

Science Serving Florida's Coast



“Performance Counts”

Annual Progress Report for 2005

May 2006

Technical Paper 155



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1.0 INTRODUCTION

The Florida Sea Grant College Program is committed to enhancing the practical use and conservation of coastal and marine resources for a sustainable economy and environment in a state whose coastline stretches for over 1,300 miles. 2005 represents the 35th year for Sea Grant in Florida. The program operates through a statewide, research, education and extension partnership of state and federal agencies, businesses and citizens. All eleven public universities, three private universities, and two private non-profit research laboratories constitute this virtual college without walls. The University of Florida serves as the host campus. Florida Sea Grant is one of 31 Sea Grant programs nationwide that together form the National Sea Grant College Program as authorized by federal legislation. It is the only university-based, statewide coastal research, education, extension/outreach and communications program in Florida.

This annual progress report for 2005 is the eighth annual progress report submitted by Florida Sea Grant under the program evaluation procedures adopted during 1998 by the National Sea Grant College Program. This report covers the year 2005, but some historical data are included to provide baseline information for subsequent annual progress reports.

Florida Sea Grant had 10 different NOAA grants in effect during 2005. This annual report covers work completed and ongoing under all 10 grants.

Florida Sea Grant awards from NOAA activities during calendar year 2003.			
Number	Keyword Identifier	Start Date	Current End Date
NA16RG-2195	Omnibus Research, Extension, Communications, Management	02/01/02	05/31/07
NA16RG-2198	Oyster Decontamination	03/01/02	02/28/05
NA16RG-2558	Coastal Storms Project #8 (E/T-10)	03/01/02	05/31/06
NA17RG-2992	South Florida Marine Ecosystem Outreach E/T-9	09/01/02	09/30/07
NA04OAR4170027	Knauss Fellow E/ST-29	02/01/04	01/31/05
NO04NOS4730008	E/T-14 Manatee	04/01/04	03/31/07
NA05OAR7171024	Knauss Fellow E/ST-30	02/01/05	01/31/06
NA05OAR4171029	Knauss Fellow E/ST-31	02/01/05	01/31/06
NA05OAR4171036	Knauss Fellow E/ST-32	02/01/05	01/31/06
NA05OAR4170156	Growout Technology Production for Cobia R/LR-A-42	06/01/04	05/31/06

Every Florida Sea Grant activity and accomplishment reported on in this progress report satisfied three simple but tough criteria: 1) it was based on a strong rationale; 2) it demonstrated scientific or educational merit; and 3) it produced results that are clearly useful and applicable in industry, management or science. A number of core values allow Florida Sea Grant to deliver results based on these criteria: 1) **Excellence**; Research was funded on a competitive basis, with scientific merit as the most important criterion. Extension programs were based on reviewed faculty plans of work. Communications efforts use the latest technology to achieve maximum output, visibility and citizen receipt of our science-based information; 2) **Participation**; High value was placed on the involvement of a large number of participating institutions in research, education and extension programs. Graduate student involvement was high and a diverse male and female faculty was involved, from assistant to full professors; 3) **Accountability**; Both external and internal processes were used to measure a wide range of achievements. These included tracking the scientific publication output of faculty and students, understanding the contribution to society of scientific discovery, measuring the way citizens receiving educational programs changed their behavior, and determining the economic impact or level of new business activity resulting from a research project; 4) **Connection with Users**; A strong advisory process was used to define research priorities, to plan extension programs, and to measure the impact of programs. It was also used to build public and private support for Florida Sea Grant; 5) **Partnerships**; Faculty, students, and citizens all benefited from functioning in a partnership mode. Scientific results and education projects reached greater success levels and were implemented when partners, from agencies to businesses, provided financial support to an activity.

The 2005 annual progress report in the context of Florida Sea Grant's four-year cycle strategic plan, implementation plan and annual work plan.



¹ Representation of this document on the timeline.

2.0 ACCOMPLISHMENTS AND BENEFITS

Economic Leadership

Goal 1: Create Products and Processes from Florida's Coastal Resources Using Marine Biotechnology

- 1.1 There is a general lack of understanding of marine biotechnology by non-scientists. The goal of the project is to draw upon Sea Grant's vast national network of research, education and outreach resources to build an effective marine biotechnology website. It will be an effective tool for increasing awareness of this field among government officials, policymakers, students, educators, scientists, journalists, the general public, and industry professionals.
(Masterson/Pomponi/Clark/Reed: E/T-11)

A section introducing the marine biotechnology website will describe how marine biotechnology affects society in regard to human health, quality of life, economy, natural resources, and the state of the environment. Extensive introductory content has been researched and written relating to the two key areas ("Oceans and Human Health" and "Environmental Issues"). A number of research projects have been profiled in articles that have so far focused mainly on the institutions where video interviews have been taped. These articles have been split into separately linked sections for web-friendly reading. In addition, two "success story" articles covering the discovery and development of individual drugs derived from marine organisms have been written. Three video interviews have been conducted. The scope of this objective expanded to include clear descriptions of the key analytical techniques used in marine biotechnology.

- 1.4 To promote industry education and engagement, and media awareness of Florida marine biotechnology opportunities and constraints, and work will continue with BioFlorida and other stakeholders to implement a business plan for this subject. (Seaman)

A marine biotechnology business plan for FSG was drafted and circulated for review late in 2005. The revised plan will be implemented in 2006. Initial industry response was favorable and supportive. The National Marine Biotechnology Briefing was organized and held in Washington, D.C., with over 10% of Congressional offices in attendance (the largest briefing held by co-sponsor BIO). The FSG publication, "The Promise of Marine Biotechnology in Florida," won an Award of Distinction from the Florida Public Relations Association.

- 1.5 To promote faculty cooperation and exchange to enhance research and training, a statewide marine biotechnology listserv will be continued, planning for the fifth statewide summit will continue, and venues to disseminate technical results will be explored nationally. (Seaman)

FSG organized an invited session on marine-derived medicines at the International Conference on Industrial Bioprocessing, conducted by the Biotechnology Industry Organization, in addition to continuing the items listed here. The associate director served on the planning committee for the Pacific Rim Summit on Industrial Biotechnology (for 2006).

- 1.6 To promote awareness and understanding of marine biotechnology by Extension faculty, the possibility of establishing in-service training and a major program in this area will be explored. (Seaman)

The associate director served as de facto specialist for this subject, due to lack of funding for a full-time faculty position.

Goal 2: Determine Production and Management Techniques Which Make Florida's Fisheries Sustainable and Competitive

2.5 The FY02 National Sea Grant federal appropriation required the enhancement of Sea Grant's fisheries extension program.

2.5.1 Florida Sea Grant will increase the overall amount of its Sea Grant fisheries extension activity through its Fisheries Work Action Team.
(Spranger/Adams/Otwell/Jacoby/Agents: E/FE-FSG)

Initiated discussions with Bill Lindberg regarding incorporating artificial reefs as a part of fisheries extension activities. (Jacoby)

Funds were provided to support and enhance programs that focused on artificial reefs, recreational scallops, shrimp fisheries, ethical angling and stewardship and fisheries buy-out options. (Spranger)

2.5.2 Florida Sea Grant will participate in a regional activity for the Gulf of Mexico states by participation in the sustainability of the Gulf of Mexico shrimp industry.
(Spranger/Adams/Agents: E/FE-GM)

See Task 2.7.

2.5.3 Florida Sea Grant will work as a member of the South Atlantic Regional Fish Extension Project team that will address the topic of fisheries management.
(Spranger/Jacoby/Adams/McGuire: E/FE-SA)

The South Atlantic Regional Fish Extension Project dealing with marine protected areas was put on hold pending further decisions by key management agencies. (Jacoby)

Worked with program leaders in SE Atlantic to coordinate regional fishery management issues. Assigned specialist to participate as member of South Atlantic Regional Fish Extension team who coordinated a meeting of federal and state agency personnel to identify needs and opportunities for collaboration. (Spranger)

2.6 The FY03 National Sea Grant federal appropriation continued the required enhancement of Sea Grant's fisheries extension program. Florida Sea Grant will hire two new fisheries oriented county faculty (Bay, Collier) and increase its recreational fishery extension program activity by one-half FTE. (Spranger/Holland/Floyd: SGEP-13-FE)

- Participated in a FSG extension agent 2 day workshop (February) to discuss current issues facing fisheries in Florida, including tagging, catch and release and ethical angling issues (Holland/Floyd).
- Held a workshop in Miami-Dade county (March) to discuss recreational fisheries management issues associated with multi-cultural anglers who were primarily Hispanic. (Holland, Floyd). Presented a summary of the findings at the October FSG agents meeting (Makopondo).
- Attended New Orleans meeting of the Gulf of Mexico Fisheries Management Council Socioeconomic Panel (June) to comment on Red Snapper issues, especially on topics related to the Florida for-hire industry (Holland).
- Held multiple conversations with representatives of Florida's for-hire sector about greater engagement with them, but they declined. Provided assistance with a proposal they were

submitting to NMFS to do Gulf-wide for-hire sector survey. They expressed gratitude for assistance with this proposal (Holland).

- One FSG member attended the inaugural meeting of the Gulf of Mexico Recreational Fisheries Implementation Team, held by NOAA-NMFS-SERO in St. Petersburg, FL (Holland).
- Floyd resigned from University and Dr. Richard Makopondo was recruited to replace Dr. Floyd to continue with project (Holland).
- Attended a regional meeting for the Southeast Atlantic Sea Grant network in Georgetown SC (Holland/Makopondo).

Secured county funds and worked with extension administration to create a new Sea Grant fish extension agent position for Bay County. Agent was hired in Spring of 2005. Secured county funds and worked with extension administration to create a new Sea Grant fish extension agent position for Collier County. Agent will be hired in Spring of 2006. Created partnership with University of Florida Department of Tourism, Recreation and Sport Management to develop a recreational fishery extension project. (Spranger)

- 2.7 All commercial shrimpers in Florida will become aware of the USDA Trade Adjustment Assistance program and decide whether to make an application and claim with USDA in an effort to seek relief from the market impacts of imported, aquacultured shrimp on the prices received for out-of-state landings. (Adams)

Florida was not eligible for TAA assistance on shrimp landings that occurred in Florida. However, they were eligible for benefits on out-of-state landings. Worked with USDA, Farm Service Agency and Florida Wildlife Research Institute to notify all commercial shrimp harvesters in Florida and all wholesale shrimp dealers regarding the process of receiving benefits on those out-of-state landings. Approximately two dozen individuals received training and benefits in Escambia County. (Adams)

- 2.8 The Gulf and South Atlantic Foundation-funded project designed to determine the fair market value for a commercial shark permit and vessel in Florida will be completed (via a one-year extension). One hundred (100) commercial shark vessel owners will become better informed of the “fair market value” for a vessel and/or a federal shark permit, and the bid development process associated with a buyback program. (Adams/Larkin)

The study to determine a fair market value for commercial shark vessels and/or permits was completed. The study suggested that a vessel buyout may not be feasible, but a permit reduction program may have some merit. The findings of the study were utilized by the Gulf and South Atlantic Fishery Foundation in assisting the industry in further conceptualizing a hypothetical buyout program. (Adams)

- 2.10 Continue to provide scientific input to the Gulf of Mexico Regional Fishery Management Council. Attend various meetings and provide economic input in the derivation and selection of management options. Twenty-five (25) fishery managers will become more aware of the role of economics in the process of sustainable fishery management.

2.10.1 Serve on Scientific and Statistical Committees (Adams/Gregory)

Attended two meetings of the Scientific and Statistical Committee of the Gulf of Mexico Regional Fishery Management Council (Tampa and New Orleans) and provided input into the economic consequences of proposed regulatory changes to the reef fish, coastal pelagics and shrimp fishery management plans. (Adams)

Elected vice-chair of the SSC and the Gulf Council awarded me a certificate of appreciation and a service plaque for eleven years of service on the Finfish Stock

Assessment Panel. In addition, (1) Attended two Scientific and Statistical Committee meetings and commented on assessment reports and management options for the red snapper, king mackerel, and spiny lobster fisheries and on an Individual Fishing Quota proposal for red snapper; (2). Organized a workshop in Key West on Gulf essential fish habitat issues and testified at a subsequent public hearing on proposals to make Pulley's Ridge a marine reserve. The workshop and public hearing was also discussed on a local radio talk show. Invited participant by the Gulf of Mexico Fishery Management Council to participate in an Ad Hoc Grouper IFQ Panel for the Gulf of Mexico that will be comprised of scientists and fishermen. The use of IFQs, or Individual Fishing Quotas, is considered by many to be the major future management approach to regulating commercial fishing harvest at sustainable levels with minimal social and economic disruption to fishing communities; (3). Invited participant by the Gulf of Mexico Fishery Management Council to participate in an SSC Task Force Review Panel (SSC = Scientific and Statistical Panel) charged with reviewing SSC function and structure and making recommendations for improvement (Panel consists of four Council members and chair and vice chair of the SSC. Initial discussions were conducted via a conference call. (Gregory)

- 2.10.2 Review and comment on stock assessment analysis and draft management document. (Gregory)

Participated in two Florida Fish and Wildlife Conservation Commission stock assessment workshops for spiny lobster. Florida Sea Grant fishery dependent and independent data from a lobster program conducted in the 1970s and a more recent study in the 1990s was provided during the data workshop and extensive comments were provided in the subsequent assessment workshop. Spiny lobster in Florida were determined not to be overfished nor to be undergoing overfishing. (Gregory)

Six discussions were held with staff and the NOAA Fisheries Southeast Regional Administrator on the intended and project impacts of an industry proposal to establish limited entry and a permit buyback program in the Gulf grouper commercial fishery. (Gregory)

- 2.11 Assist regional fisheries agencies with fisheries management plans and assessments. (Adams)

- 2.11.1 Continue to Chair the Gulf States Marine Fisheries Commission Sheepshead Management Task Force. Write an economics component for the draft management plan.

Continued to chair the Sheepshead Task Force for the Gulf States Marine Fisheries Commission. The final report of the fishery profile was completed and submitted to the Commission. Adams gave a summary of the report to the Board of Commissioners at the Gulf States Marine Fisheries Commission meetings in Pt. Clear, AL. (Adams)

- 2.12 Give presentations at the following conferences: (Adams)

- 2.12.1 Aquaculture America Conference -- New Orleans, LA (paper on venting tool use) Presentation on the development of an educational program for the use of venting tools (in an Extension Program session) (Adams)

- 2.12.2 American Fisheries Society Annual Meeting, Anchorage, AK

Presentation on the economic activities associated with the recreational scallop fishery in Florida (in a session dedicated to stock enhancement programs) (Adams)

- 2.12.3 North American Association of Fisheries Economics and Trade, Vancouver, BC
- Presentation on the shark buyout study and preliminary findings regarding the feasibility of such a program in the US Gulf and South Atlantic region (Adams)
- 2.12.4 International Pectinid Conference, Queensland, Australia
- Presentation on the economic activities associated with the recreational scallop fishery in Florida. (Adams)
- 2.13 Work with the Southeast US Sea Grant Fisheries Extension Enhancement Team to explore how NMFS and Sea Grant can better cooperate and collaborate on extension and outreach programs within the region. Will hold a Workshop in Savannah, GA with representatives from NMFS, GSFMC, ASMFC, and state agencies to address this issue. (Adams/Spranger)
- Continued to serve as the Florida Coordinator of the South Atlantic Regional Fisheries Extension Enhancement (FEE) Committee. Co-organized and conducted an FEE workshop in Savannah, GA. Attended by representatives from each state (FL-NC) fishery management agency, South Atlantic Fishery Management Council, South Atlantic Marine Fisheries Commission, NOAA, NMFS, and Sea Grant. Developed FEE program development action items for 2006. (Adams)
- 2.14 Assist the Gulf of Mexico grouper fishery industry leaders to develop a limited entry program for federal and state waters. (Gregory)
- The Monroe County Sea Grant Marine Extension Agent was an invited participant to the initial Southern Offshore Fishermen's Association meeting at NMFS regional headquarters to initiate plans to conduct an industry driven buyout program to reduce commercial fishing effort in the West Florida grouper fishery. Congress has provided approval for a loan of up to \$35 million dollars for the buyout with the loan being repaid from a tax on future landings. Four additional meetings with leaders of the Gulf of Mexico Grouper Commercial Fishery Buyout Steering Committee to identify and resolve a number of key issues needed to design an effort limitation program, including various concerns expressed by NMFS.
- A 17 page "Outline of the Gulf of Mexico grouper industry limited entry management plan proposal" was drafted that summarized the Gulf of Mexico Grouper Industry Limited Entry Steering Committee's decisions to date and provided supporting analytical rationale.
- A 45 minute radio presentation/discussion was conducted to discuss proposed and recently implemented recreational and commercial red grouper harvest limits. At least three additional radio discussions and one newspaper article was published on the commercial grouper limited entry plan.
- Testified at a Florida Fish and Wildlife Conservation Commission meeting in Key Largo about the purpose and potential of the Gulf of Mexico Grouper Limited Effort Program I have been helping the industry with throughout the year.
- 2.15 Increase the sustainability of fisheries resources in Brevard County. (Combs)
- 2.15.1 Conduct educational programs and provide materials and technical assistance for the Brevard Sport Fishing Association (SFA) and the Brevard County Commission Marine Advisory Council (BCCMAC) for the development, maintenance, and monitoring of artificial reefs off the Brevard County coast.

Worked with Florida Sport Fishing Association in association with Brevard County Commission Marine Advisory Council in advancing plans to establish several new artificial reefs, and to upgrade at least one existing artificial reef, off coast of Port Canaveral – progress is very slow.

- 2.15.2 Assist two commercial fishing businesses at Port Canaveral and elsewhere in Brevard County that have been economically impacted by foreign competition in seafood products, such as shrimp and scallops, as they may seek “exit strategies” that will permit them to move from seafood production to some other enterprise, while maintaining profitability. Facilitate two meetings for interested fishermen with public officials, such as County Commissioners, and Port Commissioners, who are interested in resolving these challenges.

Began assisting Bluepoints Intl. Fisheries (Port Canaveral), via Clean Marina program, in conversion of seafood processing facilities into a new \$15 million public-access marina facility, accommodating more than 950 recreational boats, mostly in dry-storage – accompanied manager of new facilities to a meeting of Marine Industries Association of Brevard, and introduced him to MIAB members, who listened with great interest to his description of Bluepoint’s plans.

- 2.15.3 At least 30 recreational fishermen will learn environmentally and economically friendly management practices for recreational fishing. (fish venting, catch n’ release, circle hooks and mercury in fish) by attending an educational exhibit or receiving a brochure. Knowledge gained will be measured by a survey after training session.

Florida Sport Fishing Association, Annual Deep Sea Fishing Tournament (Port Canaveral), Educational display and interactive Q/A at Captains meeting and during Tournament day – (350 contacts).

- 2.16 In collaboration with Florida Fish and Wildlife Conservation Commission’s Snook Carcass Intercept and Recovery Program, local anglers and tackle shops have been participating in this project. This research project is to provide a greater understanding of the statewide genetic stock structure, spawning potential and movement patterns. Plans are to increase angler awareness and participation through educational presentations. Preliminary results from 2004 data provide evidence of potential regional populations on each coast and genetic samples should aid in differentiating these populations. (Wasno)

Continue to work with Florida Fish and Wildlife Conservation Commission’s Snook Carcass Intercept and Recovery Program. Activities include conveying program goals to local sportfishermen and encourage cooperation. Agent assisted FWC field personnel with carcass recovery. Carcass recovery has increased in Lee County. FWC will be working through Lee Agent to plan a 2006 fishing tournament project that will contain all fish that come through the weigh station and hold for 48 hours to determine survivability during catch-and-release tournaments.

- 2.17 Conduct a recreational fishing educational program in Santa Rosa County. (Verlinde)

- 2.17.1 Promote fishing techniques such as fish venting, circle hooks, proper handling and release of fish and fishery management issues for recreational fishermen.

Promoted fishing techniques such as fish venting, circle hooks, proper handling and release of fish and fishery management issues at 4-h youth camps. Provided ethical fishing materials to 4 recreational fishermen. Provided venting tool manufacturing contacts to a local tackle shop.

2.17.2 Coordinate and promote the artificial reef program.

Coordinated FY '05-'06 artificial reef construction proposal to FWC and deployment of Santa Rosa Marine Resort III. As the county observer for reef deployment, provided post-deployment reports, and GPS coordinates of patch reefs.

- 2.18 A sponge resource inventory will be conducted in the Northern Gulf of Mexico in the area near St. Marks. The annual sponge resource inventory in the area of Florida Bay from Everglades National Park to Marathon will be continued. Both studies are contracted to and funded by FWCC to provide information necessary to manage a sustainable commercial sponge fishery and evaluate the recovery of hard bottom habitats in Florida Bay. Findings will be presented to FWCC, FMRI, the multi-agency task force studying Florida Bay, FSG and the FKNMS. (Stevely/Wasno/Sweat) (EX-FWCC-2; EX-FWCC-5)

The northern Gulf commercial sponge inventory was successfully completed. Information provided will be used to evaluate opening new sponge grounds. All contract obligations met. Funding source: Florida Fish and Wildlife Commission (\$25,000).

The Florida Keys sponge survey was successfully completed. Data are being used to evaluate recovery of sponge populations following widespread mortalities, and to evaluate impacts of commercial sponge fishing. Results presented at 2005 Florida Bay Science Conference. Funding source: Florida Fish and Wildlife Commission (\$7,000). (Stevely)

With Agents Stevely and Wasno, conducted commercial sponge inventory in the Northern Gulf of Mexico and in Florida Bay. Presented findings to FWC and FSG. (Sweat)

Sponge resource inventory was conducted in the northern Gulf of Mexico (St Marks). An annual sponge resource inventory was conducted in Florida Bay (Long Key). Funding was provided by FWCC. (Wasno)

- 2.19 Continue scallop restoration program, including hatchery, nursery and stocking. Educate public with recreational scalloping workshop and distribution of new recreational scalloping publication. Present report on "Economic Impact of Recreational Scalloping in Citrus County, Florida" to 15th International Pectinid Workshop and 58th Annual Meeting of GCFI. (Sweat)

Continued scallop restoration project. Presented information on recreational scalloping impact on Citrus County, Florida to international audiences in Mooloolaba, Australia (15th International Pectinid Workshop) and Brest, France (8th International Conference on Shellfish Restoration).

- 2.20 Conduct 17th Annual St. Petersburg Pier Kid's Fishing Tournament. Fishing techniques and ethics will be taught to 500 kids twelve years of age and younger. (Sweat)

Held 17th Annual St. Petersburg Pier Kid's Fishing Tournament (as tournament director). 520 kids attended.

- 2.21 Conduct fish survival workshops for recreational fishermen that address fish venting, circle hooks, proper handling, resuscitation tanks and fishery management issues. Assist Agent Wasno as weighmaster at recreational fishing tournaments. (Sweat)

Conducted two fish survival workshops for recreational fishermen. Emphasized proper handling, fish venting, circle hooks and resuscitation tanks.

- 2.22 Optimize planning, management and construction of artificial reefs to enhance fisheries production. (Stevely)
- 2.22.1 Plan and obtain funding for evaluation of Manatee Co. artificial reefs to meet permitting requirements.
- Funding obtained. Manatee Co. and Sarasota Bay Estuary Program provided \$10,000 to conduct artificial reef monitoring project.
- 2.22.2 Assist in organization of the Florida West Coast Artificial Reef Program Coordinators Workshop.
- Florida West Coast Artificial Reef Program Coordinators Workshop was held October 12, 2005, Palmetto, FL. Reef program coordinators from 14 counties increased their ability to plan, construct and manage artificial reef programs.
- 2.22.3 Work with Manatee Co. Extension Advisory Committee and Manatee County government to site new artificial reef location.
- The Manatee Co. Extension Artificial Reef Advisory Committee surveyed two new sites.
- 2.22.4 Utilize University of Tampa faculty and students to monitor algal populations on artificial reefs.
- Funding was obtained from Sarasota Bay Estuary Program so that a University of Tampa undergraduate program can monitor algal and coral populations on Tampa Bay artificial reefs.
- 2.23 Provide educational programs assigned to enhance fish stocks.
- 2.23.1 Provide technical assistance to Red Start program as member of Red Start Science Advisory Board. (Wasno/Stevely/Staugler/Sweat)
- Provided technical assistance to RedStart program. Served as weighmaster at Edison Big Snook Tournament, conducting resuscitation workshop/demonstration. (Sweat)
- Conducted 2 REDstart Scientific Advisory Committee meetings. This Committee is comprised of members representing 9 governmental agencies. Committee successes include greater community support, volunteer participation, successful state grant funding and fish releases into local bay system. (Wasno)
- 2.23.2 Present Red Start poster exhibit at 2005 World Aquaculture Society Conference (Bali, May 9-13). (Wasno/Stevely/Staugler/Sweat)
- Conducted resuscitation workshop at live-release fishing tournament (Edison Big Snook). (Sweat)
- Presented “REDstart: Community-Based Fisheries Enhancement Program” poster at World aquaculture Conference in Bali, Indonesia. (Wasno)
- 2.23.3 Plan fish resuscitation workshops to improve survival of fish caught during live-release fishing tournaments. (Wasno/Stevely/Staugler/Sweat)

Conducted 14 Fish Resuscitation Tank System displays at local fishing tournaments, Sea Grant Fisheries Design Team Meeting and fishing clubs. (Wasno)

2.23.4 Prepare fish resuscitation publication. (Wasno/Stevely/Staugler)

Fish Resuscitation Tank System brochure will be completed 5/2006. (Wasno)

2.24 Enhance artificial reef habitat in Charlotte County. (Staugler)

2.24.1 Identify site for a new Charlotte County artificial reef.

A new artificial reef site was not identified in 2005 due to diversion of funds from reef program to hurricane recovery efforts.

2.24.2 Enhance existing reefs in need of materials as money allows.

A 90' barge was added to the Tremblay Reef in January 2005, with the assistance of Wasno.

Successful deployment of artificial reef in Charlotte County with Agent Staugler. Emergency solicitation of funding from West Coast Inland Navigation District and Charlotte County Government allowed local contractor to deploy barge.

2.24.3 Educate resource users of reef locations and proper etiquette for using reef resources through the Boating and Angling Guide to Charlotte Harbor, and through the development of a Charlotte County Artificial Reef brochure and local Sea Grant extension website.

The Boating and Angling Guide to Charlotte County was updated during 2005, but not printed until early 2006. This guide includes artificial reef locations. A County artificial reef brochure is currently in draft form. The remake of Charlotte County Extension's website, which would include the Sea Grant website has been put on hold due to the pending arrival of the University's "Solutions for Your Life" website.

2.24.4 Educate artificial reef volunteer divers on the essential elements of artificial reef monitoring, including reef mapping, fish identification, and quality assurance techniques.

The CMRT volunteer dive team has not been active since Hurricane Charley. As a result a contract for diving services was initiated with Mote Marine Laboratory's Dive Operations Center.

2.25 Enhance Charlotte County fisheries through the development of an urban fishing program. (Staugler)

2.25.1 Work with Charlotte County Parks and Recreation, FWC and volunteers to identify and stock suitable fish species lakes at the South County Regional Park.

400 redfish were released into the South County Park as part of the Urban Fisheries Program.

2.25.2 Develop educational programs, including fishing clinics, and catch and release tournaments.

The Sea Grant agent helped organize the Kids Cup Redfish Tournament in 2005. 105 young anglers participated in this event. All proceeds went to the Don Ball School of fishing, an eight week course offered to seventh grade students at the County's four public middle schools.

2.26 Increase the sustainability of fisheries resources in Okaloosa and Walton counties. (S.Jackson)

- 2.26.1 Conduct fish survival workshops for recreational fishermen, charter boat operators and fishing tournament organizers that address such topics as fish venting, circle hooks, proper handling and release, and fishery management issues.

No activity occurred in this area during the year.

- 2.26.2 Conduct educational programs and provide materials and technical assistance for the maintenance and development of artificial reefs off Florida's coast.

Provided leadership and organization for the Okaloosa County Artificial Reef Advisory Committee.

Facilitated meetings with Destin Charterboat Association, Army Corp of Engineers and Okaloosa County Regulators to discuss monitoring issues related to the renewal of local Large Area Artificial Reef permit sites.

Conducted a side scan sonar study with local grass roots organization to locate artificial reef materials impacted by recent tropical storms and hurricanes. Sponsored by Florida Fish and Wildlife.

Provided information to the public on Okaloosa County's artificial reefs through presentations to local civic organizations and museum exhibits and community displays.

2.27 A new Sea Grant Extension Program will be created in Taylor County. (Sapp)

- 2.27.1 Create Taylor County Artificial Reef Dive Team.

Utilizing principles of effective volunteer recruitment and management, I created the Taylor County Artificial Reef Program with 25 active members in areas of technical diving, GIS Mapping, Financial Management, Marketing, Funding Acquisition, and Community Development backed up by comprehensive print and web-based educational resources. The Florida Fish and Wildlife Conservation Commission Artificial Reef Program staff consider our Web resource pages as some of the finest in the State (source: Keith Mille, FWC). Approximately 200 artificial reef publications are distributed monthly and the Program is currently in pursuit of several hundred thousand dollars in funding for new reefs. Also, re-permitting projects are currently underway.

- 2.27.2 Pursue grant support for the creation of artificial reefs and work with private, state and university organizations to perform technical analysis and identify candidate locations for artificial reef development.

I coordinated a regional, tri-county grant program and received signed letters of support from thousands of area businesses, leaders and citizens. I established excellent working relationships with local, State, and federal agencies involved in reef funding, permitting, and monitoring. The largest grant to date for reef development activities was \$35,000 and I independently organized and composed all documentation and requirements for a grant proposal 300-400% greater. Given the 13,000% rate of return of artificial reef monies (source Jon Dodrill: FWC Artificial Reef Program) over the functional lifespan of an

artificial reef, this should provide millions of dollars in economic stimuli to one of the poorest counties in the State and an area of Critical Economic Concern.

- 2.27.3 Identify cost-effective strategies for the manufacturing of artificial reef materials and for the deployment of these materials, identify and pursue sustainable reef designs and develop artificial reef systems that will have the greatest ecological and economic impact for the local community.

I performed numerous inquiries into options for reef material staging locations, deployment sites, and materials acquisition. Given the lack of coastal infrastructure in Taylor County, it was concluded that the best short-term strategy for manufacturing and deployment of reef materials is through contractual outsourcing and immediate focus shifted to the procurement of grant funds to enable this. Long-term strategies are being address by the newly-formed Taylor County Coastal Advisory Committee that should provide more options for staging and deployment in the future.

- 2.28 Continue work on Turtle Excluder Devices (TED's) with local shrimp industry. Work with Dale Stephens, NOAA Fisheries Service, to distribute new "leatherback TED's" for local off-shore shrimp fishermen to field-test and evaluate. Organize and teach at least one TED workshop for shrimp fishermen in Franklin County. (Mahan)

The Franklin County Agent continued to work with local shrimp fishermen on TED-related issues. Provided area commercial fishermen with 15-leatherback TED's to use in their nets. I also worked with Gary Graham (TX-Sea Grant) on providing area shrimp fishermen with electronic data logs. The 2005 Hurricane Season prevented the TED workshop from being taught.

- 2.29 Contribute to the enhancement of artificial reef science, technology and use in Florida. (Lindberg)

- 2.29.1 Serve on the Gulf of Mexico Fishery Management Council's Special Reef Fish Scientific and Statistical Committee.

Participated as a member in several SSC meetings and conference calls regarding amendments to reef fish management plans, and contributed recent research reports to the gag SEDAR process.

- 2.29.2 Serve on the State of Florida's Artificial Reef Advisory Board.

Continued to serve as an advisory board member, although no formal actions were taken by the board during 2005; provided counsel to FWC on the implementation of the State of Florida Artificial Reef Strategic Plan in conjunction with items 2.29.3, 2.29.4, 2.29.7 and 2.29.8.

- 2.29.3 Co-Chair the Research & Conservation Working Group for FWC Division of Marine Fisheries Strategic Planning.

The strategic recommendations of this working group were reported to the FWC and constituencies in writing and at an October 2005 workshop. The workgroup met twice during the year and had numerous conference calls and e-mail reviews to develop and review the recommendations drafted by the co-chairs.

- 2.29.4 The State of Florida's goal to use artificial reefs directly in fisheries management will be advanced by completing Phase I development of the Steinhatchee Fisheries Management Area (FMA), as a demonstration project based on prior FSG research. In Phase I, 40

standardized reefs will be deployed along the 10-fathom contour of the northeastern Gulf of Mexico as monitoring stations for evaluating the output from the 100 sq. mi. FMA, which will be developed in Phase II. During Phase I the fishing public of the region will be educated about the purpose and plans for this FMA.

The 40 SFMA evaluation reefs were deployed as planned during September 2005. Artificial reef construction funding for the SFMA Divers' Trail was obtained from FWC, for placement during spring 2006. The fishing public was educated about the purpose of the SFMA through web page information posted by the Taylor County Sea Grant Extension agent, and an initial public workshop held in December 2005. As an outcome of that workshop Taylor County and adjacent counties are partnering with the University and FWC toward the development of the SFMA Fishing Reef Zone.

- 2.29.5 Florida west coast artificial reef coordinators will know what is required for a community to acquire, prepare and deploy large naval vessels as artificial reefs for economic development. As a result of an FSGE-organized workshop, they will learn the scope of effort and investments involved with such projects, and the economic/tourism benefits, and thus will be able to make informed decisions about initiating large vessel reefing projects.

The Florida West Coast Artificial Reef Coordinators Workshop was held in October 2005 with an agenda that included an expert panel discussion on reefing naval ships, a discussion of the efficacy of artificial reef BMP's from local perspectives (see 2.29.7), observed effects of hurricanes and red tides, and initial planning for a regional economic analysis.

- 2.29.6 State and local artificial reef coordinators, reef contractors and the fishing public will learn the scientific and resources management issues associated with artificial reef development, through the production and distribution of an extension publication tentatively titled "Understanding the Attraction-Production Issue for Artificial Reefs as Fisheries Habitat."

This was not completed in 2005 owing to competing demands for faculty time. However, it remains a priority for 2006.

- 2.29.7 Best management practices for reef habitat enhancement in estuarine waters will be developed beginning in 2005, through a working group convened by FSGE in cooperation with the Florida FWC Artificial Reef Program. This group will include scientists, resource managers, environmental regulators and artificial reef coordinators, and will address, among other things, the efficacy of under-dock local deployments.

Progress toward artificial reef BMPs include confirmation of the anticipated benefits with both local reef programs that apply for reef permits and the US Army Corps of Engineers that issues such permits. As such, the FWC Artificial Reef Program has informally agreed to partner with FSGE to initiate the necessary process during 2006.

- 2.29.8 State artificial reef program managers and county reef coordinators will have access to technical advise on reef design and evaluation, through county FSGE agents and directly from the statewide Fisheries Habitat Specialist.

Technical advice was provided to Panhandle counties on questions of reef monitoring, to Big Bend counties on fishing reef design and development and to SW Florida counties on economic analyses (see 2.29.6). Program planning support was provided to Panhandle

Sea Grant Agents toward a 2006 workshop on large-area artificial reefs sites, per a prior needs assessment.

- 2.29.9 The associate director was invited to serve in an expert consultation for the International Centre for Advanced Mediterranean Agronomic Studies to develop a course on “Design and Management of Artificial Reefs for Fisheries.” (Seaman)

- 2.30 Mote Marine Laboratory will be assisted with a black grouper volunteer angler tag and release effort and a survey of black grouper spawning sites in South Florida in a NMFS cooperative Fishery Research Grant. (Gregory)

The agent’s role in this project was primarily to provide public educational information about the project, including fish venting, volunteer angler tagging, and black grouper carcass collection. Flyers describing the program were produced and distributed at marinas and bait and tackle shops throughout the Keys. Numerous talk radio discussions were conducted. Three different newspaper articles were published in local papers throughout the year. Two PowerPoint presentations were published on the county cable TV channel. Ten days were expended visiting marine facilities to distribute information and discuss the program with interested persons. Five freezers are being maintained for collection of black grouper carcasses. Two dive and fishing field trips were conducted and a one-hour presentation was made at a local Audubon Society meeting.

- 2.31 Increase the sustainability of fisheries resources in Escambia and Santa Rosa counties. (Diller)

- 2.31.1 Conduct educational programs for the public and provide assistance to the Escambia County Marine Resource Division in the monitoring, maintenance, and development of artificial reefs off our coastline.

Agent assisted Escambia County Marine Resources in documenting and monitoring deployment of an artificial reef on June 24th, 2005. Agent obtained basic SCUBA certification to begin process for scientific diver designation from the University of Florida to assist in monitoring of local reefs.

- 2.31.2 Conduct fish survival workshops for recreational fishermen, charter boat operators and fishing tournament organizers that address such topics as fish venting, circle hooks, proper handling and release, and fishery management issues.

Agent presented information about fish venting, circle hooks, and catch-and-release methods to the Pensacola Recreational Fishermen’s Association. Discussed management issues of the red snapper fishery with the local Coastal Conservation Association.

- 2.31.3 Conduct extension training session for Escambia County shrimp fleet applying for the USDA Farm Service Agency’s Trade Adjustment Assistance program.

Escambia County Agent conducted required extension training for shrimpers applying for the USDA Farm Service Agency’s Trade Adjustment Assistance (TAA) program in 2005. Twenty shrimpers received Federal TAA funds totaling \$35,044 to offset losses due to imported shrimp.

- 2.31.4 Continue local fish extension activities that may include topics such as derelict fishing traps, mercury in fish, shrimp management, marine protected areas, essential fish habitat and fish management.

Escambia County agent presented variety of programs discussing fish habitat, water quality, and fisheries management issues to both youth and adult audiences.

- 2.32 The knowledge of marine fisheries policy will be increased through the exchange of information and methodologies to fisheries managers, non-governmental agencies, the fishing community and other user groups through the forum of the Gulf and Caribbean Fisheries Institute. (Creswell)
- 2.32.1 Promulgate and distribute the 56th Proceedings of the Gulf and Caribbean Fisheries Institute and disseminate it to members, libraries, universities, and computer databases.
- The agent completed the review, editing, and publication of the 56th Proceedings of the Gulf and Caribbean Fisheries Institute. This 876 page scientific text (ISSN # 1553 8486) was distributed to the GCFI membership and over 80 libraries around the world.
- 2.32.2 Serve as chairman of the Steering and Program Committees for the 58th Gulf and Caribbean Fisheries Institute and publish its Book of Abstracts.
- As Executive Secretary of the Gulf and Caribbean Fisheries Institute, the agent served as the chairman of the Steering and Program Committees for the 58th annual institute, held in San Andres, Colombia. The agent also promulgated and published the 58th GCFI Book of Abstracts (156 pp.)
- 2.33 Behavioral changes in boaters and marine operators will be encouraged to cause environmentally friendly boating habits through exhibits, mass media, distribution of informational material, and the "Clean Marina/ Clean Boatyard" certification program. (Creswell)
- 2.33.1 At least four marinas and/or boatyards in St. Lucie, Martin, and Indian River Counties will complete or enlist in the "Florida's Clean Marina Program".
- Two marinas were certified as Clean Marinas in 2005, less than anticipated, in large part due to damage from hurricane Wilma. However, two workshops were conducted, with five new marinas enlisted in the certification program.
- 2.33.2 Complete re-installation of monofilament recycling stations in St. Lucie and Indian River Counties.
- Fifteen monofilament recycling stations were re-installed (those lost due to hurricanes) and four new stations were installed in St. Lucie County.
- 2.33.3 Continue to promote utilization of monofilament recycling through newspaper articles and radio programming.
- Three, ½ hour radio programs were presented related to monofilament recycling, Exhibits and informational materials were displayed at four environmental events in St. Lucie Co. and at the county fair. Twenty DVDs related to the impact of monofilament on marine life were distributed to media centers at public schools in St. Lucie County and at the St. Lucie County Marine Center's marine ecosystem exhibit.
- 2.33.4 Continue to plant mangrove seedlings along the Indian River Lagoon through the "IRL Mangrove Restoration Program"
- The agent continued to work as a part of the Indian River Lagoon Mangrove Restoration Program", planting over 500 seedlings along impacted shoreline in 2005.

- 2.33.5 Teach at least 30 fishermen and/or scientists the importance of venting fish bladders and demonstrate its method.

Sixty-two recreational fishermen were instructed on the importance of ethical angling practices and the proper use of fish venting tools. Each fisherman received a venting tool and an informational brochure.

- 2.34 Conduct fisheries education program in Bay County. (Cameron)

- 2.34.1 Conduct ethical angling workshop for recreational fishermen, charter boat operators, and fishing tournament organizers and participants that address topics such as fish venting, circle hooks, releasing techniques, and fishery management issues.

Educated over 500 youth about circle hooks, proper handling and releasing techniques, and fisheries management at kids fishing clinics, 4-H marine camps, and beach field trips, including 10 youth that caught their first fish. Demonstrated proper venting techniques to 20 adults in an offshore fishing class. (Cameron)

- 2.34.2 Increase awareness of fisheries management regulations through the exchange of information among non-governmental agencies, governmental agencies, local media, and the fishing community in Bay County.

Increased awareness of fisheries management regulations through one-on-one contacts and a focus group meeting involving local, state, and federal agencies, as well as charter and recreational fishermen, and non-profit organizations. (Cameron)

- 2.35 In response to the two Shark attacks occurring in the Florida Panhandle in the summer of 2005 this agent assisted local officials in contacting and bringing George Burgess from the University of FL, FL Museum of Natural History to investigate each incident. The agent provided logistical support for the expert and facilitated communication between local fire department officials in Walton County and Chairman of the Board of County Commissioners in Gulf County. (S. Jackson)

As a result of the agents role to support local governments during critical time of crisis, media attention was handled by a knowledgeable science based shark researcher.

Creditable reporting was provided to National and local media outlets. Sound advice was provided to local officials in the effected two counties.

Northwest Florida residents and tourists received information that was less sensationalized than normally expected or previously seen with Shark attacks occurring in 2001. Mr. Burgess was able to investigate each incident thoroughly and bring concluding evidence to the International Shark Attack Files and the victims families.

Goal 3: Develop the Food and Hobby Segments of Florida's Marine Aquaculture Industry

- 3.5 The availability of marine baitfish in Florida is limited. This project will evaluate the feasibility of producing a live baitfish (mud minnow) using water from a stormwater treatment system. If successful, the project will benefit the environment by removing nutrients and increase cash flow to farmers. (Reddin/Leteux:PD-04-8).

This project is still pending the final report. Results will be reported in 2006.

- 3.6 Interest in shrimp culture in Florida has increased dramatically. Currently, there is no financial information describing the culture of marine shrimp in earthen freshwater ponds in Florida. This project will provide a preliminary financial assessment of the culture of marine shrimp in outdoor freshwater ponds in Florida. (Adams: Ex-USDA-1).

The USDA-funded shrimp culture feasibility study was complete and the final report was submitted. The study assessed the financial feasibility of a hypothetical, small-scale, low-tech, low-cost, inland, earthen pond system for culturing marine shrimp in Florida. The findings suggest that such a system may be financially viable under certain market and cost conditions. A workshop to discuss these findings is scheduled for February 2006. (Adams)

- 3.8 Assist Brevard Co. Sheriff Work Farm deputies and inmates in designing, constructing, and implementing a proposed small-scale Tilapia aquaculture project intended to serve as educational tool for inmates, and hopefully to provide food for County Jail system. (Combs)

This task was not completed.

- 3.9 Continue cooperative programming with Sea Grant Clam Aquaculture Specialist, Leslie Sturmer, in two workshops assisting clam aquaculture enterprises, in efforts to improve their economic efficiencies. (Combs/Sturmer)

Continued cooperative programming with Sea Grant Shellfish Aquaculture Extension Agent, Leslie Sturmer, by providing current information and assisting clam aquaculture enterprises, in efforts to improve their economic efficiencies. (Sturmer)

- 3.10 Establish, coordinate and provide training for Lee County clam farmers. Two workshops to be held to provide post-hurricane recovery of destroyed clam crops. (Wasno/Sturmer)

Met with Lee County clam farmers on two occasions to provide assistance with post-hurricane recovery efforts of destroyed clam crops. Specifically, growers on Pine Island supported the concept of a community land-based nursery. Worked with county representatives and farmers in identifying potential sites and funding opportunities. (Sturmer)

Two workshops were held with Lee County clam farmers to determine strategy to increase revenue and clam harvest success rates following losses during hurricane event. (Wasno)

- 3.11 Educate interested public with aquaculture information and consultation. Serve as aquaculture consultant to public schools in Citrus County. (Sweat)

- 3.12 Increase the scientific, industry and agency knowledge about Florida clam aquaculture through participation at regional and national conferences. (Sturmer)

- 3.12.1 Participate in the Aquaculture America 2005 conference in New Orleans. Invited to present papers on ongoing research and educational efforts in support of the Florida clam culture industry and an introduction to shellfish aquaculture.

Participated in the Gulf and South Atlantic States Shellfish Conference in South Carolina, and provided an overview of the Florida hard clam aquaculture industry highlighting this year a new program to collect clamshell at processing plants for restoration of local oyster reefs.

- 3.12.2 Participate in the Gulf and South Atlantic States Shellfish Conference in South Carolina, and provide an overview of the Florida hard clam aquaculture industry highlighting this year a new program to collect clamshell at processing plants for restoration of local oyster reefs.

Participated in the Gulf and South Atlantic States Shellfish Conference in South Carolina, and provided an overview of the Florida hard clam aquaculture industry highlighting this year a new program to collect clamshell at processing plants for restoration of local oyster reefs.

- 3.12.3 Give a presentation on the development and implementation of a pilot crop insurance program for Florida clam growers to the Louisiana Farm Bureau for oyster growers who are interested in exploring financial protection for their crops.

Gave a presentation on the development and implementation of a pilot crop insurance program for Florida clam growers to the Louisiana Farm Bureau for oyster growers who were interested in exploring financial protection for their crops.

- 3.12.4 Give a presentation about Florida's clam farming industry and its dependence on clean water at a American Water Resources Association regional conference to be held in Cedar Key.

Gave a presentation about Florida's clam farming industry and its dependence on clean water at an American Water Resources Association regional conference held in Cedar Key.

- 3.13 Establish, coordinate and provide training and technical assistance in counties where clam farming is ongoing. Counties involved include Levy, Dixie, Charlotte, Lee, Brevard, St. Lucie, Indian River and Franklin. (Sturmer)

- 3.13.1 Initiate and conduct workshops in support of the new clam farmers who are developing their farms on lease sites in Collier County. Topics to be addressed include seed sources and handling, culture equipment, stocking and planting methods, and rules and regulations. (with Wasno)

Conducted "hands-on" workshops in support of the new clam farmers who are developing their farms on lease sites in Collier County. Topics addressed included seed sources and handling, culture equipment, stocking and planting methods, and rules and regulations.

Conducted workshops to assist new farmers with initial set-ups and local regulations. (Wasno)

- 3.13.2 Continue to provide local workshops and technical assistance for potential and existing clam farmers in southwest Florida. This year, specifically working with growers in an effort to restore infrastructure lost as a result of the 2004 hurricane season by evaluating a community land-based nursery. (with Wasno)

Continued to provide local workshops and technical assistance for potential and existing clam farmers in southwest Florida. This year, specifically worked with growers in an effort to restore infrastructure lost as a result of the 2004 hurricane season by evaluating the potential of a community land-based nursery. Efforts focused on siting and funding sources. (with Wasno)

Clam farmers upland staging area known as Lee County Fishermen's Co-Op was purchased by Lee Co government for \$16 million. Site is being evaluated for the construction of a clam farmer's grow-out facility. This facility will serve to increase clam growers profit potential.

