Oyster Middens to Mosquito Fleet

A BRIEF HISTORY
OF COMMERCIAL FISHERIES
IN SOUTH CAROLINA

by Dr. James M. Bishop

THE COAST of South Carolina stretches for approximately 180 miles in a northeast direction from the mouth of the Savannah River to the Little River Inlet. This coastal region is comprised of a vast complex of estuaries, marshes, barrier islands, rivers, and the famous "sea islands," and this results in a substantial increase in the actual land-water interface. The state's effective shoreline measures greater than 5,000 miles. Mild climate, fertile soil, and abundant water, fish, and wildlife encourage active and passive recreation, residential development, agriculture, industrial development, transportation, preservation, and commercial fisheries.

The quantity and availability of South Carolina's marine species have provided food and pleasure for coastal inhabitants since prehistoric times. Development of these coastal species into commercial fisheries is the subject of research supported by the Coastal Heritage Program. Prior to now, little research had been done on the development of South Carolina's commercial fisheries. The available information falls naturally into three chronological categories: Pre-Columbian, Colonial, and Historical (1880 to present).

THE PRE-COLUMBIAN FISHERY

Extensive use of marine species as a food source became common about 4000 years ago. The earliest shell middens (refuse heaps) are characteristically ring-shaped and comprised primarily of oyster shells, although a wide variety of other marine species' remains are included. The formation of these middens coincides closely with the development of pottery. Pottery shards at these archaeological sites indicate increased site occupation because the pottery vessels were used for food storage and cooking; they were too cumbersome to be routinely transported between sites. Younger middens, 2500-1200 years old, are not ring-shaped, generally smaller in size, and composed almost entirely of oyster shells. Native Americans used shellfish as a food source until after contact with Europeans but it did not dominate their diet as it once had.

THE COLONIAL FISHERY

Initial observations by early explorers about the use of marine species by Native Americans consisted of little more than casual anecdotes. In 1566, Gonzalo Solis de Meras noted that the Aborigines of Port Royal were excellent navigators and fished from their canoes. One hundred years later, Robert Horne explored the Carolina coast and was impressed with the abundance of seafood. In A Brief Description of the Province of Carolina, published in 1666, he wrote:

Here are as brave Rivers as any in the World, stored with great abundance of sturgeon, salmon, basse, plaice, trout, and Spanish Mackrill, with many other most pleasant sorts of Fish, both

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...Fisheries
(Continued from page 1)

Flat and round, for which the English tongue hath no name.

The purpose of many of these early statements was to encourage immigration, so their accuracy is questionable. For example, accounts of oyster abundance published in 1682 stated that more could be gathered easily in a day than could be eaten in a year, and that mountains of oysters blocked the creeks. The fact that some contained pearls drew special attention.

References to the abundance of fish and shellfish continued until the 1730's and then almost ceased until 1880. Significant commercial fisheries developed during this period although information about their development is scant. It is known that prior to the War Between The States, Charleston was the most important fishing port between New Jersey and Florida. Blackfish were an important commercial species. About 15 New England smacks made an annual pilgrimage to Charleston during the winter months to fish the blackfish banks located up to 40 miles offshore. Charleston dealers supplied the entire region with fish during the winter months, but warm temperatures and the danger of spoilage essentially halted distribution outside Charleston during the summer. The only other commercial fisheries prior to the War Between The States specifically mentioned were those for mullet and terrapin; however, others surely existed and research to document their existence continues.

After the War Between The States, the fishing industry in South Carolina experienced some substantial changes. The Emancipation Proclamation caused a large segment of the coastal population to rely on their own resourcefulness for provisions, and fishing was an attractive profession. By 1880, 94% of the fishermen in Charleston were Afro-Americans. Smack ownership changed from Northerners to resident Charlestonians and seven smacks owned by the Charlestonians were fished year round. Four to six men crewed on each smack; fishing gear consisted exclusively of hand-lines. Phenomenal catches by these vessels were not uncommon; in 1858, a single vessel landed 3200 blackfish in one day's effort and in less than nine months in the early 1870's, the smack Althea Franklin landed 50,000 blackfish and 5,000 other species.

