

September 12, 2002

Office of State Budget
Attention: Karen Amos
1122 Lady Street, 12th Floor
Columbia, SC 29201

Dear Ms. Amos:

It is my pleasure to submit to you the FY2001-02 Accountability Report of the S. C. Sea Grant Consortium, which represents our twenty-first year of operation. An electronic version of this report has been sent to your e-mail address, and four hard copies and one 3.5" diskette (Word doc) are enclosed. This report has been prepared in accordance with Sections 1-1-810 and 1-1-820 of the S.C. Code of Laws and Section 72.63 of the FY2001-02 Appropriations Act.

The objectives and performance measures included in our FY01-02 Accountability Report are based in part on the Consortium's Strategic Plan, approved by the Consortium Board of Directors in December 1996, the National Sea Grant College Program Strategic Plan, and input provided by Consortium staff and constituencies whom we serve. The Strategic Plan was revised in 1999. Our mission statement is based on our enabling legislation (Section 48-45-10:100, S. C. Code of Laws).

I am confident that the Consortium's FY01-02 Accountability Report meets the requirements set forth in state law. If you do have any questions or require further information, please feel free to contact Ms. Elaine Knight or me at (843) 727-2078.

Thank you and we look forward to your continued assistance as we move to enhance the quality and delivery of services to South Carolina's citizens.

Sincerely,

M. Richard DeVoe
Executive Director

MRD/

Enclosures

cc: Dr. Ronald R. Ingle
Chair
S.C. Sea Grant Consortium Board of Directors

Accountability Report Transmittal Form

Agency Name: South Carolina Sea Grant Consortium

Date of Submission: September 12, 2002

Agency Director: Mr. M. Richard DeVoe

Agency Contact Person: Mr. John Dwyer, Charleston

Agency Contact's Telephone Number: 843-727-2078



FY01-02 Accountability Report
South Carolina Sea Grant Consortium

"Science Serving South Carolina's Coast"

Date: 12 September 2002

FY01-02 ACCOUNTABILITY REPORT

SOUTH CAROLINA SEA GRANT CONSORTIUM

Section I:

EXECUTIVE SUMMARY

General Information and Mission Overview

The S.C. Sea Grant Consortium, created in 1978 by the S.C. General Assembly, is charged with managing and administering the Sea Grant Program and related activities to support, improve, and share research, education, training, and advisory services in fields related to ocean and coastal resources. The Consortium's unique mission is to maximize the economic, social, and environmental potential of the coastal and marine resources of the state and region, and the agency does so by serving as a broker of information and funding.

The Consortium develops and supports a balanced and integrated research, education, and extension program for South Carolina which seeks to provide for future economic opportunities, improve the social well-being of its citizens, and ensure the wise use and development of its marine and coastal natural resources. It also administers an effective and efficient communications and extension network among academia, business, government, and the general public to ensure that Consortium activities are responsive to marine and coastal users and that information generated is delivered in a useful and timely fashion. The S.C. Sea Grant Consortium is part of a nationwide network of 30 Sea Grant Programs that report to the National Sea Grant College Program, NOAA, U.S. Department of Commerce; thus, Consortium activities are responsive to regional and national needs, as well as to those of South Carolina. It is unique among Sea Grant programs in that it is an academically based state agency.

Institutions which hold membership in the Consortium include The Citadel, Clemson University, Coastal Carolina University, the College of Charleston, the Medical University of South Carolina, South Carolina State University, S.C. Department of Natural Resources, and the University of South Carolina. Consortium institutions provide the expertise of their respective faculty and professional staffs, as well as a wide range of facilities and equipment, necessary to carry out the diversity of programs supported by the Consortium.

In addition to the direct relationship with its member institutions, the Consortium interacts with numerous other local, state, and federal agencies, businesses, industries, and non-profit organizations to identify issues and opportunities and form partnerships to address the needs of its diverse constituencies.

The Consortium's overarching goal of maximizing the potential of the state's coastal and marine resources is a broad one. To effectively direct its day-to-day activities toward this goal, the Consortium's research, education, and extension activities are organized around six program areas, each of which supports the sustainable use of the state's coastal and marine resources. The six major program areas are:

- Coastal Ocean Studies
- Ecosystem Dynamics
- Climate and Hazards
- Emerging Technologies
- Sustainable Economic Development
- Marine Education

Efforts distributed among these six areas provide a balanced program, which is central to achieving the major goals of the agency. A seventh area, Management and Administration, is centered on the agency's day-to-day operational goals and objectives, and together these areas form the basis for this accountability report.

Strategic Planning and Program Goals

The goal of the Consortium's strategic planning process is to maximize the ability of S.C. Sea Grant's research, education, and outreach programs to address the coastal resource needs of South Carolina. To this end, the Consortium's strategic planning process has identified three concepts that provide the foundation for future Sea Grant activities:

- To develop and maintain an integrated Sea Grant Program for South Carolina that seeks to provide for future economic opportunities, improve the social well being of its citizens, and ensure the sustainable use and development of its marine and coastal natural resources.
- To continue to build an effective and efficient research, education, communications and extension network among academia, business, government, and the general public to ensure that Consortium activities are responsive to marine and coastal users and that information generated is delivered in a timely fashion.
- To remain an integral component of the National Sea Grant College Program where Consortium activities are responsive to regional and national needs, as well as to those of South Carolina.

Results

The National Sea Grant College Program is specific in requiring compliance with a merit review process for member institutions based on program evaluations performed every four years by a Program Assessment Team (PAT). The South Carolina Sea Grant Consortium's evaluation was conducted in 1999. The Consortium received an "Excellent" rating, and our outstanding performance resulted in an increase of \$140,000 in our Core budget in 2001 with Federal funds coming from the National Sea Grant College Program. The Consortium's next Program Assessment will take place during the summer of 2004.

The Consortium's total annual budget for FY01-02 was \$6,060,044, representing a 5 percent increase over FY00-01. The FY00-01 total budget was \$5,761,668, representing a 2.6 percent increase over FY99-00.

The Consortium experienced an increase in its non-state funding level to \$5,515,596, a \$404,685 increase over FY00-01. The FY00-01 increase over FY99-00 was \$89,481. As Table 7.1.5A (page 27) shows, there is a favorable trend in the increase of non-state funding.

The S.C. General Assembly's commitment to and support of the S.C. Sea Grant Consortium has positioned it to be able to successfully compete for non-state funding, and with only 9 percent of its budget (vs. 11% in the previous reporting period) coming from state appropriations, the Consortium represents a highly leveraged, cost-effective investment by the State of South Carolina.

Nevertheless, while the S.C. Sea Grant Consortium has benefited from a significant increase in its non-state funding for research, education, and extension programming, there is now a need for additional program, fiscal management, and administrative support from state appropriations to handle the demand for Consortium efforts and activities as they continue to increase. As noted in last year's report, coastal growth will continue to remain a primary natural resource management issue for the state into the foreseeable future. In fact, anecdotal information suggests that we have approached a point where research and outreach funding may not keep pace with the issues resulting from the increasing pressures of population growth along the coast of South Carolina.

At the heart of the Consortium's mission are the efforts of Sea Grant-supported scientists. For the FY02-04 Biennial Request for Proposals, the Consortium experienced a 22 percent increase in pre-proposals (61) submitted for funding consideration compared to forty-nine (49) received in the previous biennial request. In that request, twenty-six (26) of the principal investigators were invited to submit full proposals. Of those, twelve (12) were funded. In the current biennial cycle, twenty-seven (27) of the investigators were invited to submit full proposals, and fifteen (15) were funded – a 25 percent increase in funded proposals.

Results of the Consortium's research, education, and extension programs and activities supported by competitive grants from the Consortium's core Sea Grant program, the National Sea Grant College Program Office's National Strategic Initiatives, and other funding agencies, as well as our success with the Coastal Management and Dean John A. Knauss Fellowship competitions, can be found in Category 7.

Section II:

BUSINESS OVERVIEW

1. Number of Employees

The S.C. Sea Grant Consortium employs a total of fourteen (14) individuals. The trend in number of employees essentially has remained constant over time.

2. Operation Location

The Consortium’s main office is located at 287 Meeting Street in Charleston, South Carolina. Specialists working for the S.C. Sea Grant Extension Program are located in offices in Charleston, Conway, and Georgetown, South Carolina.

3. Expenditures/Appropriations Chart

Base Budget Expenditures and Appropriations

Major Budget Categories	00-01 Actual Expenditures		01-02 Actual Expenditures		02-03 Appropriations Act	
	Total Funds	General Funds	Total Funds	General Funds	Total Funds	General Funds
Personal Service	\$ 614,123	\$ 332,289	\$ 594,801	\$ 321,708	\$ 617,530	\$ 327,530
Other Operating	\$ 513,380	\$ 196,377	\$ 501,948	\$ 128,195	\$ 535,875	\$ 105,745
State Aid	\$ 7,129	\$ 7,129	\$ 2,550	\$ 2,550	\$ 1,956	\$ 1,956
Allocations	\$ 3,468,966	\$ 0	\$ 3,874,425	\$ 0	\$ 6,341,124	\$ 0
Fringe Benefits	\$ 141,920	\$ 88,979	\$ 133,275	\$ 78,239	\$ 151,725	\$ 90,979
Total	\$ 4,745,518	\$ 624,774	\$ 5,106,999	\$ 530,691	\$ 7,648,210	\$ 526,210

Other Expenditures

Sources of Funds	99-00 Actual Expenditures	00-01 Actual Expenditures	01-02 Actual Expenditures
Information Technology	\$ 4,467	\$ 0	\$3,660

4. Key Customers

Because of the unique nature of the Consortium’s mission, we do not have “customers” as such. Instead, we serve many constituencies, through the provision of information and funding, including faculty, staff, and students of our eight member institutions; federal, state, and local natural resource and economic development agencies; institutions and individuals involved in the management of the state’s coastal resources; state and local government officials and community leaders; K-12 teachers and students; non-governmental organizations; business and industry, citizen groups; and the general public.

5. Key Suppliers

The Consortium depends on the expertise and knowledge of the faculty, staff, and students of its member institutions, as well as its own, to generate, translate, and deliver pertinent coastal and marine resource-related information to its constituents. It also depends on the success of the proposals it prepares and/or submits on behalf of its member institutions to secure the financial resources necessary to support the myriad of activities with which it is engaged.

6. Major Products and Services

The Consortium’s major products and services fall into the following categories:

- Marine and coastal research that delivers applied, science-based information to educate individuals, businesses, local and state government, and other organizations on the balanced use and conservation of coastal and ocean resources.
- Extension, advisory services, and technical assistance activities (such as workshops, seminars, constituent meetings, etc.) focusing on coastal hazards, environmental and water quality issues, coastal recreation and tourism, aquaculture, and coastal community development.
- Community-based volunteerism, through marine litter and habitat restoration projects (e.g., Beach Sweep/River Sweep; Oyster Reef Restoration).
- Communications products (print, media, Web-based) that inform and educate citizens about the issues relevant to life, work, and along the coast of South Carolina (e.g., *Coastal Heritage* magazine).

The Consortium organizes its research, education, and extension activities in six programmatic areas. A seventh area, Management and Administration, is centered on the

agency's day-to-day operational goals and objectives. The Consortium's program areas and goal statements are:

Coastal Ocean Studies: To identify and understand the processes dominating the coastal ocean of the South Atlantic Bight (SAB) as they affect coastal processes, pollution of the coastal zone, fisheries dynamics, and mineral resource management, and are influenced by global climate change.

