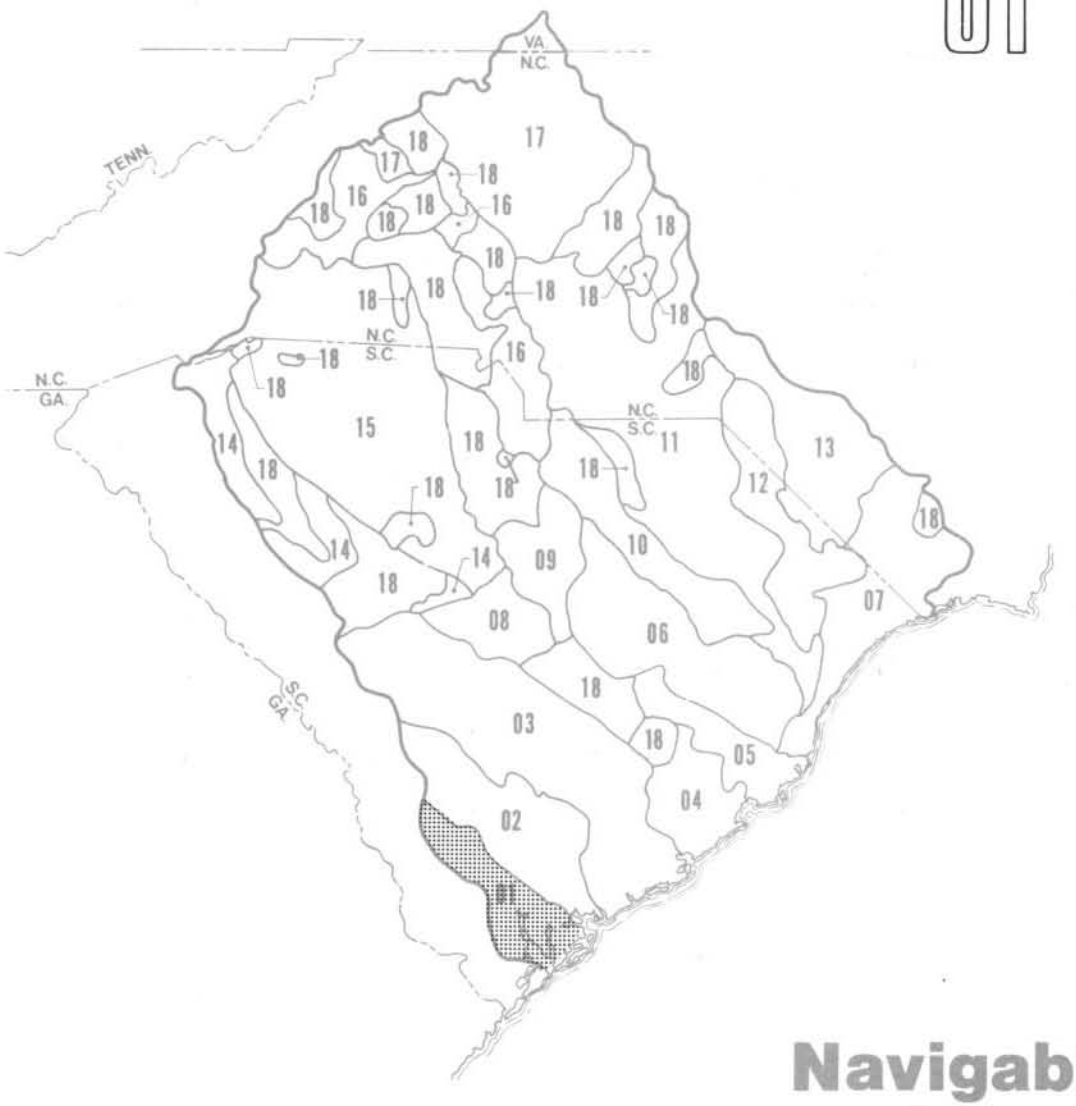
U.S. ARMY CORPS OF ENGINEERS
CHARLESTON DISTRICT
Charleston, South Carolina

COOSAWHATCHIE RIVER AREA

Report No. 01



Navigability Study
1977

STANLEY CONSULTANTS

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SECTION 1 - INTRODUCTION

Purpose

The purpose of this study is to collect, develop, and evaluate information on waterbodies within the boundaries of the Charleston District, Corps of Engineers, for establishing the classification of "navigable waters of the U. S." and "waters of the U. S." (During the course of this study the term "navigable waters" was changed to "waters of the U. S." Herein references to "navigable waters" are synonymous with "waters of the U. S.") Study objectives include definition of the present head of navigation, the historic head of navigation, the potential head of navigation, and the headwaters of all waterbodies within the district.

The information generated as a part of the study will be utilized by the Charleston District in administration of its programs dealing with water resource project construction permits in "navigable waters of the U. S." (River and Harbor Act of 1899), and the deposition of dredge or fill material in "navigable waters" or their contiguous wetlands (Section 404 of PL 92-500).

Scope

The scope of this project is generally summarized by the following:

1. Outline drainage areas, locate headwater points where mean flow is five cubic feet per second (cfs), summarize lake data (10 to 1,000 acres), establish stream mileage for "navigable waters of the U. S.", and prepare a stream catalog summary for the district.
2. Conduct field surveys of waterbodies to establish mean water levels and obstruction clearances for evaluating the potential head of navigation.
3. Analyze available hydrological data to estimate mean, maximum, and minimum discharge rates at obstructions and other selected locations.
4. Conduct a literature review to identify past, present, and future uses of waterbodies for interstate commerce.

5. Conduct a legal search to identify Federal and state court cases which impact on navigation classifications.
6. Prepare plan and profile drawings, maps of the district showing significant physical features, and a map delineating the recommended navigation classifications.
7. Prepare reports on all major river basins and large lakes (greater than 1,000 acres) including information on physical characteristics, navigation projects, interstate commerce, court decisions, navigation obstructions, and recommended classification of waterbodies for navigation.
8. Prepare a summary report outlining navigation-related information for the entire district as well as the methodology, procedures, and other factors pertinent to the development of each of the river basin reports.

Conduct of this study relies heavily upon available information. Compilation and evaluation of existing data from many sources and development of field survey information are the main contributions to the new water resource data base represented by this study.

Related Reports

Information pertaining to this navigability study for the Charleston District has been compiled into a series of reports, one of which is represented by this document. A complete listing of the reports is presented below to facilitate cross referencing.

Number	Title
--	Summary Report
01	Coosawhatchie River Area
02	Combahee River Area
03	Edisto River Area
04	Cooper River Area
05	Santee River Basin
06	Black River Area
07	Waccamaw River Basin
08	Congaree River Basin
09	Wateree River Basin
10	Lynches River Basin

Number	Title
11	Great Pee Dee River Basin
12	Little Pee Dee River Basin
13	Lumber River Basin
14	Saluda River Basin
15	Broad River Basin
16	Catawba River Basin
17	Yadkin River Basin
18	Lakes - Greater Than 1,000 Acres
--	Coastal Supplement

The eighteen reports covering various drainage areas in the district present information for the specific basins. The Summary Report provides an overview of the entire study of district waterbodies and presents information applicable to all waters in the district. Reference should be made to both the individual drainage area reports as well as the Summary Report to obtain a thorough understanding of the study approach and results.

Acknowledgements and Data Sources

The contribution of many project team members within the Corps of Engineers, Charleston District, and Stanley Consultants is gratefully acknowledged by Stanley Consultants. In addition to the legal search and other evaluations and input from Charleston District staff, several others made significant contributions to this study effort. Dr. John W. Gordon, Assistant Professor in the Department of History, The Citadel, prepared the narrative and literature review information for past and present interstate commerce.

Several state water resource, transportation, utility, and planning agencies also cooperated and provided useful data for compiling these reports. Federal water resource and regulatory agencies and private utilities provided information along with public and private operators of large reservoirs.

Specific numbered data sources are referenced in the reports in parentheses. These data sources are listed in the Bibliography of each report of the navigation study.

SECTION 2 - PHYSICAL CHARACTERISTICS

The Coosawhatchie River has a drainage area of approximately 590 square miles and is the principal tributary to the Broad River in southeast South Carolina. The stream flows for approximately 50 miles in a southeast direction from its headwaters in Allendale County through Hampton, Jasper, and finally Beaufort County where it meets the Broad River. Plate 01-1 shows the entire drainage basin of the Coosawhatchie River and its tributaries.

The Coosawhatchie is a gentle meandering river having marsh and swamp-like conditions throughout. Elevations range in the basin from 130 feet above mean sea level at its headwaters to mean sea level at its mouth on the Broad River. Approximately 9 miles of the Coosawhatchie are considered tidally influenced. Plates 01-2 and 01-3 are detailed maps indicating the significant features found in the basin.

Selected physical characteristics of the Coosawhatchie River are described in Table 1. Also indicated are approximate values for drainage area, mean water flow, and elevation change. Methodology for determining the numerical values of physical characteristics appearing in Table 1 is defined in the Summary Report.

The location of one key stream gaging station on the Coosawhatchie is presented in Table 2. Also shown are the mean, minimum, and maximum flows at the gaging station.

TABLE 1

PHYSICAL CHARACTERISTICS (1)(2)(3)*

Length-Mouth to Headwaters[1)]	50 miles
Elevation Change to Headwaters[1)]	130 feet
Drainage Area[2)]	590 square miles
Mean Discharge at Mouth[1)]	520 cfs
Limit of Tidal Influence[2)]	River Mile (R.M.) 9.0
Confluence with Broad River	R.M. 18.1
Length of Present Navigable Waters of the U. S.	9.0 miles (R.M. 9.0)

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1) From mouth at confluence with Broad River to a remote point on the Coosawhatchie River having a mean annual flow of five cfs.

2) From R.M. 0.0 at confluence with Broad River.

* See Bibliography for these references.

TABLE 2

KEY STREAM GAGING STATION (1)(3)

USGS Gaging Station Number	02176500
Location Description	Located near the City of Hampton, in Hampton Co., S. C., at U. S. 601 Highway bridge
Drainage Area	203 square miles
Mean Flow	190 cfs
Minimum Flow[1)]	3.7 cfs
Maximum Flow[2)]	485 cfs

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1) Exceeded or equaled 90 percent of the time.

2) Exceeded or equaled 10 percent of the time.

SECTION 3 - NAVIGATION IMPROVEMENT PROJECTS

Federal Navigation Projects

No Federal navigation projects have been authorized for the Coosawhatchie River basin. However, navigation improvements on other streams in the Coosawhatchie report area have been approved by Congress and summarized in Table 3. The Incomplete List of Navigable Waters, 1965, developed by the Charleston District, Corps of Engineers, indicated the limit of practical navigation on the Coosawhatchie River at the U. S. Highway 17 bridge at R.M. 7.0* (as shown on Plate 01-6). (A 1.2-mile discrepancy in the river mileage of the navigation limit location exists between reference sources. As discussed in the Summary Report, the source of river mileage used for presentation in this study sometimes differs from river mileage referred to in authorized project and/or present navigable limits information.) (2)(5)

Other Navigation Projects

As discussed later in Section 4, the state of South Carolina passed several acts in the 1700's and early 1800's to improve navigation on streams in the Coosawhatchie report area.

Inquiries made at various state and Federal agencies indicate no projects are now planned or under construction which would improve or substantially benefit navigation on the Coosawhatchie River.

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* This distance does not correspond to river miling developed as a part of this study. This study shows a distance of about 8.2 miles.

TABLE 3

AUTHORIZED FEDERAL NAVIGATION PROJECTS (4)(5)

Waterbody	Atlantic Intracoastal Waterway
Work Authorized	12 ft deep (at mean low water) not less than 90 ft wide channel
Date Completed	1940
Project Location	Between Norfolk, Virginia and St. Johns River, Florida
Authorization	River and Harbor Acts: 19 September 1890; 13 June 1902 - H. Doc. 56th Congress, 1st Sess.; 3 March 1925 - H. Doc. 237, 68th Congress, 1st Sess.; 3 March 1925 - S. Doc. 178, 68th Congress, 2nd Sess.; 3 July 1930 - H. Doc. 41, 71st Congress, 1st Sess.; 30 August 1935 - Rivers and Harbors Committee Doc. 14, 72d Congress, 1st Sess.; 30 August 1935 - H. Doc. 129, 72d Congress, 1st Sess.; 31 August 1935 - Rivers and Harbors Committee Doc. 11, 72d Congress, 1st Sess.; 26 August 1937 - Harbors and Rivers Committee Doc. 6, 75th Congress, 1st Sess.; 2 March 1945 - H. Doc. 327, 76th Congress, 1st Sess.

