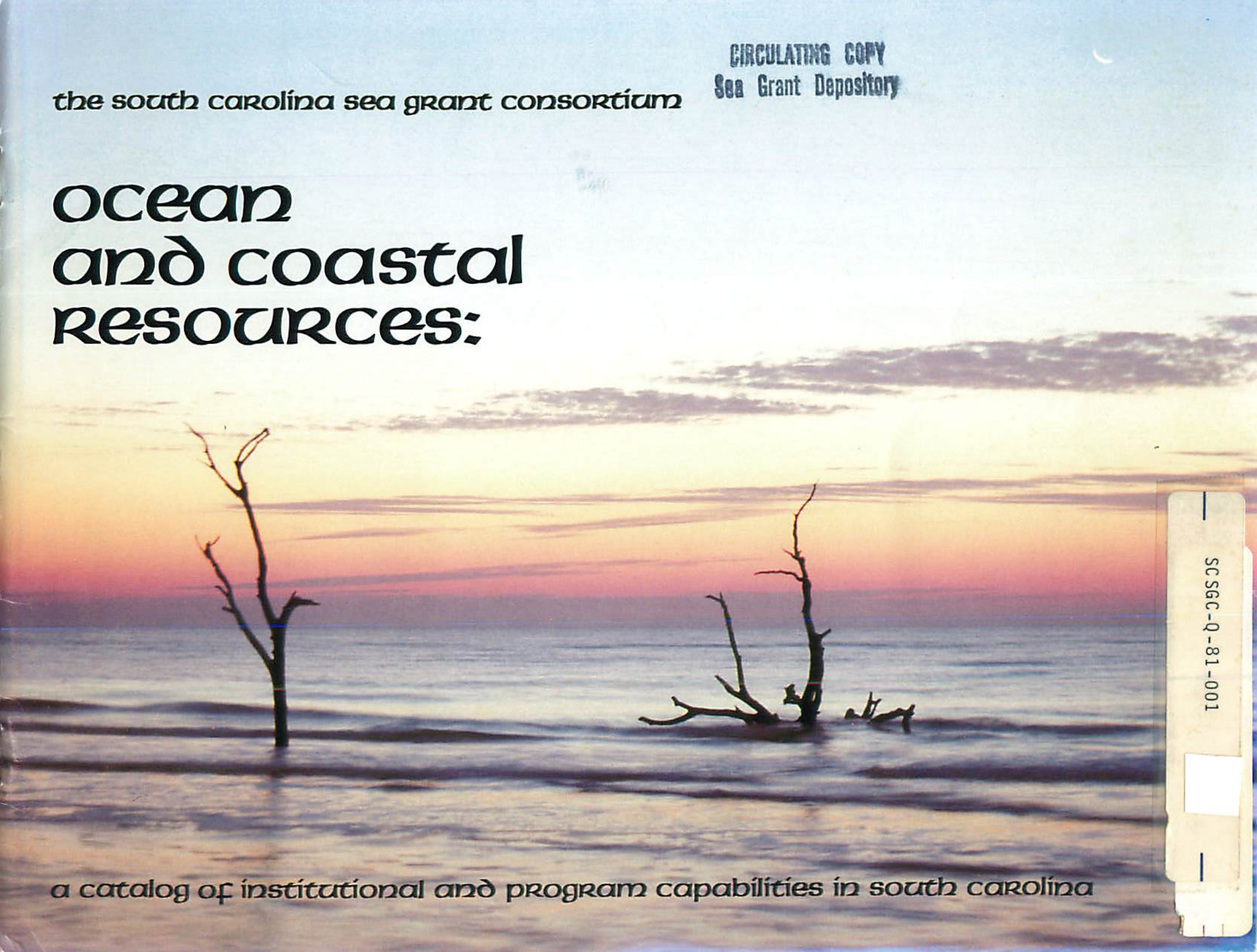
the south carolina sea grant consortium

ocean and coastal resources:



a catalog of institutional and program capabilities in south carolina

acknowledgements

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about the cover

The vestigial remains of a maritime forest that once stood on Capers Island are silhoutted against the morning sky. Although day is breaking, the moon and Venus are still visible in the east. Erosion has taken its toll along the South Carolina coast. These live oaks lined the beach only a decade ago. Today, however, they stand 50 feet beyond the beach at high tide. Capers, like South Carolina's other barrier islands, is being claimed by the sea. (photo by TR)

Credits

OCEAN AND COASTAL RESOURCES: A CATALOG OF INSTITUTIONAL AND PROGRAM CAPABILITIES IN SOUTH CAROLINA

SCSG-SR-81-01

September 1981

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For additional copies of this and other Sea Grant publications, contact:

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introduction

With the nation's farmlands disappearing at an alarming rate, our energy needs steadily increasing and food production threatened on a global scale, our future depends on the sensible development and management of our ocean and coastal resources.

South Carolina is blessed with an abundance of these resources. With its beautiful barrier islands, estuaries and salt marshes, our state boasts some of the most unique and valuable coastal and marine resources in the world. South Carolina, however, is not only rich in natural resources, but in human resources as well. Our colleges, universities and state agencies offer many programs relating to ocean and coastal topics, and a number of researchers within these programs have received international recognition for their studies in coastal and marine-related fields.

The purpose behind this catalog is to highlight the resources within these programs and show how they relate to our growing dependence on the world's oceans and coastal areas. By closely examining the seven institutions that comprise the South Carolina Sea Grant Consortium, we are able to provide the reader with valuable information pertaining to the many opportunities and capabilities that each institution offers in the area of ocean and coastal studies.

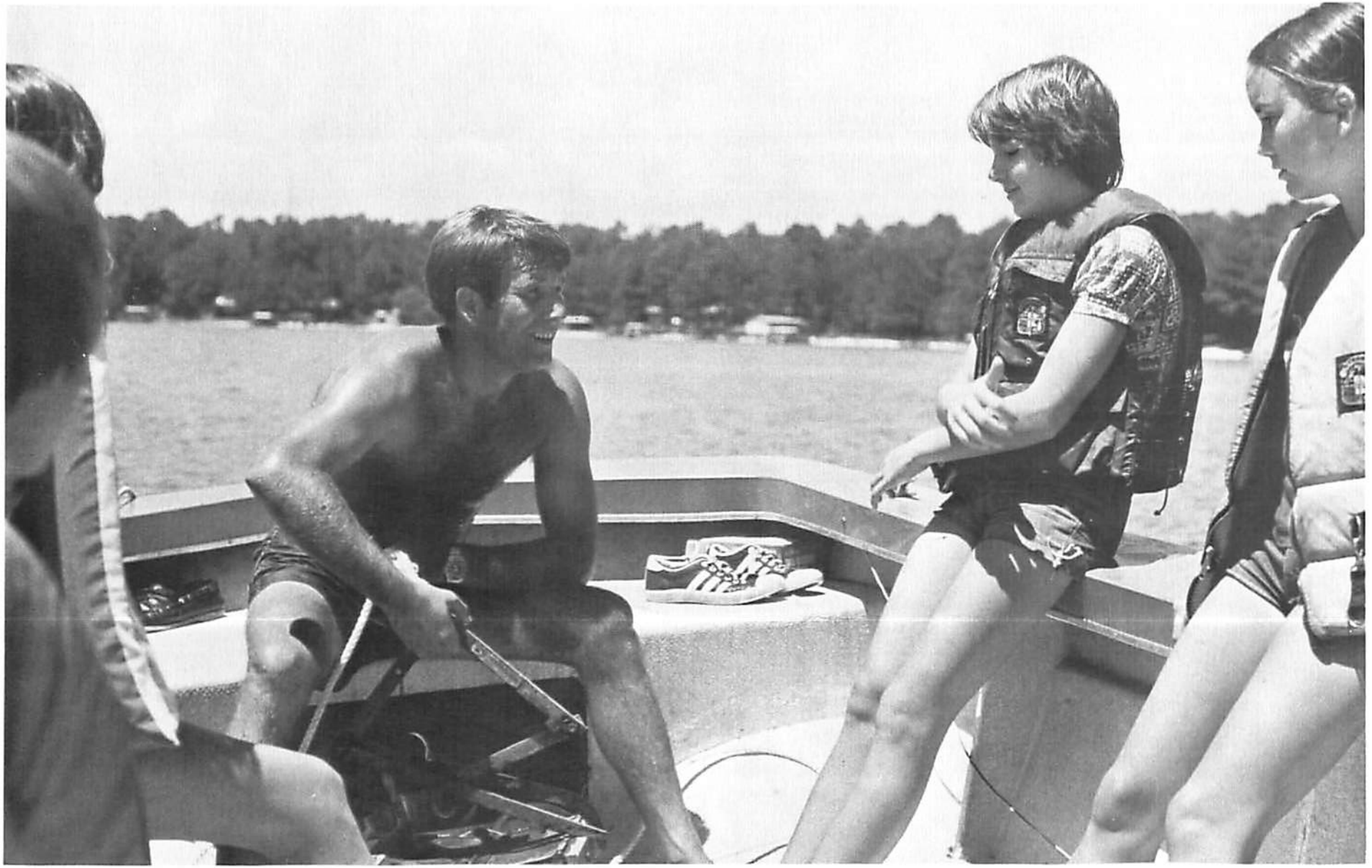
We are proud of the work being done in this state to promote, through education and research, a better understanding of our ocean and coastal resources. It is our hope that this catalog will help focus an even greater amount of attention on the need for continued and growing support of our programs of marine education and research.