Ecosystem Dynamics: To enhance the availability and quality of marine, estuarine, and freshwater resources that can support the economic and quality-of-life needs of the public and private sectors in South Carolina.

Climate and Hazards: To provide technical and educational programs which examine the forces of climate and hazards and provide information to the public and private sectors on the nature of hazards and how to plan for them.

Emerging Technologies: To develop techniques, technologies, and new products based on marine systems for use in commercial and industrial applications, and to continue to apply low-cost technologies to coastal and marine resource problems and opportunities.

Sustainable Economic Development: To establish and enhance economically viable business and municipal opportunities that are compatible with the long-term use and conservation of natural and cultural resources of the coasts of South Carolina and the region.

Marine Education: To provide effective programming in support of human and workforce development (through formal education) and enhanced public awareness (through informal education) related to the use, management, and conservation of marine and coastal resources.

Management and Administration: To provide effective and efficient management and administrative support to the Consortium's member institutions (including their faculty and staff) and diverse constituencies in support of delivering research, education, and extension programming to ensure that coastal and marine issues and opportunities are rigorously researched and understood, and that the resulting information is communicated to those who use and manage these resources.

7. Organizational Structure

The S.C. Sea Grant Consortium is structured to optimize communication and feedback linkages necessary for the proper development and implementation of its programs. Activities of the Consortium are governed by authorizing committees of the S.C. General Assembly and a Board of Directors to which the Executive Director reports. The Board of Directors includes the chief executive officers of the Consortium's member institutions:

Dr. Ronald R. Ingle, Chair
President
Coastal Carolina University
Conway, SC 29528

M. Gen. John S. Grinalds
President
The Citadel
Charleston, SC 29409

Dr. James F. Barker
President
Clemson University
Clemson, SC 29634

Leo I. Higdon
President
College of Charleston
Charleston, SC 29424

Dr. Raymond S. Greenberg
President
Medical University of South Carolina
Charleston, SC 29403

Dr. Paul A. Sandifer
Director
S.C. Department of Natural Resources
Columbia, SC 29202

The Honorable Ernest A. Finney, Jr.
Interim President
S.C. State University
Orangeburg, SC 29117

Dr. Andrew Sorensen
President
University of South Carolina
Columbia, SC 29208

The Board meets annually to review Consortium program policies and procedures. The Board also provides a direct line of communication between the Consortium Agency Head and the higher administrative levels of its eight member institutions. An organizational chart depicting the administrative structure of the S.C. Sea Grant Consortium can be found as Appendix A.

Section III:

MBNQA CATEGORIES

Category 1 – Leadership

1.1-1.7

1.1 Organizational Approach

To ensure that all Consortium staff understand the agency's strategic plan and quality expectations, a Consortium-wide planning session (typically in a retreat setting; annually when feasible) is conducted in which information about the agency's mission, goals, and objectives is explained and discussed, and staff are encouraged to share their ideas about ways to improve the agency's performance. Monthly staff meetings provide another forum for sharing information and discussing the Consortium's progress toward strategic goals.

The Consortium also addresses its strategic goals and day-to-day business requirements through meetings of its "Core Group" on a monthly basis. The Core Group consists of the Agency Head, the Assistant Director for Administration and Management, the Sea Grant Extension Program Leader, the Assistant to the Director for Program Management, the Assistant to the Director for Program Development, and the Communications Director. Each member represents the program activities and staff within his/her division, and collectively the group discusses short- and long-term program priorities, budget and staff needs, constraints and issues, and future opportunities.

1.2. Leadership Activities – Agency Head

The South Carolina Sea Grant Consortium staff has played key leadership roles in organizations, professional societies, and activities that advance the mission of the Consortium and enable it to better serve the needs of its constituencies.

Selected activities of the Agency Head include:

1.2.1. State Activities

- Organized and chairs the South Carolina Task Group on Harmful Algae, an organization of state and federal agencies, universities and others to develop strategies to deal with harmful algae blooms.
- Serves on the Advisory Board of the Water Resources Center, Strom Thurmond Institute, Clemson University.
- Continues to serve as a member of the Board of the Lowcountry Institute, Spring Island. S.C.
- Serves as Vice President of the 113 Calhoun Street Board of Directors.
- Member, Management Committee, State of the Harbor - Charleston Harbor Project (under the auspices of SCDHEC/OCRM)
- Established a coastal and ocean research discussion group (with representatives of SCMRD, University of South Carolina, Clemson University, Coastal Carolina University, University of

Charleston, SC, and NOAA/NOS-Charleston Laboratory to explore the development of a coordinated state coastal and ocean research strategy.

- Invited Finals Moderator, South Carolina-Georgia Regional National Ocean Sciences Bowl competition, Columbia, S.C., March 2, 2002.
- Invited Moderator, Transportation Panel, Governor's Summit on Growth, Columbia, SC, March 3-5, 2002.
- Invited Participant, President's Summit on Public Service, Clemson University, April 23, 2002.
- Appointed Adjunct Faculty Member with the Marine Environmental Studies Graduate Program at the Graduate School of the College of Charleston on April 25, 2002.

1.2.2. National Activities

- Serves as President of the national Sea Grant Association (SGA), a federation of the 30 Sea Grant College Programs located in every coastal and Great Lakes state.
- Co-chair of the National Sea Grant Theme Team on Coastal Natural Hazards, one of nine national planning groups made up of scientists, extension specialist, educators, and government representatives charged with developing the national Sea Grant agenda for this and other topics.
- Organized and hosted Sea Grant Week 2001, a biennial conference of the Sea Grant Association with participation of the National Sea Grant Office and the National Sea Grant Review Panel, on Hilton Head Island in March 2001. Mr. Scott Gudes, Acting Administrator of NOAA, was a keynote speaker.
- Invited member of the North Carolina Sea Grant College Program External Review Panel, North Carolina State University, September 25-27, 2001.
- Organized and held a retreat for the SGA Executive Board to discuss operating vision and principles, St. Louis, MO, October 23-25, 2001. Vision and principles subsequently approved unanimously by SGA delegates in March 2002.
- Formal participant, as SGA president, of the National Sea Grant Review Panel (NSGRP), a FACA-approved committee charged with overseeing the National Sea Grant College Program office. The NSGRP reports to the Secretary of the U.S. Department of Commerce. Most recently attended and reported at NSGRP meeting, Silver Spring, MD, November 8-9, 2001.
- Formal member, as SGA President, of the Coastal Coordination Committee, a group comprised of the Acting Assistant Administrator of NOAA's National Ocean Service, the National Sea Grant College Program Director, the Executive Director of the Coastal States Organization, among others, whose goal is to integrate program activities across NOAA.
- Invited panelist, on behalf of the SGA, before the southeastern regional meeting of the U.S. Commission on Ocean Policy, Charleston, S.C., January 16, 2002.
- Invited Moderator of the Formal Education Panel of the Capitol Hill Oceans Week event, Washington, D.C., June 5-6, 2002.

1.2.3. Other Activities

- Served (2000-2001) as Program Chairman for the international Aquaculture 2001 Triennial Conference and Trade Show, attended by more than 3,500 people. Invited speaker and author in a special session on responsible aquaculture.

- Co-convened and presented a special poster session at the regional Geological Society of America conference on April 3-5, 2002 with the research team of the Consortium's Coastal Erosion Study (funded by the U.S. Geological Survey).
- Co-founder and co-chair of the International Conference on Shellfish Restoration (ICSR). ICSR'02 is scheduled for November 20-24, 2002 in Charleston, S.C.; ICSR'00 was held November 14-18, 2000 on Hilton Head Island, with over 200 participants.
- Co-chair of the Southeast Coastal Ocean Science Conference and Workshop, being organized by the Consortium, the NOAA Coastal Services Center, the College of Charleston, and others, scheduled for Fall, 2003.

1.3. Leadership Activities - Consortium Staff

Employees are encouraged to join and actively participate in professional organizations. Examples include:

1.3.1. Local

- Charleston 2000 Plan - chair, Economic Development Committee
- Charleston Tourism Commission - chair, Long-Range Planning
- Charleston Area Small Business Development and Resource Network - founding member
- Charleston County World of Wonders Family Science Program - instructor
- Beaufort County Stormwater Ordinance Advisory Committee - co-chair; staff
- Fort Johnson Seminar Series – committee member
- Maritime Association of the Port of Charleston - member
- Nonpoint Education for Municipal Officials - program coordinator
- S.C. Native Plant Society – member Lowcountry chapter
- Wind-Aid Program – Coordinator (2001)
- Winyah Bay Task Force – Technical Committee

1.3.2. State

- S.C. Aquaculture Association - charter member and advisor
- S.C. Shrimp Growers Association - advisor
- S.C. DHEC/DNR Mariculture Regulatory Committee - member
- S.C. Dept. of Health and Environmental Control - member, Nonpoint Source Task Force
- S.C. Farm Bureau - adviser, Aquaculture Commodities Committee
- ACE (Ashepoo-Combahee-Edisto) Basin Economic Forum - member
- North Inlet-Winyah Bay National Estuarine Research Reserve - member, Advisory Board
- Clemson University Extension Senate - President-Elect (1998-99); President (1999-00)
- Clemson/SCDNR Cooperative Fisheries Unit - coordinator
- Clemson Extension, Natural Resources Initiative Team – member
- S.C. Governmental Finance Officers -- member
- S.C. Rural Economic Development Council - member
- S.C. Nature-Based Tourism Association Annual Conference - Program Chair (1994-99), Technical Advisory Board (1994-01)
- S.C. Flood Hazard Mitigation Planning Committee – member (1998-99)

- S.C. Information Resources Council - member, Standing Committee on Geographic Information
- S.C. Mapping Advisory Committee - member
- S.C. Marine Educators Association - member
- S.C. Economic Development Association - member
- S.C. Chapter, American Planning Association - member
- S.C. DNR Marine Advisory Committee, Disease Introductions Subcommittee - advisor
- S.C. Association of Environmental Professionals – member
- S.C. Marine Educators Association – Board member (1998); newsletter editor (1997-98)
- Leadership, South Carolina – graduate, Class of 2001
- Coastal Pesticide Advisory Council (CPAC) – on-going member
- S.C. Task Group on Toxic Algae - member
- S.C. Aquatic Plant Management Society Board of Directors (2001)
- SCDNR Natural Resources-Aquaculture Legislation Committee (2000-01)
- SCDNR Exotic Species Introductions Sub-Committee
- South Carolina Aquarium – Technical Committee (2000-01)
- International Conference on Shellfish Restoration Committee, co-chair (2001-2002)
- S.C. Government Webmasters Association (2002)
- S.C. Harmful Algae Task Force, communications officer (2001-2002)
- Fiscal Manager, *113 Calhoun Street*

1.3.2. National and Regional

- Coastal Zone '01 Conference – Planning Committee, presenter (2001)
- Atlantic States Marine Fisheries Commission – Aquaculture Committee
- Southern Task Force on Wetlands and Endangered Species Issues, Cooperative Extension Service – member
- National Marine Educators Assn. - member
- National Marine Educators Assn. – logistical coordinator and registrar, 1999 Conference
- National Sea Grant Extension Program Leaders – Southeast Region, past-chair serving on Executive Committee (present)
- National Sea Grant Extension Assembly - Natural Hazards Initiative Chair (1995-99); Chair-elect (1999-2000)
- Sea Grant Week Conference – Logistical coordinator and registrar (2001)
- Assembly of Sea Grant Extension Program Leaders (ASGEPL) – Executive Committee, Chair (2001)
- National Publications Task Force, chair (2001-2002)
- National Communicator’s Steering Committee (2001-1002)
- National Hazards Theme Team (2001-2002)
- National Media Relations Advisory Committee (2001-2002)
- Sea Grant National Web Committee (2002)
- Southeastern Estuarine Research Society – member
- Society of Research Administrators – member
- Sea Grant Association – fiscal officer
- International Personnel Managers Association – member
- The Coastal Society – registrar (2000)
- Sea Grant Finance Officers – Chair (1999 & 2000)

Category 2 – Strategic Planning

2.1-2.2

The goal of the Consortium's strategic planning process is to maximize the ability of S.C. Sea Grant's research, education, and outreach programs to address the coastal and marine resource needs of South Carolina and its citizens. The objectives of the strategic planning process are to:

- Receive input from constituents and stakeholders
- Update the existing strategic plan based on the input received
- Use the strategic plan to guide programs

The Consortium's ability to anticipate and respond to constituent needs is critical to its success in serving the state. The Consortium employs several planning tools to ensure that its programs are achieving the maximum possible benefits. These include both formal and informal mechanisms.