Waterbody	Port Royal Sound
Work Authorized	Provides for a channel from the ocean through Port Royal Sound to Port Royal, South Carolina. This work includes channels (1) 27 ft long and 500 ft wide across the ocean bar and in Port Royal Sound for approximately 13.2 miles, (2) 24 ft deep and 300 ft wide in Beaufort River and (3) Battery Creek for approximately 7.5 miles to and including a turning basin 27 ft deep and 600 ft wide

TABLE 3 (continued)

AUTHORIZED FEDERAL NAVIGATION PROJECTS (4)(5)

Date Completed	June 1956
Project Location	Port Royal Harbor, Port Royal Sound, Beaufort River, and Battery Creek
Authorization	River and Harbor Act of 3 September 1954, House Document 469, 81st Congress, 2nd Session
Waterbody	Village Creek
Work Authorized	Provides for channel 8 ft deep and 80 ft wide from that depth in the Morgan River to the Porpoise Fish Company Terminal, a distance of 2.2 miles
Date Complete	1966
Project Location	Village Creek, S. C.
Authorization	Section 107 of the 1960 River and Harbor Act, as amended on 24 November 1965
Waterbody	Archers Creek
Work Authorized	Provides for 6 ft deep channel at mean flow water and 75 ft wide from its intersection with the Beaufort River for a distance of two miles
Date Completed	1914
Project Location	Archers Creek (Port Royal Sound Island and Parris Island, S. C.)
Authorization	River and Harbor Act of 1912, House Document 513, 62nd Congress, 2nd Session

SECTION 4 - INTERSTATE COMMERCE

Past

In the late 17th and early 18th Centuries, English settlement in South Carolina spread inland to the northwest and southwest from Charleston, while settlers from Scotland, under Lord Cardross, had attempted to settle at Port Royal. Wherever possible, these settlers used the most efficient means of transportation then available; riverine transportation. By the 1830's, the rice growing culture spawned the great plantations along the lower tidewater reaches of the Broad-Colleton-Coosawhatchie River system. Rice, naval stores, surplus grains, and various timber products could be moved down that system to the deep-water port of Beaufort, S. C. These products could then be distributed by ship from Beaufort to other British colonies or to England itself. In addition to the staves and lumber shipped to the West Indies and the furs and pelts transported to England, South Carolina exported directly to the mother country some 264,488 pounds of rice between 1720 and 1729; and some 429,525 pounds of rice between 1730 and 1739. (6) A significant portion of these totals came from the Coosawhatchie River basin, as the coastal region "had always been ... dependent on foreign markets to which it exported rice, indigo, lumber, naval stores, cotton, and other relatively minor items. (7)

In order to improve the various watercourses which made such exportation possible, the General Assembly of the colony of South Carolina sought to clear several of the key streams. To that end, various acts were passed after 1714 which called for specified kinds of improvements to a number of streams. One such act, passed in 1756, intended to make navigable a tributary of the Coosawhatchie-Broad network, "the Chechessey Creek." (8) An act passed in 1778 was for "clearing and making navigable Tulifiny Creek, from the bridge known by the name Tulifiny Bridge, to the Mill-dam of Barnard Elliott, Esq." (9) Nine years later, in 1787, another act sought to clear and make navigable the same Chechessey Creek mentioned above. (10)

The extent of success to which these and similar efforts -- mounted during the time that South Carolina was a royal colony of Great Britian -- is not clear from the evidence available. It is clear, however, that Beaufort and Port Royal were significant ports during the period, and so they remained after American independence had been won. The Coosawhatchie-Broad River network did not -- relative to the other river basins in the state -- profit from the funds which South Carolina devoted to inland navigation in the period 1820-30. (11) Nonetheless, by 1818 John Wilson, the state's Civil and Military Engineer, was charged with the task of cataloging the major rivers. The report which he submitted indicates something of the Coosawhatchie's usefulness. "The Tulifiny and Coosawhatchie unite," noted Wilson, "a little above their junction with Broad River, and the navigation is good from the ocean to where the influence of the tide ceases, about 30 miles." Wilson's report continues, indicating that "The only obstructions to the navigation ... from the line, where the influence of the tide ceases, to the Granite ridge, are sand bars and logs." (12)

Eight years later, in 1826, Robert Mills, architect and inland-navigation advocate, described the Coosawhatchie and its several tributaries. The Coosawhatchie, he wrote in Statistics of South Carolina, 1826, is navigable "for vessels of considerable burden." (13) Both the Chechessee River and the Colleton River, he noted, were also navigable "for vessels of considerable burden" (14) Still another tributary, the Pocotaligo River, which feeds into the Broad River, was also "navigable for vessels of considerable burden." Although the Pocotaligo River had "a considerable trading place before the [American] Revolution," it now "contains only a few houses." (15)

During the Civil War, the U. S. Navy, under Admiral DuPont, captured Port Royal in 1861, and thus denied the Confederates an outlet for these crops or products produced inland along the Coosawhatchie. In the years following the Civil War, the Coosawhatchie-Broad River system was slow to recover its old prominence. Various examinations of the waterbodies of that system were mounted by the U. S. Army Corps of Engineers in 1880

and 1888. Regarding the traffic typical of the region in 1880, Colonel Quincy Gillmore wrote that "all freights arriving from the interior for transportation to foreign or domestic ports ... [are] transferred to oceangoing vessels at the [Port Royal] railroad wharves, and all freight arriving by vessels at Port Royal Sound for transfer to the interior would be loaded into railroad cars at the same place." (16)

In the decade and a half following Gillmore's 1880 report, the "water commerce of Beaufort increased with the increase of the phosphate interests and with the establishment of the Port Royal naval station on the Beaufort River about 6 miles below the Town of Beaufort." However, the rise of competition from Florida-based phosphate mines hurt those near Beaufort; although, in 1903 the Virginia-Carolina Chemical Company continued to operate a fertilizer factory on the Beaufort River. (17) Yet by 1901, for example, it was reported that the value of exports at Beaufort had dwindled from some $4,939,417 in 1894 to only $166,189 only seven years later. (18) In 1902, the commercial statistics for the region indicated that 29,333 tons of fertilizer, 90,873 tons of phosphate rock, plus additional amounts of timber, coal, and cement had been moved across the bar at Port Royal, amounting to a total of 148,547 tons. These commodities were moved in that year of 1902 in 112 merchant vessels. (19)

By the second and third decades of the 20th Century, the channel at Port Royal had "a 43-foot depth available at mile 12.6, the junction of the Cheechessee and Broad Rivers." As for the Broad, it was navigable as far up as mile 24.5*, and the Beaufort River joins it at mile 14*. (20) The usefulness of the waterbodies forming the Broad-Coosawhatchie network was potentially expanded after the passage of the Rivers and Harbors Act of 26 August 1927. This and other acts provided for the "Atlantic Intracoastal Waterway between Norfolk, Va., and St. Johns River, Fla.," which project was completed in 1940. This allowed for a considerable movement of "petroleum products, pulpwood, paper, oysters, oyster shells and agricultural products." (21)

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* This distance does not correspond to river miling developed as a part of this study.

A second development, which appeared to place the potential of the Broad-Coosawhatchie Basin in a markedly different perspective, was South Carolina's creation, in 1942, of a unified State Ports Authority system. The first institution of its type, the State Ports Authority had as its goal the improvement of South Carolina's principal port of Charleston, but also of the lesser ports of Georgetown and Beaufort-Port Royal as well. (22)

Even with the creation of the Ports Authority, while considerable amounts of material were being moved up and down the coast via the inland waterway, neither Beaufort nor Port Royal appeared particularly to enjoy any major expansion of commercial activity of a waterborne, interstate variety. Indeed, as of 1950, it was stated that "no deep-draft commercial vessels have used the harbor during the last 45 years." (23) Three years later, Waterborne Commerce of the United States, 1953 contained no listing for the Coosawhatchie-Broad River network, and did not specify any waterborne commercial activity for that stream. (24)

Present

The Coosawhatchie-Broad River network is not currently being used for purposes of waterborne interstate commerce. (25)

As noted by Wilson, in the early 19th Century, the Coosawhatchie was navigable to the poleboats and perriaugers* then in use as far up as "where the influence of the tide ceases, about 30 miles." It and several of its tributaries seem also to have been "navigable for vessels of considerable burden."

In 1965, the Coosawhatchie River was described as follows: "Navigable length in miles (7 miles**); trib. of Broad River, U. S. Highway 17 limit of practical navigation." The Broad River was described as being navigable for 18 miles. (5)

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* Perriauger - A vessel used during the early development period of the United States (1700's-1800's) for the transportation of supplies. The vessel was sometimes oared, poled, or pulled and was occasionally fitted with mast and sail.

** This distance does not correspond to river miling developed as a part of this study.

Future Potential

Comprehensive analysis of the regional economics (income, education, employment, community facilities, transportation systems and similar factors), which would indicate growth patterns and the services needed to sustain various types of industrial and commercial activities, is beyond the scope of this study. Thus, the potential use of the Coosawhatchie River and its tributaries for interstate commerce in future years is difficult to predict.

The river has the potential to be utilized for shipment of goods into other states since it is connected to the Broad River, Intracoastal Waterway, and the Atlantic Ocean at Port Royal Sound. However, future potential interstate commerce is not anticipated to be significant in the basin due in part to heavy dependence by industrial and commercial establishments on other forms of transportation, including the interstate highway system, railroads, and air transport.

SECTION 5 - LEGAL AUTHORITY

General

This section presents information pertaining to the legal aspects of the navigability investigation. Such Federal and state court decisions as apply to the specific basin reported on herein are outlined. The Summary Report presents more complete documentation and references to the court cases dealing with navigation classifications and legal jurisdiction.

Navigability Interpretations

The term "navigable waters of the U. S." is used to define the scope and extent of the regulatory powers of the Federal government. Precise definitions of "navigable waters" or "navigability" are ultimately dependent on judicial interpretation, and are not made conclusively by administrative agencies.

Definitions of "navigability" are used for a wide variety of purposes and vary substantially between Federal and state courts. Primary emphasis must therefore be given to the tests of navigability which are used by the Federal courts to delineate Federal powers. Statements made by state courts, if in reference to state tests of navigability, are not authoritative for Federal purposes.

Federal courts may recognize variations in definition of navigability or its application where different Federal powers are under consideration. For instance, some tests of navigability may include:

1. Questions of title to beds underlying navigable waters.
2. Admiralty jurisdiction.
3. Federal regulatory powers.

This study is concerned with Federal regulatory powers. Unfortunately, courts often fail to distinguish between the tests, and instead rely on precedents which may be inapplicable. Thus, a finding that waters are "navigable" in a question dealing with land title may have a somewhat different meaning than "navigable waters of the U. S." which pertains to Federal regulatory functions.

In this study, the term "navigable waters of the U. S." is used to define the extent and scope of certain regulatory powers of the Federal government (River and Harbor Act); this is distinguished from the term "navigable waters" which refers to other Federal regulatory powers (Section 404 of PL 92-500).

Administratively, the term "navigable waters of the U. S." has been defined to mean waters that have been used in the past, are now used, or are susceptible to use as a means to transport interstate commerce landward to their ordinary high water mark and up to the head of navigation as determined by the Chief of Engineers. "Navigable waters of the U. S." are also waters subject to the ebb and flow of the tide shoreward to their mean high water mark. These waters are deemed subject to a Federal "navigation servitude". The term "navigable waters of the U. S." defines the more restricted jurisdiction which pertains to the River and Harbor Act of 1899.

In contrast, the term "navigable waters" defines the new broader jurisdiction with respect to Section 404 of the Federal Water Pollution Control Act Amendments of 1972. Accordingly, "navigable waters" not only include those waters subject to the navigation servitude, but adjacent or contiguous wetlands, tributaries, and other waters, as more fully defined in revised Corps of Engineers Regulations.

Although this navigability study covers both "navigable waters of the U. S." and "navigable waters", the analyses of judicial interpretations have only focused upon determining "navigable waters of the U. S." to the head of navigation. Due to common usages in court cases, the terms "navigability" and "navigable waters" may herein appear interchangeably with the term "navigable waters of the U. S." However, the summary of court cases is directed at the Federal regulatory jurisdiction of the River and Harbor Acts, and not necessarily regulatory jurisdiction under the Federal Water Pollution Control Act.

General Federal Court Cases

Powers of the Federal government over navigable waters stem from the Commerce Clause of the U. S. Constitution (Art. I,§8). Pursuant to

its powers under the Commerce Clause, Congress enacted the River and Harbor Act of 1899.

The well-established Federal test of navigability to whether a body of water is used or is capable of being used in conjunction with other bodies of water to form a continuous highway upon which commerce with other states or countries might be conducted.

Several Federal court decisions make it clear that a waterway which was navigable in its natural or improved state retains its character as "navigable in law" even though it is not presently used for commerce. The test of navigability is not whether the particular body of water is in fact being used for any form of commerce but rather whether it has the capacity for being used for some type of commerce. Several cases substantiate this (see the Summary Report for details on the court decisions).