THE MOSQUITO FLEET

Closely associated with the smack style of fishing was Charleston's famed "Mosquito Fleet." The origin of this fleet is obscure but as early at 1817, blacks were fishing from 25 dugouts off the Isle of Palms. Perhaps this was the forerunner. After the War Between the States, several hundred men were engaged regularly in the "boat fisheries." Weather permitting, these vessels made daily trips to the blackfish banks, and provided Charleston a reliable source of fresh fish until the late 1940's. The skill and courage of the men of the Mosquito Fleet were admired throughout Charleston. From inshore waters, the fleet brought in trout, skipjack, whiting, and croaker; offshore, they caught blackfish, whiting, porgy, bastard sniffers, and grunts. These fish were sold to peddlers who hawked the catch in the residential areas of Charleston with such melodious chants as:

Old Joe Cole - good old soul
Porgy in the summertime
And whiting in the spring
Eight upon a string
Don't be late - I'm waiting at the gate
Don't be mad - Here's your shad
Old Joe Cole - good old soul.

Adapted from Street Cries of an Old Southern City by Harriet Kershaw Leiding. Charleston, 1910.

Fifteen years after the War Between The States, the United States Government published a comprehensive review of the nation's fisheries and fishery industries. This work provided the first significant description of South Carolina's fisheries and showed that commercial exploitation of many marine species was already well established. In 1880, 1005 fishermen landed over six million pounds of bluefish, hard clams, crabs, mullet, oysters, shrimp, sea trout, terrapin, herring, shad, and sturgeon.

South Carolina was particularly noted for its shrimp industry which landed 630,000 pounds using only seines and cast nets. Fishermen in the 1880's preferred shrimp to any other bait. Shrimp were sold by the "plate," equal to about one quart, and fishermen purchased one to two plates daily. Shrimp were also sold by as many as 200 street vendors; retail sales amounted to nearly $60,000 annually.

FISHERY MANAGEMENT IN SOUTH CAROLINA

The first important event in fishery management in South Carolina occurred on February 23, 1906 when the General Assembly passed an act to "regulate the catching, gathering, sale, exporting and canning of oysters, terrapin, clams, shad, and sturgeon, to provide for the licensing thereof, and to provide for the leasing of public lands suitable for the cultivation thereof." A Board of Fisheries was established and given the responsibility to execute the new legislation. In an effort to make the board self-supporting, taxes were collected on canned oysters, raw-shucked oysters, clams, and terrapins.

Annual reports of the Board of Fisheries provide a record of landings on the important species. These Annual Reports are the main source of fishery statistics in the early 1900's and provide many interesting bits of information related to the state's fisheries. For example, in 1924, enough canned oysters were produced in the state that if placed from end to end along the coast, they would stretch the distance between the state lines of Georgia and North Carolina. In 1921, a license was issued to gather turtle eggs; presumably those of the now threatened Loggerhead. Other species whose past commercial exploitation is surprising include the ribbed mussel and the now endangered shortnose sturgeon.

THE MODERN FISHERY

Marshes are recognized as one of the most productive natural systems in the world and South Carolina has over 504,000 acres of coastal marsh. These marshes are the source of the detrital food chain which indirectly supports most of the species upon which the state's marine fisheries depend. Although South Carolina possesses over 20% of the Eastern states' Atlantic coastal marsh, its contribution to the commercial fisheries of the Atlantic Seaboard is disproportionately small. In 1976, 14 Atlantic Coast states landed 1.72 billion pounds valued at $360 million. Among these states South Carolina ranked tenth with landings of 21.4 million pounds (1.2% of the total) valued at $14.1 million (3.9% of the total).

