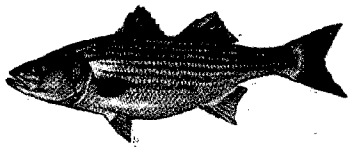
FISHES OF THE EDISTO RIVER BASIN



Bibliography
Historical Sampling Locations
Species Occurrence

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REPORT 6

Fisheries Habitat Committee
Edisto River Basin Project
S.C. Department of Natural Resources
Water Resources Division
Columbia, South Carolina

FISHES

of the

EDISTO RIVER BASIN

SOUTH CAROLINA

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Species Occurrence

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Fisheries Habitat Committee
Edisto River Basin Project
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The Honorable David M. Beasley, Governor

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Edisto River Basin Project

The **Edisto River Basin Project** involved citizens of the Basin in the evaluation and planning of the region's natural, cultural, and economic assets. A primary goal of the project was to make future-land-use planning recommendations concerning how these resources should be utilized and/or protected. The project was conducted by the South Carolina Department of Natural Resources (SCDNR) in partnership with the South Carolina Department of Commerce and the South Carolina Department of Parks, Recreation and Tourism. Funding was provided by the National Oceanic and Atmospheric Administration.

Fisheries Habitat Committee

The **Fisheries Habitat Committee** was formed to evaluate the quality of fisheries habitat in the Basin and make recommendations to the Edisto River Basin project task force and basin residents as to how the fishery resource should be utilized, protected, and managed.

B. C. Marcy	Chairperson,	Fisheries Biologist, Westinghouse Savannah River Company
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Introduction

This report summarizes all of the available fish population data and fishery information collected to date in the Edisto River Basin and estuary. It includes a bibliography of both freshwater and saltwater fisheries references specific to the Edisto, adjacent river basins, and selected related fisheries references in South Carolina pertinent to the species occurring in the Edisto River Basin. The report also includes the historical sampling locations and descriptions for both freshwater and saltwater fisheries studies and surveys and a historical listing of freshwater and saltwater fish species occurring in the Basin and estuary.

A geographic information system (GIS) is used extensively in the Edisto River Basin Project as a tool to evaluate natural and anthropogenic resources. Maps included in this document were created by the Water Resources Division of the SCDNR, using the ARC/INFO analysis software and Adobe Illustrator graphics software. Sampling locations were developed from a series of fisheries survey data. The hydrography data represent the river channels and tributary system of the Edisto River Basin compiled by the United States Geological Survey at a scale of 1:24,000.

Members of the **Fisheries Habitat Committee** of the **Edisto River Basin Project** compiled and verified fish population data and fishery information for this report. The committee especially wishes to acknowledge Anne Hale Miglarese, Chief of the Resource Assessment and Planning Section of the Water Resources Division, and Barry Beasley, Project Director, for their support of this document. Appreciation especially goes to Jim Scurry and Chris Page, also of the Water Resources Division, for their technical expertise and support throughout the process of creating and publishing this document.

Edisto River Basin *

The Edisto River Basin is located in south-central South Carolina (Figure 1). From its western extreme in eastern Edgefield County, the Basin extends southeastward 130 miles across the Coastal Plain to the Atlantic Ocean. The Edisto River Basin is a drainage area of about 3,120 square miles (nearly 2 million acres). The region occupies approximately one-tenth of the area of South Carolina. The width of the Basin ranges from an approximately 30-mile-wide corridor, through an 8-mile-wide bottleneck below Givhans Ferry State Park, to a 10- to 24- mile-wide estuarine region at the coast. Portions of 12 counties are encompassed by the Basin. These counties are: Edgefield, Saluda, Lexington, Aiken, Barnwell, Bamberg, Orangeburg, Calhoun, Dorchester, Berkeley, Charleston, and Colleton (Figure 1).

The approximately 250 unobstructed river miles from the headwaters in Edgefield County to the Atlantic Ocean have distinguished the Edisto as one of the longest free-flowing blackwater rivers in the United States. The Edisto River and its tributaries are associated with extensive wetland areas. The Basin is drained by four sub-basins: South Fork Edisto River, North Fork Edisto River, Edisto River (main stem), and Four Hole Swamp (Figure 2).

The North and South Forks of the Edisto River originate in the upper Coastal Plain, primarily in the Sandhills regions of Edgefield, Saluda, and Lexington Counties. The North and South Forks drain two sub-basins of 750 and 870 square miles, respectively. These sub-basins span approximately 70-75 miles each and then join to form the main stem of the Edisto River. The headwaters of Four Hole Swamp sub-basin are in the Coastal Plain in Calhoun and Orangeburg Counties and drain about 650 square miles. The Four Hole Swamp system spans approximately 50 miles before it

* Adopted from Marshall (1993) and Thomason et al. (1993).