The ebb and flow of the tide is another test which remains a constant rule of navigability in tidal areas, even though it has sometimes been disfavored as a test of Federal jurisdiction. Several cases note that ebb and flow should not be the sole criterion of navigability, but that extension of Federal jurisdiction into the major non-tidal inland waters is possible by an examination of the waters "navigable character". The ebb and flow test, however, remains valid as a rule of navigability in tidal areas; it is merely no longer a restriction for non-tidal areas. For bays and estauries, this extends to the entire surface and bed of all waterbodies subject to tidal action, even though portions of the waterbody may be extremely shallow or obstructed by shoals, vegetation or other barriers as long as such obstructions are seaward of the mean high tidal water line. Marshlands and similar areas are thus considered "navigable in law" insofar as they are subject to inundation by the mean high waters. The relevant test is therefore the presence of the mean high tidal waters. Navigable waters are considered navigable laterally over the entire surface regardless of depth.

Another factor relevant to navigability determinations is land title. Whatever title a party may claim under state law, the private ownership

of the underlying lands has no bearing on the existence or extent of the dominant Federal jurisdiction over "navigable waters of the U. S." Ownership of a river or lake bed will vary according to state law; however, the Supreme Court has consistently held that title to the bottomlands is subordinate to the public right of navigation.

Specific Federal Court Cases

Navigability, in the sense of actual usability for navigation or as a legal concept embracing both public and private interests, is not defined or determined by a precise formula which fits every type of stream or body of water under all circumstances and at all times. A general definition or test which has been formulated for Federal purposes is that rivers or other bodies of water are navigable when they are used, or are susceptible of being used, in their ordinary condition as highways for commerce over which trade and travel are or may be conducted in the customary modes of trade and travel on water.

The question of navigability of water when asserted under the Constitution of the U. S., as is the case with "navigable waters of the U. S.", is necessarily a question of Federal law to be determined according to the general rule recognized and applied in the Federal courts.

Review of Federal case history reveals no decisions which apply specifically to navigation in the Coosawhatchie River report area. (26)

South Carolina State Court Cases

The current South Carolina legislative enactment defining navigability and requiring freedom from obstruction may be found in Section 70-1 of the South Carolina Code of Laws. This Section essentially provides that all streams which can float rafts of lumber or timber are considered navigable by state law.

Many of the South Carolina State cases reported are primarily concerned with state ownership questions. While the majority of states actually own their streams and exercise control over their navigable waters, the ultimate authority has been granted to the Federal govern-

ment by the Commerce Clause of the Constitution. The general rule, then, is that the states both own and control the navigable streams within their borders, subject to exercise of the superior right of control by the U. S. Although case histories show that state and Federal concepts of navigability do not always agree, when Federal interests are at stake, the Federal test will govern.

There are exceptions, however, to the "overwhelming majority rule of state ownership of lands beneath navigable waters," and South Carolina is in the minority. In the minority states, it was considered that property rights were vested at the time of independence from England and that the state took title only to tidal-navigable streams while riparian owners took title to all stream beds, both navigable and non-navigable, if non-tidal. Even in the minority states, however, private ownership of the bed does not affect the rights of the public to the use of navigable waters.

A legal search indicates that there are three South Carolina state court cases which specifically deal with navigation considerations in the Coosawhatchie River basin. (26)

State v. Pacific Guano Co.* - This case arose under a statute designed to "protect the rights and interests of the state in the phosphate rocks and phosphatic deposits in the navigable streams and waters of the state..." (XVI Stat. 615 [S.C. 1878]) Damages and an injunction were sought from the out-of-state corporate defendant. The questions of interest arose as to streams which were tidal but not navigable in fact. The court, on appeal, did take an unusual approach to the question. The circuit court had ruled:

> "Chisolm's Creek and Big Creek were not navigable streams. Although the tide ebbs and flows through them, yet the conditions necessary to sustain trade or commerce of any kind do not exist ... Flowing out of Coosaw, with the tide, into Chisolm's Island, they lose themselves in the marshes with which they are surrounded. They are entirely within the private estate of the owners of the island and make no connection with thoroughfares of travel or trade and are none themselves."

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* 22 S. C. 50 (1884).

After observing that "the fundamental idea (of the common law) was that the property in the sea and tide-waters, and in the soil and shore thereof, was in the sovereign," the court went on to sustain the opinion below as a factual question not reviewable on appeal:

> "The circuit judge, notwithstanding the positive rule of the common law as to the navigability of all tidal streams, held that even tidal channels are navigable in law only when they are navigable in fact ... and we cannot say that this was error of law ... These were pure findings of fact by the circuit judge ... We cannot hold that the bed of a creek not navigable, although tidal, belongs to the state to the exclusion of the riparian proprietor."

Thus, the court took the unusual tact of allowing the circuit judge to displace the common law by declaring that it was a factual finding not subject to review in a law case. In this regard, the circuit judge found, based on the facts, that the following creeks were navigable in fact, the state supreme court refusing to overturn this determination: Palmer's Creek, Haulover Creek, Horse Island Creek, Sheaphead or Fish Creek, a branch of Palmer's Creek, and South Wimbee Creek. Accordingly, the tidal channels were deemed navigable in the law only when they were navigable in fact for trade and commerce by craft of some kind.

State v. Pinckney* - In this case, the state sought recovery of land between the high and low water marks of a tidal body of water. The court found the correct common law rule to be that:

> "The space between the high and low water mark of the border of the sea is called the shore, and belongs by the common law to the sovereign, unless acquired by grant from the sovereign ..."

Essential to this holding is that the subject tidal areas in Beaufort County are navigable waters, including the area near the Coosaw River, Parrott Creek, Morgan River, and St. Helena Sound.

Heyward v. Farmers' Mining Co.** - Bull River and Coosaw River reportedly united at nearly a right angle, the former running north and south and the latter running east and west. Shingle Creek ran up into the marsh nearly at a right angle to the Coosaw River, in a northerly direction, and another similar creek called "Buzzard Island

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* 22 S. C. 484 (1884).

** 42 S. C. 138, 19 S. E. 963 (1894).

Creek" ran into the marsh from the Bull River in an easterly direction. In a trespass action, the trial court found as a fact that certain streams were not navigable and was reversed on appeal. The ruling is summed up by the headnote editor:

> "Therefore, where the trial judge ruled that a tidal creek was not a navigable stream of the state, because it ran up into a private estate and lost itself in the surrounding marsh, because it had never been used as a highway for commerce, and there seemed to be no prospect of its ever being so used, and because it makes no connection with other highways he erred in all of these rulings."

The court considered all these conditions irrelevant to the true test of navigable capacity; "to be navigable, a stream should have sufficient depth and width to float useful commerce ..." As a result the plaintiff could not have title to the tidal lands, and his trespass action failed.

Recent Federal Litigation

A review of recent Federal litigation concerning the Charleston District revealed one court action in the Coosawhatchie River basin concerning navigation. (26)

U. S. v. Davis O. Heniford, Jr.* - Defendant initially applied to the Corps for the construction and connection of a finger-canal system at Harbor Island, Beaufort County, South Carolina in October 1971. While the permit application was pending, defendant initiated construction on the canal system, which was a part of said permit application. Prior to commencing work, the Corps had informed defendant that a permit was not then required for work above the level of mean high water so long as a connection to navigable waters was not made. At the same time, however, the Corps pointed out to defendant that his construction activities would not have a favorable bearing on the permit application to connect to navigable waters. Further, defendant was instructed by the Corps not to work below the level of mean high water. As a part of the construction, defendant later installed a flap-gate that connected a portion of the inland canal system to navigable waters. The flap-gate was removed upon notice from the Corps. This civil action was commenced

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* U.S.D.C., South Carolina, Civil Action No. 74-865.

against the defendant on 2 July 1974. The position propounded by the U. S. Attorney's office has been that: (1) construction of the canals in such close proximity to navigable waters so that a connection is inevitable requires a Corps permit under Section 10 of the River and Harbor Act of 1899; and (2) Section 10 jurisdiction is established over the canals that were connected by the flap-gate because, as a matter of law, once man-made canals are connected to navigable waters they remain navigable even if the connection is restored. Due to unresolved objections, the Corps returned the permit application to defendant on 13 March 1975. A Consent Judgement was filed 9 April 1976 enjoining further work unless a prior Corps permit or waiver of requirement was obtained. The judgement also required defendant to maintain the embankments, and to restore any rupture according to Corps approved plans.

Federal Agency Jurisdiction

The delineation of "navigable waters of the U. S.", as discussed earlier, in essence, defines the Federal navigation servitude and is applicable to Federal jurisdiction generally (not merely applicable to the Corps of Engineers). No matter which Federal agency or activity may be involved, the assertion of "navigability" ("navigable waters of the U. S.") arises under the U. S. Constitution, or under application of Federal statute.

By virtue of the Commerce Clause of the Federal Constitution, and the clause empowering Congress to make all laws necessary to carry into execution the Federal judicial power in admiralty and maritime matters, "navigable waters of the U. S." are under the control of Congress, which has the power to legislate with respect thereto. It is for Congress to determine when and to what extent its power shall be brought into activity. It may be exercised through general or special laws, by Congressional enactments, or by delegation of authority.

Thus, Congress has power which is paramount to that of the states to make improvements in the navigable streams of the U. S. and for this purpose to determine and declare what waters are navigable. The Federal government also has the power to regulate the use of, and navigation on, navigable waters.

The above presents the basis upon which Federal jurisdiction in "navigable waters of the U. S." is established. The basic definition or jurisdictional concept of "navigable waters of the U. S." remains consistent, irrespective of which department or office of the Federal government may be delegated particular responsibility. For instance, the safety, inspection, and marine working functions of the U. S. Coast Guard embrace vessel traffic within "navigable waters of the U. S." as previously defined.

With specific reference to agency regulation of construction or work within "navigable waters of the U. S.", other than by the Corps of Engineers, the Department of Transportation Act of 15 October 1966 (PL 89-670) transferred to and vested in the Secretary of Transportation, certain functions, powers, and duties previously vested in the Secretary of the Army and the Chief of Engineers. By delegation of authority from the Secretary of Transportation, the Commandant, U. S. Coast Guard, has been authorized to exercise certain of these functions, powers, and duties relating to the location and clearances of bridges and causeways in the "navigable waters of the U. S."

An additional agency of particular interest concerning work or construction within "navigable waters of the U. S." is the Federal Power Commission. The Federal Power Act, Title 16, United States Code, Sections 791 et. seq., contemplates the construction and operation of water power projects on navigable waters in pursuance of licenses granted by the Federal Power Commission. The statute was enacted to develop, conserve, and utilize the navigation and water power resources of the nation. The act provides for the improvement of navigation, development of water power, and use of public lands to make progress with the development of the water power resources of the nation.