Considering South Carolina's extensive coastline, the productivity of estuaries, and the importance of commercial fisheries to the economy, this ranking is surprisingly low. South Carolina has no resident fishery for species such as menhaden which are landed in high volume in other states. In 1976, more shrimp (8.7 million pounds) were landed than any other species in South Carolina.

In contrast, North Carolina's volume of fishery landings in 1976 was ten times that of South Carolina but the monetary value of North Carolina's landings was only twice as much as South Carolina's. This is because South Carolina harvested a species which provides little volume but much money, whereas North Carolina harvested a species
Shem Creek and Shrimping

by John W. Brown and Charles M. Neufeld

ON THE NORTHERN SIDE of Charleston Harbor, a small tributary, Shem Creek, flows through the center of the town of Mt. Pleasant. The creek is navigable only a short distance inland past the Shem Creek bridge. Shem Creek and its adjacent upland area are natural resources which, during the past 50 years, have become tremendously important to the town of Mt. Pleasant and the surrounding area. Shem Creek is one of the busiest shrimp trawler bases on the East Coast.

Although homes are located on both banks of this creek, the majority of its adjacent uplands are devoted to business use. While most of the economic development of Mt. Pleasant has taken place since 1946, the Shem Creek area has a long history of business activity. Sometime prior to 1784, a mill was built there by Jonathan Lucas, a skilled and educated millwright. A combination rice and saw mill, driven by water power, it is thought to be the first mill of its type built near Charleston. A grist mill, built on this site some years later, was burned during the War Between the States.

In 1895 Captain Robert H. Magwood bought property along Shem Creek and began operating a "cooter pen." There Captain Magwood raised terrapin on shrimp and fiddler crabs until they were ready for shipment by train to restaurants as far away as Baltimore and New York City. This was an early use of the aquaculture concept in South Carolina. The terrapin trade continued until the 1920's, although the property changed hands a number of times.

Shortly after World War I, a crab plant and an oyster cannery were located on Shem Creek in the area above the bridge. Both of these ventures marked continued growth in this small but dynamic area of Mt. Pleasant.

The shrimping industry was launched in South Carolina by a Florida shrimper, Captain Regan. In 1924, he was fishing out of Charleston for bluefish off Bulls Bay. Not having any luck, he decided to lower his shrimp net. That day he brought in 375 pounds of jumbo shrimp. The following year, three Florida companies shrimped out of Charleston, and by the late 1920's, about 40 vessels, most from out-of-state, had located in Charleston. These boats worked out of Adgers Wharf and the Columbus Street terminals.

The first completely local shrimping operation was begun south of Charleston Harbor about 1926 by Owen Massenburg, who controlled between 15 and 20 trawlers to supply his shrimp canning plant at Folly Beach. In 1930, Captain William C. Magwood brought the shrimping industry to Shem Creek. The Magwood family had previously been in the freight boat business, hauling produce from farms on Johns, James, Edisto, and Wadmalaw Islands to Charleston. This business died in 1929 when bridges were built over the Cooper River, Stono River, and Shem Creek. Magwood then converted his freight boat into a shrimp trawler. The Skipper was a small (44 foot), round-stermed vessel which operated a single net. Magwood's was the only trawler in Shem Creek when the 1930 shrimp season started.

THE POST-WAR BOOM

Development of the commercial shrimping industry began to grow rapidly after World War II. The first shrimp dock was built on Shem Creek in 1946; by 1953, six docks had been built on the creek. The 1950's saw a steady increase in the South Carolina shrimping industry, which in turn led to increased business activities along Shem Creek. By 1965, the last commercial shrimp dock to locate on Shem Creek was built.

The shrimping industry went into a sharp decline in the early 1960's. Poor catches in 1963 and 1964 resulted in numerous trawlers moving to waters south of Charleston. Many fishermen sold their boats and the number of commercial trawling licenses issued fell markedly. The industry recovered after the 1964 season, although there continue to be off years due to shrimp population fluctuations. The 1965 season was the beginning of an upward trend in the shrimping industry.