2.1. Strategic Planning Process

To determine how the Consortium's existing strategic plan (1997-2001) addresses the needs of the State, the Consortium's Core Group reviewed that plan in 1998 and agreed to initiate an update. The Core Group felt that the major program areas identified in the existing plan remain relevant, however, suggestions of specific action steps were needed for how best to achieve the plan's goals. A series of focused workshops were held with stakeholders to address these goals and the following six thematic areas:

- K-12 Marine Science Education
- Coastal Hazards
- Coastal and Ocean Processes
- Coastal Historical, Cultural, and Nature-based Tourism
- Aquaculture
- Ecosystem Dynamics

The workshops were designed to achieve four primary objectives:

1. Identify priority needs in South Carolina pertaining to the area of concern.
2. Identify current activities in South Carolina in the area of concern.
3. Identify priority needs in the area of concern that are not being adequately addressed by current activities.
4. Identify specific potential actions that SC Sea Grant could take to address these unmet needs.

The most important factor of the workshops was the participants. Each workshop began with an invitation list comprised of scientists, policymakers, business and industry representatives, community leaders, and other stakeholders. Significant effort was spent to include all possible categories of stakeholders in each topic area. Invitees were sent background materials prior to the workshop that described the National Sea Grant Program's objectives in this area; recent and current S.C. Sea Grant objectives and activities in this area, and other useful preparatory materials.

Following each workshop, a summary of the discussions and presentations was produced. Summaries were mailed to those who attended as well as those who were invited but could not attend; comments were requested. These summaries, and any comments received, served as the basis for updating the agency's Strategic Plan. Also, the input from this process is incorporated into the Consortium's biennial Request for Proposals (RFP) to ensure that program areas, objectives, and priorities continue to meet the changing needs of our stakeholders and enable the agency to successfully meet its mission goals.

2.2. Development and Tracking

The results of the 1998-1999 workshops have been incorporated into the Consortium's 2000-2003 Strategic Plan. The Consortium views its Strategic Plan as a dynamic document; at all times there are planning activities occurring. Implementation of one element of the plan often leads to identification of a new need, which is then incorporated into the plan for implementation, and so on.

Planning is now under way to conduct a formal strategic planning process encompassing all program areas during the fall and winter of 2002-2003. The process will help shape the future directions, priorities and objectives of the Consortium. The new strategic plan will cover the calendar years 2004-2007. Our long-term goal is to conduct a formal and thorough review of each of the Consortium's program areas every four years.

2.3. Communication and Deployment

Effective March 1, 2000, the Consortium began implementing its 2000-2003 strategic plan, which formed the basis for the Consortium's Sea Grant biennial RFPs for FY2000-FY2002 and FY2002-2004. Consortium priorities are being addressed within the agency's programmatic areas (described earlier).

The goal of the strategic planning process is to maximize the ability of S.C. Sea Grant's research, education, and outreach programs to address the coastal and marine resource needs of South Carolina. In addition to its on-going strategic planning process, the Consortium utilizes other means to enhance its ability to identify constituent groups and their needs. It does this through interaction with members of the Consortium's Board of Directors, liaisons at the Consortium's member institutions, Blue Ribbon Committees, its Sea Grant Extension Program specialists, and its Communications and Information Services staff.

Category 3 – Customer Focus

3.1-3.6

3.1. Key Customers and Stakeholders

As previously mentioned, the Consortium’s constituencies consist of the faculty, staff and students of the agency’s eight member institutions, as well as an extremely diverse group of organizations and individuals representing universities, federal, state, and local natural resource and economic development agencies, business, industry, state and local governments, community groups, non-governmental organizations (NGOs), K-12 teachers and students, and others. Simply put, the Consortium’s mission is to serve the coastal and marine resource needs of all who live, work, and play in South Carolina and throughout the southeastern United States. Our motto is: *“Science Serving South Carolina’s Coast.”*

The Consortium serves its member institutions: The Citadel, Clemson University, College of Charleston, Coastal Carolina University, Medical University of South Carolina, South Carolina State University, S.C. Department of Natural Resources, and University of South Carolina. Federal organizations with which the Consortium has collaborated during FY01-02 included the NOAA National Sea Grant College Program, NOAA Coastal Services Center, NOAA National Marine Fisheries Service, NOAA National Ocean Service, NOAA Coastal Ocean Program, NOAA National Severe Storms Laboratory, U.S. Geological Survey, Federal Emergency Management Agency, U.S. Army Corps of Engineers, and U.S. Coast Guard. The Consortium has worked with the following state agencies during the reporting period: S.C. Department of Health and Environmental Control, SCDHEC/Office of Ocean and Coastal Resource Management, S.C. Department of Natural Resources, S.C. Department of Parks, Recreation and Tourism, S.C. Emergency Preparedness Division, Palmetto Pride, and the S.C. State Ports Authority. Other organizations include: numerous counties, cities, towns, and councils of government, S.C. Marine Educators Association, S.C. Coastal Conservation League, S.C. Downtown Development Association, S.C. Marine Association, S.C. Nature-Based Tourism Association, S.C. Aquaculture Association, Extension Disaster Education Network, Beaufort Water Quality Task Force, coastal Chambers of Commerce, Lowcountry Seafood, Inc., African-American Heritage Council, 113 Calhoun St. Foundation, Charleston Area Project Impact, Donlar Corporation, Mayo Clinic, South Carolina Aquarium, Duke Power Company Foundation, Springs Industries, Lockheed Aeronautical, Inc., BMW Manufacturing Corp., Charleston Homeownership Center, BP Amoco Chemicals Company, Ben & Jerry’s Charleston, Cisco’s Café, Marine Terminals, The City Marina, and Sonoco Products, Inc.

3.2. Identification of Customer Needs

The S.C. Sea Grant Consortium is structured to optimize communication and feedback linkages necessary for the proper development, implementation, and delivery of its programs.

In addition to its Board of Directors, Institutional Liaisons provide a direct administrative link between the Consortium and each of its member institutions. Each Institutional Liaison provides a channel of communication on matters dealing with the proposal process, processing of grants and awards, and oversight of ongoing projects and programs. In addition, the Consortium's *External*

Procedures Handbook: A Faculty and Institutional Guide for Consortium Proposals and Projects provides documentation on the administrative processes the Consortium employs in managing its extramural programs, and is made available to faculty and staff at the Consortium's member institutions.

Program Area Advisory Groups are convened as needed to provide assistance in long-term planning, technical quality, and identification of available expertise in the Consortium's program areas. Two such groups met over the reporting period: one to address the needs of K-12 marine science education, and the other to identify key issues in the area of coastal recreation and tourism.

The S.C. Sea Grant Consortium maintains direct and frequent contact with coastal and marine user groups and the general public, and serves as a conduit between institutional knowledge-seekers and coastal and marine knowledge-users, through its S.C. Sea Grant Extension Program (SGEP) and Communications and Information Services (CIS) activities. These outreach programs assure that (1) problems and needs of those who live and work along the coast are accurately identified, (2) research projects and programs are effectively providing the necessary science-based information, and (3) this information is delivered to target audiences in a timely fashion and "user-friendly" format. Further, these users play an active role in the ongoing process of refining our strategic plan to meet the changing needs of our constituencies. The overarching goal of the strategic planning process is to maximize the ability of the Consortium's research, education, and outreach programs to address the coastal resource needs and opportunities of South Carolina and its citizens.

3.3. Listening and Learning

Several internal mechanisms have been established by the Consortium to facilitate a programmed team approach to address coastal and marine resource issues and constituency needs. As previously mentioned, the Consortium's Core Group supports communication and information exchange among the Consortium's internal program components -- staff members of the Core Group represent program policy, program development, program management, extension services, communications, and administration. Meetings, held on a monthly basis, help ensure efficient and effective program component interaction. Using a team approach, the Core Group develops and coordinates Consortium programs and activities.

The Consortium's staff continues to improve the SCSGC Web site (www.scseagrant.org) by enhancing its interactive features, making the site more assessable to people with disabilities, and keeping the information up-to-date and relevant. Nevertheless, traditional means of communication are still extremely important for information delivery; the Consortium's communications staff produced over 66 publications in FY01-02, which informed our constituents about coastal issues and, where appropriate, facilitated the transfer and exchange of information.

In addition to its strategic planning process, the Consortium utilizes other means to enhance its ability to identify and communicate with constituent groups and their needs. It does this through interaction with members of the Board of Directors; liaisons at the Consortium's member institutions, Blue Ribbon Committees; its Sea Grant Extension Program specialists; and its Communications and Information Services staff.

Category 4 – Information and Analysis

4.1-4.4

4.1. Evaluation of Consortium Proposals and Programs

The primary focus of the Consortium’s information and analysis process is the evaluation of how well research and outreach proposals address the mission, goals, and priorities of the agency, as laid out in the agency’s strategic plan and specified in its biennial Request for Proposals (available on the agency’s Web site and in hard copy format to all Consortium members faculty and staff).

4.1.1. Proposal Review Process

All research, education, and outreach proposals received by the Consortium go through a rigorous scientific review process. For our biennial “Program Plan to the National Sea Grant College Program Office,” the proposal process begins with the submission of “concept letters” (preproposals). A technical and management review panel is convened to assist Consortium management in determining which researchers’ concept letters merit full-proposal invitations. The selection criteria are based on the goals, objectives and priorities laid out in the Consortium’s strategic plan.

When full proposals are received, the Consortium distributes them to scientists and experts nationwide to seek written peer reviews. We maintain a database of experts in all scientific fields relevant to the kinds of research we consider for funding. Those experts are called upon to evaluate research that proposes work in their areas of expertise. Our objective is to obtain at least three detailed, written reviews of every proposal to guide the Core Group in making recommendations to the Agency Head. Development proposals (called “seed projects”) are also evaluated by the Core Group with the aid of these written peer reviews.

The proposals that comprise our biennial “Program Plan to the National Sea Grant College Program Office” are subjected to additional review by a technical peer review panel. During this review, a panel of scientists, who in the aggregate have the expertise necessary to analyze all proposals submitted for funding consideration, is convened at the Consortium’s headquarters in Charleston. The Consortium’s program monitor from the National Sea Grant Office participates in the panel as well. Typically, the panel review process is completed over a two-day period. Input from the panel, as well that provided in the written peer reviews, are then used to guide the decision-making process of the Agency Head, with input provided by the Core Group and in consultation with the National Sea Grant Office.