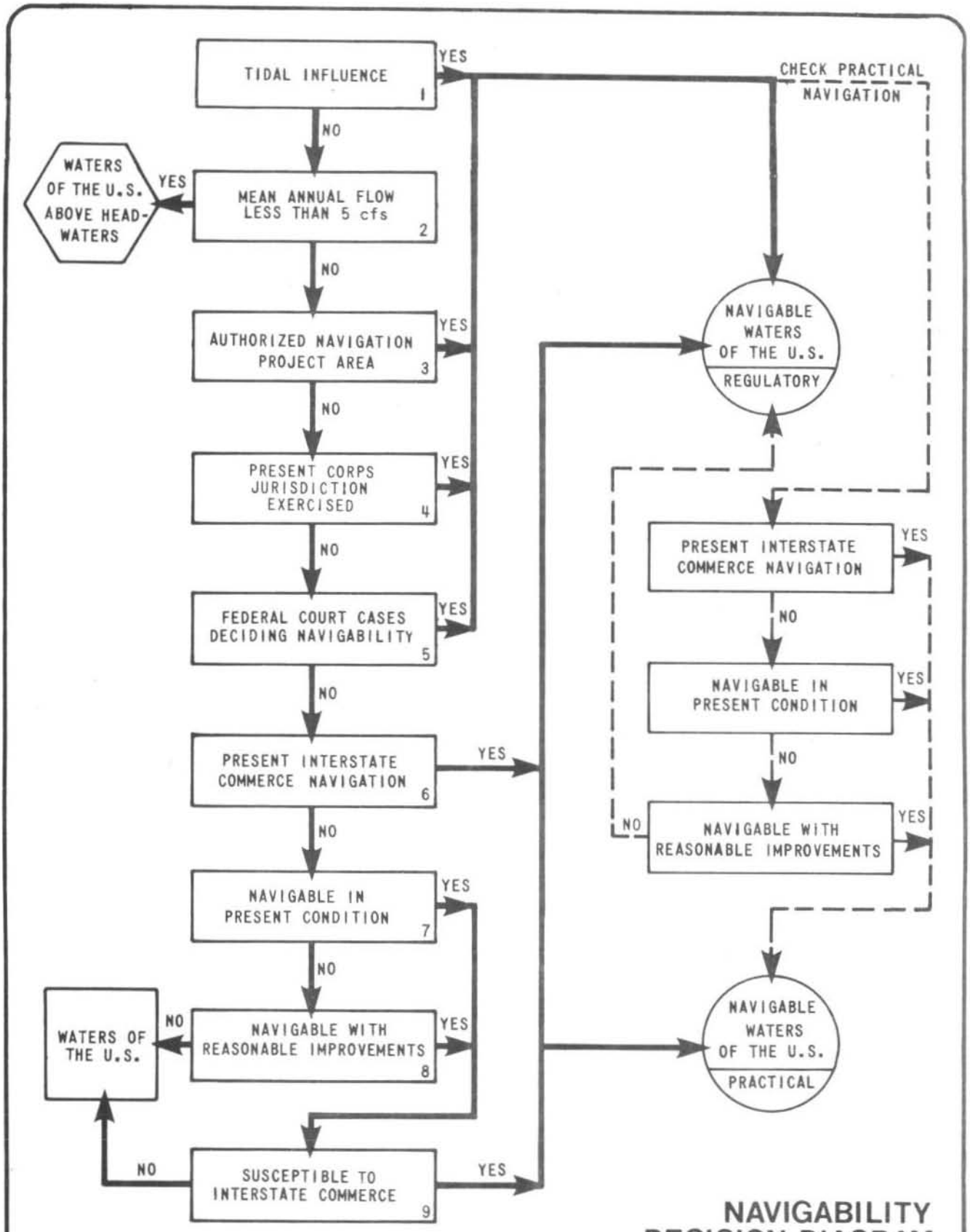
SECTION 6 - NAVIGATION OBSTRUCTIONS AND CLASSIFICATIONS

Navigation Classification Procedures

As noted in Section 5, definition of navigability is not subject to a single precise formula which applies to every circumstance. Many factors including stream physical characteristics (depth, width, flow, slope, etc.), presence of obstructions, court decisions, authorized navigation projects, potential for reasonable improvements, and susceptibility of a stream to interstate commerce activities, play a role in the decision-making process for classifying waterbodies in the Charleston District. In an effort to make the analytical process concerning stream classifications as systematic as possible, a "Navigability Decision Diagram" has been developed and is presented in Figure 1. This diagram has been utilized as a guide in assessing the various navigation classifications for streams in the Charleston District. The Summary Report includes a detailed presentation on the methodology and approaches used in the analysis; however, the following presents a brief synopsis of the techniques as indicated in Figure 1.

Tidal Influenced Areas - Tidal areas (see Item 1 in Figure 1) which are affected by mean high water are classified "navigable waters of the U. S." according to various legislative and judicial actions. The "navigable waters of the U. S." are subject to regulatory jurisdiction by the Corps of Engineers and other agencies. Even though all tidal areas are so classified and subject to regulatory procedures, many are not practically navigable based upon past and/or present requirements for vessels. Figure 1 shows that some additional "check" analyses are necessary to distinguish those tidal waters which are actually capable of practical navigation. Investigation of the tidal areas is beyond the scope of this study; however, drawings showing the "plan" of major rivers to their mouth, often tidal influenced, are presented in the interest of continuity.

Waters of the U. S. Above Headwaters - Section 404 of PL 92-500 considers the headwaters of waterbodies to be the point at which the mean annual flow is five cfs. Waterbodies or portions of waterbodies



NAVIGABILITY DECISION DIAGRAM
Figure 1

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CHARLESTON DISTRICT
U.S. ARMY CORPS OF ENGINEERS

located upstream of the headwaters are nationally permitted by law and do not require an application for dredge or fill discharge permits provided the proposed work will meet certain conditions. However, these waters are classified "waters of the U. S." and are within Corps of Engineers jurisdiction as applicable to Section 404. Item 2 in Figure 1 shows the testing procedure for the five cfs point.

Authorized Navigation Project Area - Any streams which currently have authorized Federal projects to aid navigation are classified as "navigable waters of the U. S." (Item 3 in Figure 1). Many of the projects thus authorized were based upon conditions which are not currently applicable (for example, use of pole boats or steamboats for justifying the navigation benefits). Consequently, many of the streams having older authorized projects will not allow passage of present-day commercial navigation vessels without some additional improvement. Thus, some portions of the authorized project areas are not considered practical for navigation. Figure 1 shows the additional "check" procedure which has been followed to assess the practical limit of "navigable waters of the U. S."

Present Corps Jurisdiction Exercised - The Corps of Engineers is exercising jurisdiction on several non-tidal waterbodies which are not covered by authorized projects (Item 4 in Figure 1). (5) Determinations previously made on these waterbodies under the River and Harbor Act indicated use for interstate commerce and hence the current classification as "navigable waters of the U. S." Some of these streams are not currently navigable by present-day commercial vessels and thus have practical limits. Figure 1 shows the "check" used to assess the practical limits of "navigable waters of the U. S."

Federal Court Decisions - As noted in Section 5, Federal case law is the predominant indicator which is to be used for establishing Federal jurisdiction over waterbodies in the Charleston District (Item 5 in Figure 1). Several decisions have been rendered which classify certain streams in the district as "navigable waters of the U. S." However, some of these court decisions have been arrived at under different circumstances or without the benefit of the data developed as a part of this investigation. Therefore, even though some of the

streams are classified by judicial review as "navigable waters of the U. S.", they are not practical for navigation with present-day vessels. Figure 1 shows the steps necessary to "check" those portions of the "navigable waters of the U. S." which are capable of practical navigation.

Present Interstate Commerce Navigation - Any rivers currently involved in interstate commerce activities are classified as "navigable waters of the U. S." from both the regulatory and practical standpoint (see Item 6 in Figure 1).

Waters of the U. S. Below Headwaters - For those streams, or portions of streams, not subject to authorized projects, court cases, or present interstate commerce navigation, several additional tests for determining navigability are required (Items 7 and 8 in Figure 1). If the waterbody is not judged to be navigable in its present state or with reasonable improvements, then it is beyond the limit of "navigable waters of the U. S." and is termed "waters of the U. S." over the remaining length. These "waters of the U. S." (as well as the "navigable waters of the U. S.") up to the headwaters (five cfs points) of the streams are subject to jurisdiction under Section 404 of PL 92-500. A general or individual permit is required for discharge of dredged or fill material below the headwaters (five cfs point) of "waters of the U. S." Discharges above the headwaters are discussed in the previous subsection, "Waters of the U. S. Above Headwaters."

Interstate Commerce - Some non-tidal waters in the district are not now subject to authorized projects, court decisions, or interstate commerce navigation, but can be navigated under present or reasonably improved conditions. These streams may be considered for classification as "navigable waters of the U. S." if they are susceptible to interstate commerce activities (past, present, or future). A combined judgment considering both "reasonable improvement" factors (Item 8 in Figure 1) and "interstate commerce" factors (Item 9 in Figure 1) has often been utilized in arriving at the conclusions and recommendations concerning navigability of waterbodies in the Charleston District. The Summary Report provides further details on these factors.

Navigation Classification Categories

This study classifies streams into several different categories, each of which is discussed subsequently:

1. Present "navigable waters of the U. S." (by regulatory procedures).
2. Historically navigable waters (based on literature review).
3. Recommended "navigable waters of the U. S." (based upon data developed as a part of this investigation).
4. Recommended waters for practical navigation (within "navigable waters of the U. S.").
5. Headwaters for all waterbodies (five cfs points).

The first four navigation classifications are displayed on the plates presented later in this report. The headwater limits are summarized in Appendix A.

Present Navigable Waters of the U. S.

The Coosawhatchie River is classified as "navigable waters of the U. S." from its confluence (R.M. 0.0) with the Broad River near Port Royal Sound to the U. S. 17 Highway bridge (R.M. 7.0*). (5) However, the tidal limit has been estimated at R.M. 9.0, and since all tidal areas are classified as "navigable waters of the U. S.", the present limit must be at the limit of tidal influence, R.M. 9.0.

Historically Navigable Waters

Various types of vessels ranging from cypress log canoes to poleboats and perriaugers have navigated the Coosawhatchie River from the 1700's and well into the 20th Century. As indicated in Section 4, these vessels navigated the Coosawhatchie to "where the influence of the tide ceases." Data developed during this study indicates the location of tidal influence at approximately R.M. 9.0 (see Summary Report for explanation of methodology for tidal limits). Therefore, R.M. 9.0 is identified as the limit of historic navigation.

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* This distance does not correspond to river miles developed as a part of this study. This study shows a distance of about 8.2 miles at this point.

Recommended and Practical Navigable Waters of the U. S.

The recommended and practical limit of "navigable waters of the U. S." is at R.M. 9.0, the limit of tidal influence. This recommendation is based on review of the present classification as well as an investigation into the practicality of navigation. The "practical navigable waters of the U. S." classification is based on field observations and computational analysis of channel dimensions made at obstructions upstream of the tidally influenced portion of the stream. The results indicate an approximate mean water depth of about 4 feet, an approximate mean channel width of 20 feet, and an average slope of 1.8 feet per mile at mean water to the U. S. 601 Highway bridge near Hampton, South Carolina at R.M. 33.7. The present potential for river commerce does not appear sufficient to justify the extensive amount of work that would be required to establish a navigable channel beyond the tidal influence area.

There are no significant non-tidal tributaries to the Coosawhatchie River capable of supporting navigation.

These conclusions on the navigation limits meet the criteria established for the Federal test of navigability that the body of water is used, or is capable of being used, in conjunction with other bodies of water to form a continuous highway upon which commerce with other states or countries might be conducted

Waters of the U. S.

"Waters of the U. S." are considered to be all streams beyond the recommended limits of "navigable waters of the U. S." "Waters of the U. S." with more than five cfs mean annual flow require a permit for discharge of dredged or fill material. "Waters of the U. S." with less than five cfs mean annual flow are nationally permitted by law and will not require an individual application for dredge or fill discharge permits provided the proposed work will meet certain conditions.

Appendix A lists all the five cfs water flow points associated with the Coosawhatchie River report area. Each point is located by stream code, stream name, latitude and longitude, and a mileage reference.

Appendix B lists the lakes located in the Coosawhatchie River report area which have surface areas between 10 and 1,000 acres. The lake summary identifies the stream basin code, lake name or owner, county location, and where data is available, the surface area and gross storage.

SECTION 7 - CONCLUSIONS AND RECOMMENDATIONS

Five classifications of navigation on streams in the Coosawhatchie River report area have been determined and are presented below. The first two are classifications developed from historical evidence and current Federal stream classifications. Classification 3 is based on field measurements, observations, and data analysis for the river. Classification 4 is based on review of all previously determined limits with a recommendation of the most upstream locations with supporting evidence of navigability. The fifth classification accounts for all streams not otherwise classified and was determined based on the drainage area and hydrological aspects of the stream.

1. The Coosawhatchie River is presently classified "navigable waters of the U. S." between its mouth at R.M. 0.0 on the Broad River to R.M. 9.0 (the approximate tidal limit).
2. The historical limit of navigation on the Coosawhatchie River is R.M. 9.0.
3. The non-tidal portion of the Coosawhatchie River is not recommended as practically navigable. Practical navigation within tidal areas is beyond the scope of this study, consequently, the recommended practical navigation limit is located within tidal waters but not defined by river mile.
4. It is recommended that the Coosawhatchie River be classified "navigable waters of the U. S." from its mouth (R.M. 0.0) at its confluence with the Broad River to R.M. 9.0, the limit of tidal influence.
5. All streams not recommended for classification as "navigable waters of the U. S." are recommended for classification as "waters of the U. S." throughout their entire length.