John M. Armstrong

Dr. John M. Armstrong, Director
The South Carolina Sea Grant Consortium

inside

the south carolina sea grant consortium



The South Carolina Sea Grant Consortium is a partnership among various universities, colleges and state agencies in South Carolina to promote and implement education, research and advisory activities, and to provide information and technical assistance in the development and use of South Carolina's coastal and ocean resources.

The Consortium's foremost goal is to make the best and most efficient use possible of the considerable knowledge and skills possessed by the faculty and staff of its seven member institutions:

- The Citadel
- Clemson University
- The College of Charleston
- The Medical University of South Carolina
- South Carolina State College
- The University of South Carolina
- The South Carolina Wildlife and Marine Resources Department

Many advantages are realized through this partnership among the state's universities, colleges and agencies:

*Manpower sharing for greater productivity and lower costs is promoted.

*The ability to put together teams of faculty and staff from the various institutions to help solve problems of concern to the state is made possible. This combining of talent maximizes the effectiveness of the existing personnel at the lowest possible cost. Because of this, the South Carolina Sea Grant Consortium office operates efficiently with a very small staff. The Consortium has an on-site coordinator located at each institution. Names and addresses of these coordinators can be obtained by contacting Consortium headquarters in Charleston.

The Consortium funds and coordinates a large number of individual projects in the state. Examples of Consortium projects having particular impact on our coastal and marine resource development include:

*The development of a mechanical shrimp deheader and sorter to aid the commercial shrimping industry.

*The commercial culture of freshwater prawns. Work is being done with private growers to set up culture ponds, and attempts are being made to breed a hybrid prawn especially suited for commercial culture.

*The analysis of future effects that international treaties (such as the United Nations' Law of the Sea Treaty) might have on South Carolina.

*The development of commercial clam culture to replace clams that will be lost due to Santee River rediversion. Industry is providing 60 percent of the funding for this project. In addition, the Consortium is supporting several other aquaculture development projects in the state.

*The development of a mechanical oyster harvester which allows use of oysters that under normal circumstances would not be commercially harvested.

*The production of a popular Coastal History of South Carolina which will show the important role that coastal activities have played in the development of this state.

*The study of extracts from salt marsh plants that could be used for medicinal substances.

*The presentation of public seminars and workshops to provide information to citizens and officials on important marine issues.

photo courtesy of USC

EDUCATION, RESEARCH AND ADVISORY SERVICES —

These are the keys to the Sea Grant Program.

*Education and training assures an adequate supply of trained professionals in marine-related fields. Through Sea Grant projects, state universities and colleges are giving students early exposure to the practical aspects of their academic learning through problem-oriented research, work-study, and internships with both government and industry. The Consortium helps promote efficiency in manpower by developing inter-institutional programs sharing faculty expertise.

*Research provides the necessary knowledge and technology needed to meet the challenge of developing and managing our ocean and coastal resources. The Consortium is oriented toward applied research and specific problem solving.

*Advisory Services provides a pathway of communication between Sea Grant researchers and potential users of their work.

Marine Advisory Services

Operated in cooperation with the Cooperative Extension Service at Clemson University, the Marine Advisory Service is directed by a project leader located at South Carolina Sea Grant Consortium headquarters and is staffed by specialists stationed in Charleston, Georgetown and Beaufort.

These specialists are a vital part of the Sea Grant program in this state. Providing a pathway of communications between Sea Grant researchers and potential users of their work, the specialists work closely with fishermen, dock owners, agency staff members and others who use or manage marine and coastal resources. They are also active in aiding citizens and public agencies in solving coastal engineering problems, improving the marketing of South Carolina's seafood products, developing programs in marine recreation and training commercial fishermen.

Because of their close contact with marine resource users, MAS specialists are able to alert researchers at Consortium institutions to problems they feel should be investigated. The investigators can then design projects to solve these problems. MAS delivers the results of these projects to potential users, completing the cycle of research and application Sea Grant is based on.

In order to make information more readily available to the public, the MAS conducts workshops and seminars throughout the year. A large number of publications dealing with marine-related subjects are also available.

In addition to its role as a state agency, the Consortium is also a member of a national network of programs.

The Sea Grant Program on a national basis fosters greater economic efficiency. This yields greater productivity and fights inflation.

During a 10-year period, National Sea Grant network projects have produced a direct economic dollar gain to the economy of approximately $217 million per year from an investment over the entire 10-year period of approximately $250 million dollars. It is one of the few programs that can show a real and substantial net gain for the nation's economy.

For more information concerning the South Carolina Sea Grant Consortium, contact:

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the citadel

photo courtesy of The Citadel

Marine research and educational activities at the Citadel, South Carolina's military college, are primarily conducted by members of the school's biology faculty. However, the geology division, under the auspices of the Department of Chemistry, offers a course in marine geology, and geologists at The Citadel have been actively involved in beach erosion studies along the South Carolina coast. The Department of Civil Engineeering is also involved in a number of studies with coastal and marine applications.

MARINE BIOLOGY AND ENVIRONMENTAL STUDIES

The Department of Biology

Prior to 1967, biology, like the division of geology, was also a division of the Department of Chemistry. Since that time, however, the Department of Biology has emerged as an integral part of the liberal arts program of the college.

The Department of Biology at The Citadel participates in the school's graduate program by offering both major and minor programs leading to the Master of Arts in Teaching (MAT) degree. Although primarily designed to assist local secondary school teachers and administrators in upgrading their professional qualifications, the MAT program in biology has attracted a large number of students from non-teaching professions.

Through this program, The Citadel offers a number of courses directly related to coastal and marine studies. These courses include marine biology, marine invertebrates, pollution ecology, vascular flora of South Carolina, medical entomology, and a seminar in environmental studies in graduate research projects.

A large number of "support" courses are also offered by the department.

In addition to its MAT program, The Citadel also participates in the Master of Science degree program offered by the Charleston Higher Education Consortium.

Facilities in the Department of Biology are well-suited for coastal and marine-related teaching and research. Laboratory facilities are modern and well-equipped, with special capabilities in the areas of marine biology, vertebrate zoology, vector biology, microbiology and physiology.

In addition to its laboratory facilities, the department maintains one of the largest herbariums in the Southeast. Containing some 12,500 plant varieties, the herbarium is noted for its extensive collection of coastal specimens.

In 1980, The Citadel established the Vector Biology Program within the Department of Biology. This program is particularly significant in its relation to our coastal and marine environments.

The objectives of this program are three-fold and include the development of practical water management techniques to reduce mosquito populations in spoil areas, duck ponds, high marsh and rice fields; surveillance for incidence of arboviruses in bird and mosquito populations; and the development of laboratory and field methods for controlling mosquito populations with biological agents.

The director of the Vector Biology Program is a trained orinthologist specializing in shore birds. Additional staff include a medical entomologist specializing in the biological control of potential disease vectors in estuarine regions and an entomologist/curator responsible for maintaining and expanding the program's insect collection.

The program is further supported by a physiologist, field botanist, estuarine ecologist and mycologist from the Department of Biology.

photo courtesy of The Citadel

COASTAL PROCESSES AND ENGINEERING

The Department of Civil Engineering

The coastal zone presents unique challenges for today's engineers. And, with increasing pressure being placed on our delicate coastal areas, coastal engineering has become a vital part of the proper development and management of our coastal and marine resources.

Through the Citadel's various programs in civil engineering, greater emphasis is being focused on coastal engineering and the problems associated with the coastal zone.

A number of courses offered by the Department of Civil Engineering gives students and faculty the opportunity to apply specific skills to engineering problems related to this area. Three courses which place particular emphasis on coastal areas are Environmental Engineering, Transportation Engineering and Soil Mechanics.

The Department of Civil Engineering contains excellent facilities for coastal engineering research. The Citadel's well-equipped facilities include a concrete laboratory, materials testing laboratory, bituminous materials testing laboratory, soil mechanics laboratory, fluid mechanics laboratory and an environmental engineering laboratory.

The department also maintains equipment for courses in graphic science, surveying and photogrammetry.

In addition to laboratories and classrooms, LeTellier Hall, the main civil engineering building, houses the John Anderson Memorial Library. The library contains a large number of engineering technical works, periodicals and reference materials.

