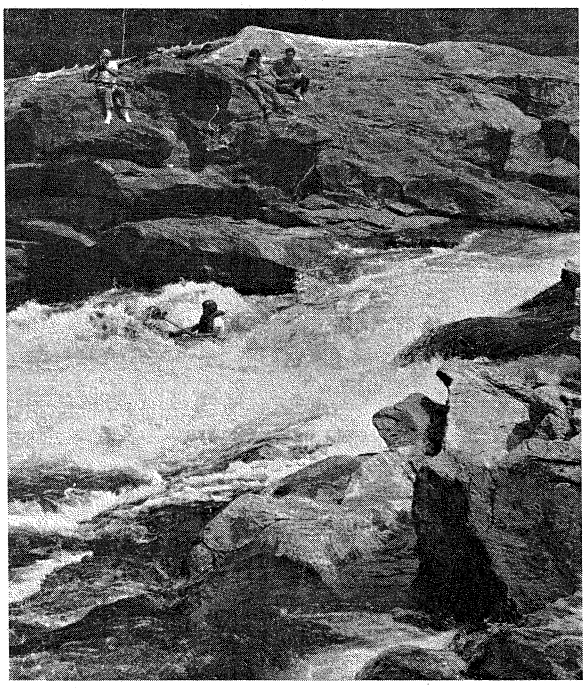


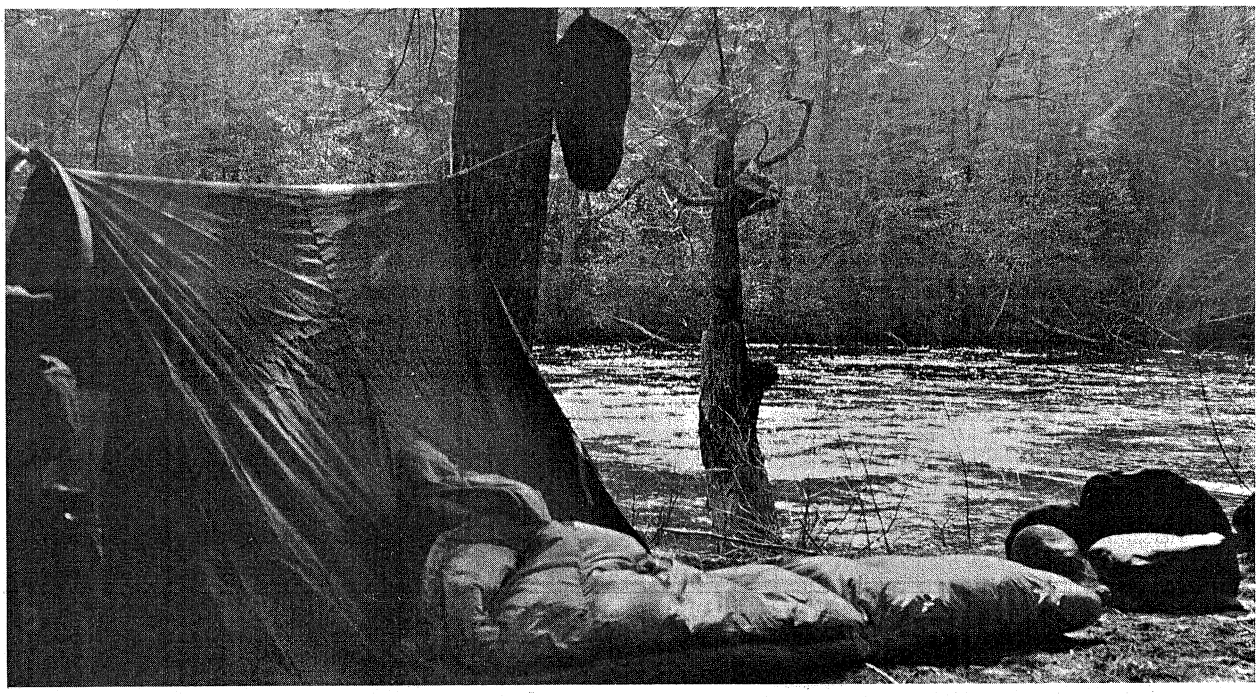
The number of canoeists using the river is increasing.