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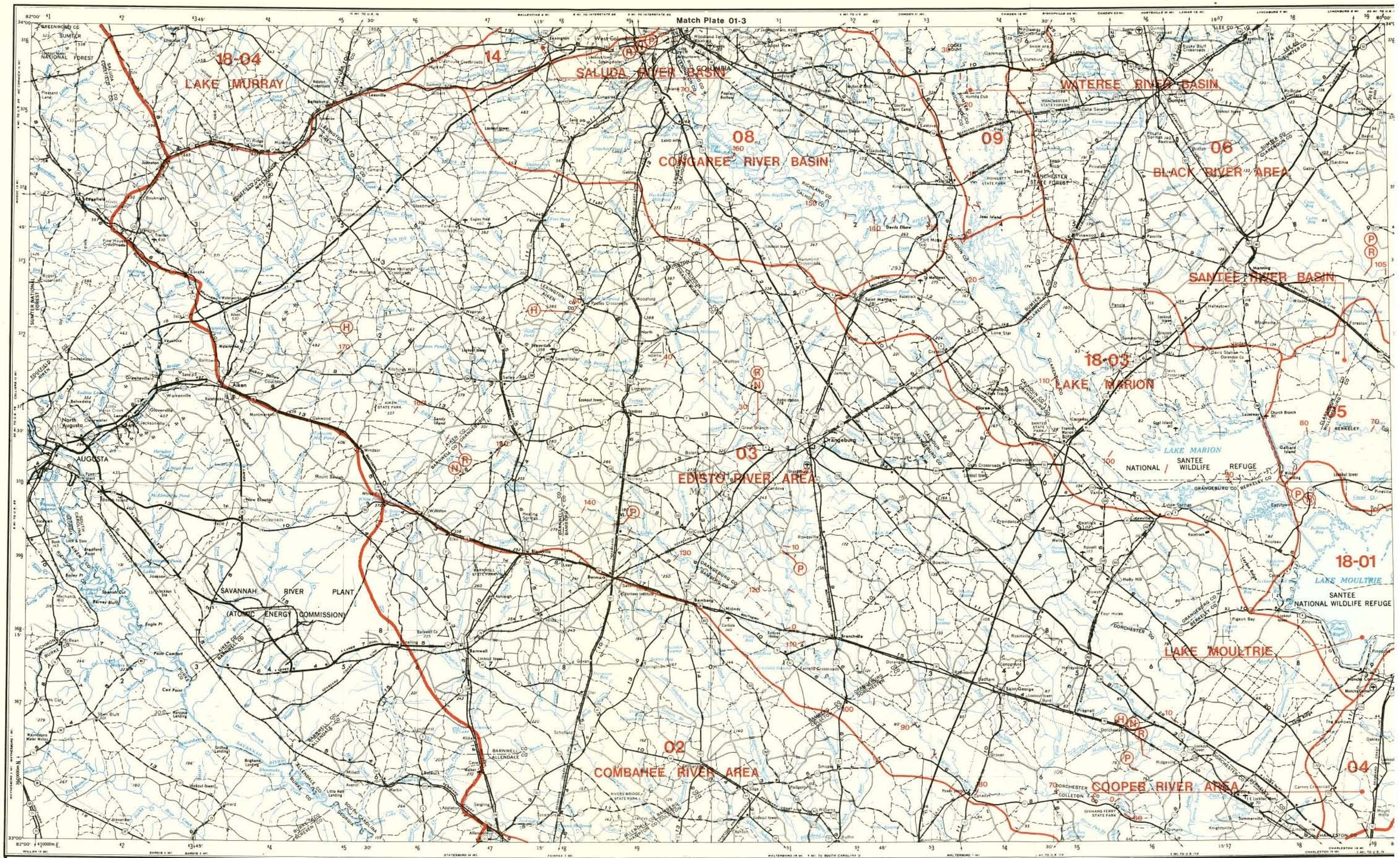

POPULATED PLACES
Over 500,000 — NEW ORLEANS
100,000 to 500,000 — CHARLOTTE
25,000 to 100,000 — CHARLESTON
5,000 to 25,000 — Georgetown
1,000 to 5,000 — Kingstree
Less than 1,000 — Inchon

RAILROADS
Standard gauge
Narrow gauge

BOUNDARIES
Park or reservation
State
County

ROADS
Primary, all-weather, hard surface
Secondary, all-weather, hard surface
Light duty, all-weather, improved surface
Fair or dry weather, unimproved surface
Trail
Interchange
Route markers: Interstate, U.S., State

Landplane airport
Landing area
Seaplane airport
Seaplane anchorage

Power line
Landmark: School; Church; Other
Spot elevation in feet
Marsh or swamp
Intermittent or dry stream

USGS BASE MAP
AUGUSTA, GA., S.C.
1957, Revised 1969
NI 17-8

0 5 10
scale in miles

N

LEGEND:
- (N) PRESENT LIMIT OF NAVIGABLE WATERS OF THE U.S.
- (H) HISTORIC LIMIT OF NAVIGATION
- (P) PRACTICAL LIMIT OF NAVIGATION (RECOMMENDED)
- (R) LIMIT OF NAVIGABLE WATERS OF THE U.S. (RECOMMENDED)
- 20 RIVER MILE

1977

U.S. ARMY CORPS OF ENGINEERS
CHARLESTON DISTRICT
Charleston, South Carolina

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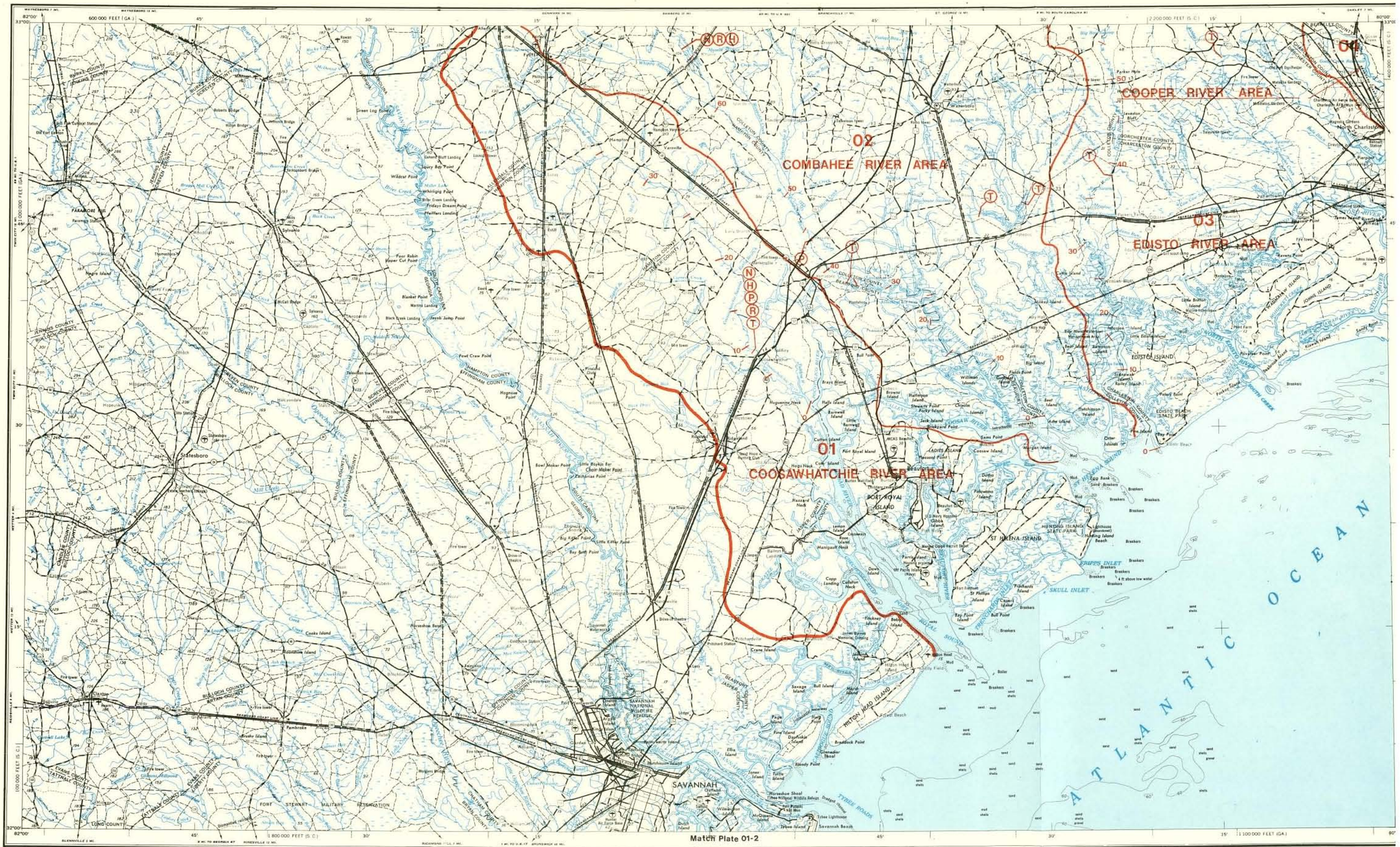
SIGNIFICANT FEATURES

COOSAWHATCHIE RIVER AREA

Report No. 01, 02, 03, 04, 05, 06, 08, 09, 14, 18

NAVIGABILITY STUDY

Plate 01-2



USGS BASE MAP
SAVANNAH ,GA.; S.C.
1957 Revised 1967
NI 17-11

0 5 10
scale in miles

N

LEGEND:

- (N) PRESENT LIMIT OF NAVIGABLE WATERS OF THE U.S.
- (H) HISTORIC LIMIT OF NAVIGATION
- (P) PRACTICAL LIMIT OF NAVIGATION (RECOMMENDED)
- (R) LIMIT OF NAVIGABLE WATERS OF THE U.S. (RECOMMENDED)
- (T) APPROXIMATE LIMIT OF TIDAL INFLUENCE
- 20 RIVER MILE

1977

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Charleston, South Carolina

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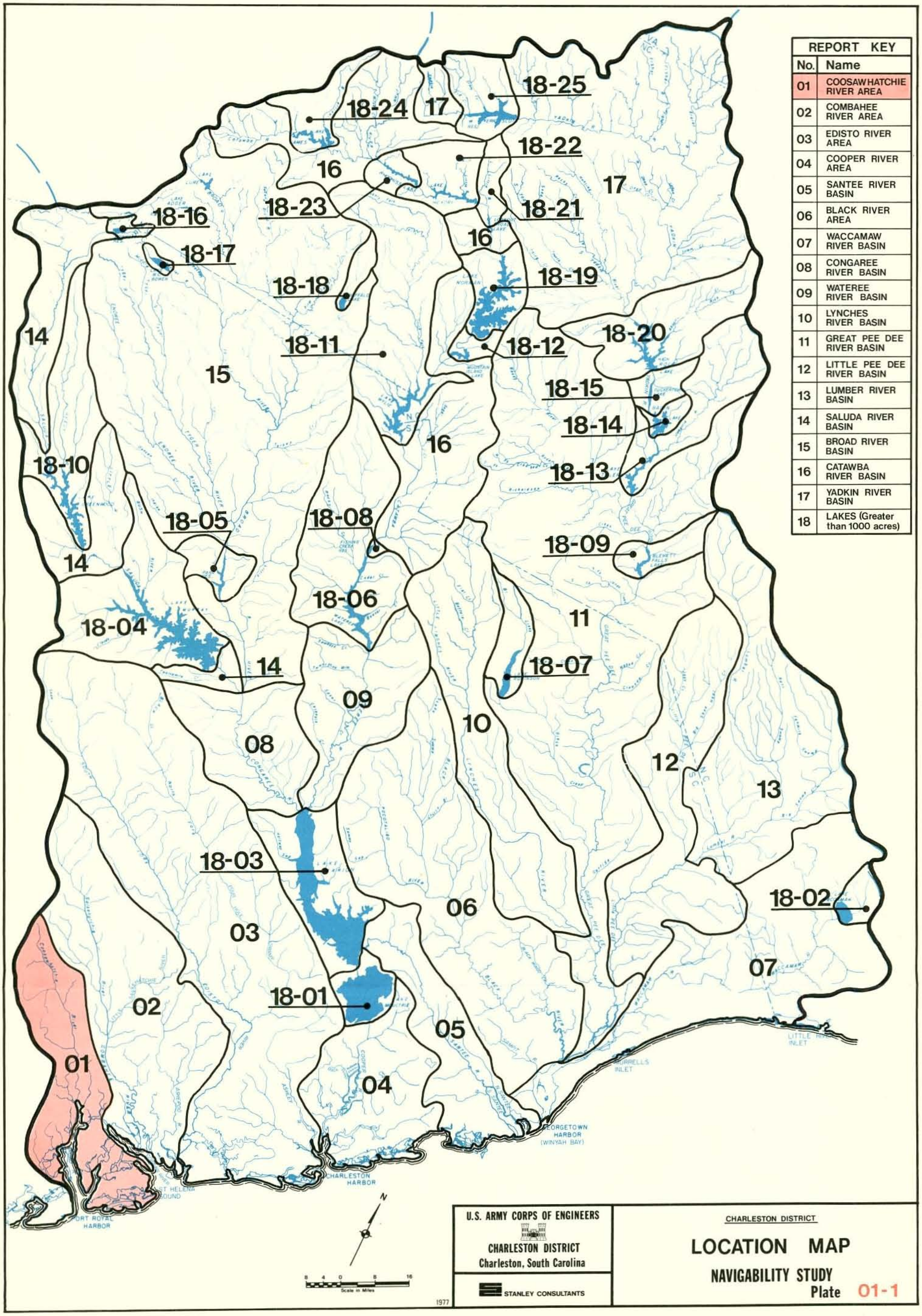
SIGNIFIGANT FEATURES
COOSAWHATCHIE RIVER AREA
Report No. 01,02,03,04
NAVIGABILITY STUDY
Plate 01-3