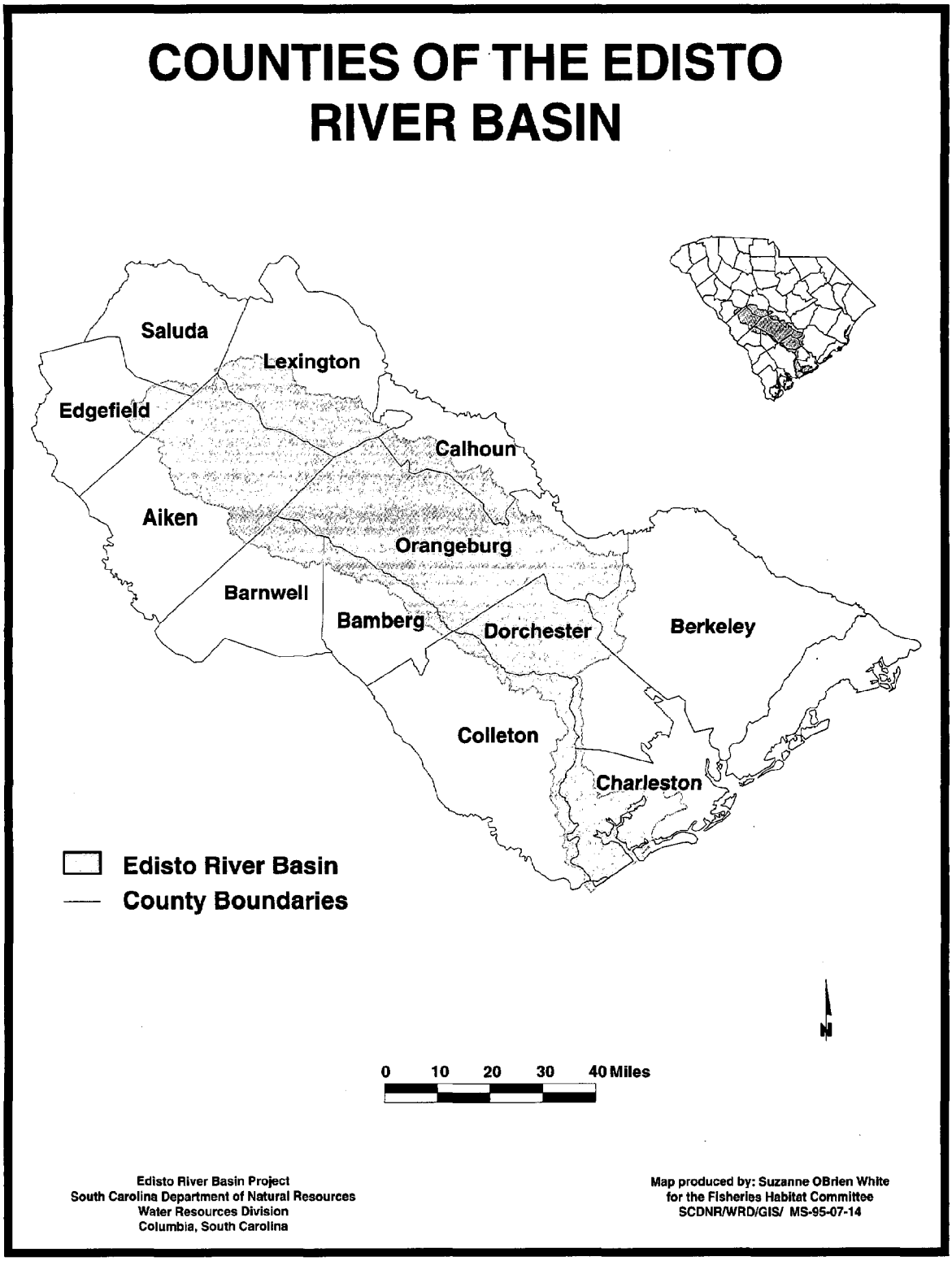


Figure 1. Counties of the Edisto River Basin, South Carolina

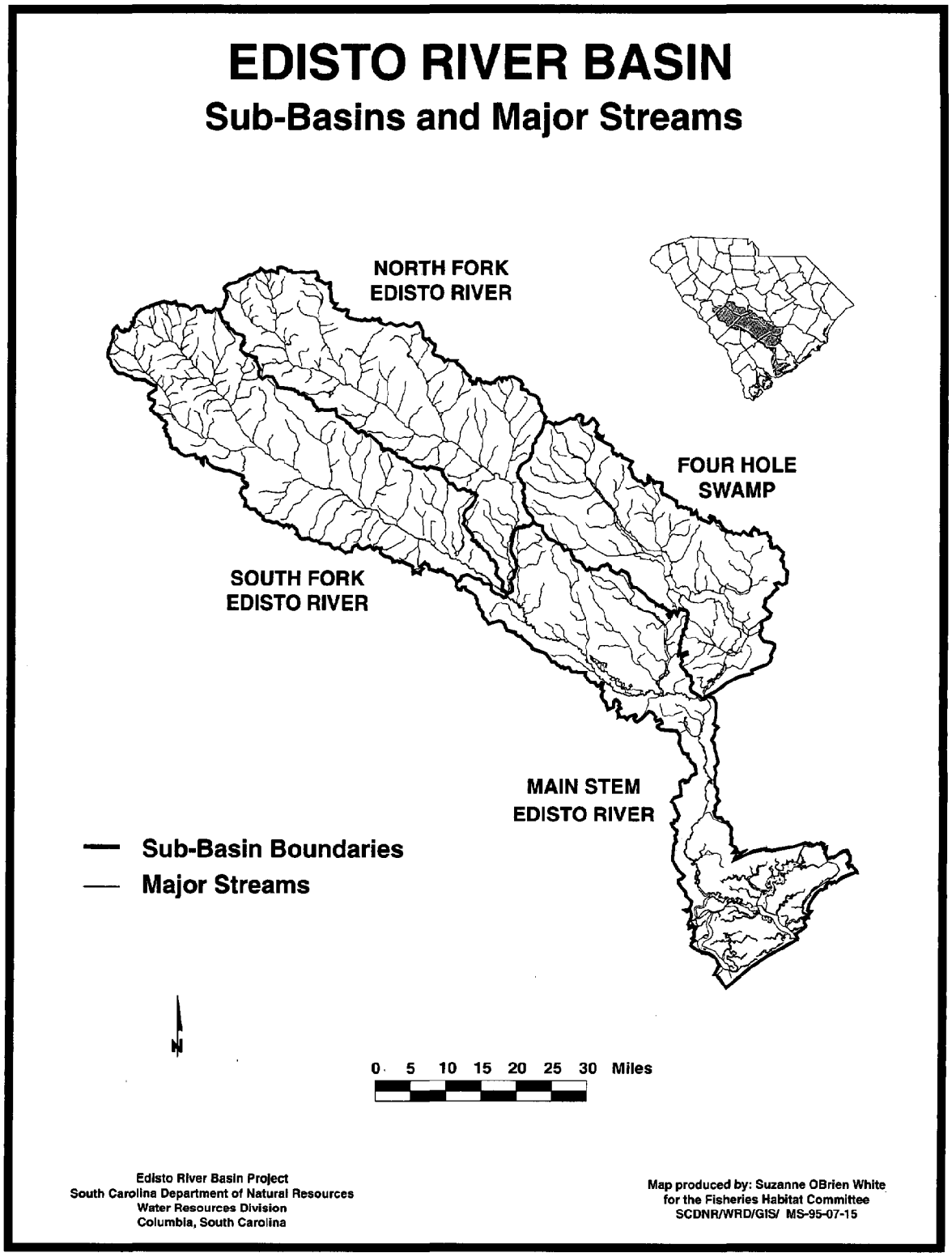


Figure 2. Sub-basins and major streams of the Edisto River Basin

discharges into the main stem of the Edisto River. The Edisto River (main stem) eventually receives all the drainage from the North and South Forks and Four Hole Swamp. In addition, the main stem receives drainage from its own sub-basin area of about 850 square miles. The main stem extends approximately 65 miles from the confluence of the North and South Forks to the Atlantic Ocean. At the coast, the Edisto River is divided by Edisto Island to form the North and South Edisto Rivers, each having a distinct estuary. Most of the freshwater flow is toward the south side of Edisto Island. These tidally influenced brackish streams also receive drainage from bordering salt marshes, tidal rivers, and tidal creeks. The coastal/estuarine portion of the main-stem drainage is about 200 square miles.

The Edisto River flows relatively fast over a bottom of shifting sand. As it enters the lower Coastal Plain, the bottom also includes much marl. Numerous meanders create undercut banks with resulting deadfalls. Stream gradient is slight, falling only about 650 feet over the entire length of the system. The stream channel is generally narrow and heavily canopied in the upper reaches, but it broadens as it nears the coast. While the channel is well defined during low to normal flows, it frequently leaves the streambed after heavy rainfall events and inundates the swampy flood plain. Tidal influences begin at about river mile 40.

Water quality of the Edisto River is generally good: characterized by low turbidity, low alkalinity, and dark color, the latter resulting from the leaching of organic materials in the flood plain. The water is acidic, having a pH between 5.5 and 6.0.

Fishes of the Edisto River Basin / Estuary *

Freshwater Fishes

The fish community of the Edisto River system is diverse and contains both freshwater and saltwater species. Management activities on the system in recent years have been limited to the collection of biological data, the earliest being in 1964 and 1968. These surveys focused on the species composition of fish in the Edisto River Basin. To date, 87 species (25 families) have been collected and identified from the freshwater portion of the Basin and 120 species (52 families) have been collected and identified from the saltwater portion of the Basin from all sampling efforts since 1964 (Table 1). The Edisto River typifies the "blackwater streams" of the Southeastern Coastal Plain of the United States. These systems have historically supported highly regarded fisheries, particularly for redbreast sunfish (*Lepomis auritus*).

Stockings of various fish species were common in the river, with surplus hatchery production of redbreast sunfish, bluegill (*Lepomis macrochirus*), redear sunfish (*Lepomis microlophus*), largemouth bass (*Micropterus salmoides*), and channel catfish (*Ictalurus punctatus*) stocked by the South Carolina Wildlife and Marine Resources Department (SCWMRD) (as of 1993, South Carolina Department of Natural Resources; SCDNR) on numerous occasions, usually at the request of public officials. The National Fish Hatchery at Orangeburg, operated by the U. S. Fish and Wildlife Service, has also periodically released sunfish, largemouth bass, catfish, and striped bass (*Morone saxatilis*), in the North Fork Edisto River.

The SCDNR sampled river habitats for freshwater fish species from 1988 to 1990, collecting a total of 68 species. Spotted sucker (*Minytrema melanops*) contributed the most biomass. Other

*Adopted from Marshall (1993), Thomason et al. (1993), and W. A. Roumillat (personal communication).

Table 1. Families, genera, and species collected in freshwater and saltwater surveys from 1964 to 1994, in the Edisto River Basin / Estuary

	Families	Genera	Species
Freshwater surveys	25	47	87
Saltwater surveys	52	85	120
Reported in both surveys	13	14	18
Families, genera, and species count for the Edisto River Basin / Estuary	64	118	189

dominant species (by weight) included bowfin (*Amia calva*), flat bullhead (*Ameiurus platycephalus*),largemouth bass, common carp (*Cyprinus carpio*), longnose gar (*Lepisosteus osseus*), and American eel (*Anguilla rostrata*). Redbreast sunfish, an important recreational species, contributed 6 percent to the total biomass. A 1989-90 creel census for the Edisto River to determine the user and harvest characteristics of the sport fishery was conducted by SCDNR. These data indicate that the redbreast sunfish is by far the most sought-after species in terms of the percentage of angler hours of directed effort (65 percent of total directed effort). Redbreast sunfish was the dominant species harvested in terms of numbers (45 percent) and pounds (32 percent) of fish caught. Results indicated that flat bullhead and channel catfish were second to the redbreast sunfish in being sought-after and in total catch. The catch per unit of effort was much greater for the bullhead and channel catfish. Census results showed that the Edisto freshwater sport fishery may be characterized as a winter bullhead and channel catfish fishery and late spring/early summer redbreast fishery with low fishing pressure in the late summer and autumn.

The Edisto River is ranked as the number one river fished according to respondents in a State survey. With the economic worth of the Edisto River fishery (over 1 million dollars annually) coupled to the estimated $725,000 spent on the neighboring Combahee River fishery, these coastal river fisheries are providing valuable recreational and economic opportunities for the people in their drainage areas.

Anadromous Fishes

Anadromous fish species known to occur in the Edisto River include the American shad (*Alosa sapidissima*), hickory shad (*Alosa mediocris*), blueback herring (*Alosa aestivalis*), striped bass, Atlantic sturgeon (*Acipenser oxyrhynchus*), and shortnose sturgeon (*Acipenser brevirostrum*), an endangered species. A survey conducted by the U. S. Fish and Wildlife Service reported that the recent status of each of these species in the Edisto River, except for the American shad and shortnose sturgeon, was judged to be stable (Rulifson 1982). Census and harvest data have indicated declines in American shad.

The shad fishery of the Edisto has traditionally been important to residents of the region. The recreational shad fishery for South Carolina is centered on the Edisto River in the Jacksonboro area. Reports of commercial catches for shad in the Edisto date back to 1880. Major declines in commercial landings were noted. A summary of American shad landed in South Carolina showed a decline of approximately 85 percent over the period from 1896 to 1977.