Through the department's program in transportation engineering, students focus on a number of areas that have direct bearing on development and management of our coast. Studies focus on such topics as the planning, financing and design of land transportation, airport and seaport facilities.

In regard to the coastal zone, environmental engineering places particular emphasis on such topics as the relationship of water supply and waste water treatment to public health; hydrology; water consumption; and water quality standards.

Each year the civil engineering curriculum is augmented by off-campus educators and engineers who lecture and moderate seminars in engineering specialities. Many of these lectures and seminars can be applied to engineering problems associated with the coastal zone.

clemson university

Although situated in the foothills of the Blue Ridge Mountains, some 200 miles from the South Carolina coast, Clemson University, through its programs of research and education, plays a vital role in the development and management of our coastal and marine resources.

Students and researchers throughout the University's many departments and schools are constantly searching for answers to many of man's questions about our oceans and coastal areas.

As the state's land grant university, Clemson boasts nationally recognized programs in engineering, freshwater fisheries, biological sciences and agriculture. While the University does not offer a curriculum entirely devoted to marine topics, a number of the school's faculty and researchers do, however, concentrate their studies on coastal and marine topics, and many University programs are related directly to coastal and marine research.

MARINE EDUCATION

Especially active in coastal and marine education and research are the Departments of Civil Engineering, Environmental Systems Engineering, Agricultural Engineering, Zoology, Microbiology and Entomology, Fisheries and Wildlife. The Department of Agricultural Economics and Rural Sociology also offers course work relating to the development and management of our coastal and marine resources.

Undergraduate and graduate degree programs are offered in each of these curriculums, and many students concentrate on marine-related topics in a particular field.

Clemson University also plays a major role in the marine area through its various Extension programs. The South Carolina Cooperative Extension Service, headquartered at Clemson, cooperates with the Sea Grant Consortium in maintaining

marine advisory agents in three coastal South Carolina cities: Charleston, Beaufort and Georgetown. These agents provide a link between Consortium researchers and people or organizations facing marine-related problems.

RESEARCH CAPABILITIES AND FACILITIES

Research is essential to a better understanding of our oceans and coastal areas, and Clemson University researchers play an important part in helping to further this understanding. Clemson researchers, applying newly-developed methods in engineering, biology and aquaculture, are finding answers to many of man's most perplexing questions concerning our coastal and marine resources.

Clemson's modern research facilities provide both students and researchers excellent opportunities for work in marine-related fields of study, and many of these students and researchers are involved in a number of research programs concentrating on our oceans and coasts.

Areas of research include: coastal processes and engineering, marine biology and aquaculture, fishery development and management, and coastal and marine resource development.

COASTAL PROCESSES AND ENGINEERING

The Department of Civil Engineering

Much of the work done by researchers in Clemson's Department of Civil Engineering focuses on problems affecting the coastal zone. These include such topics as coastal erosion, sedimentation and dredge disposal at sea.

Most of these studies are conducted by researchers at the Clemson Hydraulics Laboratory, one of the most extensive physical modeling facilities in the Southeast. Developed through contracts with government agencies and private industry, the result has been the creation of a facility which combines the latest in modeling expertise with state-of-the-art instrumentation.

photo courtesy of Clemson University

The Clemson Hydraulics Laboratory has capabilities for a broad range of studies, including: coastal engineering, thermal pollution, sediment dynamics and applied hydrology.

The laboratory occupies some 6,500 square feet of research space in Lowry Hall and an additional three acres of open laboratory area on the Clemson campus. The fully-equipped research facility has a total recirculating water capacity of 2,000 gpm with an unlimited water supply.

The laboratory's recirculating water channels, wave tanks, a stratified model basin and a deep dispersion basin, make this an exceptional facility for conducting various coastal and marine studies.

In addition to the facilities at the laboratory, researchers have a complete machine shop, electronic shop, photographic laboratory and computers at their disposal.

Nearby field study sites used by CHL include Lake Hartwell, a 56,000-acre U.S. Army Corps of Engineers project; Lake Keowee, a 17,500-acre utility lake subject to heat load from a nuclear power plant; Lake Jocassee, a 7,500-acre, deep mountain lake which serves as a storage reservoir; the Clemson Research Watershed, a 500-acre gauge watershed with a meterological station; and the Coweeta Hydrologic Laboratory, a 5000-acre U.S. Forest Service facility with 40 watersheds.

Personnel at the CHL are totally committed to the problem-solving objectives of the facility. This commitment has developed through the various experiences of the laboratory's senior researchers. Their research projects involve physical and mathematical modeling as well as major field studies.

Coastal and marine-related studies by researchers in Clemson's Department of Civil Engineering include such topics as physical and mathematical modeling of industrial discharges into estuaries, low-cost shoreline protection, ocean wave monitoring programs, sediment transport in estuaries, coastal erosion analyses, marine siting and coastal circulation.

Environmental Systems Engineering

Clemson University's Department of Environmental Systems Engineering applies the basic principles and tools of engineering to the understanding, planning, analysis, design, operation, management and improvement of entire environmental systems and the components of such systems.

Studies also include man-made systems such as air, water and wastewater treatment processes and systems, as well as natural systems such as stream and river basins, impoundments, estuaries and the atmosphere.

The program also focuses on the quality of the environment and the money spent on environmental protection and management.

In addition to established strengths in wastewater process design, water resources engineering and air pollution control, the ESE has developed capabilities to analyze and cope with newer environmental problems such as those associated with hazardous chemical wastes, the nuclear fuel cycle and emerging energy technologies.

Students and researchers in ESE can also apply their methods to areas affecting the coastal zone. Environmental problems created by such factors as heavy metals and saltwater intrusion are becoming increasingly evident, and studies conducted by Clemson students and faculty are aimed at overcoming these growing concerns.

photo courtesy of Clemson University

The Department of Environmental Systems Engineering occupies some 15,000 square feet of research space. Located in Rhodes Engineering Research Center, ESE facilities include 12 modern, well-equipped laboratories, an analytical instrumentation laboratory, four walk-in temperature-controlled rooms, a laminar flow clean room, a trace organic separations laboratory and a two-story operations and processes laboratory.

Many of the courses taught and research conducted by the department have coastal and marine applications. Some of these studies include stream and water quality surveys, development of automatic instrumentation for environmental monitoring, water resources planning and management and overland flow treatment systems.

MARINE BIOLOGY AND AQUACULTURE

The Department of Entomology, Fisheries and Wildlife

With increasing amounts of pressure being placed on our dwindling commerical fisheries, attention is turning toward the development and management of successful systems of aquaculture and mariculture. Through its various programs of research and education, Clemson's Department of Entomology, Fisheries and Wildlife is helping pave the way for increased development in these areas.

Course work and research in the department centers on such topics as aquaculture techniques, fishery biology, biology of marine organisms, aquatic productivity, parasites and diseases of marine animals, shellfish biology, biology of migratory fish and directed studies and field work in marine biology.

Although most studies focus on freshwater systems, a large number of projects are marine-related. Recent and ongoing studies conducted by the department include work with hard clams, American eels, blueback herring, red drum, crawfish and freshwater prawns.

The fisheries and marine research facility is located on ten acres of Experiment Station lands adjacent to Lake Hartwell on the Clemson campus. This facility includes two fully-equipped dry labs, a wet lab and environmental room, forty outdoor pools and ten earthen ponds. The department also maintains equipment for extensive field studies, including a number of boats, trucks and live-haul tanks.

Additional research facilities within the department include a fish museum housed in Long Hall. The museum has approximately 60,000 cataloged specimens and is available for taxonomic and reference teaching and research work.

The Southeastern Reservoir Investigations Laboratory, operated by the U.S. Fish and Wildlife Service and located one mile from campus, also provides support to the department. This research laboratory includes a number of scientists whose cooperation has provided Clemson undergraduate and graduate students with valuable field and laboratory training in fisheries investigations. Also, several state and federal fish hatcheries are within a half-day drive from Clemson.

Facilities providing Clemson University support in the area of estuarine and marine research include: Hobcaw Barony near Georgetown, the Marine Resources Center in Charleston, the Dennis Wildlife Center located in Bonneau and Clemson's Coastal Experiment Station near Charleston.

The Department of Microbiology

Clemson University's Department of Microbiology offers students and faculty members many opportunities for marine-related research. Through its well-equipped, modern facilities, studies can be conducted in all phases of microbiology, including marine microbiology.

Jordan Hall, a newly-completed biological sciences laboratory building, provides nearly 10,000 square feet of research space for microbiology and includes facilities for marine microbiological research. Additional research space is located in several other campus buildings.

Special facilities used by the department include walk-in incubators, cold rooms and special laboratories equipped with tissue-culture analysis, analytical ultracentrifugation, various kinds of chromatographic analysis, isotope studies and fermentation and photographic facilities.