REPORT KEY	
No.	Name
01	COOSAWHATCHIE RIVER AREA
02	COMBAHEE RIVER AREA
03	EDISTO RIVER AREA
04	COOPER RIVER AREA
05	SANTEE RIVER BASIN
06	BLACK RIVER AREA
07	WACCAMAW RIVER BASIN
08	CONGAREE RIVER BASIN
09	WATEREE RIVER BASIN
10	LYNCHES RIVER BASIN
11	GREAT PEE DEE RIVER BASIN
12	LITTLE PEE DEE RIVER BASIN
13	LUMBER RIVER BASIN
14	SALUDA RIVER BASIN
15	BROAD RIVER BASIN
16	CATAWBA RIVER BASIN
17	YADKIN RIVER BASIN
18	LAKES (Greater than 1000 acres)

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CHARLESTON DISTRICT
Charleston, South Carolina

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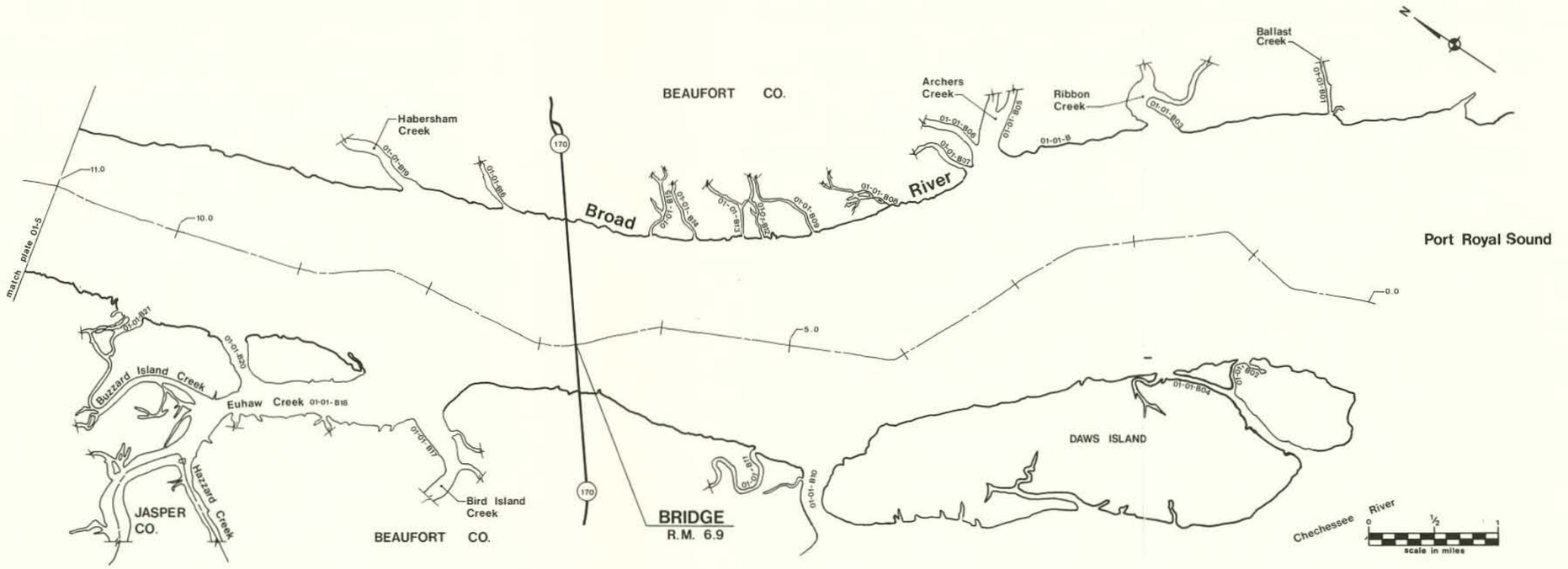
CHARLESTON DISTRICT

LOCATION MAP

NAVIGABILITY STUDY
Plate 01-1



ELEVATION FEET ABOVE MSL

BROAD RIVER TIDALLY INFLUENCED THROUGHOUT

11 10 5 0

RIVER MILES

ELEVATION FEET ABOVE MSL

LEGEND:

- OVERHEAD STRUCTURE — 75' — HORIZONTAL CLEARANCE IN MAIN CHANNEL
- 12' — VERTICAL CLEARANCE TO STRUCTURE
- MEAN WATER SURFACE — MAXIMUM DEPTH AT MEAN FLOW
- STREAM BED — 8' (6') — MAXIMUM DEPTH OF 50 FOOT WIDE CHANNEL AT MEAN FLOW
- STRUCTURE RIVER MILE LOCATION

NOTES:

1. ELEVATION AND SLOPE OF MEAN WATER SURFACE ARE BASED ON USGS TOPOGRAPHIC MAPS AND ARE THEREFORE ONLY APPROXIMATIONS. VERTICAL DIMENSIONS FROM STREAM BED TO OVERHEAD STRUCTURES ARE FIELD MEASUREMENTS. RELATIVE LOCATION OF MEAN WATER SURFACE IS APPROXIMATED FROM CONTOUR MAPS, MEASURED CROSS SECTIONS AND VELOCITIES. STREAM FLOW RECORDS, THE MANNING EQUATION, AND FIELD OBSERVATIONS. SEE SUMMARY REPORT FOR COMPLETE EXPLANATION.
2. THE UPSTREAM EXTENT OF TIDAL INFLUENCE IS APPROXIMATED BY PROJECTING THE ELEVATION OF MEAN HIGH TIDE HORIZONTALLY FROM THE MOUTH OF A RIVER TO A MILE POINT WHERE IT INTERSECTS THE PLOTTED MEAN WATER SURFACE OF THAT RIVER.

1977

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Charleston, South Carolina

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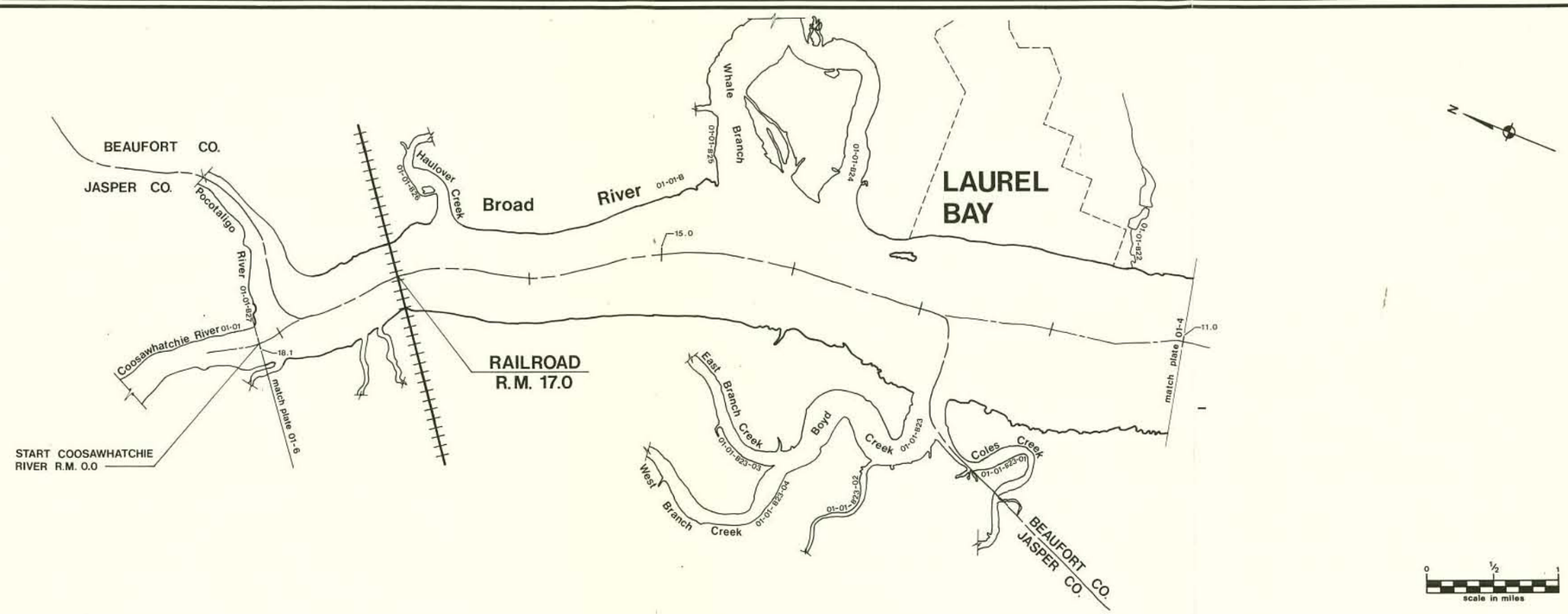
PLAN AND PROFILE

BROAD RIVER

Coosawhatchie River Area
BEAUFORT - JASPER CO., S.C.

NAVIGABILITY STUDY

Miles 0.0 - 11.0 Plate 01-4



ELEVATION FEET ABOVE MSL

BROAD RIVER TIDALLY INFLUENCED THROUHOUT

18.1 18 15 11

RIVER MILES

ELEVATION FEET ABOVE MSL

LEGEND:

OVERHEAD STRUCTURE — 75' — HORIZONTAL CLEARANCE IN MAIN CHANNEL

12' — VERTICAL CLEARANCE TO STRUCTURE

MEAN WATER SURFACE — MAXIMUM DEPTH AT MEAN FLOW

STREAM BED — 8' (6') — MAXIMUM DEPTH OF 50 FOOT WIDE CHANNEL AT MEAN FLOW

STRUCTURE RIVER MILE LOCATION

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Charleston, South Carolina

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PLAN AND PROFILE

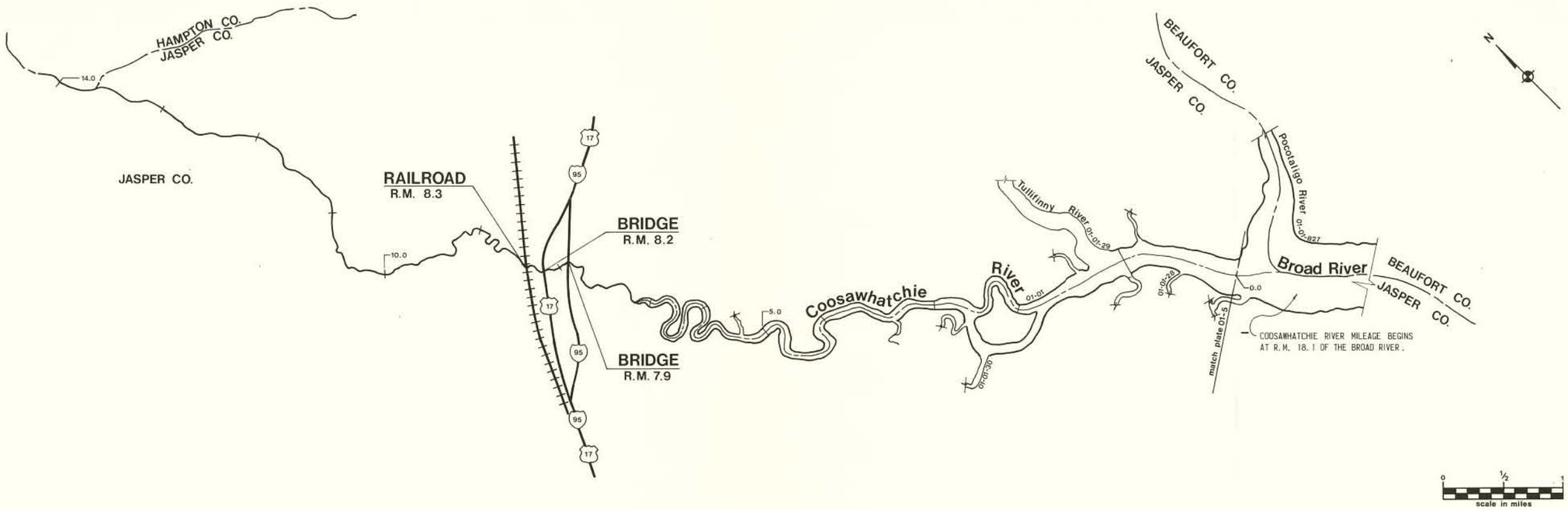
BROAD RIVER

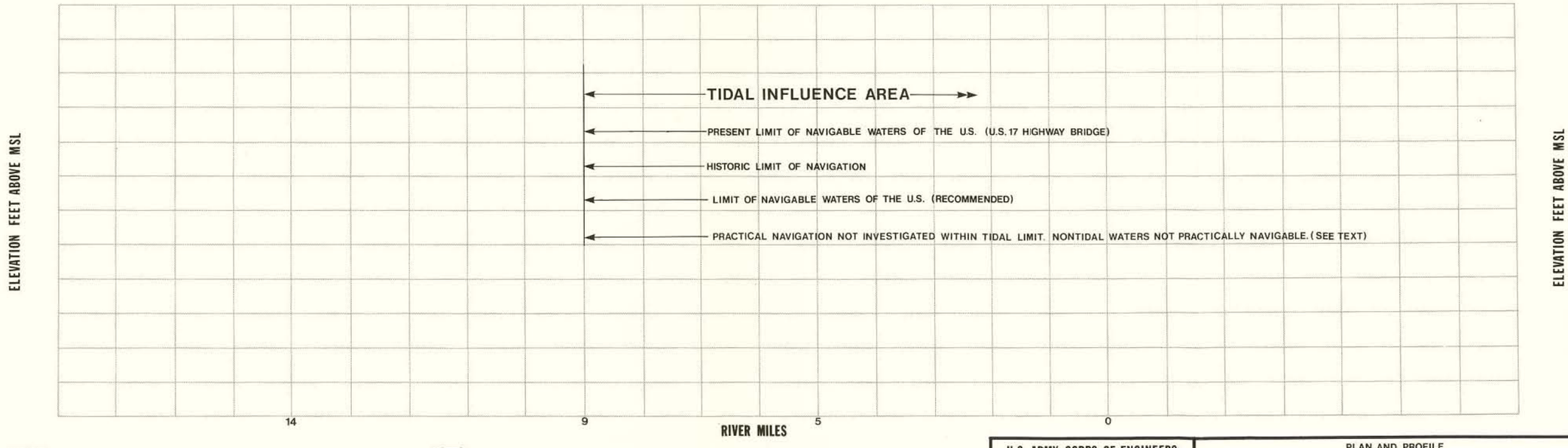
Coosawhatchie River Area

BEAUFORT - JASPER CO., S.C.

NAVIGABILITY STUDY

Miles 11.0 - 18.1 Plate 01-5





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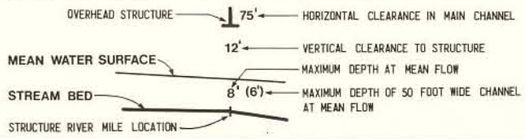

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Charleston, South Carolina

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PLAN AND PROFILE

COOSAWHATCHIE RIVER

Coosawhatchie River Area

BEAUFORT-HAMPTON-JASPER CO., S.C.

NAVIGABILITY STUDY

Miles 0.0-14.0 Plate 01-6

APPENDIX A
STREAM CATALOG

This appendix presents a coded listing of all non-tidal streams located in the Coosawhatchie River report area having a mean annual flow greater than or equal to five cfs. In tidal areas essentially all streams are coded; however, some very small, short streams and drainage tile systems were not coded.

Streams which are all or partially subject to tidal influence are noted in the listing. These are classified "navigable waters of the U. S." to the tidal limit. All streams not tidally influenced are classified "waters of the U. S."

The points where flow is approximately equal to five cfs (headwaters) are defined by approximate longitude and latitude, and river miles from the nearest named tributary, major highway, railroad, or other similar reference point. Some streams listed in the tabulation may not have headwater locations identified. This occurs when the name of a stream changes at a confluence where the flow immediately downstream is greater than five cfs. Thus, the headwater locations for streams with more than one name are associated with the appropriate upstream name found on USGS quadrangle maps. Some streams in this appendix listing are also coded in other reports for this study. Cross-references to specific reports are noted.

The coding system shown in the tabulation uses a procedure developed by the Charleston District, Corps of Engineers. Streams are summarized from the mouth of the major river upstream to the report boundary.

USGS data was used to identify the location where the mean annual stream flow is five cfs. Flow records from gaging stations throughout the Charleston District were evaluated and an isoflow map developed to indicate variations in runoff (cfs per square mile). These runoff values were then applied to the appropriate stream drainage areas (as determined from USGS quadrangle maps) so that a flow of five cfs was approximated.

APPENDIX A
STREAM CATALOG

STREAM CODE							STREAM NAME	HEADWATER LOCATION (Mean Flow = 5 cfs)				
REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	01	B					Broad River (Port Royal Sound) Principal outlet of Coosawhatchie River to ocean - 'B" designates all tributaries to Broad River below confluence with Coosawhatchie River.					
01	01	B01					Ballast Creek * #					
			01				Unnamed Tributary *					
			02				Unnamed Tributary *					
			03				Unnamed Tributary * #					
		B02					Unnamed Tributary * #					
		B03					Ribbon Creek *					
			01				Unnamed Tributary *					
			02				Unnamed Tributary * #					
				01			Unnamed Tributary *					
			03				Unnamed Tributary *					
			04				Unnamed Tributary *					

* All or part tidally influenced. # Dual code in Report 01.

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REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	01	B04					Unnamed Tributary * #					
			01				Unnamed Tributary *					
			02				Unnamed Tributary * #					
		B05					Archers Creek * #					
			01				Unnamed Tributary *					
				01			Unnamed Tributary *					
				02			Unnamed Tributary * #					
				03			Unnamed Tributary *					
				04			Unnamed Tributary *					
				05			Unnamed Tributary *					
			02				Unnamed Tributary * #					
			03				Unnamed Tributary *					
			04				Unnamed Tributary *					
			05				Unnamed Tributary *					
		B06					Unnamed Tributary *					
		B07					Unnamed Tributary *					

* All or part tidally influenced. # Dual code in Report 01.
"B" Tributary to Broad River below Coosawhatchie River.

APPENDIX A
STREAM CATALOG

STREAM CODE							STREAM NAME	HEADWATER LOCATION (Mean Flow = 5 cfs)				
REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	01	B08					Unnamed Tributary *					
		B09					Unnamed Tributary *					
		B10					Unnamed Tributary * #					
		B11					Unnamed Tributary * #					
			01				Unnamed Tributary *					
		B12					Unnamed Tributary * #					
			01				Unnamed Tributary * #					
		B13					Unnamed Tributary * #					
			01				Unnamed Tributary * #					
		B14					Unnamed Tributary *					
		B15					Unnamed Tributary *					
		B16					Unnamed Tributary *					
		B17					Bird Island Creek * #					
			01				Unnamed Tributary *					
			02				Unnamed Tributary *					
			03				Unnamed Tributary * #					

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"B" Tributary to Broad River below Coosawhatchie River.

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REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	01	B17	04				Unnamed Tributary *					
			05				Unnamed Tributary *					
			06				Hazzard Creek * #					
		B18					Euhaw Creek *					
			01				Unnamed Tributary * #					
			02				Buzzard Island Creek *					
				01			Unnamed Tributary *					
				02			Unnamed Tributary * #					
			03				Hazzard Creek * #					
				01			Bird Island Creek * #					
				02			Unnamed Tributary * #					
				03			Chechessee River * #					
				04			Unnamed Tributary *					
				05			Unnamed Tributary *					
				06			Unnamed Tributary *					
				07			Unnamed Tributary * #					

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"B" Tributary to Broad River below Coosawhatchie River.

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REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	01	B18	04				Unnamed Tributary *					
			05				Unnamed Tributary *					
			06				Unnamed Tributary *					
			07				Unnamed Tributary * (Honey Hill Swamp)					
		B19					Habersham Creek *					
			01				Unnamed Tributary *					
			02				Unnamed Tributary *					
		B20					Unnamed Tributary * #					
		B21					Unnamed Tributary * #					
			01				Island Creek * #					
		B22					Unnamed Tributary *					
		B23					Boyd Creek *					
			01				Coles Creek *					
				01			Unnamed Tributary *					
			02				Unnamed Tributary *					

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"B" Tributary to Broad River below Coosawhatchie River.

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REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	01	B23	03				East Branch Creek *					
			04				West Branch Creek * (Boyd Creek)					
				01			Unnamed Tributary *					
		B24					Unnamed Tributary * #					
		B25					Whale Branch *					
			01				Unnamed Tributary * #					
			02				Unnamed Tributary * #					
			03				Big Island Creek * #					
			04				Big Island Creek * #					
			05				Unnamed Tributary *					
			06				Haulover Creek * #					
				01			Unnamed Tributary *					
			07				Unnamed Tributary * #					
			08				Unnamed Tributary * #					
			09				Unnamed Tributary * #					
			10				Coosaw River * # ##					

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"B" Tributary to Broad River below Coosawhatchie River.

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STREAM CATALOG

STREAM CODE							STREAM NAME	HEADWATER LOCATION (Mean Flow = 5 cfs)				
REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	01	B25	11				Hospa Creek * ##					
				01			Unnamed Tributary *					
				02			Unnamed Tributary *					
		B26					Haulover Creek * #					
		B27					Pocotaligo River *					
			01				Unnamed Tributary *					
				01			Haulover Creek * #					
			02				Unnamed Tributary *					
			03				Unnamed Tributary *					
			04				Unnamed Tributary *					
01	01						Coosawhatchie River	32 58 40	81 18 40	3.3		Duck Creek
		28					Unnamed Tributary *					
		29					Tullifinny River *					
		30					Bees Creek *					
			01				Unnamed Tributary * #					
		31					Unnamed Tributary * #					
		32					Cypress Creek	32 42 30	81 05 50	1.2		Johns Pen Creek

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REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	01	32	01				Johns Pen Creek	32 40 20	81 08 10			Confluence-Zigzag Br
		33					Camp Branch	32 48 35	81 01 25	2.3		Coosawhatchie River
		34					Sanders Branch	32 51 40	81 06 00	2.4		House Fork-Sanders Branch
		35					Black Creek	32 47 40	81 15 50	2.4		S.C. 5 Highway
			01				Brier Creek	32 46 30	81 09 40	1.1		S.C. 36 Highway Bridge
		36					Bloodhill Creek	32 52 45	81 13 15	2.4		Coosawhatchie River
		37					Beech Branch	32 53 40	81 16 15		0.3	Southern RR Bridge
		38					Duck Creek	32 57 30	81 15 25	2.2		Coosawhatchie River
		39					Unnamed Tributary	32 56 55	81 19 15	1.4		Coosawhatchie River
			01				Unnamed Tributary	32 55 50	81 20 10	2.0		Coosawhatchie River
	02						Chechessee River * (Port Royal Sound)					
		01					Unnamed Tributary * #					
		02					Unnamed Tributary *					
		03					Colleton River *					
			01				Unnamed Tributary *					
			02				Unnamed Tributary *					

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REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	02	03	03				Sawmill Creek *					
				01			Unnamed Tributary * #					
				02			Unnamed Tributary *					
			04				Unnamed Tributary *					
				01			Unnamed Tributary * #					
			05				Unnamed Tributary *					
			06				Callawassie Creek *					
				01			Unnamed Tributary *					
				02			Unnamed Tributary *					
				03			Unnamed Tributary *					
			07				Unnamed Tributary *					
				01			Chechessee Creek * #					
			08				Okatee River *					
				01			Unnamed Tributary *					
				02			Unnamed Tributary *					
				03			Unnamed Tributary *					
				04			Unnamed Tributary *					

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REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	02	03	08	05			Unnamed Tributary *					
		04					Unnamed Tributary * #					
		05					Unnamed Tributary *					
		06					Unnamed Tributary * #					
		07					Chechessee Creek * #					
			01				Unnamed Tributary *					
			02				Unnamed Tributary * #					
		08					Hazzard Creek * #					
	03						Unnamed Tributary *					
	04						Beaufort River * (Port Royal Sound)					
		01					Unnamed Tributary *					
			01				Unnamed Tributary					
		02					Unnamed Tributary *					
		03					Unnamed Tributary * #					
			01				Ballast Creek * #					
		04					Ballast Creek * #					

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REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	04	05					Unnamed Tributary *					
		06					Chowan Creek *					
			01				Unnamed Tributary *					
			02				Cat Island Creek * #					
			03				Caper Creek * # (Wallace Creek)					
				01			Unnamed Tributary *					
				02			Unnamed Tributary *					
				03			Unnamed Tributary *					
			04				Distant Island Creek *					
				01			Unnamed Tributary *					
				02			Unnamed Tributary *					
			05				Unnamed Tributary *					
				01			Caper Creek * # (Wallace Creek)					
			06				Morgan River * #					
		07					Archers Creek * #					

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REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	04	08					Cat Island Creek * #					
		09					Battery Creek *					
			01				Archers Creek * #					
			02				Unnamed Tributary *					
			03				Unnamed Tributary * #					
			04				Unnamed Tributary * #					
			05				Unnamed Tributary * #					
				01			Unnamed Tributary *					
				02			Unnamed Tributary *					
			06				Unnamed Tributary *					
			07				Unnamed Tributary *					
			08				Unnamed Tributary *					
			09				Unnamed Tributary *					
			10				Unnamed Tributary *					
			11				Unnamed Tributary * #					
			12				Unnamed Tributary *					