The Edisto shad fishery was reported in 1978 to extend from Willtown Bluff to Branchville, but shad have been known to ascend the river as far as Orangeburg on the North Fork Edisto River and Norway on the South Fork Edisto River. Unpublished data from L. E. Cable in 1938 indicated that the major shad spawning grounds were between Westbank Landing and Givhans Ferry. Wade (1971) reported that 92 percent of the spawning activity of the American shad on the Edisto River occurred

between Westbank Landing and Jellico Landing just south of Givhans Ferry State Park. Another 7 percent occurred between Jellico Landing and Givhans Ferry.

Estuarine / Marine Fishes

There have been no economic impact analyses limited solely to the Edisto River estuarine system. A coastwide assessment was made by Ray Rhodes, SCDNR Economist, but the results have not been fully analyzed.

The only commercial fin-fish fishery in the estuarine area of the Edisto River System was the limited gill-net capture of the presently protected Atlantic sturgeon, red drum (*Sciaenops ocellatus*), and the spotted seatrout (*Cynoscion nebulosus*). The red drum and spotted seatrout, along with the sheepshead (*Archosargus probatocephalus*) and southern flounder (*Paralichthys lethostigma*) are presently most sought by recreational anglers (Low, 1989). Much of the effort to capture these species is by angling from small boats, primarily because the preferred habitats of these fishes are inaccessible from the shore. Fishes captured from shore-access regions (bridges, private piers, and docks) are primarily the spot (*Leiostomus xanthurus*), Atlantic croaker (*Micropogonias undulatus*), southern kingfish (*Menticirrhus americanus*), silver perch (*Bairdiella chrysura*), and sea catfish (*Arius felis*).

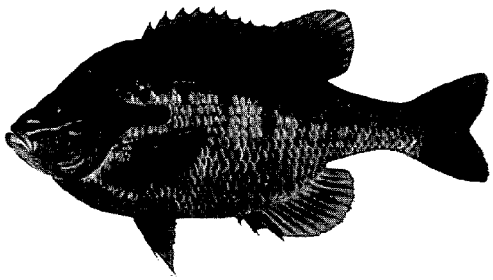
Creel census surveys have been conducted (Low et al. 1986, 1987, 1992a, 1992b) to estimate recreational harvest by anglers throughout the State. These efforts for the Edisto region indicate relatively light harvest rates, probably because of the low human population present, and the relative inaccessibility of appropriate habitat for fish capture.

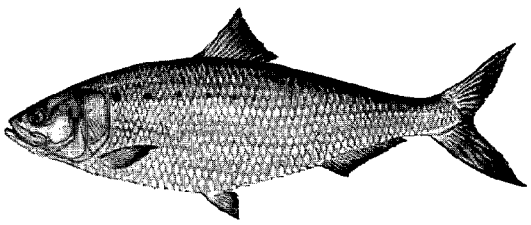
No intentional fish stocking has occurred in the estuarine area of the Edisto River drainage. Much of the aquaculture activity that has taken place at the Bears Bluff Research Laboratory facility in recent years has involved the Atlantic sturgeon and the endangered shortnose sturgeon.

Fish Species Occurrence

Edisto River Basin / Estuary

- Freshwater
- Saltwater





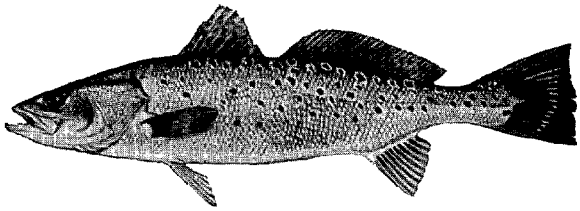


Table 2. Fish species occurring in freshwater portions of the Edisto River Basin [1]

Family	Common name	Scientific name
Petromyzontidae - lampreys		
	Sea lamprey	*Petromyzon marinus*
Acipenseridae - sturgeons		
	Shortnose sturgeon	*Acipenser brevirostrum*
	Atlantic sturgeon	*Acipenser oxyrhynchus*
Lepisosteidae - gars		
	Longnose gar	*Lepisosteus osseus*
Amiidae - bowfins		
	Bowfin	*Amia calva*
Anguillidae - freshwater eels		
	American eel	*Anguilla rostrata*
Clupeidae - herrings		
	Blueback herring	*Alosa aestivalis*
	American shad	*Alosa sapidissima*
	Gizzard shad	*Dorosoma cepedianum*

[1] Source:
C. S. Thomason et al. (1993) and personal communication from C. S. Thomason (1995).

Table 2. Fish species occurring in freshwater portions of the Edisto River Basin (Cont.)

Family	Common name	Scientific name
Cyprinidae - minnows and carps		
	Rosyside dace	*Clinostomus funduloides*
	Grass carp	*Ctenopharyngodon idella*
	Bannerfin shiner	*Cyprinella leedsi*
	Whitefin shiner	*Cyprinella nivea*
	Common carp	*Cyprinus carpio*
	Bluehead chub	*Nocomis leptocephalus*
	Golden shiner	*Notemigonus crysoleucas*
	Highfin shiner	*Notropis altipinnis*
	Ironcolor shiner	*Notropis chalybaeus*
	Dusky shiner	*Notropis cummingsae*
	Spottail shiner	*Notropis hudsonius*
	Sailfin shiner	*Notropis hypselopterus*
	Yellowfin shiner	*Notropis lutipinnis*
	Taillight shiner	*Notropis maculatus*
	Coastal shiner	*Notropis petersoni*
	Rosyface chub	*Notropis rubescens*
	Pugnose minnow	*Opsopoeodus emiliae*
	Creek chub	*Semotilus atromaculatus*
Catostomidae - suckers		
	Creek chubsucker	*Erimyzon oblongus*
	Lake chubsucker	*Erimyzon sucetta*
	Spotted sucker	*Minytrema melanops*
	Silver redhorse	*Moxostoma anisurum*
	Striped jumpock	*Moxostoma rupiscartes*
Ictaluridae - freshwater catfishes		
	Snail bullhead	*Ameiurus brunneus*
	White catfish	*Ameiurus catus*
	Yellow bullhead	*Ameiurus natalis*
	Brown bullhead	*Ameiurus nebulosus*
	Flat bullhead	*Ameiurus platycephalus*
	Blue catfish	*Ictalurus furcatus*
	Channel catfish	*Ictalurus punctatus*
	Tadpole madtom	*Noturus gyrinus*
	Margined madtom	*Noturus insignis*
	Speckled madtom	*Noturus leptacanthus*
	Broadtail madtom	*Noturus sp.*
	Flathead catfish	*Pylodictis olivaris*

Table 2. Fish species occurring in freshwater portions of the Edisto River Basin (Cont.)

Family	Common name	Scientific name
Esocidae - pikes		
	Redfin pickerel	*Esox americanus americanus*
	Chain pickerel	*Esox niger*
Umbridae - mudminnows		
	Eastern mudminnow	*Umbra pygmaea*
Aphredoderidae - pirate perches		
	Pirate perch	*Aphredoderus sayanus*
Amblyopsidae - cavefishes		
	Swampfish	*Chologaster cornuta*
Belonidae - needlefishes		
	Atlantic needlefish	*Strongylura marina*
Cyprinodontidae - killifishes		
	Mummichog	*Fundulus heteroclitus*
	Lined topminnow	*Fundulus lineolatus*
Poeciliidae - livebearers		
	Eastern mosquitofish	*Gambusia holbrooki*
	Least killifish	*Heterandria formosa*
Atherinidae - silversides		
	Brook silverside	*Labidesthes sicculus*

Table 2. Fish species occurring in freshwater portions of the Edisto River Basin (Cont.)

Family	Common name	Scientific name
Percichthyidae - temperate basses		
	Striped bass	*Morone saxatilis*
Centrarchidae - sunfishes		
	Mud sunfish	*Acantharchus pomotis*
	Flier	*Centrarchus macropterus*
	Everglades pygmy sunfish	*Elassoma evergladei*
	Bluebarred pygmy sunfish	*Elassoma okatie*
	Banded pygmy sunfish	*Elassoma zonatum*
	Blackbanded sunfish	*Enneacanthus chaetodon*
	Bluespotted sunfish	*Enneacanthus gloriosus*
	Banded sunfish	*Enneacanthus obesus*
	Redbreast sunfish	*Lepomis auritus*
	Green sunfish	*Lepomis cyanellus*
	Pumpkinseed	*Lepomis gibbosus*
	Warmouth	*Lepomis gulosus*
	Bluegill	*Lepomis macrochirus*
	Dollar sunfish	*Lepomis marginatus*
	Redear sunfish	*Lepomis microlophus*
	Spotted sunfish	*Lepomis punctatus*
	Largemouth bass	*Micropterus salmoides*
	Black crappie	*Pomoxis nigromaculatus*
Percidae - perches		
	Savannah darter	*Etheostoma fricksium*
	Swamp darter	*Etheostoma fusiforme*
	Christmas darter	*Etheostoma hopkinsi*
	Turquoise darter	*Etheostoma inscriptum*
	Tesellated darter	*Etheostoma olmstedi*
	Sawcheek darter	*Etheostoma serrifer*
	Blackbanded darter	*Percina nigrofasciata*
Gerreidae - mojarras		
	Spotfin mojarra	*Eucinostomus argenteus*

Table 2. Fish species occurring in freshwater portions of the Edisto River Basin (Cont.)