More trails are needed along the river.



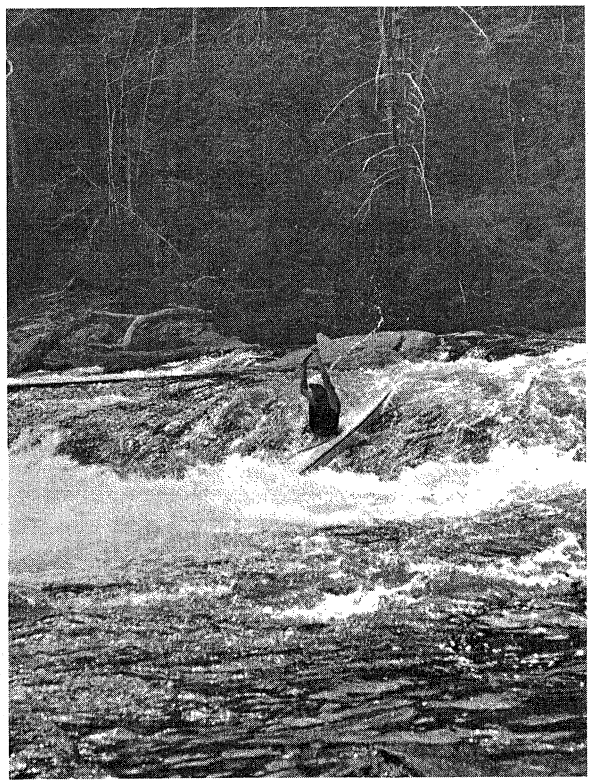
Rafting Bull Sluice.



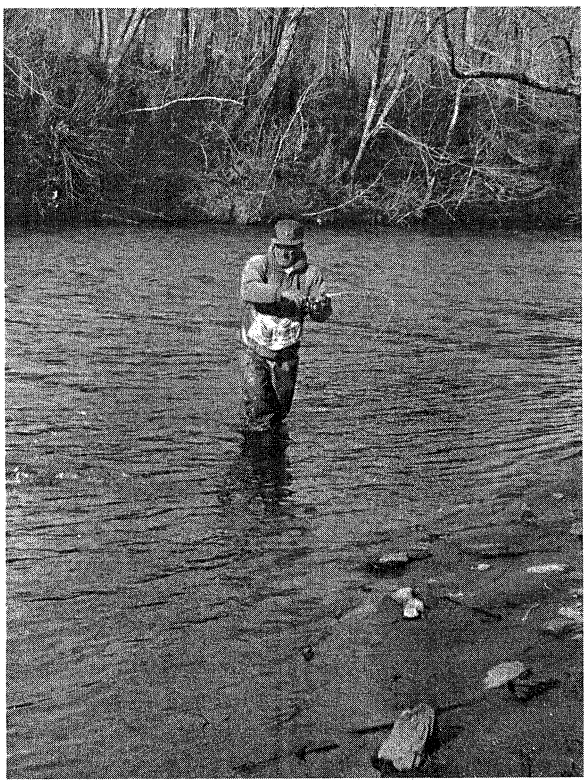


Most camping is done at undeveloped sites along the river.

The whitewater is the challenge for many people using the river.



A successful trout fisherman near Highway 28 bridge.



The casual sightseer is offered only brief glimpses of the river at bridge crossings and access points. To see and enjoy much of the river requires considerable time and effort from the recreationist, whether he be fisherman, canoeist, hiker or camper.

Other major recreation attractions are located within 50 miles of the Chattooga River--

--The Highland-Cashiers resort area of North Carolina is an exclusive and popular vacation area of the Southeast.
--National Forests in Georgia, South Carolina, Tennessee and North Carolina offer many forms of recreation.
--The Great Smokies National Park is the most heavily visited National Park in America with over 6 million visitors annually.
--21 major lakes and reservoirs including Hiwassee, Nantahala, Fontana, Tugaloo, Hartwell, Appalachia and Sidney Lanier offer extensive recreational opportunities.