Trawlers began moving back to Shem Creek in the early 1970's and the creek has been seasonally used to nearly full capacity since then. There is a tremendous seasonal fluctuation in the number of boats docking in Shem Creek and a concurrent fluctuation in the activity of local related businesses. Overall, in the last decade, the number of trawlers operating in South Carolina has increased dramatically. However, the net value of the fishery has declined for shrimpers primarily due to increased operating costs.

An important element in the growth of the businesses along Shem Creek is the presence of Highway 17. This four lane road carries traffic volumes in excess of 27,000 trips per day. The high volume of automobile traffic has been responsible for the rapid growth and expansion of businesses which are in no way dependent on Shem Creek. The intersection of two strong economic forces - a commercially important creek and a heavily travelled urban thoroughfare - has resulted in the present mixture of fish houses, restaurants, ice docks, retail shops, and ice houses.

The information prepared for this report comes from a section of an economic study of the Shem Creek area entitled "Shem Creek - An Economic Background" by John W. Brown and Charles Neufeld, prepared by the S.C. Sea Grant Consortium under a grant provided by the S.C. Coastal Council.
Changing Roles for Marsh Field Impoundments

Adapted by Rick DeVoe

As one views this vast hydraulic work, he is amazed to learn that all of this was accomplished in face of seemingly insuperable difficulties... If all of this were in some old country it would stimulate the research and admiration of travellers, but in our own State it is passed by as commonplace and ordinary.

Rice and Rice Planting in the South Carolina Low Country, David Doar; The Charleston Museum, 1936.

THE STATE OF SOUTH CAROLINA is blessed with an extensive system of coastal marsh acreage. With over 504,000 acres of coastal marsh, South Carolina has approximately 20% of the total marsh acreage on the Atlantic coast: 334,000 acres are classified as salt marsh, 35,000 acres are brackish marsh and over 64,000 acres are freshwater marsh. The remaining 70,000 acres, some 14% of the total, are classified as impounded marsh.

Impoundment marsh areas are one of the more readily apparent physiographic features of the South Carolina coastal region. Impoundments are characterized by extensive systems of dikes, canals, and reservoirs located adjacent to many of the state's coastal rivers and embayments. These systems are remnants of the flourishing rice culture industry of the 18th and 19th centuries.

IMPOUNDMENT RICE CULTURE

Rice culture was introduced into North America during the last quarter of the 17th century in the vicinity of Charles Towne in the Carolina Province. After settlement, the rice industry expanded into both southeastern and northeastern sections of the province. Rice was at first grown as an upland crop without irrigation; however, it is probable that even the very early colonists recognized advantages in utilizing low, moist land for rice cultivation.

Irrigation of rice fields began about 1724 in the freshwater swamps of the southeastern part of the province. The swamp bottoms were irrigated with water stored in ponds formed by dams. Drainage was accomplished through ditches channeling water into adjacent streams. During the early period, irrigation systems were not as elaborate or as permanent as they became after the Revolution; the industry did not exhibit the great degree of geographic stability which characterized the later period.

Continued problems with inland rice cultivation induced the shift to tidewater rice culture after the Revolution. As the backcountry was increasingly cleared and cultivated, the problems of unwanted silting and flooding of inland swamp rice fields increased. The fields rapidly developed the condition of too much or too little water at a given time. The "freshet," floods produced by heavy rains, became the fear of all planters. Rice planting continued in the freshwater swamps until the close of the Revolution, although some small transfers of cultivation to the tidewater region had begun earlier. Use of the tidal river swamps for cultivation started as early as 1758 near Winyah Bay. The major shift to the tidewater region came during the late 18th and early 19th centuries.

After the Revolution, major developments led to a greater expansion of the rice industry. Carolina rice had established a reputation for quality and commanded a premium price. More important, a system was perfected in the Georgetown area around 1786 which utilized tidal action to flood and drain the fields. This system provided a much greater degree of control than the earlier upland system, and consisted of a series of dikes, canals, and ditches, referred to collectively as "impoundments."