Visiting privileges enable students and faculty to conduct marine, estuarine and salt marsh studies at the South Carolina Wildlife and Marine Resources Center in Charleston, and at the University of Georgia's Marine Institute at Sapelo Island, Ga.

Much of the work done in the area of marine microbiology is in conjunction with studies being carried out by the Department of Entomology, Fisheries and Wildlife.

The Department of Zoology

Students and faculty in Clemson's Department of Zoology are involved in numerous studies relating to coastal and marine organisms, and many majors pursue advanced degrees in such courses as marine biology.

A number of the department's staff specialize in marine organisms. Studies conducted by these researchers have focused on such topics as behavior of local and migratory fish, with emphasis on sharks and rays. These studies are being used to determine the potential for an alternative fishery along the South Carolina coast.

Researchers within the department have also published an atlas and guide to

marine invertebrates and conducted studies concerning shell formation in marine animals. The department also has groups active in ecological physiology, the study of shorebirds and the ecology of coastal marshlands.

FISHERY DEVELOPMENT MANAGEMENT

The Department of Agricultural Engineering

Through the Department of Agricultural Engineering, students and researchers have been active in studying and developing new techniques and equipment that will not only help to increase agricultural efficiency in this nation, but will also help to increase production and efficiency in such areas as commercial fishing and aquaculture.

The department offers many opportunities for training and research in various phases of engineering, including: power and machinery, soil and water resources, agricultural waste management, structures and environment, systems simulation and processing.

The department, housed in McAdams Hall, has 27,000 square feet of teaching, laboratory and office space. Recently, an additional 32,000 square feet of new space has been constructed and old facilities renovated at a total cost of $2.7 million. These expanded and renovated facilities have increased graduate laboratory space and provided additional offices for faculty and graduate students.

Equipment for research work has also been expanded considerably over the past few years. Instrumentation and facilities including the Instron Universal Tester, multipoint recorders, analogue computer, dynamic strain measuring equipment, data aquisition system, high-speed photographic equipment, environmental chambers, gas chromatographic, waste and analysis laboratory and color sorting equipment are all available.

These facilities, coupled with a growing reliance on mechanization in commercial fishing and aquaculture, have helped pave the way at Clemson for increased development of methods and machinery with marine applications.

Development of a hydraulic oyster harvester and an automatic shrimp deheader are just two ways Clemson agricultural engineers are applying their techniques to marine-related fields. Researchers have also been involved in such studies as using aquatic plants for fuel.

COASTAL AND MARINE RESOURCE DEVELOPMENT AND MANAGEMENT

The Department of Planning Studies

Intelligent planning, for years overlooked, is essential to the proper development and management of our coastal resources. Through Clemson's Department of Planning Studies, students and faculty are currently meeting the challenges of coastal planning through course work and research.

Since the Department of Planning Studies at Clemson was established in the College of Architecture in 1968, it has evolved in response to developments in the planning profession as well as increasing resource availability within the University.

Areas of expertise in the department cover a wide range of subjects that include urban design, planning administration, transportation, social services, economic development, policy analysis and quantitative methods. Available resources of Clemson University in such planning-related fields as agricultural economics, political science, sociology and environmental engineering have also been tapped.

The Department of Planning Studies continues to recognize the challenge of educating students who are able to meet the present and future career requirements in the constantly changing fields of planning. With slight modifications in core course offerings, the department could easily initiate a fully-developed curriculum in coastal zone planning.

Planners deal with problem solving in a wide variety of subject areas. Where special expertise is needed, the department forms interdisciplinary teams. Specific needs related to the coastal zone can be adapted very quickly through this process.

A number of projects have been undertaken recently by members of the department. These have included the development of a coastal energy impact model, a land use inventory of the coastal regions in South Carolina, public facilities data for the South Carolina coastal area and a study of the economic impact of industry and energy locations along the coast.

The Department of Agricultural Economics and Rural Sociology

Since the 1960's, the Department of Agricultural Economics and Rural Sociology has been involved in a number of studies concerning marine resource management and policy, including finance and marketing alternatives for coastal zone management.

Faculty members from the department have authored a number of books focusing on the topic of coastal zone management, and they were also involved in helping design the South Carolina coastal zone management program.

In addition to offering undergraduate and graduate courses in natural resource economics that are designed primarily for students pursuing degrees in the economic sciences, the department also offers a natural resources policy seminar that is designed for graduate students in technical fields such as engineering, biology and forestry.

photo courtesy of Clemson University

In addition to the various programs and facilities within Clemson University, the Robert Muldrow Cooper Library provides students, faculty and researchers easy access to more than 762,000 volumes and 13,000 serial titles.

Students and faculty also have access to the University's IBM 370/3033 computer with eight megabytes of core storage and more than 150 time-sharing terminals.

the college of charleston

MARINE EDUCATION

The Marine Biology Graduate Program

The location of the College of Charleston, on the relatively unspoiled and biologically rich Carolina coast, is ideal for marine research and training. Through the Department of Biology's Marine Biology Graduate Program, students can take full advantage of the school's facilities and setting.

The Marine Biology Program, held in cooperation with the Charleston Higher Education Consortium, is based at the Grice Marine Biological Laboratory on the grounds of historic Fort Johnson, eight miles from the downtown campus.

Situated on the southern rim of Charleston Harbor, the modern, well-equipped laboratory houses classrooms, student laboratories, research laboratories, dormitory and kitchen facilities, and an aquarium room equipped with running sea water.

Surrounding the laboratory grounds are estuarine intertidal oyster beds, mud flats and spartina marsh. The open ocean and the beaches of the sea islands are only two miles away. Boats and vans provide easy transportation for field trips to the nearby estuaries of the Edisto, Ashley, Cooper and Wando rivers, and to the sounds and inlets of the sea islands.

In addition to the laboratory facilities at Fort Johnson, the Marine Resources Library, supported jointly by the College of Charleston and the South Carolina Wildlife and Marine Resources Department, provides students and researchers an excellent source for materials relating to coastal and marine studies.

photo courtesy of College of Charleston

Established in 1972, the facility has developed into one of the largest marine science libraries in the Southeast. The library contains nearly 10,000 book titles and 630 periodical titles. In addition, there are more than 20,000 cataloged reprints.

The library's major focus is on marine biology and oceanography, but aquaculture, marine chemistry, marine geology, marine and estuarine ecology, fisheries management and economics, and coastal zone management are also emphasized.

Further strengthening the Marine Resources Library is the personal library of G. Robert Lunz, a noted South Carolina marine biologist. The collection includes many valuable, out-of-print works as well as Dr. Lunz's personal papers.

A full-time professional librarian and

two full-time library assistants comprise the staff of the Marine Resources Library. Library orientations are offered to all marine science classes at the College, and individualized assistance in library research methods is always available.

COASTAL AND MARINE RESOURCE DEVELOPMENT AND MANAGEMENT

The Center for Metropolitan Affairs and Public Policy

With increasing pressure being placed on our valuable coastal areas, solutions to the problems of proper use and development of our coastal lands must be found. Through it various programs of education and research, the College of Charleston's Center for Metropolitan Affairs and Public Policy focuses on many of these issues surrounding this development and management.

The Center offers a Master's in Public Administration Program concentrating on coastal zone and natural resource management.

Through its courses in natural resources and environmental policy, historical and current issues affecting natural resource policy are examined from legal, economic and physical perspectives.

Course work focusing on coastal zone management addresses major facets of coastal management: ecological processes, management of environmental resources, the legal and administrative framework, politics and implementation problems.

Auxiliary courses provide skills necessary to analyze processes, programs and alternative decisions, as well as training in administration of projects, programs and agencies in marine-related programs.

Aside from its educational programs, the Center is involved in numerous marine-related projects, many of them funded through the South Carolina Sea Grant Consortium. These projects include the development of a multi-jurisdictional urban waterfront planning and management model used for effecting orderly growth, development, redevelopment and modernization of the urban waterfront; a survey of coastal evacuation needs and capabilities; and the development of shore erosion management options in South Carolina.

Other coastal and marine-related projects undertaken by the Center include the implementation of a storm water program for Myrtle Beach, S.C., and a symposium for public officials assessing energy-related impacts in coastal areas.