Family	Common name	Scientific name
Mugilidae - mullets		
	Striped mullet	*Mugil cephalus*
Eleotridae - sleepers		
	Fat sleeper	*Dormitator maculatus*
Bothidae - lefteye flounders		
	Summer flounder	*Paralichthys dentatus*
	Southern flounder	*Paralichthys lethostigma*
Soleidae - soles		
	Hogchoker	*Trinectes maculatus*

Table 3. Fish species occurring in saltwater portions of the Edisto River Basin [1]

Family	Common Name	Scientific Name
Carcharhinidae - requiem sharks		
	Finetooth shark	*Carcharhinus isodon*
	Blacktip shark	*Carcharhinus limbatus*
	Smooth dogfish	*Mustelus canis*
	Lemon shark	*Negaprion brevirostris*
	Atlantic sharpnose shark	*Rhizoprionodon terraenovae*
Sphyrnidae - hammerhead sharks		
	Scalloped hammerhead shark	*Sphyrna lewini*
	Bonnethead shark	*Sphyrna tiburo*
Squalidae - spiny dogfishes		
	Spiny dogfish	*Squalus acanthias*
Rajidae - skates		
	Clearnose skate	*Raja eglanteria*
Dasyatidae - stingrays		
	Southern stingray	*Dasyatis americana*
	Atlantic stingray	*Dasyatis sabina*
	Bluntnose stingray	*Dasyatis sayi*
	Smooth butterfly ray	*Gymnura micrura*

[1] Source:

SCDNR, Marine Resources Division. U.S. Fish and Wildlife Sportsfish Restoration. Trammel Net Samples (1991-1994).
SCDNR, Marine Resources Division. U.S. Fish and Wildlife Sportsfish Restoration. Larval Fish Assessment (1988).
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SCDNR, Marine Resources Division. Drift Shad Gill Net Samples (1988-1994).
SCDNR, Marine Resources Division. Trawl Samples for American Shad (1989).

Table 3. Fish species occurring in saltwater portions of the Edisto River Basin (Cont.)

Family	Common Name	Scientific Name
Myliobatidae - eagle rays		
	Cownose ray	*Rhinoptera bonasus*
Acipenseridae - sturgeons		
	Shortnose sturgeon	*Acipenser brevirostrum*
	Atlantic sturgeon	*Acipenser oxyrhynchus*
Lepisosteidae - gars		
	Longnose gar	*Lepisosteus osseus*
Elopidae - tarpons and ladyfish		
	Tarpon	*Megalops atlanticus*
	Ladyfish	*Elops saurus*
Anguillidae - freshwater eels		
	American eel	*Anguilla rostrata*
Congridae - conger eels		
	Conger eel	*Conger oceanicus*
Ophichthidae - snake and worm eels		
	Spotted worm eel	*Myrophis punctatus*
Clupeidae - herrings		
	Blueback herring	*Alosa aestivalis*
	Hickory shad	*Alosa mediocris*
	American shad	*Alosa sapidissima*
	Yellowfin menhaden	*Brevoortia smithi*
	Atlantic menhaden	*Brevoortia tyrannus*

Table 3. Fish species occurring in saltwater portions of the Edisto River Basin (Cont.)

Family	Common Name	Scientific Name
Clupeidae - herrings (cont.)		
	Gizzard shad	*Dorosoma cepedianum*
	Threadfin shad	*Dorosoma pentenense*
	Atlantic thread herring	*Opisthonema oglinum*
Engraulidae - anchovies		
	Striped anchovy	*Anchoa hepsetus*
	Bay anchovy	*Anchoa mitchilli*
Synodontidae - lizardfishes		
	Inshore lizardfish	*Synodus foetens*
Ictaluridae - freshwater catfishes		
	White catfish	*Ameiurus catus*
	Brown bullhead	*Ameiurus nebulosus*
	Channel catfish	*Ictalurus punctatus*
Ariidae - sea catfishes		
	Sea catfish	*Arius felis*
	Gaftopsail catfish	*Bagre marinus*
Batrachoididae - toadfishes		
	Oyster toadfish	*Opsanus tau*
Gobiesocidae - clingfishes		
	Clingfish	*Gobiesox strumosus*

Table 3. Fish species occurring in saltwater portions of the Edisto River Basin (Cont.)

Family	Common Name	Scientific Name
Gadidae - codfishes		
	Carolina hake	*Urophycis earli*
	Southern hake	*Urophycis floridanus*
	Spotted hake	*Urophycis regius*
Ophidiidae - cusk-eels and brotulids		
	Striped cusk-eel	*Ophidion marginatum*
Belonidae - needlefishes		
	Atlantic needlefish	*Strongylura marina*
Cyprinodontidae - killifishes		
	Sheepshead minnow	*Cyprinodon variegatus*
	Mummichog	*Fundulus heteroclitus*
	Spotfin killifish	*Fundulus luciae*
	Striped killifish	*Fundulus majalis*
Atherinidae - silversides		
	Atlantic silverside	*Menidia menidia*
Syngnathidae - pipefishes and seahorses		
	Dusky pipefish	*Syngnathus floridae*
	Northern pipefish	*Syngnathus fuscus*
	Chain pipefish	*Syngnathus louisianae*
Percichthyidae - temperate basses		
	Striped bass	*Morone saxatilis*

Table 3. Fish species occurring in saltwater portions of the Edisto River Basin (Cont.)

Family	Common Name	Scientific Name
Serranidae - sea basses		
	Rock seabass	*Centropristis philadelphica*
	Black seabass	*Centropristis striata*
	Gag grouper	*Mycteroperca microlepis*
Pomatomidae - bluefish		
	Bluefish	*Pomatomus saltatrix*
Carangidae - jacks		
	Blue runner	*Caranx crysos*
	Jack crevalle	*Caranx hippos*
	Atlantic bumper	*Chloroscombrus chrysurus*
	Atlantic moonfish	*Selene setapinnis*
	Lookdown	*Selene vomer*
Lutjanidae - snappers		
	Gray snapper	*Lutjanus griseus*
	Lane snapper	*Lutjanus synagris*
Lobotidae - tripletail		
	Tripletail	*Lobotes surinamensis*
Gerreidae - mojarras		
	Spotfin mojarra	*Eucinostomus argenteus*
	Mojarra	*Eucinostomus sp.* *(cf. E. harengula)*
Pomadasyidae - grunts		
	Pigfish	*Orthopristis chrysoptera*

Table 3. Fish species occurring in saltwater portions of the Edisto River Basin (Cont.)

Family	Common Name	Scientific Name
Sparidae - porgies		
	Pinfish	*Lagodon rhomboides*
	Sheepshead	*Archosargus probatocephalus*
Sciaenidae - croakers and drums		
	Silver perch	*Bairdiella chrysur*
	Spotted seatrout	*Cynoscion nebulosus*
	Sand trout	*Cynoscion nothus*
	Weakfish	*Cynoscion regalis*
	Banded drum	*Larimus fasciatus*
	Spot	*Leiostomus xanthurus*
	Southern kingfish	*Menticirrhus americanus*
	Gulf kingfish	*Menticirrhus littoralis*
	Atlantic croaker	*Micropogonias undulatus*
	Black drum	*Pogonias cromis*
	Red drum	*Sciaenops ocellatus*
	Star drum	*Stellifer lanceolatus*
Mullidae - goatfishes		
	Spotted goatfish	*Pseudupeneus maculatus*
Ephippidae - spadefishes		
	Spadefish	*Chaetodipterus faber*
Mugilidae - mullets		
	Striped mullet	*Mugil cephalus*
	White mullet	*Mugil curema*
Sphyraenidae - barracudas		
	Gauchanche	*Sphyraena gouchancho*

Table 3. Fish species occurring in saltwater portions of the Edisto River Basin (Cont.)

Family	Common Name	Scientific Name
Uranoscopidae - stargazers		
	Southern stargazer	*Astroscopus y-graecum*
Blenniidae - blennies		
	Striped blenny	*Chasmodes bosquianus*
	Crested blenny	*Hypleurochilus geminatus*
	Feather blenny	*Hypsoblennius hentzi*
	Freckeled blenny	*Hypsoblennius ionthus*
Gobiidae - gobies		
	Violet goby	*Gobioides broussoneti*
	Darter goby	*Gobionellus boleosoma*
	Sharptail goby	*Gobionellus hastatus*
	Freshwater goby	*Gobionellus shufeldti*
	Naked goby	*Gobiosoma bosci*
	Seaboard goby	*Gobiosoma ginsburgi*
	Green goby	*Microgobius thalassinus*
Trichiuridae - cutlassfish		
	Atlantic cutlassfish	*Trichiurus lepturus*
Scombridae - mackerels		
	Spanish mackerel	*Scomberomorus maculatus*
Stromateidae - butterfishes		
	Harvestfish	*Peprilus alepidotus*
	Butter fish	*Peprilus triacanthus*

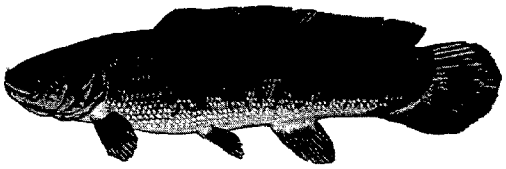
Table 3. Fish species occurring in saltwater portions of the Edisto River Basin (Cont.)