- 3.13.3 Continue to work with new growers in Franklin County by providing current information to assist them in their business plans. Further will begin educating local citizens in the area about the new seafood product being raised in their coastal waters. (with Mahan)

Continued to work with new growers in Franklin County by providing current information to assist them in their business plans. Plans for informational sessions for local citizens about the new seafood product being raised in their coastal waters were thwarted by the impact of the 2005 hurricane season in the area. (with Mahan)

- 3.13.4 Provide technical assistance to the clam growers in Levy County by helping them acquire funding for infrastructural needs, specifically boat access to lease areas and parking facilities.

Provided technical assistance to clam growers in Levy County by helping them acquire funding through USDA Rural Development for infrastructural needs, specifically boat access to lease areas and acquiring property for parking facilities.

- 3.13.5 Continue to provide individual consultations to clam growers on how to use a computerized spreadsheet program to enhance their record keeping and inventory management activities for a commercial clam culture operation.

Continued to provide individual consultations to clam growers on how to use a computerized spreadsheet program to enhance their record keeping and inventory management activities for a commercial clam culture operation.

- 3.13.6 Continue development of workshops and materials, as well as educational support, to shellfish growers who are participating in the USDA pilot crop insurance program and other crop assistance programs.

Continued providing educational support to shellfish growers who are participating in the USDA pilot crop insurance program and other crop assistance programs, as well as providing technical support to USDA Risk Management Agency and reinsured companies in implementing the pilot program. The program will be remain under agency evaluation through crop year 2007.

- 3.14 Continue a coordinated effort to enhance hard clam farming in Florida through a series of USDA funded projects. (Sturmer)

- 3.14.1 Continue field trials to compare the performance of multiple Florida strains of hard clams under aquaculture conditions and to assist researchers in collecting field data to correlate this performance with genetic diversity.

Completed field trials to compare the performance of multiple Florida strains of hard clams under aquaculture conditions. Assisted UF Department of Fisheries and Aquatic Sciences researchers in collecting field data to correlate this performance with genetic diversity. Preliminary findings show significant performance differences between commercial stocks in the culture trials, both in survival and growth rates and also significant differences between at least some hatcheries in genetic diversity indices. Genetic diversity indices, however, were unrelated to either performance or to morphotype.

- 3.14.2 Continue to provide technical assistance to the 5-year Clam Lease Assessment, Management, and Modeling using Remote Sensing (CLAMMRS) project. Provide “farmer friendly” graphs of monthly archived water quality data, as well as post to a web site, and compare a 3-year continuous water quality database at 10 aquaculture lease sites in the state with clam production. This project allows for adoption of remote sensing technology for the clam aquaculture industry.

Continued to provide technical assistance to the Clam Lease Assessment, Management, and Modeling using Remote Sensing (CLAMMRS) project. Provided “farmer friendly” graphs of monthly archived water quality data, as well as posted to a web site, and compared a 3-year continuous water quality database at 10 aquaculture lease sites in the state with clam production. This project allows for adoption of remote sensing technology for the clam aquaculture industry.

- 3.14.3 Assist in compiling a final report on study that provided baseline information on the presence and absence of shellfish pathogens in aquaculture lease areas. This report will allow clam growers to increase their awareness of potential health problems for their stocks.

Assisted in compiling a final report on a study that provided baseline information on the presence and absence of shellfish pathogens in aquaculture lease areas. This report allows clam growers to increase their awareness of potential health problems for their stocks.

- 3.14.4 Continue to provide technical assistance to the UF Whitney Lab in developing reliable spawning and larval rearing techniques, and monitoring the production performance of the blood ark and ponderous ark during nursery and growout phases. The project is evaluating alternative molluscan shellfish species for possible aquaculture production. (with Creswell)

Technical assistance was provided to staff at the UF Whitney Marine Laboratory leading to the successful spawning and hatchery production of blood ark and ponderous ark clams. A technical manual for hatchery production of these species for shellfish hatchery operators is in preparation. (Creswell)

Continued to provide technical assistance to the UF Whitney Lab in developing reliable spawning and larval rearing techniques, monitoring the production performance of the blood ark and ponderous ark during nursery and growout phases, and developing a final report for the project. The project is evaluating alternative molluscan shellfish species for possible aquaculture production. (Sturmer)

- 3.14.5 Disseminate results of a project addressing the issue of stock diversity in cultured clam stocks to commercial hatchery operators.

Disseminated results of a project addressing the issue of stock diversity in cultured clam stocks to commercial hatchery operators.

- 3.15 Evaluate the production and processing for alternative techniques and alternative species of clams for Florida clam growers. (Sturmer)

- 3.15.1 Serve as a liaison between industry partners and researchers in evaluating production of triploid and diploid clams under commercial growout conditions in open-water aquaculture leases. This Florida Sea Grant-funded project will evaluate the use of triploidy, a basic breeding technique, for the improvement of hard clam culture, specifically to improve survival during the summer environmental stressors experienced in subtropical waters.

Served as a liaison between industry partners and researchers in evaluating production of triploid and diploid clams under commercial nursery and growout conditions in open-water aquaculture leases. This Florida Sea Grant-funded project is evaluating the use of triploidy, a basic breeding technique, for the improvement of hard clam culture, specifically to improve survival during the summer environmental stressors experienced in subtropical waters.

- 3.15.2 Assist the Agriculture Market Research Center in distributing a report on the magnitude of the potential domestic market and product attributes desired by the seafood trade for the blood ark and ponderous ark clams. These findings will be used to educate shellfish wholesale dealers as to the market attributes of these alternative molluscan shellfish species.

Assisted the Agriculture Market Research Center in distributing a report and EDIS publications on the magnitude of the potential domestic market and product attributes desired by the seafood trade for the blood ark and ponderous ark clams. These findings are to be used by shellfish wholesale dealers educating them to the market attributes of these alternative molluscan shellfish species.

- 3.15.3 Develop a research and extension team and identify funding to begin evaluating the sunray venus clam as a new molluscan shellfish species for diversification of the Florida hard clam aquaculture industry. (with Creswell/Adams)

Developed a research and extension team and secured funding to initiate a project evaluating the sunray venus clam as a new molluscan shellfish species for diversification of the Florida hard clam aquaculture industry. (Sturmer)

Sunray venus clam project was funded. Work was initiated. No findings to report for 2005. (Adams)

- 3.15.4 Serve on a national committee, the National Organic Aquaculture Workgroup, Shellfish SubGroup, that is developing guidelines and standards for organic shellfish labeling.

Served on a national committee, the National Organic Aquaculture Workgroup, Shellfish SubGroup. Guidelines and standards for organic shellfish labeling were developed and submitted to the NOAWG for consideration by the National Organic Standards Board.

- 3.16 Provide statewide service to clam grower associations and state agencies. (Sturmer)
- 3.16.1 Continue providing organizational support and technical assistance to local clam growers associations, and in working with the boards in developing an umbrella statewide organization. (with Adams)
- A Florida Sea Grant publication addressing the statewide organization concept was published – “Organizational Structures and Strategies for the Hard Clam Aquaculture Industry in Florida” (SG TP-141, January 2005) (Adams)
- Continued providing organizational support and technical assistance to local clam growers associations, and in working with the boards in developing an umbrella statewide organization. Specifically, worked with the Cedar Key Aquaculture Association and the Department of Aquaculture and Consumer Services in developing a statewide clam aquaculture industry task force that will allow for better communications with DACS as well as serve as a statewide advisory committee for shellfish extension. (with Adams)
- 3.16.2 Continue to serve on the education and conference committee of the Florida Aquaculture Association.
- Continued to serve on the education and conference committee of the Florida Aquaculture Association. Assisted the FAA in providing an educational exhibit at the Farm Bureau Legislative Reception and the Ruskin Seafood Festival.
- 3.17 Provide easy access to up-to-date information on shellfish aquaculture in Florida. (Sturmer)
- 3.17.1 Continue to update a web site for the shellfish aquaculture extension program where services provided can be directly accessible by the clam farming industry. The site provides updates on research and extension projects, current suppliers list, links to state and national publications addressing shellfish aquaculture and a calendar of events.
- Continued to update a web site for the shellfish aquaculture extension program where services provided can be directly accessible by the clam farming industry. The site provides updates on research and extension projects, current suppliers list, links to state and national publications addressing shellfish aquaculture and a calendar of events.
- 3.17.2 Continue to provide information on new issues, concerns and trends at the local, state and national level related to shellfish aquaculture through publishing a quarterly newsletter, *The Bivalve Bulletin*.
- Continued to provide information on new issues, concerns and trends at the local, state and national level related to shellfish aquaculture through publishing a quarterly newsletter, *The Bivalve Bulletin*.
- 3.18 Continue to provide one-on-one consultations and technical support to individuals in Franklin County interested in learning more about freshwater and marine aquaculture. (Mahan)
- The Franklin County Agent provided approximately 150 aquaculture consultations to individuals on a wide-range of marine and freshwater aquaculture topics. The majority of the marine-related questions were about clam, oyster, shrimp and off-shore aquaculture. The majority of freshwater

questions were on catfish, raising shrimp in freshwater, and Tilapia aquaculture.

- 3.19 Complete the assessment of the economic feasibility of small-scale freshwater, penaeid shrimp culture in Florida. This study will provide guidelines for prospective culturists regarding investing in inland shrimp culture in Florida. Project received a one-year extension. (Adams/Sweat)

See 3.6 above (Adams)

With Specialist Adams, completed the assessment of the economic feasibility of small-scale freshwater, penaeid shrimp culture in Florida. (Sweat)

- 3.20 Continue to develop educational program and materials, update financial feasibility analysis for a small-scale clam culture operation, and provide technical assistance and educational support where clam farming operations are being considered in the state, in particular Collier County. (Sturmer/Adams)

Continued to support the overall hard clam educational program with L. Sturmer. (Adams)

Continued to develop educational program materials, update financial feasibility analysis for a small-scale clam culture operation, and provide technical assistance and educational support where clam farming operations are being considered in the state, in particular Collier County. (Sturmer/Adams)

- 3.21 Continue to represent Florida Sea Grant on the state's Aquaculture Interagency Coordinating Committee and assist in preparing the annual report to AICC. (Adams)

Continued to serve as the Florida Sea Grant representative on the FDACS Aquaculture Interagency Coordinating Committee. Compiled the FSG component of the 2005 AICC Annual Report that is developed each year. (Adams)

- 3.22 Begin working on National Sea Grant funded study addressing the financial costs associated with biofouling in marine aquaculture. This work will be done in cooperation with the University of Connecticut. (Adams)

Work associated with the National Sea Grant Program –funded project concerning bio-fouling in shellfish aquaculture began. No major findings to report for 2005. Adams will be working with faculty at the University of Connecticut. An industry survey is scheduled to be implemented during early 2006 and survey development began in December 2005. (Adams)

- 3.23 Maintain a shellfish aquaculture research and education facility in Cedar Key. This salt-water running laboratory on Florida's Gulf of Mexico coast allows UF faculty to address the research needs of the clam farmers. (Sturmer)

Maintained a shellfish aquaculture research and education facility in Cedar Key. This salt-water running laboratory on Florida's Gulf of Mexico coast allows UF faculty to address the research needs of the clam farmers. (Sturmer)

- 3.24 Provide technical assistance that includes startup considerations to new and existing aquaculturists in Florida and South Alabama. (S.Jackson)

The Agent provided support and assistance to aqua-farmers and pond owners utilizing best management practices for managing these aquatic resources and associated businesses.

Through the education programs and with the assistance of the Sea Grant Agent area farmers gained knowledge and fish culture skills necessary to explore potential aquaculture crops appropriate for the give local resources and marketing conditions. Fish Pond owners gained knowledge in pond management through the Extension education programs and individual site visits conducted by the Agent.

3.25 Increase general knowledge of aquaculture through classroom instruction. The general public will be more aware of aquaculture as a potential industry in Florida through seminars, exhibits and mass media presentations. (Creswell)

3.25.1 At least 100 students will learn more about aquaculture through classroom and distant learning programs.

This activity was not completed due to lost school days as a result of hurricanes Francis, Jeanne, and Wilma. Loss of class time and a need to prepare for FCAT testing precluded any additional programming.

3.25.2 Compile an informational packet for individuals interested in shrimp aquaculture.

Over 40 informational packets for individuals interested in shrimp culture were distributed during workshops and upon request. These packets included general information of shrimp farming, the final report from the UF Shrimp Demonstration Project, Florida Aquaculture Best Management Practices, and state aquaculture certification forms.

3.25.3 Develop a series of two-page fact sheets on potential aquaculture species in Florida.

No aquaculture fact sheets were submitted to EDIS in 2005. These sheets are now in preparation.

3.25.4 Conduct at least six radio broadcasts (30 minutes each) dedicated to aquaculture topics.

Six, ½ hour radio broadcasts related to aquaculture were presented. These included: grouper culture, queen conch culture, shrimp aquaculture (2), potential for farming Caribbean spiny lobster, and aquaculture and global fisheries.

3.26 Enhance production, minimize costs, and improve opportunities for aquaculture businesses. (Creswell)

3.26.1 At least four ½ day workshops will be presented at the Shrimp Aquaculture Demonstration Site at the University of Florida Research and Education Center related to shrimp aquaculture.

Four ½ day workshops were presented at the Shrimp Aquaculture Demonstration Site at the UF Indian River Research and Education Center. Participants were provided informational packets related to shrimp farming in Florida and toured the demonstration shrimp farm.

3.26.2 Continue to instruct fish farmers in Puerto Rico to aspects of collection, handling and growout of spiny lobster and provide information regarding development of formulated feeds for spiny lobsters.

Two site visits were conducted to Puerto Rico to evaluate the progress of the spiny lobster aquaculture project in conjunction with an offshore fish aquaculture enterprise. The agent provided information and assistance to staff related to diet development for spiny lobsters and cage design and deployment.

3.26.3 Conduct at least one workshop on the potential of baitfish aquaculture in Florida.

No workshop on baitfish aquaculture in Florida was presented. One is being planned for 2006 with Dr. Courtney Ohs, the new UF aquaculture specialist stationed at IRREC.
* Presented one hour television program on the UF Shrimp Farming Demonstration Project aired at least 20 times on four local television networks.

3.27 Teach 3rd grade youth about aquaculture as part of Nassau County's "Ag Extravaganza." (McGuire)

Taught 314 third grade youth about aquaculture as part of Nassau County's Ag Extravaganza.
Taught 179 kindergarten and fifth grade students about water pollution as part of Flagler County's AgVentures program.

Goal 4: Improve the Product Quality and Safety of Florida's Seafood Products

- 4.2 One of the primary strategies to reduce the number of illnesses in the high risk population for *Vibrio vulnificus* is to educate and inform the medical community. The result will be that appropriate information will be transmitted directly to the high-risk patient at the time of treatment and/or counseling for the high-risk condition. This project will conduct 30 regional workshops at local chapters of the Florida Dietitians Association and Florida Nurses Association to provide educational materials developed by trained health educators. (Heil: E/TP-3)

The project was modified to actively announce and promote the free accredited continuing medical education credit on-line *Vibrio vulnificus* education course for physicians. A mass mail out to promote the free on line course which included a cover letter and the Interstate Shellfish Sanitation Conference *Vibrio vulnificus Fact Sheet for Health Care Providers* was to all 118,749 physicians licensed in Alabama, Florida, Georgia, Louisiana, and Texas. Overall, the mail out to 118,749 licensed physicians in Florida, Louisiana, Texas, Alabama, and Georgia reached 115,655 physicians (97.4%). Therefore the mass mailing management tool was demonstrated to be extremely effective in reaching physicians. Additionally, this was the first known mass mailing of *Vibrio vulnificus* education materials to all licensed physicians in any state. The unit cost was \$0.44 per letter. Preliminary information from the Interstate Shellfish Sanitation Conference indicates that 1,364 physicians have logged on to the websites from September through December 20, 2005. Considering that the United States Food and Drug Administration (*Federal Register: December 18, 1995: Volume 60, Number 242; Table 7; Page 65186*) considers the cost to society of a single *Vibrio vulnificus* illness to be \$2,008,917.00, these educational funds were highly cost effective. Also, the Train-the-Trainer Workshop on the risks associated with consumption of shellfish that may contain naturally-occurring *Vibrio* bacteria has been fully completed. For the first time, state health educators from Alabama, California, Georgia, Florida, Louisiana, Mississippi, and Texas have been fully trained in delivering effective public health messages to the medical community on the risks associated with consumption of shellfish that may contain naturally-occurring *Vibrio* bacteria. A total of eleven state health educators were trained.

- 4.4 Produce a book entitled "Use of carbon monoxide and other modified atmospheric conditions in seafood processing." The use of carbon monoxide is currently under regulatory scrutiny and this book will make the latest scientific information available to everyone. (Otwell: PD-04-07)

The published book (2006) will stand as the most current compilation of technology, science and regulation for modified atmospheric processing and packaging of seafood. Likewise, the portion on processing with filter smoke and carbon monoxide represents the first and only published text addressing this new technology. . Blackwell Publishing is now advertising the book in their brochures and website.

- 4.5 Conduct annual Seafood Training schools. (Otwell)

- 4.5.1 International Shrimp School for industry and agencies in May for suppliers and buyers about the USA and world.

International Shrimp School for industry and agencies was held May 17-19, 2005 at the University of Florida's Aquatic Food Products Labs in Gainesville. Attendance exceeded 35 participants from about 14 nations with many operations based in the USA and FL. The training was conducted in cooperation with the US FDA and various commercial expertise in lectures and demonstrations. <http://shrimpschool.ifas.ufl.edu/>

- 4.5.2 First Annual ‘Certification School’ for Cooked Shrimp Processors in May in conjunction with the Laitram Equipment Corp (New Orleans) for domestic and other processing operation about the world cooking both warm and cold water species.

First Annual ‘Certification School’ for Cooked Shrimp Processors was completed Feb. 22-24, 2006 in conjunction with the Laitram Equipment Corp in New Orleans for domestic and other processing operation about the world cooking both warm and cold water species. Attendance included 25 participants across 12 nations. The school involved expertise from the University of Florida, FDA and a selection of technical experts. <http://cookedshrimpschool.ifas.ufl.edu/>

- 4.5.3 Smoked Fish School for Florida Processors in September focused on controls to reduce and prevent *Listeria monocytogenes*.

Smoked Fish School for Florida Processors was postponed.

- 4.6 Direct and maintain the National Seafood HACCP Alliance for Seafood Safety and Education. (Otwell)

- 4.6.1 Continue role as National Coordinator role for the Seafood HACCP Alliance that has provides seafood safety training for all federal FDA seafood inspectors in the nation, most state based inspectors and over 90% of all nationally based seafood processing firms, plus over 10,000 international participants from 30 nations. The training now includes the traditional 3-day HACCP courses and 1.5 day sanitation courses taught biannually in Florida, plus a special one-day support course taught for individuals that complete an established Internet course developed by the Seafood HACCP Alliance based at Cornell.

The FL Sea Grant Seafood Specialist maintained his role as the National Coordinator for the Seafood HACCP Alliance that has provided seafood safety training for all federal FDA seafood inspectors in the nation, most state based inspectors and over 90% of all nationally based seafood processing firms, plus over 10,000 international participants from 30 nations. The total graduates of the training since 1995 exceeds 25,000. The training now includes the traditional 3-day HACCP courses and 1.5 day sanitation courses taught biannually in Florida, plus a special one-day support course taught for individuals that complete an established Internet course developed by the Seafood HACCP Alliance based at Cornell. This program remains the benchmark training program by which all other training is assessed per seafood commercial about and into the USA. It remains the required course for most state and all FDA inspectors.

The Seafood HACCP Alliance training format and certain materials have been adopted with Alliance approval for use in structuring similar HACCP courses for medical supplies and pharmaceuticals.

In 2005, the Alliance forged a working relationship with the International Association of Fish Inspectors (IAFI; <http://www.iafi.net/>) to better identify responsible authorities and potential trainers across every nation in the world producing seafood and aquacultured products destined for commerce in the USA.

- 4.6.2 Maintain the inventory for all seafood HACCP education materials in support of Alliance training programs about the nation and world as certified and recorded in company with the national Association of Food and Drug Officials (AFDO).

FL Sea Grant continued their role as the national and international distribution center for all Seafood HACCP Alliance training materials. Maintain the inventory for all seafood HACCP education materials in support of Alliance training programs about the nation and world as certified and recorded in company with the national Association of Food and Drug Officials (AFDO).

- 4.6.3 Specifically assist in preparation of revisions of the new FDA Fishery Products and Controls Guide due for release in early 2006.

FL Sea Grant arranged a special working group that compiled extensive review comments to assist FDA in their preparation of revisions of the new FDA Fishery Products and Controls Guide due for release in Fall 2006. The review comments were based on training experiences across the nation and about the world.

- 4.6.4 Redraft all current Alliance training material to remain consistent with the new FDA HACCP recommendations anticipated in the new Fishery Products Guide 2006.

The Alliance has initiated a redraft of all current Alliance training material to remain consistent with the anticipated new edition of FDA's HACCP manual for Fishery Products Controls Guide 2006.

- 4.6.5 Plan and conduct a series of Seafood HACCP Update sessions about the nation to orient trainers and users per new regulatory mandates and changes in HACCP requirements.

The Alliance has initiated planning for a series of "Seafood HACCP Update Sessions" about the nation to orient trainers and users per new regulatory mandates and changes in HACCP requirements anticipated in the next edition of the Fishery Products Controls Guide 2006. The Update session will be linked with a new Trainer Re-Certification program to keep all training current and uniform.

- 4.6.6 Plan and conduct another Alliance HACCP 'Train-the-Trainers' program to provide more qualified trainers for seafood safety with particular efforts to prepare bilingual trainers in company with AFDO regions.

The Alliance has initiated planning for a series of trainer Re-Certification programs to keep all training current and uniform. This effort will involve the IAFI and special efforts to address need for bilingual trainers.

- 4.6.7 Revise the Alliance 'Compendium of Methods' as a technical resource for test methods and procedures in support of HACCP implementation in processing and regulatory inspections.

Sea Grant continues to maintain the Alliance 'Compendium of Methods' as a technical resource for test methods and procedures in support of HACCP implementation in processing and regulatory inspections.

- 4.7 Continue to serve on a technical committee developing an innovative, interactive Internet system recently titled, "Fish Port" (based on main frame -- ECOPORT). This technology support system is being developed in collaboration with FAO/World Health Organization. (Otwell)

Continue to serve on a technical committee developing an innovative, interactive Internet system recently titled, "Fish Port" (based on main frame -- ECOPORT). This technology support system is

being developed in collaboration with FAO/World Health Organization. Progress has been delayed awaiting sufficient FAO support into 2007.

- 4.8 Committee Member for the National Academy of Sciences report on Nutrient Relationships in Seafood: Selections to Balance Benefits and Risks due for completion December 2005. (Otwell)

FL Sea Grant Specialist is a Committee Member for the National Academy of Sciences' report on "Nutrient Relationships in Seafood: Selections to Balance Benefits and Risks" due for completion Summer 2006. This 18 month assignment will offer historical changes in addressing seafood safety communications in the USA. One consequence has been the introduction of a special In-Service training program, "Seafood Risk-Benefits" proposed to begin in FL during Fall 2006. This initial effort is planned to become multi-state effort into 2007.

- 4.9 Continue in leadership and advisory positions with number of seafood technology organizations. (Otwell)

4.9.1 National Seafood HACCP Alliance, National Coordinator.
National Seafood HACCP Alliance, National Coordinator.

4.9.2 Seafood Science and Technology Society (SST) of the America's, Executive Director.
Seafood Science and Technology Society (SST) of the America's, Executive Director.

4.9.3 U.S. Representative on the Board of Directors for the International Association of Fish Inspectors (IAFI) – convene in Sydney, Australia, September 2005.
U.S. Representative on the Board of Directors for the International Association of Fish Inspectors (IAFI) – convene in Dublin, Ireland, September 2007.

4.9.4 U.S. Advisory Representative to the European 'SeafoodPlus' organization involving every EU nation collaborating in various aspects of seafood safety and quality research – convene in Granville, France October 2005.
U.S. Advisory Representative to the European 'SeafoodPlus' organization involving every EU nation collaborating in various aspects of seafood safety and quality research – convene in Tromso, Norway - May 2006.

4.9.5 Technical advisor for the FA Team for the Codex Alimentarius meeting to address international standards for seafood and aquacultured products; next meeting Beijing, China September 2006.
Expert Consultation Committee, "Antimicrobials in Aquaculture and Antimicrobial Resistance" assigned by FAO/OIE/WHO to address problems involving antimicrobial resistance due to use and misuse of antibiotics with aquaculture.

- 4.10 Determine ways to advance the use of post-harvest treatments (PHT) for production of safer Florida oysters for raw consumption. Coordinator for current USDA Special Research Projects extending into 2008. Current work includes assessing use of special freezing techniques and development of a industry based lab for analytical certification for product safety based in Apalachicola, Florida to assist commercial adaptation. (Otwell)

Work continues in determining ways to advance the use of post-harvest treatments (PHT) for production of safer Florida oysters for raw consumption. FL Sea Grant Specialist is the coordinator for current USDA Special Research Projects extending into 2009. Current work includes assessing use of special freezing techniques and development of a industry based lab for analytical certification for product safety based in Apalachicola, Florida to assist commercial adaptation. Two new processes have been developed, *Frosted Oysters* and *Easy-Shuck Oysters* employing freezing

techniques to reduce and eliminate concerns for *Vibrio vulnificus* in raw oysters. This work is supported by a new oyster industry lab staff and positioned in Apalachicola, FL working in cooperation with the local industry and FL Sea Grant Marine Agent, Bill Mahan.

- 4.11 Participate in the development of a “Mark of Quality” program for the U.S. domestic shrimp industry. Introduce Shrimp Harvester Awards Program to recognize excellence in performance by domestic vessels in Florida. Work aligned with the new *Wild American Shrimp Inc.*(Otwell)

Participate in the development of a “Mark of Quality” program for the U.S. domestic shrimp industry. Introduce Shrimp Harvester Awards Program to recognize excellence in performance by domestic vessels in Florida. Work aligned with the new *Wild American Shrimp Inc.*(WASI). Multi-state/Sea Grant program has been collecting samples for use in a series of WASI certifier training programs to initiate in September 2006 at the University of Florida. FL Sea Grant is coordinating collaboration with Sea Grant programs in TX, LA, MS, AL, GA, SC and NC.

- 4.12 Assist FDA in continuing international study to determine proper handling methods to control and prevent development of histamine in for large tuna. Work locations for actual harvest include Grenada and Hawaii. (Otwell)

Continued to assist FDA in continuing international study to determine proper handling methods to control and prevent development of histamine in large tuna. Work locations for actual harvest include Grenada and Hawaii. All products have been collected and transported to the University of Florida for final analysis. This project work has been identified as the number one FDA research work objective through 2005-2006.

- 4.15 Enhance seafood safety at local levels using education and local training events. Provide ongoing logistical support for six Brevard County commercial seafood producers, including commercial clamming and clam aquaculture, and seafood processing safety and sanitation procedures as implemented through the FDA-mandated program, Hazard Analysis and Critical Control Points (HACCP). (Combs)

Seafood sanitation practices included routinely in Commercial Clammer Educational classes conducted 5/13, 5/14, 6/25/05.

- 4.16 Enhance seafood safety at local levels using education and local training events. Coordinate workshops and seminars at local seafood festivals that provide home seafood consumers with seafood safety information. (Sweat)

Held seafood safety workshops and seminars at local seafood festival and boat show.

- 4.17 Assist in completing a final publication on the research and validation of a tempering process developed to assist shellfish wholesalers in improving the shelf life of hard clams in refrigerated storage. (Otwell/Wright/Sturmer)

Assisted in completing a final publication on the research and validation of a tempering process developed to assist shellfish wholesalers in improving the shelf life of hard clams in refrigerated storage. (Sturmer)

- 4.18 Continue work as the FL Sea Grant representative on the DACS *Vibrio vulnificus* (Vv) Illness Reduction Workgroup. The workgroup is charged to meet at least annually to evaluate Vv illness data for FL and the Gulf of Mexico and make any required adjustments to Florida’s Vv Illness Reduction Plan. (Mahan)

The DACS *Vibrio vulnificus* (Vv) Illness Reduction Workgroup met once in 2005 to review and discuss Vv illness reduction activities in the state, the FDA's Vv Illness/Mortality data for 2004 and progress made on meeting our 40% and 60% illness-rate reduction goals. At this point, it appears that FL will reach its 40% illness reduction rate as required by the Interstate Shellfish Sanitation Conference by the end of 2006.

- 4.19 Continue work as a member of the Oyster Post Harvest Process (PHP) Advisory Committee to develop goals and set priorities for the oyster PHP research being conducted under several USDA – CSREES grants. (Mahan)

The Franklin County Agent continued his work on the PHP Advisory Committee. The PHP research and validation work is going well and the U.S. Food & Drug Administration has validated both the nitrogen freezing-tunnel and the blast-freezer PHP method of reducing the *Vibrio vulnificus* numbers to non-detectable in the oysters.

- 4.20 Continue work as an appointed member on the Interstate Shellfish Sanitation Conference's *Vibrio vulnificus* Education Subcommittee, Biotoxin, Post Harvest Treatment, and Education Committees. (Mahan)

The Franklin County Agent continued to work on his appointed ISSC's committees. During the year prior to the ISSC's Biennial Meeting, the only committee active was the Vv Education Subcommittee.

- 4.21 Attend and participate in Interstate Shellfish Sanitation Conference's Biennial Meeting in Clear Point, AL. Attend and participate in the Conference's *Vibrio vulnificus* Education Subcommittee, Biotoxin, Post Harvest Treatment, and Education Committees. (Mahan)

The Franklin County Agent attended and participated in the Interstate Shellfish Sanitation Conference's Biennial Meeting in Clear Point, AL in August and participated in the *Vibrio vulnificus* Education Subcommittee and the Education Committee meetings.

- 4.22 Assist Monroe County seafood processors with HACCP and seafood safety issues on an as-needed basis. (Gregory)

Two local fish processing facilities were assisted with establishing a stone crab and smoked fish HACCP plans.

Goal 5: Increase the Economic Competitiveness and Environmental Sustainability of Coastal Water-Dependent Businesses

- 5.5 A boating and anchoring guide will be produced for St. Augustine, Florida to (1) enhance the experiences of local and transient boaters, (2) promote safe navigation and responsible boating and anchoring behaviors, and (3) provide boaters with information on area resources and amenities. (Swett/Fann/Stevely: EX-SAPW-1)

Outcome: 10,000 copies of a navigational, historical and environmental perspective of St. Augustine waterways and vicinity using natural-color aerial photographs, along with historic pictures and maps, were produced and distributed to help visitors and residents enjoy and appreciate what they can see and access from recreational vessels. With a strong maritime emphasis, the maps and text present features from the history of America's oldest city; resources important to boaters and anglers, including marinas and boat ramps; the distribution of wildlife and natural resources; and sources of information and assistance. In addition, the guide offers suggestions for safe navigation and anchoring in area waters. (<http://edis.ifas.ufl.edu/SG066>)

- 5.6 Florida Sea Grant Extension will continue its third-year outreach activity as a component of the Southeast Atlantic Coastal Ocean Observing System (SEACOOS). Four Sea Grant programs (North Carolina, South Carolina, Georgia and Florida) are cooperating in this regional project. Florida Sea Grant will serve as a member of the SEACOOS Extension and Education WorkGroup. Regional and state educational products and resources will be developed for extension agents and marine and coastal resource users. (Simoniello/D.Jackson/Spranger: E/T-12)

- Short presentation at close-out of Coastal Storms Initiative to tie-in the early work of the SEACOOS project to findings of the CSI.
- Panel display and discussion on SEACOOS with interested persons at the Miami Boat Show. A total of 128,000 attended the show, with about 25 quality contacts made at the display booth on the subject of SEACOOS. Updated fact sheet handed out (approximately 100 copies).
- Update given to members of the Clean Boating Partnership twice during year.
- Represented Florida S.G. and the 4-state outreach efforts at the International Ocean Observing Systems conference in Washington, DC. In May, 2005
- Presentation on SEACOOS outreach efforts (with Chris Simoniello) for the PAT review committee.
- Presentation to Gulf Atlantic Yacht Club included information on SEACOOS efforts that relate to boaters.
- Panel presentation and fact sheets for Extension Professionals Association of Florida. Approximately 300 in attendance.

Florida Sea Grant provides leadership in the 4-state effort with Mike Spranger as FL PI and Chris Simoniello as regional coordinator of extension and education. Some of the many products I helped develop include SEACOOS DVD, Waves and Hurricanes posters and related virtual classroom activities, brochures and flyers and model buoys (described below). Also created PowerPoint presentations/posters for a variety of users (e.g. COSEE online course, American Meteorological Society meeting, Institute of Marine Remote Sensing teacher workshops, COSEE and SEPORT workshops, Extension Professionals of Florida, FL Bay and Adjacent Marine Systems Conference). Create questions/work with NOSB and Sunshine State Scholar programs & FL state ROV competition. Worked with Braxton Davis on needs assessment for Coastal States Organization. (Simoniello)

Served as member of SEACOOS Education and Outreach Work Group. Provided programmatic and administrative oversight to SEACOOS Regional Education Specialist. Provided

presentations on SEACOOS to such groups as the Clean Boating Partnership, and Florida Marine Science Educator Association. (Spranger)

- 5.7 Florida Sea Grant Extension will work with the research and education community to develop the Gulf of Mexico Coastal Ocean Observing System (GCOOS), providing technical assistance in development of the GCOOS memorandum of agreement, business plan, and creation of an Education and Outreach Council. (Spranger)

Assisted in development of GCOOS Memorandum of agreement, business plan and creation of education and outreach council. Elected to GCOOS Board of Directors and Executive Committee.

- 5.8 In coastal communities across the nation, there is growing concern that current development patterns are contributing to water quality and environmental degradation. Smart growth training will be provided to agency staff and university faculty. (Sidman: SGEP-13-EPA)

Outcome: Dr. Sidman is acting co-chair of the IFAS Goal 6 theme team “Smart Growth and the Urban and Rural Interface,” which explores a variety of issues related to maintaining a balance between growth and community quality of life, thereby fulfilling the demonstrated need for planning and growth management-related extension and education targeted to localities situated along the urban and rural boundary. Dr. Sidman will help conduct an in-service training (May 15, 2006) on the principles of smart growth for IFAS extension faculty.

- 5.9 Congress passed the Clean Vessel Act in 1992 to help reduce pollution from vessel sewage discharges. The Clean Boating Partnership has developed a voluntary, statewide incentive-based Clean Marina Program. This project will access the awareness of Florida boaters about these programs as a way to better target future efforts. (Swett: EX-FDEP-1)

Outcome: Florida Sea Grant completed a study that determined (1) boater awareness of the Clean Vessel Act (CVA) and Clean Marina Program (CMP), (2) changes in awareness of the CVA since a 1998 assessment, and (3) the practices and attitudes of Florida boaters. Results indicate that nearly 50 percent of the general boater population is aware of Florida’s Clean Vessel; a result not significantly different from the 1998 survey. In contrast, 72 percent of owners of larger boats (≥ 26 feet long) were aware of the CVA. The report concludes with recommendations on how to better target future educational and outreach efforts among the general boating population.

http://www.flseagrant.org/program_areas/boating/publications/TP_151An_Assessment_of_Florida_Boaters_Web.pdf

- 5.10 A web presence is a valuable tool for providing program information and educational materials to existing and potential program clientele. The web pages devoted to the inventory of Southwest Florida recreational anchorages have been highly used. This project will implement dynamic, database driven web technology to enhance the FSG website on recreational anchorages. (Swett/Fann: PD-05-03)

Web presence is a valuable tool for providing program information and educational materials to existing and potential program clientele. The Web pages devoted to the inventory of southwest Florida recreational anchorages have proven successful in attracting traffic to the Florida Sea Grant (FSG) website. Email and telephone feedback from users, as well as site statistics, have shown that the anchorage pages are among the most frequently visited on the FSG website. FSG developed the anchorage pages ten years ago, and Web technologies and design standards have evolved considerably since then. Before this project, the anchorage pages were static (with textual data and other information entered at the time of Web page creation and not readily accessed—other than being made visible in a Web browser—or changed thereafter). To realize the potential of the Web for content delivery and education, the pages needed to be more than a static reproduction of

printed material. As a result of this project, a dynamic, database-driven Web technology was implemented that significantly enhances the information content and improves the usability of the Florida Sea Grant (FSG) Web pages that provide information on recreational anchorages.

Outcome: Dynamic Web technology was employed on the Florida Sea Grant (FSG) anchorage Web site and, as a result, users can now tailor Web content to their needs and are presented with a richer and more personalized experience. This project represents the first application of dynamic, database-driven technology on the FSG Web site, and it provides FSG communications staff an opportunity to evaluate the feasibility of converting other static, but content-rich, sections to the technology. The project is consistent with FSG strategic objectives to expand use of the Internet as an educational tool and to incorporate educational strategies designed to increase boater awareness and boating behavior. http://flseagrant.ifas.ufl.edu/anchorage/anchorage_inventory.php

- 5.11 The NOAA Coastal Services Center is identifying and evaluating the successful application of data and information from the integrated ocean observing system (IOOS) in addressing natural resource management issues. This project will compile 3-5 case studies for presentation to NOAA. (Simoniello: E/T-15)

Three case studies were written and presented at the NOAA Coastal Services Center. NOAA CSC was pleased with the work and is now condensing the case studies for publication in a NOAA brochure highlighting applications of COOS information for resource managers.

- 5.12 Southwest Florida's coastal communities share a dilemma: how to balance growth in recreational boating and associated coastal development with conservation and management of natural resources. This project will obtain baseline information to map and describe activities, use patterns, and problems/needs of the Sarasota Bay boating community. (Sidman: EX-WCIND-2; EX-WCIND-3)

Outcome: A recreational boating characterization was completed for Sarasota County to generate baseline information to map and describe activities, use patterns and the problems / needs of the Sarasota County boating community. A map-based questionnaire was mailed to a random sample of nearly 5,000 area boaters and nearly 1,000 completed and returned the questionnaire. The methods and results are described in the Sea Grant technical report TP-152. This information is intended to assist Sarasota County with prioritizing and improving waterway access and maintenance, and optimizing boat facility siting.

- 5.13 Assist marinas in Brevard County with specific programs and through participation in the Clean Marina Program as follows (Combs):

- 5.13.1 Address and provide recommendations regarding stormwater issues at four marinas.

1/18/05, and 6/22/05 Banana River Marine, Merritt Island, review sand-filter system installed at boat wash-down facility.

9/28/05 Bluepoints Marina (new facility in planning stages), Port Canaveral

10/12/05 Follow-up with Bluepoints Marina, Port Canaveral

10/12/05 Cape Marina, Port Canaveral – review signage needs (existing Clean Marina/Clean Boatyard)

11/16/05 Diamond 99 Marina, Melbourne – visit with new owners to review progress on Clean marina/Clean Boatyard designation process

11/18/05 St. Sebastian Marina, Little Hollywood – review hurricane damage repairs and progress in Clean Marina program

11/18/05 Sebastian Inlet Marina and Boatyard, Micco – review hurricane damage repairs and progress in Clean Marina program

11/18/05 Sebastian Inlet Marina and Boatyard, Micco – review hurricane damage repairs and review needs for stormwater-handling, and progress in Clean Marina/Clean Boatyard programs

- 5.13.2 Conduct on-site training and guidance to assure Clean Marina or Clean Boatyard designation at three marinas.

1/18/05 Banana River Marine, Merritt Island
3/10/05 Orange Cove Marina, Cocoa Beach
4/12/05 Inlet Marina, Sebastian State Park, Sebastian Inlet
9/28/05 Bluepoints Marina (in planning stages), Port Canaveral
11/16/05 Diamond 99 Marina, Melbourne

- 5.13.3 Increase public awareness of Clean Marina/Clean Boatyard program by 10% by conducting two educational programs on Brevard County Space Coast Government TV (SCGTV).

Not done.

- 5.13.4 Reduce marine debris through industry adoption of proper disposal methods of waste petroleum products, cleaning solutions, dead batteries and other harmful products and increase use of pump-out stations through Clean Marina/Clean Boatyard educational programming at four marinas/boatyards in Brevard County.

Ongoing support of and work with Cape Marina (Port Canaveral), Titusville Municipal Marina (Titusville), Melbourne Harbor Marina (Melbourne), and all marinas presently working towards designation as Clean Marinas/Boatyards.

- 5.13.5 Strengthen ties between the Marine Industries Association of Brevard, the Marine Industries Association of Florida, Florida Fish and Wildlife Conservation Commission, Florida Department of Environmental Protection, the US Coast Guard, and fellow Sea Grant Agents in expanding the influence of the Clean Boating Partnership around the state of Florida.

Ongoing process, enhanced by regular attendance at monthly meetings of MIAB where Clean Marina/Clean Boatyard programs are regularly discussed.

- 5.14 The *Lee County Boaters Destination Guide* will be completed and 12,500 copies will be printed in April 2005. Distribution through Lee County Chamber of Commerce and waterfront businesses will begin May 2005. This guide will depict waterfront businesses that cater to boaters and describe boater-friendly destinations for pursuit of waterborne activities. (Wasno)

12,000 copies of the “Lee County Boaters Destination Guide” were printed and distributed to local waterfront participating businesses free of charge. Funding was provided by West Coast Inland Navigation District.

- 5.15 In a collaborative program with Florida Department of Environmental Protection, Marine Industries Association of Southwest Florida and Florida Sea Grant, the Clean Marina Program will certify three marinas. In addition, a workshop will be coordinated with Pelican Isle Yacht Club to introduce the program to prospective marinas. Goals are to have 25 local marinas and boatyard personnel attend and begin certification reviews for five. (Wasno)

The Clean Marina Program certified one marina in southwest Florida (Collier Co). An introductory workshop was held for marinas at Pelican Isles Yacht Club. Fifteen marinas were represented. Certification reviews are being held for five marinas.

5.16 Enhance the boating and marine industries in Santa Rosa County. (Verlinde)

5.16.1 Promote the Clean Marina Program.

Promote Clean Marina at local fish camps and the former clean marina in Santa Rosa County, information was provided to one fish camp, due to hurricane damage in 2004 and 2005, the fish camp and former clean marina are still not open.

5.16.2 Redesign the Boater's Guide to Pensacola Bay. This guide will include safe and clean boating tips, recreational fishing information, boat ramp and marina locations, clean marina designations, boating issues, and information on endangered and exotic species.

Continue to work w/ FWCC point of contact to discuss the reprinting and design of the Pensacola Bay System Boat Guide. Data has been gathered, look for publication in summer 2006.

5.17 An extension-style brochure, a Web-site, and map server will highlight significant accomplishments, such as the regional waterway management system and the general permitting effort, that have resulted from a 5-year cooperative agreement between Florida Sea Grant and the West Coast Inland Navigation District (WCIND). The public will be better equipped to support WCIND objectives if informed about accomplishments resulting from WCIND management actions on priority issues. (Swett/Fann)

Outcome: 5,000 copies of an extension style brochure and an accompanying Web site were created to highlight the Regional Waterway Management System, which applies the latest science and technology to address a daunting planning dilemma faced by coastal counties--how to balance the phenomenal growth of the boating population with conservation and management of surrounding environmental resources. <http://edis.ifas.ufl.edu/SG067>

5.18 A statewide survey will be conducted to assess boater awareness and impacts of the Clean Vessel Act (CVA) grant program and the Clean Marina Program (CMP). A secondary objective is to assess the ability of a Web-based survey to provide a statistically valid assessment of boater awareness of the CVA and the CMP. The success of these programs depends on marina and boater awareness of environmental laws, rules and regulations, and jurisdictions with which they must comply. (Swett)

Results included in Task 5.9 above.

5.19 A Recreational Boating Characterization for Greater Charlotte Harbor will be completed to characterize the preferences, activities, and use-patterns of area boater populations. A map-based questionnaire will be mailed to a random sample of boaters stratified by trip origin type (marina wet-slip, dry-storage facility, ramp, private dock). The information will be used for resource management and planning applications, and as the basis for developing map-based products intended to improve boating experiences and instill resource stewardship. (Sidman/Fik/Swett/Fann/Sargent: EX-FWCC-3)

Outcome: A recreational boating characterization was completed for Greater Charlotte Harbor and summarized in the Florida Sea Grant technical report TP-150. A map-based questionnaire was mailed to a random sample of 6,944 area boaters. Questionnaire recipients marked the start and end

point of their last two recreational boating trips, traced their travel routes, identified their favorite boating destinations, and the primary activities that they engaged in while at a particular destination. In addition, much descriptive data about boaters' trips, including preferences for selecting trip departure sites, destinations, and travel routes, favorite activities, vessel types, and the timing, duration, and frequency of trips, was collected and linked to the mapped data. A content analysis identified important issues and needs from the perspective of the boating community. This information is intended to be used for resource management and planning applications.

- 5.20 A Recreational Boating Characterization for Sarasota County will be initiated to characterize the preferences, activities, and use-patterns of area boater populations. This project intends to satisfy important elements of local manatee protection plans that recommend (1) an analysis of boating patterns, (2) an assessment of marine facility uses, needs, and siting, and (3) increased public education for resource stewardship and manatee protection (2006) (Sidman/Fik/Swett/Fann/Sargent: EX-FWCC-3)

Results included in Task as 5.12 above.

- 5.21 Florida Sea Grant (FSG), the Florida Fish and Wildlife Research Institute (FWC) Boating and Waterways Section, and the Department of Highway Safety and Motor Vehicles will work to implement recommendations (Florida Sea Grant TP-138) to enhance the utility of the Florida Vessel Title Registration System (VTRS) as a planning and management tool. FWC and FSG also will implement a Web-based data server to provide access to and queries of vessel registration information derived from the VTRS. Florida Sea Grant, FWC, and many other entities use VTRS information on a regular basis for research and outreach purposes. (Swett/Sidman)

Outcome: This project is on-going. In 2005, a stakeholder meeting was held to rank and prioritize recommendations and VTRS data needs. Florida Sea Grant and Florida Fish and Wildlife Conservation Commission personnel also met with Department of Highway Safety personnel (DHSMV) to discuss issues/constraints, data needs, and to obtain a better understanding of policies regarding VTRS data release. FSG and DHSMV signed a memorandum of agreement that permits use of data by FSG for research purposes.

- 5.22 The State of Florida, with the guidance of Florida Sea Grant (FSG), is developing a new administrative rule for dredging public waterways in Lee County under the authorization of a general permit. The rule will apply to trafficsheds with high priority maintenance dredging needs as identified by applications of the FSG Regional Waterway Management System. Impacts include state policy based on "best available science", better efficiency and effectiveness in dredging and waterway maintenance, savings in dollars and staff time, and better public policy through a holistic, environmentally-based decision-making process. (Swett/Fann)

Outcome: The selection process to determine which boat source areas (trafficsheds) and public waterways will be included in the new State Administrative Rule is complete. Current discussions between Lee County, the West Coast Inland Navigation District, the Florida Department of Environmental Protection and Florida Sea Grant are to determine how to implement non-combustion engine zones to mitigate maintenance dredging activities in aquatic preserves.