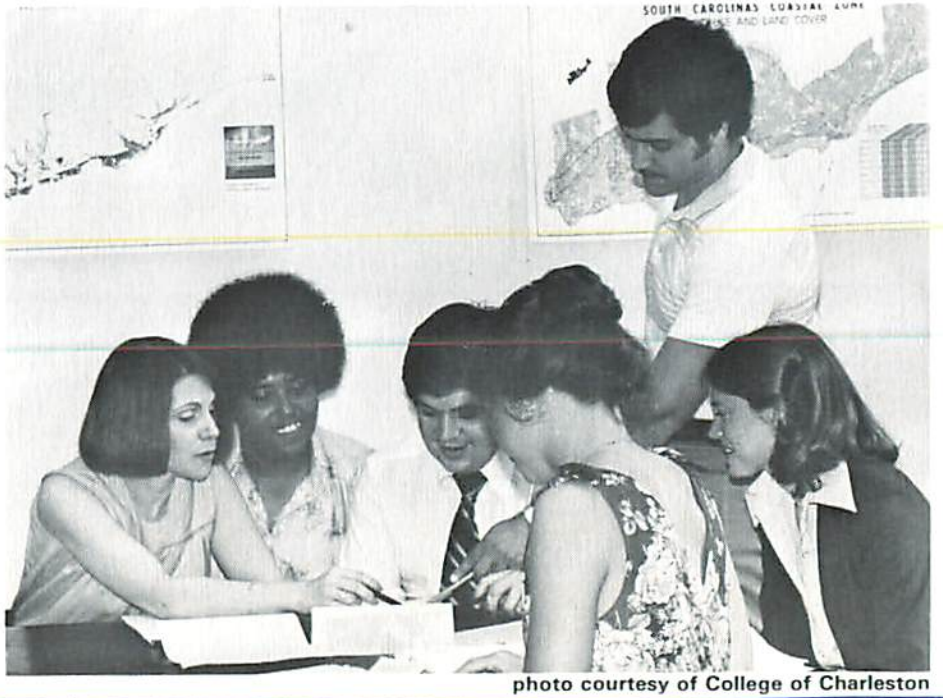


photo courtesy of College of Charleston

COASTAL PROCESSES AND ENGINEERING

The Department of Geology

The South Carolina coast, with its unique system of estuaries, barrier islands and beaches, provides an excellent setting for geological studies. The Department of Geology at the College of Charleston offers a broad range of studies and courses which relate to these coastal and marine areas.

The Department of Geology offers a classical Bachelor of Science degree in geology. Students, however, have the option of taking elective courses which emphasize marine and sedimentary geology. These courses include Marine Geology, Sedimentary Petrology, Coastal Plain Stratigraphy, Principles of Sedimentation, as well as Special Problems in Marine Geology.

Students and faculty within the department are also involved in a number of research projects dealing with coastal and marine geology. These projects include coastal and estuarine research, carbonate environments and marine ecology, coastal plain mapping and stratigraphy, and conodont paleocology and carboniferous stratigraphy.

The College of Charleston provides excellent facilities for geological research at its laboratories located on campus and at the Grice Marine Laboratory at Fort Johnson. These modern, well-equipped laboratories are open to both students and faculty.

Equipment available for geological studies include: x-ray diffractometer and radiograph units, electro-particle balance, benthos piston corer, box corer, T.D.D. recorder, bottom sediment samplers, scanning electron microscope, water samplers and a millepore filtering system.

SPECIAL SERVICES AND EVENTS

Summer Program in Marine Biology

Students may earn undergraduate degree credits through the College of Charleston's two summer sessions in marine biology.

Held at the Grice Marine Biological Laboratory at Fort Johnson, students may participate in such classes as Marine Biology, Biology of the Crustacea, Problems of Marine Biology, Marine Invertebrate Embryology and Salt Marsh Ecology.

Dormitory space is available at the Grice Laboratory, and ample kitchen facilities are available. Rooms are assigned on a first-come-first-serve basis.

the medical university of south carolina

photo courtesy of MUSC

Throughout man's history the sea has been a provider. It has fed, protected and moved us. And today, thanks to researchers with the Medical University of South Carolina, it is giving us even more.

Exciting new research focusing on marine organisms is helping solve many of man's most perplexing medical problems.

NEW MARINE PRODUCTS

The Marine Biomedical Research Program

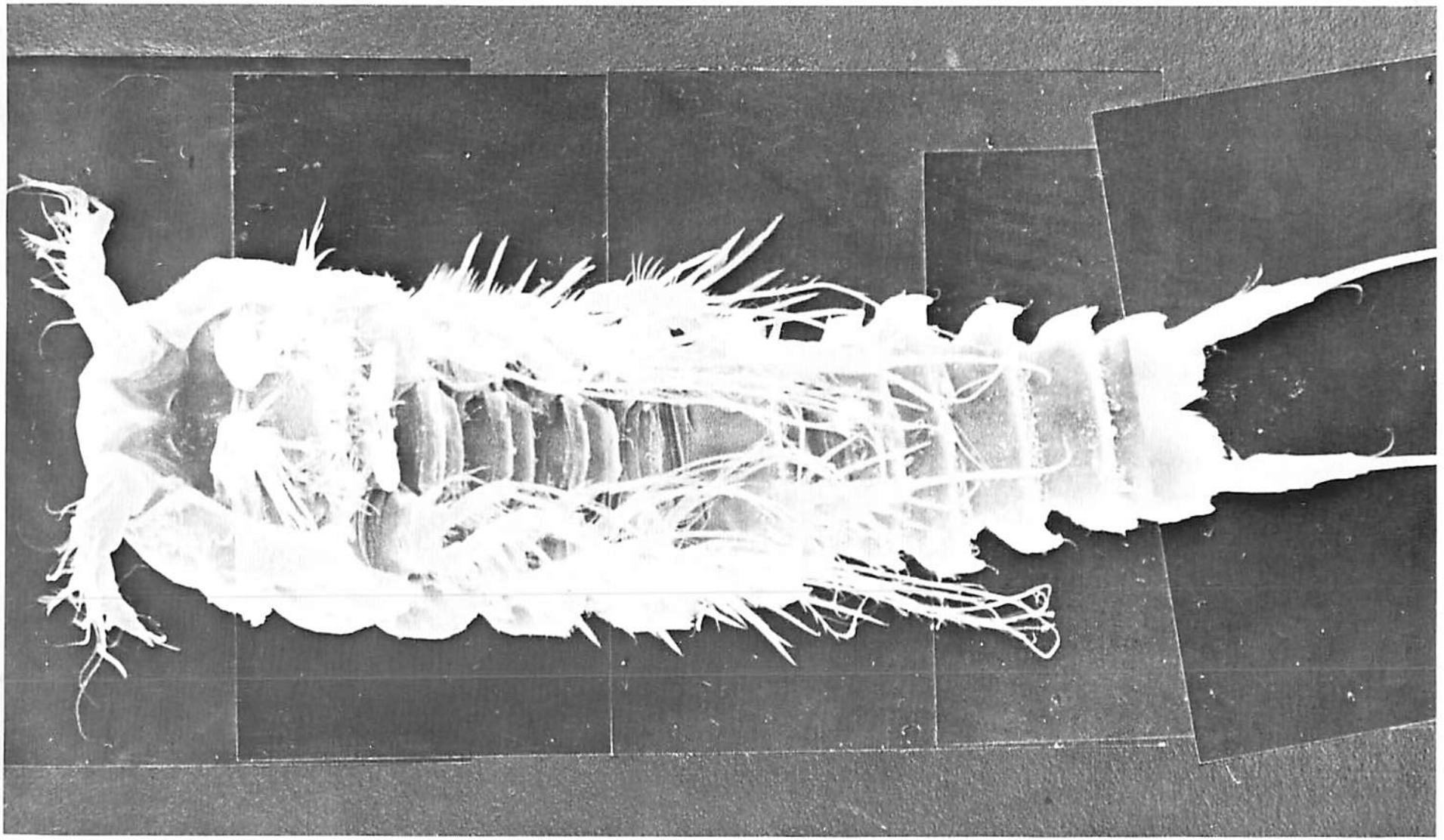
An extremely specialized field, marine biomedicine plays an important role in research activities conducted by researchers with MUSC. For this reason, the University maintains labs at both the Marine Resources Institute at Fort Johnson and at the main campus seven miles away.

Specifically, MUSC has three large research laboratories which are equipped for research pertaining to comparative immunology, pathology of marine animals, marine toxicology, marine parasitology and microbiology, and the cell biology of blood cells in marine organisms.

In addition to the three major labs, there are four private laboratory rooms, a photographic darkroom and a shared wet lab for maintaining marine animals.

On MUSC's main campus, located in downtown Charleston, there are well-equipped laboratories available to graduate and medical students interested in marine biomedicine. These include the facilities of the Departments of Biochemistry, Anatomy, Basic and Clinical Immunology and Microbiology, Physiology, Pathology, Pharmacology and Biometry.

Some 30 members of the MUSC



faculty have research interests involving the use of marine organisms as models for biomedical investigations. Areas of expertise include: immunology, microbiology, parasitology, comparative physiology, fine structure, biochemistry, neurobiology and neurochemistry, developmental biology, genetics, epizootiology and epidemiology, histochemistry and comparative pathology.

Graduate students working with marine organisms can earn the Ph.D. degree in Anatomy, Biochemistry of Immunology and Microbiology, or the interdisciplinary Ph.D. degree in Molecular and Cellular Biology and Pathobiology.

south carolina state college

MARINE EDUCATION

The Department of Natural Sciences

Although no regular programs in marine education are offered by South Carolina State College, a cooperative program with the University of South Carolina's Marine Science Program and the Belle W. Baruch Institute for Marine Biology and Coastal Research is introducing minority students to the many opportunities available in the field of marine science.