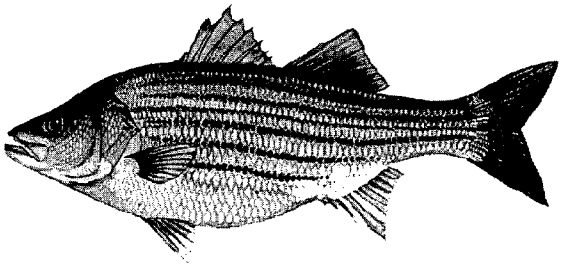
Family	Common Name	Scientific Name
Triglidae - sea robins		
	Northern searobin	*Prionotus carolinus*
	Striped searobin	*Prionotus evolans*
	Leopard searobin	*Prionotus scitulus*
	Bighead searobin	*Prionotus tribulus*
Bothidae - lefteye flounders		
	Fourspot flounder	*Ancelopsetta quadrocellata*
	Bay whiff	*Citharichthys spilopterus*
	Fringed flounder	*Etropus crossotus*
	Summer flounder	*Paralichthys dentatus*
	Southern flounder	*Paralichthys lethostigma*
	Windowpane	*Scophthalmus aquosus*
Soleidae - soles		
	Hogchoker	*Trinectes maculatus*
Cynoglossidae - tonguefishes		
	Blackcheek tonguefish	*Symphurus plagiusa*
Balistidae - leatherjackets		
	Planehead filefish	*Monacanthus hispidus*
Tetraodontidae - puffers		
	Smooth puffer	*Lagocephalus laevigatus*
	Northern puffer	*Sphoeroides maculatus*
Diodontidae - porcupinefishes		
	Striped burrfish	*Chilomycterus schoepfi*

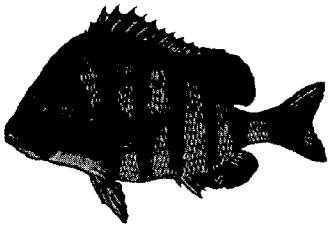
Historical Fisheries Sampling Locations

Edisto River Basin / Estuary

- Freshwater
- Saltwater







Freshwater *

The South Carolina Wildlife and Marine Resources Department (presently SCDNR) biologists conducted freshwater stream surveys throughout the State between 1974 and 1981. All streams 3 miles in length or longer were surveyed to determine species composition and water quality. Rotenone was the most common means of sampling; some sites were also electrofished (Figures 3, 4, 5, and 6).

Angler creel surveys were conducted from 1989 to 1991 by the SCDNR District VI biologists. Extensive roving creel surveys recorded angler numbers and hours, harvest, species targeted and caught, economic data, and opinions. Surveys in 1989 and 1990 included the North Fork Edisto River, South Fork Edisto River, and the main stem of the Edisto River. In 1991, only sections of the main river were surveyed.

SCDNR biologists of District VI and the Eastover office used electrofishing and rotenone to determine species composition, biomass, age, and growth for the biological survey. This survey was done from 1988 to 1990 on both forks and the main river.

A tag and return study to determine redbreast sunfish (*Lepomis auritus*) mortality due to angling was conducted in 1989 and 1992. In 1989, redbreast tagging was conducted on both forks and the main river. In 1992, tagging was done only on a section of the main river.

In 1991, an aquatic macroinvertebrate rapid bioassessment was made on both forks and the main river for the primary purpose of assessing the effects of the city of Orangeburg on the biota of the Edisto. Family-level assessment was carried out by biologists of SCDNR District VI (Figure 7).

* C. S. Thomason, Personal Communication.

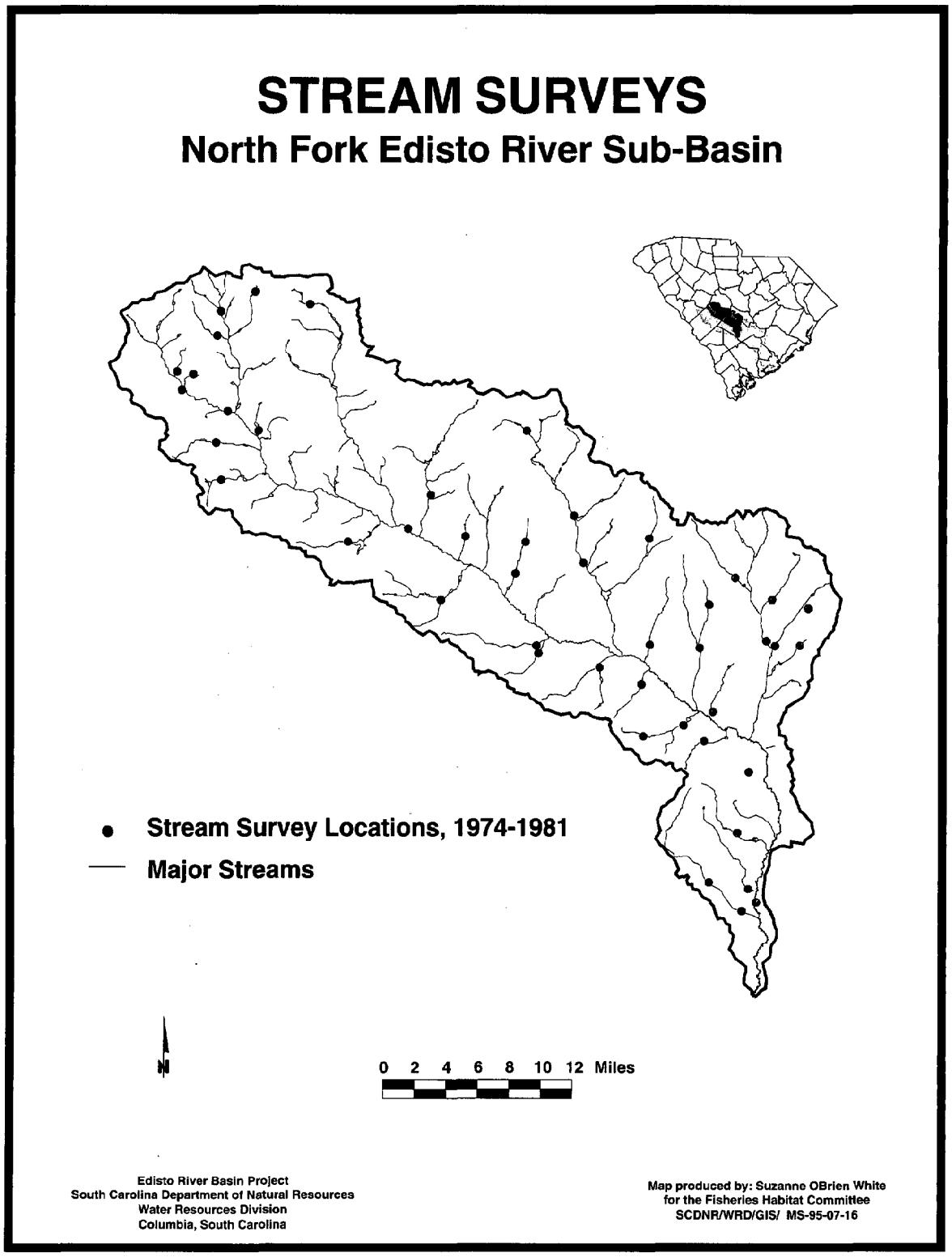


Figure 3. Freshwater-fisheries stream-survey locations in the North Fork Edisto River sub-basin