- 5.23 A boating and anchoring guide will be produced for Jupiter Inlet, with funding from the Jupiter Inlet District, to (1) enhance the experiences of local and transient boaters, (2) promote safe navigation and responsible boating and anchoring behaviors, and (3) provide boaters with information on area resources and amenities. (Swett/Fann)

Outcome: 5,000 copies of a boating and anchoring guide for Jupiter Inlet District are now being printed for distributed (3/2006). A companion Web site is being developed based on the printed guide and it will be operational in May 2006.

- 5.24 Local municipal regulations that govern boating activities on local waterways will be identified, documented, and incorporated into a statewide GIS database for use with the Florida Fish and Wildlife Conservation Commission's Coastal Resource Information System. The purpose is to assist the FWC and partners in implementation of more effect waterway management. The project will span multiple years, this year being the first. (Swett/Ankersen/Hamann/Sidman/Sargent-FWC)

Outcome: Florida Sea Grant and the University of Florida Levin College of Law initiated a multi-year project to catalog and incorporate into a GIS database local municipal regulations that govern boating activities on Florida's coastal waterways. The first phase of the project will be completed in 2006.

- 5.25 Assist marine industries in Charlotte County. (Staugler)

- 5.25.1 Conduct on-site training and guidance to assure Clean Marina or Clean Boatyard designation at 4 pledged marinas.

Conducted site visits and provided guidance to pledged marinas. One Marina/Boatyard is very close to receiving designation, two are in re-design phases and will re-open as Clean Marinas.

- 5.25.2 Increase public awareness of Clean Marina/Clean Boatyard program through a redesigned Boating and Angling Guide to Charlotte Harbor.

The updated Boating and Angling Guide now includes information about the Clean Marina Program. In addition, the Clean Marina Program is promoted through Clean Boater and other ongoing Sea Grant outreach efforts.

- 5.26 In the last 10 years, regulatory changes have retired many traditional marine industry careers. Publications, technical assistance and special extension programming activities will be created for Taylor County to inform and educate the local citizenry of viable alternatives for productive careers in areas of aquaculture and nature-based tourism. These efforts seek to boost local economies while contributing towards a broad-based coastal conservation ethic and sustainable coastal development. (Sapp)

I performed 13 field consultations involving technical water quality analysis and distribution of aquaculture opportunity resources that enabled residents to both continue current aquaculture operations with greater profitability and initiate new aquaculture operations. I also developed web and print resources focused on eco-tourism and kayaking opportunities in the area. By December, 2005, I distributed nearly 40 educational publications a month for area paddling trails for both local citizens and regional visitors, thereby boosting local economies.

- 5.27 Continue work with the Franklin County Board of County Commissioners and county staff to identify potential boat ramp/water access points for both commercial and recreational fishing interests. (Mahan)

The Franklin County Agent continued his work with the Franklin County Board of County Commissioners and county staff to identify potential boat ramp/water access points for both commercial and recreational fishing interests. The Agent help the County secure a \$275,000

Boater's Improvement Program Grant from the FL Fish and Wildlife Conservation Commission and located several potential boat ramp sites on properties that are currently for sale.

- 5.28 Assist the local fishing industry, county planners, and interested public with workshops, meetings and research to provide waterfront management with the aim of maintaining a sustainable level of waterfront access for the commercial fishing industry. (Gregory)

The Monroe County Sea Grant Marine Extension Agent encouraged commercial fishing industry leaders to speak at three different Monroe County BOCC meetings with regard to the need to develop a master plan for managing waterfront uses.

Agent activities included participation in the MC Planning Department's Livable Communities Workshop regarding potential redevelopment of the Stock Island waterfront, a Monroe County Marine and Port Advisory Committee discussion of working waterfronts and a proposed marine management plan, invited membership on a technical advisory committee for the marine management study being conducted jointly by the Florida Atlantic University Catanese Center and South Florida Regional Planning Council. Testimony was also provided to the Monroe County Planning Commission on the potential benefits of a temporary moratorium on waterfront redevelopment until the marine management plan was complete.

Spoke on US 1 Morning Magazine radio talk show on at least three occasions about the concerns about the loss of working waterfront and its importance to the commercial fishing industry. I was interviewed for at least four newspaper articles in local papers. Also, an article on this subject that recently appeared in the Miami-Herald about the local loss of working waterfront was also published by the Wilmington, NC Star-News newspaper.

Subsequently, the BOCC approved a temporary moratorium on waterfront redevelopment until the ongoing waterfront management plan is complete and set aside \$20M towards purchase of waterfront property.

Clean Marina Program

The Monroe County Sea Grant Marine Extension Agent participated in Clean Marina surveys with FDEP, Marine Industries Association, and USCG Auxiliary at Seabird Marina on Long Key and Caribee Marina in environmentally friendly procedures that go well beyond the basic regulatory requirements.

Serra Morrison and Doug Gregory participated in the final clean marina survey with FDEP, USCG Auxiliary, and FKNMS of Mangrove Marina in Tavernier. The marina passed inspection and will be awarded Clean Marina Status later in the year.

Serra participated in the Clean Marina designation ceremony at SeaBird Marina on Long Key on August 22. The event was attended by Florida Sea Grant, Florida DEP, and members of the U.S. Coast Guard.

- 5.29 Serve as the principal Sea Grant liaison for the Florida Clean Boating Partnership. (D.Jackson)

5.29.1 Continue to work with clean marina, clean boatyard, clean marine retailers, and clean boater programs with Sea Grant Extension faculty, the Florida DEP and industry.

- Attended 3 of 4 Clean Boating Partnership meetings, serving on committee and participating in general meetings.

- Presented successes/failures of starting a clean marina program to Oregon's initial organizational industry/government meeting for startup of their clean marina program.
- Presented successes/failures of starting a clean marina program to South Carolina's initial organizational industry/government meeting for a re-start of their clean marina program.

5.29.2 Prepare and edit updates for the "Sources for Best Management Practices in Marine Facilities".

Updated and inserted new material in "Sources for Best Management Practices for Marine Facilities" (3 times). Updates posted on DEP website within 2 weeks of each update.

5.30 Participate at the Coastal Zone '05 Conference in New Orleans as part of a group presentation. The other participants will be Texas Sea Grant, California Sea Grant, and the Clean Water Trust of Boat/U.S. The topic will concern successes and failures in starting and organizing clean marina programs from each of our perspectives, using different funding, organization, and criteria in each program. (D.Jackson)

Co-presented paper on clean marina program successes and failures at Coastal Zone '05 conference in New Orleans, with Texas S.G. and Boat/U.S. representatives as co-presenters.

5.31 Continue working with Clean Boating Partnership to designate new clean marinas and clean boatyards in 2005. Help re-establish previously recognized facilities as they recover from Hurricane Ivan. Present Clean Boater educational materials to boaters at the Pensacola Boat show and other environmental events. (Diller)

At the Pensacola Boat Show, more than 450 people signed the Clean Boater Pledge promising to follow best management practices while boating to protect the environment. Escambia Agent distributed over 500 personal flotation devices and over 50 bilge socks to boaters that signed the pledge.

Escambia County marinas continued recovery from Hurricanes Ivan, Dennis, and Katrina. Several Clean Marinas plan to re-open in 2006.

5.32 Enhance the environmental sustainability of marine businesses in Miami-Dade County. (Crane)

5.32.1 Work with the Clean Marina's DEP staff to establish clean marina and boatyard designations through conducting workshops, site visits, and dissemination of informational materials. At least 2 marinas and/or boatyards will become designated or enlist in the Florida Clean Marina Program.

Two marina managers attended a Clean Marina/Boatyard Workshop. From the program surveys completed, results indicated a satisfaction rating of 5.0 out of 5.0, knowledge gained rating of 3.5 and a practice change rating of 5.0. The Miami-Dade Agent provided educational information and technical assistance to assist Sealine Marina to achieve the Clean Mariana status.

5.32.2 Continue working with marina managers on proper pollution prevention of fish waste, fuel spills, and other hazardous waste through the dissemination of fuel spill kit bags for boaters, fish waste signs "Don't be Kind to Pelicans" and other debris related

information. Adopted pollution prevention practices will be measured by follow-up survey from the dissemination of materials to marina managers and boaters/anglers.

125 boaters received fuel spill kits bags. All 125 boaters who pledged to use the bilge sock to absorb oil and fuel discharges from their boat will prevent approximately 312 quarts (78 gallons) from entering the marine waters and affecting wildlife and habitats. About 6 pelican signs were distributed to marina managers. Additional funding is needed to print extra pelican signs for marine facilities.

- 5.33 Recruit marinas to participate in the Clean Marina Program in Bay County. Conduct workshop to inform the dock masters and marina staff on the importance of a clean marina for pollution control and best management practices. Present facilities with literature and training regarding the Clean Marina Program. (Cameron)

Met with two local dock masters interested in the Clean Marina Program and distributed literature to both of them but each have moved on in their careers and have not been replaced yet. (Cameron)

- 5.34 Enhance the environmental sustainability of marine industries in Broward County through education about the Clean Boating Partnership and related environmental and economical best management practices through workshops, site inspections and facility designations. (Behringer)

The review and designation of Lauderdale Marina was postponed due to hurricanes. Distributed information and materials on Clean Marina/Boatyard Program at the annual International Fort Lauderdale Boat Show. Approximately 800 visitors received information and 200 of them signed Clean Boater pledge cards. (Behringer)

- 5.35 Continue to serve on the Public Education and Image Committee of the Marine Industries Association of South Florida Marine Master Plan Steering Committee. (Behringer)

Participated in planning meetings to develop “Welcome Bags” for boat captains. (Behringer)

- 5.36 Enhance the marine industries in Northeast Florida. (McGuire)

- Worked with staff from the DEP’s NE District to certify five new clean marinas or boatyards in NE Florida.
Worked with staff from DEP’s NE district to certify two clean boatyards and one new clean marina.
- Worked with staff at the Fish and Wildlife Research Institute to finalize print and distribute boater and angler recreational guide for Duval County.
Finalized and received 30,000 print copies of the Boating & Angling Guide to Duval County. Distributed approximately 25,000 of those guides in 2005.
- Worked with Flagler County planners and staff at the Fish and Wildlife Research Institute to develop a similar guide for Flagler County.
FWRI stopped work on Flagler County’s boating guide and it was dropped from their project list. I will work with FSG boating and waterways staff to develop a Flagler guide in 2006-2007.
- Helped St. Augustine Ports and Waterway Authority distribute a waterways guide for St. Augustine.
Assisted St. Augustine Ports & Waterways Authority to distribute over 3,000 St. Augustine Waterways Guides.

Coastal Ecosystem Health and Public Safety

Goal 6: Protect and Enhance Coastal Water Quality and Safety

- 6.1 Current on-site sample collection and laboratory-based analysis is costly and time consuming in regards to approving coastal waters for shellfish growing for human consumption. Red tide is often a problem which requires constant sampling. This project will test the accuracy and effectiveness of satisfying red tide monitoring methods using remote sensing equipment rather than labor-intensive on-site sampling. (Wilhelm/Kirkpatrick: R/LR-Q-25)

The recent operation of the red tide detector in Pine Island Sound was the first automated real-time surveillance for harmful algae species in an estuary. One instrument was installed on channel marker 51 in Pine Island Sound on May 5, 2004. It operated nominally until August 13, 2004 when Hurricane Charley removed it from the channel marker. The Brevebuster is capable of estimating the contribution of chlorophyll by a target organism to the total chlorophyll of a mixed species assemblage.

- 6.5 Improve the quality of coastal and marine waterways in Brevard County. (Combs)

- 6.5.1 Write a bi-monthly educational article for the UF/IFAS Brevard County Extension newsletter, "Agriculture and More".

Newsletter articles:

Combs, C. L. 2005 "Question and Answer – Concerning current fishing/hunting regulations." Brevard Co. Extension Newsletter, Agriculture and More, 2/1:1 page

Combs, C.L. 2005. "Sharks at the Beach." Brevard Co. Extension Newsletter, Agriculture and More, 2/2:1 page

Combs, C.L. 2005. " 'What, Me Worry?' About Alien Creatures in the Lagoon." Brevard Co. Extension Newsletter, Agriculture and More, 2/3:1 page

Combs, C.L. 2005. "Waterways Access." Brevard Co. Extension Newsletter, Agriculture and More, 2/5:1 page

- 6.5.2 Present an educational program on Space Coast Government TV (SCGTV) concerning stormwater issues in Brevard County and how they are being addressed.

Not scheduled as planned in 2005 – not done.

- 6.5.3 Educate 10 members of the Brevard County Commission Marine Advisory Council on IFAS and Sea Grant resources available to assist this Council in achieving its goals, including derelict vessel removal from the Indian River Lagoon.

Attended regular monthly meetings of 10-member BCC Marine Advisory Council, as in previous years, and provided quantities of Florida Sea Grant and other Sea Grant printed materials for their library concerning derelict vessel issues; discussed with members results of Dr. Gus Antonini's work, and prospects of obtaining services of Drs. Bob Swett and Charles Sidman in Brevard County in Waterways projects that will contribute to resolution of derelict vessels problems.

- 6.5.4 Conduct two waterway cleanup exercises, designed to educate 50 participants in the environmental damages caused by litter in the marine environment.

4/16/05 Keep America Beautiful annual "Trash Bash," Grant (50 vicinity participants)

- 6.5.5 Develop two fact-sheets concerning stormwater runoff and its environmental impact in the Indian River Lagoon.

Fact Sheet on “How to Obtain a Permit for Grass Carp in Central Florida” developed, instead of stormwater Fact Sheet.

- 6.5.6 Provide educational assistance and support for “Olympic Team” of approximately 10 teenage boys incarcerated at Space Coast Marine Institute, Melbourne, in development of their 2005 Science Fair project concerning stormwater runoff, filtration, and purification, and to solicit voluntary input and support from local private stormwater product manufacturer.

June 2005 – 3 meetings – mentor for Space Coast Marine Institute, FL Dept. Juvenile Justice, Melbourne – provided support for development of “Olympics” Science Fair project, “Stormwater Runoff System,” entered in Olympics competition in Atlanta (24 contacts).

- 6.5.7 Continue, as during 2004, to provide ongoing local operational support as needed within Brevard Co. Waterways Management programs expected to be developed and implemented during 2005 through Florida Sea Grant by Dr. Bob Swett and Dr. Charles Sidman, and facilitate linkages between related local Waterways projects, such as the Derelict Vessel Removal program of the Brevard County Commission Marine Advisory Council (BCCMAC), and the Spoil Island restoration project of the Citizens for Florida’s Waterways (CFW) boating group, by attending meetings of these groups, providing them Extension information, and developing new educational materials as needed in support of these efforts. (Combs)

Attended several meetings with Brevard Co. Commissioner, Ron Pritchard, as well as meeting with State Rep. Mitch Needelman, in support of funding requests and eventual implementation of Brevard Co. Waterways management studies proposed to be conducted by Sea Grant’s Dr. Bob Swett and Dr. Charles Sidman.

- 6.6 Work to enhance water quality within the Pensacola Bay Watershed. (Verlinde)

- 6.6.1 Coordinate sampling, training and collection of samples for the UF/IFAS Lakewatch program in Santa Rosa County.

Coordinated water sample drop-off, supplies and provide training for Lakewatch volunteers for 2 sites in Santa Rosa County.

- 6.6.2 Coordinate and lead Pensacola Watershed Tour. This will be a tour of the watershed from Alabama to the coastal area of Florida for community leaders. The goal is to educate participants on watershed impacts on local water quality and continue collaborative efforts of watershed management for officials in both states of the watershed. This event was canceled due to Hurricane Ivan in 2004.

The Pensacola Bay Watershed Tour was a great success, Evaluations indicated that the tour was very informative concerning agriculture practices and natural resource conservation and restoration efforts. In addition, environmental education efforts were highlighted in the tour. More than 95 watershed residents participated in the tour. Participants included: city and state government officials from Alabama and Florida, elected officials from Escambia and Santa Rosa counties, a state representative, a city

councilman, environmental activists, community leaders, representatives from local organizations and local citizens.

- 6.6.3 With UF researchers and watershed supporters, coordinate and provide projects for the Pensacola Bay Watershed Initiative Grant proposal to the US Environmental Protection Agency.

With UF-Milton Natural Resource researchers and watershed supporters, provided water quality management projects to the 2005 application of the Pensacola Bay Watershed Initiative grant to the EPA. Total proposal was 1.2 million dollars. The proposal placed in the top 4 for the southeast division, but was not funded.

- 6.6.4 Promote stormwater best management practices to community and industry leaders. Promote use of wetland plants in stormwater treatment designs, pervious surfaces, rain gardens. Develop a demonstration site within the county.

Provided stormwater best management practices and vegetation recommendations upon request to various individuals and county planners. No demonstration site has been developed.

- 6.6.5 Support, participate in activities of the Bay Area Resource Council, a local watershed management organization.

Supported the Bay Area Resource Council by attending meetings of the council, the technical advisory committee and the Environmental Education Coordination Team. The coordination of the Pensacola Bay Watershed Tour, Resource Ranger program development, grant research and project proposals and providing meeting space and speakers are part of this agents' involvement with the committee.

- 6.7 Protect and enhance water quality in coastal Charlotte County. (Staugler)

- 6.7.1 Participate as a member of the Water Quality Quantifiable Objectives Sub-committee, of the Charlotte Harbor National Estuary Program.

The Sea Grant agent has continued to remain an active member of the CHNEP Water Quality Quantifiable Sub-committee.

- 6.7.2 Participate in the development of a community based watershed management plan for Lemon Bay.

Only one meeting of the Lemon Bay League occurred during 2005.

- 6.7.3 Work with boating user groups, master gardeners and civic groups to promote BMPs for improved coastal water quality.

Four outreach programs occurred in 2005. Programs addressed best management practices for boaters.

- 6.8 Improve coastal water quality in Okaloosa and Walton Counties. (S.Jackson)

- 6.8.1 Work with boating user groups to promote BMPs that benefit coastal water quality.

Co-sponsored informational meeting for Clean Marina Program with Florida Department of Environmental Protection, Florida Marine Industries, and the Coast Guard in Fort Walton Beach to introduce the Clean Marina and Boatyard Programs to 14 representatives from area marine businesses.

Worked with Clean Marina partners to Certify Shalimar Yacht Basin as a Clean Marina.

- 6.8.2 Work with volunteers and local community leaders to develop water quality monitoring program.

35 Choctawhatchee Basin Alliance (CBA)-LakeWatch volunteers monitored 15 globally rare Coastal Dune Lakes each month.

They contributed a total of 1300 hours of community service. Consistent collection of data for these rare lake ecosystems has been established and reoccurring each month for over 2 years.

35 CBA Bay Rally-Project COAST Volunteers monitored 54 stations in Choctawhatchee Bay.

They contributed at total of 600 hours of community service in 2005 the program was established in 2002.

- 6.8.3 Continue regional fish extension activities that focus on topics of derelict fishing traps, mercury in fish, shrimp management, marine protected areas, essential fish habitat and fish management.

Assisted in the distribution of NOAA literature describing marine protected areas to appropriate recreational and charter fishing channels.

Provided Trade Assistance Training to Alabama Shrimping Operation headquartered in Okaloosa, County Florida.

Supported local dialogue related to Gulf of Mexico Fishery Management Council public hearing regarding red grouper.

- 6.9 Improve coastal water quality and monitoring program throughout Florida. (Jacoby)

- 6.9.1 Work with partners throughout Florida and beyond to develop and improve volunteer monitoring programs. (Jacoby)
Spoke with volunteers in Project COAST who monitor coastal water quality at sites around Florida. Discussed the use of monitoring data to formulate trophic indices. (Jacoby)

- 6.9.2 Work with partners to develop and implement training and curricula dealing with a watershed approach to water quality. (Jacoby)

The continuing series of in-service trainings dealing with a watershed approach to water quality provided training on bacteria in our water supply. (Jacoby)

- 6.10 Assist the Florida Yards and Neighborhood program and Florida Lakewatch program in Escambia County by working with volunteers and local community leaders to understand and develop water quality monitoring programs and reduce stormwater. (Diller)

The Escambia Florida Yards and Neighborhoods, Sea Grant, and Windstorm Mitigation agents co-sponsored and organized the Coastal Recovery Expo with the Bay Area Resource Council and the City of Pensacola. The Expo included windstorm resistant landscaping and construction techniques, stormwater prevention, and dune restoration and planting information. (Diller)

Although Escambia marine agent continued to serve as County coordinator for the Florida Lakewatch Program, local sampling groups are still recovering from Hurricane Ivan and have yet to resume water quality testing.

- 6.11 As a member of the US Fish and Wildlife Service's manatee entanglement and manatee education working groups, continue to work on issues relating to derelict crab/fishing traps. (McGuire)

Continue to serve on the US Fish & Wildlife Service's Manatee entanglement and manatee education working groups. Entanglement working group was unable to coordinate derelict crab trap removals in 2005 (mostly because of hurricanes) but will continue working on this in 2006.

- 6.12 Work with staff from the Guana Tolomato Matanzas National Estuarine Research Reserve to investigate the feasibility of starting a NEMO program in Florida. (McGuire)

The GTMNERR staff person responsible for NEMO resigned and the position is currently vacant.

Goal 7: Protect, Restore, and Enhance Coastal Ecosystem Habitats

- 7.1 Large populations along Florida's coast have created conflicts between human uses of the waterways and natural resources such as oysters. This project will determine the impact of boat wakes on intertidal oyster reefs and will provide coastal managers with data on which science-based management decisions can be based. (Walters/Coen/Grizzle: R/C-E-45)

Resource Managers will be able to use project findings to develop "best management practices" for recreational boaters in areas where oyster reefs are declining. Second, the restoration methodology developed through this grant will be put into use in Canaveral National Seashore with funding from TNC/NOAA. Third, the single-pass boat wake methodology will be used as part of an award through the Palmetto Bluff Conservancy in Bluffton, South Carolina to help them minimize boat wake damage in an area where new marina construction will soon be underway.

- 7.2 Many reef fishes are thought to make diel, seasonal, or ontogenetic migrations among multi-habitats. But most evidence of such movements is indirectly inferred from density and size-structure differences among the habitats. This project will provide quantitative results (time and spatial range) which will have direct utility for resource managers charged with designing and implementing management plans for tropical and subtropical coastal habitats and fisheries. (Luo/Su/Serapy/Lorenz: R/C-E-48)

This is the first time that miniature archival tags have been used on gray snapper to produce solid evidence of diel multiple habitat utilization, which until now has only been speculated upon by researchers. This is also the first time camera arrays have been used in monitoring gray snapper to establish diel habitat utilization patterns. Finally, this is first time acoustic tagging has successfully been used to quantify for gray snapper diel, seasonal, and ontogenetic habitat utilization patterns.

- 7.3 Since 1984, aquarium releases of *Caulerpa taxifolia* - Mediterranean strain have led to this "killer algae" becoming established in coastal waters in Europe, California and Australia. In all cases, the ecological and economic costs have been substantial. The goal of this project is to significantly reduce the likelihood that *Caulerpa taxifolia* will become established in Central Florida. (Walters/Olsen: R/C-E-49)

Field sampling focused on the Florida Keys, the Tampa Bay region, and the northern Indian River Lagoon. Samples of all species of *Caulerpa* were collected from over 30 sites. No native *C. taxifolia* has been collected in Florida waters. All collected samples of all species of *Caulerpa* have been sequenced and entered into GenBank. Twenty-eight aquarium shops in central Florida were visited and *Caulerpa* sp. was available and purchased from 8 of these shops. In almost all cases it was *Caulerpa racemosa* (another potential pest species).

- 7.6 The need for current information on the types and impacts of aquatic nuisance species in informal education settings is critical to the public. As part of a four-state southeast regional effort, Florida will conduct several training programs for extension faculty and informal educators. These individuals will then develop aquatic nuisance species programs and materials in their respective locales. (Spranger: E/T-13)

Assisted in development of an invasive species summit for extension faculty that was held in Spring 2005. Provided funds for several invasive species workshops for teachers in NE Florida, South Florida and the Panhandle. Provided funds to The Florida Aquarium for a teacher training program in invasive species. Provided presentation on invasive species at Florida Marine Science Educator Association annual conference. Issues and program updates on invasive species was presented at annual Florida Sea Grant Extension planning meeting.

- 7.7 In a number of geographic locations worldwide, species of the genus *Caulerpa* have become major invaders shallow water habitats and have displaced native populations of seagrass. This appears to be occurring in certain Tampa Bay areas. This project is designed to document this shift from seagrass to an alga. (Bell/Robbins: PD-04-11)

Information on light levels and growth of *Caulerpa prolifera* confirms that the alga grows most quickly in lower light conditions and can spread at a rate (1m per 4 months) much more rapid than the fastest growing seagrass at the site (1m per year). Thus it is expected that the spatial dominance by *C. prolifera* will occur most readily at low light areas such as deeper water or under the canopy of large seagrass such as *Thalassia testudinum*, thereby identifying potential sites of establishment. In addition, the small light sensors used provide a new way to gather synoptic information about the light regimes in different coastal plant canopies. The use of underwater videography was shown to be an effective method for collecting high resolution information on seagrass and algae distribution over a large area, thereby providing a potential tool for coastal managers.

- 7.8 Provide public education opportunities concerning invasive exotic marine species in Brevard County waters as follows. (Combs)

- 7.8.1 Conduct six one-hour public seminars, targeting fishermen, in different locations in Brevard County, addressing the environmental and economic impacts of invasive exotic marine species upon recreational and commercial fisheries.

1/14/05 Invited presentation at Manatee Center, Ft. Pierce, "Marine Invasive Exotic Species" (20 attendees)

- 7.8.2 Develop six one-page fact sheets addressing the environmental and economic impacts of invasive exotic marine species upon recreational and commercial fisheries.

Fact Sheet on "How to Obtain a Permit for Grass Carp in Central Florida"

- 7.8.3 Present two educational programs on Space Coast Government TV (SCGTV) concerning marine invasive exotic species and their environmental and economic impacts, in order to heighten public awareness of the importance of these unwanted neighbors.

Not scheduled as planned in 2005 – not done.

- 7.8.4 Set up four or more manned educational exhibits at popular public events such as the annual Grant Seafood Festival, the annual Brevard County Fair, the Brevard Marine Industries Association Boat Show, annual Deep Sea Fishing Tournaments, and other related events to increase general public awareness of probable negative impacts on marine ecosystems caused by invasive exotic species.

Six days expended at three events (1,650 contacts, total) –

2/26-27/05 Grant Seafood Festival (Grant), Educational display, variety of handouts, interactive discussions with visitors (800 contacts)

6/3-4/05 Florida Sport Fishing Association, Annual Deep Sea Fishing Tournament (Port Canaveral), Educational display and interactive Q/A at Captains meeting and during Tournament day – (350 contacts)

11/4-14/05 Space Coast (county) Fair (Cocoa) – Marine Education Poster Contest (500 contacts)

- 7.8.5 Write or be interviewed by a reporter for a newspaper article about the environmental and economic impact of marine invasive exotic species.
- Task not completed.
- 7.8.6 Develop three educational brochures, designed to enhance recreational boaters' understanding of endangered marine species, the importance of protecting them, and methods to do so, especially manatees, green seaturtles, and loggerhead seaturtles, all of which are found in the IRL during a part of their life-cycle.
- Task not completed.
- 7.8.7 Continue serving on the multi-agency Project Development Team (PDT) of the Indian River Lagoon-North (IRL-N), and the PDT Ecological Sub-Team, in addressing IRL issues that might impact the Comprehensive Everglades Restoration Program (CERP).
- One meeting in 2005 – funding being dropped for continued association with Comprehensive Everglades Restoration Project (CERP) – very disappointing announcement!
- 7.8.8 Conduct eight classes for 60 commercial clambers concerning Indian River Lagoon water quality as potentially impacted by marine invasive exotic species.
- “Invasive Exotic Marine Species,” for Commercial clammer environmental education classes
- 5/13/05 (in Cocoa, 8 attendees)
 5/13/05 (in Titusville, 12 attendees)
 5/14/05 (in Palm Bay, 3 attendees)
 6/25/05 (in Palm Bay, 8 attendees)
 8/3/05 (make-up class, 0 attendees)
 10/5/05 (make-up class, 0 attendees)
 12/7/05 (make-up class, 0 attendees)
- 7.8.9 Conduct local workshops for K-12 teachers and interested citizens on marine invasive exotic species and their impacts on marine ecosystems.
- Task not completed.
- 7.9 Support implementation of COSEE Coral Reef Workshop for secondary school science teachers in July in Brevard Co., and participate as speaker concerning Oculina Bank (reef) Habitat Area of Particular Concern and Texas Flower Gardens National Marine Sanctuary. (Combs)
- Despite significant efforts to recruit attendees, not enough local teachers signed-up for training to justify holding this workshop – workshop was cancelled.
- 7.10 Conduct a collaborative project with Florida Gulf Coast University, South Florida Water Management District, Florida Department of Environmental Protection and Florida Sea Grant Program to continue to enhance oyster reefs at the mouths of 12 rivers and creeks in Lee and Collier Counties. Volunteers have created oyster bags from mined fossil oyster shells and will continue to enhance 2004 reef placement in areas of historically documented reef areas. (Wasno)

65 volunteers deployed 18 tons of bagged fossil oyster shells at 5 Lee County sites where oyster restoration work is being conducted. Previous shell deployments have yielded oysters of 2-inches after 8 months post deployment.

- 7.11 Make three presentations at the World Aquaculture Conference in Bali, Indonesia (Wasno)
- 7.11.1 “Stressor response model for the American oyster *Crassostrea virginica*: implications for restoration and enhancement of oysters in SW Florida estuaries.”
- 3 presentations were made at the World Aquaculture Conference in Bali, Indonesia. Co-presented: “Collaboration of Community, Regulatory Agencies and Academia in the Restoration of Oyster Reefs in Southwest Florida: An Adaptive Management Strategy”
- 7.11.2 “Seasonal and anthropogenic influences on the ecological and physiological responses of oysters: the role of adaptive resource management in SW Florida estuaries.
- “Developing a Program to Determine Oyster Restoration Success”
- 7.11.3 “REDStart: Community-based approach to fisheries enhancement.” (with Stevely/Creswell)
- Presented poster entitled: “REDStart: Community-based approach to fisheries enhancement.” at the World Aquaculture Society annual meeting in Bali, Indonesia (with Wasno and Stevely). (Creswell)
- “REDstart: Community-Based Fisheries Enhancement Program” (Wasno)
- 7.12 The REDstart Community-Based Fisheries Enhancement Program is a collaborative project with Florida Fish and Wildlife Conservation Commission, South Florida Water Management District, Sanibel-Captiva Conservation Foundation Marine Laboratory, Mote Marine Laboratory, City of Sanibel, US Fish and Wildlife Service and Florida Sea Grant. This project will enter the research phase with the first release of fish into local waters. Fish will be tagged and research will be conducted by the SCCF laboratory. (Wasno/Stevely/Creswell)
- Served on the REDStart project advisory committee and provided technical assistance in the design and operation of its recirculating aquaculture system. (Creswell)
- REDstart Fisheries Enhancement Program completed its second cycle of red drum fingerling grow-out. 4,500 red drum were tagged and released in Pine Island Sound. Research on these fish will be conducted by the Sanibel-Captiva Conservation Foundation’s Marine Laboratory. Health certification on these fish conducted by FWC was 48/50. Highest range to date for all red drum facilities. (Wasno)
- 7.13 Invited Team Member for the 8th Annual International Shellfish Restoration Conference to be held in Brest, France. Team meeting will be held to discuss final logistics, send acceptance letters to the presenters, and finalize field trips. I will be presenting during the conference on clam aquaculture and organizing volunteers for stock enhancement in fish and shellfish projects. (Wasno)
- Member of the Organizational Committee of the 8th Annual International Shellfish Restoration Conference held in Brest, France. 250 presentations were conducted.
- 7.14 Provide general educational training and assistance to improve coastal habitats in the Pensacola Bay Watershed. (Verlinde)

- 7.14.1 Provide aquatic nuisance species information to 4-H leaders, teachers, and the public at various talks and programs.

Provided invasive species information via e-mail list to teachers and 4-H leaders. Discussed Aquatic nuisance species at the Marne Collectors workshop to 24 Santa Rosa County teachers.

- 7.14.2 Assist with coordination of an oyster reef restoration project in East Bay. Teacher workshops and oyster reef importance/ecology curriculum will be developed to support this project.

Oyster reef restoration in East Bay, planning, site development and education materials have been developed. In conjunction with the Santa Rosa County School Board Science Coordinator and teachers, a curriculum has been developed, 2 workshops were provided to 11 teachers at 8 schools. A small restoration site was planted in Oct. 2005; a larger site will be planted in 2006. Funding is from NOAA, due to hurricane impacts on oyster beds in Santa Rosa County.

With the Florida Department of Environmental Protection, Northwest District, Ecosystem Restoration Section, contributed to grant proposal for the O.Y.S.T.E.R. (Offer Your Shell To Enhance Restoration) project which was funded. 8 cubic yards of oyster shell has been collected from local seafood restaurants to create small reefs in the three county area.

- 7.14.3 Work with UF/IFAS West Florida Research and Education Center researchers to continue dune restoration research. Coordinate volunteers for dune restoration planting; provide information to the public on dune restoration techniques and using composite plantings.

With researchers from the West Florida Research and Education Center, presented dune restoration techniques at the Coastal Restoration Seminar to 11 participants. Participants indicated an increase in knowledge using a pre and post survey. Provided dune restoration techniques using composite planting information at the Gulf Breeze Zoo Earth Day celebration and the Coastal Encounters Event in Navarre, FL.

- 7.14.4 Continue to support Project Greenshores, a FDEP habitat restoration initiative.

Provided support for the habitat restoration site at Project Greenshores. Promoted Project Greenshores student field trips to 96 science teachers at the beginning of the year science teacher meeting in Milton. In addition, the site is a community education project. Residents who pass by take notice of the site. Coastal residents who call with questions about shoreline restoration, are familiar with the site. 1 resident recognized the marsh plants as those that would work along her shoreline.

- 7.14.5 Develop "sea turtle friendly" guidelines for contractors working on the beachfront on Navarre Beach. These guidelines are to coordinate beach restoration and rebuilding contractors with sea turtle patrols and sea turtle nesting information.

Developed "sea turtle friendly guidelines" for contractors working on Navarre Beach after 2004 and 2005 storms. Guidelines were developed with input from the sea turtle monitoring patrol group. Due to many storms and severe beach erosion, guidelines were not distributed. Guidelines will be distributed before the start of the 2006 storm season.

- 7.15 Inform citizen groups about invasives which are coming into the Florida coastal ecosystems. (Sweat)

Distributed literature on marine invasives to local citizen groups and general clientele.

- 7.16 Continue providing support of a shelling restoration program for the commercial oyster fishery in Levy County. This year will assist the oystermen's association in implementing a federal grant in which funds are to be used in collecting clam shells at local shellfish processing plants and storing at a county site. Clam shell is a byproduct of clam processing and makes an excellent cultch material for oysters. (Sturmer)

Continued providing support of a shelling restoration program for the commercial oyster fishery in Levy County. This year assisted the oystermen's association in implementing a federal grant in which funds were used in collecting clam shells at local shellfish processing plants and storing at a county site. Over 3500 bushels of clam shells, a byproduct of clam processing, were collected and will be used as cultch materials for oysters in the upcoming year. (Sturmer)

- 7.17 Enhance Sarasota Bay water quality. (Stevely)

- 7.17.1 Present results of efforts to restore Sarasota Bay oyster reef habitats at International Shellfish Conference.

"Mapping Historical Oyster Reefs in Little Sarasota Bay" 8th International Shellfish Restoration Conference, Brest, France.

- 7.17.2 Assist Sarasota Bay Estuary Program in development of long-range technical work plan to support restoration of Sarasota Bay habitats and water quality.

Sarasota Bay Estuary Program 4-year work plan completed 9/2005.

- 7.17.3 Maintain functional Sarasota Bay Estuary Program Technical Advisory Committee in role as Chairman.

Chaired five Sarasota Bay Estuary Program Technical Advisory Committee meetings.

- 7.17.4 Train 40 Extension Master Gardeners in Manatee and Sarasota Co. in coastal plant ecology and identification.

Coastal Plant Ecology and Identification Training Session 9/21/05. Forty-seven participants

- 7.17.5 Assist Sea Grant waterway management program in providing technical assistance to Manatee Co., City of Bradenton Beach and possibly City of Palmetto in managing anchorages and boat ramps.

Conducted sea grass mapping work for city of Bradenton Beach to assist in managing anchorage. Conducted four Marine Extension Advisory Committee meetings devoted to acquisition of new boat ramp facilities. Developed two fact sheets on boat ramp facility use in Manatee Co.

- 7.18 Provide general educational training and assistance to improve coastal habitats around Charlotte Harbor. (Staugler)

- 7.18.1 Work with the Charlotte Harbor NEP to produce a seagrass video/DVD that will be used to educate SW Florida boaters through public broadcast and government television, educational programs and events.

Shooting for a seagrass video occurred in October 2005. A two minute segment for PBS and a longer segment will be produced by WGPU. The finished video will be completed in 2006.

- 7.18.2 Continue to chair the Charlotte Harbor NEP Hydrologic Alterations Subcommittee.

The Sea Grant agent continued to chair the Hydrologic Sub-committee of the Charlotte Harbor National Estuary Program.

- 7.18.3 Provide educational programs to boating and fishing groups, master gardeners, civic groups and citizens on coastal habitats and invasive species.

Five outreach programs occurred in 2005. Programs addressed coastal habitats, monofilament recovery, coastal cleanups, adopt a shore program, and invasive exotic species.

- 7.19 Improve the quality and quantity of coastal and marine habitat in Okaloosa and Walton counties. (S.Jackson)

Fish and Wildlife Construction Grants totaling \$455,000 have been awarded for construction of new public reefs in Okaloosa County (2001 -2005).

Through the work of the agent, public reef projects are planned and implemented utilizing information from science based studies. Patch reef designs have been introduced to benefit fisheries and promote fisheries conservation.

Since the agent began work in 2001, all public reef deployments in Okaloosa County have been reviewed and designed in concert with research faculty at the University of Florida.

- 7.19.1 Conduct local workshops for K-12 teachers and interest citizens about the recognition and management of invasive species in the coastal ecosystems.

This task not completed.

- 7.19.2 Develop coastal restoration programs such as sea grass planting, dune restoration and beach renourishment that will improve coastal ecosystems.

Provided guidance and site planning for individual shoreline residents (9) on the Gulf and bay.

Use media outlets to provide information to shoreline restoration information to area residents. Radio Programs (20,000)

- 7.20 Taylor County is still an active area for illegal shrimp and fish harvest activities. These illegal activities contribute to the loss of significant numbers of juvenile species of both commercial and recreational relevance and to the destruction of a significant amount of native sea grass beds off the coast. Working with regional Florida Fish and Wildlife Conservation Commission, a public awareness campaign will be created to increase awareness of the direct commercial and recreational

economic value of these marine species, the indirect economic value of sea grass beds, and the economic and ecological impacts of these illicit activities. Efforts may be initiated to increase funding and/or support for regulatory agencies and to increase awareness of such activities among regional organizations with regulatory power. (Sapp)

No direct programming on illicit activities, although I provided award-winning (IFAS Image Award) educational resources to 75,000 regional citizens detailing the direct link between healthy seagrass communities and productive recreational and commercial fisheries. This outreach was provided through regional articles, web-based resources, service to schools, community lectures, and during artificial reef programming efforts. I also served as liaison between coastal residents who monitor destructive practices and regional officials who enforce commercial and recreational fishing that resulted in a cessation of egregious illegal and commercial activity that was resulting in the destruction of seagrass beds in protected waters.

- 7.21 Continue work as a member of the Nature Conservancy's Apalachicola River Basin Invasive Exotics Workgroup. (Mahan)

The Franklin County Agent continued his work as a member of the Nature Conservancy's Apalachicola River Basin Invasive Exotics Workgroup. The group continues to evolve and several committees were formed in 2005, to begin working on specific projects/issues.

- 7.22 The need for enhanced ocean education is clearly recognized by scientists in the oceanographic community, including both classroom and informal educators. One specific need is public education on aquatic nuisance species. As part of a four-state southeast regional effort, Florida will conduct a number of training workshops for formal and informal educators, finalize and distribute lesson plans, and co-author and distribute a boaters alert card. (Spranger/Jacoby: E/T-13)

Invasive species education was furthered through presentations at the Southern Association of Marine Educators meeting, a meeting of Project WILD facilitators, the annual meeting of the League of Environmental Educators in Florida, and the training session for the Boca Grande Pass Clean-up. The publication, A primer on invasive species in marine and coastal waters, was awarded the Long Publication Award of Excellence from the Florida Association of Natural Resource Extension Professionals, and the Boca Grande Pass Clean-up received a Certificate of Appreciation from the Gulf Guardians Awards Program of the US Environmental Protection Agency's Gulf of Mexico Program. (Jacoby)

- 7.23 Serve on regional and national committees that are associated with Coastal Ocean Observing Systems. (D.Jackson/Spranger/Simoniello)

Serve on SEACOOS Education and Outreach Work Team. Serve on GCOOS Board of Directors, Executive Committee and Education and Outreach Council. (Spranger)

Serving on state, regional, national and international committees associated with COOS (examples include SEACOOS Executive Committee, Ocean US External Review Planning Committee, SECOORA Steering Committee, and FL COOS Caucuas Planning Committee). Also invited as US SG rep by NOAA Climate Office to International COOS workshop. Invited to planning committee/chair IOOS sessions at The Coastal Society 20th Biennial Meeting. Invited editor Ocean US IOOS Education report and Marine Technology

- 7.24 Improve the quality and quantity of coastal and marine habitat in Escambia County. (Diller)

7.24.1 Conduct local workshops for K-12 teachers and interest citizens on marine invasives.

Escambia Agent delivered marine invasives information to the Pensacola Recreational Fishermans Association and SCUBA instructors and divers at DivePros and SCUBA Shack dive shops. Teacher workshop tentatively scheduled for spring of 2006.

- 7.24.2 Develop and assist with coastal restoration programs such as sea grass planting, dune restoration and beach renourishment that will improve coastal ecosystems as they recover from Hurricane Ivan.

Coastal restoration projects finally beginning in 2006 following hurricane Ivan in 2005 and hurricanes Dennis and Katrina in 2006. Renourishment of Pensacola Beach and Perdido Key took place in 2005, new dunes and plantings will occur in 2006. (Diller)

- 7.24.3 Continue to work with the Project Greenshores team to develop site two of this coastal ecosystem restoration project in Pensacola Bay that includes oyster reefs, seagrass beds, and salt marsh habitats.

Project Greenshores Site II continued development, permitting, and fund raising in 2005 with construction expected to begin in 2006. Escambia agent serves on Steering Committee for the project and utilized Project Greenshores on educational tours for the Sea Grant Academy and Florida Agriculture Educators.

- 7.25 Increase awareness of sea grass beds in St. Andrew Bay and how they are an important part of the ecosystem. This will be done by conducting educational programs on the importance of sea grass beds for marine resources. (Cameron)

Increased awareness of sea grass beds in St. Andrew Bay as a critical fish habitat through 4 beach seine field trips demonstrating the major biodiversity of fish, crustaceans, and mollusks in the sea grass beds.

- 7.26 Improve the quality of the Broward County coral reef ecosystem. (Behringer)

- 7.26.1 Continue to serve as the Local Navigator for the Appreciation and Awareness Focus Team of the Southeast Florida Coral Reef Initiative (SEFCRI).

Coordinated the SEFCRI Awareness and Appreciation Focus Team to finalize the Local Action Strategy and priority projects. Received funding from FDEP and NOAA to implement priority projects in FY 2005. Presented the Awareness and Appreciation Focus Team Local Action Strategy to the SEFCRI coordinator and other Focus Teams at two SEFCRI team meetings. Approximately 25 attendees at each meeting. Secured approval and funding to hire a Project Coordinator for the Awareness and Appreciation (AA) Focus Team of the SEFCRI. This position will take on regional coordination of the SEFCRI AA Team as well as budget and grant management, allowing the Navigators more time to develop and implement educational programs and products. (Behringer)

- 7.26.2 Develop a marketing identity for the Southeast Florida Coral Reef Initiative.

In partnership with a graphic designer, designed a logo and tagline to represent the SEFCRI. (Behringer)

- 7.26.3 Conduct a needs assessment of citizen and visitor knowledge, values and practices related to coral reefs, as well as an assessment of existing coral reef education materials and program to develop a more effective coral reef education program.

Developed needs assessment surveys and distributed it to 1850 visitors and 100 residents to evaluate visitor and resident knowledge, values, and practices related to coral reef and coral reef conservation in southeast Florida. Results will be analyzed in 2006. Inventoried existing coral reef related education products and programs in Broward County to determine where gaps and overlaps exist. Found very few programs and products targeting the general public, educators, youth, and stakeholders such as divers, fishers, boaters. (Behringer)

- 7.26.4 Develop a media kit and hotel tent card to educate media, visitors and resource user groups (boaters, divers, fishers, etc.) about coral reefs, impacts to them and how to conserve them.

Created a media kit with eight fact sheets addressing the benefits of the southeast Florida coral reef system, threats to it, conservation tips, the Southeast Florida Coral Reef Initiative and associated partners. This media kit will be distributed to media and elected officials in 2006. Created a hotel tent card in Spanish and English with conservation tips for general public, boaters, divers/snorkelers and fishers. To be distributed in hotels in 2006. (Behringer)

- 7.26.5 Develop a website about southeast Florida coral reefs and the Southeast Florida Coral Reef Initiative.

In partnership with a graphic designer, created a website about southeast Florida reefs and the SEFCRI, to be launched in 2006. The website targets general public, stakeholders and educators and provides information on SEFCRI, coral reef ecology, local reef research, benefits of the reef, threats to the reef, what is being done to conserve them, as well as information for youth and educators. (Behringer)

- 7.26.6 Coordinate and conduct workshops to educate dive operators and businesses about sustainable diving and snorkeling practices.

The Sustainable Marine Recreation Tourism workshops were postponed and scheduled for May 2006. (Behringer)

- 7.26.7 Educate the general public, resource user groups, educators and youth about the coral reefs, impacts to them and how to conserve them through workshops, festivals and other educational programs.

- In partnership with NOAA's Coral Reef Conservation Program, organized a Caribbean/Atlantic Coral Reef Regional Outreach Workshop in Fort Lauderdale to provide capacity-building training for coral reef outreach, education and management staff in south Florida, USVI, Bahamas and Puerto Rico. The workshop trained 34 participants in strategic coral reef environmental education and communications and strengthened regional coordination.
- Presented a talk on local coral reefs and the SEFCRI to the Wynmoor Nature Club. Approximately 53 participants attended.
- Presented a seminar on local coral reefs and the SEFCRI for the Broward Community College Environmental Lecture Series. Approximately 150 college students attended.
- Staffed a Florida Sea Grant Extension booth at the Broward County Water Matters Day and distributed coral reef educational material to approximately 2000 attendees.
- Served as a marine resources panel representative for the Leadership Fort Lauderdale program (Class XI), sponsored by the Greater Fort Lauderdale Chamber of Commerce.

Presented a talk on the SEFCRI and coral reef management and conservation issues to 30 class participants.