On occasion, formal technical panels are convened to review major, multi-institutional research and outreach efforts, such as the Land Use-Coastal Ecosystem Study (LU-CES) and the USGS Coastal Erosion Study.

4.1.2. Conflict-of-Interest

Another important feature of the Consortium’s review process is its Conflict of Interest Policy, which is designed to protect the integrity of all proposal writers and peer reviewers. The policy

requires that potential reviewers recuse themselves if they have (1) a major professor/student relationship with the Principal Investigator (PI), (2) published with the PI in the last five years, (3) been a colleague of the PI in the same academic department or served directly or indirectly in a supervisory role over the PI in the last year, (4) grants, contracts, or any financial interest with a PI, and/or (5) a relationship (by blood or by marriage) to the PI.

4.2. Consortium Management Information System

During 2001-2002, the Consortium's Management Information System (CMIS) was converted from an outdated database system running on Unisys equipment and a text-oriented database software package called TXBASE 2.0, to a Windows-based platform utilizing Microsoft Access as its database. CMIS addresses one of the Consortium's major management objectives – the evaluation of organizational performance against goals and standards. It is organized into eight database files (Sea Grant Projects, "Seed" Projects, Non-Sea Grant Projects, Principal Investigators, Graduate Students, Peer Reviewers, Publications, and Workshops); data are updated and revised regularly.

Ultimately, this will permit the Consortium's Management Information System to become more fully Web-based and interactive with Consortium-funded researchers and other stakeholders. In the immediate future, the new Access database will be further refined to facilitate querying as well as generating useful management reports.

4.3. Internal Decision-making

Several internal mechanisms have been established by the Consortium to facilitate a programmed team approach for decision-making. For example, the "Core Group" supports communication and information exchange among the Consortium's internal program components. Staff members of the Core Group represent program policy, program development, program management, extension services, communications, and administration. Meetings, held on a monthly basis, help ensure efficient and effective program component interaction and analysis of programs and activities. Using a team approach, the Core Group develops and coordinates Consortium programs and activities.

Other mechanisms established by the Consortium include internal task groups to deal with information technology, the Consortium's Web site, mailing lists, and the Consortium Management Information System (CMIS).

Additionally, the Consortium first produced its *Internal Procedures Handbook: A Staff Guide for Consortium Operations, Proposals, and Projects* in 1992. It was revised in 1999, and will be updated again in 2003. The handbook details programmatic and administrative policies for use by all Consortium staff.

4.4. Fiscal Analysis

Finally, fiscal responsibility is the keystone of any state agency because of its fiduciary responsibility to the state's citizens and taxpayers it serves. The Office of the State Auditor has scheduled an evaluation of the Consortium's accounting and procurement practices to start August

28, 2002, covering the fiscal year ending June 30, 2001. The fiscal year 2000 audit concluded that there were no exceptions to the Consortium's accounting procedures, and its procurement practices were found to be very satisfactory. The Consortium assistant director is responsible for the financial well-being of the agency on a day-to-day basis.

Category 5 – Human Resource Focus

5.1-5.6

5.1. Employee Motivation

Consortium supervisors formally meet with their staff on a monthly or quarterly basis. Employees are encouraged to participate in these meetings and to voice their opinions and ideas that may improve their efficiency and that of the agency. Employees are also strongly encouraged to join state, regional, and national organizations to enhance their professional development, further develop and sharpen their skills and knowledge, and build leadership capabilities. Each staff member is given the opportunity to, at least once a year and if funds are available, attend a workshop or conference of their choice to enhance his/her job performance and build professional skills.

5.2. Development and Training Needs

The S.C. Sea Grant Consortium is a small agency and many of its employees wear more than “one hat.” Therefore, in some instances, employees are cross-trained to be able to perform job functions in more than one program division (administration, communications, education, program research, program development, and extension services) of the office. New employees are given an overview of the agency policies and procedures during the interview stage, and the agency’s personnel manual and Internal Procedures guide are made available for their use. New employees are also oriented by the assistant director. Employees, as stated before, are informed of training and professional development opportunities to enhance their job skills and knowledge through training at the state, federal, and/or national levels.

5.3. Employee Evaluation

Employees are not only rated annually through the Employee Performance Management System, but are assessed throughout the year to keep their performance level as high as possible. They are encouraged to talk to their supervisor any time they have questions or have problems or concerns. Employees are encouraged to bring their ideas and/or problems to their supervisor, whether it is within their division or agency wide. If their supervisor cannot help with their problems or are unable to give them adequate guidance, they are encouraged to talk to the assistant director or to the Agency Head, if necessary. We have found that this open line of communication fosters enhanced performance and helps to promote idea-sharing, enhance teamwork, and problem-solving.

5.4. Assessment Methods

Monthly or quarterly meetings with and among employees within and across agency divisions are held regularly. In addition, the Agency Head chairs a monthly Consortium staff meeting in which employees share their accomplishments and needs, and inform agency staff of what is going on within their programs. These meetings help agency managers assess employee problems and successes. Additionally, the Agency Head and agency supervisors are in constant communication and contact with all agency staff on a daily basis, and use these opportunities to assess staff morale, provide “attaboys,” and encourage excellence. This provides direct and constant means by which

agency supervisors can determine whether employees are motivated and satisfied with their work and working conditions.

5.5. Community Involvement

The Consortium and its staff are directly involved with the community. The agency is a member of the Trident and South Carolina Chambers of Commerce, and many other community-based organizations and institutions. The agency is an active participant in the state's United Way campaign. Two (of many) Consortium programs that foretell the agency's involvement with the community are the Beach Sweep/River Sweep volunteer marine litter control program and the 113 Calhoun Street Sustainability project (see Category 7). A listing of the community groups, organizations, institutions, businesses, industries, and public interest groups with which the Consortium and its staff are engaged can be found in Category 3.

Initiated in 2000, each Christmas, individual staff members pool their money and contribute a donation, in the name of the S.C. Sea Grant Consortium, to the Charleston *Post & Courier* newspaper's "Good Cheer Fund" for the needy. Last year employees contributed about \$200 to the fund.

Category 6 – Process Management

6.1-6.4

6.1. Product/Service Design and Delivery

While the Consortium has always made it a priority to focus its process management around the needs of its constituencies, there are always opportunities for improvement, particularly in the Internet Information Age. The Consortium's staff continues to upgrade the SCSGC Web site (www.scseagrant.org) by enhancing its interactive features, making the site more assessable to people with disabilities, and keeping the information current. The Web site features an array of information about coastal and marine issues for scientists, educators, students, business and industry, and the public.

The site offers Web pages about Sea Grant research, extension, and educational activities. It includes current and back issues of the periodicals *Coastal Heritage* and *Inside Sea Grant*, frequently updated information about ongoing projects such as Beach Sweep/River Sweep and 113 Calhoun Street: A Center for Sustainable Living, and links to other research and educational institutions. The Flash software we employ on the site allows S.C. Sea Grant to create interactive educational activities for students and other users.

In addition to being well received by the public and our various stakeholders, the Web site has made doing business with the Consortium more convenient for our institutional faculty and staff. The Consortium is transitioning its project proposal application and project reporting from a hard copy to an electronic process.

The goal of the Consortium's communications department is to place information produced by the agency's research, education, and extension activities into the hands of those who manage and use South Carolina's coastal and marine resources. To facilitate that effort, a "S.C. Sea Grant Consortium Communication Support Guidelines" booklet is now in use. The guide advises Sea Grant-sponsored investigators, extension specialists, and others of the procedures and opportunities available for publication and dissemination of information derived from their work.

Program Area Advisory Groups are convened as needed to provide assistance in programmatic matters, while Institutional Liaisons provide a direct administrative link between the Consortium and each of its member institutions. Each Institutional Liaison provides a channel of communication on matters dealing with the proposal process, processing of grants and awards, and oversight of ongoing projects and programs. In addition, the Consortium's *External Procedures Handbook: A Faculty and Institutional Guide for Consortium Proposals and Projects*, first prepared in 1985 and most recently revised in 1999, provides documentation on the administrative processes the Consortium employs in managing its extramural programs, and is made available to faculty and staff at the Consortium's member institutions. To reflect the fact that the Consortium increasingly does business electronically via the Internet, the *External Handbook* will be revised during the next reporting period, and will be posted on-line.

6.2. Meeting Key Performance Requirements

The principal investigator of a Sea Grant project is responsible for all technical reporting and, in conjunction with the institutional business office, all fiscal reporting to the Consortium. In turn, the Consortium is responsible for technical and fiscal reporting to its funding agencies. Consortium professional staff frequently visits with investigators on campus to discuss project progress and needs. The investigator must submit formal requests for budget changes, time extensions, and changes in project scope to the Agency Head, through the institution's Office of Sponsored Programs, at least 60 days prior to the end of a grant period.

The Sea Grant fiscal year begins March 1 with the formal award announcements mailed to the investigator. Under separate notification, the respective institution's business office is provided with two copies of the Consortium Award Agreement, which must be read, agreed to, and endorsed by the appropriate signatory authority and the P.I. The institution must then forward one copy of the signed original back to the Consortium for its records.

Permanent equipment purchased under a Consortium project is and remains the property of the Consortium, but can remain with the investigator's institution. The Consortium does reserve the right to transfer use of this equipment upon completion of the project. However, there are provisions for the investigator and/or institution to obtain title to equipment. Final disposition of the equipment will be determined under existing statutes.

In addition to the Agreement, fiscal reporting forms that reflect the approved budgets are mailed to investigators and their respective institutional fiscal officers. The "Federal and Match Expenditure Report" is used to reflect expenditures and is sent quarterly to the Consortium's Assistant Director by the institutional business office, with the appropriate endorsement.

The policy and procedures set forth in the DOC regulations (37 CFR 401), "Rights to Inventions made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts, and Cooperative Agreements," published in the Federal Register on March 18, 1987, apply to all grants and cooperative agreements made for which the purpose is experimental, developmental, or research work. The Consortium's Assistant Director receives with the final expenditure report a completed "Final Invention Statement" if any patents were developed during the course of the project.

There are three categories of program technical reports required by the Consortium:

1. "Progress Report," prepared by the Consortium staff (with input provided by the principal investigators) 90 days prior to the end of a project year, that briefly summarizes project progress for the current effort;
2. "Annual Report," summarizing annual progress of a project which is proposed for continuation; and
3. "Final Report," prepared at the end of a project, providing a concise summary of results of the entire project.

These reports are used to ensure that the projects are achieving their stated goals within the timeframes and budgets established for them. Furthermore, the reports form the basis for reporting accomplishments in the State Accountability Report as well as the annual National Sea Grant Office

Progress Report. The reports also provide documentation that is useful in preparing for the Consortium's performance assessment by the National Sea Grant Office every four years.

Annual and Final Reports are due at the Consortium office 30 days after the project year ends.

Final reimbursement to the institutions may not be made until the Project Report is received and deemed acceptable by the Consortium office.

Category 7 – Business Results

7.1-7.5

7.1. Program Support - FY01-02

7.1.1. Consortium Funding - Current Status

For the reporting period, the Consortium experienced an increase in its non-state funding level to \$5,515,596, a \$404,685 increase over FY00-01. Overall, the Consortium's total annual budget for FY01-02 was \$6,060,044, representing a 5.0% increase over FY00-01, and a 7.4% increase over FY99-00.