The following description of rice field impoundment construction and operation suggests the amount of work and maintenance required, given the limited technology of the era: Typically, once a location was selected, a temporary ditch and embankment were constructed, and any natural channels running through the embankment were bridged and later filled. "Trunks" were installed in the embankment, and the clearing of the swamp began. Individual fields were then made by constructing "cross banks" within the large...
embanked area, which served to keep water in, or out of, each field. Normally, the fields were ditched to aid in drainage. After the embankments were completed, flood gates were installed at the ends of trunks; the field was ready to be put into operation.

The entire process of clearing, digging, and construction was slow. Many years of effort were required to open new fields and establish a working plantation. Once a field was placed into production, it required constant attention and maintenance. Water levels were regulated by the flood gates and trunks and the water level had to be carefully maintained. Ideally, the bottom of the trunk was placed at the low tide level. The gates could be locked in position or swung to operate as a one-way valve. During flooding, the outer gate was locked open and the inner gate was opened automatically by tidal pressure through the trunk. When the tide began to fall, water pressure closed the inside gate, thus holding water in the rice field.

In a study of tidalwater rice culture published in Geoscience and Man (1975), S.B. Hilliard noted:

Knowing the vagaries of coastal environments, with their periodic storms, devastating tides, and occasional freshets from upstream, ... a substantial amount of maintenance was needed to keep the fields in order. Reclaiming a tidal swamp for a rice field demanded a high level of technical expertise. Leveling embankments, laying off ditches and fields, and setting trunks and gates required considerable engineering knowledge. No other large agricultural regions in the United States during the antebellum period demanded such expenditures of labor and such a high degree of technical supervision while bringing land into production.

South Carolina and Georgia produced almost 90% of the total national rice crop during the early 19th century. In South Carolina, rice was grown along the Waccamaw, Black, Sampit, Pee Dee, Santee, Cooper, Edisto, Ashepoo, Broad, Combahee, and the Savannah river systems. Until 1860, Georgetown produced more rice than any other county in the nation. During 1850-1860, about 39 Santee River plantations were in operation, consisting of 16,600 acres of rice impoundments, with an average annual yield of 30 bushels per acre.

After 1860, production faltered and never recovered. The causes for its decline and ultimate extinction were varied. The War Between the States directly resulted in the destruction of some production capacity. The loss of slave labor and capital wealth were major obstacles to the revival of the industry. These were but the first great blows to the planters, for without the full control of a stable labor force and with the shattered condition of the economy after the War, every storm and disaster forced further curtailment of production.

The final abandonment of commercial rice culture in the South Atlantic States was caused by the introduction of rice cultivation into Louisiana and southwestern states where machinery could be used in both elsewhere “with superior attraction for a magnificent and permanent game preserve.” The Santee Gun Club eventually bought twelve rice plantations and controlled about 20,000 acres in the Santee Delta. In 1975, the Santee Club donated its holdings to The Nature Conservancy for establishment of a refuge now known as the Santee Coastal Reserve.

In South Carolina, numerous impoundments range in size from a fraction of an acre to several thousand acres. Most of these are former rice fields, although some may consist of diked brackish marsh. Many have been maintained and managed as game preserves since the demise of commercial rice production. As described above, most impoundments were constructed by diking off wetland areas intersected by tidal creeks. In some instances, entire marsh-creek areas were completely encircled by dikes, although the most common practice was to dike off the open end of a marsh slough bounded by high lands. These impoundments are usually equipped with flood gates or other structures for regulating water level and salinity. In most cases, this is done to encourage plant growth suitable for waterfowl. In a few impounded areas, salinity is controlled for aquaculture purposes.

**IMPOUNDMENT USE FOR THE FUTURE**

Although impoundment systems have characterized the coastal wetlands of South Carolina for over two centuries, knowledge about their ecology is very limited. Because of renewed interest in using the inherent productivity of existing impoundments, this lack of knowledge presents a major problem.