- Educated 46 elementary school students on coral reefs, threats to them and what they can do to help, utilizing hands-on activities.
- Presented a talk on coral reefs to 150 middle school students as part of an Environmental Awareness Day.
- Presented a talk on local coral reefs and SEFCRI to 51 student participants in Youth Leadership Broward, sponsored by the Leadership Broward Foundation and Broward County School Board to educate students about community issues.
- Presented a talk on SEFCRI and the Awareness and Appreciation Team projects to 83 members of the South Florida Dive Club.

7.26.8 Serve as the Outreach Committee Co-Chair for the 11th International Coral Reef Symposium.

Participated on the International Coral Reef Symposium Local Organizing Committee planning meetings.

7.27 Begin EPA-funded study on the economic consequences of red tide effects on SW Florida communities. The study will assist community planners in the SW-region of Florida to better understand the potential economic impact of red tide events to local businesses. (Adams)

EPA-funded study on the economic consequences of red tide events in SW Florida began. Data collection efforts were centered on Florida Dept. of Revenue. Visits to industry and county/municipal agencies conducted in Lee, Charlotte, Sarasota and Manatee Counties. (Adams)

7.28 Give presentation at the 2005 Florida International University Beaches Conference. The attendees (150) will become more aware of the effects of red tide events on local communities. They will also better understand the educational needs and opportunities that exist regarding the coastal population. (Adams)

Poster presentation given at the 2005 Beaches Conference at Florida International University in Miami. The poster concerned the economic consequences of red tide events in Florida. (Adams)

7.29 Give presentation on the economic effects of red tide events at the Coastal Zone 05 Conference in New Orleans, LA. Attendees will gain a better understanding of the types of impacts red tide events can impose on coastal communities. (Adams)

Presentation was given at the Coastal Zone '05 Conference in New Orleans, LA. The presentation concerned the impact red tide events have on local water-related activities, waterfront business patronage, and overall business revenues in red tide-affected areas. (Adams)

7.30 Provide general educational training and assistance to improve coastal habitats in Northeast Florida. (McGuire)

7.30.1 Invasive species is a topic in the "Exploring our Environment" program which will be offered at Marineland three times in 2005 to classes of 20 adults each time.

"Exploring our Environment" was offered 3 times in 2006 to a total of 42 participants. Agent taught participants about invasive plants and animals (terrestrial and aquatic).

- 7.30.2 Give presentation at National Marine Educators' Association annual conference about "Stop the Invasives" interactive education program for fifth graders.

Agent gave presentation on "Stop the Invasives" program at the 2005 National Marine Educators Association conference (8 attendees) and at the 2005 EPAF conference (35 attendees). Agent received request for more information from an educator in South Africa who had attended the NMEA conference and had received permission from her government department of education to incorporate invasives into the science curriculum.

Goal 8: Prepare and Respond to Coastal Storms

- 8.1 Commercial sea oats micropropagation for dune restoration is limited by absence of a protocol for efficient production of multiple genotypes. Removing this limitation is critical for this technology to be used for commercial application of the technology for dune stabilization and restoration. The goal for this project is to develop an efficient protocol. (Kane/Wilson: R/C-S-41)

The genotypic differences previously observed within and between sea oats populations, using genetic markers, were exemplified when the micropropagated sea oats genotypes are out planted. While sea oats genotypes survive when reciprocally transplanted on opposite coasts, distinct genetic differences between east and west coast populations suggest that, from the standpoint of ecological stability, planting of plant materials from opposite coasts should be avoided. The 2004 hurricane season and consequent destruction of natural seed producing populations on both coasts stimulated significant interest in alternate sources of sea oats. Damage to sea oats seed producing populations which occurred following the 2004 hurricane season will increase reliance on micropropagation as a supplemental source of sea oats planting materials. The commercial application of research is also being applied as AgriStarts II, Inc., Apopka, FL has now scaled up their sea oats production. They now offer micropropagated sea oats in their 2005 catalog. This same technology will be provided to other commercial micropropagation laboratories.

- 8.2 Florida has been a leader in beach management. This book will build on decades of Sea Grant projects and other agency research, authorized by one of the world's foremost coastal engineers. It will provide a "Legacy of Florida's Beaches." (Dean: PD-01-10)

The author failed to complete the final manuscript, which was 90% complete.

- 8.6 Seismic waves (tsunami) are natural occurrences in all the earth's ocean and marginal seas. This project will adopt an advanced tsunami run-up model used on the U.S. west coast to conditions in the North Atlantic Basin. It is cooperative project with Puerto Rico Sea Grant. (Maul: PD-04-10)

Previous efforts of modeling tsunamis with MOST (Method of Splitting Tsunami) were performed primarily in the Pacific Ocean. This endeavor was to model the 1755 Lisbon event in the Atlantic Ocean using parameters based on historical records and current research defining the source and location of the event. Travel time for the wave from the offing of Portugal to southeast United States is 9-1/2 hours; wave height at the 10-meter isobath ranges from -0.21 to 0.22 meters; projected run-ups are one to two meters depending on the stage of the tide.

- 8.7 Attend 6th South East Asia Sea Partnership International Sea Grant and Coastal Hazards Conference, Jakarta, Indonesia, May 1-4 2005; make presentation on role of Sea Grant field Agent within US Sea Grant Program; Chair Workshop on Emergency Management/Coastal Hazards. Conduct four public educational seminars based on attending and participating in South East Asian Sea Grant Conference. (Combs)

The Brevard Sea Grant Agent was invited by the National Sea Grant Office, Washington DC, and the International Programs Office, NOAA Research, National Oceanic & Atmospheric Administration, Washington DC, to join a US Sea Grant Team of seven experts attending and making presentations to the in 6th Annual South East Asia Sea Partnership International Conference and Workshops, Jakarta, Indonesia, April 28-May 8, 2005.

Members of the US Sea Grant Team were: Dr. Jim Murray, Director, National Sea Grant Extension; Dr. Rene Eppi, Director, NOAA Research; Michael Abbey, NOAA International Programs Coordinator, NOAA Research; Dr. Stephanie Showalter, Director, National Sea Grant Law Center, Univ. Mississippi; Ms. Katie Mosher, Director of Communications, North Carolina

Sea Grant; Dr. Clyde Tamaru, Director Sea Grant Aquaculture Research, Univ. Hawaii; Chris Combs, Brevard Co. Sea Grant Agent, Univ. Florida.

The Brevard Sea Grant Agent described the local role of a Sea Grant Extension Agent to an audience of 150 representatives (Ministers of Fisheries, Ministers of Agriculture, Marine Research Lab Directors) of the countries participating in the South East Asia Sea Partnership Program (SPP). SPP Members include Indonesia, Malaysia, Thailand, South Korea, Philippines, and Vietnam. The Brevard SG Agent also served as Chairman and Moderator of a Workshop on Disaster Management for sixteen representatives of the SPP countries.

- 8.8 Provide beach safety, boating safety and hurricane preparedness information at various events and programs. Promote, coordinate and present at Coastal Recovery workshop and “Ivan, what have we learned?” workshop. (Verlinde)

Provided emergency response information at the Coastal Encounters event in Navarre, more than 400 coastal residents attended the event. Beach and water safety were promoted through a news article and at local events. “Ivan what have we learned workshop” was not conducted.

- 8.9 Participate in Charlotte County’s hurricane recovery efforts ongoing from 2004 and preparation for future coastal storms and hazards. (Staugler)

- 8.9.1 Participate on the County’s Task Force on Waterway Cleanup and Restoration.

The Sea Grant agent, along with Bob Swett participated in the County’s Task Force on Waterway Cleanup and Restoration.

- 8.9.2 Provide educational information to area bait shops, marinas, and boating supply stores as they reopen for business.

Educational materials, including Boating and Angling Guides, Fishing Regulations, Tarpon Fishing in Boca Grande brochures, etc. were provided to all County marine dependent businesses as they re-opened from the hurricane and throughout the year.

- 8.10 Recruit marinas and boatyards to participate in the Clean Marina and Boatyard Program in Taylor County. Conduct outreach to inform marina staff of proper pollution prevention, disaster avoidance and best management practices. Present prospective facilities with literature and hands-on training regarding CMP components as outlined in the handbook. Coordinate inspection for qualification and compliance with CMP criteria. Designate facilities as “Clean Marinas/Boatyards” through web-based documentation, newspaper articles and a flag ceremony. (Sapp)

I received an agreement with a major proposed marina in this area (permitting and construction pending State and federal approval) to agree to all the terms and management practices of the Clean Marina Program during both construction and operation.

- 8.11 Research and write at least three columns for the Apalachicola & Carrabelle Times Newspapers educating area homeowners on steps they can take to prepare for coastal storms or be safe from coastal hazards. (Mahan)

The Franklin County Agent researched and wrote 39-newspaper columns in 2005. Included in this total were six columns related to storm preparation, safety and recovery. Topics included; “Making a Home Disaster Kit,” “The 2005 Hurricane Outlook,” “Lightning Safety,” “Portable Generator Safety,” and “Emergency /Disaster Gifts.”

8.12 The NOAA Coastal Storms Program (formerly Initiative) will have its final public forum in early 2005. The education/outreach component of this project will be completed at the end of this forum, and the project will be ended. Two more pilot programs are started, one at the mouth of the Columbia River, involving Oregon and Washington Sea Grant programs, and the other will concentrate on the Southern California Bight. Experience with the outreach and education efforts in the St. Johns River Watershed pilot will be shared with the respective Sea Grant programs. (D.Jackson)

- Close-out session for the Florida pilot program of the Coastal Storms Program (formerly known as Initiative) held for public and internal audiences.
- Start-up session for Oregon/Washington mouth of the Columbia program was held in Astoria, Oregon. Attended to share successes and failures of the Florida pilot with the new cadre of players.

8.13 Assist Escambia County residents and businesses recover from Hurricane Ivan and prepare for future storms. Work with Sea Grant and other groups to develop Hurricane Response teams and educational information. (Diller)

Escambia County agent assisted Marine Resources Division with hurricane recovery efforts after Hurricanes Dennis and Katrina. Activities included inspecting boat ramps and docks, checking waterways for large debris, and assessment of vessel restriction zone signage with FEMA representative to receive funding to replace missing signs.

Worked with Florida Sea Grant and County Marine Resources to begin development of Hurricane Response teams.

8.14 The Miami-Dade County Agent will work with local marine agencies to secure funding in efforts to produce a DVD on Hurricane Preparedness and Safety for Florida boaters and marina managers. Agent will work with boater user groups to determine planning needs and proper emergency responses in the event of a hurricane. Agent will also work with state and local agencies to secure funding for DVD hurricane preparedness guide. (Crane)

Funding requirements to produce a DVD on Hurricane Preparedness for Florida boaters are ongoing. Agent has met with several marina managers and boating groups to help support this need. Agent is working with other Sea Grant Extension agents to create a technical advisory committee for guidance and support on producing this video.

8.15 Initiate a coastal hazards awareness program in Bay County. (Cameron)

8.15.1 Help organize and present a hurricane preparedness program in Bay County. The program will educate boat owners on how to prepare their vessels for hurricanes.

Assisted with the organization of 2 hurricane preparedness programs in Bay County focusing on "How to Prepare Vessels for Hurricanes." The program was followed up with a spot on a local morning television show discussing the importance of hurricane preparedness for boat owners and the general public. (Cameron)

8.15.2 Conduct educational program on rip currents to inform citizens and tourist on the dangers of rip currents and what to look for, what to do if you get caught in one, and how to determine when it is safe to enter the water.

Developed display regarding rip currents used at local events, 4-H events, and teacher in-service trainings. Educated 15 teachers, 100 youth, and over 100 adults about what rip currents are, how they are formed, and what to do if you are caught in one. (Cameron)

- 8.15.3 Participate in NOAA Coastal Services “Storm Surge User Needs Assessment” workshop to determine needs of the community for storm surge warnings and preparations.

Participated in NOAA Coastal Services “Storm Surge User Needs Assessment” workshop in Panama City, FL, to address concerns regarding storm surge predictions for the fishing and boating industries. (Cameron)

- 8.15.4 Provide newspaper article on “Hurricane Preparation for Boat Owners” at the beginning of hurricane season to educate boat owners on how to prepare for a hurricane.

Provided a newspaper article on “Hurricane Preparation for Boat Owners” at the beginning of the hurricane season to educate boat owners on how to prepare before a hurricane makes landfall. (Cameron)

- 8.16 Facilitating Principal Investigator/User interaction in three thematic areas has been identified as high priority by SEACOOS. Fisheries, Search and Rescue, and Sediment and Waves have been targeted as the major themes. The regional extension and education coordinator will continue serving on each of the three committees and facilitate meetings with appropriate groups. For example, for the Fisheries Theme Team, will continue organizing and facilitating meetings among West Florida Shelf scientists from USF, UM, NOAA Fisheries, FWC, and members of commercial and recreational fisheries. (Simoniello)

In addition to serving on all three theme teams, I served on the planning committees of local and regional meetings designed to draft white papers for each topic. In addition to organizing two local meetings (USF, FWRI, NOAA Fisheries, USGS), I was an author and editor of the WFS Ecosystems/HABs white paper. At the SEACOOS Spring meeting, I helped create the speaker agenda for the theme team sessions and moderated a breakout session.

- 8.17 SEACOOS public awareness will be achieved by enhancing model buoys previously constructed with appropriate signage and supporting information. Jennett’s Pier, North Carolina, the Georgia Marine Extension Service Aquarium in Savannah, the South Carolina Sea Grant Consortium, and Florida Sea Grant each has a model. Information will be created to reflect each state’s ocean observing activities and to show relevance and increase awareness to citizens. (Simoniello)

The model in GA has been equipped with signage and is on display at the aquarium in Savannah. South Carolina is in the process of forming a partnership through the COSEE program to have teachers create the signage and supporting information. North Carolina and Florida have more mobile displays and so adapt signage and supporting information to meet specific needs, based on the purpose of the event.

- 8.18 SEACOOS brochures will be developed in conjunction with Florida Sea Grant publications personnel. Two or three versions of the brochure will be designed, depending on funding, so that different audiences can be targeted. One will be written for the general public (for display at aquaria, museums, etc) and another will be designed to target those engaged in boating and fishing (for distribution at marinas, boat shows, bait and tackle shops, etc). If time and funds permit, a third brochure targeting those engaged in resource management will be designed. (Simoniello)

Working with Dorothy Zimmerman, a new general SEACOOS brochure (now on display at several piers and aquaria), and a flyer targeting boaters and fishermen were created. The boater/fishermen

flyer has also been slightly modified and reprinted by extension people in GA and NC. Due to major budget cuts and the fact NOAA CSC was creating a similar product, we did not create a brochure targeting resource managers (but the case studies I wrote will be included in their product).

- 8.19 A workshop will be planned and conducted for approximately ten extension and education professionals engaged in ocean observing activities. The objective is to work with Chris Calloway (University of North Carolina) to learn how to add content to the SEACOOS web site. As part of the workshop, each participant will be expected to upload at least one education activity/lesson plan to the Community and Classroom section of the www.seacoos.org website. Without dedicated web support, giving SEACOOS extension and education work group members the ability to add content is the only way to keep the website updated and dynamic. (Simoniello)

This objective was modified to a more ambitious undertaking-the E&E work group opted to redesign the entire Community and Classroom section by separating the Education and Extension components. I took the lead for extension and Katie Greganti took the lead for education. We had a crash website course with Chris Calloway and subsequently created entirely new site maps for each component of the site. Work is in progress to finalize/get SEACOOS-wide approval for the new plan and move forward.

- 8.20 SEACOOS in-reach (activities that build relationships among SEACOOS work groups) efforts related to the Florida COOS Caucus will help shape Florida's role in the R-COOS (regional COOS which is not necessarily SEACOOS). Governance issues and composition of the Board of Directors-activities that will help transition SEACOOS into SECOORA are areas where efforts will be focused. Will also serve on an extension and education committee for the Gulf of Mexico COOS with the objective of exploring ways to enhance interaction between the two regions. (Simoniello)

Actively engaged in all five of the FL COOS Caucus meetings held to date-both as invited speaker and agenda planning committee member. Worked on documents that identified FL COOS interests and outlined R&D priorities for FOCRC. Expand FL COOS Caucus participation by private sector, resource managers, NWS and others by attending appropriate meetings (e.g. Coastal States Initiative, Tampa Harbor Pilots quarterly meetings, American Meteorological Society meetings). Invited to be on GoM E&E committee but advisory committee vetoed formal participation due to time constraints.

- 8.21 A region-wide (NC, SC, GA and FL) inventory of ocean observing assets is underway. GIS specialists Bob Swett and David Fann are collaborating to build on the SEACOOS equipment inventory. A team of SEACOOS extension professionals from the four states will be coordinated in order to increase the 12% response rate of the initial 3 week survey. Results from the project will be used to help determine where/how regional ocean observing system assets will be allocated. (Simoniello/Swett/Fann)

The FLSG-led regional asset inventory has been requested and used by many state, federal and private groups interested in ocean observing systems. The quality of the product led to collaborations with local and regional programs seeking to build upon our efforts (e.g. FL DEP's Coastal Ocean Monitoring State Asset Inventory, FWRI's GAME (Geospatial Assessment of Marine Ecosystems). Both inventory information and data file protocols are being shared. (Simoniello)

- 8.22 In conjunction with Ocean US, and SECOORA, a regional meeting is planned to engage business/private sector people in ocean observing system planning and development. The objective is to increase awareness of the Integrated Ocean Observing System, and obtain feedback for the SECOORA Business Plan from this sector before the plan is finalized and considered for

acceptance by the national office. The objective is to conduct the meeting before 2006.
(Simoniello)

Served on the planning committee for the July SECOORA regional meeting. In addition to leading breakout sessions, I helped organize comments that were eventually incorporated into the SECOORA Business Plan (I participated in this process via Steering Committee conference calls). Approximately 1/3 of meeting participants were from the private sector/industry.

Education and Human Resources

Goal 9: Produce a Highly Trained Workforce

- 9.1 Enhance graduate education in disciplines related to the coast and ocean by active participation in public and privately funded graduate programs. (Cato)
- 9.1.1 A minimum of two qualified applicants will be submitted annually to the Sea Grant John A. Knauss Marine Policy Fellowship national competition. Over each five-year period, an average of one Knauss Fellow per year (of 40 nationally) will be from Florida.
- For the 2005 Class of Fellows, five applicants were submitted. Three were selected to receive a fellowship:
- Kelly Denit (UM)
 - Marcia C.M. de Almedia (UM)
 - Jacqueline Wilson (UF)
- From 2001-2005, a five-year period, 9 fellows have been selected.
- 9.1.2 At least one national Sea Grant Industrial Fellow candidate (of 2-4 per year nationally) will be successful every three years.
- FSG submitted one industrial fellow application for 2005, but the fellow was not selected. FSG has had one successful applicant from 2003-2005.
- 9.1.3 At least 30 percent of the annual Florida Sea Grant federal core program research budget will be used to support graduate students.
- For 2005, 39% of all research funds supported graduate students.
- 9.1.4 A minimum of five graduate students will receive scholarship funding through private funds in cooperation with the Aylesworth Foundation for the Advancement of Marine Science and the Old Salt Fishing Club.
- A total of 5 students were on Aylesworth (4) and Old Salt (1) scholarships during 2005.
- 9.1.5 One high school student will receive a college scholarship through the Chuck Skoch Florida Sea Grant Scholarship.
- One high school senior, Juan Gallo, Felix Varela Senior High School, received a one-year scholarship and enrolled at University of Central Florida during 2005.
- 9.1.6 A minimum of two qualified applicants will be submitted to the NOAA Coastal Services Center Competition each time it is held.
- Six applications were received and three submitted during 2005. None of the applicants were selected.
- 9.2 A minimum of \$600,000 per year in non-national Sea Grant CORE program funding will be received from extramural funding sources to support Sea Grant programs. (Cato)

A total of \$1,006K in non-Sea Grant core funds were received in 2005 and administratively handled by Florida Sea Grant. An additional \$655K were received by state specialists and administered through their academic departments.

- 9.3 Florida Sea Grant will participate in National Strategic Investment, National Outreach and National NOAA/Sea Grant proposal competitions when available. Funding data will be analyzed to measure the success rate of Florida Sea Grant against the other Sea Grant programs. (Cato)

See section 10.0 (Self Evaluation for this analysis).

- 9.4 At least 15 different academic disciplines and six different Florida universities and research laboratories will receive Florida Sea Grant funding in each proposal cycle. This can only be achieved through the encouragement of competitive proposals from many participants because peer review determines actual funding. At least six institutions participating in Florida Sea Grant will be visited each year to meet faculty and students to keep a high level of participation in Florida Sea Grant. Six faculty progress reports will be distributed annually to 800 faculty statewide to inform them of Sea Grant activities and opportunities. (Cato/Seaman)

For the 2004-05 core (2005 was second year) Florida Sea Grant two-year program, 11 of the 16 participating institutions were successful in competing for research funds.

Florida Atlantic University	Nova Southeastern University
Florida Institute of Technology	University of Florida
Florida International University	University of Miami
Florida State University	University of South Florida
Harbor Branch Oceanographic Institution	University of Central Florida
Mote Marine Laboratory	

A total of 18 different academic departments (disciplines) are participating in 2004-05.

Aquaculture (HBOI)	Marine Affairs and Policy (UM)
Biological Sciences (FIT)	Marine Biology and Fisheries (UM)
Chemistry and Biochemistry (FAU)	Marine Geology and Geophysics (UF)
Civil and Coastal Engineering (UF)	Mechanical and Aerospace Engineering (FIT)
Fisheries and Aquatic Sciences (UF)	Mechanical and Aerospace Engineering (UF)
Food and Resource Economics (UF)	Oceanography (NSU)
Food Science and Human Nutrition (UF)	Pharmacology and Therapeutics (UF)
Law (UF)	Urban and Regional Planning (FSU)
Marine Affairs and Fisheries (UM)	Veterinary Medicine (UF)

Six faculty progress reports were distributed.

Campus visits were postponed during 2005 since time was needed to prepare for the quadrennial Program Assessment Team Review and to create the 2006-07 two-year proposal.

- 9.5 An average of four Florida Sea Grant supported seminars will be funded annually as a way to increase the skills of faculty and students in ocean and coastal related academic disciplines. (Seaman/Cato: PD-05-1)

Two seminars were held: P. Soudant, Université de Bretagne Occidentale, France, addressed faculty and students at Florida Gulf Coast University on the topic “Application of flow cytometric techniques in bivalve immunology and disease studies to evaluate environmental and anthropogenic stress: an overview.” The seminar was hosted by Aswani K. Volety; P. Wainwright, University of California, addressed faculty and students at Florida Institute of Technology on the topic “Diversity, evolution and ecology of coral reef fishes: implications for fisheries and aquaculture.”

The seminar was hosted by Ralph K. Turingan. Overall, new technical information is incorporated into the research planning of Florida marine scientists and their students. Specifically, a memorandum of understanding between Florida Gulf Coast University and the European Institute of Marine Sciences at the University of Brest was finalized, and research collaboration between a speaker and host on coral reef species life history was initiated.

- 9.6 Conferences, workshops and travel to conferences and workshops will be supported for Florida Sea Grant researchers and potential researchers and Florida Sea Grant Extension and Communications faculty. The activity will be supported when consistent with priorities in the Florida Sea Grant Strategic Plan: 2002-2005. (Cato/Seaman: PD-05-2)

The FSG Seafood Extension Specialist attended the Codex Committee meeting to discuss the establishment of international standards for fishery products and seafood commerce. Conferences co-sponsored include the Second International Sustainable Marine Fish Culture Conference and Workshop, the Gulf in Peril Conference (ultimately postponed), and Marine Ornamentals '06.

- 9.7 Organize and conduct the Program Assessment Team evaluation of the Florida Sea Grant program. See Section 10.0 (Self Evaluation), Item 1, under Programmatic Measures of Performance.

- 9.8, 9.9 Extension faculty will attend at least four days of in-service training workshops or conferences that will support their educational programs. (All Agents/Spranger)

1/27/05 Clean Boating Partnership in-service training (Orlando), "Clean Marina Train-the-Trainer Workshop"

5/20/05 Florida Bar/Florida Sea Grant workshop (Ft. Lauderdale), "Waterways and Waterfronts" program

8/19-20/05 4-H and Dept. Fisheries & Aquatic Sciences in-service training (Gainesville), "Fishing for success" sportfishing training (Combs)

The Franklin County Agent attended and participated in the following inservice trainings/conferences during 2005: The 2005 Biennial Interstate Shellfish Sanitation Conference in Point Clear, AL (2-days); 2005 SE Watershed Forum in Apalachicola, FL (1-day); Fungi – Ecology, Biology and Id., NFREC-Quincy, FL (1-day); FL Sea Grant Annual Meeting (3-days); UNIFAS training (.5-day); and the Natural Resource Faculty Summit, Marianna, FL (1.5-days). (Mahan)

Attended four days of inservice training workshops (Sea Grant Extension Faculty In-service Training) and conferences (Aquaculture America 2005) that supported my educational programs. (Sturmer)

Attended 1 day of Gulf of Mexico Sea Grant annual meeting in Point Clear, AL

Attended 1 day of the International Artificial Reef Conference in Biloxi, MS.

Attended 1 day UF/IFAS Retention Pond in-service via Polycom

Contributed to and attended 3 day Environmental Education Institute in-service training at Wakulla Springs.

Coordinated and attended the 2 day Natural Resource Summit in Marianna, FL.

Coordinated and attended 2 day WOW! Wonders of Wetlands workshop in Milton, FL.

Attended 3 day Marine Environmental Education In-service in Cedar Key, FL.

Attended 2 day Shark Awareness in-service training in Gainesville, FL.

Attended 3 day annual FL. Sea Grant Planning meeting in Gainesville, FL (Verlinde)

Attended four days of In-Service Training. (Wasno)

National Sea Grant Academy (VA and FL), October FSGE meeting, Sea Grant Educators workshop (Maui), 2005 NMEA Conference. (Simoniello)

- 9.10 Continue coursework toward Master's Degree in Environmental Studies at University of West Florida. (Verlinde)

Completed 19 hours of graduate degree in Agriculture Communication and Education from the University of Florida, distance education.

- 9.11 Continue coursework toward Master's Degree in Environmental Studies at Florida Gulf Coast University. (Wasno)

Completed three additional courses at Florida Gulf Coast University. Continue track towards graduation in 2006.

- 9.12 Participate as a Fellow in the Natural Resources Leadership Institute to develop the skills necessary for effective natural resources leadership communication and conflict resolution. Over the course of 2004, seven 3-day seminar and activity sessions will be attended, a course practicum completed and graduation attended. (Sturmer/Sidman/S.Jackson)

All three participants graduated as a Fellow from NRLI October 2005 and presented partium.

- 9.13 The trend for ocean science education is clearly recognized by the science and education communities. This regional activity among the Gulf of Mexico states will "bridge the gap" between science and education through summer teacher institutes, online programs, informal educator workshops and lesson plans. (Spranger: COSEE-GOM-1)

Conducted annual COSEE summer teacher institute that was attended by 11 middle school teachers and 7 scientists. Provided online presentation (with Chris Simoniello) on "Southeast Atlantic and Gulf of Mexico Coastal Ocean Observing Systems." Provided online presentation on "Environmental Stewardship and Sense of Place." Conducted extension in-service training on marine and ocean science for 20 4-H, Natural Resource and Extension agents.

- 9.14 The goal of this workshop is to introduce pre-K through 12th grade educators to current topics in coral reef research, as well as some of the exciting and novel techniques being employed to restore these ecologically and economically critical habitats. Post-workshop, teachers will be required to develop age-specific lesson plans that meet and exceed the state of Florida and national standards for science education. To maximize dissemination of lesson plans, all plans will be made available on the world-wide web. Additionally, all educators will be required to present their ideas at either a national/regional educators meeting (FAST, FMSEA, NMEA, etc.) or at an in-service teacher's workshop. (Walters: PD-04-6)

Nine educators representing pre-K through 12th grade embarked on a 5-day workshop on coral reef research and restoration in the Florida Keys from June 2-6, 2004. Second, post-workshop, all educators were requested to submit age-appropriate lesson plans on coral reef topics that most interested them. These plans were distributed at the National Marine Educators Association (NMES) Meeting in Hawaii in July 2005 and at the Florida Association of Science Teachers Conference in Orlando in November 2005.

A series of lesson plans were distributed at the National Marine Educators Conference (NMEA) in July 2005 and the Florida Association of Science Teachers Meeting (FAST) in November 2005. Lesson plans will be distributed free-of-charge to all interested educators at conferences listed

above on CDs and via the web. Once critiqued, we will also share this information with all supporting agencies interested in education in the Florida Keys.

Educators from five Florida counties participated in this workshop.

Ms. Suzie Caffery, UCF Creative School, 3-4 year olds (Orange County)

Ms. Diahn Escue, UCF Creative School, 5-6 year olds (Orange County)

Ms. Teresa Reidel, Carillon Elementary School (grades 3-5) (Seminole County)

Ms. Melinda Myrick-Lupo, Jefferson Middle School (grades 6-8 science) (Brevard County)

Ms. Jennifer Roupp, Winter Park High School, Biology and Marine Biology (Orange County)

Dr. Paul Sacks, Winter Springs High School, Earth Science and Chemistry (Seminole County)

Mr. Jeffery Grevert, King High School, Biology and Marine Biology (Hillsborough County)

Mr. James Wharton, Educational Specialist, Smithsonian Marine Lab in Fort Pierce (St. Lucie County)

Ms. Lisa Wall, Satellite Beach High School and UCF graduate student (Brevard County)

Dr. Linda Walters, UCF Biology, Workshop Organizer (Orange County)

Additional cash funding for this educators workshop was provided by the University of Central Florida, the US Geological Survey and Florida Institute of Oceanography. NOAA/NURC provided staff and boat support for visit to the Aquarius Underwater Habitat. Staff from FKNMS, The Nature Conservancy, Reef Environmental Educational Foundation (REEF), and Reef Relief provided in-depth lectures on the missions and views of their agencies.

9.15 Conduct professional development training programs. (Verlinde)

9.15.1 With Environmental Education Focus team leader, coordinate UF/IFAS 2005 Environmental Education Training In-service for extension agents.

With the Environmental Education Focus Team Leader coordinated the EE Institute in-service training at Wakulla Springs State Park. 11 natural resource and 4-H agents attended the 3 day training.

9.15.2 Provide teacher workshops such as WOW! Wonder of Wetlands, Oyster Reef habitats, field sampling techniques, assist w/ marine collectors permit workshop.

Provided 5 teacher workshops to 126 Santa Rosa County Science teachers. Topics included: Oyster Reef Restoration (2 workshops) and curriculum development, Gulf Coast Ocean Observation Systems, WOW! The Wonders of Wetlands, and the Marine Collectors Permit workshop.

9.15.3 Provide professional development opportunities information to teachers, 4-H leaders and various industry and agency professionals.

Through an e-mail list of more than 40 teachers and 4-H leaders, provided professional development opportunities and timely curriculum development and subject material information.

Through an e-mail list of more than 60 community leaders, agency personnel, local citizens provided information on public input opportunities, upcoming meetings and timely watershed and natural resource updates.

9.16 Work with ANERR staff to organize and teach a workshop for natural resource leaders/educators/administrators on "Working with the Press to get your Story Out." (Mahan)

The Franklin County Agent worked with ANERR staff to plan and organize a "Working with the Press to get your Story Out" workshop. However, after all the preliminary work was done and we were getting ready to advertise the program the Department of Environmental Protection's Communications Department cancelled the program. They claimed we were spending too much time on the subject and that they could do the program in .5 days instead of 1.5 days. So the idea for the program has been put on hold.

- 9.17 The National Sea Grant Extension Academy has been approved and the first sessions will be held during 2005. Will assist with planning for all three sessions, delivery of instruction, and coordination of the actual program which will require cooperation of a small cadre of Sea Grant personnel, the national office, and several state offices. The Academy will consist of two one-week sessions separated by 6 months of study and integrated distance learning activity. The planning number for trainees is 25 – 30 for this first Academy. (Spranger/D.Jackson)

Assisted in planning, coordination, logistics, instruction and close-out of all three sessions of the first National Sea Grant Extension Academy. Nearly 10% of the nation's Sea Grant extension staff were trained. All official and anecdotal feedback was positive.

Planning was started, reservations for space made, and a revised agenda was prepared for the second session of the National Sea Grant Extension Academy. This academy was postponed for lack of funding.

Coordinated and provided instruction at first National Sea Grant Extension Academy that was attended by 30 extension agents and specialists from 23 states. First session was held in Spring in Washington DC; second session was held in Fall in Pensacola. Evaluations indicated that participant's significantly increased their skills and knowledge, leading to be more productive in their extension activities in their respective states. (Spranger)

- 9.18 Hurricane Response Teams will be organized, trained, and dispatched as appropriate if the need arises. These will be volunteer agents and specialists who will work in small teams toward helping various marine industries back into operation following any major storm events, with special concern following hurricanes. An important mission will be to learn as much as possible about boats that are affected by the storm for preparation of future education programs on prevention of damage and disruption. The plan will be for these teams to be self-sufficient and self-contained so as to have no impact on local services, supplies, or equipment. (D.Jackson)

Planning was completed for training of volunteer agents and specialists as hurricane response teams. These teams will be known as SMART, Specialized Marine Assessment and Response Teams. Logistics were completed, announcements made, and the course was ready to be executed twice in 2005, but postponed both times by hurricanes. The entire program is ready for execution whenever re-scheduled, presumably early in 2006. Materials, supplies, and equipment to support the teams were assembled for showing during training and for use when teams would be dispatched.

Goal 10: Create a Scientifically and Environmentally Informed Citizenry

- 10.1 A number of educational activities are implemented under the previous goals. The following ones cross many goals and are implemented in general.
- 10.1.1 Produce high quality publications and productions that effectively communicate results of Florida Sea Grant activities to both general and specialized audiences. Productions include Sea Grant Reports, Sea Grant Extension Fact Sheets and brochures, Sea Grant Technical Papers, books, book chapters, staff papers, conference proceedings, newsletters, posters signage and electronic formats including CD-ROMs and videos. (Kearl/Zimmerman)
 - 10.1.2 At least ten print or broadcast news releases will be produced. (Kearl/Zimmerman)
 - 10.1.3 The Florida Sea Grant Internet home page and website will be upgraded and maintained. (Zimmerman/Whitehouse/Damron/Wagner)
- (See Section 10.0, Publications, and Section 9.0, Outreach Activities; Displays and Web-based Technologies.)
- 10.2 Conduct public education programs concerning endangered species in Brevard County. (Combs)
- 10.2.1 Offer public education through two workshops in Brevard County with newly developed “custom” written materials concerning proper methods of protecting and conserving endangered species, especially manatees and seaturtles.
 - 10.2.2 Work with the Clean Boating Partnership in distribution of approximately 30 Monofilament Collection bins to be distributed to Clean Marinas around the state of Florida – funding provided by the Clean Boating Partnership; bin-construction (total 100 bins constructed) during 2004 by 80 Rockledge High School Environmental Science Students. Such Monofilament Collection Bins provide on-site public educational opportunities concerning importance of preventing introduction of environmentally unfriendly products, such as monofilament, into marine and aquatic environments where they might be ingested by endangered species or any other species, causing probable health hazards to these species.
- No work was accomplished for these tasks.
- 10.3 Assist federal, state and local agencies in development of sea turtle awareness programs. (Combs)
- 10.3.1 Conduct eight 1-2 hour sessions of programming for Brevard County 4-H youth and adults interested in participating in the annual State 4-H Marine Ecology Event; subject areas studied will include marine ecosystems, marine plants, marine invertebrates, and marine vertebrates.
- 4-H Marine Ecology training -- Home-school clubs decided not to participate in Marine Ecology Contest training, but Brevard Agent continued his support of the Contest, and assisted in its implementation for the 11th year since beginning his job in Brevard Sea Grant Extension (100 attendees)
- 10.3.2 Enter a Junior Team and a Senior Team from Brevard County in the annual State 4-H Marine Ecology Contest.

Because the clubs did not participate in training, no Brevard Teams were entered in the Contest.

- 10.3.3 Develop three educational brochures, designed to enhance recreational boaters' understanding of endangered marine species, the importance of protecting them, and methods to do so, especially manatees, green seaturtles, and loggerhead seaturtles, all of which are found in the IRL during a part of their life-cycle.

No work was accomplished for these tasks.

- 10.4 Teach youth and adults about environmental issues in Lee County.

- 10.4.1 Experienced certified SCUBA divers will be organized to dive Boca Grande Pass March 17 and 18, 2005 to recover debris from the Pass. Divers attend a workshop provided by Mote Marine Laboratory and Florida Sea Grant on a marine invasive species-Green Mussel. This particular species has been introduced to our coastal area in the Tampa area and has been spreading throughout Florida waters. This is an aggressive species that will encroach on native species and disrupt ecosystems. Divers are educated as to identifying, surveying and reporting all sightings. This is important in order to understand its behavior, range and adaptive nature; thus, putting a plan together to stifle further growth. Divers are provided a refresher lecture on proper dive techniques and safety protocols. (Wasno/Stevely/Jacoby/Staugler)

A presentation on invasive species was given during the training session for the Boca Grande Pass Clean-up. This activity received a Certificate of Appreciation from the Gulf Guardians Awards Program of the US Environmental Protection Agency's Gulf of Mexico Program. (Jacoby)

37 certified SCUBA divers removed 1,700 pounds of debris from Boca Grande Pass during this 2-day event. There were no injuries to any participants. 27 government and civic associations participated. Educational components included green mussels identification, marine invasives and reporting protocols.

- 10.4.2 Conduct general marine environmental education programs for youth and adults in Lee County. (Wasno)

Marine Environmental Education Programs were held at three local libraries and two kid's fishing tournaments. 245 children and adults attended these programs.

- 10.5 The Gulf Coast Regional Envirothon Board of Directors will be focusing on recruiting additional high school participation in the five county area of Southwest Florida. A colorful brochure has been printed for distribution to all science teachers/coordinators in the area. The brochure highlights past events and will serve as an introduction for future high school visits by Envirothon recruiters. Envirothon 2005 will be held in early December. (Wasno/Staugler)

Twenty-two teams, including 8-9 new teams attended the meeting in December. Eight teams were unable to attend due to hurricane recovery. 125 packets including the brochure were distributed to all local high schools in the five county area including public and parochial.

- 10.6 REDstart volunteers will participate in a 2-day workshop on concepts of aquaculture and proper fish handling techniques. As this project moves towards the research phases, total number of fish reared will be increased and thus elevate risks of fish die-offs due to stress and disease. This workshop will be conducted in early Fall 2005. Participating agencies that will offer presentations

will include Mote Marine Laboratory, Ruskin Aquaculture Facility, Florida Fish and Wildlife Service, Florida Sea Grant, Sanibel Captive Conservation Foundation Marine Laboratory and US Fish and Wildlife Service. (Wasno/Stevely/Creswell)

This workshop (project REDStart) was not held due to some concerns about fish health and their release into the natural environment. It has been rescheduled for 2006. (Creswell)

- 10.7 *Fisherman's Educational Kiosk* – Through a Charlotte Harbor National Estuary Program grant, an educational kiosk focusing on issues pertinent to fishing tournament participants will be developed. This kiosk will highlight 18 issues of importance to include fish handling, venting tools, sea grass protection as well as some research projects that Sea Grant is involved with locally. A few of the research projects would be the REDstart Project, Oyster Reef Enhancement and Red Tide. This kiosk will be displayed at 12 Lee County fishing tournaments with a potential audience of 3,500 participants. It will also be made available for agents in Charlotte, Sarasota and Hillsboro Counties. (Wasno/Staugler/Stevely/Sweat)

Fishermen's Educational Kiosk was finally purchased. This display was used at the last fishing tournament of the season. Approximately 275 participants were in attendance.

- 10.8 A grant through the West Coast Inland Navigation District will provide funding for boat fuel for an elite high school dive research team. Under the guidance of Lee Counties Marine Agent, this group of 10 high school students will meet on a bi-monthly basis to conduct artificial reef research on Lee County Reef Systems. (Wasno)

High School SCUBA dive club conducted 4 outings collecting debris from artificial reefs. In addition, students were taught basic scientific research protocols.

- 10.9 Conduct a general marine educational program for youth and adults in Santa Rosa County. (Verlinde)

- 10.9.1 With UF/IFAS researchers, North Carolina State University and US Fish and Wildlife Service, coordinate and present at stream restoration workshop.

A stream restoration workshop was scheduled for Nov. 2005, but due to overwhelming commitment by presenters and coordinator, the workshop was cancelled and re-scheduled for April 2006.

- 10.9.3 Provide coastal information news articles to various media outlets.

Provided and contributed to coastal issues news articles and press releases concerning events such a Seagrass Awareness, Coastal Encounters and topics such as oyster restoration, artificial reefs, beach safety and upcoming activities to the Santa Rosa County 4-H newsletter, Pensacola News Journal, Navarre Press and Gulf Breeze News and the Bay Area Resource Council newsletter.

- 10.9.4 Continue to support, coordinate and develop curriculum and videos for the Resource Ranger Program, an environmental education program for 4-H members and students. The program includes curriculum, videos and field trips about coastal issues.

More than 250 students in the two county area attended Resource Ranger field trips. Continue to support and contribute to script writing and curriculum development of the Resource Ranger Program. Seven Resource Ranger episodes are currently airing in 4 local markets.

- 10.9.5 Coordinate the 5th annual Seagrass Awareness Celebration. As part of the Santa Rosa County Beaches to Woodlands Tour, coordinate the “Coastal Encounters” event.
- Coordinated and presented at the 5th annual Seagrass Awareness Celebration and Coastal Encounters Events. More than 600 residents attended these festivals.
- 10.9.6 Teach Florida Master Naturalist Program wetlands and coastal modules.
- The Florida Master Naturalist Wetlands module was scheduled for June 2005, due to low enrollment, it was cancelled.
- 10.9.7 Coordinate 21th annual NW Florida Rivers Clean-up and International Coastal Clean-up.
- The 21st annual Northwest Florida Rivers Cleanup was held June-August 2005. 258 area residents participated in the clean-up. 11 pickup trucks of debris were removed from area creeks and rivers. Due to 1 hurricane and much rain, this number was down compared to past years
- 10.9.8 Develop educational programs for 4-H, teachers, boaters and interested citizens on marine debris and monofilament recycling.
- Marine debris timeline and monofilament recycling information and demonstrations were used at 3 local festivals and 5 natural resource field trips for area students and 4-H members.
- 10.9.9 Work with extension 4-H agents in the development of coastal programs and activities for local clubs. Continue to provide activities and curriculum for senior 4-H marine club.
- Eight 4-H youth were involved in the 4-H senior marine biology club. Provided fishing activities, and coastal resource information at 2 4-H marine camps (169), fishing with state 4-H operation military kids (16) retreat in Panama City, and marine ecology field day for 148 school enrichment 4-H members.
- 10.9.10 Provide information concerning coastal issues to public through e-mail lists.
- Through an e-mail list of more than 40 teachers and 4-H leaders, provided professional development opportunities and timely curriculum development and subject material information.
- Through an e-mail list of more than 60 community leaders, agency personnel, local citizens provided information on public input opportunities, upcoming meetings and timely watershed and natural resource updates.
- 10.9.11 Provide coastal information and hands-on activities at various environmental events such as Earth Day, Navarre Fun Fest, NW Florida Wildlife Sanctuary’s Open House.
- Provided touch tanks, seagrass information, safe boating, beach safety, monofilament, marine debris, sharks, invasive species information at various festivals such as Seagrass Awareness, Wildfest, and Coastal Encounters.
- 10.9.12 Provide Santa Rosa County community leaders with coastal information.

Support the Santa Rosa County Board of County Commissioners Marine Advisory Committee. Attend monthly meetings throughout the year to provide resources, grant writing and information.

- 10.9.13 Support the Board of County Commissioners marine advisory committee. Coordinate an open public forum on boating, access and waterway issues. Respond and coordinate waterway management issues.

Support the Santa Rosa County Board of County Commissioners Marine Advisory Committee. Attend monthly meetings throughout the year to provide resources, grant writing and information.

- 10.9.14 With Andrew Diller, provide “Sea Turtle Friendly Beaches” program to Navarre beach residents.

Due to continued hurricane recovery on Navarre Beach, the “Sea Turtle Friendly Beach program was not promoted in 2005.

- 10.9.15 Provide coastal issue talks to various community organizations.

Provided Coastal Issues and Updates talk at Navarre Garden Club (32 attendees), watershed information on the Pensacola Bay watershed Tour.

- 10.9.16 Support 4-H marine and county camps at Camp Timpoochee. Provide 4-H leaders and teachers with coastal information and opportunities.

See 10.9.9

- 10.10 Conduct a general shellfish aquaculture program for youth and adults. (Sturmer)

- 10.10.1 Provide information about the economic and environmental benefits of shellfish aquaculture to a variety of groups, including youth, students, citizens, local government officials, state agency representatives, legislators and the media, through tours, presentations and written materials.

Provided information about the economic and environmental benefits of shellfish aquaculture to a variety of groups, including youth, students, citizens, local government officials, state agency representatives, legislators and the media, through tours, presentations and written materials.

- 10.10.2 Serve on a steering committee in developing the 2nd annual Clamerica Celebration to be held on 4th of July in Cedar Key. This community event is planned to focus attention on the importance of the area’s aquaculture industry.

Served on the steering committee in developing and implementing the 2nd Annual Clamerica Celebration held on 4th of July in Cedar Key. This community event focuses attention on the importance of the area’s aquaculture industry.

- 10.10.3 Provide educational programs on shellfish aquaculture to local K-12 teachers and to 4-H youth.

Provided educational programs on shellfish aquaculture to local K-12 classes, 4-H youth, and undergraduate classes.

- 10.11 Enhance the sustainability of Cortez, Florida. (Stevely)
- 10.11.1 Organize 24th Annual Cortez Commercial Fishing Festival. Annually this festival reaches 15,000 citizens with information on environmental issues, and raises \$55,000-\$65,000 for acquisition of environmentally sensitive land.
- Organized 24th Annual Cortez Commercial Fishing Festival: a total of 1,200 people attended educational talks on fishing practices and bay ecology. The Festival generated \$80,000 to fund acquisition of environmentally sensitive land adjacent to the village of Cortez. A total of over \$350,000 has been generated to date.
- 10.11.2 Assist Florida Institute for Saltwater Heritage (FISH) in conducting educational programming to support acquisition and management of the FISH Preserve, development of the Florida West Coast Maritime Museum at Cortez, and restoration of the 1912 Cortez School House.
- Restoration of 1912 school house begun in 2005. Also, new out parcel purchased in 2005.
- 10.12 Conduct public education programs in Charlotte County (Staugler)
- 10.12.1 Develop and maintain a Charlotte County Marine Extension website with local marine resource information.
- The remake of Charlotte County Extension's website, which would include the Sea Grant website has been put on hold due to the pending arrival of the University's "Solutions for Your Life" website.
- 10.12.2 Research and write at least 12 columns for the WaterLIFE Magazine on marine-related topics, monthly distribution of 30,000.
- Twelve monthly columns for the WaterLIFE Magazine were written during 2005. Topics included water quality in Charlotte Harbor, the Charlotte Harbor watershed, the lifecycle of a redfish, monofilament recovery and recycling, marine biotechnology, artificial reefs, Languir's circulation, marine debris cleanup efforts, kids fishing, loss of the waterfront, clean boating partnership, and rip currents.
- 10.12.3 Write marine-related column for quarterly Extension Newsletter.
- Two marine related columns were written for the County Extension newsletter. The newsletter, which is normally produced quarterly, was only produced two times during 2005.
- 10.12.4 Participate in the planning and aquatics testing section of the Envirothon competition for high school students in SW Florida.
- The Sea Grant agent participated in the planning and implementation of the 2005 Envirothon Academic Challenge for SW Florida.
- 10.12.5 Work with Keep Charlotte Beautiful, CCA, & U.S. Coast Guard Auxiliary, to assemble, install and maintain monofilament recycling bins at marinas, ramps and fishing piers within the County.