State appropriations accounted for only 9.0% of the total FY01-02 budget, down from 11.3% in FY00-01. The S.C. General Assembly reduced the Consortium's FY01-02 recurring state budget from \$650,000 to \$544,000 (rounded to nearest thousand). This cut represented a 15% decrease in the Consortium's recurring state budget, which has had a huge impact on a small agency such as ours. We cannot continue current productivity levels and provide excellent service to our constituents if cuts of this magnitude continue to be required.

The S.C. Sea Grant Consortium has been very effective in securing non-state funding in support of its six program areas around which it organizes its research, education, and extension activities. Budget trends covering the period 1988-2002 are found in Table 7.1-5A and Figure 7.1-5A. The sources of funding for the current fiscal year (01-02) are shown in Figure 7.1-5B. Budget trends for the period 1997 through 2002 are shown in Figure 7.1-5C.

Figure 7.1-5 A. Year-to-year comparisons of SCSGC funding by sources.

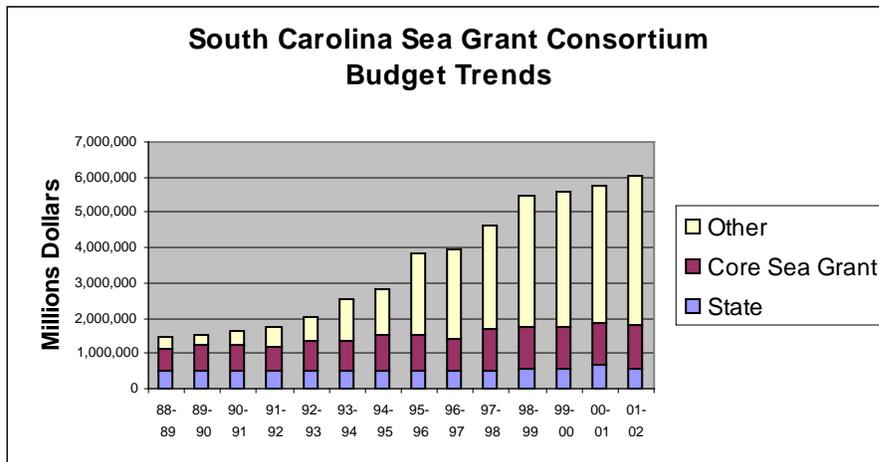


Figure 7.1-5 B. Breakout of SCSGC 2001-02 budget.

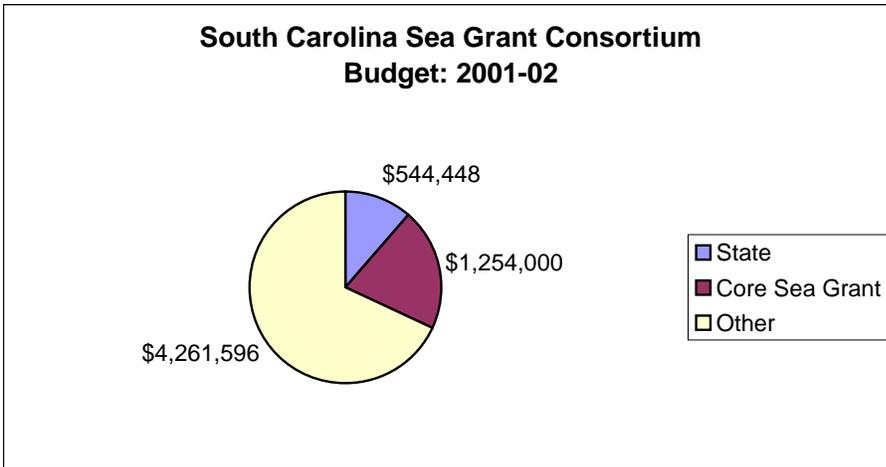


Figure 7.1-5 C. Four-year budget trend, fiscal 1997 through 2002.

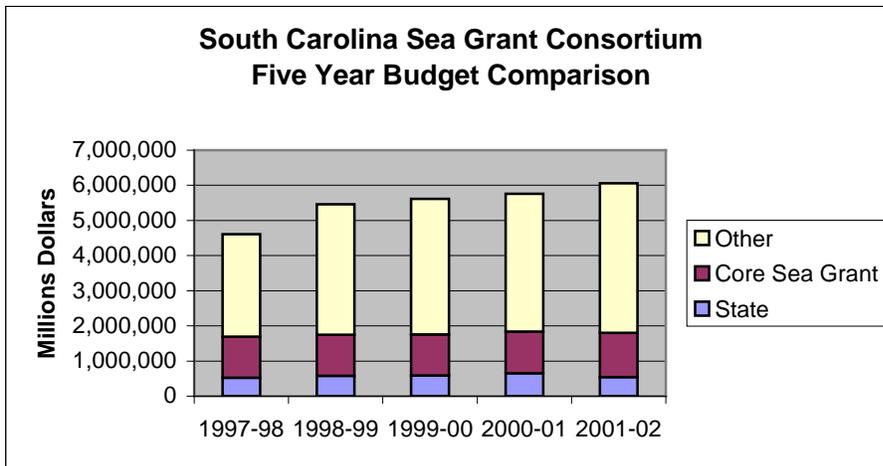


Table 7.1-5 A. Annual SCSGC budgets by funding source.

South Carolina Sea Grant Consortium

BUDGET TRENDS 1988-2002

(As of July 1, 2002)

Year	State¹	Core Sea Grant	Other²	Total
1988-89	\$483,100	\$659,300	\$339,400	\$1,481,800
1989-90	510,400	705,000	310,300	1,525,700
1990-91	518,400	725,000	386,200	1,629,300
1991-92	496,800	705,000	553,000	1,754,800
1992-93	485,500	845,000	705,300	2,035,800
1993-94	490,800	845,000	1,185,700	2,521,500
1994-95	503,900	1,015,000	1,283,100	2,802,000
1995-96	487,400	1,015,000	2,352,500	3,854,900
1996-97	496,500	896,500 ³	2,548,800	3,941,800
1997-98	528,300	1,169,000	2,916,500	4,613,800
1998-99	575,200	1,169,000	3,716,600	5,460,800
1999-00	591,536	1,169,000	3,852,430	5,612,966
2000-01	650,757	1,191,210	3,919,701	5,761,668
2001-02 ⁴	544,448	1,254,000	4,261,596	6,060,044

Note: All figures rounded to the nearest 100. Figures do not include institutional cost shares.

¹ State appropriations include B&CB-mandated reductions and B&CB adjustments such as BPI, FB, bonus and annualizations.

² Other funds include support provided by local, state, federal (other than core Sea Grant) and private sources.

³ Reduced Sea Grant core funding due to a six-month administrative budget as per National Sea Grant Office transition of grant start dates.

⁴ Figures represent funding to date. State appropriations level reflects both the 15% beginning-of-the-year and 4% mid-year budget reductions.

7.1.2. Consortium Funding - Coming Year

The Consortium's state appropriation was reduced from \$551,650 in FY01-02 to \$526,210 for FY02-03, a 5.0% (= \$25,440) reduction. For FY02-03, our projected budget breaks out as follows:

- Total funds: \$7,648,210
- General funds: \$526,210

7.2. Personnel and Administration Overview

The Consortium's fourteen full-time equivalents are evenly divided among the Consortium's Outreach, Program Administration, and Program Management activities (Figure 7.1-5D). Of these FTEs, 8.9 are funded with state monies, and 5.1 are funded with Federal/other monies. The Consortium's FTEs have remained relatively constant over time, even though the Consortium's activities have significantly expanded.

While the Consortium's programmatic activities continue to increase, administration costs remained level over time until the present state fiscal difficulties and budget cuts. Administration costs for the period 2001-02 decreased 15 percent compared to FY00-01. Since 1999-00, the Consortium has had to absorb severe budget reductions, thus, administration costs have decreased by approximately 11 percent (Figure 7.1-5 E). For FY02-03, administration costs are expected to cut by approximately \$4,500. This trend will have adverse affects on our ability to serve South Carolina's coastal needs, particularly so at a time when the state is experiencing exponential growth and development in its coastal communities. The need has never been greater to apply science to coastal imperatives.

Figure 7.1-5 D. SCSGC full-time equivalents by function.

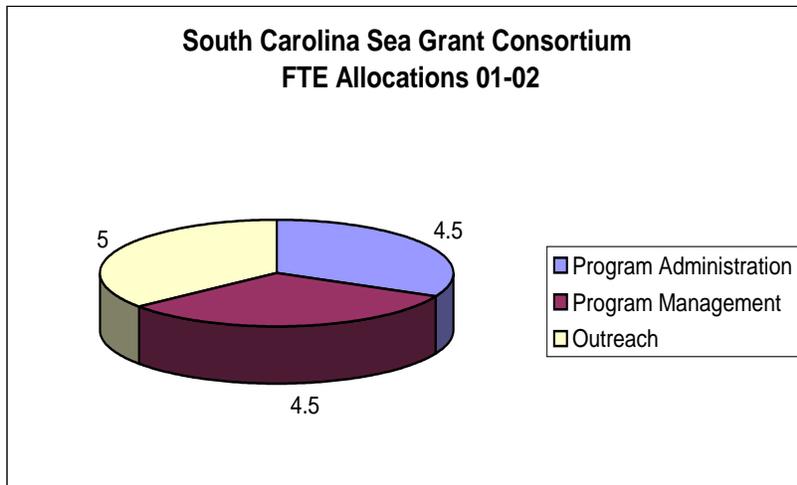
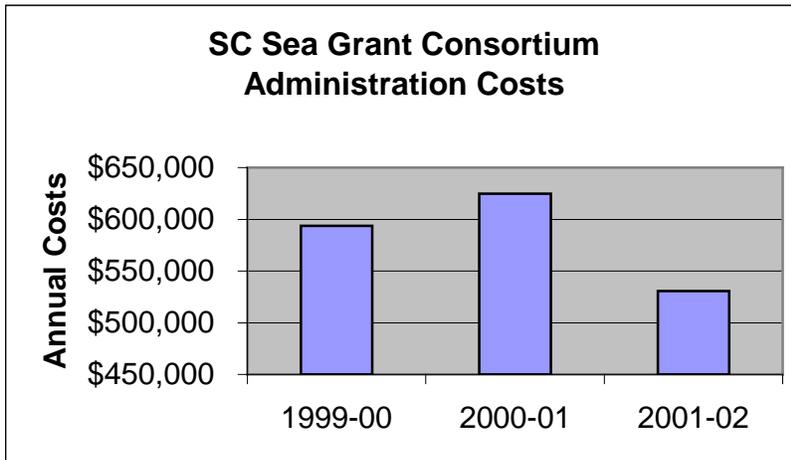


Figure 7.1-5 E. Comparison of current period administration costs to previous years.



7.3. Consortium Program and Project Summary - FY01-02

7.3.1. Overview

The Consortium received \$1,254,000 in Sea Grant core funding to support 15 research and education projects, its program management and development activities, its Communications and Information Services program, and the S.C. Sea Grant Extension Program (managed jointly by the Consortium and Clemson Cooperative Extension Service).

In addition, the Consortium was awarded an additional \$114,000 from the National Sea Grant Office as merit funding as a result of the National Sea Grant Program Assessment Team evaluation process, which rated the S.C. Sea Grant Consortium as “excellent.”