In the past, minority groups have been under-represented in most American college and university science programs, particularly in the area of marine science. It is this special program that is helping to bring about a change.

Funded through the South Carolina Sea Grant Consortium, the program provides students with six weeks of intensive classroom, laboratory and field studies. Classroom and lab work is conducted on the USC campus in Columbia, with field work conducted near the USC-Beaufort campus.

An important part of the summer program is the Visiting Lecturers Series. These speakers serve as role models for the students. In addition to lecture-discussions, they provide students with one-on-one interactions about research, training and employment opportunities.

Students participating in the summer program receive excellent instruction at South Carolina State College in all phases of biology, chemistry, physics and physical science. These courses are essential to studies in marine science.

Within the Department of Natural Sciences, a number of the professional staff have expertise and interest in marine-related studies. Research focusing on trace elements in fish and other selected seafoods, and the study of oxygen equilibrium binding in the blood of marine organisms are just two of the marine-related projects faculty at the College are involved in.

ADVISORY SERVICES

South Carolina State College is also involved in a number of programs focusing on marine services and opportunities in the minority community.

Workshops have been held in conjunction with the Clemson University Extension Service, Sea Grant's Marine Advisory Service and South Carolina State's School of Home Economics.

South Carolina State College is also a member of the Small Business Development Center of South Carolina, a consortium of South Carolina schools providing counseling services for small businesses.

The SBDC was established to reduce the failure rate of small businesses in the state, to help small businesses improve their ability to generate profit and to advise the potential small businessman of the feasibility of a business prior to investing capital.

These purposes are accomplished by using one or more of the three basic services: counseling, continuing education and information transfer geared to the needs of small businesses.

The center has participated in management counseling services in marine-related small businesses in a number of minority communities.

An important part of S.C. State's advisory role is focused on the Cooperative Extension Service's 1890 program. This program, with headquarters at S.C. State, is instrumental in providing basic technical assistance and information to the state's predominantly black, small-scale farmers. Plans are being made, however, to include the states minority coastal fishermen in this program.

south carolina wildlife and marine resources department

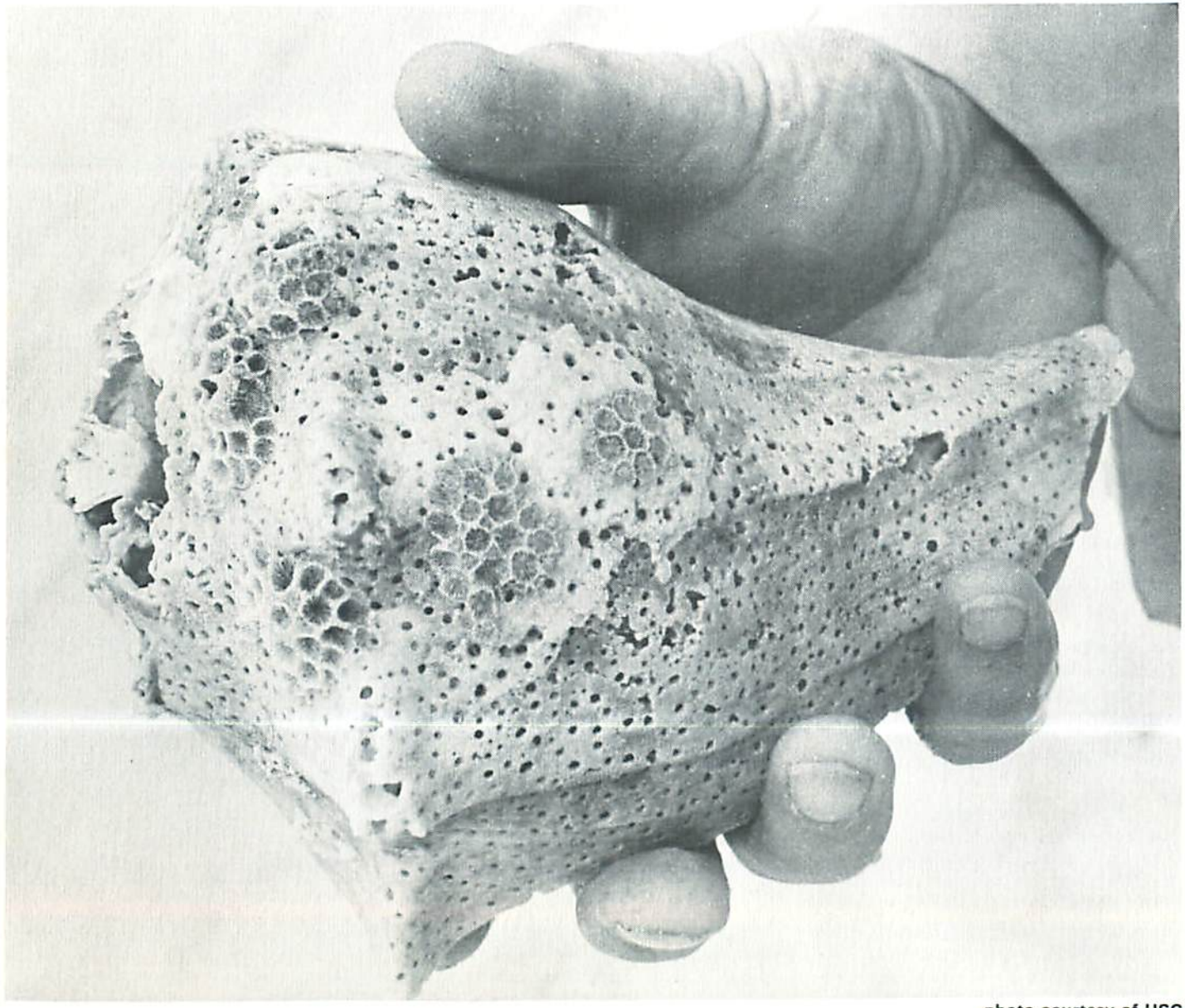


photo courtesy of USC

Marine Resources Division

Located at historic Fort Johnson on Charleston Harbor, the South Carolina Division of Marine Resources is responsible for the management, development and proper use of the state's coastal resources.

The Division consists of two functional units: the Office of Conservation, Management and Marketing, and the Marine Resources Research Institute.

FISHERY DEVELOPMENT AND MANAGEMENT

The Office of Conservation, Management and Marketing

The Office of Conservation, Management and Marketing has primary responsibilities for management and development of the commerical and recreational fisheries in the state's coastal areas, including the regulation and control of commercial fishing seasons, areas and equipment; the issuance of licenses and permits for fishing; management of public shellfish grounds; collection and maintenance of fisheries statistics; the leasing of state bottoms for shellfish culture or other forms of mariculture; the promotion of seafood products; and the development of seafood markets.

Recently, the Office of Conservation, Management and Marketing has become increasingly active in a broad spectrum of environmental and ecological concerns, especially those which have an impact on fisheries and marine habitats.

In order to fulfill its responsibilities, the Office is organized into eight functional sections:

Environmental Evaluations
Finfish Management
Crustacean Management
Shellfish Management
Recreational Fisheries

Licensing and Leasing
Fisheries Statistics
Marketing Services

MARINE BIOLOGY, OCEANOGRAPHY AND AQUACULTURE

The Marine Resources Research Institute

In addition to filling research needs of its own, the Institute provides facilities which support the Charleston Higher Education Consortium's Marine Biology Graduate Program and the Medical University of South Carolina's Marine Biomedical Research Program.

Marine Resources also provides facilities supporting marine studies of other state colleges and universities.

The Institute's activities are clustered into four areas: fisheries, environmental sciences, aquaculture and educational support services. Research interests include fisheries biology, fishery population dynamics, oceanography, marine biology, benthic ecology, marine and estuarine ecology, and aquaculture.

The MRRI occupies some 60,000 square feet of space, with the main laboratory building containing 12 laboratories, a central artificial sea water system, two large constant-temperature rooms, a walk-in chiller and freezer, and offices for the scientific staff.

An additional 30,000 square feet of space contains teaching as well as research laboratories, an auditorium, library and computer terminals. There is also space available for graduate students and visiting investigators.

Three smaller buildings at Fort Johnson have been modified to house a geology laboratory, finfish and shellfish taxonomic work-up facility, and an aquaculture project. Shop facilities are maintained to provide some instrument maintenance and fabrication.

In addition to its laboratories, the Marine Resources Division also operates and maintains four research vessels that are shared by the MRRI and the Office of Conservation, Management and Marketing. The research vessels include the R/V Oregon, a 100-foot oceanographic ship; the R/V Anita, a 55-foot shrimper designed for inshore and estuarine survey work; the R/V Carolina Pride, a 50-foot combination inshore estuarine trawler and diver support vessel; and the R/V Atlantic Sun, a 72-foot nearshore oceanographic and fish assessment vessel. Several smaller inboard craft are also operated by the Division.