Nineteen monofilament bins are currently installed at public ramps, fishing piers, marinas, and at area bait shops. These bins are maintained by the U.S. Coast Guard Auxiliary, flotilla 87, the Charlotte County chapter of the Coastal Conservation Association, and the Charlotte County 4-H Marine Ecology Club.

- 10.12.6 Help coordinate Coastal Cleanup and Adopt a Shore programs.

The Sea Grant agent worked with Keep Charlotte Beautiful to organize a coastal cleanup in 2005. 600 volunteers collected 12,715 lbs of debris.

- 10.12.7 Provide coastal information and activities at various marine-related events.

Coastal information and activities were provided at the Charlotte Harbor Nature Festival, the Englewood Town Hall meeting, and the CCA Expo. These events attracted about 5,000 people.

- 10.12.8 Provide marine-related speaker programs to at least six community organizations.

The Sea Grant agent provided marine-related speaker programs to 13 community organizations during 2005.

- 10.12.9 Develop Mangrove & Seagrass program and Watersheds & Water Quality program for Master Gardener training.

A mangrove and seagrass program has been created, but not given to the Master Gardener's. It has been given to other civic clubs. A watershed and water quality program was not developed in 2005, due to the other commitments.

- 10.12.10 Work with Wasno and Jacoby to organize the Boca Grande Pass cleanup event. (with Wasno/Jacoby)

The Sea Grant agent participated in the planning of the 2005 Boca Grande Pass Cleanup event however the flu prevented her participation. (Staugler)

A presentation on invasive species was given during the training session for the Boca Grande Pass Clean-up. This activity received a Certificate of Appreciation from the Gulf Guardians Awards Program of the US Environmental Protection Agency's Gulf of Mexico Program. (Jacoby)

- 10.12.11 Redevelop and reprint the Charlotte Harbor Boating & Angling Guide.

The Charlotte Harbor Boating & Angling Guide was update during 2005. Printing and delivery occurred in March 2006.

- 10.12.12 Distribute 40,000 Boating & Angling Guides.

47,000 Boating & Angling Guides were distributed during 2005.

- 10.12.13 Work with Charlotte County Environmental & Extension Services to develop and implement "Environmental Traveling Show" for youth grades 3-5.

- 10.13 Conduct a general marine environmental education program for youth and adults in Okaloosa and Walton Counties. (S.Jackson)

This is the main focus for the Marine Extension program in Okaloosa and Walton Counties. The agent will provide support to teachers conducting classroom enrichment projects such as NaGISA at Niceville and South Walton High Schools. Additionally, a supporting team role will be taken for COSEE and 4-H Camping Projects. Frontline planning and teaching roles will be taken for projects such as State Marine Camp, Local School programs such as Dunes in Schools, Florida Master Naturalist, Cooperative Teacher Education programs with Dauphin Island Sea Lab, and Sea Turtle Education programs.

- 10.13.1 Develop educational programs for teachers, boaters and interested citizens on marine debris and monofilament line recycling.

To fund the monofilament fishing line recycling project, 4-H youth wrote and obtained a grant of \$750 from Youth Service of America (YSA), a non-profit organization that helps to enable youth entrepreneurship. Additional sponsorships totaling over \$400 were committed from local conservation organizations and businesses.

The program networked with Bass Pro Shops of Destin providing valuable support as point of conservation education, many media contacts, and as a MRRP collection site.

A survey instrument for our 4-H teen council's presentations was created. 518 surveys were completed. Survey results indicate 73% did not know fishing line was recyclable (pre-presentation) while 91% said they would recycle line if program was available locally (post presentation).

Working closely with the University of Florida (IFAS) Sea Grant and 4-H programs, YSA and WTDC, our local recycling program currently has 10 bins placed in Walton and Okaloosa counties. The program is expanding to include six additional bins at Hulbert and Eglin Air Force Bases.

The program has collected over 200 pounds of monofilament fishing line to date.

Sea Grant Extension partnered with 4-H to provide marine debris and monofilament recycling education to over 2,000 Girl Scouts attending events at the Gulfarium, a local marine life park.

Sea Grant Extension partnered with 4-H to provide recycling information and displays to patrons of Bass Proshop during a special media day event. Recycling information was presented on local TV fishing shows and newspapers in Panama City and in Destin.

- 10.13.2 Work with volunteers in annual fall coastal clean-up campaigns.

Worked with Walton County Tourist Development Council to provide support for fall Coastal Clean-up.

Partnered with Walton County TDC and Walton County 4-H to promote and organize local clean-up for Grayton Beach. Provided marine debris educational activities and materials.

- 10.13.3 Work with Extension 4H Agents in the development of marine environmental programs for local clubs.

Worked with combined Teen Councils on monofilament recycling project.

10.13.4 Develop marine environmental programs for local K-12 teachers.

Supported NaGISA (Natural Geography in Shore Areas) Northwest Florida – An International Cooperative Marine Science Project.

April 2005 – Assisted Venezuelan Scientists and Niceville High School instructors as students surveyed Destin’s East Pass jetties and beaches. Follow up; worked with teachers and students to examine sampling techniques for meofauna found in beach and samples.

October 2005 – Assisted Niceville High School instructors as students surveyed Destin’s East Pass jetties and beaches. Worked with South Walton High School instructors to bring this program to Walton County Schools in 2006.

10.13.5 Develop online or hard-copy newsletter or newspaper articles on local marine/coastal topics that is distributed to interested citizens.

Provided educational information via press release and subsequent news articles regarding red tide in Northwest Florida. Included SEACOOS and other technology advances regarding red tide remote sensing and sampling. (50,000+)

Provided press release addressing storm preparations – The use of sandbags on the beach (Written with Spencer Rodgers North Carolina State University – Sea Grant) (Unknown)

Contributed to article on beach safety addressing jellyfish stings, rip currents, insect bites and sun care. (42,000)

Provide information regarding local aquaculture, shoreline restoration, rip currents, and fishing information via agents website (2,884)

Sea Turtle life history brochure for Walton County (13,000)

10.13.6 Provide Master Naturalist Programs featuring wetlands and coastal systems to interested citizens and establish a volunteer coastal program for marine extension.

12 students completed the course requirements for the coastal systems module of the Florida Master Naturalist Program in 2005.

90% of the Coastal Systems Module graduates in 2005 rated the course as Excellent.

Pre and post test scores percent knowledge gained for Coastal Systems was 17.3%.

Beyond the increase in the knowledge gained were the new educational resources produced for our community as a result of project work associated with these classes. Class projects included:

- Enhancing interpretation at local nature walks;
- Advocacy roles for shoreline restoration and water quality projects;
- Field guide quick reference card set for beach safety, stewardship, plant and animal interpretation;

Master Naturalists continue to support Extension and outreach efforts in Okaloosa and Walton Counties. Former class members have return assist with classes regarding sea turtle biology and local monitoring/stewardship opportunities.

Outreach to tourists and youth are often fulfilled by Master Naturalist volunteers. Other graduates are involved with local Choctawhatchee Bay water quality initiatives supported by Florida DEP. Additional graduates are volunteers with local state parks, communities and conservation organizations.

- 10.14 In Taylor and neighboring counties, the gag grouper is a highly valuable fish for both recreational and commercial anglers. Working primarily with key faculty in the University of Florida Department of Fisheries and Aquatic Science, a public awareness and education campaign will be established to gain broad public support for a new project aimed at enhancing essential fish habitat off the coast of Taylor and Dixie Counties. Increased awareness of the Steinhatchee Fisheries Management Area project will be achieved through public presentations, comprehensive web-based publications, and through various regional print publications. The gag fishery is currently under intense management and pressure. This educational campaign will also serve to increase awareness of general principles of coastal health and ecology and also of management techniques that make Florida's fisheries both sustainable and competitive. This will create a better educated citizenry and increase support for similar long-term enhancement projects in the future. (Sapp)

Independently organized a community awareness campaign that informed citizens of the objectives of the Steinhatchee Fisheries Management Area (SFMA) and principles of ecosystem management for fisheries productivity through regional articles (outreach: 65,000), web-based resources (documented outreach: 11,000), materials distributed (2,500 publications distributed), personal/group meetings and consultations (750 gaining awareness and expressing support) that gained public and political support for the project. Through my direct efforts, the County Commissions in Taylor, Dixie and Wakulla Counties all signed unanimous resolutions supporting the development of artificial reef projects under the objectives of the SFMA project.

- 10.15 Plan, market and produce a regional fishing tournament titled, "4-H Nature Coast Classic." This event, tentatively scheduled for May of 2006, will feature specific adult and youth education programs focusing on responsible angling and fisheries enhancement and conservation that are consistent with Florida Sea Grant. It will also feature a commercial expo that will draw many of the top boat, tackle, and marine-related equipment manufacturers in the State. The event will serve to raise awareness among both citizens and industry in the region about the key programs of Florida Sea Grant and Florida 4-H, while raising money for Taylor County 4-H and artificial reef development programs. Grant funding will be pursued to support the marketing of this event. (Sapp)

Gained title sponsor (Timberland Ford in Perry, FL), organized and researched event (13 meetings, 5 agencies, and 5 active volunteers) and due to limited time and resources, postponed event until 2007.

- 10.16 Plan and implement complete re-development of the Taylor County Extension Service web presence, while directly referencing Florida Sea Grant and Florida Sea Grant programs in all Taylor County Marine program areas. Through direct marketing, effective design principles, and consistent "cross-promotional" efforts (direct reference in various outreach campaigns, , web site traffic will increase by 250-400% during the first year. (Sapp)

On average, there were 800-1050 monthly visits to the Taylor County Extension Web site prior to my independent web-based educational resource campaign. By the end of 2005 and through direct marketing, effective technical design, and consistent efforts of “cross-promotion,” I achieved 15,000 visits and 1,500 actively downloaded (distributed) educational documents on a monthly basis. This 1,500 % increase far exceeds the 250-400% growth rate that was projected in my 2005 Plan of Work and stimulated much greater interest in UF/IFAS and Florida Sea Grant programs. Additionally, I acquired all technological resources and hardware for educational technology training and coordinated technology training for faculty in group and one-on-one sessions.

- 10.17 Initiate a broad-based community education program that seeks to increase knowledge and awareness of primary Florida Sea Grant programs including aquaculture, fisheries, coastal habitats, boating and waterways, water quality, and coastal storms. Program areas will be tailored to issues and concerns that are relevant to Taylor County and the “Nature Coast.” Consistent with regional demographic indicators, education will focus on the principles of empowerment and ownership (ex. Fisheries conservation will be promoted through a sense of personal responsibility, specific reference to the individual gain from collective efforts, and practical steps to achieve productive fish populations) and will include monthly articles in regional sportsman publications (ex. In each issue of Woods-N-Water, a regional publication with a distribution of 65,000, I will contribute a feature article that deals with a specific theme of relevance to Florida Sea Grant and makes specific reference to Taylor County Extension and Florida Sea Grant. Each article will include a specific reference to the Taylor County web site, where I will create a detailed series of web-based publications that serve to further increase knowledge and understanding of the current issue.), print and web-based publications, presentations to local civic groups, and creative ways of “cross-promotion” with local government organizations including the Chamber of Commerce and local Tourism Board. (Sapp)

I published six (6) feature articles to a readership of 65,000 that highlighted important regional programs focusing on seagrass preservation, the red tide phenomena, fisheries conservation projects, game food plots, reef fish venting, and feral hog control. All these articles served as a gateway to a well-organized educational delivery system involving public lectures and community events (total outreach: 2,500) and a comprehensive web-based “E-Extension” service that promoted the work of UF/IFAS and Florida Sea Grant researchers.

- 10.18 Research and write at least 20 columns this year for the Apalachicola & Carrabelle Times Newspapers on marine/natural resources-related topics. (Mahan)

The Franklin County Agent researched and wrote 39 newspaper columns for the Apalachicola & Carrabelle Times Newspapers.

- 10.19 Present at least 10 Marine Extension Updates to the Franklin County Board of County Commissioners on a variety of local and state marine issues. (Mahan)

The Franklin County Agent presented 15 marine Extension Updates to the Franklin County Board of County Commissioners. Topics include: assorted fishery management issues, hurricane damage to the local seafood industry, FL red tide, ISSC updates, *Vibrio vulnificus* updates, and the formation of the Franklin County Seafood industry taskforce.

- 10.20 Continue work with County High Schools to help provide research and technical support for student’s science fair projects and to be a judge at the Annual Science Fair. (Mahan)

The Franklin County Agent provided three students with technical information/assistance with their science fair projects and was a judge at the Apalachicola Middle & High School Science Fair. In addition he was a judge for the Invention Convention Program at the ABC School.

- 10.21 Teach two homeowner education programs to educate homeowners on how they can help protect our local natural resources by selecting the proper pesticide and using it safely. (Mahan)

The Franklin County Agent taught two-homeowner education programs that included discussions on the selection and safe use of pesticides to help protect the environment. In addition the Agent spoke to several people during the Seagrass Awareness Day Program about the importance of using pesticides and fertilizers properly to protect the Apalachicola Bay ecosystem.

- 10.22 Conduct a general marine environmental education program for youth and adults in Escambia County. (Diller)

- 10.22.1 Maintain and update the Escambia County Marine Extension website with local marine resource information, sea turtle education, and educational events.

Agent maintained and updated the Escambia County Marine Extension website with local marine resource information, sea turtle education, and educational events.

- 10.22.2 Continue support and development of educational programs for teachers, boaters and interested citizens on marine debris, coastal clean-ups, and monofilament line recycling.

Recognized local Boy Scouts for maintaining the monofilament recycling bins at Fort Pickens during 2004 and assisted member replace bins lost during Hurricane Ivan. Assisted with coordination and advertising of Escambia County efforts during the annual Coastal Clean-up.

- 10.22.3 Work with Extension 4-H agents in the development of marine environmental programs for local clubs. Assist with development and activities at state marine and county 4-H camps.

Escambia agent served as instructor and staff member for the state 4-H Marine and Sportfishing Camp at Camp Timpoochee. Youth participated in a variety of activities including sportfishing, shark and fish identification, waves and oceanography, fish painting, and visited the Gulfarium.

- 10.22.4 Develop marine environmental programs for local K-12 teachers and youth. Continue writing for Resource Rangers video series and developing related educational programming.

Escambia agent assisted writing Resource Rangers video/television episode on habitats entitled "Sharing our Space". Organized and taught marine and coastal resource activities to the Junior Lifeguard Program at Naval Air Station Pensacola. Presented sea turtle seminars to the marine biology classes at Escambia and Pine Forest High Schools. (Diller)

- 10.22.5 Develop online or hard-copy newsletter or newspaper articles on local marine/coastal topics that are distributed to interest citizens.

Escambia agent was interviewed by local media for several articles on sea turtles. Developed online information for website and responded to on-line requests for information.

- 10.22.6 Provide Master Naturalist Program training to interested citizens and continue to develop a local volunteer program for marine extension.

Training of new Master Naturalists was postponed for 2005 due to lack of suitable sites to host the training because of damage from Hurricane Ivan. Previous graduates attended COSEE informal educators in-service training at Dauphin Island in January 2005 and continued volunteer efforts.

- 10.22.7 Coordinate the Turtle Friendly Beach program for sea turtle awareness and protection. Conduct sea turtle lighting workshops and provide sand fencing information during the recovery from Hurricane Ivan. Provide educational assistance and Sea Grant Extension representation to various sea turtle working groups. (with Verlinde)

Agent coordinated the Turtle Friendly Beach program for sea turtle awareness and protection and presented the program at the 2005 Sustainable Beaches Conference. Assisted with a sea turtle lighting workshop and provided sand fencing information during the recovery from Hurricane Ivan. Provide educational assistance and Sea Grant Extension representation to various sea turtle working groups.

- 10.23 Conduct a general marine educational program for youth and adults in Santa Rosa County. With Andrew Diller, provide "Sea Turtle Friendly Beaches" program to beach residents. (Verlinde/Diller)

Santa Rosa County efforts of the Turtle Friendly Beach Program were halted after Hurricane Dennis severely impacted Navarre Beach. As recovery continues through 2006, the program will resume. (Diller)

See 10.9.14 (Verlinde)

- 10.24 Enhance stewardship of marine life through education in St. Lucie County. (Creswell)

- 10.24.1 Conduct classroom instruction for "Motion in the Ocean" 5th grade program. 300 - 5th grade students attending middle and high schools in the St. Lucie County School District will improve their knowledge of marine science through the "Motion in the Ocean" program, a hands-on instructional which focuses on the relationship between anatomical form, function and adaptation to the environment.

This agent presented "Motion in the Ocean", and interactive program related to form and function of marine organisms, to 625 5th grade students in the St. Lucie Public School District. Students gained knowledge on the relationship between anatomical form, function, and adaptation to the environment.

- 10.24.2 Conduct ecology and canoeing instruction to 5th graders through the "Lagoon Days" program.

Over 750 5th grade students from the Indian River Public School District learned appropriate and safe canoeing practices during the "Lagoon Days" program.

- 10.24.3 Conduct field trip exercises with 4th graders through the "Ecosystem Explorer" program at the St. Lucie County Marine Center. 300 - 4th grade students will become more knowledgeable about the marine environment by attending a program at the St. Lucie County Marine Center.

Over 100 5th grade students from the St. Lucie County Public School District learned methods for monitoring water quality, marine food chains, and adaptation of marine organisms at the St. Lucie County Marine Center – Smithsonian Ecosystem Exhibit.

- 10.24.4 Conduct field trip exercises with 7th graders through the “Ecosystem Explorer” program at the St. Lucie County Marine Center. 200 - 7th grade students will become more knowledgeable about the marine environment by attending a program at the St. Lucie County Marine Center in conjunction with classroom instruction at their schools.

Approximately 180 7th grade students from the St. Lucie County Public School District learned marine benthic sampling techniques, adaptations of marine organisms, and the use of dichotomous keys for identifying marine mollusks.

- 10.24.5 Conduct in-class presentations on marine invasive species in Florida. 500 students attending middle and high schools in the St. Lucie county School District will improve their knowledge of marine invasive species in Florida and methods to decrease introductions of non-native marine species.

Over 660 high school students from the St. Lucie County Public School District improved their knowledge of marine invasive species in Florida and methods to decrease introductions of non-native marine species.

- 10.24.6 Provide marine day programs for 4-H summer camps (4). 200 - 4-H, Indian River "Lagoon Days", and other summer camp students will increase their knowledge of the Indian River Lagoon through field activities, such as beach seining, benthic sampling, and observation.

Sixty youth from summer school programs and 4-H increased their knowledge of the Indian River Lagoon through field activities, such as beach seining, benthic sampling, and observations.

- 10.25 To increase the awareness of the citizenry of St. Lucie County of the anthropogenic impacts on Florida's coastal waters, and more specifically, the Indian River Lagoon. (Creswell)

- 10.25.1 Conduct “Our Coastal Environment” seminar series (four part series relating coastal ecology and environmental landscaping through FYN) to at least five homeowner associations and other civic groups in St. Lucie County.

This activity was not accomplished due to lack of interest by homeowner associations pre-occupied with post-hurricane renovations.

- 10.25.2 Continue bi-weekly radio broadcast “At Home in St. Lucie” (½ hour program) discussing topics related to the impacts of coastal development and mans’ activities on the marine environment.

Twelve ½ hour radio broadcasts were conducted on topics related to marine fisheries, marine and estuarine ecology, and anthropogenic impacts to the Indian River Lagoon.

- 10.25.3 "Clean Boating" - A "Clean Boating" display, including an audio-visual presentation, the "Clean Boating Habits" booklet, hurricane preparation for boating interests, and other printed material were presented at public events. These included: "Florida Shallow Water Fishing Expo", "Ft. Pierce Boat Show", "St. Lucie County Chamber of Commerce Fishing Tournament", and "Nature Days" (Ft. Pierce Manatee Center).

Twelve displays and exhibits for the Clean Marina/Clean Boater Partnership were presented at boat shows, fishing tournaments, and the St. Lucie County Fair. Over 3,000 clean boater pledge cards were submitted as a result of these exhibits. Six, ½ hour radio programs were presented related to Clean Marina/Clean Boater programs and Hurricane Preparedness for Marine Interests.

- 10.25.4 Conduct at least two workshops dedicated to public education of marine invasive species.

This activity was not accomplished.

- 10.25.5 Distribute invasive species information to retail pet outlets throughout St. Lucie County.

This activity is in progress in 2006.

- 10.25.6 Continue to work with “The Caulerpa Taskforce” to develop strategies for public identification of this and other algal invasive to the Treasure Coast.

This agent continues to serve on the “Caulerpa Taskforce” to develop strategies for public identification of this and other algal invasives to the Treasure Coast. Two ½ hour radio broadcasts were dedicated to marine invasives with particular emphasis on algal species overtaking coral reef habitats off east-central Florida.

- 10.26 Conduct public education programs in Miami-Dade County. (Crane)

- 10.26.1 Volunteers who will participate in beach clean up activities will remove marine debris from the shoreline and will learn the impacts of litter to the shoreline. Knowledge gained will be determined by survey at the end of clean-up event.

182 volunteers participated in beach cleanups. About 85% of 182 individuals gained knowledge on the impacts of marine debris to the environment as measured by a follow up survey. Of 21 volunteers surveyed, at least 16 planned to make better efforts to recycle and participate in community stewardship events.

- 10.26.2 Conduct workshops on marine environmental topics for informal and formal educators/teachers. Knowledge gained and skills learned will be measured by pre and post test. Follow-up survey will indicate number of students reached with information from the workshop.

Agent conducted and hosted 2 teacher workshops reaching 34 teachers. 100% of 34 teachers learned about the importance of oceans and atmosphere and the impacts of invasive species. Of 12 individuals surveyed, 100% reported they would use the information in their classroom, reaching 2,000 students. Pre and posts tests indicated a 29.5 point increase on invasive species for 12 teachers who attended the workshop.

- 10.26.3 Continue working with volunteers to construct and install at least 15 outdoor fishing line recycling bins and educate citizens on the impacts of discarded fishing line to the marine environment. Success of this activity will be measured by the number of volunteers who participate and the number of recreational anglers reached about the program. At least 80% of anglers will agree to use the bins if placed where they regularly fish.

Thirteen outdoor bins were installed at several marine boat ramps, parks, and marinas by volunteers. 27 volunteers donated 214 hours to this program. From returned surveys, 150

pounds of fishing line was collected by volunteers. One Boy Scout earned their Eagle Scout Badge for his efforts in the mono fishing line recycling project.

- 10.26.4 Teach youth (K-12 Grade) the basic concepts of the coastal and marine systems such as coral reefs, marine debris, sharks, and sea turtles. Knowledge gained will be measured at the end of the program by program survey.
- 10.27 Develop and conduct Marine Science Career Day for local high school youth and teachers. (Crane)
- 10.27.1 A local workshop will be conducted for landscape architects on Mangrove Biology, Ecology, Trimming Regulations, and Restoration Activities in south Florida. Knowledge gained will be measured by pre-post test.
- 28 people attended a Mangrove Maintenance Seminar. Of those people, 28 completed a program evaluation and indicated their previous knowledge rating of mangroves was 2.3 out of 5.0. After the seminar, their knowledge of mangroves increased to a rating of 4.6. Seminar participants had a satisfaction rating of 5.0 of the class. Pre-post test indicated 47% of 17 respondents scored higher on the post test.
- 10.27.2 Host and conduct Environmental Immersion Day for high school students to learn about Miami's marine and coastal environment.
- 14 students participated in Environmental Immersion Day by visiting with scientists at UM RSMAS and exploring the seagrass for animals. Evaluation survey of 14 students indicated a satisfaction rating of 4.5 out of 5.0 and knowledge gained rating of 4.0.
- 10.27.3 Online or hard-copy newsletter or newspaper articles will be developed on local marine/coastal topics that is distributed to interested citizens. Bi-monthly "At the Waters Edge" will be distributed to 300 people.
- Agent conducted a focus group to assist in measuring effectiveness of marine newsletter At the Water Edge. Currently, 300 citizens receive the bi-monthly At the Waters Edge newsletter which is authored and edited by the Miami-Dade County Sea Grant Extension Agent.
- 10.27.4 Develop and present a program on Shark Awareness and Conservation at the Florida Association of Science Teachers Annual Conference.
- Agent taught 106 students from two middle schools about sharks. Approximately 85% of the students gained knowledge about shark species and the threats they undergo for survival as indicated from survey. The Miami-Dade Marine Agent created a PowerPoint presentation on sharks and a shark jeopardy game to teach students about sharks.
- 10.28 Conduct public education programs in Bay County. (Cameron)
- 10.28.1 Develop educational programs for teachers, boaters and interested citizens on marine debris, monofilament line recycling, and marine/natural resources.
- Developed educational programs geared towards teachers regarding oceanography, rip currents, and water resources. Created a display for the Monofilament Recovery and Recycling Program to show how it benefits the marine and natural resources in Bay

County. Assisted with a shoreline clean-up event where 20 youth and adults collected over 900 pounds of marine debris from a local boat ramp.

- 10.28.2 Work with Extension 4-H agents in the development of marine environmental programs for local clubs. Assist with development and activities at a state marine and county 4-H camps.

Assisted 4-H Extension agents with educational programs regarding fishing, oceanography, biodiversity of aquatic species in the St. Andrew Bay for Operation Military Kids Mock Deployments, State Marine Camps, and Bay County 4-H campus. Assisted other Sea Grant agents with the development of the “Ocean Wizards” program for the State Marine Camp, focusing on snorkeling, oceanography (waves, density, etc.), and fishing.

- 10.28.3 Develop marine environmental programs for local K-12 teachers in Bay County.

Presented an educational program on “Shark Awareness” to 100 local high school students to help reduce the risks of being attacked by a shark and also eliminate myths regarding sharks.

- 10.29 Conduct a general marine education program for youth and adults to increase community awareness and protection of coastal and marine environmental resources in Broward County. (Behringer)

- 10.29.1 Develop and conduct marine educational programs for adults, 4H clubs and K-12 teachers and students.

- 100 adults and youth were educated about marine debris through an interactive display at the Museum of Science and Discovery “Discovery Day.” Nearly 90% surveyed said they improved their knowledge of marine debris and 80% of those that fish, said they would utilize Monofilament Recovery and Recycling bins.
- Conducted a Marine Explorations program at Anne Kolb Nature Center on water quality issues and what students can do to help improve our marine environment. Students participated in seining, benthic sampling and marine organism identification. Approximately 63 students attended. Post workshop surveys indicated 91% increased their knowledge on water quality and 96% indicated they would take action in their homes to conserve water.
- Presented a talk on mangrove ecology to approximately 50 landscape architects, as part of the Miami-Dade County Extension Mangrove workshop.
- 76 youth were educated about marine animals and their environment through a hands-on touch tank, as part of an Ocean Week celebration. 100% of the participants indicated an increase in knowledge about the marine environment.

- 10.29.2 Coordinate coastal and waterway cleanups and educate participants about the impacts of marine debris on the marine environment.

- Coordinated 110 volunteers to pick up approximately 400 pounds of trash from the North Fork of the New River. Participants were educated about marine debris impacts and 97% of volunteers stated they gained knowledge about marine debris. Received funding to sponsor a lunch for youth volunteers.
- In partnership with the National Save the Sea Turtle Foundation, coordinated 75 volunteers to remove 650 lbs of trash and marine debris from 2 miles of coastline during the Coastal Cleanup. Last year, fewer volunteers (55) cleaned up more debris (664 lbs); indicating a decrease in debris impacting natural resources. 80% of

volunteers stated that they gained knowledge about marine debris and its impacts on marine resources and 50% stated they saw less debris at the site than last year.

- 10.29.3 Implement the Monofilament Recycling and Recovery Project in Broward County and conduct educational programs on the impacts of discarded monofilament and other marine debris.

Constructed five recycling bins to be installed in 2006.

- 10.29.4 Increase manatee awareness and boater safety through educational programs.

Formed a partnership with the Broward County Environmental Protection Department to develop a manatee education initiative as part of the Broward County Manatee Protection Plan. The goal is to educate stakeholders (boating and marine industry, environmental community, coastal homeowners) and the general public about manatee ecology and protection, waterway management, and recreational boating. Facilitated meetings with stakeholders to assess needs and issues that could be addressed through education. Developed a budget and secured \$1500 in funding to create educational programs and materials for formal educators that will be implemented in 2006.

- 10.29.5 Develop an online and electronic newsletter on local marine/coastal topics that are distributed to interested citizens.

Developed an electronic newsletter targeting the Southeast Florida Coral Reef Initiative 400+ team members. This newsletter provides updates on SEFCRI projects, upcoming events and coral reefs in the news.

- 10.29.6 Maintain and update the Broward County Sea Grant Marine Extension website with relevant marine resource information and educational events.

Wrote two web articles on the Southeast Florida Coral Reef Initiative and Frequently Asked Questions about Broward Marine Resources.

- 10.29.7 Provide research and technical support and serve as a judge for the Broward County Public Schools Science Fair.

Judged 65 projects in the Environmental Science category of the Broward County Public Schools Science Fair.

- 10.30 Develop new publication “Ahead of the Class: Florida Sea Grant Delivers Marine Education,” that will provide documentation on the formal and nonformal educational activities, resources and services that has been provided over the past several years. (Spranger/Cato/Kearl/Zimmerman)

“Ahead of the Class: Florida Sea Grant Delivers Marine Education” was produced in May and distributed to both the Sea Grant and UF IFAS Extension networks. County faculty also distributed the publication to their advisory committees and user groups. (Spranger)

- 10.31 Conduct a general marine environmental education program for youth and adults in Northeast Florida. (McGuire)

- Work with Texas SG and Puerto Rico SG to develop monofilament recycling programs.

Agent continues to coordinate the monofilament recycling program in NE Florida. Puerto Rico SG was unable to form partnerships and obtain funding to start monofilament recycling there. Texas SG has a growing monofilament recycling program. Agent continues to represent FSG on US Fish & Wildlife Service's Manatee entanglement and manatee education working groups.

- Continue to manage monofilament recycling in NE Florida.
- Represent FSG on the US Fish and Wildlife Service's manatee entanglement and manatee education working groups.
- Help coordinate beach cleanup programs in April and September (St. Johns County).
- Continue to help state 4-H staff make improvements to the state marine ecology judging event. Work with youth in northeast Florida to prepare them for the competition. Agent conducted three marine ecology judging event workshops for 4-H youth from Nassau, St. Johns and Flagler Counties. The St. Johns County junior team placed 3rd overall at the event, and one of the team members had the junior overall high score.
- Teach youth about marine issues as part of summer camps (4-H and non 4-H) in St. Johns and Flagler Counties.
Agent taught classes for several summer programs in St. Johns and Flagler Counties. Topics included manatees, fish, sea turtles, and beachcombing.
- Conduct workshops for formal and informal educators on marine-related topics.
Agent conducted 12 teacher workshops with a total of 188 participants. Workshops included two multiple-day programs (COSEE, Marine in-service training for IFAS faculty)
- Lead field trip at Florida Marine Science Educators Association annual conference.
Agent led a field studies field trip for the Florida Marine Science Educators Association annual conference.
- Help coordinate and teach a "Kids' Day" for the First Coast Birding and Nature Festival; lead field trips for the Festival.
Agent coordinated and taught one station at the First Coast Birding & Nature Festival Kid's Day. A total of 155 third and fifth grade students participated in the event.
- Write monthly articles on marine topics for the Flagler News Tribune newspaper.
Agent wrote 12 monthly articles for the Flagler News Tribune on topics including harmful algal blooms, water pollution and safe boating.
- Produce a quarterly newsletter which is distributed to over 750 interested residents. The newsletter includes information about selected marine topics and upcoming marine/coastal events.
Agent produced 4 quarterly issues of the newsletter "aqua-notes" which is distributed in print and electronic format to over 900 people.

10.32 Train 50 Extension Service Master Gardeners about watersheds and water conservation. (McGuire)

Agent trained 61 Master Gardeners (Putnam, Clay, St. Johns and Flagler Counties) about watersheds and water conservation.

Key to Individual Responsibilities

Adams	2, 3, 4, 5, 16, 20, 21, 22, 56	Masterson	1
Ankersen	37	Maul	58
Behringer.....	40, 54, 55, 86	McGuire	2, 24, 40, 45, 56, 87
Bell.....	47	Olsen	46
Cameron.....	15, 40, 54, 60, 61, 85	Otwell.....	2, 25, 26, 27, 28, 29
Cato.....	64, 65, 66, 87	Pomponi	1
Clark.....	1	Reddin.....	16
Coen	46	Reed	1
Combs ...	5, 16, 29, 33, 41, 42, 47, 48, 58, 66, 70	Robbins	47
Crane.....	39, 60, 84, 85	S. Jackson.....	15
Creswell	14, 19, 20, 23, 49, 72, 82, 83	S.Jackson.....	10, 22, 43, 52, 67, 77
D.Jackson.....	31, 38, 39, 53, 60, 69	Sapp.....	10, 37, 53, 59, 79, 80
Damron	70	Sargent	35, 36, 37
Dean	58	Seaman.....	1, 13, 65, 66
Diller	13, 39, 44, 45, 53, 54, 60, 81, 82	Serafy	46
Fann.....	31, 32, 35, 36, 62	Sidman	32, 33, 35, 36, 37, 67
Fik.....	35, 36	Simoniello.....	31, 33, 53, 61, 62, 63, 67
Floyd.....	2	Spranger	2, 3, 5, 31, 32, 46, 53, 66, 67, 69, 87
Gregory	3, 4, 5, 13, 30, 38	Staugler	8, 9, 37, 43, 51, 59, 71, 72, 75, 76
Grizzle.....	46	Stevely.....	7, 8, 9, 31, 49, 51, 71, 72, 75
Hamann.....	37	Sturmer.....	16, 17, 18, 19, 20, 21, 22, 29, 51, 66, 67, 74
Heil.....	25	Su	46
Holland.....	2, 3	Sweat.....	7, 8, 16, 22, 29, 51, 72
Jacoby	2, 44, 53, 71, 76	Swett	31, 32, 35, 36, 37, 62
Kane	58	Verlinde.....	6, 35, 42, 49, 59, 66, 67, 68, 72, 82
Kearl.....	70, 87	Wagner	70
Kirkpatrick	41	Walters	46, 67
Larkin.....	3	Wasno ..	6, 7, 8, 9, 16, 17, 18, 34, 48, 49, 66, 67, 71, 72, 76
Leteux	16	Whitehouse	70
Lindberg.....	11	Wilhelm.....	41
Lorenz	46	Wilson.....	58
Luo	46	Wright	29
Mahan	11, 18, 21, 29, 30, 37, 53, 59, 66, 68, 80, 81	Zimmerman.....	70, 87
Makopondo	2, 3		

3.0 PROGRAM FUNDING FROM ALL SOURCES

Funding History

Level federal funding during the 1980s and early 1990s for the National Sea Grant College Program has clearly impacted Florida Sea Grant core programs. While some increased funding has been received in recent years, the level of effort or “buying power” of core program funds is still woefully short of early 1980 levels. When inflation is taken into account, the peak buying power year was 1980. Significant core program increases began in 1997, but buying power for 2005 was still 41 percent below the peak year. With 2005 core program funds at \$1,990K, and adding funds awarded to Florida due to national competitions of \$893K, the overall 2005 buying power of the program was still 15 percent below the peak year, as noted in Table 1.

The number of full time equivalents (FTEs) budgeted for the core program from 1986 through 1988 ranged from 55 to 58. This is a level much lower than that of the late 1970’s and early 1980’s. For the last decade, FTEs supported with core program funds has ranged from 39 to 46 as shown in Table 2.

While FTEs have declined, the cost of operating research, education and Extension programs per FTE has increased. In terms of current dollars, the cost per FTE has increased from a low of \$13,000 in 1976 to a high of about \$49,000. Clearly, level or slowly growing budgets and a higher cost per FTE have driven downward the number of FTEs the program is able to purchase. On a real dollar basis (accounting for inflation), the cost per FTE has risen from a low of \$27,000 in 1984 to \$45,950 in 2003 as shown in Figure 1.

Florida Sea Grant historically matched federal funds on an approximate 1:1 basis. During 1989 and 1990 this ratio was reduced and since 1991, our core program proposal has been matched on a 2:1 basis as required by federal law. University policy now mandates that matching funds may only be included at the rate prescribed by the granting agency.

Florida Sea Grant’s recent funding history indicates an increased reliance on funding other than federal Sea Grant dollars. A comparative analysis of all Sea Grant funding sources for 2003-2004 to 2005-2006 indicates that the federal NOAA Sea Grant core program funds represented from 34 to 36 percent of total Florida Sea Grant program effort as shown in Table 3. Florida Sea Grant’s use of federal Sea Grant program funds has consistently met national guidelines that at least 50 percent be used to fund research as shown in Table 4. A listing of all funding sources for the Florida Sea Grant College Program funds for the last three years is shown in Table 5, 6 and 7.

Sea Grant federal funds plus all extramural grants generated 7.3 times the amount of state appropriations received through the Education and General budget of the University of Florida for 2005-06. Including faculty salaries dedicated to the program by UF/IFAS, 3.0 grant dollars were generated per state dollar of 2005-06 appropriations as shown in Table 8.

Table 1. Federal Sea Grant funding (\$1,000's) for Florida Sea Grant College Program, 1972-2006^e

Current				Real ^a		Percent Below Peak Year	
Year	Core Funding	National Competitions	Total	Core	Total	Core	Total
1972	378			1253		58	
1973	600			1884		37	
1974	740			2132		29	
1975	900			2368		21	
1976	975			2425		19	
1977	1125			2635		12	
1978	1260			2757		8	
1979	1450			2929		3	
1980	1627			3007		0	
1981	1575			2665		11	
1982	1575			2520		17	
1983	1428			2190		27	
1984	1458			2157		28	
1985	1458			2092		31	
1986	1506 ^b			2115		30	
1987	1506			2057		32	
1988	1386 ^c			1831		39	
1989	1489			1894		37	
1990	1530			1875		38	
1991	1652			1937		35	
1992	1652			1912		37	
1993	1500	86	1586	1697	1794	44	41
1994	1500	127	1827	1661	2023	45	33
1995	1620	626	2246	1759	2439	42	20
1996	1620	455	2075	1727	2212	43	27
1997	1880	194	2074	1970	2174	35	28
1998	1780	322	2102	1846	2178	40	28
1999	1846	444	2290	1886	2339	38	23
2000	1907	1125	3032	1907	3032	37	0
2001	1965	463	2428	1919	2371	36	22
2002	1990	535	2525	1912	2426	37	20
2003	1990	504	2494	1872	2353	34	22
2004	1990	874	2864	1824	2647	39	13
2005	1990	893	2883	1775	2570	41	15
2006 ^e	2013	482	2495				

^a Deflated using Gross Domestic Product Price deflator, 2000=100.

^b Includes MAREP add-on and GRH reduction.

^c After NOAA overall budget cut of seven percent from base of \$1,489K.

^d Beginning in 1993, total Sea Grant federal funding includes various initiatives and other funds provided through special national competitions.

^e As of May 2006.

Table 2. Individuals and full-time equivalents (FTEs) supported by federal Sea Grant core program funding 1972-2006.

Year	Research Number				Education		Advisory		Total	
	Faculty	Students	Total	FTE	Number	FTE	Number	FTE	Number	FTE
1972	14	25	47	13	0	0	6	1	59	15
1973	29	39	93	32	0	0	10	8	103	40
1974	32	34	17	36	0	0	29	10	136	46
1975	44	55	151	49	8	^b	4	13	204	62
1976	38	50	109	40	17	12	26	22	152	74
1977	32	54	108	40	24	14	74	27	206	81
1978	28	37	115	42	23	4	59	26	197	77
1979	34	41	99	49	31	2	115	32	245	83
1980	46	38	128	48	7	1	111	28	246	77
1981	53	39	153	46	4	1	120	31	277	78
1982	39	35	91	44	12	3	108	34	211	81
1983	29	30	75	33	1	1	102	32	178	65
1984	48	44	108	39	5	2	102	29	216	70
1985	48	48	118	37	2	^b	89	26	209	64
1986	39	35	83	30	0	0	90	26	173	55
1987	44	23	86	30	4	4	79	27	181	58
1988	53	30	96	31	0	0	79	27	181	57
1989	48	24	87	28	9	2	37	15	133	44
1990	45	23	81	28	7	1	36	15	133	44
1991	44	26	85	26	0	0	29	22	114	48
1992	43	25	80	25	0	0	29	22	109	47
1993	29	20	61	19	0	0	29	22	90	41
1994	25	14	48	18	0	0	32	22	80	40
1995	38	16	54	19	4	6	22	22	96	45
1996	39	14	53	19	0	0	22	22	97	45
1997	54	24	101	24	0	0	23	19	124	43
1998	46	21	70	20	0	0	34	24	104	44
1999	44	21	68	21	0	0	33	23	101	44
2000	55	24	82	20	0	0	29	19	111	39
2001	65	31	99	26	0	0	28	19	127	45
2002	39	30	71	20	0	0	34	25	105	45
2003	36	27	64	20	0	0	34	25	98	44
2004	37	21	58	15	0	0	35	26	93	41
2005	37	22	59	16	0	0	35	26	94	42
2006	47	21	68	21	0	0	26	25	106	46

Table 3. Florida Sea Grant funding effort by source for fiscal years (1 July - 30 June)
2003-2004 to 2005-2006

Source	2003-04		2004-05		2005-06	
	\$000	%	\$000	%	\$000	%
Federal NOAA Sea Grant Core Program	1,990	34.2	1,990	36.3	2,013	36.3
Federal NOAA Sea Grant National Competitions	874	15.0	893	16.3	483	8.7
Faculty Match (Core + National) ^a	1,114	19.2	938	17.0	1,202	21.7
Other Federal Grants ^c	327	5.6	271	4.9	271	4.9
Non-federal Grants ^c	400	6.9	187	3.4	252	4.5
State Appropriations ^b	849	14.6	920	16.8	998	18.0
Florida Counties	220	3.8	236	4.3	283	5.1
Foundations/Endowments	42	0.7	48	0.9	51	0.9
Total Program Effort	5,816	100.0	5,483	100.0	5,553	100.0

^a This includes all match except state university system appropriations used as match.

^b This includes state appropriations to Florida Sea Grant via the Education and General budget of the University of Florida and via the UF/Institute of Food and Agricultural Sciences used as match in extension, communications and management.

^c This includes only grants that were administered by the Florida Sea Grant College Program office. Sea Grant faculty also use their academic departments to administer grants. "New" grants in 2005 with Sea Grant faculty as principal investigator or co-principal investigator administered through academic departments were as follows: Jacoby (\$148K), Adams (\$7K) and Otwell and Adams (\$500K).

NR - Not reported prior to 2003-04. Became more significant in 2003-04.

Source calculated from data in Tables 5, 6 and 7.

Table 4. Percentage of Florida Sea Grant core and total sea grant federal funds used for research, extension, communications and management, 2003-04 to 2004-05.

Program Function	2003-04	2004-05	2005-06
		Core (%)	
Research	51.1	51.1	50.9
Extension	31.1	31.1	30.8
Communications	8.3	8.3	8.2
Management	9.5	9.5	10.1
TOTAL	100.0	100.0	100.0
	Total %		
Research	59.2	58.3	58.2
Extension	28.4	28.6	27.1
Communications	5.8	6.1	6.6
Management	6.6	7.0	8.1
TOTAL	100.0	100.0	100.0

Source: Calculated from data in Tables 5, 6 and 7.

Table 5. Sea Grant funding July 1, 2003 to June 30, 2004.