Many smaller state and private recreation developments contribute to making the area surrounding the Chattooga River a complete vacation land.

F. Proposed Water Developments

Several water development projects have been proposed for the Chattooga River in the past. None of the proposals has reached the detailed planning stage.

There is a broad proposal that the Corps of Engineers connect the Savannah River and Tennessee River Basins with a barge canal. This proposal has not been studied to determine possible routes or feasibility of the overall project. It is not likely that the Chattooga would be considered in any detailed study.

Georgia Power Company

Although they have made no detailed study or proposal, the Georgia Power Company has had an interest in hydroelectric development of the Chattooga River since they acquired lands along the river. Recent contacts with officials of the Company indicate that, at the present time, they do not have plans to make a detailed investigation of the Chattooga River for power development. In Highlands, North Carolina, on December 5, 1969, at the Chattooga River Public Listening Session, an official of the Georgia Power Company stated, "In the opinion of Georgia Power Company, the development of these projects is presently marginal from the economic viewpoint." This was referring to the 366,000 kilowatt capability proposed in the U. S. Study Commission's Southeast River Basin Report, Senate Document #51, 88th Congress. A complete statement, from the record of that public listening session is found in Appendix A of this report.

Four studies have been published concerning development of the Chattooga River.

Corps of Engineers Studies

Two studies were made by the U.S. Army Corps of Engineers and were published as House Document #657, 78th Congress in June, 1944. The 1944 study identified four dam sites on the Chattooga River for eventual construction as a part of the development of the Savannah River Basin. These studies are now considered out-of-date, and the Corps is making a new study to update them.

In Clayton, Georgia on March 17, 1970, at the second Chattooga River Public Listening Session, the Corps of Engineers submitted a statement in response to the Forest Service's "Proposal for a Wild and Scenic River." This statement supported the proposal to preserve the Chattooga River as a wild and scenic river. A complete statement, from the record of the public meeting is in Appendix B of this report.

Southeast River Basins Study

This study was made in 1963 by the U.S. Study Commission, and published as Senate Document #51, 88th Congress. Portions of this report pertaining to the Chattooga River have been summarized for this study by the Resources Advisory Board, Southeastern River Basin Staff, in a memorandum dated November 14, 1969. (Appendix C).

No alternative hydroelectric developments were proposed on other rivers to replace the generating capacity of the Chattooga River. The Resources Advisory Board summary, however, indicates that one alternative for meeting the electric power need would be to expand and improve the design for projects in the Study Commission report.

Water Resources in Appalachia Study

At the direction of Section 206 of the Appalachian Regional Development Act of 1965 (PL 89-4), the Appalachian Water Resources Survey was made. It was published in April 1970, as "Water Resources in Appalachia." The Office of Appalachian Studies of the Corps of Engineers prepared and supervised the report.

In brief, the Appalachian Water Resources Survey is a comprehensive survey of the developmental potential of the water and related resources of Appalachia. Its treatment of the Chattooga River is as follows:

"Portions of rivers, such as the Susquehanna in New York and Pennsylvania; Allegheny and Clarion in Pennsylvania; Shenandoah in West Virginia; Potomac in West Virginia and Virginia; Big South Fork Cumberland River in Kentucky and Tennessee; Red River in Kentucky; and Chattooga in Georgia, North Carolina and South Carolina have outstanding scenic qualities if retained in their free-flowing state."

Accordingly, the recommended Appalachian Water Development Plan includes these projects: a complete study of Chattooga River for Wild and Scenic River classification and the development of recreation opportunities in Sumter National Forest (outside Chattooga River Watershed).