Because South Carolina recognizes the potential for aquaculture development and the need for a sound technical base to support such development, legislation has allocated funds for the design and construction of a new pilot-scale research and development center to be located at Victoria Bluff, near Beaufort, S.C.

This new facility, the James M. Waddell, Jr. Mariculture Research and Development Center, will operate as a satellite of Marine Resources Institute. It will consist of a series of ponds with both fresh and saltwater flow-through, a 10,000 square foot hatchery and research building, a 265-foot pier and floating dock, a manager's residence and a dormitory for visiting scientists and students.

The site chosen for the facility is a 12,000-acre tract adjacent to the Colleton River. A total of 147 acres will be developed, leaving more than 1,000 acres in the State Heritage Trust Program which will serve to preserve the natural beauty of the area. The center is scheduled for completion in late 1982.

photo courtesy of SCWMRD

the university of south carolina

photo courtesy of USC

Just as education plays an invaluable role in stimulating interest and introducing students to the various coastal and marine-related fields of study, research at the University of South Carolina is vital to the continued development and preservation of our valuable coastal and marine resources.

Students, faculty members and senior scientists in nearly every department of the University are involved in a variety of research programs relating to the oceans and coasts.

Aside from the Marine Science Program at the University, a number of other programs are actively involved in coastal and marine-related research and instruction. Programs involved in these studies include: The Belle W. Baruch Institute of Marine Biology and Coastal Research, the Departments of Geology, Biology, Chemistry, Mathematics, Computer Sciences, the USC College of Engineering, the Institute of Archeology, the USC College of Business Administration, the Institute of Government and International Studies, and the USC School of Law.

This interdisciplinary approach allows students in the Marine Science Program to combine courses from various departments into a unique, individually-tailored program.

More than 100 courses that may be counted as credit toward a degree in Marine Science are available through the University's different departments. Seminar courses in specialized areas such as coral reef fish ecology, biological clocks, coastal processes, plate tectonics, benthic ecology and bioenergetics are also regularly offered by the faculty in response to student requests.

Students in the University of South Carolina's Marine Science Program also have an opportunity to participate in the Summer Field Program. Each summer,

two five-week sessions give students in Marine Science an opportunity to earn credit through intensive field and laboratory studies at various locations along the coast.

MARINE BIOLOGY, OCEANOGRAPHY AND ENVIRONMENTAL RESEARCH

The Belle W. Baruch Institute for Marine Biology and Coastal Research

The University's Belle W. Baruch Institute for Marine Biology and Coastal Research provides a focal point for marine research in this state by maintaining educational and research facilities on both the Columbia campus and at the Baruch Foundation's Hobcaw Barony just north of Georgetown, S.C. These facilities enable the University's Marine Science Program to accommodate the research goals for individual students and faculty.

Faculty and graduate student research, along with numerous field education projects, take place at the Institute's facilities located at Hobcaw.

A modern field laboratory containing environmental chambers, saltwater holding systems, monitoring, sampling and collecting equipment, and a conference center and living quarters make this an exceptional facility for conducting coastal and marine research.

In addition to the facilities at Hobcaw, the Institute also owns a number of boats that are used by students and researchers there.

Hobcaw Barony is composed of 17,000 acres bordering Winyah Bay in the Atlantic Ocean. It includes 7,500 acres of saltwater marsh, ocean beaches and dunes, a high-energy tidal inlet, marine bird rookeries, oyster banks, clam beds, many miles of tidal creeks and a complete ecological progression from the ocean to coastal highland environments. Offshore is a broad continental shelf, the Gulf Stream and the Blake Plateau.

photo courtesy of USC

The North Inlet Estuary, bordering Bell Baruch, has been designated as a Long Term Ecological Research Area (LTER) by the National Science Foundation. It is one of only six such areas in the United States and the only one with marine and estuarine habitats.

Research at Hobcaw Barony has led to increased emphasis on coastal and estuarine research, and most of the current research efforts take place along the South Carolina coast. However, there are many opportunities for work in deep-sea oceanography. University of South Carolina Marine Science faculty and students regularly participate in research cruises in the Atlantic, Pacific and Indian Oceans, and conduct special projects in the Alaskan Arctic, Tierra del Fuega, Japan, Chesapeake Bay, the Mediterranean Sea, Belize and the Amazon River.

On the Columbia campus, the research and educational resources of the entire University are accessible to students and faculty in the Marine Science Program, depending on individual study and research needs.

Facilities most directly related to marine science include: office and laboratory space for faculty and students, teaching laboratories, seawater aquarium systems, environmental chambers, respirometers, transmission and scanning electron microscopes, low-level radioisotope and stable isotope laboratories, liquid and gas chormatographs, and a wave tank.

The Department of Biology

The Department of Biology has a very active faculty with vigorous research programs in the biology of marine organisms and environments. These programs include, but are not limited to, studies of the biochemistry, physiology, developmental biology, molecular biology, genetics and ecology of plants, animals and microorganisms.

The research programs are carried out in two new buildings on the Columbia campus, at the Baruch Institute near Georgetown, S.C. and laboratories throughout the world.

The physiological ecology group is internationally recognized for its contributions to the understanding of the mechanisms by which organisms adapt to changes in the marine environment, both natural and induced by man.

Analyses of the molecular mechanisms by which adaptation occurs is

photo courtesy of Baruch Institute

accomplished in the isozyme laboratories. Responses to water stress in plants is researched in many of the species that occupy the dunes and intertidal and submerged wetland habitats of the coastal zone.

Under a cooperative research program with Japanese scientists, the Department of Biology, using the transmission and electron microscope facility, have also conducted studies on the age and growth of fish.

Students at the undergraduate and graduate level engage in independent study research projects with the faculty in the laboratory and the field.

COASTAL PROCESSES AND ENGINEERING

The Department of Geology

As a research-oriented program, the University of South Carolina's Department of Geology offers students and faculty the opportunity to pursue studies in various aspects of subjects such as sedimentology, coastal processes, marine geology and geochemistry, international geology, peat formation, regional tectonics and geophysics.

The research efforts are of international proportions, involving field studies throughout the United States, the Caribbean, the Mediterranean and Australia's Great Barrier Reef.

Many of the department's various research groups are involved in extensive coastal and marine-related studies and work closely with the Belle W. Baruch Institute for Marine Biology and Coastal Research.

The department's Coastal Research Division, one of the nation's most noted coastal studies groups, plays a vital role in developing man's understanding of coastal processes. Especially noted for its vibracoring techniques used in studying the origin of barrier islands, the division is also active in such studies as beach erosion, hydraulics of tidal inlets and sea level fluctuations.

Research efforts in the department's physical oceanography program are conducted throughout the world and focus on problems in shallow-water coastal environments such as estuaries and coral reefs.

Paleontologists with the department are involved in a number of projects, including methods showing the most efficient way of determining when and where most costly and time consuming water quality monitoring should be done in coastal zone environments.

Marine geochemists in the department are participating in a four-year study of the origin and mechanisms of accretion of manganese nodules and crusts. Much of this work will be conducted in the deep-water submersible ALVIN.

Researchers studying marine paleoenvironments are involved in reconstructing paleoenvironmental and paleo-oceanographic conditions, the study of deep-sea sediments and many other projects.

Geological oceanographers are also involved in broad-based studies including those dealing with marine sediments.

Every section in the Department of Geology is in some way involved in marine and coastal research. Most of these sections work together in piecing together these mysteries surrounding the origins of our oceans.

Research facilities in the department contain state-of-the-art equipment necessary to carry out the many geological studies. The department maintains a seismology-geophysics laboratory, used for recording seismic data from various stations in South Carolina; a paleomagnetic laboratory; a sediment dynamics laboratory; a stable isotope laboratory with facilities for analyzing carbonates, organic materials and seawater; coastal plains research laboratory with peat sectioning equipment and coring rig; an aqueous geochemical laboratory; a hydrogeology research laboratory with water pollution research equipment; an organic geochemistry laboratory; and a rock mechanics laboratory.

Also of interest to geology faculty and students is the Department of Geography's remote sensing and computer mapping laboratory.

Each semester the Department of Geology offers a weekly seminar series covering a wide range of current research topics. Invited speakers of national and international fame have visited the department as part of this popular seminar series. Occasionally speakers are invited to give a number of lectures for a two-day intensive "short course."

COASTAL PROCESSES AND ENGINEERING

The College of Engineering

The Environmental and Water Resources Engineering Group, within the University of South Carolina's College of Engineering, contains a number program elements associated with marine and coastal research. Current coastal and marine activities within the group include projects relating to wetland modeling, beach erosion and barrier island groundwater quality.