Federal Sea Grant Core:	Federal	Match
Research	\$1,016,000	\$ 480,846
Extension	620,000	310,000
Communications	165,000	85,000
Management	189,000	123,500
Other	0	0
TOTAL SEA GRANT CORE	\$1,990,000	\$ 999,346
Federal Sea Grant National Competitions:		
E/INDST-2 Industry Fellow	30,000	30,000
E/ST-29 Knauss Fellowship - Childs	38,000	0
E/T-11	146,792	79,777
R/C-E-47	80,003	40,000
R/C-E-48	146,922	73,461
R/MI-12	100,000	135,158
E/TP-3	45,000	22,846
R/LR-Q-25	100,000	139,358
R/LR-Q-26	157,700	93,586
R/C-E-49	29,158	19,289
TOTAL FEDERAL SEA GRANT NATIONAL COMPETITIONS	\$ 873,575	\$ 633,475
Other Federal Grants:		
Manatee Protection NA04NOS4730008	98,274	0
COSEE Gulf of Mexico	48,556	0
SEA-COOS University of North Carolina	175,000	0
EPA	5,000	0
TOTAL OTHER FEDERAL GRANTS	\$ 326,830	0
TOTAL FEDERAL GRANTS	\$3,190,405	\$1,632,821
MATCH COVERED BY STATE APPROPRIATIONS		\$(518,500)
NET MATCH		\$1,114,321
Non-Federal Grants:		
South Florida Water Management District	400,000	0
TOTAL NON-FEDERAL GRANTS	\$ 400,000	0
TOTAL GRANT FUNDING	\$3,590,405	\$1,114,321
Foundations/Endowment Revenues	\$ 42,174	0
Counties	\$ 220,425	0
State Appropriations:		
E&G 07/01/03 - 06/30/04	371,721	0
IFAS 07/01/03 - 06/30/04	476,928	0
TOTAL SEA GRANT FUNDING	\$4,701,653	\$1,114,321

Table 6. Sea Grant funding July 1, 2004 to June 30, 2005

Federal Sea Grant Core:	Federal	Match
Research	\$1,016,000	\$471,442
Extension	620,000	310,000
Communications	165,000	87,500
Management	189,000	133,500
Other	0	0
TOTAL SEA GRANT CORE	\$1,990,000	\$1,002,442
Federal Sea Grant National Competitions:		
SGEP-13FE	195,300	53,319
E/INDST-4 Industry Fellow	30,000	15,000
E/ST-30 Knauss Fellowship - J. Wilson	40,000	0
E/T-11	149,326	73,169
R/C-E-47	79,997	40,000
R/C-E-48	121,416	74,845
R.MI-12	100,000	121,828
E/ST-31 Knauss Fellow - K. Denit	40,000	0
E/ST-32 Knauss Fellow - C.M. Almeida	40,000	0
R/LR-A-42	69,800	50,000
R/C-E-49	27,084	19,156
TOTAL FEDERAL SEA GRANT NATIONAL COMPETITIONS	\$892,923	\$447,317
Other Federal Grants:		
SEA-COOS University of North Carolina	\$157,186	\$ 0
E/T-13 NA16RG2258 Aquatic Nuisance	39,432	19,716
E/T-9 NOAA So. Fla. Marine Ecosystem	\$50,000	\$ 0
E/T-15 Case Studies	24,785	0
TOTAL OTHER FEDERAL GRANTS	\$271,403	\$19,716
TOTAL FEDERAL GRANTS	3,154,326	1,469,475
MATCH COVERED BY STATE APPROPRIATIONS		(531,000)
NET MATCH		938,475
Non-Federal Grants:		
EX-FDEP-1 Clean Vessel	\$12,500	\$ 0
EX-WCIND-3 Sarasota Boating	70,052	0
EX-SAPW-1 Guide to Boating	24,000	0
EX-FWCC-1 Mapping Tampa	80,000	0
TOTAL NON-FEDERAL GRANTS	\$186,552	\$ 0
TOTAL GRANT FUNDING	\$3,340,878	\$938,475
Foundations/Endowment Revenues	\$48,343	\$ 0
Counties	236,262	0
State Appropriations:		
E&G 07/01/03 - 06/30/04	\$396,106	\$ 0
IFAS 07/01/03 - 06/30/04	523,791	0
TOTAL SEA GRANT FUNDING	\$4,545,380	\$938,475

Table 7. Sea Grant Funding July 1, 2004 to June 30, 2005

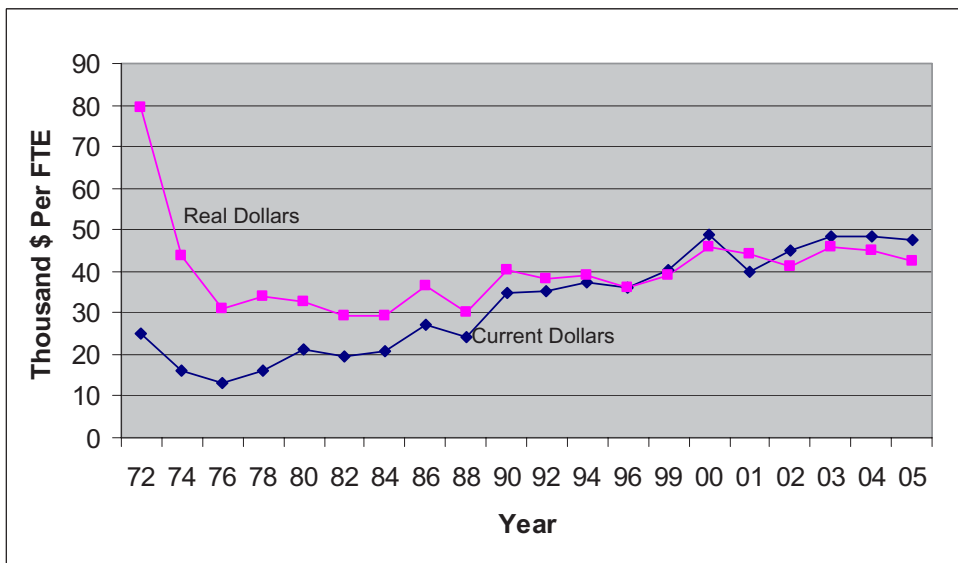
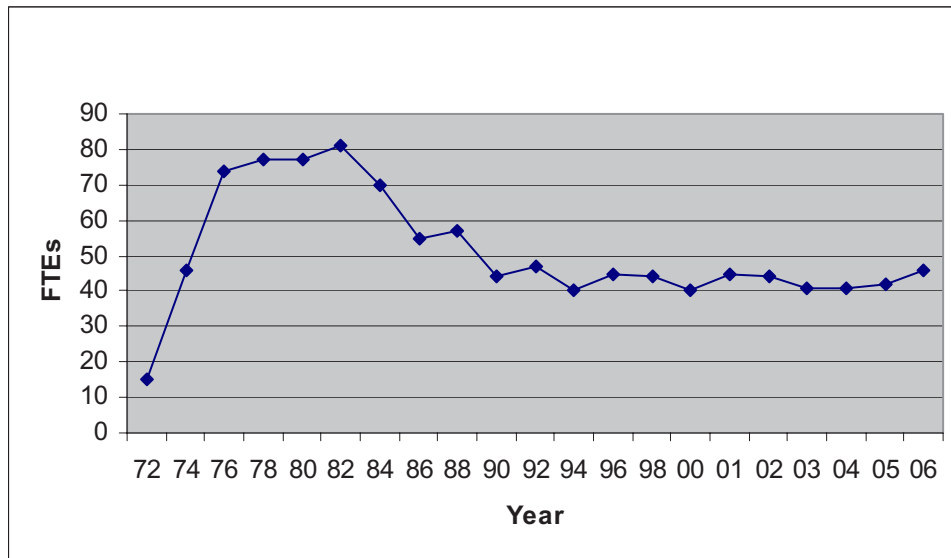
Federal Sea Grant Core	Federal	Match
Research	1,024,800	533,483
Extension	620,000	310,003
Communications	165,000	85,000
Management	203,000	101,500
Other	0	0
TOTAL SEA GRANT CORE	2,012,800	1,029,986
Federal Sea Grant National Competitions		
E/INDST-4 Industry Fellow Y-2	30,000	15,000
E/ST-33 Knauss Fellowship - C. Barrientos	41,500	0
R/MI-12	55,000	0
R/LR-A-42 Y-2	70,000	36,542
R/LR-Q-29	100,000	50,000
R/LR-Q-28 A&B	100,000	50,528
M/PD-11	30,700	15,350
E/T-16	25,000	0
E/T-17	15,000	5,000
E/T-18	14,698	0
TOTAL FEDERAL SEA GRANT NATIONAL COMPETITION	481,898	172,420
Other Federal Grants		
SEA-COOS Y-4 University of North Carolina	145,640	0
E/T-18 University of Connecticut	14,689	0
COSEE-GOM-2 University of So. Mississippi	110,231	0
TOTAL OTHER FEDERAL GRANTS	270,560	0
TOTAL FEDERAL GRANTS	2,765,258	1,202,406
MATCH COVERED BY STATE APPROPRIATIONS		(496,503)
NET MATCH		705,903
NON-FEDERAL GRANTS		
EX-FCC-6 Boat Regs	26,850	0
EX-FCC-7 Boating Regs	120,000	0
EX-FCC-8 Seasonal Boating Patterns	80,000	0
EX-JID-1 Boater Ed Guide	24,725	0
TOTAL NON-FEDERAL GRANTS	251,575	0
TOTAL GRANT FUNDING	3,016,833	705,903
FOUNDATIONS/ENDOWMENT REVENUES	51,145	0
COUNTIES	282,448	0
State Appropriations		
E&G 07/01/05-06/30/06	412,686	0
IFAS 07/01/05-06/30/06	585,571	0
TOTAL SEA GRANT FUNDING	4,348,683	705,903

Table 8. Florida Sea Grant total grants generated per dollar of state appropriations, 2005-06 program year.

	UF Appropriations Through Education and General Budget (\$412,686)	UF/IFAS Faculty Dedicated to Sea Grant (\$585,571)	Total (\$998,257)
Sea Grant Federal Funds (\$2,494,698)	6.0	4.3	2.5
All Other Extramural Grants (\$522,135)	1.3	.9	0.5
TOTAL (\$3,016,833)	7.3	5.2	3.0

Source: Calculated from Table 6.

Figure 1. A comparison of Florida Sea Grant core program FTEs and current and real funding per FTE, 1972-2005.



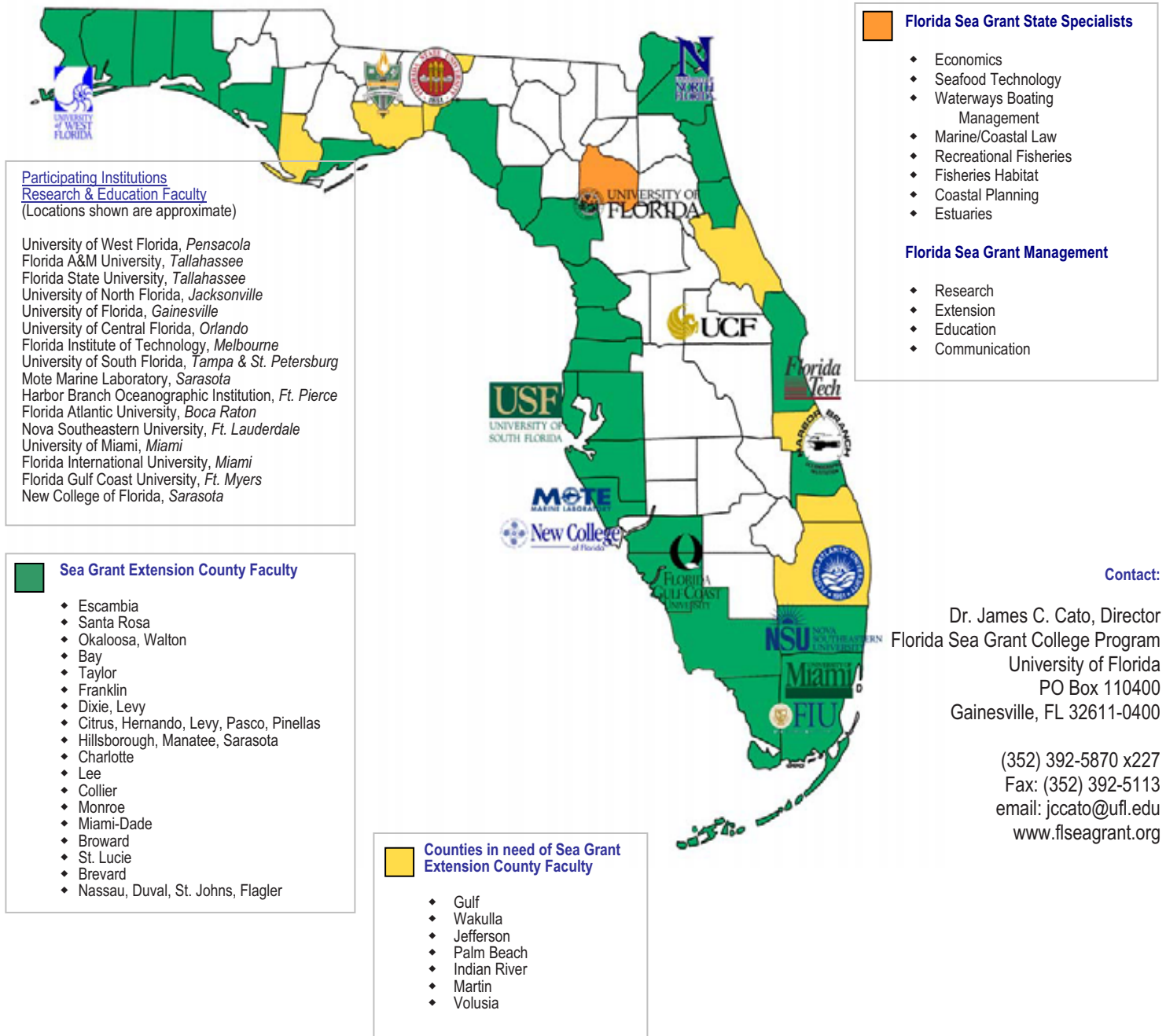
4.0 INSTITUTIONS INVOLVED

Florida has a unique network of public and private marine academic institutions (see Figure 1). Florida's academic institutions are rapidly coming of age. They are finding their niche and are being challenged and are responding to that challenge of providing national leadership. Florida scientists are coming to the forefront in pulling the land, sea, and air sciences together and integrating science and politics to find out what science means to the people. For 2005 11 of 16 institutions (both public and private) participated through the receipt of Sea Grant core funding for annual projects. In addition, three cooperating institutions and laboratories, four NOAA offices, two state agencies, two regional management districts, four foundations and non-governmental organizations, four companies and 37 counties participated. A complete listing is in Table 1.

Table 1. List of Florida Sea Grant program participants in NOAA funded core, national competition and pass-through projects, 2005.

<p style="text-align: center;">ACADEMIC/RESEARCH</p> <p><u>Florida Institutions</u> Florida Atlantic University Florida Institute of Technology Florida International University Florida State University Harbor Branch Oceanographic Institution Mote Marine Laboratory Nova Southeastern University University of Florida University of Miami University of South Florida University of Central Florida</p> <p><u>Cooperating Institutions</u> Clemson University University of North Carolina University of Southern Mississippi</p> <p style="text-align: center;">GOVERNMENT</p> <p><u>Districts</u> South Florida Water Management District West Coast Inland Navigation District St. Augustine Boating Authority</p> <p><u>State</u> Florida Fish & Wildlife Conservation Commission, Florida Marine Research Institute Florida Department of Agriculture & Consumer Services</p> <p><u>Federal</u> NOAA, National Ocean Service NOAA, National Marine Fisheries Service NOAA, Coastal Services Center</p>	<p>NOAA, Strategic Environmental Assessments Division, Office of Ocean Resources Conservation and Assessment</p> <p><u>Foundations and Non-governmental Organizations</u> Gulf and South Atlantic Fisheries Development Foundation Harbor Branch Oceanographic National Geographic Society Wildlife Conservation Society</p> <p style="text-align: center;">INDUSTRY</p> <p>ABC Research Co. Aquaculture Center of the Florida Keys, Inc. EcoMicrobials, LLS. Guy Harvey Research Institute</p> <p style="text-align: center;">COUNTY*</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">Bay</td> <td style="width: 33%;">Gulf</td> <td style="width: 33%;">Pasco</td> </tr> <tr> <td>Brevard</td> <td>Hernando</td> <td>Pinellas</td> </tr> <tr> <td>Broward</td> <td>Hillsborough</td> <td>Putnam</td> </tr> <tr> <td>Charlotte</td> <td>Indian River</td> <td>St. Johns</td> </tr> <tr> <td>Citrus</td> <td>Jefferson</td> <td>St. Lucie</td> </tr> <tr> <td>Clay</td> <td>Lee</td> <td>Santa Rosa</td> </tr> <tr> <td>Collier</td> <td>Leon</td> <td>Sarasota</td> </tr> <tr> <td>Dade</td> <td>Levy</td> <td>Taylor</td> </tr> <tr> <td>Dixie</td> <td>Manatee</td> <td>Volusia</td> </tr> <tr> <td>Duval</td> <td>Monroe</td> <td>Walton</td> </tr> <tr> <td>Escambia</td> <td>Nassau</td> <td>Wakulla</td> </tr> <tr> <td>Flagler</td> <td>Okaloosa</td> <td></td> </tr> <tr> <td>Franklin</td> <td>Palm Beach</td> <td></td> </tr> </table> <p>*All coastal counties participate via the Florida Cooperative Extension Service. However, eight lack specific Sea Grant agent coverage.</p>	Bay	Gulf	Pasco	Brevard	Hernando	Pinellas	Broward	Hillsborough	Putnam	Charlotte	Indian River	St. Johns	Citrus	Jefferson	St. Lucie	Clay	Lee	Santa Rosa	Collier	Leon	Sarasota	Dade	Levy	Taylor	Dixie	Manatee	Volusia	Duval	Monroe	Walton	Escambia	Nassau	Wakulla	Flagler	Okaloosa		Franklin	Palm Beach	
Bay	Gulf	Pasco																																						
Brevard	Hernando	Pinellas																																						
Broward	Hillsborough	Putnam																																						
Charlotte	Indian River	St. Johns																																						
Citrus	Jefferson	St. Lucie																																						
Clay	Lee	Santa Rosa																																						
Collier	Leon	Sarasota																																						
Dade	Levy	Taylor																																						
Dixie	Manatee	Volusia																																						
Duval	Monroe	Walton																																						
Escambia	Nassau	Wakulla																																						
Flagler	Okaloosa																																							
Franklin	Palm Beach																																							

Figure 1. Florida Sea Grant's Academic Community of Marine Research, Education and Extension



5.0 PROJECTS FUNDED

List of Florida Sea Grant Projects That Were Active During 2005 and Funded by Sea Grant/NOAA and Extramural Sources, in Three Major Categories According to Sponsorship

I. CORE SEA GRANT PROGRAM PROJECTS

(This list includes projects that were completing or in process in 2005)

I.A. Research (For complementary projects see section II.A)

I.A.1. Fisheries and Aquaculture

R/LR-B-56, Combining DNA Forensic and Population Genetic Approaches for Application to Shark Conservation, Management, and Trade Monitoring -- There is an urgent need for better tracking of shark fisheries and trade on a species and population specific basis to better serve and manage sharks on a worldwide basis. This continues earlier work to develop identification markers for shark species that is already being used by NOAA law enforcement.

R/LR-B-57, Assessment of Regional Spiny Lobster Stock Abundance Trends and Linkages that Explain Florida Stock Abundance Declines -- In spite of a 50% reduction in traps, the Florida spiny lobster fishery shows a 58% decrease in landings during the 1999 to 2002 fishing seasons. Significant catch decreases are observed also in the Bahamas, Cuba, and Nicaragua. No knowledge regarding the origin of these common decreasing trends is available, but regional overexploitation and environmental change are suspected. This proposal investigates the roots of such decreasing trends.

R/LR-A-39, Enhancing Stress Resistance of Cultured Hard Clams in Florida by Triploidy -- Florida has approximately 350 active clam growers producing a crop worth of \$18.2 million in 2001. Recently, the need for a hardier clam strain has become evident as clam culturists in Florida report below average survivals or total losses during the prolonged hot summers. Triploid clams may be a solution to this problem as they are virtually sterile, spawning does not occur, and energy may be available during this stressful period for basic metabolism.

R/LR-A-40, Improved Hatchery Technology of Cobia Using Proactive Microbial Management and a Simplified Live Food Regime -- The objective is to develop innovative, reliable and environmentally sustainable hatchery technology for larval rearing and production of cobia fingerlings. This will be achieved by developing proactive health management methods aiming to reduce the input of microbes from major sources of contamination during the culture cycle for this valued fish species.

R/LR-A-41-PD, Development of Feeding Mechanics, Performance and Prey Selectivity in Marine-fish Larvae: A Novel Approach to Understanding Food Requirements of Marine Ornamental Fish -- High mortality during larviculture remains a major obstacle to successful rearing of a large number of marine ornamental fish species. In particular, catastrophic mortality is associated with first-feeding or the "critical period" during which larvae switch from endogenous to exogenous feeding. This research is aimed at determining the causes of mass mortality during the early stages of exogenous feeding in hatchery-reared marine ornamental fish larvae.

R/LR-A-42, Demonstrating Hatchery and Growout Technology for Production of Cobia from Egg to Market -- The objective is to improve hatchery and offshore growout technology to expand the marine fish aquaculture in the US. This work will perfect and transfer innovative, reliable and environmentally sustainable technologies and protocols for disease prophylaxis and management of cobia (*Rachycentron canadum*) eggs,

larvae, postlarvae, fingerlings, juveniles and adults, by developing methods for controlling disease outbreaks at the hatchery, nursery, shipping and growout stages, as well as reducing the costs and risks of fingerling transport.

I.A.2. Seafood Technology

R/LR-Q-27, Regulation of Capsular Polysaccharide and Virulence in *Vibrio vulnificus* -- The goal of this work is to define genetic elements that regulate the on/off switching involved in the phase variation from virulent to avirulent forms of *V. vulnificus*. Preliminary data have identified phase variable genes within the capsular polysaccharide operon, and these mechanisms and others will be investigated for application to intervention strategies to reduce risk of oyster consumption and also for virulence-specific gene probes and/or molecular typing.

I.A.3. Biotechnology

R/LR-MB-20, Design and Development of New Antifouling Paint Additives Based on Marine Pyridyls -- This project builds on the investment and findings in R/LR-MB-16. Researchers will synthesize pyridyl compounds derived from marine worms and field test their ability as paint additives to reduce biofouling.

R/LR-MB-21, Characterization and Synthesis of Hydroxiconophans: A New Class of Neuropharmacological Agents from Cone Snails -- This project builds on the investment and findings in R/LR-MB-18. Researchers will expand the set of conopeptides from cone snails and evaluate therapeutic potential.

R/C-S-41, Enhanced Commercial Selection and Micropropagation of Sea Oats for Dune Stabilization - - Commercial sea oats micropropagation for dune restoration is limited by absence of a protocol for efficient production of multiple genotypes. Removing this limitation is critical for this technology to be used for commercial application of the technology for dune stabilization and restoration. The goal for this project is to develop an efficient protocol.

I.A.4. Ecosystem Health

R/C-E-45, Impact of Boat Wakes on the Eastern Oyster in the Southeastern U.S.: Maximizing Sustainability and Restoration - - Large human populations along Florida's coast have created conflicts between human uses of the waterways and natural resources, such as oysters. This project will determine the impact of boat wakes on intertidal oyster reefs and will provide coastal managers with data on which science-based management decisions can be based.

R/C-E-50, Quantification of Habitat Use by Reef Fishes in the Florida Coral Reef Ecosystem -- The Florida Keys coral reef ecosystem, comprised of a network of interconnected inshore coastal bays, barrier islands, and offshore coral reef environments, supports highly productive and diverse fish and invertebrate communities and a multibillion dollar fishing and tourism industry. The goal of this project is to develop robust methods for identification and quantification of reef fish habitat use that improves the statistical precision of ecosystem-wide fishery-independent reef fish visual census sampling surveys; enhances stock assessment capabilities; and provides a framework for evaluation of marine reserves.

R/C-E-51, Using Natural Chemical Tracers to Evaluate Point-Source and Non-Point Sources of Fresh Water Inputs to Biscayne Bay -- Identification of point-source and non-point sources of fresh water to coastal estuaries is essential in understanding the water quality of these areas. Planned future changes in fresh water deliveries to Biscayne Bay from point-source discharges via canals to non-point source discharge from wetlands and groundwater flow requires a monitoring method that effectively detects these changes, i.e., one that can detect

changes in canal discharge versus groundwater seepage. The results of this project will provide a scientific-based tool for assessing the results of the fresh water redistribution plan.

I.A.5. Coastal Hazards

R/C-S-44, Development of a Predictive Index for Rip Currents -- Building on R/C-S-42 a predictive rip current index can be employed to reduce the number of rip current related rescues and deaths. It would more accurately identify the conditions under which the strongest and most dangerous rip currents will occur, and provide real-time information with which to assist lifeguards with staffing decisions and to alert the public to the hazard. The goal of this project is to develop the index.

R/C-S-45, Risk Versus Mitigation Measures: Quantifying Residential Vulnerability to Hurricane Winds and Evaluating the Cost Effectiveness of Retrofits -- The implementation of affordable solutions to mitigate damage from hurricane winds can only follow from a quantification of the wind forces causing this destruction, models that relate wind forces to the capacity of man-made structures to resist them, and engineering-based evaluations of the cost effectiveness of various mitigation techniques. There is a strong need for a public risk model that will allow for a scientific and accurate evaluation of the cost effectiveness of mitigation measures on the scale of city, county, or state.

I.A.6. Waterfront Communities

R/C-P-26, Mitigating the Exposure and Vulnerability of Coastal Communities to Hurricane Flood Damage Through Growth Management -- Vulnerability of human settlements to damage from natural disasters is a significant constraint to local and global sustainability. Local growth management strategies have been advocated as a principal strategy for reducing such vulnerability, but empirical analysis of direct measures of the effectiveness of such strategies is very limited. Principal beneficiaries will include the Florida Department of Community Affairs, local governments of coastal jurisdictions in Florida, and state and local governments in other coastal areas of the United States.

R/MI-13-PD, Intelligent Manatee Idle Speed Zones -- Controversy currently exists between users of waterways and proponents that wish to protect manatee habitat. Manatee idle speed zones greatly impact coastline property values, constrain the construction of docks and boat ramps, and affect the total economic output of the Florida marine industry (\$14.1 billion dollars/180,000 related jobs). This research has the potential to significantly reduce the economic impact that round-the-clock idle speed zones have on boating associated businesses and recreational boating activities in Florida's waterways, while maintaining the integrity of the manatee habitat.

I.B. Extension and Communications

SGEP-13, Florida Sea Grant Extension Program - - This work will continue to provide effective and responsible extension education programming that promotes the wise use of coastal and marine resources in Florida, with impacts that extend to the Southeast and the nation. Currently, Extension has 18 agents and 4 full-time specialists that serve the 80% of Florida's population that live in the 36 coastal counties of the state. In cooperation with industry Florida Sea Grant has made a significant impact on improving seafood quality and seafood safety, for example through state, regional and national leadership in development of the Hazard Analysis and Critical Control Point seafood inspection program. This effort has been recognized by the "Hammer Award" of the Vice President of the U.S. for achievement by partnerships. Other efforts include guidance to local government in developing artificial reefs, development of shellfish mariculture, assisting fishers and their families deal with the impacts of the net ban in Florida, and use of rural tourism as an economic development tool.

COMM-5, Florida Sea Grant Communications Program – The production of high-quality publications and other research, extension and education support materials continues through the communications program to effectively communicate results of Florida Sea Grant activities to both general and specialized audiences. Productions have included Florida Sea Grant Reports, Florida Sea Grant Technical Papers, books and book chapters, extension publications, brochures, maps and posters. Productions have also included educational videos, news releases and features for Florida Sea Grant’s web site. A five-year publication list covering 2000-2004 summarizes communication program output at www.FLSeaGrant.org online. The Communications Program oversees the Florida Sea Grant web site, which contains nearly all of the Florida Sea Grant productions, as they are routinely posted there as part of the production process and policy.

I.C. Program Management and Development

M/PM-13, Florida Sea Grant Management - - To meet the programmatic goal of Florida Sea Grant, i.e., the use and conservation of the marine resources of Florida and the nation in a way that leads to a sustainable economy and environment, this project works to coordinate and administer the State University System of Florida Sea Grant College Program. Management activities have been judged against quantitative and qualitative performance goals as mandated by the University of Florida and the National Sea Grant College Program Office. The latest Federal program review evaluated FSG as “Excellent” for all criteria, tops in the nation.

M/PD-11, Coastal Science and Technology Innovation with Limited Funds: The Florida Sea Grant Program Development Portfolio - - This project continues to give Florida’s universities and academic laboratories, through Sea Grant, the unique capability to respond even in the middle of a fiscal year to timely marine issues and demonstrations essential to coastal user groups. Projects are low budget with limited objectives. All proposals are peer reviewed to insure technical merit and relevance. Projects are conducted if they demonstrate a likelihood of rapid success and meet at least one of six criteria: (1) offer solution to clearly defined timely problem; (2) address problem in opportunistic research area; (3) pilot study to see if longer project justified; (4) provide information to attract support elsewhere; (5) Extension demonstration project; (6) timely exchange of scientific information. Projects that were completing from earlier years and new projects started in 2005 are:

- 04-5 A Critical Evaluation of Two Approaches to Biomonitoring: Functional Assays and Stress Protein Biomarkers in *Mercenaria mercenaria* (hard clam)
- 04-6 Pre-K Through 12th Grade Educators Workshop on Coral Reef Research and Restoration
- 04-7 Use of Carbon Monoxide and Other Modified Atmospheric Conditions in Seafood Processing
- 04-8 Mud Minnow Production Sustaining Water Conservation and Nutrient Recovery
- 04-10 Atlantic Tsunami Run-up Modeling
- 04-11 Documenting a Macrophyte Shift From Seagrass to an Alga: First Measures of Alga Growth Rates, Light Environments and Possible Seagrass Loss
- 05-1 Florida Sea Grant Elise B. Newell Seminar Series
- 05-2 Timely Marine Issues
- 05-3 Using Dynamic Technology to Enhance Delivery of Florida Sea Grant Web Content
- 05-4 Tracking the Movements of Bull Sharks in the Gulf of Mexico Using Pop-up Satellite Archival Transmitters (PSAT tags)

II. ADDITIONAL PROJECTS FROM SEA GRANT SPECIAL INITIATIVES AND NATIONAL OPPORTUNITIES

(Either in process or started in 2005)

II. A. Research

II.A.1. Seafood Technology

R/LR-Q-25, Testing the Feasibility of Red Tide Remote Sensing -- Current on-site sample collection and laboratory-based analysis is costly and time consuming in regards to approving coastal waters for shellfish growing for human consumption. Red tide is often a problem which requires constant sampling. This project will test the accuracy and effectiveness of satisfying red tide monitoring methods using remote sensing equipment rather than labor-intensive on-site sampling.

R/LR-Q-26, Improved Methods for Molecular Detection of *Vibrio vulnificus* -- *Vibrio vulnificus* remains the leading cause of seafood-associated deaths. Current detection assays are consuming (2-7 days), labor intensive, expensive and not always reliable. FDA has increasingly turned to molecular detection, but problems have been reported with available assays. The objective of this project is to evaluate and improve molecular detection and typing methods for *V. vulnificus* in order to standardize evaluation of oyster and seawater samples.

II.A.2. Ecosystem Health

R/C-E-47, A Multidisciplinary Investigation for Determining MPA Baselines at Bimini Bahamas and Essential Fish Habitat for the Lemon Shark at Three Nursery Sites -- Habitat loss and degradation pose serious threats to the long-term sustainability of coastal marine fish and shellfish resources. NOAA's Strategic Environmental Assessments Division has recently embarked on a program to map and analyze fish and invertebrate habitats and distribution using a geographic information system in conjunction with habitat suitability index models. At present, these models generally lack mathematical and statistical rigor. This project will develop a practical, biologically-sound, and statistically robust methodology for quantitative assessment of what constitutes 'essential habitat' for economically and ecologically important coastal species.

R/C-E-48, Multiple Habitat Utilization by a Coastal Fish: Diel, Seasonal and Ontogenetic Movement of Gray Snapper -- Many reef fishes are thought to make diel, seasonal, or ontogenetic migrations among multi-habitats. But most evidence of such movements is indirectly inferred from density and size-structure differences among the habitats. This project will provide quantitative results (time and spatial range) which will have direct utility for resource managers charged with designing and implementing management plans for tropical and subtropical coastal habitats and fisheries.

R/C-E-49, Killer Algae: Preventing Florida from Becoming the Next Invasion Location of *Caulerpa taxifolia* - Mediterranean -- Since 1984, aquarium releases of *Caulerpa taxifolia* - Mediterranean strain have led to this "killer algae" becoming established in coastal waters in Europe, California and Australia. In all cases, the ecological and economic costs have been substantial. The goal of this project is to significantly reduce the likelihood that *Caulerpa taxifolia* will become established in Central Florida.

II.A.3.

R/MI-12 Development of an Advanced Underwater Video Telemetry and Data Collection Instrument for Remote Observation of Aquatic Organisms and Underwater -- There is widespread interest in the scientific application of underwater video units from researchers at academic institutions, government agencies, non-profit research

foundations and the fishing industry. This project will test the application of CRITTERCAM on nurse, bull and hammerhead sharks.

R/C-P-27-CC, Waterways and Waterfronts: The Legal Framework for Public Access -- Local waterfront governments often lack the time, funds or expertise to pursue waterfront policy innovation and secure this within their comprehensive planning structure. This will benefit from a comprehensive legal analysis of coastal policymaking authority, especially in the confusing nearshore jurisdictional environment, and from a systematic assessment of the planning tools at their disposal that are packaged in a useable format. This project will provide this assessment and incorporate non-regulatory alternatives such as tax and other land use incentives.

R/C-P-28-CC, Smart Growth for Coastal Communities -- In coastal communities across the nation, there is a growing concern that current development patterns, dominated by what some call “sprawl,” are contributing to water quality and environmental degradation. Though supportive of growth, communities are increasingly seeking solutions to balance growth with community and environmental values. Community decision-making often lacks the resources and training necessary to address these issues resulting in a new demand and a new opportunity for smart growth extension programming.

II. B. Extension

E/NS-2, Southeast Regional Aquatic Nuisance Species Education and Outreach Network -- Science education in the U.S. is undergoing fundamental change and reform directed at the kindergarten through high school (K-12) levels or precollege system. This project will focus on nonindigenous species by addressing content and attitudinal needs of classroom teachers and informal education and outreach personnel, who would in turn, incorporate the latest scientific content knowledge in these areas in their classrooms or outreach efforts. Teachers will learn about nonindigenous species, their regional and national impact, and management attempts.

E/T-9, NOAA South Florida Marine Ecosystem Outreach Project -- Restoration and long-term sustained water quality of the South Florida Ecosystem is a priority among federal, state and local agencies, with billions of dollars being expended on a variety of projects over the next 25 years. The ultimate success of these projects will depend on the awareness, knowledge and decisions of citizens, business owners, and community leaders that are based on sound science. This project will serve as the link between science-based information developed by NOAA agencies and Sea Grant-supported research and the citizenry of South Florida.

E/T-10, Coastal Storms Initiative Outreach Project -- More than half of the population of the U.S. lives in the coastal area. Storms in coastal areas are more severe and are less predictable than in the interior of the country. Coastal storm losses have an economic as well as an environmental impact, with damages estimated at between \$10 billion and \$50 billion dollars each year. The Florida pilot is the first regional pilot program in what is planned to be a series of national pilot programs. Because of recent storm events, the coastal communities in Florida are highly motivated to see improvements in prediction and tracking of storm paths.

E-T-11, Online Outreach Designed to Demystify Marine Biotechnology: *marnebiotech.org* -- There is a general lack of understanding of marine biotechnology by non-scientists. The goal of the project is to draw upon Sea Grant’s vast national network of research, education and outreach resources to build an effective marine biotechnology website. It will be an effective tool for increasing awareness of this field among government officials, policymakers, students, educators, scientists, journalists, the general public, and industry professionals.

E-TP-3, Educational Workshops for the Florida Medical Community on the Risks Associated with the Consumption of Shellfish That May Contain Naturally-Occurring *Vibrio* Bacteria -- One of the primary strategies to reduce the number of illnesses in the high risk population for *Vibrio vulnificus* is to educate and inform the medical community. The result will be that appropriate information will be transmitted directly to the

high-risk patient at the time of treatment and/or counseling for the high-risk condition. This project will conduct 30 regional workshops at local chapters of the Florida Dietitians Association and Florida Nurses Association to provide educational materials developed by trained health educators.

E/FE-GM, Gulf of Mexico Regional Fish Extension Project -- The FY02 National Sea Grant federal appropriation required the enhancement of Sea Grant's fisheries extension program. The topic of focus for Florida Sea Grant is participation in the sustainability of the Gulf of Mexico shrimp industry.

E/FE-SA, South Atlantic Regional Fish Extension Project -- The FY02 National Sea Grant federal appropriation required the enhancement of Sea Grant's fisheries extension program. Florida Sea Grant Extension is a member of the South Atlantic Regional Fish Extension Project team addressing marine protected areas essential fish habitat and fisheries management.

E/FE-FSG, Fisheries Extension Enhancement -- The FY02 National Sea Grant federal appropriation required the enhancement of Sea Grant's fisheries extension program.

SGEP-13-FE-A & C [2 modules], Florida Sea Grant Fish Extension Project -- The FY03 National Sea Grant federal appropriation continued the required enhancement of Sea Grant's fisheries extension program. Florida Sea Grant will hire two new fisheries oriented county faculty (Bay, Collier) and increase its recreational fishery extension program activity by one-half FTE.

E/T-16, National Sea Grant Extension Academy -- Florida Sea Grant Program will coordinate, develop and establish a national academy for training professional people new to Sea Grant Extension. There is a need for training in "Extension Professional Competencies" for new extension faculty. This is being conducted with the support of both the National Sea Grant College Program and the Assembly of Sea Grant Extension Program Leaders.

II.C. Fellowships

E/INDST-2, (Industrial Fellowship) - ABC (Aquaculture, Biology and Conservation) of Marine Ornamental Shrimp - - The great increase in the popularity of saltwater aquaria has dramatically stimulated the worldwide fishery for small, colorful coral reef fishes and invertebrates. People involved in this fishery utilize a variety of techniques, ranging from hand-operated nets to extremely damaging application of toxins and explosives to stun fishes so survivors can be easily caught. All of these techniques can have deleterious effects on the reef ecosystems. The goal of this project is to develop the technologies for culturing more ornamental species in order to minimize wild collection while, sustaining the aquarium industry and creating new commercial opportunities.

E/INDST-4, A Critical Evaluation of Two Approaches to Biomonitoring: Functional Biomarkers Assays and Stress Protein Biomarkers in *Mercenaria mercenaria* (Hard Clam) -- Biomarkers are biological changes that are observed in an animal following exposure to sublethal environmental or anthropogenic stressors. This project proposes to test the following assumption: stress protein biomarkers expression profiles correlate with traditional functional biomarker assays of bivalve health. This will be done by exposing *Mercenaria mercenaria* to two important environmental stressors, high temperature and low-oxygen conditions (hypoxia), both of which are known to induce stress protein responses and affect the health of aquatic organisms.

E/ST-29, 30, 31, 32 Knauss Fellowship -- One student in 2003-2004 and three in 2004-2005 spent one year in Washington, D.C. working in Federal programs related to coastal and ocean science and management.

III. MAJOR EXTRAMURAL (NON-SEA GRANT-FUNDED) PROJECTS

A number of other projects indicate the reliance of other organizations upon Florida Sea Grant, and are in addition to the partnerships reflected in the projects listed above. Certain projects supplement salary requirements for Extension. These are projects that are funded from the agency to Florida Sea Grant, but are not funded through NOAA. A brief listing of those projects active during 2005 is presented below.

III.A. Extension

E/T-12, Southeast Atlantic Coastal Ocean Observing System -- Florida Sea Grant Extension will continue outreach as a component of the Southeast Atlantic Coastal Ocean Observing System (SEA-COOS). The four Sea Grant programs (North Carolina to Georgia) are cooperating in this regional project. The goal is to establish a dialog with non-scientific users, identify their information needs and the preferred formats and methods of information delivery. Florida will train its extension faculty, focus on regional groups (e.g., ports, hazards) and local sectors (e.g., fishers and emerging response offices), host sector workshops and convene instate meetings with user groups.

E/T-13, Southeast Regional Aquatic Nuisance Species Education and Outreach Network -- The need for enhanced ocean education is clearly recognized by scientists in the oceanographic community, including both classroom and informal educators. One specific need is public education on aquatic nuisance species. As part of a four-state southeast regional effort, Florida will conduct public school workshops and publish a report with lesson plans. This effort will present science-based information on aquatic nuisance species to community leaders, resource managers, students and the public through outreach, information and technology transfer programs conducted by Sea Grant extension agents; federal, state and local public information officers; K-12 classroom teachers, and other outreach educators.

COSEE-GOM, (Florida Portion), Regional Center for Ocean Sciences Education Excellence (COSEE) – Gulf of Mexico -- This program is designed to strengthen ocean sciences education through interpretation of research results. The audience is the general public, pre-college teachers and students, informal educators and university and community college faculty and students.

SFWMD-CERP-1, Florida Keys CERP and Water Conservation Outreach Partnership -- The goal of this project is to deliver an outreach program for the overall Comprehensive Everglades Research and Outreach Partnership (CERP).

E/T-17, The Gulf in Peril: Strategies for Restoring and Preserving Coastal Ecosystems of the Gulf of Mexico -- The Conservancy of Southwest Florida and the Florida Sea Grant College Program are convening a conference in response to the recommendations of the Pew Ocean Commission and the U.S. Commission on Ocean Policy, and the observations of the Gulf in Peril series. The conference will bring together public and private sector stakeholders for the purpose of addressing the key issues and outline actions.

6.0 PUBLICATIONS

Florida Sea Grant issues *Publication and Communication Support Guidelines* to all Sea Grant project collaborators, and has an organized process for printing and tracking publications. Documents published “in-house” include Sea Grant Reports, Sea Grant Extension Publications, Sea Grant Technical Papers, thesis or dissertation abstracts, staff papers and other items such as Extension newsletters. Each is numbered and tracked in an appropriate series. Books and journal articles are published elsewhere, but tracked for completion and credit by Communications staff. All publications are distributed to the Pell Library at the University of Rhode Island and through the UF/IFAS Electronic Data Information Source.

An effort is also made to compare Florida Sea Grant publications and communications activity and productivity with that of peer Sea Grant Programs.

Florida Sea Grant receives about nine percent of the funding for the “top 10” (in funding) Sea Grant programs nationwide. During 2005, FSG “outperformed” the other nine programs by producing from 10 to 45% of the publications activity generated via the Pell Library (Table 1). FSG ranks about 7th in funding among the “top 10” programs, but ranked from one to four among them in productivity. Notably, 45% (or 75,419) of the pdf downloads from the Pell Library were FSG produced materials (Table 2). The “top 10” publication downloads are also shown (Table 3).

The EDIS system is a publication management system providing a comprehensive, single-source repository of all current UF/IFAS numbered peer-reviewed publications. Using the EDIS system, UF/IFAS academic departments develop and maintain a collection of publications available for universal free distribution on the World Wide Web and through the Florida Cooperative Extension Service County Offices and Research and Education Centers statewide. From the EDIS website, more than 10 million educational print and electronic products are disseminated each year from some 7,000 publication titles. Together, the streamlined publication process, universal access, and print as needed services not only reduce the cost but also expand the impact of UF/IFAS publications.

FSG utilizes the EDIS system primarily for Extension related materials. During 2005, a total of 51,272 electronic downloads of FSG related materials were made (Table 4).

Florida Sea Grant also maintains a running five-year list of publications sponsored by its research, education extension, communications and management efforts. For the current year it categorizes items as either published or in press. For all years it identifies publications according to the categories of Florida Sea Grant Report; Florida Sea Grant Technical Paper; Books and Book Chapters; Journal Articles; Graduate Theses and Dissertations; Florida Sea Grant Extension Publications; Extension Newsletters; Miscellaneous Papers, Articles and Conference Proceedings; and Websites. The project from which it originated is indicated by the code number in parentheses at the right side of the last line of each entry. Table 5 provides a current summary of the list and is followed by the complete listing.

Table 1. Core funding and selected National Sea Grant Library data for top 10 (in core funding) Sea Grant Programs, 2005. (Source: Funding data from National Sea Grant Office and Publication data from Pell Library.

Sea Grant Program	2003 Core Funding ^a (\$1000)	Reprints Received	Thesis, Dissertation Abstracts	All Other Documents	Total Documents	Per \$100K	Number of Electronic Documents Submitted	Number of PDF Downloads from Pell Library Server	Per \$100K
CA	3,859	53	6	17	76	2.7	11	15,472	401
WA	2,595	40	7	10	57	2.2	11	14,159	545
NY	2,414	22	8	18	48	2.0	21	3,956	163
OR	2,282	68	26	17	111	4.9	9	10,339	453
RI	2,060	0	0	17	17	.8	10	10,237	497
MIT	2,045	13	7	7	27	1.3	8	3,679	180
FL	1,990	25	6	34	65	3.3	35	75,419	3,790
WI	1,914	0	0	2	2	.1	1	1,266	66
TX	1,886	2	0	14	16	.8	5	15,078	799
HI	1,780	7	0	5	12	.7	4	17,573	987
TOTAL	22,825	230	60	141	431	1.9	115	167,178	732
Florida as a % of Total									
	9	11	10	24	15	NA	30	45	NA

^a 2003 Core funding used since core funding has remained relatively unchanged during 2004 and 2005.

Table 2. Comparison of Florida Sea Grant core funding level rank with documents submitted by Top 10 (in core funding) Sea Grant programs, 2005.

Florida Rank by Category Compared	Rank	Florida as % of Top 10 Total
Core Funding Level	7	9
Reprints Submitted	4	11
Thesis/Dissertation Abstracts	4	10
Electronic Documents Submitted	1	30
All Other Documents Submitted	1	24
Total Documents Submitted		
Number	3	15
Per \$100,000 Core Funds	2	NA
PDF Downloads from NSGL		
Number	1	45
Per \$100,000 Core Funds	1	NA

Calculated from Table 1

NA - Not Applicable

Table 3. Top 10 Florida Sea Grant publication downloads from the Pell Library, 2005.

1. FLSGP-H-97-002 Model HACCP program for soft shell blue crab
2. FLSGP-H-04-002 HACCP: programa de capacitacion en analisis de peligros y puntos criticos de control
3. FLSGP-H-95-002 Total quality assurance and hazard analysis critical control point (HACCP): manual for clam production
4. FLSGP-H-97-003 HACCP program: penaeid shrimp: dockside operations
5. FLSGP-G-02-003 Common sharks of Florida
6. FLSGP-E-00-001 Sanitation control procedures for processing fish and fishery products (Seafood HACCP Alliance course)
7. FLSGP-R-95-001 A HACCP program for raw, cultured penaeid shrimp
8. FLSGP-R-98-020 Developing and implementing a HACCP plan: record-keeping procedures
9. FLSGP-W-01-004 Ecology of aquaculture species and enhancement of stocks
10. FLSGP-S-01-001 Florida marine biotechnology: research, development and training capabilities to advance science and commerce

Source: Pell Library, University of Rhode Island.

Table 4. Electronic downloads of publications written by Florida Sea Grant faculty, 2005.