The S.C. Sea Grant Consortium continues to be competitive in securing funds through the National Sea Grant College Program National Strategic Initiative (NSI) program competitions. Of eight pre-proposals submitted for funding, four were invited to submit full proposals and one of them was funded under the Oyster Disease NSI.

The Consortium continues to seek and receive funding from a number of non-state sources. Funding was secured from the NOAA Coastal Ocean Program for the Land Use-Coastal Ecosystem Study (LU-CES; \$1.2 million) and the Urbanization and Southeastern Estuarine Systems program (USES; \$698,744), the NOAA National Ocean Service for FISHTEC (\$388,500), and the U.S. Geological Survey for the SC/GA Coastal Erosion Study (\$500,000).

7.3.2. Program Grants 2001-2002 Update

The S.C. Sea Grant Consortium competed for and secured the following coastal and marine research, education, and extension grants from non-state sources:

7.3.2.a. Program Management, Research and Outreach

- "S.C. Sea Grant College Core Program" - NOAA National Sea Grant College Program - \$1,114,200 - March 1, 2001 to February 28, 2002 (continuing) - M. Richard DeVoe (S.C. Sea Grant Consortium).
- "S.C. Sea Grant College Program - Merit Funding" - NOAA National Sea Grant College Program - \$140,000 - March 1, 2001 to February 28, 2002 (Year 1 of 4) - M. Richard DeVoe (S.C. Sea Grant Consortium).
- "S.C. Sea Grant College Core Program - Supplement" - NOAA National Sea Grant College Program - \$21,000 - September 1, 2001 to February 28, 2002 (continuing) - M. Richard DeVoe (S.C. Sea Grant Consortium).
- "National Sea Grant Knauss Marine Policy Fellowship Program" - NOAA National Sea Grant College Program - \$38,000 - February 1, 2001 to January 31, 2002 - M. Richard DeVoe (S.C. Sea Grant Consortium) - [University of South Carolina]
- "The *Communicator*: Creating a More Cohesive and Informed Sea Grant Network Through an Educational Newsletter for Internal Audiences - Phase IV" - NOAA National Sea Grant College Program - \$46,250 - September 1, 2001 to February 28, 2002 (Year 4 of 4) - Linda J. Blackwell (S.C. Sea Grant Consortium).
- "Sea Grant National Media Relations Project" - NOAA National Sea Grant College Program - \$193,619 - March 1, 2001 to February 28, 2002 (Year 3 of 4) - Linda J. Blackwell (S.C. Sea Grant Consortium).
- "Sea Grant Abstracts" - NOAA National Sea Grant College Program - \$91,900 - March 1, 2001 to February 28, 2002 (Continuing) - F. Shephard (WHOI).
- "Support for Beach Sweep/River Sweep '00 Activities" - Private Donations - ~\$20,000 - September 2001 - Linda J. Blackwell (S.C. Sea Grant Consortium).

7.3.2.b. Coastal Ocean Studies

- "South Atlantic Bight Land Use - Coastal Ecosystem Study (LU-CES)" - NOAA Coastal Ocean Program Office - \$1,200,000 - July 1, 2001 to June 30, 2002 (Year 2 of 5) - M. Richard DeVoe (S.C. Sea Grant Consortium).
- "Urbanization and Southeastern Estuarine Systems (USES)" - NOAA Coastal Ocean Program - \$698,744 - August 1, 2001 to July 31, 2002 (Year 12 of 13) - F. John Vernberg (University of South Carolina).

7.3.2.c. Ecosystem Dynamics

- "Molecular and Pathobiology Studies to Identify the Causative Agent of Juvenile Oyster Disease" - NOAA National Sea Grant College Program - \$ 60,290 - October 1, 2001 to September 30, 2002 (Year 1 of 2) - Cheryl M. Woodley and Eric R. Lacy (Medical University of South Carolina).

7.3.2.d. Climate and Hazards

- "Establishing the Operational and Management Functions of 113 Calhoun Street: A Center for Sustainable Living" - NOAA/NOS Coastal Services Center - \$90,000 - September 1, 2000 to August 31, 2002 (Year 1 [Extended] of 1) - M. Richard DeVoe (S.C. Sea Grant Consortium).
- "SC/GA Coastal Erosion Study - Phase II" - U.S. Geological Survey - \$500,000 - September 1, 2000 to August 31, 2002 (Year 2 of 5) - M. Richard DeVoe (S.C. Sea Grant Consortium).
- "National Sea Grant Coastal Hazards Theme Team" - NOAA National Sea Grant College Program - \$15,000 - March 1, 2001 to February 28, 2002 (Year 2 of 3) - M. Richard DeVoe (S.C. Sea Grant Consortium).
- "Sea Grant Technology Program Initiative to Accelerate Implementation of Retrofit Measures for Improving the Wind Resistance of Houses" - NOAA National Sea Grant College Program - \$85,000 - October 1, 2001 to September 30, 2002 (Year 1 of 1) - Timothy A. Reinhold (Clemson University)

7.3.2.e. Marine Biotechnology

- "Cooperative Program in Fisheries Molecular Biology (FISHTEC)" - NOAA National Ocean Service - \$388,500 - September 1, 2001 to August 31, 2002 (Year 9 of 9) - M. Richard DeVoe (S.C. Sea Grant Consortium).
- "Examination of Altered Gene Expression in the Mummichog (*Fundulus heteroclitus*) Due to Chronic Exposure to Estuarine Pollutants" - NOAA National Sea Grant College Program - \$125,000 - September 1, 2001 to August 31, 2002 (Year 2 of 2) - Lisa J. Bain et al. (Clemson University).
- "Environmental Marine Biotechnology - Assessing the Health of Coral Reef Ecosystems in the Florida Keys Using an Integrated Molecular Biomarker System" - NOAA National Sea Grant College Program - \$125,000 - September 1, 2001 to August 31, 2002 (Year 2 of 2) - Cheryl M. Woodley & Eric R. Lacy (Medical University of South Carolina).

7.3.2.f. Sustainable Economic Development

- "Development of Reliable Spawning, Nursery, and Juvenile Production Techniques for Commercialization of Black Sea Bass Aquaculture" - NOAA National Sea Grant College

Program - \$300,000 - September 1, 2001 to August 31, 2002 (Year 1 of 2) - Theodore I.J. Smith (S.C. Department of Natural Resources).

- “Engineered Ecosystems for High Rate Sustainable Marine Shrimp and Bivalve Production” - NOAA National Sea Grant College Program - \$208,200 - September 1, 2001 to August 31, 2002 (Year 1 of 2) - David E. Brune (Clemson University).
- “Development of Cobia Culture in the United States” - NOAA National Sea Grant College Program - \$60,459 - September 1, 2001 to August 31, 2002 (Year 1 of 2) - Theodore I.J. Smith (S.C. Department of Natural Resources).
- “Addressing the Challenges of Coastal Growth in South Carolina: A S.C. Sea Grant Consortium Initiative” - NOAA National Sea Grant College Program - \$50,000 - September 1, 2001 to August 31, 2002 - M. Richard DeVoe (S.C. Sea Grant Consortium).

7.3.2.g. Marine Education

- “SG-MSI Partnership Program: Strategic Partnership to Enhance Experiential Learning in Marine Sciences” - NOAA National Sea Grant College Program - \$45,000 - October 1, 2001 to September 30, 2002 (Year 2 of 3) - Donald I. Anadu (South Carolina State University).

7.3.2.h. Training and Outreach

- “Implementation of a Nonpoint Education for Municipal Officials Program” - S.C. Department of Health and Environmental Control - \$60,209 - July 1, 2000 to June 30, 2003 (Year 2 of 3) - M. Richard DeVoe (S.C. Sea Grant Consortium)

7.4. Consortium Program Results - FY01-02

During the reporting period, the Consortium administered research, education, and extension projects involving 97 grant actions – a 19% increase in activity compared to the FY00-01 period. This number does not include grant administration activity associated with ongoing research projects. It is important to point out that moving forward, the Consortium’s resources are being stretched thin by state budget cuts, while its level of activities and community involvement continue to grow robustly.

Consortium support was provided to many faculty and staff, as well as post-secondary students, at our eight member institutions. Between July 1, 2001 and June 30, 2002, Consortium educational programs reached approximately 33 K-12 teachers and approximately 2,300 K-12 students. Consortium communications produced nearly 70 publications, ranging from extension manuals to technical reports. From July 1, 2001 through June 30 2002, the Consortium responded to requests for 4,573 Sea Grant publications.

The Consortium’ marine educator (and Program Manager for the COASTeam program) presented at the S.C. Marine Educators Association annual meeting in March 2002. The title of the

presentation was “The COASTeam Program: New Directions!” Results of the COASTeam program are listed below under *Marine Education*.

In April 2002, a marine education advisory committee was assembled to determine how Sea Grant could best serve the people of South Carolina in the field of marine education. As a result of the meeting, work has begun on a curriculum component to accompany each issue of *Coastal Heritage*. The Consortium is discussing with the Department of Education how Sea Grant might get involved with an educational project being conducted by SCETV.

7.4.1. Research and Education

7.4.1.a. Core Sea Grant Research and Education Efforts

The S.C. Sea Grant Consortium organizes its core Sea Grant research and education efforts into six program themes: Coastal Ocean Studies, Ecosystem Dynamics, Climate and Hazards, Emerging Technologies, Sustainable Economic Development, and Marine Education.

Coastal Ocean Studies

R/CE-5 “**Nearshore Impacts of Offshore Dredging for Beach Nourishment**” – P. Work (Georgia Tech) – The researchers are in the process of quantifying impacts of proposed dredging at Folly Island, SC. The goal of the study is to investigate the impacts of dredging on the nearshore sediment transport rates. If dredging quantities are too large, or if dredging occurs too close to shore, it is possible to negatively impact the nearshore sediment transport rates and worsen beach erosion. Project methodology relies heavily on numerical models, which are currently being validated. In addition to providing answers about optimal dredging plans for the site, another goal is to provide more general recommendations regarding nearshore dredging for beach nourishment material. Several "footprints" of the dredge borrow area are now being considered to investigate best- and worst-case configurations.

R/CP-11 “**Towards Quantifying Coastal Erosion in South Carolina: Offshore Shoals as Sediment Sinks and Controls for Shoreline**” – G. Voulgaris (University of South Carolina) – This work is providing a better understanding of regional sediment dynamics critical for long-term coastal planning and engineering design purposes. Beach replenishment projects, construction of groins, seawalls and other soft and hard coastal engineering structures aim at restoring recreational beaches. Prevailing conditions (e.g., tides, currents, and winds) in these areas may be influenced by offshore topography and sediment availability. The objective of this study is to examine the relationship between an offshore shoal in the Myrtle Beach area and coastal erosion dynamics. The end goal is to characterize and quantify the potential for the shoal to be a sustainable borrow site for this economically important resort community. Specific objectives are to: (1) identify the effect of tidal and wind forcing around the shoal; (2) identify the effect of the shoal in controlling wave propagation and its role in “energetic events” (such as storms); (3) model the propagation of gravity waves for the prediction of wave characteristics; and (4) model coastal circulation over the shoal.

Ecosystem Dynamics

R/ER-19 – **“Linkages Between Cellular Biomarker Responses and Reproductive Success in Oysters and Mussels”** – A. Ringwood (SCDNR – Marine Resources Research Institute) – The research has built on previous year’s work to develop an important means of testing and validating promising cellular biomarkers. This research has the potential to yield tools that will identify individuals and populations experiencing chronic stress. The value lies in the ability to detect early warning signs so that mitigation efforts may be employed to prevent severe effects at the population and ecosystem levels.