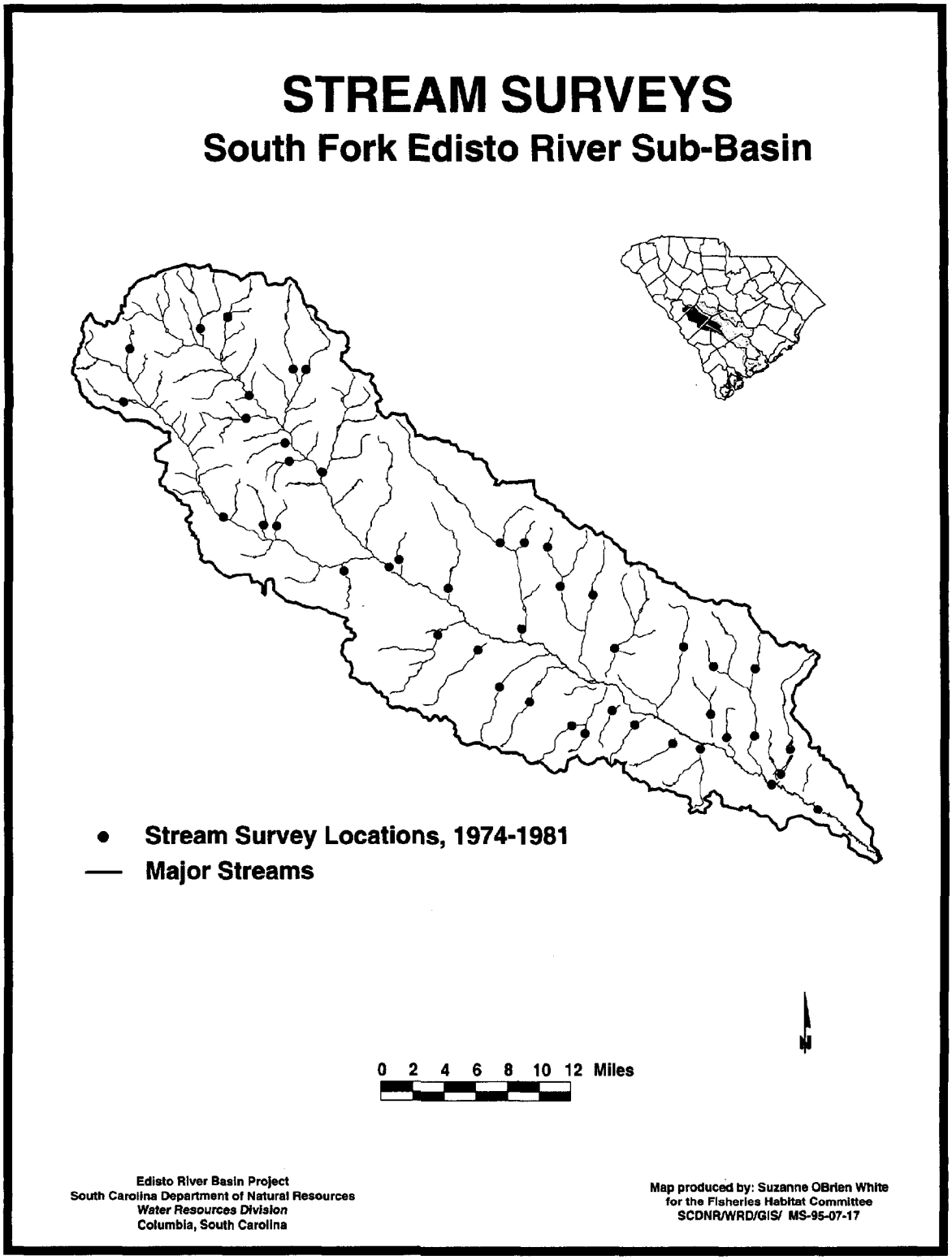


Figure 4. Freshwater-fisheries stream-survey locations in the South Fork Edisto River sub-basin

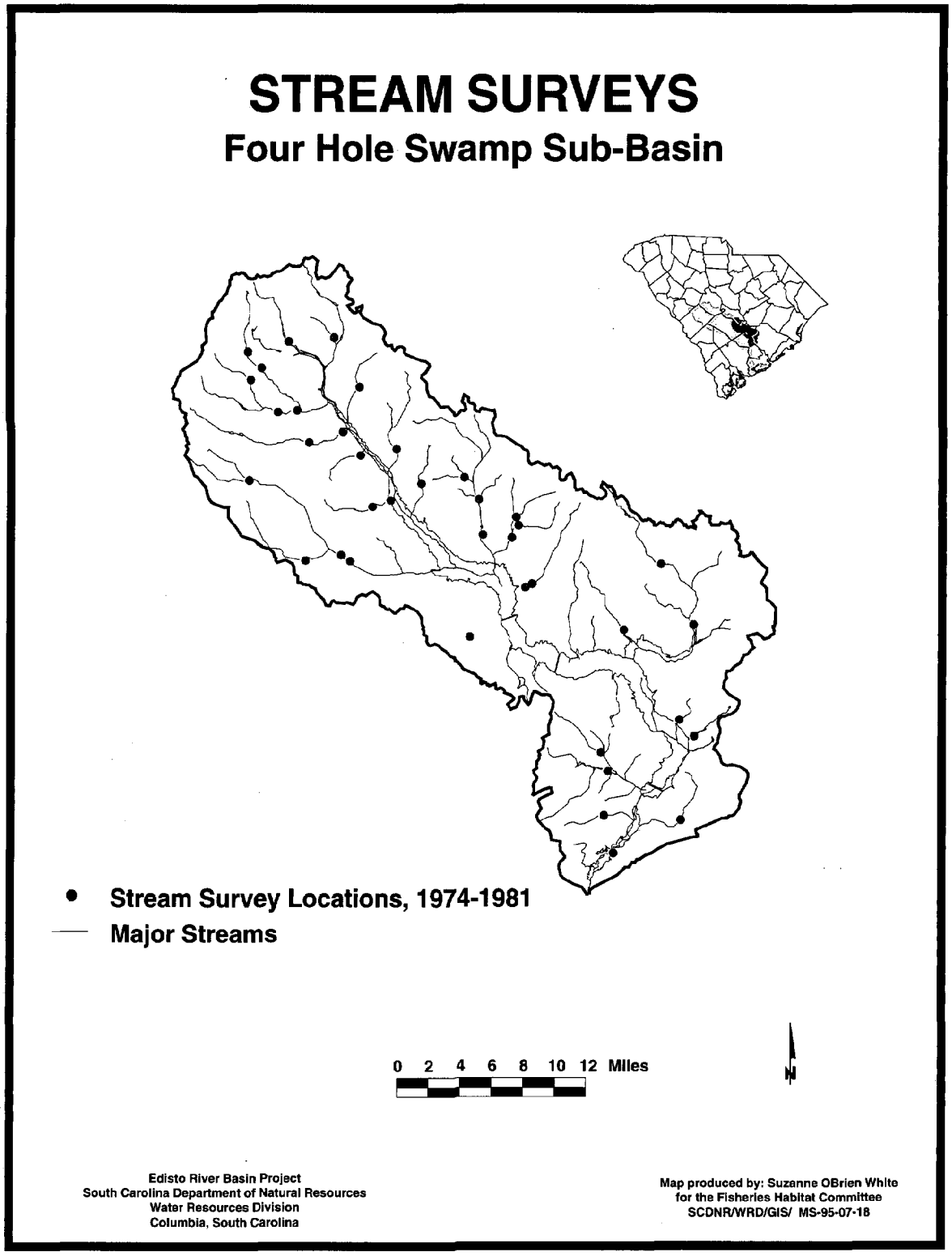


Figure 5. Freshwater-fisheries stream-survey locations in the Four Hole Swamp sub-basin