Impoundment acreage has been viewed in the past as a static coastal resource. However, over the past several years, interest in these areas for waterfowl management, aquaculture, and other uses has increased significantly. As a result, South Carolina’s regulatory agencies, including the Wildlife and Marine Resources Department and the Coastal Council, currently must review a significant number of applications for proposed utilization and/or management of these unique areas without the benefit of a sound ecological data base. Various policy and legal questions have resurfaced which may require changes in current legislation and/or regulatory policies.

In addition, federal agencies such as the U.S. Fish and Wildlife Service and the Army Corps of Engineers have closely followed the recent surge of interest and have expressed a need for scientific data with which they could develop impoundment policies. Increased interest in the use of impoundments

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Ebbs & Flows

Coastal Conference Held

Coastal Heritage: Past, Present, and Future was the subject of a day-long conference held at the Charleston Museum on December 3, 1982. In five major sessions, speakers and panelists discussed a range of coastal issues from both contemporary and historical perspectives. The conference brought together leaders in coastal zone planning and development from the public, academic, and private sectors.

Editorial Board Formed

We are pleased to announce the formation of the Coastal Heritage Editorial Board. Comprised of ten scholars representing a range of disciplines and five institutions, the Editorial Board will review manuscripts produced by Coastal Heritage researchers and supplement the research findings with their own expertise. Input from the Editorial Board will help ensure that the forthcoming book, Coastal Heritage: A Primer to the South Carolina Coast, will be comprehensive and balanced in its presentation of the many aspects of coastal life.

The Editorial Board members are:

Dr. Wayne Jordan, Department of History, College of Charleston
Dr. Charles F. Kovacik, Department of Geography, University of South Carolina

Lowcountry Crafts Displayed

Lowcountry South Carolina crafts have largely been shaped by the resources available in the coastal region. The great number of waterways has demanded that people produce such water-related objects as boats and nets. The natural resources—what woods and grasses are abundant and accessible, for instance—have helped determine the design of local crafts.

Five major Lowcountry crafts are presented in the free-standing exhibit, "Coastal Heritage: Folk Art," prepared by the Coastal Heritage Program. The importance of local resources in the development of sweetgrass coiled baskets, forged ironwork, wood carvings, boat building, and netmaking is emphasized.

The display includes contemporary color photography and historic black and white shots (some over 50 years old), printed explanations and examples of the crafts. Among the artifacts are a walking stick, carved with entwined reptiles, from the 1920's; both South Carolina and African coiled baskets; and a 19th century mortar and pestle.

The exhibit is available by request from: Linda M. Knight, Traveling Exhibition Program, S.C. Museum Commission; P.O. Box 11296; Columbia, S.C. 29211; (803) 758-8197.

Timmerman Cites Concerns

In the August-September, 1982 issue of "Fish and Wildlife News," Dr. James A. Timmerman, Jr. of the S.C. Wildlife and Marine Resources Department addressed the impact of the "New Federalism" on fish and wildlife resources from a state perspective. Dr. Timmerman pointed out that, in the past, "...States have been dependent upon Federal funds for innumerable fish and wildlife programs in order to protect, conserve and utilize our fish and wildlife resources...."

In South Carolina, he wrote, reduction of federal funding could severely impact upon South Carolina's fish hatcheries, anadromous species (i.e. striped bass and shad) projects, endangered species program, and the state's law enforcement program for fish and wildlife. Dr. Timmerman called for careful decision-making by local, state, and federal resource managers to mitigate the potential long-term, detrimental impacts of reduced funding.

In addition to his position as Executive Director of the S.C. Wildlife and Marine Resources Department, Dr. Timmerman is First-Vice President of the International Association of Fish and Wildlife Agencies and serves on the Board of Directors of the S.C. Sea Grant Consortium.