DLN	Pub #	Title	Author	Annual-2005
SG062	SGEF146	Common Sharks of Florida	Florida Sea Grant	5942
SG042	SGEF108	Circle Hooks	Florida Sea Grant	3182
SG045	SGEF119	The Biology and Fishery of Florida's Commercial Sponges	John Stevely and Don Sweat	3053
FS108	FSHN0410	The Food Recall Manual	Douglas L. Archer, Keith R. Schneider, Ronald H. Schmidt, W. Steve Otwell, Renee M. Goodrich, and Chris Thomas	2405
SG061	SGEB55	Nutrients and Florida's Coastal Waters: The Links Between People, Increased Nutrients and Changes to Coastal Aquatic Systems	Jennifer Hauxwell, Charles Jacoby, Thomas K. Frazer, John Stevely	2234
SG064	TP126	Bathymetric Data for Coastal Resource Management in Southwest Florida Waterways: Enhancement and Standardization of Field Collection Methods Used by the West Coast Inland Navigation District	Robert Swett, David Fann	2054
FE361	FE361	Economic Analysis of an Intensive, Zero-Water Exchange, Saltwater Shrimp Culture Demonstration Project in Nicaragua	Mayra López, Charles Adams, James C. Cato, and Donald Sweat	1935
SG055	TP104	Science Serving Coastal Florida: Florida Sea Grant Delivering Results! 2000	Florida Sea Grant	1925
FE210	FE210	A Preliminary Assessment of the Costs and Earnings of Commercial, Small-Scale, Outdoor Pond Culture of Tilapia in Florida	Chuck Adams and Andy Lazur	1919
FE345	FE345	The Commercial Bottom Trawling Industry in Florida: Balancing Environmental Impact with Economic Contribution	Chuck Adams	1810
FA011	CIR710	Catfish Farming in Florida	S. J. Walsh, W. J. Lindberg	1688
SG063	TP121	The Costs of Hurricane Emergency Management Services: A Risk-Based Method for Calculating Property Owners' Fair Share	Robert E. Deyle and Richard A. Smith, Michael R. Boswell, E. Jay Baker, Mary Kay Falconer, Joseph A.	1522
FE218	FE218	An Overview of the Cuban Commercial Fishing Industry and Recent Changes in Management Structure and Objectives	Chuck Adams, Placido Sanchez Vega, and Anicia Garcia Alvarez	1433

FE280	FE280	Economic Impact of Florida's Commercial Fisheries and Aquaculture Industries.	Alan Hodges, David Mulkey, Effie Philippakos, and Chuck Adams	1418
FE123	FE123	What Happened After the Net Ban?	Chuck Adams, Steve Jacob, and Suzanna Smith	1387
FE302	FE302	Recreational Fishing License Sales in Florida: 1990-2000	Kristina Stephan and Chuck Adams	1355
SG060	SGEB54	Submarine Groundwater Discharge: An Unseen Yet Potentially Important Coastal Phenomenon	D. Reide Corbett, William C. Burnett, Jeffrey P. Chanton	1191
SG047	SGEF121	Release Techniques for Marine Fishes	Rich Novak	1168
FE493	FE493	Economic Impact on the Re-opened Scaloping Area for Citrus County, Florida?2003	Tom Stevens, Charles Adams, Alan Hodges, and David Mulkey	1159
SG043	SGEF109	Los Anzuelos Circulares	Florida Sea Grant	1098
FE306	FE306	An Overview of the Relative Economic Importance of Florida's Coastal Counties	Chuck Adams, Effie Philippakos, Alan Hodges, and David Mulkey	1090
FE178	FE178	The Manatee and Sarasota County Economies: An Overview	Effie Philippakos, Alan W. Hodges, David Mulkey, and Charles M. Adams	992
FE309	FE309	Economic Considerations for the Prospective Mudminnow Culturist in Florida	Chuck Adams and Andy Lazur	935
FS110	FSHN0502	Guidance for Processing Beef Jerky in Retail Operations	W. Steve Otwell, Keith R. Schneider, and Victor Garrido	930
FS115	FSHN0507	Guidance for Processing Cured and Smoked Ham and Pork Loins	W. Steve Otwell, Keith R. Schneider, and Victor Garrido	891
SG048	SGEF123	Resources for Marine Educators	William Seaman, Jr. and Jacquelyn Whitehouse	886
FS117	FSHN0509	Guidance for Processing Sushi in Retail Operations	W. Steve Otwell, Keith R. Schneider, and Victor Garrido	808
FS109	FSHN0501	Guidance for Processing Fermented and Dried Sausage in Retail Operations	W. Steve Otwell, Keith R. Schneider, and Victor Garrido	750
FS113	FSHN0505	Guidance for Processing Fresh-cut Produce in Retail Operations	W. Steve Otwell, Keith R. Schneider, and Victor Garrido	676
FS116	FSHN0508	Guidance for Processing Cured and Hot Smoked Sausage	W. Steve Otwell, Keith R. Schneider, and Victor Garrido	623
FA045	CIR702	A First Look at Florida Aquaculture	Jerome V. Shireman and William J. Lindberg	550
FS111	FSHN0503	Guidance for Processing Smoked Seafood in Retail Operations	W. Steve Otwell, Keith R. Schneider, and Victor Garrido	536

FE162	FE162	An Overview of the Cuban Commercial Fishing Industry and Implications to the Florida Seafood Industry of Renewed Trade	Chuck Adams	499
FS114	FSHN0506	Guidance for Processing Fresh Juices in Retail Operations	W. Steve Otwell, Keith R. Schneider, and Victor Garrido	296
FS112	FSHN0504	Guidance for Processing Reduced Oxygen Packaged (ROP) of Raw, Frozen, Seafood in Retail Operations	W. Steve Otwell, Keith R. Schneider, and Victor Garrido	255
SG065	SGEF148	Florida's Vessel Title Registration System as a Source of Boat Locations and Characteristics: A Case Study in Lee and Manatee Counties	Robert A. Swett, Charles Sidman, Timothy Fik and Bill Sargent	210
SG067	SGEF161	The Regional Waterway Management System: A Tool for Balancing Coastal Resource Use and Protection	Robert A. Swett and David A. Fann	165
SG068	TP149	A Survey of Stakeholders to Determine Florida Sea Grant's 2006-2009 Programmatic Objectives for Coastal Communities and Water-Dependent Businesses	Robert Swett and Susan Fann	158
SG066	SGEB59	Navigational, Historical and Environmental Perspective of St. Augustine Waterways	Robert A. Swett and David A. Fann	91
AA105	RFAA105	Marine Economics	Clouser, R.L.; Adams, C.	53
TOTAL				51,272

Table 5. Summary of Florida Sea Grant Publications and Other Educational Products, 2001 to 2005.

	Published				
	2005 ^a	2004	2003	2002	2001
Sea Grant Reports	0	1	0	1	3
Sea Grant Extension Publications	5	8	4	9	8
Sea Grant Technical Papers	10	9	5	8	12
Books	1	0	2	2	1
Book Chapters	2	1	5	2	6
Scientific Journal Articles	8	14	26	25	29
In Press	17				
Submitted	60				
Graduate Thesis or Dissertation	2	15	14	22	11
In Process	40				
Staff Papers/Conference Proceedings	1	6	25	64	25
Extension Newsletters ^b	6	5	7	7	5
WWW Pages Maintained	10	10	10	1	1

^a Number reflects totals prior to processing all 2005 project final reports.

^b Each newsletter has multiple volumes.

Publications of the Florida Sea Grant College Program, 2001 – 2006

CALENDAR YEAR 2006 (January – December)

I. Florida Sea Grant Report

A. Published

B. In Press

C. In Process, Planned, Submitted, etc.

National Seafood HACCP Alliance. (in process - 2006). **Sanitation control procedures for processing fish and fishery products**. Seafood HACCP Alliance Course - Second Edition for Training and Education. SGR-119. 2nd Edition. (E/TP-2)

II. Florida Sea Grant Technical Paper

A. Published

Florida Sea Grant. 2006. **Florida Sea Grant College Program 2006-2007 implementation plan**. TP-153. (M/PM-13)

Sidman, C., R. Swett, T. Fik, S. Fann, and B. Sargent. 2006. **A recreational boating characterization for Sarasota County**. TP-152. (Ex-WCIND-3)

Sidman, C., R. Swett, T. Fik, S. Fann, D. Fann, and B. Sargent. 2006. **A recreational boating characterization for the greater charlotte harbor**. TP-150, revised. (Ex-FWCC-3)

B. In Press

Sidman, C., R. Swett, T. Fik, S. Fann and W. Sargent. (in press – 2006). **A Recreational Boating Characterization for Sarasota Bay**. TP-152. (R/C-P-28)

III. Books and Book Chapters

A. Published

B. In Press

Campbell, M., and A.C. Wright. (in press - 2003). **Rapid detection of *Vibrio vulnificus* by real-time PCR**. In: Molluscan Shellfish Safety. Eds. Villalba et al. Xunta de Galicia, Spain. (R/LR-MB-15)

Olson, D. B. (in press - 2006). **Lagrangian biophysical dynamics**. In: Lagrangian Analysis and Prediction A. Mariano, T. Ozgokmen, A. Griffa and T. Rossby eds. (R/LR-B-57)

C. In Process, Planned, Submitted, etc.

IV. Journal Articles

A. Published

B. In Press

Ault, J.S., S.G. Smith, J.A. Bohnsack, J. Luo, D.E. Harper, and D.B. McClellan. (in press - 2006). **Building sustainable fisheries in Florida's coral reef ecosystem: positive signs in the Dry Tortugas**. Bulletin of Marine Science. (R/C-E-50)

Smith, S.G., D.W. Swanson, J.S. Ault, M. Chiappone, and S.L. Miller. (in review - 2006). **Sampling survey design for Florida Keys coral reef assessments**. Coral Reefs. (R/C-E-50)

- Humston, R., J.S. Ault, M.F. Larkin, and J. Luo. (in press - 2005). **Movements and site fidelity of bonefish (*Albula vulpes*) in the northern Florida Keys determined by acoustic telemetry.** Marine Ecology Progress Series 291:237-248. (R/C-E-50)
- Ault, J.S., S.G. Smith, and J.A. Bohnsack. (in press - 2005). **Evaluation of average length as an indicator of exploitation status for the Florida coral reef fish community.** ICES Journal of Marine Science 62:417-423. (R/C-E-50)
- Ault, J.S., J.A. Bohnsack, S.G. Smith, and J. Luo. (in press - 2005). **Towards sustainable multispecies fisheries in the Florida USA coral reef ecosystem.** Bulletin of Marine Science 76(2):595-622. (R/C-E-50)
- Humston, R., D.B. Olson, and J.S. Ault. (in press - 2004). **Behavioral assumptions in models of fish movement and their influence on population dynamics.** Transactions of the American Fisheries Society 133:1304-1328. (R/C-E-50)
- Franklin, E.C. (pending - 2004). **Habitat-based assessment protocol for the Florida marine aquaria fishery with application to gray angelfish.** Thesis. University of Miami. 111 p. (R/C-E-50)
- Franklin, E.C., J.S. Ault, S.G. Smith, J. Luo, G.A. Meester, G.A. Diaz, M. Chiappone, D.W. Swanson, S.L. Miller, and J.A. Bohnsack. (in press - 2003). **Benthic habitat mapping in the Tortugas region, Florida.** Marine Geodesy 26(1-2):19-34. (R/C-E-50)
- Chatzidaki-Livanis, M., M. M. Jones, A.C. Wright. (in press - 2006). **Genetic variation in the *Vibrio vulnificus* group 1 CPS operon.** J. Bacteriol. (R/LR-Q-27)
- Ortiz, M, C. LeGault, and N. Ehrhardt. (in press-2000). **An alternative method for estimating bycatch from the U.S. shrimp trawl fishery in the Gulf of Mexico, 1972-1995.** Fishery Bulletin. 98(3):583-599. (R/LR-B-37)
- Phillips, R., C. Niezrecki, and D.O. Beusse. (in press - 2004). **Determination of West Indian manatee vocalization levels and rate.** Journal of the Acoustical Society of America, 115(1):422-428. (R/MI-13)
- Schofield, O., M.A. Moline, G.A. Vargo, R.G. Steward, and G. Kirkpatrick. (in press - 2004). **Spectral inherent optical and fluorescence properties of natural populations of the toxic *Dinoflagellate, Gymnodinium Breve*, in the Gulf of Mexico.** EOS Trans AGU 79(1):OS161. (R/NCOP-5)
- Shivji, M.S., D.D. Chapman, E.K. Pritchard, and P.W. Raymond. (in press – 2005). **Genetic profiling reveals illegal international trade in fins of the great white shark, *Carcharodon carcharias*.** Conservation Genetics (R/LR-B-56)
- Stringer, C.E. and W.C. Burnett. (in press - 2004). **Sample bottle design improvements for radon emanation analysis of natural waters.** Journal of Health Physics. (R/C-E-44)
- Taniguchi, M., W. C. Burnett, C. F. Smith, R. J. Paulsen, D. O'Rourke, S. Krupa, and J.L. Christoff. (in press - 2003). **Spatial and temporal distributions of submarine groundwater discharge rates obtained from various types of seepage meters at a site in the northeastern Gulf of Mexico.** Biogeochemistry, 66, 35-53. (R/C-E-44)
- Walters, L., K. Brown, W. Stam, and J. Olsen. (in press – 2006). **E-Commerce and *Caulerpa* unregulated dispersal of invasive species.** Frontiers in Ecology and the Environment. (R/C-E-49)
- Yan, Z., C. Niezrecki, and D.O.Beusse. (in press - 2005). **Background noise cancellation for improved acoustic detection of manatee vocalizations.** Journal of the Acoustical Society of America, 117(6):3566-3573. (R/MI-13)

C. In Process, Planned, Submitted, etc.

- Aldo, F., C. Moller, D. Mora, H. Cano, and F. Mari (submitted - 2004). **Size exclusion hplc separation of complex mixtures of marine neuropeptides.** Anal Biochem. (R/LR-MB-18)
- Baker, B.J., M. Van Ert, A.C. Leonard, and J.E. Grimwade. (awaiting patent clearance - 2001). **Cold-water marine invertebrate-associated microorganisms as sources of drug leads.** International Journal of Pharmacognosy. (R/LR-MB-4)
- Beck, J.L. and R.G. Turingan. (in review – 2006). **The effects of zooplankton swimming behavior on prey-capture kinematics of red drum larvae, *Scieanops ocellatus*.** Marine Biology (R/LR-A-41)
- Blitch, S.B., T.K. Frazer, K.M. Blitch, M.H. Posey, and T.D. Alphin. (in preparation - 2004). **Growth of juvenile blue crabs (*Callinectes sapidus*) in seagrass and marsh channel habitats along Florida's Central Gulf Coast.** (R/LR-B-46)
- Brennan, N.P. (in preparation - 2005). **Effects of release micro-habitat on survival and growth of hatchery snook (*Centropomus undecimalis*), in a Florida estuary.** (R/LR-A-25)
- Chatzidaki-Livanis, M., M. Hubbard, K. Gordon, V. J. Harwood, and A. C. Wright. (submitted - 2006). **Population genetics of clinical vs. environmental strains of *Vibrio vulnificus*.** Applied Environ. Microbiol. (R/LR-Q-27)
- Dillon, K., J. Chanton, and L. Smith. (in process - 2005). **Denitrification rates in limestone surrounding a wastewater injection well in the Florida Keys.** Biogeochemistry. (R/C-E-44)
- Dolan, T. W. III, and M.J. IV. Butler. (in review - 2006). **Modeling ontological changes in the social behavior of juvenile Caribbean spiny lobster, *Panulirus argus*.** Journal of Crustacean Biology. (R/LR-B-50)
- Duchon, K.A., N.P. Brennan, K. Leber, and J.M. Miller (in preparation - 2005). **Comparing the growth of caged and released fish: Assessing habitat quality for stocking and relative role of directive factors.** (R/LR-A-25)
- Frazer, T.K., S.B. Blitch, M.H. Posey, T.D. Alphin, K. Blitch, and T.P. Glancy. (in revision - 2005). **Use of shallow-water habitats by juvenile blue crabs along Florida's North Central Gulf Coast: The potential influence of seagrass on distributional patterns.** (R/LR-B-46)
- Frodyma, M.E., M. Van Ert, B. Furrow, A.C. Leonard, B.J. Baker, and J.E. Grimwade. (awaiting patent clearance - 2001). ***Pseudoalteromonas clarkii*, sp. nov., a psychrotrophic bacterium isolated from the Antarctic nudibranch *Tritoniella belli*.** International Journal of Systematic and Evolutionary Microbiology. (R/LR-MB-4)
- Gardon, C., L. Walters, P. Quintana-Ascencio, J. Weishampel, L. McCauley, W. Stam, and J. Olsen. (in process- 2006). **Predicting risks of invasion of *Caulerpa* species in Florida.** Conservation Biology. (R/C-E-49)
- Haas, K.A., A.B. Kennedy, and B. Sapp. (submitted - 2005). "Video Measurement of Wave and Current Fields in a Laboratory Wave Basin". (R/C-S-44)
- Irandi, E., and J. Zsiros. (submitted - 2004). **Morphometric changes and tolerance to low salinity for an exotic green alga (*Caulerpa brachypus*) and consequences to invasion success.** Aquatic Botany. (PD-03-11)
- Jones, M. M., M. Chatzidaki-Livanis, and A. C. Wright. (in process - 2006). Regulation of phase variation in *V. vulnificus*. Applied Environ. Microbiol. (R/LR-Q-27)

- Kane, M. (in process - 2005). **Comparative *in Vitro* shoot production and rooting and early *ex Vitro* growth of Sea Oats (*Uniola paniculata* L.) genotypes.** (R/C-S-42)
- Kane, M. (in process - 2005). **Comparative field performance of *in Vitro* propagated Sea Oats (*Uniola paniculata* L.) genotypes.** (R/C-S-42)
- Kane, M. (in process - 2005). **Comparative *in Vitro* growth and development of easy-and difficult-to-acclimate Sea Oats (*Uniola paniculata* L.) genotypes.** (R/C-S-42)
- Kane, M. (in process - 2005). **Comparative carbohydrate status of easy-and difficult-to-acclimate Sea Oats (*Uniola paniculata* L.) genotypes.** (R/C-S-42)
- Kane, M. (in process - 2005). **Comparative photosynthetic competence of easy- and difficult-to-acclimate Sea Oats (*Uniola paniculata* L.) genotypes.** (R/C-S-42)
- Kem, W.R., D. Rittcof, and F. Soti. (submitted - 2005). **Synthesis and chemical-biological characterization of all eight possible methyl-2,3'-bipyridyls.** Department of Pharmacology and Therapeutics, University of Florida College of Medicine. (R/LR-MB-9)
- Kennedy, A.B., and D. Thomas. (submitted - 2004). "Drifter measurements in a laboratory rip current", *Journal of Geophysical Research, Oceans*, 109, C08005, doi:10.1029/2003JC001927. (R/C-S-44)
- Kennedy, A.B., M. Brocchini, L. Soldini, and E. Gutierrez. (submitted - 2005). "Topographically-controlled, breaking wave-induced macrovortices. Part 2. Changing geometries". (R/C-S-44)
- Kennedy, A.B. (submitted - 2005). "Fluctuating Circulation Forced by Unsteady, Multidirectional, Breaking Waves". (R/C-S-44)
- Larkin, S., R. Degner, and W. Rubinstein. (in review - 2005). **Preferences for wild-caught, ecolabeled, and tank-raised marine aquarium species within the marketing channel.** *Marine Resource Economics*, FAES Journal Series No. R-09678. (R/LR-A-29)
- Lee, S.T., Wildeboer, K., Panter, K.E., Kem, W.R., Gardner, D.R., Molyneux, R.J., Chang, C-W.T., Soti, F., and Pfister, J.A. (in press-2005). **Relative toxicities and neuromuscular receptor agonistic potencies of anabasine enantiomers and anabaseine.** *Neurotoxicol and Teratology*. (R/LR-MB-20)
- Licamele, J.D., R.G. Turingan, L. Creswell and K. Gaines. (in preparation - 2006). **Captive rearing of marine ornamental fishes: Linking functional morphology and feeding selectivity in the hatchery phase of aquaculture.** *Aquaculture*. (R/LR-A-41)
- Lopez, J.V., C.L. Peterson, R. Willoughby, and S.A. Pomponi. (in preparation - 2001). **Application of anti-sense *Oligonucleotide* (ASO) technology to inhibit cell cycle regulating genes for sponge culture optimization.** (R/LR-MB-5)
- MacMahan, J., E. Thornton, T. Stanton, and A. Reniers. (submitted - 2005). **RIPEX: Observations of a rip current system.** *Journal of Marine Geology*. Accepted. (R/C-S-42)
- MacMahan, J., R.J. Thieke, R.G. Dean, D.M. Hanes, and R.A. Holman. (submitted - 2005). **Analysis of rip channel stability.** *Journal of Marine Geology*. (R/C-S-40)
- MacMahan, J., A. Reniers, T. Stanton, E. Thornton, and R. Dean. (in preparation - 2002). **Field measurements rip current instabilities.** *Journal of Geological Research*. (R/C-S-40)
- Meester, G.A., A. Meharotra, J.S. Ault, and E.K. Baker. (submitted - 2004). **Designing marine reserves for fishery management.** *Journal of Management Science* 50(8):1031-1043. (R/LR-B-47)

- Mora, D., F. Pflueger, G. B. Fields, and F. Mari. (submitted - 2004). **First example of hydroxyvaline (GHV) within a polypeptide chain: A novel conopeptide from *Conus gladiator* contains GHV.** Science. (R/LR-MB-18)
- Mora, D., F. Pflueger, G.B. Fields, and F. Mari. (submitted - 2004). **Polypeptides chains containing γ -hydroxyvaline (HYY): An intriguing posttranslational modification found in conus peptides.** Proc. National Academy of Science. (R/LR-MB-18)
- Peterson, B.J., C.M. Chester, and J.W. Fourquean. (in process - 2002). **The potential role of the sponge community in controlling phytoplankton blooms in Florida Bay.** Marine Ecology Progress Series. (R/C-E-43)
- Peterson, B.J., and J.W. Fourquean (in process - 2002). **An experimental manipulation of sponge grazing on seagrass growth dynamics.** Marine Ecology Progress Series. (R/C-E-43)
- Peterson, B.J., J. Boyer, J. Cornwell, and J.W. Fourquean. (in process - 2002). **Biogenic inputs of nitrogen by the sponge community into Florida Bay.** OIKOS. (R/C-E-43)
- Phillips, R., C. Niezrecki, and D.O. Beusse. (submitted - 2005). **Detection ranges for acoustic based manatee avoidance technology.** Journal of the Acoustical Society of America. (R/MI-13)
- Piercy, A., A. Samuel, F. Snelson Jr., and G. Burgess. (in process - 2005). **Validation of fatty acid signatures in diet analysis of elasmobranch fishes.** (PD-03-07)
- Pinelli, J.-P., C. S. Subramanian, C. Lapilli, and L. Buist. (in review - 2005). **Application of a wireless pressure sensing system to coastal wind monitoring.** Wind and Structures Journal. (R/C-S-43)
- Posey, M.H., T.K. Frazer, T.D. Alphin, and S.B. Blitch. (in revision - 2005). **Facultative habitat use: Does function change with landscape?** (R/LR-B-46)
- Posey, M.H., T.D. Alphin, T.K. Frazer, S.B. Blitch, J.A. Hartsell, J. Christian, and T.P. Glancy. (in revision - 2005). **Juvenile blue crab use of shallow water habitats in Southeastern North Carolina: Distribution among seagrass, oyster and marsh habitats.** (R/LR-B-46)
- Ranamukhaarachchi, D., M.E. Kane, and T.H.M. Mes. (in revision - 2005). **Character incompatibility: An approach to determine reproduction of sea-oats (*Uniola paniculata* L.) populations.** Molecular Ecology. (R/C-S-36)
- Ranamukhaarachchi, D., M.E. Kane, D.W. Crewz, C.L. Guy, and N.P. Philman. (in revision - 2005). **Molecular analysis of genetic diversity in four Florida sea oats (*Uniola paniculata* L. *poaceae*) populations: Implications for restoration of dune communities.** Journal of Coastal Research. (R/C-S-36)
- Reniers, A., J. MacMahan, T. Stanton, E. Thornton. (in preparation - 2002). **Modeling of infragravity motions on a complex beach.** Journal of Geological Research. (R/C-S-40)
- Rhyne, A.L. and J. Lin. (submitted - 2004). **Growth, development and survival of larval *Mithraculus sculptus* A. Milne Edwards and *M. forceps* (Lamarck) (Decapoda: Brachyura: Majidae): economically important marine ornamental crabs.** Aquaculture. (PD-03-09)
- Rhyne, A.L. and J. Lin. (submitted – 2005). **The first complete life cycle aquaculture of *Lysmata grabhami*.** (R/INDST-2)
- Rhyne, A.L. and J. Lin. (submitted – 2005). **Larviculture of the early zoeal stages of scarlet cleaner shrimp, *Lysmata amboinensis*.** (E/INDST-2)
- Rhyne, A. L. and J. Lin. (in review - 2005). **A western Atlantic peppermint shrimp complex.** Bulletin of Marine Science. (R/INDST-2)

- Soti, F., J. Rocca, and W.R. Kem. (in process - 2005). **Isolation and structure elucidation of bipyridyl and dihydroisoquinolyl alkaloids from a marine worm, *Amphiporus angulatus***. Department of Pharmacology and Therapeutics, University of Florida College of Medicine. (R/LR-MB-9)
- Stam, W., J. Olsen, S. Zaleski, S. Murray, K. Brown, and L. Walters. (in process – 2006). **A forensic survey of *Caulerpa* species (Caulerpales, Chlorophyta) from aquarium shops, e-commerce and the Florida coast: Establishing a proactive baseline for early detection**. Journal of Phycology. (R/C-E-49)
- Stringer, C.E., W.C. Burnett, and J.P. Chanton. (submitted - 2004). **Assessment of groundwater discharge to Lake Barco, Florida via radon tracing**. Water Research. (R/C-E-44)
- Subramanian, C. S., J.-P. Pinelli, C. Lapilli, and L. Buist. (in review - 2005). **A wireless multi-point pressure sensing system: Design and operation**. IEE Sensors Journal. (R/C-S-43)
- Thieke, R.J., J. Engle, and J. MacMahan. (in preparation - 2005). **Use of statistical analyses of rip current rescues in formulation of a predictive index and the identification of major events**. Journal of Coastal Research. (R/C-S-44)
- Thornton, R., and R. Kerr. (in process - 2005). **Examination of stimuli designed to induce pseudopterosin production in the soft coral *Pseudopteroorgia elisabethae***. (R/LR-MB-8)
- Van Ert, M.N., M. Frodyma, B.J. Baker, A.C. Leonard, and J.E. Grimwade. (in preparation - 2001). **Characterization of bioactive metabolite production in bacteria associated with antarctic and temperate marine invertebrates**. Applied and Environmental Microbiology. (R/LR-MB-4)
- Van Ert, M., B. Gancarz, M. Frodyma, J. Grimwade, B. Baker, and A. Leonard. (awaiting patent clearance - 2001). **Distribution, size, and host-range specificity of plasmids harbored by bacteria associated with antarctic and temperature marine invertebrates**. Applied and Environmental Microbiology. (R/LR-MB-4)
- Wright, A.E., Y. Chen, P. Winder, N. Gulavita, T. Pitts, R.E. Longley, and S.A. Pomponi. (submitted - 2004). **Lasonolide C-G: Five new lasonolide compounds from the sponge**. Journal of Natural Products, 67:1351-1355. (R/LR-MB-17)
- Yan, Z., C. Niezrecki, L. Cattafesta, and D.O. Beusse. (submitted - 2005). **Background noise cancellation of manatee vocalizations using an adaptive line enhancer**. Journal of the Acoustical Society of America. (R/MI-13)
- Zhang, D., A.L. Rhyne, and J. Lin. (in review – 2005). **Reproductive behavior differences in the two species of *Lysmata* shrimp: Effects of density**. Journal of Exp. Marine Biology Ecol. (R/INDST-2)

V. Graduate Thesis and Dissertations

A. Published

B. Pending

- Abbasi, H. (pending - 2005). ***Conus dalli*: Isolation and characterization of novel conopeptides from a panamic mollusk-hunting *Conus***. Dissertation. Department of Chemistry and Biochemistry, Florida Atlantic University. (R/LR-MB-18)
- Aponte, L. (pending - 2005). **Design of hurricane data collection hardware and real-time data transmission**. Dissertation. Department of Civil and Coastal Engineering, University of Florida. (R/C-S-43)

- Blitch, S.B. (pending - 2005). **Tentative project "growth of juvenile blue crabs (*Callinectes sapidus*) in two different habitat types"**. Thesis. Department of Fisheries and Aquatic Sciences, University of Florida. (R/LR-B-46)
- Boudreaux, M. (pending - 2005). **The impact of invasive versus native competitors on the oyster *Crassostrea virginica* in the Indian River Lagoon**. Thesis. Department of Biology, University of Central Florida. (R/C-E-45)
- Bouwma, P. (pending - 2006). **Antipredator behavior and morphology of the spiny lobsters *Panulirus argus* and *Panulirus guttatus***. Dissertation. Florida State University. (R/LR-B-50)
- Butler, M.J. IV. (in progress - 2006). **Determination of metabolic rates of Suwannee Regional Reef gag grouper using electron transport system (ETS) assay**. Thesis. University of Florida. (R/LR-B-53)
- Cano, H. (pending - 2005). **Novel conopeptides from the venom of *C. purpurascens* and *C. ermineus***. Dissertation. Department of Chemistry and Biochemistry, Florida Atlantic University. (R/LR-MB-18)
- Chatzidaki-Lavanis, M. (pending-2004). **Genetic variation in the *Vibrio vulnificus* group 1 CPS operon**. Dissertation. University of Florida. (R/LR-Q-27)
- Didoha-Cruz, A. (pending - 2004). **Ecological impact of marine ornamentals aquaculture in the Philippines**. Dissertation. Florida Institute of Technology. (R/LR-A-41PD)
- Difrenna, V. (pending - 2004). **Effects of scaling in hydraulic conductivity in the biscayne aquifer**. Thesis. Department of Earth Sciences. Florida International University. (R/C-E-51)
- Donahue, S. (pending - 2004). **The ecology of shallow water sponges in the Florida Keys**. Thesis. Old Dominion University. (R/LR-B-50)
- Donnelly, M. (pending-2005). **Spatial competition between mangroves and salt marsh plants in restored mosquito impoundments**. Thesis. Department of Biology, University of Central Florida. (R/C-E-45)
- Dulaiova, H. (pending-2005). **Multiple isotopic traces for the study of coastal hydraulic processes**. Dissertation. Florida State University. (R/C-E-42)
- Franco, A. (pending - 2004). **Novel conopeptides from the venom of *C. regius* and *C. spurius***. Dissertation. Department of Chemistry and Biochemistry, Florida Atlantic University. (R/LR-MB-18)
- Goldstein, J. (pending - 2004). **Postlarval settlement responses in Caribbean spiny lobster**. Thesis. Old Dominion University. (R/LR-B-50)
- Henning, M. (pending - 2005). **Highly streamlined PCR-based genetic identification of carcharhinid sharks (Family Carcharhinidae) for use in wildlife forensics, trade monitoring, and delineation of species distributions**. Thesis. Oceanographic Center, Guy Harvey Research Institute, Nova Southeastern University. (R/LR-B-56)
- Kline, R. (In progress - 2004). **Density-dependent activity budgets and related swimming energetics of gag grouper**. Thesis. University of Florida. (R/LR-B-53)
- Larsen, S. (In progress - 2004). **Influence of conspecific abundance and refuge availability on anti-predator responses by gag grouper, *Mycteroperca microlepis***. Thesis. University of Florida. (R/LR-B-53)
- Lear, J. (pending - 2004). **Lobster-octopus dynamics in the Florida Keys**. Thesis. Old Dominion University. (R/LR-B-50)

- Martin, J. (pending - 2005). **The use of *Vibrio vulnificus* bacteriophages to decontaminate naturally and experimentally infected oysters.** Thesis. Molecular Genetics & Microbiology, University of Florida. (R/LR-Q-24)
- Matei, E. (pending - 2005). **3D structure and dynamics of conopeptides in solution using nuclear magnetic resonance.** Dissertation. Department of Physics, Florida Atlantic University. (R/LR-MB-18)
- Molina, H. (pending - 2004). **Title to be determined.** Dissertation. (R/LR-B-47)
- Moller, Carolina. (pending - 2005). **Novel conopeptides from the venom of *C. floridanus* and *C. villepini*.** Dissertation. Department of Biology, Universidad Simon Bolivar, Caracas, Venezuela. (R/LR-MB-18)
- Mora, David. (pending - 2004) **Novel conopeptides from the venom of *C. gladiator*.** Thesis. Department of Chemistry and Biochemistry, Florida Atlantic University. Currently employed at Ivax Pharmaceuticals, Miami Gardens, Fl. (R/LR-MB-18)
- Murray, M. (pending - 2005). **Groundwater discharge in Sarasota Bay.** Dissertation. Department of Oceanography, Florida State University. (R/C-E-44)
- Nagy, B. (in progress - 2004). **Spatio-temporal distribution and abundance of pelagic planktivorous fish in relation to benthic habitat.** Dissertation . Department of Fisheries and Aquatic Sciences, University of Florida. (R/LR-B-53)
- Nissmen, L.D. (pending - 2004). **Investigation of the blood ark, *Anadara ovalis*, and ponderous ark, *Noetia ponderosa*, reproduction and development.** Thesis. Environmental Biology. Florida Atlantic University. (R/LR-37-PD)
- Pflueger, F.C. (pending - 2004). **Novel conopeptides from the venom of *C. brunneus*.** Dissertation. Department of Chemistry and Biochemistry, Florida Atlantic University. (R/LR-MB-18)
- Pisarewicz, Katarzyna. (pending - 2004). **Novel conopeptides from the venom of *C. mus*.** Thesis. Department of Chemistry and Biochemistry, Florida Atlantic University. (R/LR-MB-18)
- Powaser, C. (pending - 2010). **Global-scale population genetic structure in sharks.** Dissertation. Oceanographic Center, Guy Harvey Research Institute, Nova Southeastern University. (R/LR-B-56)
- Randall, M.T. (pending - 2004). **Tentative project "the ecology of drift macroalgae in a relatively undisturbed shallow water estuary along the Gulf Coast of Florida".** Thesis. Department of Fisheries and Aquatic Sciences, University of Florida. (R/LR-B-46)
- Rhyne, A.L. (pending - 2006). **Title to be determined.** Dissertation. Biology Department. Florida Institute of Technology. (E/INDST-2)
- Richards, V. (pending - 2005). **Genetic connectivity throughout Florida and the Caribbean: comparative phylogeography of diverse reef taxa with contrasting reproductive strategies.** Thesis. Oceanographic Center, Nova Southeastern University. (R/LR-B-54)
- Smith, J. (pending - 2005). **Title?** Thesis. (R/LR-Q-24).
- Stalker, J. (pending - 2008). **The use of natural chemical tracers to evaluate point and non-point source freshwater inputs to Biscayne Bay.** Dissertation. Department Earth Sciences. Florida International University. (R/C-E-51)
- Stiner, J. (pending - 2005). **The impact of predators on the oyster *Crassostrea virginica* in the Indian River Lagoon.** Thesis. Department of Biology, University of Central Florida. (R/C-E-45)

- Teare, B. (pending - 2005). **Multiple habitat utilization by a coastal fish: Diel, seasonal and ontogenetic movement of gray snapper (*Lutjanus griseus*)**. Thesis. Division of Marine Affairs. University of Miami, Rosenstiel School of Marine and Atmospheric Science. (R/C-E-48)
- Williams, O. (pending - 2004). **Novel conopeptides from the venom of *C. jaspedius***. Thesis. Department of Chemistry and Biochemistry, Florida Atlantic University. (R/LR-MB-18)
- Wittenrich, M. (pending – 2006). **Interspecific variation in the development of feeding mechanism and feeding performance in marine ornamental fish**. Thesis. (R/LR-A-41)
- Yan, Z. (pending - 2006). **Background noise cancellation and detection of underwater acoustic signals**. Dissertation. Department of Mechanical and Aerospace Engineering, University of Florida. (R/MI-13)

VI. Florida Sea Grant Extension Publications

A. Published

Florida Sea Grant College Program. 2006. **Florida Sea Grant college program directory 2006 through 2008**. SGEF-165. (SGEP-13)

B. In Press

Fann, D. (in press - 2006). **Navigational, Historical, and Environmental Perspective of Jupiter Inlet and Loxahatchee River**. SGEB-057.

VII. Extension Newsletters

A. Published

McGuire, M.P. 2006. St. Johns Ag. Center. (SGEP-13)
Aqua Notes. 6 p.
 February 6(1)

Sturmer, L. 2006. Levy County: Cooperative Extension Service (SGEP-13)
The Bivalve Bulletin. 6 p.
 February X(1)

VIII. Miscellaneous Papers, Articles and Conference Proceeding

A. Published

B. In Press

Greenawalt, J.M., Frazer, T.K., Jacoby, C.A., and W.S. Arnold. (in press - 2004). **Estimating mortality rates of bay scallops along Florida's Gulf coast**. In: 17th Biennial Conference of the Estuarine Research Federation. (SGEP-13)

Pinelli, J.-P., C. S. Subramanian, C. Lapilli, and L. Buist. (in press - 2005). Development of a wireless pressure sensing system for coastal wind monitoring. In: 4th European and African Conference on Wind Engineering, Prague, July 11-15, 2005. (R/C-S-43)

Posadas, B. and R. Posadas. (in press - 2003). **Consumer preferences for postharvest processed raw oyster products in Coastal Mississippi**. Technical Bulletin of the Mississippi Agricultural and Forestry Experiment Station. (R/LR-Q-23)

Subramanian, C. S., J.-P. Pinelli, C. Lapilli, and L. Buist. (in press - 2005). **A remote multi-point pressure sensing system.** In: 43rd AIAA Aerospace Sciences Meeting, Reno, Nevada, January 10-13 2005. (R/C-S-43)

Subramanian, C. S., Pinelli, J.-P and C. Lapilli. (in press - 2005). **Wireless pressure sensing during hurricanes Frances and Jeanne.** In: 10th Americas Conference on Wind Engineering, Baton Rouge, Louisiana, May 31- June 4, 2005. (R/C-S-43)

Valero-Aracama, C. M.E. Kane, N.L. Philman and S.B. Wilson. (in press – 2005). **Starch utilization during in vitro rooting of easy- and difficult-to-acclimatize sea oats (*Uniola paniculata* L).** Proceedings International Plant Propagators' Society 54: 22-27. (R/C-S-41)

C. Submitted, In Preparation, Planned

Adams, C., and L. Sturmer. (in review-2004). **Economic Impact of the Florida Cultured Hard Clam Industry.** In: Aquaculture America Vol. February. (SGEP-13)

McDaniel, L., D.W. Griffin, J. Crespo-Gomez, M.R. McLaughlin, and J.H. Paul. (submitted - 2002). **Evaluation of Marine Bacterial Lysogens for use in a Mutagen Detection (Prophage Induction) Assay.** American Society for Microbiology, Los Angeles. May 21-25. (R/LR-MB-3)

Otwell, W.S., V. Garrido, and A. Lahsen. (in progress - 2004). **Validations, verifications and audits.** Rome, Italy WHO/FAO. (SGEP-13)

Subramanian, C., J. P. Pinelli, L. Buist, A. Jha. (planned - 2003). **A wireless data acquisition system for coastal wind monitoring.** The 11th International Conference on Wind Engineering, June. (R/C-S-43)

Thieke, R.J., J. Engle, J. MacMahan, M. Schrader, and E. Gutierrez. (submitted - 2004). **Observed wave conditions during rip current “outbreaks” in Florida.** Proceedings 29th International Conference on Coastal Engineering, Lisbon, Portugal. (R/C-S-44)

IX. Websites

A. Published

Florida Sea Grant Home Page

www.flseagrant.org

Florida Bay

www.flseagrant.org

Seafood Science and Technology

www.sst.ifas.ufl.edu

Anchorage Inventory

http://flseagrant.ifas.ufl.edu/anchorage/anchorage_inventory.php

Non-Native Invasive Aquatic and Wetland Plants in the United States

www.plants.ifas.ufl.edu/seagrant/aquinv.html. Vic Ramey.

Escambia County Marine Extension.

www.escambia.ifas.ufl.edu/marine. Andrew P. Diller

The Miami-Dade County Sea Grant Extension Program.

www.miami-dade.ifas.ufl.edu/programs/seagrant.htm. Marella Crane.

REDstart Fisheries Enhancement Project

www.lee-county.com/extensionservices/marine.htm. Bob Wasno.

UF/Monroe County Extension Service.

www.monroe.ifas.ufl.edu/mces3.htm. Doug Gregory

St. Johns County - Northeast Marine Extension.

www.stjohns.ifas.ufl.edu/sea/seagrant.htm. Maia P McGuire

CALENDAR YEAR 2005

I. Florida Sea Grant Report

A. Published

II. Florida Sea Grant Technical Paper

A. Published

Florida Sea Grant. 2005. **Florida Sea Grant College Program Year 2005 work plan.** TP-148. (M/PM-13)

Florida Sea Grant College Program. 2005. **Florida Sea Grant College program strategic plan 2006 - 2009.** TP-144. (M/PM-13)

Florida Sea Grant. 2005. **Ahead of the class: Florida Sea Grant delivers marine education.** TP-139 (SGEP-13)

Florida Sea Grant. 2005. **Performance counts: Annual progress report for 2004.** TP-145. (M/PM-13)

Ruth, A., L. Sturmer, and C. Adams. 2005. **Organizational structures and strategies for the hard clam industry in Florida.** TP-141. (SGEP-13)

Sidman, C., R. Swett, T. Fik, S. Fann, D. Fann, and B. Sargent. 2005. **A recreational boating characterization for the greater charlotte harbor.** TP-150. (Ex-FWCC-3)

Sidman, C., T. Fik, R. Swett, B. Sargent, and S. Fann. 2005. **Estimating land and water-side service areas and use potential for boat ramps: A case study of Tampa and Sarasota Bays.** TP-142. (Ex-FWCC-1)

Swett, R., S. Fann and J. DeLaney. 2005. **An Assessment of Florida Boaters and their awareness of the Clean Vessel Act and Clean Marina Program.** TP-151. (SGEP-13)

Swett, R. and S. Fann. 2005. **A survey of stakeholders to determine Florida Sea Grant's 2006-2009 programmatic objectives for coastal communities and water-dependant businesses.** TP-149. (M/PM-13)

Stevely, J. 2005. **Proceedings of the 2004 Florida Artificial Reef Summit.** TP-136. (SGEP-13)

III. Books and Book Chapters

A. Published

Lee, C-S., P.J. O'Bryen, and N.H. Marcus. (Eds.). 2005. **Copepods in aquaculture.** Ames, Iowa: Blackwell Publishing. (R/LR-A-37)

Marcus, N.H. 2005. **Calaniod copepods, resting eggs, and aquaculture.** In: C-S Lee, P.J. O'Bryen, and N.M. Marcus (Eds.), *Copepods in Aquaculture*. pp. 3-9. Ames, Iowa: Blackwell Publishing. (R/LR-A-37)

Turingan, R.G., J.L. Beck, J.M. Krebs, and J.D. Licamele. 2005. **Development of feeding mechanics in marine fish larvae and the swimming behavior of zooplankton prey: Implications for rearing marine fishes.** In: C-S Lee, P.J. O'Bryen, and N.M. Marcus (Eds.), *Copepods in Aquaculture*. pp. 119-132. Ames, Iowa: Blackwell Publishing Professional. (R/LR-A-41)

IV. Journal Articles

A. Published

- Abercrombie, D.L., S.C. Clarke, and M.S. Shivji. 2005. **Global-scale genetic identification of hammerhead sharks: Application to assessment of the international fin trade and law enforcement.** *Conservation Genetics* 6:775-788. (R/LR-B-56)
- Butler, M.J. IV, T. Dolan, J. H. Hunt, W. F. Herrnkind, and K. Rose. 2005. **Recruitment in degraded marine habitats: A spatially-explicit, individual-based model for spiny lobster.** *Ecological Applications* 15: 902-918. (R/LR-B-50)
- Clarke, S., J.E. Magnussen, D.L. Abercrombie, M. McAllister, and M.S. Shivji. 2005. **Identification of shark species composition and proportion in the Honk Kong shark fin market using molecular genetics and trade records.** *Conservation Biology* 20(1):201-211. (R/LR-B-54)
- Fik, T., C. Sidman, B. Sargent, and R. Swett. 2005. **A methodology for delineating a primary service area for recreational boaters using a public access ramp: A case study of Cockroach Bay.** *The Florida Geographer* 36: 23-40. (Ex-FWCC-1)
- Garrido, L.R., and S. Otwell. 2005. **What is chem-free shrimp?** *Global Aquaculture Advocate* 8(4):30-32. (SGEP-13)
- Jiang, D., J.L. Rocha, S. Otwell, and S. Moss. 2005. **Potential of genetic selection for shrimp carcass, meat traits.** *Global Aquaculture Advocate* 8(1):57-58. (SGEP-13)
- Quevedo, A., J. Smith, G.E. Rodrick, and A.C. Wright. 2005. **Ice immersion as a postharvest treatment of oysters for the reduction of *Vibrio vulnificus*.** *Journal of Food Protection* 68(6): 1192-1197. (R/LR-Q-27)
- Sidman, C., and T. Fik. 2005. **Modeling spatial patterns of recreational boaters: Vessel, behavioral, and geographic considerations.** *Leisure Sciences* 27:175-189. (R/C-P-24)

V. Graduate Thesis and Dissertations

A. Published

- Valero-Aracama, C. 2005. **Physiological and anatomical basis for differences in growth performance during *in Vitro* and *ex Vitro* culture of sea oats (*Uniola paniculata L.*).** Dissertation. Environmental Horticulture. University of Florida. (R/C-S-41)
- Magnussen, J. E. 2005. **DNA Diagnostics for internationally protected and commercially traded shark species.** Thesis. Oceanographic Center, Guy Harvey Research Institute, Nova Southeastern University. (R/LR-B-54)

VI. Florida Sea Grant Extension Publications

A. Published

- Florida Sea Grant, Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute, and Duval Audubon Society. 2005. **Boating and angling guide to Duval County.** SGEF-163. (SGEP-13)
- Florida Sea Grant Extension Program. 2005. **Venting - A guide to releasing reef fish with ruptured swimbladders.** SGEF-162. (SGEP-13)

- Seaman, W.S. 2005. **Marine biotechnology research, development and education: Florida sea grant science promotes and adds value to ocean resources.** SGEF-164. (M/PM-13)
- Swett, R.A., and D.A. Fann. 2005. **The regional waterway management system: A tool for balancing coastal resource use and protection.** SGEF-161. (R/C-P-24)
- Swett, R. A., and D. A. Fann. 2005. **Navigational, historical, and environmental perspective of St. Augustine waterways.** SGEB-59. (SGEP-13)

VII. Extension Newsletters

A. Published

- Crane, M. 2005. Miami-Dade County. (SGEP-13)
At the Waters Edge. 4 p.
 December – January 5(1)
- Gregory, D. 2005. UF/IFAS/Monroe County Extension (SGEP-13)
Educating with Extension. 4 p.
 January 4(1)
 March 4(2)
 April 4(4)
 May 4(5)
 June 4(6)
 July 4(7)
 August 4(8)
 September 4(9)
 October 4(10)
 December 4(12)
- McGuire, M.P. 2005. St. Johns Ag. Center. (SGEP-13)
Aqua Notes. 6 p.
 February 5(1)
 May 5(2)
- Stevely, J.M. 2005. Manatee County Extension Services (SGEP-13)
The Marine Scene. Six Editions-Bimonthly. 6 p.
 January – February 46(1)
 March – April 46(2)
 May – June 46(3)
 July – August 46(4)
 September – October 46(5)
- Sturmer, L. 2005. Levy County: Cooperative Extension Service (SGEP-13)
The Bivalve Bulletin. 6 p.
 February IX(1)
 March IX(2)
- Sweat, D.E. 2005. Pasco County Extension Newsletter. (SGEP-13)
Marine Times. 8p.
 July - September 28(3)

VIII. Miscellaneous Papers, Articles and Conference Proceeding

A. Published

Creswell, R.L. (Ed). 2005. **GCFI proceedings of the fifty-sixth annual Gulf and Caribbean Fisheries Institute**. Roadtown, Tortola, British Virgin Islands, November 2003. (SGEP-13)

IX. Websites

A. Published

Florida Sea Grant Home Page

www.flseagrant.org

Florida Bay

www.flseagrant.org

Seafood Science and Technology

www.sst.ifas.ufl.edu

Anchorage Inventory

www.flseagrant.org/program_areas/boating/anchorage/anchorage_inventory.htm

Non-Native Invasive Aquatic and Wetland Plants in the United States

www.plants.ifas.ufl.edu/seagrant/aquinv.html. Vic Ramey.

Escambia County Marine Extension.

www.escambia.ifas.ufl.edu/marine. Andrew P. Diller

The Miami-Dade County Sea Grant Extension Program.

www.miami-dade.ifas.ufl.edu/programs/seagrant.htm. Marella Crane.

REDstart Fisheries Enhancement Project

www.lee-county.com/extensionservices/marine.htm. Bob Wasno.