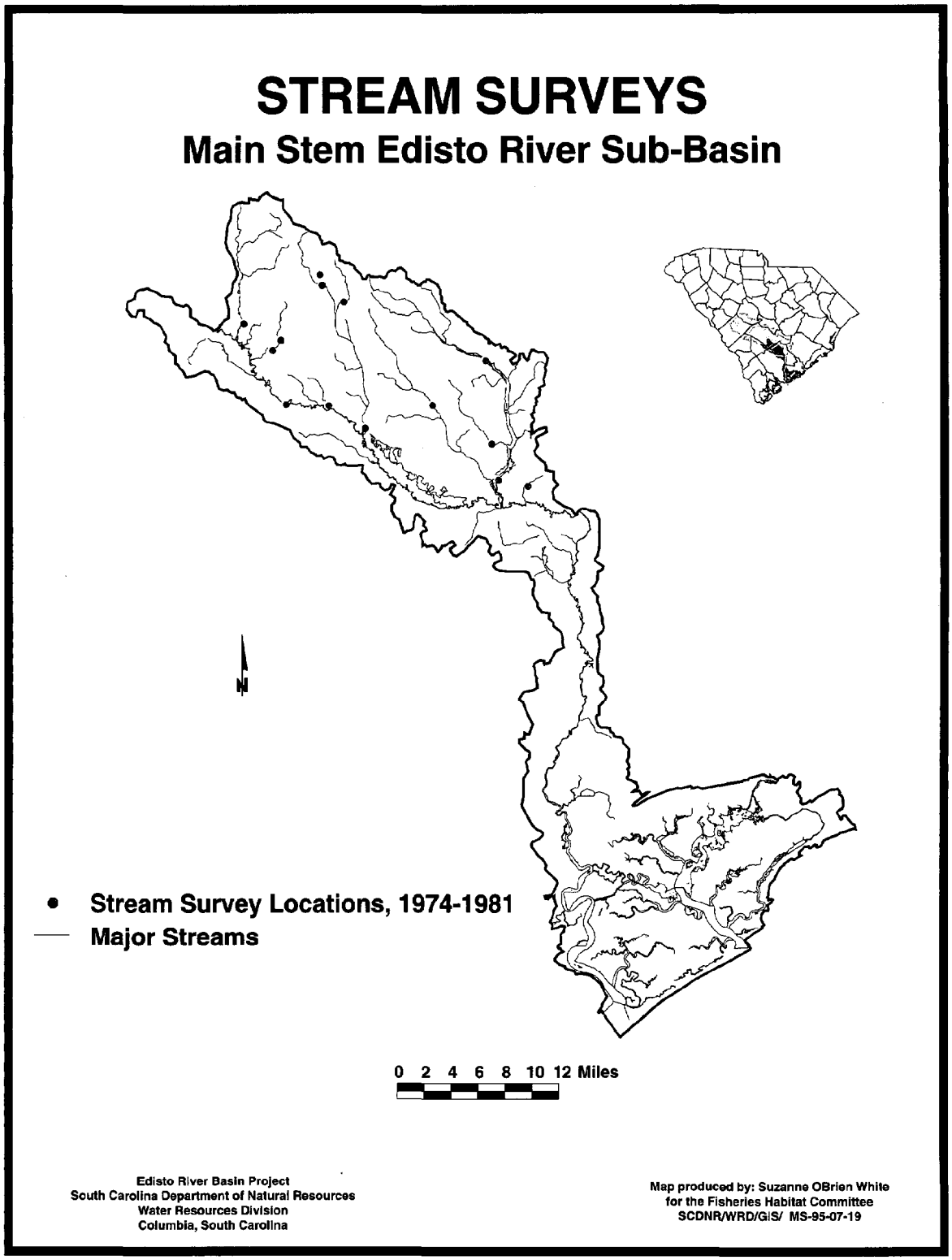


Figure 6. Freshwater-fisheries stream-survey locations in the main stem Edisto River sub-basin

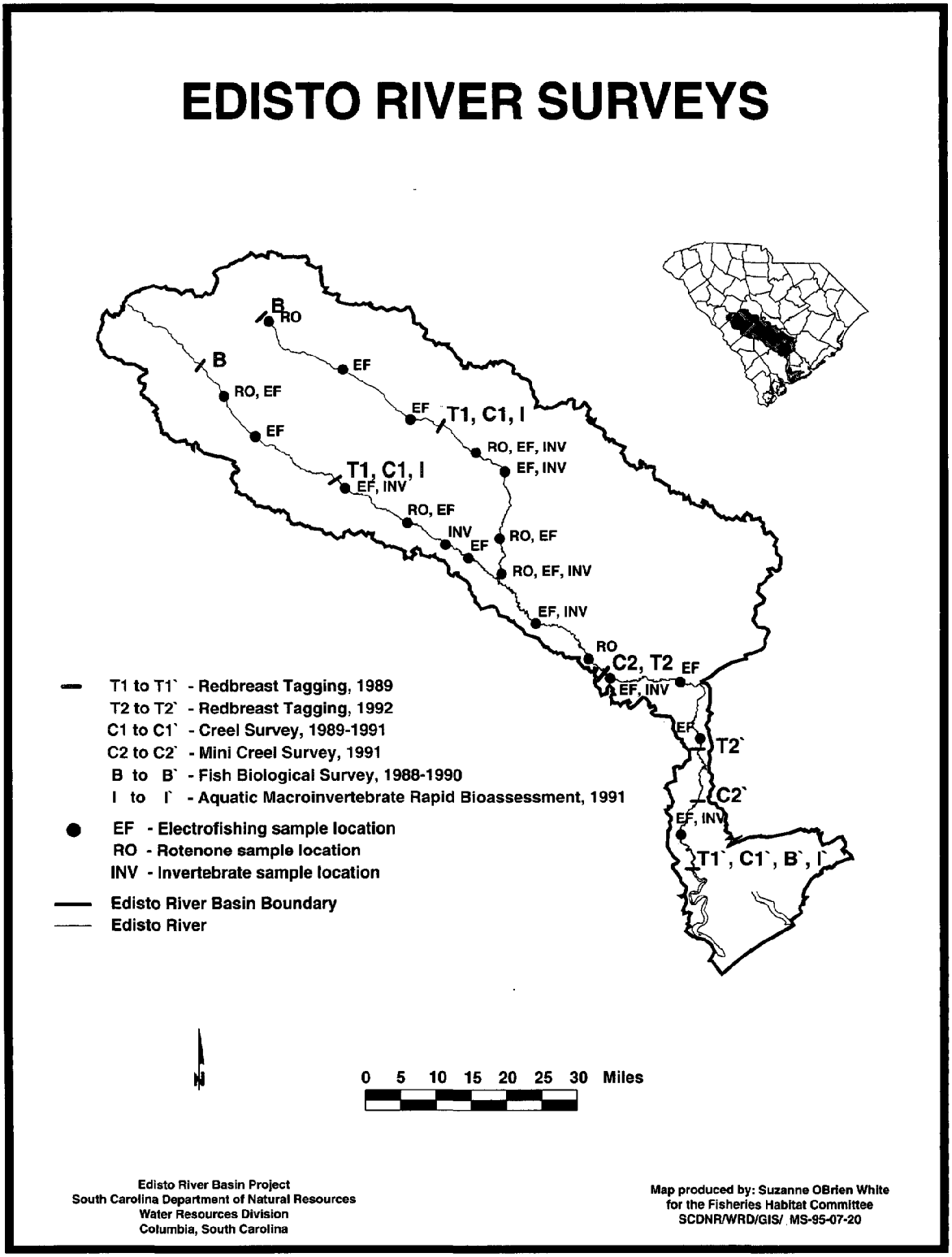


Figure 7. Freshwater-fisheries river surveys in the Edisto River Basin

Saltwater *

Sampling in the Edisto River estuary has been done irregularly for the past 30 years. Biologists at the USFWS Bears Bluff Laboratory, on Wadmalaw Island, did survey trawling to obtain information on fishes and macroinvertebrates found in the North Edisto River during the 1960's (Bearden 1961).

The SCDNR conducted a statewide survey of estuaries from 1973 to 1977, most of it done in the North Edisto River with a standard sampling trawl (16 ft. otter trawl). Wenner et al. (1991) compiled and analyzed these data as part of a synopsis of fishes and macroinvertebrates of the region.

Shad gill-net and trawling work was conducted in order to sample anadromous fishes by the Office of Fisheries Management (SCDNR) from 1988 to 1995 in the Edisto estuarine system.

Larval fish collections were made by SCDNR / Marine Resources Research Institute in an attempt to establish larval and juvenile habitats for recreationally sought estuarine species (Wenner et al. 1990). Sampling was conducted monthly from June 1987 through August 1988.

Trammel nets were used from 1991 to 1994 to sample the shallow water of the Edisto estuarine system. The nets were used to capture many of the recreationally important species found in the region (red drum [*Sciaenops ocellatus*], spotted seatrout [*Cynoscion nebulosus*], southern flounder [*Paralichthys lethostigma*], sheepshead [*Archosargus probatocephalus*], and black drum [*Pogonias cromis*]). Trammel net sets targeted other species, such as spot (*Leiostomus xanthurus*), mullet (*Mugil cephalus*), silver perch (*Bairdiella chrysura*), and sea catfish (*Arius felis*), which were co-inhabitants of the shallow waters sampled. The main objective of the trammel net work was to capture, tag, and release selected recreationally important species in effort to analyze fishing pressure, age composition, and fish population status within the state estuaries (Wenner et al. 1990)(Figures 8 and 9).

* W. A. Roumillat, Personal Communication.