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REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	04	09	13				Unnamed Tributary *					
			14				Unnamed Tributary *					
		10					Factory Creek * #					
			01				Unnamed Tributary * #					
		11					Unnamed Tributary * #					
		12					Unnamed Tributary * #					
		13					Factory Creek * #					
		14					Broomfield Creek * #					
			01				Unnamed Tributary * #					
			02				Unnamed Tributary *					
		15					Unnamed Tributary * #					
		16					Unnamed Tributary * #					
		17					Pigeon Point Creek * #					
		18					Unnamed Tributary *					
		19					Pigeon Point Creek * #					
		20					Unnamed Tributary * #					

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REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	04	21					Albergottie Creek *					
			01				Unnamed Tributary *					
			02				Unnamed Tributary *					
			03				Unnamed Tributary *					
			04				Unnamed Tributary *					
			05				Salt Creek *					
				01			Unnamed Tributary *					
		22					Brickyard Creek * ##					
			01				Mulligan Creek * #					
	05						Station Creek * #					
	06						Morse Island Creek * #					
	07						Morse Island Creek * #					
		01					Unnamed Tributary *					
		02					Unnamed Tributary *					
		03					Unnamed Tributary *					
		04					Unnamed Tributary *					

* All or part tidally influenced. # Dual code in Report 01. ## Dual code in Report 02

APPENDIX A
STREAM CATALOG

STREAM CODE							STREAM NAME	HEADWATER LOCATION (Mean Flow = 5 cfs)				
REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	07	05					Unnamed Tributary *					
			01				Unnamed Tributary *					
				01			Unnamed Tributary *					
	08						Harbor River * # (Trenchards Inlet)					
		01					Turtle Creek *					
		02					Moon Creek * #					
		03					Unnamed Tributary *					
		04					Unnamed Tributary * #					
			01				Unnamed Tributary * #					
		05					Skull Creek * #					
			01				Unnamed Tributary * #					
			02				Unnamed Tributary * #					
		06					Unnamed Tributary * #					
			01				Unnamed Tributary * #					
		07					Story River * #					

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REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	08	08					Station Creek * #					
			01				Scott Creek *					
				01			Unnamed Tributary *					
				02			Unnamed Tributary *					
				03			Unnamed Tributary *					
				04			Unnamed Tributary * #					
			02				Unnamed Tributary *					
			03				Unnamed Tributary * #					
			04				Unnamed Tributary * #					
			05				Unnamed Tributary * #					
		09					Unnamed Tributary * #					
			01				Story River * #					
		10					Club Bridge Creek *					
			01				Unnamed Tributary *					
			02				Unnamed Tributary *					

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REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	08	10	03				Unnamed Tributary *					
			04				Unnamed Tributary * #					
			05				Unnamed Tributary * #					
			06				Unnamed Tributary *					
			07				Unnamed Tributary *					
			08				Unnamed Tributary *					
	09						Moon Creek * # (Pritchards Inlet)					
	10						Unnamed Tributary * #					
		01					Skull Creek * #					
	11						Skull Creek * # (Skull Inlet)					
		01					Unnamed Tributary *					
		02					Unnamed Tributary * #					
		03					Unnamed Tributary *					
	12						Story River * # (Fripps Inlet)					
		01					Old House Creek *					

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REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	12	01	01				Unnamed Tributary *					
			02				Unnamed Tributary *					
			03				Unnamed Tributary *					
			04				Unnamed Tributary *					
			05				Unnamed Tributary *					
			06				Unnamed Tributary * #					
			07				Unnamed Tributary *					
			08				Unnamed Tributary *					
		02					Unnamed Tributary *					
		03					Unnamed Tributary *					
		04					Story River * #					
			01				Unnamed Tributary *					
			02				Unnamed Tributary *					
			03				Unnamed Tributary *					
			04				Unnamed Tributary * #					
				01			Unnamed Tributary * #					

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REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	12	04	04	01	01		Unnamed Tributary *					
				02			Harbor River * #					
			05				Unnamed Tributary * #					
				01			Unnamed Tributary * #					
			06				Unnamed Tributary *					
			07				Unnamed Tributary * #					
		05					Unnamed Tributary *					
			01				Harbor River * #					
		06					Unnamed Tributary *					
		07					Harbor River * #					
	13						Johnson Creek * #					
		01					Unnamed Tributary *					
		02					Unnamed Tributary *					
		03					Unnamed Tributary *					
		04					Unnamed Tributary *					
		05					Unnamed Tributary *					

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REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	13	06					Unnamed Tributary *					
		07					Harbor River * #					
	14						Harbor River * #					
		01					Unnamed Tributary *					
		02					Ward Creek *					
			01				Unnamed Tributary *					
		03					Unnamed Tributary *					
		04					Johnson Creek * #					
		05					Unnamed Tributary * #					
		06					Story River * #					
		07					Unnamed Tributary * #					
		08					Unnamed Tributary *					
		09					Unnamed Tributary *					
			01				Unnamed Tributary *					
		10					Unnamed Tributary *					

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REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	15						Unnamed Tributary *					
	16						Morgan River * #					
		01					Coffin Creek *					
			01				Unnamed Tributary *					
		02					Unnamed Tributary *					
		03					Village Creek *					
			01				Pine Island Creek * #					
				01			Unnamed Tributary * #					
			02				Unnamed Tributary *					
			03				Unnamed Tributary * #					
				01			Pine Island Creek * #					
			04				Unnamed Tributary * #					
			05				Unnamed Tributary * #					
		04					Eddings Point Creek *					
			01				Unnamed Tributary * #					
			02				Unnamed Tributary * #					

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STREAM CODE							STREAM NAME	HEADWATER LOCATION (Mean Flow = 5 cfs)				
REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	16	04	03				Unnamed Tributary * #					
			04				Unnamed Tributary *					
			05				Unnamed Tributary * #					
			06				Unnamed Tributary *					
		05					Unnamed Tributary *					
		06					Parrot Creek * # ##					
			01				Duck Pond *					
			02				Bass Creek *					
				01			Unnamed Tributary *					
				02			Unnamed Tributary *					
				03			Parrot Creek * #					
		07					Jenkins Creek *					
			01				Unnamed Tributary *					
			02				Doe Point Creek * #					
			03				Unnamed Tributary *					
			04				Doe Point Creek * #					
			05				Unnamed Tributary * #					

* All or part tidally influenced. # Dual code in Report 01. ## Dual code in Report 02.

APPENDIX A
STREAM CATALOG

STREAM CODE							STREAM NAME	HEADWATER LOCATION (Mean Flow = 5 cfs)				
REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER		LATITUDE (° ' ")	LONGITUDE (° ' ")	STREAM MILES UP	STREAM MILES DOWN	FROM
01	16	07	06				Unnamed Tributary * #					
			07				Unnamed Tributary *					
			08				Morgan River * #					
		08					Unnamed Tributary *					
			01				Boatswain Pond Creek *					
				01			Unnamed Tributary *					
				02			Unnamed Tributary *					
				03			Unnamed Tributary *					
		09					Lucy Point Creek * ##					
			01				Rock Springs Creek *					
		10					Jenkins Creek * #					
		11					Unnamed Tributary *					

* All or part tidally influenced. # Dual code in Report 01. ## Dual code in Report 02.

APPENDIX B

SUMMARY OF 10 TO 1,000 ACRE LAKES

This appendix is a compilation of lakes from 10 to 1,000 acres which are contained in the Coosawhatchie River report area.

This inventory was compiled from the following sources:

1. Inventory of Lakes in South Carolina Ten Acres or More in Surface Area.
2. USGS Quadrangle Maps.

The USGS quadrangle maps were used to locate and to detect lakes that were not listed in the other sources. Actual surface area and gross storage information is supplied where available. The lakes were coded by major stream basin in accordance with other procedures developed for identifying streams. The map data from Source 1 above generally does not permit detailed location of the small lakes. Thus, lakes are coded by basin only as far as the secondary order.

APPENDIX B

SUMMARY OF 10 TO 1,000 ACRE LAKES

STREAM CODE							LAKE NAME OR OWNER	SURFACE AREA (acres)	GROSS STORAGE (acre-ft)	LOCATION BY COUNTY (SOUTH CAROLINA)
REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER				
01	01	18					Unnamed Lake	--	--	Beaufort
01	01	18					Unnamed Lake	--	--	Beaufort
01	04	06	04				J. M. Trask, Sr.	36	90	Beaufort
01	04	06	05				J. M. Trask, Sr.	15	60	Beaufort
01	08	08					E. G. Sanders	17	51	Beaufort
01	04	04					United States Marine Corps	206	618	Beaufort
01	16	09	01				Bruce G. Pratt	12	36	Beaufort
01	16	09					Bruce G. Pratt	15	45	Beaufort
01	01	24					Clarendon Farm, Inc.	47	141	Beaufort
01	04	18					Pleasant Point Plantation	170	680	Beaufort
01	01	25					Johnny Weed	10	40	Beaufort
01	01	25					Clarendon Farm, Inc.	10	50	Beaufort
01	17						Gregory Pond	--	--	Beaufort
01	02						Unnamed Lake	--	--	Beaufort
01	02	03	05				Belfair Plantation	21	80	Beaufort
01	02	03	06				Elgin Walker	20	60	Beaufort
01	02						Elgin Walker	29	87	Beaufort

APPENDIX B

SUMMARY OF 10 TO 1,000 ACRE LAKES

STREAM CODE							LAKE NAME OR OWNER	SURFACE AREA (acres)	GROSS STORAGE (acre-ft)	LOCATION BY COUNTY (SOUTH CAROLINA)
REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER				
01	01	27					W. A. Campbell, Jr.	12	36	Beaufort
01	01	27					Sumner Pingree	29	87	Beaufort
01	01	27					Sumner Pingree	14	52	Beaufort
01	01	27					Castle Hall Plantation	103	410	Beaufort
01	01	27	03				Cotton Hall Plantation	57	107	Beaufort
01	01	27	03				Tomotley Plantation	34	102	Beaufort
01	01	27	03				Tomotley Plantation	36	108	Beaufort
01	01	27					W. A. Campbell, Jr.	26	78	Beaufort
01	01	25	08				Tomotley Plantation	74	222	Beaufort
01	01	18					Strawberry Hill Plantation	16	48	Jasper
01	01	23	01				Good Hope Plantation (Big Pond)	20	60	Jasper
01	01	18					Good Hope Plantation (White Hill Pond)	12	36	Jasper
01	01						Gregorie Neck Plantation	32	96	Jasper
01	01	28					Edward P. Huguenin	14	42	Jasper
01	01	30					Nunna Rock Ponds H. K. Purdy	79	302	Jasper
01	01	30					Cypress Woods	40	160	Jasper

APPENDIX B

SUMMARY OF 10 TO 1,000 ACRE LAKES

STREAM CODE										
REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER	LAKE NAME OR OWNER	SURFACE AREA (acres)	GROSS STORAGE (acre-ft)	LOCATION BY COUNTY (SOUTH CAROLINA)
01	01	30					Cypress Woods Corps.	36	288	Jasper
01	01	30					Cypress Woods Corps.	28	224	Jasper
01	01						W. W. Frick	10	40	Jasper
01	01						Dalecut Plantation	28	84	Jasper
01	01	18	03				R. B. Wall	32	128	Jasper
01	01	18	03				Tismyr Lake	--	--	Jasper
01	01						Unnamed Lake	--	--	Hampton
01	01	27					Buckfield Pond	240	576	Hampton
01	01						Horse Pond	--	--	Hampton
01	01	32					Loren Johnson	25	195	Hampton
01	01	32	01				Mrs. S. W. Jones	12	72	Hampton
01	01	34					E. H. Boland	15	63	Hampton
01	01	34					Town of Hampton	10	35	Hampton
01	01	35					Lake Warren	600	3,600	Hampton
01	01	35					Town of Estill	10	30	Hampton
01	01	35					C. P. Barnes	13	62	Hampton
01	01						J. B. O'Neal	50	200	Allendale
01	01	38					G. A. Sanders	25	80	Allendale

APPENDIX B

SUMMARY OF 10 TO 1,000 ACRE LAKES

STREAM CODE							LAKE NAME OR OWNER	SURFACE AREA (acres)	GROSS STORAGE (acre-ft)	LOCATION BY COUNTY (SOUTH CAROLINA)
REPORT NUMBER	MAJOR RIVER	PRIMARY	SECONDARY	TERTIARY	FOURTH ORDER	FIFTH ORDER				
01	01	39					Bruce Harter	15	36	Allendale
01	01						Allendale City Lagoon	12	29	Allendale
01	01						J. M. Oswald	19	70	Allendale