Federal Power Commission Study

The Federal Power Commission preliminary analysis gives two alternatives for power development on the Chattooga River. Each proposes three impoundments on the river. (Table 1). The first alternative proposal would flood 7,250 acres and would have an installed generating capacity of 1,780,000 kilowatts. The second alternative proposal would flood 9,450 acres with an installed generating capacity of 1,800,000 kilowatts. The Cashiers project in both proposals would be a pumped storage installation with the forebay on Little Whitewater Creek, a tribuary of the Whitewater River in the Keowee River Basin. This installation could operate separately from the other two. In either proposal, the Rogues Ford-Opossum Creek or Sand Bottom-Opossum Creek operations are inter-dependent, both being pumped storage installations.

Either of the Federal Power Commission's proposals would leave the Chattooga River unfit for National Wild and Scenic River purposes. According to the Federal Power Commission analysis, either proposal "would still leave an 18 to 20 mile stretch of the river that could be considered for other purposes." The other purposes would not include Wild and Scenic status since the river would not be free-flowing because of the Cashiers Reservoir. None of the 18 to 20 mile stretch would have sufficient water for canoeing.

The Federal Power Commission requested special consideration for the Cashiers project in view of expected future demands for peaking power. The project could be operated so that "releases from the impoundment could be regulated so that they would be nearly equal to the inflows." It would inundate about two miles of river under a 450 acre impoundment, interrupting the free-flowing characteristics of this stretch

TABLE 1
CHATTOOGA RIVER BASIN
Potential Hydroelectric Power Projects

PROJECT NAME	DAM			RESERVOIR				POWER INSTALLATION		
	River	River Mile	Drainage Area Sq Mi	Maximum Power Pool Elev Ft msl	Area Acres	Maximum Critical Drawdown Ft	Power Storage Capacity Ac Ft	Gross Power Head Ft	Installed Capacity Kw	Average Annual Generation Mwh
CASHIERS	Chattooga	46.9 2/	12.4	2880	450	45 3/	16.5M	640	550M 4/	482M
ROGUES FORD	Chattooga	11.3	193.0	1600	5800	25	140M	360	1 MM 5/	876M
SAND BOTTOM alternative for Rogues Ford	Chattooga	17.7	178.0	1640	5800	20	150M	280	1MM 6/	876M
OPOSSUM CREEK with Rogues Ford	Chattooga	4.9	258.0	1240	1000	40	40 M	348	230M 7/	202M
with Sand Bottom	Chattooga	4.9	258.0	1360	3200	10	40 M	468	300 M 8/	263M

Footnotes:

1/ Based on 10% annual load factor.

2/ Forebay will be located on Little Whitewater Creek tributary to Whitewater River.

3/ Afterbay drawdown = 45ft, Forebay drawdown = 60ft, Maximum power pool at elevation 3520 ft.

4/ 550M kw installation based on 15hrs continuous generation if reduced to 8hrs could be increased to about 1MM kw.

5/ 1MM kw installation based on 8 hrs continuous generation.

6/ 1MM kw installation based on 8 hrs continuous generation ultimate could be as much as 2MM kw.

7/ 115M kw pumped storage based on 8hrs continuous generation and 115M kw conventional installation.

8/ 150M kw pumped storage based on 8 hrs continuous generation and 150M kw conventional installation.

of the river. It would cut off a two mile free-flowing segment above the afterbay which would not have the necessary length for classification as an individual river section. Unless releases from this impoundment were regulated exactly with outflows, interruption in the flow of water from this impoundment could drastically affect the free-flowing characteristics of the rest of the river.

Only the benefits of hydroelectric power were considered in the Federal Power Commission's preliminary analysis of these proposals. The analysis points out that considerable opportunity for recreation, water-cooling and other purposes would be provided by the development.

The Federal Power Commission proposed no alternative hydroelectric developments on other rivers to replace the generating capacity of the Chattooga River.

Soil Conservation Service Proposals

The Soil Conservation Service indicates there are no existing or proposed SCS water development projects within the Chattooga River Watershed. The Conservation Needs Inventory for Watershed, prepared by SCS in 1960-62, listed several potential flood control or drainage projects in Georgia and South Carolina in the Chattooga Watershed. Since then, these inventoried projects have been field checked by SCS Watershed Investigation Parties and have all been declared not feasible for development.