R/ER-20 – **“Succession of Tidal Freshwater Wetlands on the Cooper River, S.C.: Ecological Functions and Management”** – J. Morris *et al.* (University of South Carolina, The Citadel, SCDNR-Freshwater Fisheries and Wildlife) – The researchers are engaged in determining best management alternatives for former rice field impoundments along the Cooper River. The habitats in these former rice fields are changing rapidly from open water fields to dense fields of cattails and other aquatic plants. The researchers have qualified the ecological values of different habitats in order to understand the ecological costs and benefits of different management practices. For example, fish habitat has been found to be better in fields that are maintained in an open state. Researchers have shown that the best course of action is to achieve a mixture of habitat types in order to maximum biodiversity and maintain a variety of ecosystem functions. Several meetings have been held with local interest groups to discuss the findings, and a special session on the ecological values of impoundments was held at the 2001 international meeting of the Estuarine Research Federation.

R/ER-21 – **“Development of a Cross-Linked Copepod Life-Cycle and Molecular-Genetic Assay for Examining Exposure and Effects of Coastal Use Insecticides”** – J. Staton (University of South Carolina) – An acute toxicity test with an LC95 concentration of fipronil was performed on *Amphiascus tenuiremis* to determine if a small cohort of individuals could survive and be cultured for future toxicity testing and genetic analysis of fipronil resistance. These cultures are now well established in a flow-through sediment/seawater system. In addition, a full life-cycle microplate bioassay with *A. tenuiremis* has been developed to test for sublethal effects of a suite of pesticides, including fipronil. This bioassay method will be helpful in determining if *A. tenuiremis* displays any genetic resistance to fipronil. Individuals from the fipronil-exposed cultures have been collected for genetic analysis in order to compare their GABAA beta-like receptor gene sequence to that of non-exposed individuals. At this time, we have successfully isolated a GABAA beta-like receptor fragment from cDNA and are currently cloning and sequencing additional fragments to increase replication and to gain a more detailed picture of the gene. This information will allow us to use PCR techniques to amplify the GABAA beta-like receptor gene from individual *A. tenuiremis* and compare genetic variation between exposed and non-exposed populations leading to its use as a potential biomarker of exposure in the wild.

R/ER-22 – **“A Novel Foraminiferal-Based method to Determine Sublethal Toxicological Risks of Metal Mixtures in Estuarine Sediments”** – T. Shaw (University of South Carolina) – Exposure-toxicity risk assessment tools are being developed based on the bioaccumulation of heavy metals in the foraminiferan *Ammonia beccarii* and concordant toxic response of the common copepod, *Amphiascus tenuiremis*. The goal is to develop a linked-species model that relates bioaccumulation to exposure risk. During the reporting period researchers set up a foraminifera

culture system and readied the sediment microcosms for toxicity studies. A field sampling program also is underway.

R/ER-23 – **“Groundwater-Derived Nitrogen and Phosphorous Inputs to the Satilla River Estuary: Impact on Coastal Ecosystem Health”** – W. Moore (University of South Carolina) – The serious decline in coastal water quality and ecosystem health resulting from coastal development is under study. Development increases anthropogenic wastes, leading to eutrophication and resulting ecological damage, such as fish kills and harmful algal blooms. Understanding the causes of this damage and documenting an ecosystem’s response are key objectives. The work will provide answers to basic questions about coastal ecosystem health.

Climate and Hazards

R/CE-6 – **“Determination of Hurricane Wind Loads and Wind Effects”** – T. Reinhold (Clemson University) – Technologies for monitoring wind loads, developed by a Sea Grant Industrial Fellow, are being used to better understand wind loads on low rise buildings (such as residential homes) in the convective eyewall regions of hurricanes. Doppler Radar research indicates complex wind structures exist. Understanding them will improve the ability of government and industry to establish cost effective mitigation measures.

Emerging Technologies

R/MT-4 – **“Remediation of Haloorganic Pollutants with *Spartina alterniflora*”** L. Marton (University of South Carolina) – By developing a molecular genetic characterization of the haloorganic degradation activity of cordgrass, *Spartina alterniflora*, the research team expects to pave the way for the generation of super-dehalogenator plants by conventional breeding and gene transfer. The plant will then be used for new remediation technologies. Such a genetically engineered plant may play a significant role in the remediation of pollutants in estuarine and marsh habitats. These improved transgenic organisms are targeted for use in soil or water bioremediation in sites contaminated with halogenated organics.

R/MT-5 – **“Marine Evolutionary Ecotoxicology – Using Genomics and Population Genetic Theory to Infer Impact of Contaminants on Natural Populations”** – J. Quattro (University of South Carolina) – The inland silverside, an estuarine “sentinel species,” is being used to measure population genetic responses to contaminant history across select sites with various qualitative and quantitative levels of contamination. The researchers are using theoretical and empirical population genetics to determine chronic and subtle effects of pollutants on marine and estuarine resources resulting from anthropogenic activities. They are now developing indicator alleles that express specific levels of habitat quality and serve as molecular probes, or biomarkers, for assessing effects of environmental stressors on organisms. One product will be genetic assays to identify exposure levels of contaminants of concern in South Carolina.

R/MT-6 – **“Development of cDNA Micro-arrays for Analysis of Environmental Stressors and Disease in Local Populations of Atlantic White Shrimp”** – P. Gross (Medical University of South Carolina) – cDNA micro-arrays are being used to analyze genetic response of litopenaeid shrimp to a variety of stressors. The research looks at functional genomic data in relation to various

environmental stressors and analyzes these data using bioinformatic-based approaches. Another goal is to train a new generation of scientists in these methods. Two graduate students are now involved in generating a comprehensive micro-array for stress analysis. A third student is developing a suite of web-based bioinformatic tools for organizing, analyzing and disseminating the collected data from these efforts.

Sustainable Economic Development

A/CG-1 – “Addressing the Challenges of Coastal Growth in South Carolina: A S.C. Sea Grant Consortium Initiative” – R. DeVoe (S.C. Sea Grant Consortium) – The Consortium’s “Coastal Growth Initiative” seeks to (1) develop a coordinated approach to outreach education related to coastal land use impacts on natural resources; (2) establish a support framework to enhance the SC NEMO program; (3) develop outreach education programs to offer advice and assistance to coastal communities in developing comprehensive land use plans consistent with environmental health and resource conservation; and (4) enhance delivery of information developed through Sea Grant land use research programs such as LU-CES (see below).

R/SE-1 – “Impacts of Stocked Red Drum on the Recreational Fishery in Murrell's Inlet: Phase I Biological Considerations” – T. Smith (SCDNR – Marine Resources Research Institute) – This project will examine the potential of increasing the red drum population in Murrell's Inlet, one of the most heavily developed and fished coastal areas in SC. Based on landings information, abundance of red drum in this estuary appears low. By stocking fish it should be possible to determine if there is sufficient habitat to support a larger population and whether there's a recruitment bottleneck limiting the number of fish entering the system. Brood stocks have been collected and are being spawned. Fry are being stocked in ponds and approximately 500,000 juveniles are expected to be available in September/October to stock the Murrell's Inlet estuary. Fish will be marked prior to stocking and local anglers are expected to assist in the stocking and assessment efforts.

R/A-33 – “Application of Emerging Marine Water Treatment Technologies for Use in Zero Exchange Biosecure Super-Intensive Shrimp Production Systems” – C. Weirich (SCDNR – Marine Resources Research Institute) – The research team is examining future expansion and development of the U.S. commercial shrimp farming industry by the application of zero exchange, biosecure, super-intensive shrimp production systems. Extensive and semi-intensive culture systems simply are not competitive in the open marketplace. Through support of the USDA US Marine Shrimp Farming Program, the researchers have developed a super-intensive production system. They are now devising filtration systems to determine their effectiveness in the removal of carbon and nitrogen, allowing for increased stocking densities.

Marine Education

E/O-16 – “COASTeam Aquatic Workshops – A School-Wide Approach to Integrating Marine and Aquatic Concepts into the K-5 Science Curriculum” – L. Sautter (University of Charleston, SC) – The COASTeam marine education program addresses ongoing efforts to meet the needs of South Carolina elementary teachers for standards-based multi-disciplinary science criteria. For the reporting period, 2,300 K-12 students were taught

by teachers who completed COASTeam training. In June 2002, COASTeam partnered with the National Science Foundation's "Project Inquiry" to train middle school teachers in the Charleston and Berkley County school districts.

7.4.1.b. National Sea Grant Projects

E/C-1 "**Sea Grant National Media Relations**" – B. Sherman (National Sea Grant Office) - The Sea Grant National Media Relations Project is an ongoing effort to facilitate the transfer of Sea Grant research and outreach information from individual state Sea Grant programs to national and regional news media and other interested audiences. The project also completely redesigned the main Sea Grant news center Web site within the past year and is preparing a third edition of "Sea Grant's Guide to Coastal Science Experts." The project is being conducted primarily by the National Media Relations Coordinator, with assistance of investigators from Washington, Maryland, and South Carolina Sea Grant programs, and overall supervision by a committee representing the administrative, extension and communication components of the Sea Grant network nationwide.

E/C-2 "**Sea Grant Abstracts Production and Publication**" – F.C. Shephard (Woods Hole Data Base, Inc.) – Now in its sixteenth year, Sea Grant Abstracts has clearly established itself as a valuable tool for aiding Sea Grant's goals in technology transfer, education, and development. Hard copy and electronic versions reach complementary readerships.

R/CH-2 – "**Coastal Hazards Theme Team**" – (R. DeVoe & R. Bacon (S.C. Sea Grant Consortium) –

A/NO-1 "**Sea Grant Haznet**" - R. Bacon (S.C. Sea Grant Extension Program) - With support from NOAA's Coastal Services Center, developed a Sea Grant coastal hazards Web site www.haznet.org, and the architecture and graphics are presently being re-designed. The HazNet Web site will become the Web site of the Sea Grant Hazards Theme Team. Discussions have been initiated with the National Sea Grant Office and the USDA to conclude a cooperative agreement between HazNet and EDEN for resource sharing and to create an expanded hazards outreach education network.

7.4.1.c. Other Grants and Activities

R/FT-1 "**Cooperative Institute for Fisheries Molecular Biology**" - DeVoe, et al. (SCSGC, University of South Carolina, SCDNR-MRRI, NOAA/NOS/Charleston Lab) - The 2001-2004 Comparative Institute for Fisheries Molecular Biology (FISHTEC) research project continues to enhance knowledge about the population biology of commercially important pelagic fish species, such as tunas and swordfish. PCR-based technologies are now being used to better understand shark population genetics as these fishes become threatened. Other research is beginning to focus on issues related to "Ecologically Significant Areas" (fish habitats). Southern flounder, croaker and scup have been added to the growing list of species under investigation. Several manuscripts have been accepted for publication in peer-reviewed journals.

R/GS-2 "**South Carolina/Georgia Coastal Erosion Study**" - DeVoe, et al. (SCSGC, University of Charleston, S.C., Coastal Carolina University, Clemson University, University of South Carolina,

Skidaway Institute of Oceanography, Georgia State) - Investigators from five South Carolina and Georgia research institutions and the U.S. Geological Survey, with funds provided through the USGS Coastal and Marine Geology Program, are continuing work towards the development of a conceptual model of the sediment budget for the South Carolina coast. Phase II of the Coastal Erosion Study is now in its second year, providing funding for eight discrete research and data management projects. In addition, investigators are pursuing new avenues of funding. In the spring of 2003 the study team will present results and papers at a major conference of coastal engineers and geologists in St. Petersburg, Florida.