Mosquito Fleet Discussed

At the joint meeting of the Southeastern Estuarine Research Society and the Gulf Estuarine Research Society held November 11-13, 1982 in Marineland, Florida, Dr. James Bishop, a Coastal Heritage Program researcher, gave a slide presentation from research into the history of South Carolina's commercial fisheries. Some of the information included in his presentation, "The Mosquito Fleet, A Review of Charleston's Defunct Artisanal Offshore Fishery," is found in Dr. Bishop's article on page one of this bulletin.
... Fisheries
(continued from page 2)

which provides large volume but is worth less money per pound - menhaden constituted 60% of North Carolina's 1976 fishery harvest. An unknown quantity of these menhaden were captured in South Carolina waters, so South Carolina's low volume ranking is due in part to misrepresented landings.

At one time, South Carolina produced as many shrimp as the rest of the Atlantic Coast states combined and was among the top three of all states in canned oyster production. The number of fishermen in the state has not changed dramatically in the last century, but the number and volume of species landed has. Changes in demand, overharvesting of some species, and habitat changes have caused the landings of some species to decline drastically while others are now landed in greater quantities than ever. Fishing effort for several species is so intense today that landings depend directly on population numbers.

Dr. James M. Bishop is an assistant marine scientist at the South Carolina Wildlife and Marine Resources Department, Marine Resources and Research Institute. This article is based on Dr. Bishop's own work for the Coastal Heritage Program which is to trace aspects of the state's natural history and specifically to document the history of South Carolina's commercial fisheries.

... Impoundments
(continued from page 5)

has underscored the need for acquisition and synthesis of ecological data, analysis of public policy, and the development of management strategies at the local, state, and national levels.

In response to these needs, the South Carolina Sea Grant Consortium has assembled a team of researchers from five of its seven member institutions to examine impoundment ecology and use via a three-year Sea Grant-funded study. The information generated by this large scale effort will provide a preliminary basis for the development of impoundment policies by state and federal agencies; will help researchers to investigate the ecological similarities and differences of impounded and open marsh areas; and will provide reasonable guidelines for impoundment use which ensure high impoundment productivity while minimizing adjacent environmental effects.

This article was adapted by Rick DeVoe of the S.C. Sea Grant Consortium from "An Ecological Characterization of S.C. Wetland Impoundments" - South Carolina Marine Resources Center Technical Report No. 51; edited by John V. Miglarese and Paul A. Sandifer; May 1982.

Publications Available

The S.C. Sea Grant Consortium has available a number of publications on fisheries and related topics. They are available from: Communications, S.C. Sea Grant Consortium, 221 Fort Johnson Road, Charleston, S.C. 29412.

CONSORTIUM PUBLICATIONS

"Species Assemblages, Distribution, and Abundance of Fishes and Decapod Crustaceans from the Winyah Bay Estuarine System, South Carolina" - SC-SG-TR-81-03.

CONSORTIUM PROCEEDINGS


M.A.S. PUBLICATIONS

"Guide to Flounder Fishing in South Carolina" - SC-MAS-81-02
"Tail of the Rock Shrimp" - SC-MAS-78-15
"Dipping and Picking: A Guide to Recreational Crabbing" - SC-MAS-78-08
"Don't Waste That Fish. Tips for Taking Care of Your Catch" - UNC-SG-75-23
For the past year, we have mailed *Coastal Heritage* free of charge to people whose names were included on a number of mailing lists. We know there have been duplicates and inaccuracies. If you would like to continue receiving this bulletin, simply remove your address label from this issue and place it below. Return this card to us and we will continue to send your subscription free of charge. If we don’t hear from you by March 18, we will assume you no longer wish to receive *Coastal Heritage*.

Rhet Wilson
Coastal Heritage Program Director

We'd also love to hear about subjects you think we should cover in future issues. Add your comments below. Thank you.

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**The Coastal Heritage Program** is an interdisciplinary research and public education project of the S.C. Sea Grant Consortium. It provides information on the interaction of the environment, the economy, and the culture of the coastal area. It operates with the support of the S.C. Committee for the Humanities, an agent of the National Endowment for the Humanities.

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