Laboratory facilities are well equipped for many of the analyses necessary in coastal and marine research. Specifically, a classical sanitary engineering laboratory is available for routine wet chemistry. High-level analytical capabilities are available for metal analysis with two atomic absorption spectrophotometers. Several gas chromatographs are also available, including a new computer-controlled capillary GC with purge and trap. A standard array of environmental chambers and pilot plant facilities are also available.

In addition to the sanitary engineering capabilities, there are also facilities for hydrology and hydrogeology. For a number of years, investigators in surface and subsurface hydrology in the College of Engineering have been actively involved in research into the mechanics of flow pollutant transport porcesses.

Research in these areas has focused on the development and testing of process models. Simulation models are now available for overland flow, infiltration, sheet and rill erosion, water quality in streams under unsteady flow, groundwater flow in saturated and unsaturated zones, and pollutant transport in the saturated zone. In addition to those models developed by the investigators, several models developed by federal agencies have been tested and are available.

photo courtesy of USC

Equipment and procedures are also available for analyzing soil infiltration characteristics, soil hydraulic conductivity and fluid system dispersion characteristics. Specific equipment includes a sprinkling infiltrometer, velocity current meters and a flourometer. Soil core sampling equipment and a soils laboratory for determining porosity, permeability and moisture-tension measurements is also available.

The Department of Geography

The Department of Geography at the University of South Carolina offers training in fundamental geographic skills and opportunities for advanced study in a variety of systematic, technical and regional fields.

Students are provided with easy access to all the services provided by the department and are encouraged to use them in classroom and research activities. Students and researchers in the University's Marine Science Program and Department of Geology regularly use these facilities.

The modern, well-equipped facilities include an excellent cartographic-photographic laboratory with a full-time supervisor. Also included are area-analysis and audio-visual tutorial laboratories, ample materials related to geographic education and the University map library. The department also maintains the campus weather station.

The department is involved in extensive use of electronic data processing equipment and digital data base for analysis and map generation. The Computer Services Division's graphics section is one of the most sophisticated digitizing and plotting operations in the nation.

Of special interest to students and faculty doing coastal and marine-related research is the department's remote sensing and computer mapping laboratory. Student and faculty researchers can work with aircraft and satellite imagery in determining such things as vegetation patterns and biomass in salt marsh environments and the intertidal zone, and also in measuring elevations of land forms.

Aside from the facilities available in the department, a number of courses concentrate on coastal and marine areas. Faculty members within the department specialize in such areas as transportation, cartography, remote sensing, computer mapping, natural resources and the environment.

COASTAL RESOURCE DEVELOPMENT AND MANAGEMENT

The USC Institute of Archeology and Anthropology

Steeped in history and tradition, South Carolina has long been a focal point for studies concentrating on our nation's coastal heritage. The University of South Carolina's Institute of Archeology and Anthropology plays an important part in preserving this heritage.

As a full-time archeological research facility within the University, the Institute has the responsibility for recording, evaluating, guarding and preserving our archeological resources on land and beneath the water.

In order to carry on their work, archeologists at the Institute work closely with professionals in many other fields. Geologists, historians, ecologists, geographers and other anthropologists all contribute to information relating to man's past interaction with the environment and with other men.

Since 1973, the Institute has been actively involved in a program of underwater archeological research. An inventory of

underwater sites is being developed through surveys both on the coast and in inland rivers and lakes. This program has been successful due to the great deal of cooperation that exists between hobby divers and the research staff at the Institute.

The Institute also conducts a continuing archeological survey of coastal regions. Archeological research has revealed much about life along the South Carolina coast during prehistoric times and the state's early history. The oldest examples of prehistoric pottery ever found in North America have been unearthed from shell middens along the South Carolina coast, and divers recently raised the oldest river-going cargo ship ever recovered in this country. This find will be valuable in filling the information gap in America's maritime history and is being preserved in a special facility on campus. The ship will be displayed at the Rice Museum in Georgetown when the preservation process is complete.

The 15,000 square foot Institute has facilities including a complete cataloging and processing lab, photographic lab, publications department, art department and Institute library.

In addition to these facilities, the Institute maintains the only conservation laboratory (used for preserving waterlogged and fragile materials) in the Souteast and the largest in the North America.

The College of Business Administration -- Division of Research

Throughout history, man has relied heavily on the sea for trade. And today, the ocean continues to be a major force in the development of commerce. The various programs offered and projects undertaken by the College of Business Administration and Division of Research reflect this continued reliance upon our oceans and coastal areas.

The Division of Research is involved in a number of on-going studies dealing with the development and management of our coastal and marine resources. Much of this work centers around the issue of coastal economic development as it relates to the Coastal Zone Management Act.

Because of an increasing number of trade-offs between industry and the environment, the Division of Research has begun to focus an even greater amount of attention to the issues surrounding coastal economic development.

The Division works closely with such groups as the State Ports Authority, and is involved in such in-depth studies as land-use planning, management and controls in the coastal zone. A number of publications stemming from these studies have been produced by the Division.

The large staff which makes up the College of Business Administration and Division of Research come from diverse professional backgrounds. This wide range of experience is invaluable when working in coastal and marine-related areas. Not only does this group include specialists in manufacturing, utilities and trade, but also specialists in marine-related areas such as commerical fishing and shipping.

Through this staff, the College of Business and Division of Research can serve in not only an educational and research capacity, but can also function as an advisory service.

The Department of Government and International Studies

With increasing attention being focused on such international topics as commercial fishing rights, mineral rights, foreign trade and port development, we cannot escape the politics of the sea. Through its various programs, the University of South Carolina's Department of Government and International Studies addresses many of these issues.

Studies concentrating on marine-related topics emphasize fundamental research dealing with politics, economics and public policy issues as they relate to marine affairs. The department also offers students a course focusing on the politics of ocean space.

A few of the key issues the department has studied center around the administration of programs for extracting minerals from the sea and the politics of keeping global shipping lanes open to traffic.

In addition to the department's work, the University of South Carolina School of Law has also examined these same studies arising from the United Nations' Law of the Sea concepts.

The Department of Government and International Studies has produced a number of publications dealing with these marine-related issues and other issues affecting the coastal zone. These are available through the department.

The department is facilitated by support provided through its Institute of International studies and the Bureau of Governmental Research and Service.

The University of South Carolina School of Law

Recent studies conducted by the University of South Carolina School of Law have illustrated the need for increasing emphasis on the legal aspects of the development and management of our coastal and marine resources. This increased emphasis is essential to the future of the coastal zone.

Faculty members within the School of Law share a number of interests relating to coastal and marine issues. Studies have been conducted on the issues of International Law of the Sea, local zoning in coastal communities, fisheries law and coastal erosion.

With increasing attention being focused on the coastal zone, the University of South Carolina School of Law is expected to play an important role in the development and management of this area.

SPECIAL SERVICES AND EVENTS

In addition to the various schools and colleges within the University, the Thomas L. Cooper Library provides easy access to the students, faculty and researchers needing information relating to coastal and marine topics. The library, a completely computerized facility containing more than 3.1 million volumes, includes an excellent science section with extensive journal holdings in marine science.

The University also has a large, multiple-access computer center used regularly by students and faculty in every department.

An important part of the University of South Carolina's Marine Science Program is its work in the area of special services and public education, linking the work of researchers with the needs of the general public. Some of these programs include:

International Symposia and Seminars

A continuing series of international symposia are held regularly at Hobcaw Barony's Kimbel Conference Center. These symposia have resulted in serial publications comprising the Belle W. Baruch Library in Marine Science.

Past symposia have been concerned with estuarine organisms and other topics

dealing with coastal and marine processes.

In addition to the international symposia, prominent scientists from throughout the United States and abroad regularly participate in seminars on the Columbia campus.

Baruch Public Lecture and Nature Film Series

Throughout the year, the Baruch Public Lecture and Nature Film Series gives audiences the opportunity to find out more about our valuable coastal and marine resources. Held at the Kimbel Conference Center, the lectures and films are free and open to the public.

The Baruch Public Lecture and Nature Film Series is sponsored by the Belle W. Baruch Institute for Marine Biology and Coastal Research, the Belle W. Baruch Forest Science Institute of Clemson University and the Belle W. Baruch Foundation.

Coastal Ecology Classes for Children

In its continuing effort to increase awareness of the coastal environment, Baruch also sponsors the Coastal Ecology Classes for Children. Designed for grades K-12, sessions take place at Hobcaw Barony.

Field trips to salt marsh, swamp, forest and beach environments highlight the classes, and slide shows, arts and crafts, educational games and guest speakers provide additional learning experiences for the participants.

In addition to the international symposia and seminars, the Baruch Lecture and Nature Film Series, and Coastal Ecology Classes for Children, the University also has available to the public a large number of publications, exhibits and films dealing with coastal and marine issues.

photo courtesy of Baruch Institute

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