R/COP-7 "The South Atlantic Bight Land Use - Coastal Ecosystem Study (LU-CES)" - DeVoe and Kleppel (SCSGC, University of South Carolina, Marine Resources Research Institute-SCDNR, Clemson University, University of Georgia, Georgia Institute of Technology, Skidaway Institute of Oceanography) – The study is now completing its second year of fieldwork. LU-CES scientists and program managers participate in regular strategy meetings to fine-tune the integrated research program, coordinate fieldwork, develop and refine field research efforts, and present and share research information as it is generated. LU-CES efforts are being conducted by five research teams (Physical Attributes and Hydrology; Geochemistry and Nutrients; Toxic Contaminants and Ecological Effects; Land Use; and Database Management/GIS/Modeling) and an education/outreach team, consisting of more than 40 scientists, students, and staff.

Since last year's accountability report, a new and improved, interactive Web site (www.lu-ces.org) was launched. It is a data and information hub to facilitate the exchange of data, findings, and relevant products among participating scientists and with resource managers and community leaders responsible for making land-use decisions. In June, LU-CES principal investigators, graduate students, and user-panel members met jointly with the Beaufort County SAMP at Spring Island, S.C., to review progress and discuss future research plans.

7.4.2. S.C. Sea Grant Extension Program

7.4.2.a. Administration and Management

A revised S.C. Sea Grant Consortium/Clemson University Extension Service Memorandum of Understanding was formally signed on March 26, 2001 to replace the outdated 1987 document. Under the new MOU the S.C. Sea Grant Extension activities are more closely integrated with the extension activities of Clemson University, resulting in greater programmatic synergies, efficiencies and effectiveness.

7.4.2.b. Staffing

The Consortium has two vacancies in its Extension Program. It is presently seeking to hire a Coastal Hazards Specialist by year-end 2002 to fill a vacancy created in the spring of 2002. The Coastal Hazards Specialist will plan, develop, and deliver technical and non-technical outreach programs related to hazard resistant construction/retrofit; coastal hazards awareness; and hazard mitigation strategies. The Consortium has begun a program planning and review process, which will lead to hiring a specialist for its Coastal Recreation and Tourism program. The target date is spring 2003.

7.4.2.c. Program Update

As a group, the Extension Program staff published, or has *in press*, 23 technical papers. The staff made 36 key presentations, workshops, and exhibits during the reporting period.

The following are selected examples of recent S.C. Sea Grant Extension Program activities and accomplishments by programmatic (specialist's) area.

Coastal Hazards

- Construction and outfitting of *113 Calhoun Street: A Center for Sustainable* has been completed. During the past year, the design and construction of four new educational exhibits has been completed.
- During the reporting period, the *Center* hosted 590 visitors. Its Web site had 11,623 visits by an estimated 6,415 individuals. A virtual tour of the house is available at the Center's Web site: www.113calhoun.org.
- Conducted homeowner-training class for 13 Habitat for Humanity homeowners.
- Conducted a Coastal Erosion workshop for 28 municipal officials in Myrtle Beach.
- Provided hurricane and home protection information for 150 people at the Folly Beach Town Hurricane Meeting.
- Distributed hurricane home protection and other hazards-related literature to over 2,000 people at the Citadel Mall Mitigation Expo in Charleston, and 1,200 people at the Home Depot Mitigation Expo in Bluffton, SC.
- Completed a *Consumer Guide for High Wind Construction*. A technical manual for high wind construction is in the works.

Aquaculture

- Continues to serve on Shrimp Aquaculture Effluent Sub-Committee of the U.S. Joint Sub-Committee on Aquaculture to draft alternatives in the development of new National Pollution Discharge Elimination System (NPDES) regulations.
- Provided aquatic weed control training to appropriate constituents. An Aquatic Weed Control presentation was given to the Lowcountry Pond Clinic. Three Continuing Certification Hours for Aquatic Weed Control Training was given to S.C. DNR fisheries biologists.
- Organized, chaired and coordinated the development of Continuing Education Hours for Aquatic Pesticide Applicators Workshop/SCAPMS. South Carolina applicators received eight CCHs.
- Prepared an Integrated Pest Management Plan (IPM) for International Paper's Georgetown-to-Pee Dee River 27.5-miles canal. Collaborated with SC DHEC and the US Army of Corps of Engineers as well.
- Continues to serve as a member of a South Carolina Department of Natural Resources committee working on modifications to South Carolina aquaculture regulations.
- Began development of a management plan for aquatic weed control to protect wood stork nesting habitat in collaboration with the US Fish and Wildlife Service.
- Continues to serve on the Aquaculture Committee of the Atlantic States Marine Fisheries Commission to formulate aquaculture policy for the South Atlantic region on topics related to "user conflicts and water allocation", "research, extension and stakeholder interaction" and "aquaculture, disease and therapeutics."

- Received Clemson University Board of Trustees Award for Faculty Excellence.

Coastal Recreation and Tourism

- Co-sponsored the Tidelands Birding Festival held at sites along the Grand Strand in February 2002.
- Continue to work with the National Parks Service supplying the *Gullah Coastal Heritage* magazine issue to their African-America cultural interpretation centers in national parks.
- Continue to serve on the South Carolina Nature Based Tourism Association as a technical advisor.

Environmental Quality

- Continuing to implement a statewide NEMO (Nonpoint Education for Municipal Officials) water quality program in partnership with the S.C. Department of Health and Environmental Control, the University of South Carolina, and others. During the reporting period, the Pee Dee watershed was completed. NEMO is now being implemented in the Saluda and Seneca watersheds, and work will begin with the BCD COG to implement NEMO in Berkeley, Charleston, and Dorchester counties.
- The “Coast-A-Syst” project is a cooperative venture of SCSGEP, Clemson Extension and other organizations under the leadership of the SCSGEP Environmental Quality Specialist. It consists of practical environmental self-assessment for homeowners. The “Coast-A-Syst” team conducted a demonstration project at the Grand Strand Home Show in Myrtle Beach.
- To date, over 500 people have undergone training or been introduced to the “Coast-A-Syst” program. A Web site has also been developed: www.clemson.edu/sccoastasyst.
- “Coast-A-Syst” train-the-trainer programs have been held for Master Gardeners and County Extension Agents to conduct “Coast-A-Syst” programs in their regions. Tool kits on CD-ROM are distributed at these training sessions.
- Collaborating with the SC Department of Health and Environmental Control (SCDHEC) and the Office of Ocean and Coastal Resource Management (OCRM) to implementing a pilot program in septic system inspection and management.

Coastal Communities

- Initiated the development of strategies with SCDHEC-OCRM staff to analyze all local government comprehensive land use plans in the eight (8) coastal county area of South Carolina.
- Served on the Sustainable Coastal Communities Initiative Advisory Committee, which reviewed and selected four (4) project proposals to fund related to storm water management, wetland restoration, and developing greenway networks.
- Collaborated with members of the Sustainable Economic Resources Action Committee to address growth and development strategies for the Sewee to Santee Economic Development Initiative. The Initiative will provide concrete action steps to help Awendaw, McClellanville, and the surrounding rural areas strengthen economies, protect the environment and meet community needs.
- The South Carolina NEMO program informs and educates local officials on how local land use decisions and polluted runoff are inextricably linked, in an effort to increase consideration of nonpoint source pollution in land use policy decisions. The Coastal Communities specialist, in conjunction with the Coastal Environmental Quality specialist, started an extensive education program including workshop presentations in the designated watersheds.

- Contributed to the design and development of the SC NEMO Web site (www.scseagrant.org/scnemo.htm).

7.4.3. Communications and Information Services

During FY01-02, the Consortium's Communications and Information Services group wrote and produced more than 66 publications, and had 240 media placements.

7.4.3.a. Coastal Heritage

Four issues of *Coastal Heritage*, the Consortium's premier publication, were produced. Major topics included advocacy organizations, biological invaders, coastal growth, and coastal history.

7.4.3.b. Key Products

Other notable communications products include the new consortium brochure that highlights program activities, and a 113 Calhoun Street marketing piece that was created to attract more visitors to the Sustainability Center.

7.4.3.c. S.C. Sea Grant Consortium Web site

The Consortium's staff continues to improve the SCSGC Web site (www.scseagrant.org) by enhancing its interactive features, making the site more assessable to people with disabilities, and keeping the information current. The site features an array of information about coastal and marine issues for researchers, educators, students, and the public.

7.4.3.d. Beach Sweep/River Sweep

Beach Sweep/River Sweep, South Carolina's largest one-day clean-up, was held September 15 2001, and celebrated its 13-year anniversary. Organized and coordinated by the Consortium, the S.C. Department of Natural Resources, and Palmetto Pride, Beach Sweep/River Sweep 2001 engaged over 7,000 volunteers, who picked up over 35 tons of trash.

7.4.3.e. Communications Awards and Recognition

Each issue of the *Coastal Heritage* quarterly magazine focuses public attention on a coastal theme selected in accordance with the Consortium's program areas and current events on a state or national level. In addition to its biennial mailing list, the Consortium receives regular feedback, both written and oral, on the magazine. Among those who have noted the valuable contribution *Coastal Heritage* makes toward raising public awareness and understanding are civic/business groups, the news media, educators, and other agencies involved in managing natural resources. The magazine has won numerous awards in past years. In FY01-02 the magazine received the following award:

- 2002 APEX Award of Excellence

7.5. Student Fellowships

7.5.1. Dean John A. Knauss Marine Policy Fellowship

The National Sea Grant College Program sponsors the Dean John A. Knauss Marine Policy Fellowship Program to advance marine-related educational and career goals of participating students and to increase partnerships between universities and government. The fellowship provides a unique educational experience to students who have an interest in ocean, coastal, and Great Lakes resources in the national policy decisions affecting those resources. Each year, fellowships are awarded on a competitive basis at the national level. Selected Knauss Fellows are hosted by the legislative and executive branches of federal government.

For FY01-02, one of S.C. Sea Grant Consortium's applicants was awarded this prestigious fellowship, and she will begin her one-year assignment in the Executive Branch effective February 1, 2003. During the selection process we interviewed six applicants and recommended four to the national office. Two of the four were selected as finalists, but one applicant decided to pursue a different career path. Of the six candidates, five were from the University of Charleston's masters programs in environmental studies and marine biology, and one from the University of South Carolina's graduate program in marine science

7.5.2. Coastal Management Fellowship

The National Oceanic and Atmospheric Administration (NOAA) Coastal Management Fellowship provides on-the-job education and training opportunities for postgraduate students in coastal resource management policy and also provides specific technical assistance for state coastal resource management programs. The program matches highly qualified students with hosts around the United States in state coastal zone management (CZM) programs.

For FY01-02, the S.C. Sea Grant Consortium's applicant in a nationwide competition was selected and matched with a CZM program. She is completing her master of science degree in the University of Charleston's Environmental Studies program and will be working in the following state CZM program:

- Connecticut's CZM project entitled "Public Access to Coastal Environments (PACE)." The outcome of this project is the development of a public access database and Web site. The Fellow will develop a comprehensive GIS database of shoreline property ownership classification and use it to help the state organize, analyze, and share information related to public access to coastal environments in Connecticut.

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