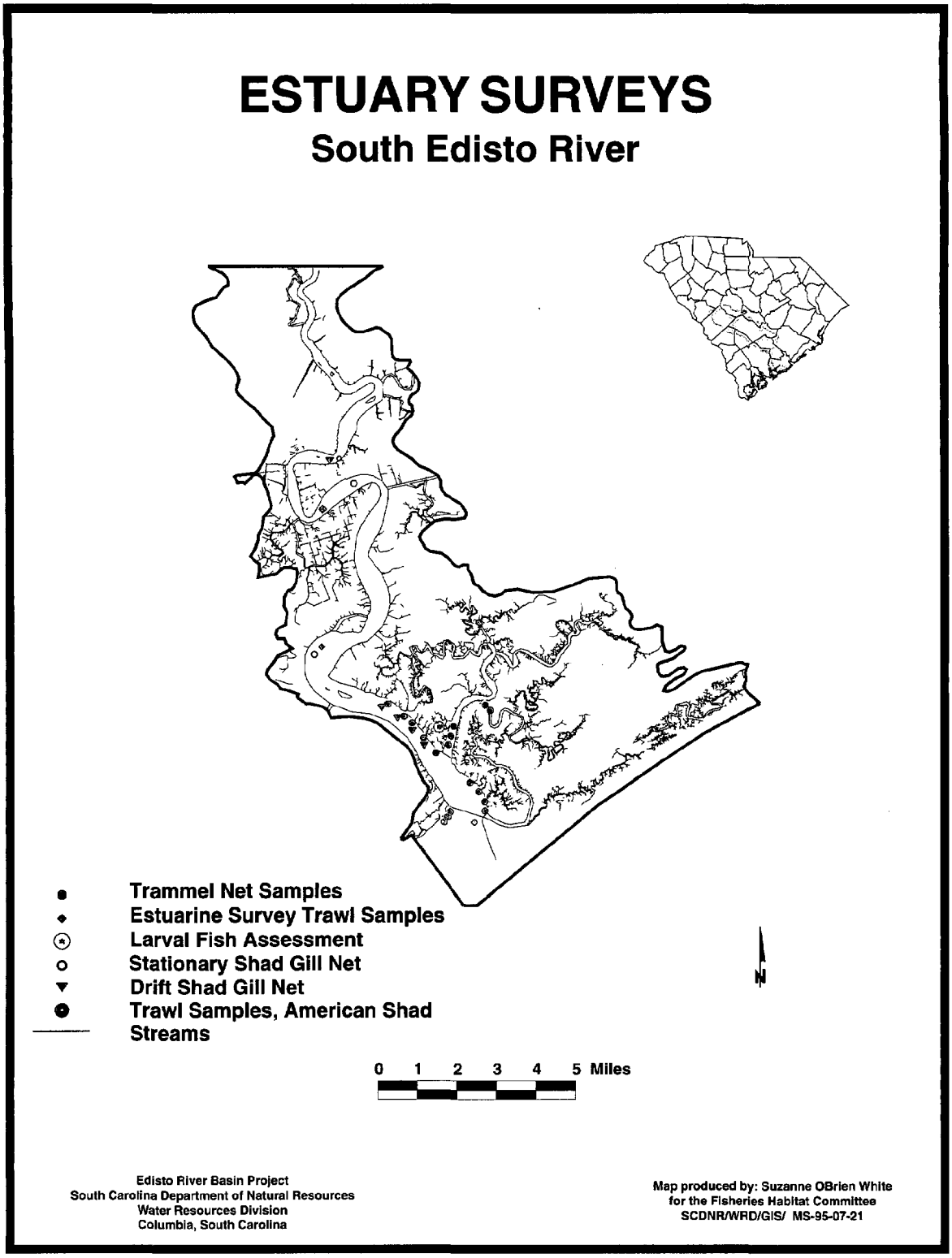


Figure 8. Estuarine-fisheries sampling locations on the South Edisto River

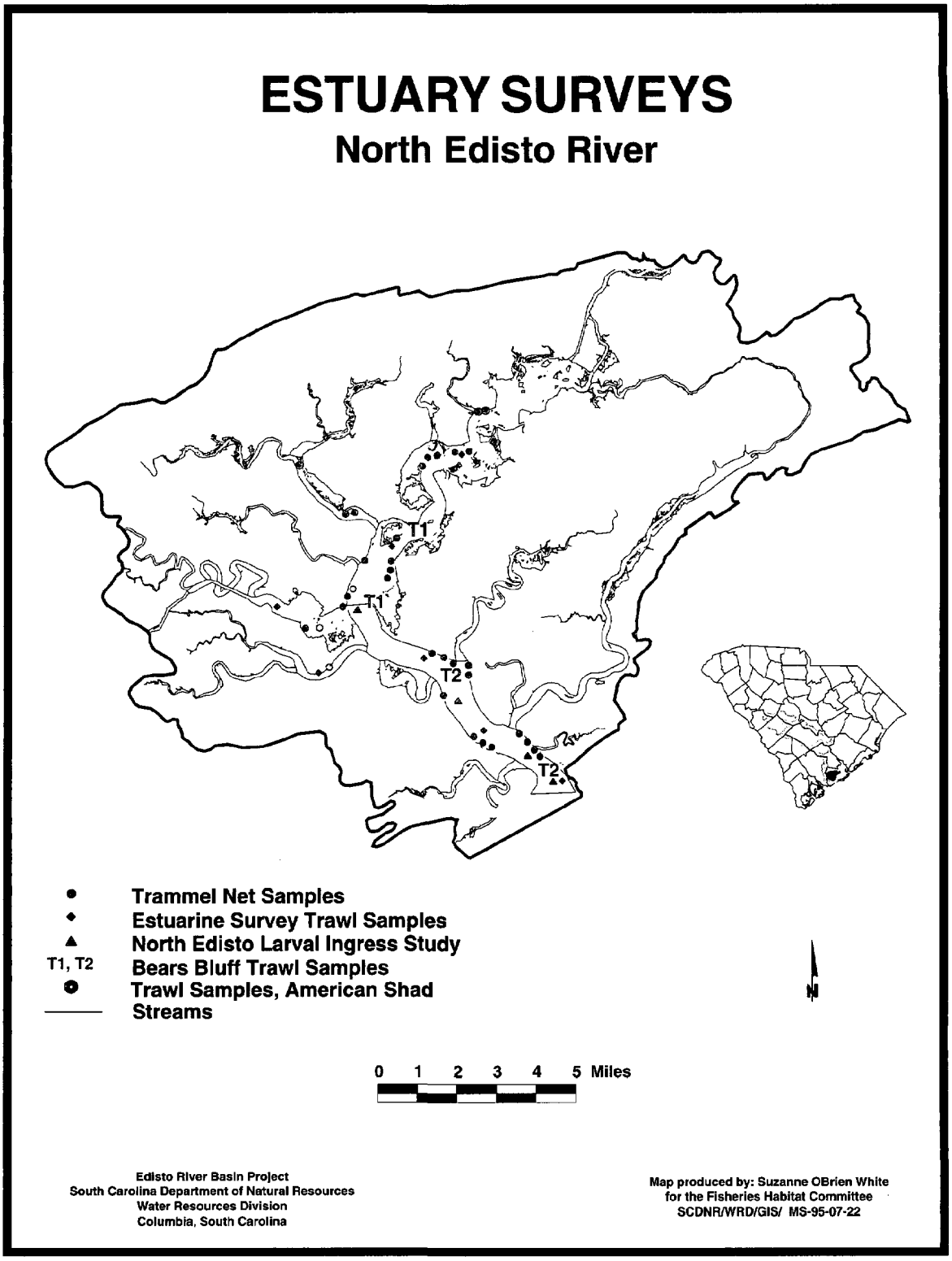


Figure 9. Estuarine-fisheries sampling locations on the North Edisto River

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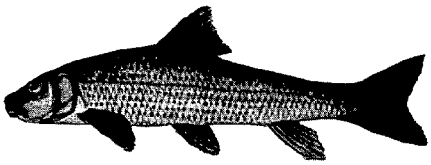
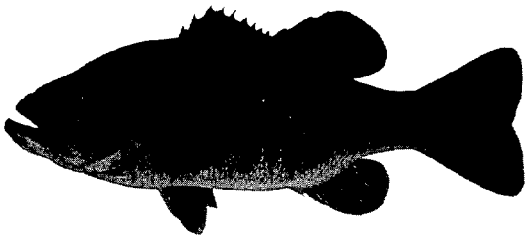
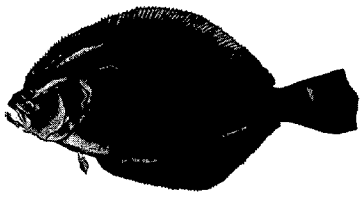
Edisto River Basin / Estuary

- Freshwater
- Saltwater







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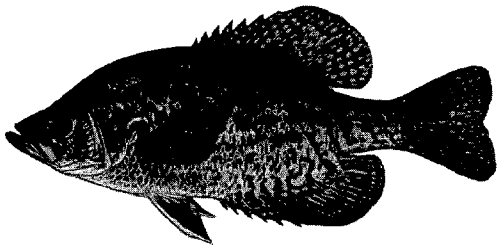
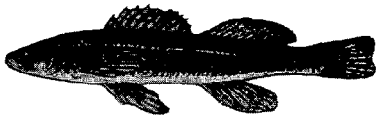
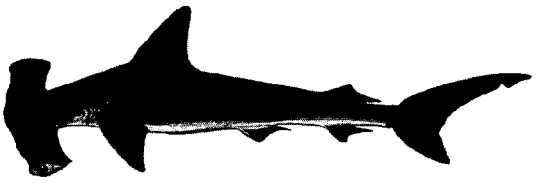
- Saltwater







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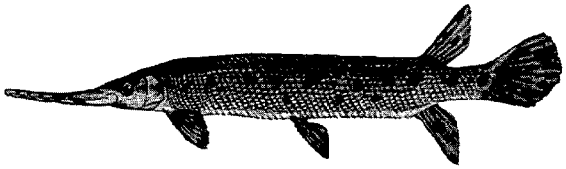

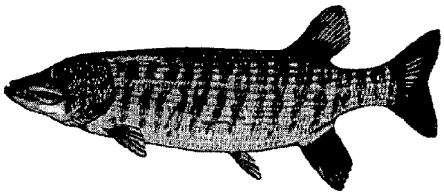

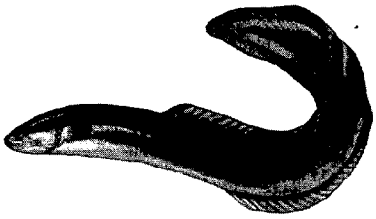

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