UF/Monroe County Extension Service.

www.monroe.ifas.ufl.edu/mces3.htm. Doug Gregory

St. Johns County - Northeast Marine Extension.

www.stjohns.ifas.ufl.edu/sea/seagrant.htm. Maia P McGuire

CALENDAR YEAR 2004

I. Florida Sea Grant Reports

A. Published

National Seafood HACCP Alliance. 2004. HACCP: Programa de capacitacion en analisis de peligros y puntos criticos de control. Seafood HACCP Alliance Course – Fourth Edition for Training and Education. SGR-125. (SGR-120 in Spanish). (E/TP-2)

II. Florida Sea Grant Technical Papers

A. Published

Cato, J. 2004. **An investment in Florida's future: Sea Grant sponsored graduate education 2004.** TP-140. (M/PM-13)

Florida Sea Grant. 2004. **Florida Sea Grant College Program Year 2004 work plan.** TP-137. (M/PM-13)

Florida Sea Grant. 2004. **Performance counts: Annual progress report for 2003.** TP-135. (M/PM-13)

Florida Sea Grant. 2004. **Florida Sea Grant College Program 2004-2005 implementation plan.** TP-131. (M/PM-13)

Schrope, M., and W.S. Seaman. 2004. **The promise of marine biotechnology in Florida.** TP-132. (M/PM-13)

Schrope, M. 2004. **Marine biotechnology research in Florida Sea Grant 1996-2003: An outreach and communication foundation.** TP-134. (PD-03-03)

Sidman, C., T. Fik, and B. Sargent. 2004. **A recreational boating characterization for Tampa and Sarasota Bays.** TP-130. (R-C-P-24)

Swett, R., C. Sidman, T. Fik, and B. Sargent. 2004. **Florida's vessel title registration system as a source of boat locations and characteristics.** TP-138. (R/C-P-25-PD)

Tilghman, G.C., R. Francis-Floyd, and R.E. Klinger. 2004. **A histological atlas of surgeonfish.** TP-123. CD. (R/LR-A-30)

III. Books and Book Chapters

A. Published

Adams, C., W. Keithly, and S. Versaggi. 2004. **The shrimp import controversy.** Chapter 15 of international agricultural trade disputes – case studies in North America. Ed. A. Schmitz, C. Moss, T. Schmitz, and W. Koo. The University of Calgary Press. Alberta, Canada. pp. 225-244. (SGEP-13)

IV. Journal Articles

A. Published

Adams, C. E. Hernandez, and J. Cato. 2004. **The economic significance of the Gulf of Mexico related to population, income, employment, minerals, fisheries, and shipping.** Journal of Ocean and Coastal Management, 47(2004):565-580. (SGEP-13)

Adams, C., and L. Sturmer. 2004. **Hard clam culture: A commercial success story in Florida.** World Aquaculture 35(3):56-60. (SGEP-13)

- Adams, C., L. Sturmer, A. Hodges, and D. Mulkey. 2004. **The economic impact of the culture hard clam industry in Florida.** Journal of Applied Aquaculture 15(1/2):85-99. (SGEP-13)
- Cato, J. C. 2004. **Cleaner coastal waters with science and education.** Water Resources: Impact. 6(6):17-20. (M/PM-13)
- Coleman, F.C., P. Baker, and C. Koenig. 2004. **A review of Gulf of Mexico marine protected areas: Successes, failures and lessons learned.** Fisheries 29(2):10-21. (R/LR-B-51)
- Dillon, K. and J. Chanton. 2004. **Nutrient transformations between rainfall and stormwater runoff in an urbanized coastal environment, Sarasota Bay, Florida.** Limnology and Oceanography, 50:62-69. (R/C-E-44)
- Greenawalt, J.M., T.K. Frazer, S.R. Keller, and C.A. Jacoby. 2004. **Abundance and size of bay scallops in heterogeneous seagrass habitats along the Gulf coast of Florida.** Gulf of Mexico Marine Science, 22(1), 74-84. (SGEP-13)
- Harwood, V., J.P. Ghandi, and A.C. Wright. 2004. **Methods for isolation and confirmation of *Vibrio vulnificus* from oysters and environmental sources: A review.** Journal of Microbial Methods, 59: 301-316. (R/LR-MB-15)
- Joseph, L. A. and A. C. Wright. 2004. ***Vibrio vulnificus* capsular polysaccharide inhibits boil formation.** Journal of Bacteriol. 186:889-893. (R/LR-MB-15)
- Kohl, A. and R. Kerr. 2004. **Pseudopterosin biosynthesis: Aromatization of the diterpene cyclase product, elisabethatriene.** Marine Drugs, 1:54-65. (R/LR-MB-14)
- Kohl, A. and R. Kerr. 2004. **Identification and characterization of the pseudopterosin diterpene cyclase, elisabethatriene synthase, from the marine gorgonian, *Pseudopterogorgia elisabethae*.** Arch. Biochem. Biophys. 424:97-104. (R/LR-MB-14)
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- MacMahan, J.H., A. Reniers, T.P. Stanton, and E.B. Thornton. 2004. **Infragravity rip current pulsations.** Journal of Geological Research 109(C01033):1-9. (R/C-S-42)
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IX. Websites

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Florida Bay

SST

Anchorage

Non-Native Invasive Aquatic and Wetland Plants in the United States

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Maia P McGuire

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II. Florida Sea Grant Technical Papers

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III. Books and Book Chapters

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- Brown, J.J., 2002. **Comprehensive sediment budget for the east coast of Florida.** Thesis. University of Florida. (R/C-S-39)
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- Jackson, D. 2002. **NOAA coastal storms initiative.** SGEF-147. (E/T-10)
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- Seaman, W., and R. Scott. 2002. **Biotechnology's new wave in Florida.** SGEF-149 (PD-02-3)
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VIII. Miscellaneous Papers, Articles and Conference Proceedings

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- Sweat, D. E. 2002. **Recreational harvesting of the Florida Bay scallop.** Florida Sea Grant, 2002. (SGEP-13)
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IX. CD-ROM Releases

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Florida Sea Grant Home Page.

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IX. CD-ROM Releases

None

X. Home Page

Florida Sea Grant Home Page.

7.0 STUDENTS

An Investment in Florida's Future Through Sea Grant Sponsored Graduate Education

Introduction

At the heart of Florida Sea Grant's program are the scientific investigations that it supports. On an annual basis, at least 50 percent of Florida Sea Grant's core federal funding is used to support research. An annual goal is that at least 25 percent of research funds are used to support graduate student assistantships and other direct student involvement in research activity.

Investment in the future of Florida's coastal resources requires both capital and labor. It is critical that the labor force be highly trained and skilled. As a university- and issue-based research and education program, Florida Sea Grant draws upon its partnership of people, universities, governments and businesses to ensure that Florida has a technically trained work force and scientifically and environmentally informed citizens.

Through support to graduate education, Florida Sea Grant produces highly trained scientists, social scientists, engineers and other professionals that increase Florida's economic competitiveness both nationally and internationally, and who devise and lead creative management concepts to keep Florida's coastal environment sustainable for future generations.

The opening of new viewpoints and perspectives is one of the most important challenges to higher education. In addition to gaining scientific knowledge and research skills, students need to engage interdisciplinary and

multidisciplinary perspectives, use multiple contexts in solving problems, and communicate complex ideas well in work group settings.

Fostering these important skills requires a diversification of learning opportunities at the college or university level. Florida Sea Grant participates in various fellowship and scholarship programs and traditional research assistantships that serve to broaden the experiences of graduate students, and in some cases, undergraduates. Florida Sea Grant has provided substantial support to educating Florida's future marine scientists and environmental professionals by giving selected graduate students the opportunity to develop their research and analytical skills by assisting scientists with Sea Grant projects. These graduate students are then prepared to assume prominent positions where they can impact directly on the continued wise use, sustainable development, and conservation of marine and coastal resources. Florida Sea Grant will also continue to invest in its faculty and staff so they have the necessary skills and training to meet the long-term needs of the organization.

Florida Sea Grant funded graduate students apply their skills and training from over 30 disciplines in research on:

- Aquaculture
- Marine Biotechnology
- Fisheries
- Seafood Safety and Quality
- Water Dependent Businesses
- Coastal Water Quality
- Coastal Habitats
- Coastal Storms and Hazards

Florida Sea Grant Student Programs

Florida Sea Grant does not "teach" or "graduate" students in the tradition of an academic department. However, funding and support for graduate students in many academic departments statewide is provided through Florida Sea Grant research projects and with other student fellowship and scholarship programs. Students receive Florida Sea Grant support through both public and private sources of funds.

Florida Sea Grant Student Programs	
Public Funds	Private Funds
<ul style="list-style-type: none"> • Research Assistantships • Dean John A. Knauss Marine Policy Fellowships • Sea Grant Industrial Fellowships • National Marine Fisheries Service/Sea Grant Fellows in Marine Economics and Populations Dynamics • NOAA Coastal Service Center Coastal Management Fellowship 	<ul style="list-style-type: none"> • Aylesworth Foundation for the Advancement of Marine Sciences • Old Salt Fishing Club Scholarship • Charles Skoch Sea Grant Scholarship

Beginning in the early-1980s, a decline occurred in the number of students supported by federal Florida Sea Grant funds. This decline began and continued during the “tough” federal budget years for Sea Grant when overall federal Sea Grant appropriations were cut (1981) with recovery not really beginning until the mid-1980s. University funding in Florida also suffered during that time and faculty writing Sea Grant (and other granting agency) proposals included summer salaries to protect employment, at the expense of funding that was formerly used for graduate students.

Because of the high priority within Florida Sea Grant for student support, corrective action was taken to reverse the decline in student support.

Beginning in 1993, Florida Sea Grant adopted the policy that, at minimum, 25 percent of the Florida Sea Grant federal research budget would be used to support graduate students. Beginning in 1998, Florida Sea Grant research project funding guidelines indicated that the inclusion of graduate students in proposals would give the proposal a competitive edge, assuming all other review criteria were satisfactory. This policy has been followed since, and funding has been short of the goal only one time, in 1996 (see Table 1).

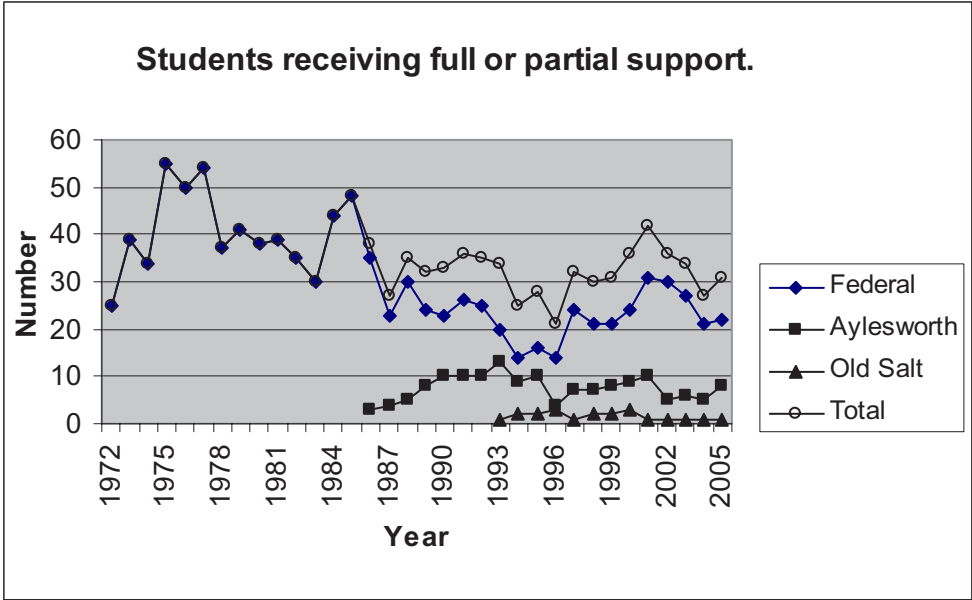
Table 1. Florida Sea Grant core federal funds used for graduate student support, 1993-2006.

Graduate Student Funding	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
As Percent of Research Funds	40	31	31	24	27	36	30	30	27	40	43	38	39	30
As Percent of All Funds	19	13	13	12	13	17	15	14	14	21	22	20	17	15

Beginning in 1986, Florida Sea Grant also initiated private support for Sea Grant sponsored students. The Aylesworth Foundation for the Advancement of Marine Sciences was formed with a major portion of its funding devoted to Florida Sea Grant scholarships. The Old Salt Fishing Club also created a scholarship program for students with both scholarship programs conducted in partnership with the Florida Sea Grant Program. The Charles Skoch Sea Grant Scholarship Program was created in 1997.

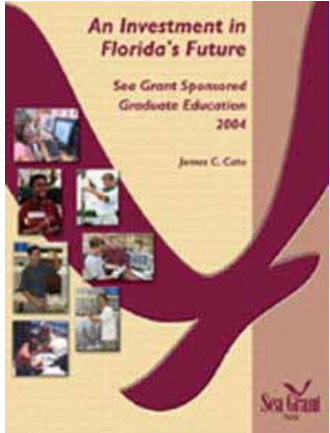
- FSG assisted the Aylesworth family, St. Petersburg, Florida, in the establishment of this private foundation in 1986. An annual FSG competition is held statewide to select scholarship recipients. As of January 2006, 83 students in 12 Florida universities have received scholarships averaging \$5,554 for a total of \$460,974 in support. Seventy-seven completed degree programs by early 2006.
- FSG and the Aylesworth Foundation also administer a scholarship program using funds generated by the Old Salt Fishing Club of St. Petersburg, Florida, for students at the University of South Florida. Since 1993, 14 students have received scholarships totaling \$35,850, or \$2,561 per student.
- In 1997, the Charles Skoch Family of Boynton Beach, Florida, created a Florida Sea Grant endowment at the University of Florida that funds a \$1,000 per year scholarship to a high school senior that is selected through competition in the Florida Annual State Science and Engineering Fair. Eight annual scholarships have been awarded through 2005.

The overall impact of these efforts has been to cause an increasing trend in the total number of graduate students supported since 1996 (the lowest year ever). For 2005, a total of 31 graduate students received some form of Sea Grant support (see Figure 1).



Student Program Analysis

An exhaustive student tracking and analysis of Florida Sea Grant student programs was begun in early 2001, completed during 2002 and the results published in November 2002. That report was updated in 2004 in Sea Grant Technical Paper 140, “An investment in Florida’s future: Sea Grant sponsored graduate education, 2004.” A summary of key highlights from that document was included in the 2004 annual report and the complete document is available on the Florida Sea Grant website.



8.0 PROGRAM AWARDS

The following awards represent a sample of the awards presented to various Florida Sea Grant Extension and Education faculty and statewide, regional and national awards during 2005.

Local Awards

- Marella Crane Gold IMAGE Award for Biscayne Bay Calendar, UF/IFAS for Creative Works Development
- Promotional Materials Award, Florida Association of Natural Resources Extension Professionals for the Fuel Spill Kit Bags for Boaters
- Poster Award “Have you Been Biscayne Bay Friendly” by Florida Association of Natural Resource Extension Professionals
- Andrew Diller Resource Rangers Youth Environmental Education Program
Chris Verlinde First Place Gulf Guardian Award: Youth Education Category
 US EPA Gulf of Mexico Program
 <http://www.epa.gov/gmpo/gulfguard.html>
- “Resource Rangers: Recycling” video/tv episode
 Gold Award
 MarCom Creative Awards
 <http://www.marcomawards.com>
- “Resource Rangers: Recycling” video/tv episode
 Silver Award
 Davey Awards
 <http://www.daveyawards.com>
- John Stevely Cortez Community Service, presented by Florida Institute of Saltwater Heritage Community Service Award, Florida Institute for Saltwater Heritage (FISH)
- Don Sweat Organized Fishermen of Florida (OFF) Crystal River Chapter, Letter of Appreciation St. Petersburg Pier Aquarium Inc., Letter of Appreciation with Presented Award for Board Activities
 NOAA Letter of Appreciation for cooperative assistance at St. Petersburg Boat Show
 West Florida Council of Boy Scouts of America, Certificate of Appreciation for Merit Badge Counselor assistance

Statewide

- Dianne Behringer Early Career Leadership , UF/IFAS Extension, FANREP for demonstrating extension leadership with less than 5 years of service.
- LeRoy Creswell Most innovative extension program, Association of Natural Resource Extension Professionals, Florida Chapter

Andrew Diller Chris Verlinde	“Operation: Military Kids” Army Reserve 412 Beach ecology field events 2005 Search for Program Excellence Award Florida Association of Extension 4-H Agents
Charles Jacoby	2005 FANREP Award of Excellence for a Long Publication, Florida Association of Natural Resource Professionals
Steve Kearn	Crystal Award, Florida Government Communicators Association
Maia McGuire	John Beakley Marine Science Educator of the Year Award (FMSEA) Sadler Distinguished Extension Professional Enhancement Award (IFAS)
Robert Swett	2005 Wachovia Distinguished Extension Professional Enhancement Award, University of Florida Cooperative Extension Service, Distinguished record of Extension programming

Regional

Douglas Gregory	Certificate of Appreciation and Service Plaque, 11 years of service on the Finfish Stock Assessment Panel, Gulf of Mexico Fishery Management Council
Charles Jacoby	2005 Gulf Guardians Awards Program Certificate of Appreciation, US Environmental Protection Agency Gulf of Mexico Program, Award for improving conditions in the Gulf of Mexico
John Stevely	Boca Grande Pass Clean-Up Certificate of Appreciation presented by Environmental Protection Agency, Gulf of Mexico Program

9.0 OUTREACH ACTIVITIES

This section contains a brief description of outreach activities organized into five areas: (1) major program activities, (2) major program plans of work, (3) workshops, conferences, displays and signage, (4) web-based technologies and (5) meetings and monthly summaries. The reader should note that this section reports activities, not impacts. Impacts are reported in section 2.0 of this document as accomplishments and benefits, and are reported under specific goals and tasks. This section contains only summary information to highlight major areas of outreach activity.

Major Program Activities

Many of the most successful outreach activities represent “programs” of work. That is, they are much more than one major workshop or conference. The “program” may utilize research faculty or research findings, may involve several methods of outreach technology or may represent a series of workshops. All these elements are reflected during major activities ongoing during 2005. Several examples follow.

Marine Biotechnology

In contrast to many other subjects addressed by university outreach and extension efforts, in which the established audiences and client groups are large, widespread, and established, marine biotechnology is relatively small and young. But its promise to contribute socially and economically significant health and industry-related products and processes from living ocean resources is great. Thus, Florida Sea Grant has found itself in a unique role of educating decision-makers with focused needs, including business executives, legislators and their staffs, and scientists -- in contrast to broad and general public audiences. A principal effort was organization by FSG of the National Marine Biotechnology Briefings, held in Washington, D.C. in November 2005, to educate stakeholders in industry and government. The session on Capitol Hill was attended by 60 individuals, including representation of the staffs of at least 10% of Congressional offices, and was co-sponsored by BIO (the Biotechnology Industry Organization). Planning was initiated for the Florida Marine Biotechnology Summit V, for 2006, and likely to be held concurrently with the annual BioFlorida conference. This affords an outstanding and unique opportunity to deliver science-based information directly to executives in industry, who may be considering “the buzz” about marine biotechnology and whether to get involved. The magazine, “The Promise of Marine Biotechnology in Florida,” published in 2004, as a calling-card style corporate report for use in educating business, industry, educational, media and other leaders, won an award from the Florida Public Relations Association and the Florida Government Communicators Association. Development of a national website on marine biotechnology continued, with completion slated for 2006. The FSG associate director participated on the national Sea Grant network “theme team” for marine biotechnology to develop greater coordination and resources among leading Sea Grant programs in the U.S., participated on the board of directors of BIOFlorida, the statewide trade association for this field, and maintained liaison with Scripps Florida as well as Tequesta Marine Biosciences, the start-up company based in part on FSG research. Finally, a business plan was drafted, in concert with the industry advisory panel.

Florida Ocean Alliance

The Florida Ocean Alliance is now into its sixth year. This is a non-partisan organization dedicated to bringing together government, academia and private sectors in Florida to protect and embrace Florida’s ocean and coastal resources for continued social and economic benefits. Members of the Florida Ocean Alliance in 2005 were:

Audubon of Florida
Carnival Cruise Lines
FAU/Cantanesse Center for Urban and
Environmental Problems
Florida Institute of Oceanography
Florida Ports Council
Florida Sea Grant
Harbor Branch Oceanographic Institution
Hubbs-Sea World Research Institute

Lewis, Longman & Walker, P.A.
Marine Industries Association of South Florida
Maritime Communications Services
Organized Fishermen of Florida
IGFA, Fishing Hall of Fame and Museum
Mote Marine Laboratory
Royal Caribbean International Cruises
The Nature Conservancy
University of Miami/RSMAS

The Alliance assists with the annual Ocean's Day in Tallahassee and provides other educational services throughout the year.

Florida Ocean and Coastal Resources Council (FOCRC)

The FOCRC was created during 2005 by the Florida Legislature. It is an 18-member council and is co-chaired by the Secretary of the Florida Department of Environmental Regulation, the Executive Director of the Florida Fish and Wildlife Conservation Commission and the Commissioner of the Florida Department of Agriculture and Consumer Services. The responsibilities of the Council are to conduct a statewide marine and ocean research review, complete an annual scientific research plan that will be used by the Legislature in making funding decisions on needed projects and conduct a resource assessment that shall serve as a baseline of information to assist in the research plan. Florida Sea Grant is directly involved in this statewide effort since James Cato, Director, is appointed to the FOCRC for a four-year term.

Ocean Observing Systems

Florida Sea Grant have been proactive in the development of extension and education activities of two regional ocean observing system programs being developed for the Southeast Atlantic and Gulf of Mexico regions. These regional systems will be part of the national integrated ocean observing system (IOOS) that is in the initial stages of development in the United States. FSG is a member of the Southeast Atlantic Coastal Ocean Observing System (SEACOOS) project. This is an integrated extension and education outreach effort with the Sea Grant programs of North Carolina, South Carolina, and Georgia; a host of universities involved in ocean observing systems research, and the Southeast Atlantic COSEE, Florida COSEE, and Gulf of Mexico-COSEE projects. A SEACOOS Extension and Education Work Group has been established to coordinate regional extension and education projects. Mike Spranger serves as FSG representative to the work group. Chris Simoniello serves as SEACOOS Regional Extension Coordinator. Her responsibilities are to develop extension and educational materials, as well as provide support that will increase the capacities for the southeast region's Sea Grant Programs to develop localized SEACOOS programs. She works with the 11 partner university scientists, educators and extension faculty in the region in the development of these educational programs and products. She is based at the University of South Florida in St. Petersburg.

Florida Sea Grant is also involved in the Gulf of Mexico Coastal Ocean Observing System (GCOOS). FSG is a signed party to the GCOOS Memorandum of Agreement, and FSG faculty actively participate in GCOOS meetings. In 2005, Mike Spranger was elected to the GCOOS Board of Directors, representing the extension and education community. In this capacity, he assisted in development of the GCOOS business plan. He also was asked to serve as interim chair of the GCOOS Education and Outreach Council (EOC), and to coordinate the first EOC meeting that will be held in the spring of 2006. At this meeting, the EOC will develop their terms of reference, organizational structure and annual work plan, and provide recommendations to the GCOOS Board of Directors. Presentations on GCOOS were made to a number of Florida organizations in 2005. These included the Clean Boating Partnership, Florida Marine Science Educator Association, the Extension Professional Association of Florida, and the Florida Caucus on Ocean Observing Systems. Presentations were also made at several

national meetings that included Assembly of Sea Grant Program Leaders, held in June in Rockport, Maine, and the Marine Technology Society meeting, held in September in Washington DC.

Marinas and Boatyards

Florida Sea Grant is a member of the Florida Clean Boating Partnership (CBP), the sponsor of the first clean marina program in the nation. Major partners include the Florida Department of Environmental Protection (FDEP), Marine Industries of Florida, and U.S. Coast Guard. FSG contributions to the CBP include writing the curricula for clean marina and clean boatyard workshops. Mike Spranger serves on the CBP Board and serves on the CBP Education Committee. Don Jackson served as chair of the CBP Visioning Committee. FSG County faculty participate in local workshop presentations and are involved in marina “designation” inspections with the FDEP and Marine Industries representatives. Currently, there are 113 clean marinas and 21 clean boatyards designated with 150 more “in the pipeline.” Ten other states are now involved in clean marina programs, and a number of states are contemplating initiating a program. Most of these programs have used elements of the Florida Clean Marina model in designing their programs. In addition, over 2,000 copies of the popular “Panic File” produced by FSG on behalf of the CBP have been distributed to marinas across the United States.

The CBP have calculated that they have been responsible for preventing a significant level of pollution and contaminants from entering Florida’s waterway. CBP estimates over 600,000 pounds of glass, 1.5 million pounds of paper, 3.7 million pounds of aluminum, 5.6 million gallons of oil and over 1 million gallons of antifreeze have been recycled or properly handled that kept these materials from reaching Florida’s waterways. The CBP has an active bilge sock distribution project that provides the sock to boaters that frequent the Clean Marina and pledge to be a clean boater. Each sock absorbs 2.5-4 quarts of oil and grease from the bilge area. CBP estimates more than 13,500 gallons of materials were collected from bilge areas in individual boats.

National Sea Grant Extension Academy

Florida Sea Grant was instrumental in the design, development and implementation of the first National Sea Grant Extension Academy (NSGEA). Mike Spranger and Don Jackson developed the agenda and format, and secured funding for this program. Other key instructors and partners included Mike Liffmann (Louisiana Sea Grant), Brian Miller (Illinois-Indiana Sea Grant) and Sacheen Tavares (NOAA Coastal Service Center). The goal of the NSGEA was to improve the knowledge and skills needed for professionals and staff working in Sea Grant Extension, to strengthen the national sea grant extension network by building internal capacity, to supplement state training efforts, to supplement state training efforts, and to instill a Sea Grant ethos among Academy participants. Three sessions were held. Session I was held in Washington DC where participants learned the fundamentals in planning, developing, implementing and evaluation extension programs. They learned about the history of Sea Grant, and had a field day in Washington DC where they met with administrators at the National Sea Grant Office and NOAA headquarters. Session II was a distant learning activity where each participant developed an annual plan of work, based on training during session I. Session III was held in Pensacola, Florida where their individual plans of work was reviewed. They also received training in conflict management, meeting planning, grant writing, and working with the media, Thirty Sea Grant Extension Faculty from 21 states participated in the Academy. The participants ranked this academy as excellent, and one of the best they have ever attended. A common comment was that this training accelerated their effectiveness as Sea Grant Extension faculty in developing and implementing extension programs in their respective states. Skills learned have been used in planning meetings, writing grants, working with the media and handling contentious situations.

Gulf of Mexico Center for Ocean Science Education Excellence (GOM-COSEE)

Florida Sea Grant is part of a unique, thematic collaboration among the five states (Alabama, Florida, Louisiana, Mississippi, Texas) that border the Gulf of Mexico. The primary goal of GOM-COSEE is to strengthen ocean sciences education through the interpretation of research results for interested public, pre-college teachers

and their students, informal educators and university faculty and their students concerning the relevance of the oceans to our daily lives. This project links educators, researchers, and interested publics both regionally and thematically, focusing on the Gulf of Mexico as the vehicle to teach ocean sciences education. FSG collaborators include the Florida Museum of Natural History and the University of Florida Seahorse Key Marine Lab.

An intense one-week, field-based education institute for nine teachers and seven scientists was held in the summer of 2005. The field-based course focused on the broad areas of coastal habitats, coastal processes and marine technologies, and how they relate to federal and state curricula standards. FSG Extension faculty (Chuck Jacoby, Scott Jackson, Maia McGuire, Chris Simoniello, Mike Spranger, Bob Swett) provided presentations at the institute. The field-based institute was complemented with a six-week internet-based distance learning program. Topics covered in this distance learning program included hypoxia, harmful algal blooms, ocean observing systems, coastal bird and animal life, and fisheries. More than 50 educators from the region participated in the online program. Evaluations indicate that all participants increased their knowledge and are utilizing this new knowledge and skills in their respective classrooms. GOM-COSEE and FSG also were sponsors of the Florida Marine Science Educator Association Conference, held in St. Augustine, Florida; the Marine Science Extension In-Service Training, held in Cedar Key; and the 2005 State 4H Youth Marine Ecology Contest that was held at the 4H Youth Camp in the Ocala National Forest.

NOAA Coastal Storms Initiative

Florida continued with the outreach and extension component of the NOAA Coastal Storms Initiative (CSI), a study that focused on the St. Johns watershed. This national pilot involves several units within NOAA for research and data cataloguing. The objective of this research is to forecast a smaller footprint of prediction of coastal storms, amelioration of effects of storms, and better planning efforts based on knowledge of potential storm surges, flooding, and vulnerability to contaminant releases during a storm events. Information and presentation on the outreach process and products produced was provided at a meeting of researchers, outreach personnel and county officials held in early 2005 in Jacksonville. Over 60 individuals attended the meeting. Don Jackson provided the logistical arrangements and provided a presentation at the session. He also provided information on CSI activities at such events as the annual meeting of the Extension Professional Association of Florida, the Miami Boat Show, the State Clean Boating Partnership, and annual meeting of the Florida Sea Grant Extension.

Major Program Plans of Work

Long range planning for the FSG Extension Program is carried out under the auspices of the University of Florida IFAS Extension's four-year plan of work and strategic plan. Every four years, Extension develops a planning process that is used to define their future needs and work activities. The work activities are updated annually through the annual plans of work that are developed by all Extension faculty. A new planning and reporting process was initiated in 2004. Extension faculty now concentrate their activities through Goal Teams, Focus Teams and Work Action Groups. Goal areas in identified for 2004-2007 that are listed below:

1. To enhance and maintain agriculture and food systems.
2. To maintain and enhance Florida's environment.
3. To develop responsible and productive youth through 4H and other youth programs.
4. To create and maintain Florida friendly landscapes
5. To assist individuals and families achieve economic well-being and life quality
6. To achieve economic prosperity and community vitality in Florida's urban and rural communities
7. To promote professional development designed to enhance organizational efficiency and effectiveness.

The goal teams and focus teams (sub areas) consist of interested faculty in specific areas of common interest. Specific task-oriented work action groups (WAGs) are then formed among interested specialists and agents to

develop materials and educational activities for local, county, state and regional audiences. For FSG, there are currently 14 WAGs that focus on such topics as artificial reefs, ethical angling, clean marinas/boatyards, invasive species, boating and waterway management, seafood technology and safety, water quality, and marine education. Updates from these w WAGs were provided at the FSG Extension annual meeting, held in October 2005 in Gainesville, Florida. The Extension faculty utilized these updates to refine their their 2006 plans of work.

To develop their major extension program activities, FSG Extension faculty rely on advisory committees to assist in identifying program needs, strategic planning and priority setting. Each campus faculty has one or more advisory committees to guide the development of their annual plan of work (POW). These POWs correspond to one of the seven Extension goal areas cited above. These individual POWs are integrated into the statewide goal and focus team areas the University of Florida Faculty Accountability System.

This annual planning process accounts for approximately 70 percent of a FSG Extension faculty's work activities. The goals and tasks related to extension activities found in Section 2.0 result from the planning efforts described above. The remaining 30 percent of a FSG Extension faculty member's time is used for emerging issues, responding to stakeholder questions and dealing with important marine issues that may arise outside of the seven identified goal areas. Annually, the planned activities undertaken in these POWs are documented through a report of accomplishment (ROA). The ROAs are used for individual staff evaluation, as well as used to develop new FSG work activities at the annual FSG Extension meeting that is generally held in the Fall.

FSG Extension Program proposals are also developed as a part of the overall Florida Sea Grant College omnibus proposal. Two, three or four-year proposals are developed, as appropriated. Much of the material for the FSG Extension Omnibus proposal is taken from the UF IFAS Extension planning process that has been previously discussed. FSG Extension faculty POWs are also integrated into the overall Florida Sea Grant College Program's long range planning process, which helps link identified research and extension program priorities and program areas.

Workshops, Conferences, Displays and Signage

Workshops and Conferences

A list of workshops and conferences (educational events) is presented in this section, along with the major outreach activities summarized here and in the Accomplishments and Benefits (Section 2.0). The summary in Table 9.1 includes specific workshops and conferences that included presentations made by Sea Grant faculty, researchers and program managers during 2005. In most cases the workshop or conference was held to accomplish one of the tasks in Section 2.0. In all cases the data includes only those with programmatic content deliveries made by faculty or management, and does not include administrative presentations. The listing also includes research faculty that were funded by Florida Sea Grant, tabulated from their annual research project reports. The complete list is presented in Table 9.2 at the end of this section.

During 2005, a total of 827 educational events were conducted (includes data received by April 26, 2006). These range across the following examples of activities.

- scientific presentations by funded research faculty at scientific conference
- workshops organized by Sea Grant Extension faculty
- marine 4-H camps
- K-12 teacher education events
- international conferences organized
- media articles and large attendance events
- etc.

The number of examples is quite varied, but the activity has been organized by Florida Sea Grant goal area as shown in Figure 9.1. The three leading areas are marine education (42.3%), fisheries (15.8%), and ecosystem health (14.1%). Audience type has also been documented as shown in Figure 9.2. Community and general education is the leading audience type (30.5%). Finally, Figure 9.3 shows that 91.5% of all activity has occurred within Florida.

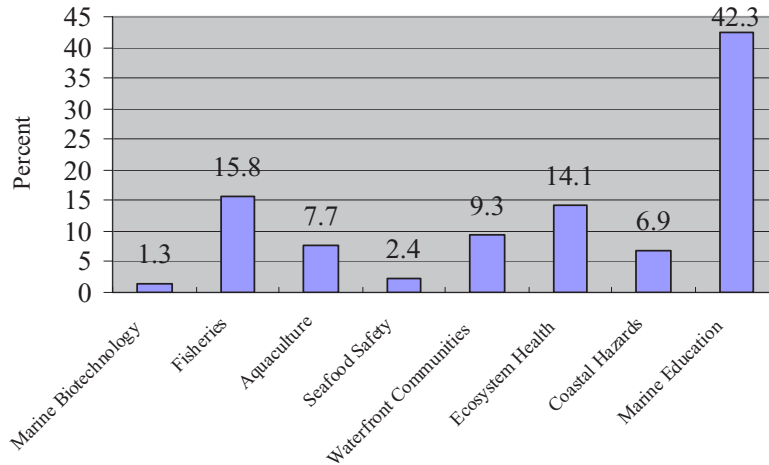


Figure 9.1 -- Percent of educational events by Florida Sea Grant goal area, 2005.

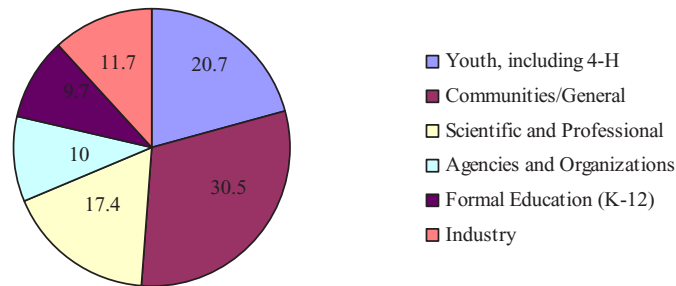


Figure 9.2 -- Percent of educational events by Florida Sea Grant audience type, 2005.

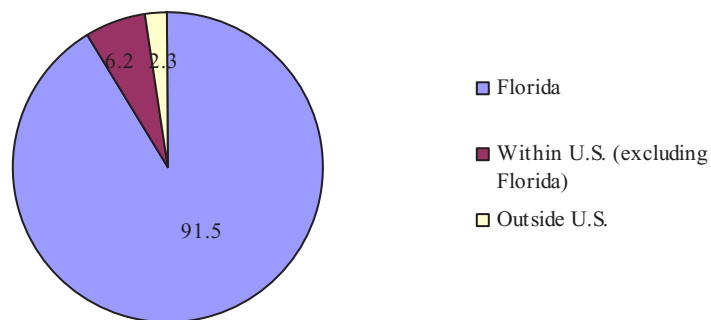


Figure 9.3 -- Percent of educational events by Florida Sea Grant geographic area of delivery, 2005.

Table 9.1 Total number of Florida Sea Grant educational events by audience type, geographic location and strategic goal area, 2005										
Audience Type/Strategic Goal Area	1-Marine Biotechnology	2-Fisheries	3-Aquaculture	4-Seafood Safety	5-Waterfront Communities	6-Ecosystem Health	7-Coastal Hazards	8-Marine Education	Total	Percent
Agencies/Organizations	1	13	7	1	19	13	13	16	83	10.0
Communities/General	0	52	17	2	26	48	18	89	252	30.5
Formal Education	0	3	6	0	2	7	2	60	80	9.7
Industry	1	32	15	12	13	11	5	8	97	11.7
Scientific/Professional	9	25	18	5	17	29	15	53	171	20.7
Youth, including 4-H	0	6	1	0	0	9	4	124	144	17.4
Total	11	131	64	20	77	117	57	350	827	100.0
Percent	1.3	15.8	7.7	2.4	9.3	14.1	6.9	42.3	100.0	
Within Florida	4	113	51	18	76	112	53	330	757	91.5
Within U.S. (outside of Florida)	2	6	12	2	1	4	4	20	51	6.2
Outside U.S.	5	12	1	0	0	1	0	0	19	2.3
Total	11	131	64	20	77	117	57	350	827	100.0

The educational events were also separated into two categories: (1) media or large attendance events and (2) those events that targeted to people in attendance at a workshop or conference (face-to-face). Of the 827 events during 2005, 83 were media or large attendance events with a potential total audience of 11 million. The remaining 744 were face-to-face educational events. Of these, attendance of 35,457 was recorded at 655 events, or 53 people per event. Extrapolating to the total means that 40,174 people attended all events. Since 827 events occurred during the calendar year (365 days), an average of 2.3 events per day occurred during 2005.

Displays and Visual Aids

Communications staff supports research, extension and education programs by developing displays, signage and other visual aids that share information or explain complex issues to an audience. In 2005, staff produced a wide variety of support pieces for events ranging from the Program Assessment Team (PAT) review to the Marine Biotechnology Briefings in Washington, DC. The PAT evaluation was a particularly challenging event that required the production of a comprehensive group of visually consistent yet functionally different communications products. Once a theme and style had been established for the principal materials, the Briefing Book, that design was adapted across various media, including PowerPoint backgrounds, reception invitations, CD covers, and photo frames given in appreciation to the more than 65 individuals who participated in the PAT seminars. The efforts received special recognition from the PAT chair.

A sample of displays and productions for 2005 follows:

Theme	Event/Need	Location
Graduate education opportunities	Oceans Day in the Capitol	Tallahassee, FL
Contributions, Impacts, Successes Briefing Binder and Text Ocean Alliance Poster PowerPoint templates Commemorative photo frames	2000-04 Program Assessment	Gainesville, FL
Coastline panels, statewide network	2000-04 Program Assessment	Statewide
SEACOOS/Ocean observation	2005 Miami Boat Show	Miami, FL
SEACOOS education working group	SEACOOS Summer Workshop	Jacksonville, FL
SEACOOS/SEACOORA	SEACOOS Fall Workshop	Columbia, SC
Best Management Practices	Sea Grant Week	Rockport, ME
Monofilament recycling signs	Charlotte County recycling campaign	Port Charlotte, FL
Information packet	Marine Biotechnology Briefings	Washington, DC
REDstart poster, advertisement	Caloosa Catch-and-Release Tournament	Fort Myers, FL
Ethical angling	Florida Outdoor Writers Association	Lakeland, FL
Fish venting	Nextel Cup – Daytona 500	Daytona, FL
Clam aquaculture success	Net Loss/Net Gain Arts Performance	Cedar Key, FL

Web-based Technologies

Maintenance and enhancement of the Florida Sea Grant website (www.FLSeaGrant.org) continued through 2005. This website is, and continues to grow as, the “window to the world” for Florida Sea Grant. It serves as a principal contact point, reference and archive for Sea Grant information serving Sea Grant personnel, collaborators and outside users. It has become a valuable and dependable resource.

Web enhancement is a scheduled and concerted effort to create new content and delivery techniques that give users greater utility than was previously available. Page maintenance is a continual effort that requires almost daily attention, be it revision of html coding, replacement of dead links, or trouble-shooting display errors. During 2005, maintenance and enhancement of the Florida Sea Grant website has involved the collapsing of ten strategic program areas folders into nine, and the conversion of existing pages to CSS style-sheet regulated pages for enhanced consistency and faster download times.

New feature stories and links have been added to Sea Grant programmatic areas. All numbered Florida Sea Grant publications for 2005 have been added. New staff listings to accommodate the expanding network of county extension faculty have been incorporated; others have been updated. The series of illustrated impact statements highlighting successful efforts of Florida Sea Grant and its partners that appears on the home page has been expanded. Out-dated information continues to be routinely replaced with current information.

Advances have also been made with “interactive” aspects of web-based technologies. The web-based Request for Proposal and Review, constructed in 2003 to streamline Florida Sea Grant’s biennial RFP process, was revised and used successfully in the RFP cycle that concluded in early 2005. This electronic proposal format has made the research proposal process faster and less expensive for researchers, reviewers, and Sea Grant administrative staff alike. Researchers are able to submit their statements of interest online to a centralized database. Reviewers are able to not only review the full text of pre-proposals online, but submit their comments and project scores online as well. Sea Grant administrative staff can now monitor the submission and review process from a series of user-friendly admin interface web browser screens.

Interactive websites are also being developed in support of Florida Sea Grant goal areas. Communications staff assisted the boating and waterways extension team with the transition of the Southwest Florida anchorage inventory from a static to an interactive website, using dynamic, database-driven web technology to enhance the content and improve the inventory’s usability. The enhancements tested on the anchorage pages will benefit other areas of the overall FSG website because it will provide communications staff with ongoing opportunities to evaluate the feasibility of converting other static but content-rich sections to database-driven sites.

Out of the public view, Florida Sea Grant continues to use three intranets that network management and staff that facilitate open and ready access to internal files, publications, and other business and operational records, which results in increased productivity, collaboration, and file security.

The National Sea Grant Library’s *Program Activity Summary Reports* for 2005 indicate that Florida Sea Grant publications productivity exceeds by far that of most other Sea Grant programs. Communications staff routinely submit electronic or PDF versions of all of its numbered publications to the National Sea Grant library. Compared with other state Sea Grant programs, while Florida ranks seventh among the top ten programs in terms of core funding received, Florida ranked first in 2005 for number of documents submitted. Moreover, in 2005, Florida Sea Grant showed 75,419 PDF (portable document file) downloads from the national archive, far more than any other Sea Grant program in the country (see Section 6.0 of this report for a complete analysis).

Meetings and Bi-Monthly Summaries

All outreach activities from our 17 field-based faculty and 10 campus-based specialists are too extensive to report in this document. In fact, it is a real accomplishment to maintain communications among our far-flung off-campus faculty who are separated by almost 1,000 miles at the extreme of the range (Pensacola – Key West). Agents and specialists touch base at regional district extension meetings, and statewide meetings where there is specific content interest (e.g. fisheries, artificial reefs, Clean Boating Partnership, shrimp TAA workshops). A bi-

monthly Faculty Progress Report is also completed and emailed via campus coordinators to about 800 faculty members located statewide. This document announces funding opportunities for faculty and students, as well as other information of interest. This report can also be found at the FSG website, www.flseagrant.org .

10.0 SELF EVALUATION

One of the requirements of the new National Sea Grant College Program “Performance Benchmarks for Evaluation” is that Sea Grant College programs conduct an ongoing program assessment or “self evaluation” on an annual basis. Florida Sea Grant has conducted an on-going and annual self-evaluation for many years.

The following sections include self-evaluation criteria for 2004 that are not included in other sections of this “Performance Counts” report.

1. Programmatic Measures of Performance
2. Administrative Measures of Performance

Programmatic Measures of Performance

1. Earn a larger percentage increase in our biennial federal Sea Grant budget than the average increase for all 31 Sea Grant Programs.

- A. Over a four-year period, the National Sea Grant Office (NSGO) evaluates each of the 31 Sea Grant programs through use of an external Program Assessment Team (PAT). About one-fourth of the programs are evaluated each year. This review is used by the NSGO in its overall assessment of program quality, to learn about strengths and weaknesses of the program, to improve individual program performance, and to provide a basis for comparison among programs over the long term. The PAT evaluation focuses on four criteria: (1) Organizing and managing for success (20 percent); (2) Connecting with users (20 percent); (3) Effective and long-range planning (10 percent); (4) Producing significant results (50 percent).

The evaluation also affects the merit funding portion of a Sea Grant program’s core funding from NOAA for the four years following its review. The current federal authorizing legislation for the National Sea Grant College Program (passed in late 2002) mandates that all Sea Grant programs be rated into categories with no more than 25 percent of the programs being placed in the top two categories. All federal Sea Grant appropriations above federal fiscal year 2003 levels are to be allocated to the Sea Grant programs in the top two categories. The PAT evaluation thus not only evaluates program quality, but also is important in setting future funding levels.

Florida Sea Grant hosted its Program Assessment Team May 17-20, 2005 and was rated “Highest Performance” in all four category areas (and in 13 of the 14 sub-elements); the 14th received the next highest mark “Exceeds Benchmark.” As required by the Board of Education for University State of Florida Centers, the complete Florida PAT 2005 evaluation is available on the Florida Sea Grant website. Florida Sea Grant was informed that it has been placed in the top category, thus positioning it to receive additional funds when federal Sea Grant appropriations are above FY 2003 levels.

- B. National Sea Grant Initiatives – Florida Sea Grant also measures its success in national competitions. These normally alternate with some occurring every other year, and others annually. Success rates are presented below to compare success rates against the national average for competitions held or completed during 2005.

Number of proposals submitted and funded in
National Strategic Investment (NSI) competitions in 2004/06.

Competition	National Level					Florida Level				
	Pre-Proposals Received	Invited	%	Funded	%	Pre-Proposals Received	Invited	%	Funded	%
--- 2004 Competition --- 2005 Funding ---										
Gulf of Mexico Oysters	NA	21	NA	12	57	5	4	80	2	50
Aquatic Invasive Species (Research)	135	54	40	12	22	6	1	17	0	0
Aquatic Invasive Species (Outreach)	40	19	48	5	26	4	0	0	0	0
Oyster Disease Research Program	NA	21	NA	8	38	NA	0	0	0	0
--- 2005 Competition --- 2006 Funding										
National Marine Aquaculture ^a	210	47		TBD	TBD	NA	7	NA	TBD	TBD
Regional Marine Research	NA	8	100	8	100	NA	2	NA	2	100

NA - Not applicable or data not available.

TBD - To be determined.

^a Proposals sent directly to National Sea Grant Office, not through Florida Sea Grant.

2. Ensure that all Florida Sea Grant competitions are open and transparent and that maximum participation is achieved by all eligible institutions.

During the development (during 2005) of the 2006-07 proposal, 15 of Florida Sea Grant's 16 participating institutions submitted a proposal. In addition, a number of other institutions or organizations not listed as "participants" submitted pre-proposals. Full proposals were invited from 11 institutions and at least one project was funded in eight institutions.

Florida Sea Grant core program research competition proposal submission data, 2006-07.

	Preproposals Sent	Preproposals Accepted	Full Proposals Submitted	Projects Funded
FAMU	0	0	0	0
FAU	2	2	2	1
FGCU	3	0	0	0
FIT	6	2	2	1
FIU	1	0	0	0
FSU	5	1	1	0
HBOI	6	3	4	3
MML	4	0	0	0
NSU	1	1	1	1
UCF	6	2	1	0
UF	22	9	9	4
UM	5	2	2	0
UNF	1	0	0	0
USF	5	3	3	2
UWF	4	2	2	1
Other	5	4	4	1
TOTAL	76	31	31	14

Florida Sea Grant also encourages participation in national fellows competitions.

Recent success rates for national Fellows competitions.

Year (Class of Service)	National Level		From Florida	
	Submitted	Funded	Submitted	Funded
<i>Sea Grant Industry Fellows</i>				
1999	NA	NA	0	0
2000	NA	NA		
2001	6	4	0	0
2002	NA	NA	2	2 ^a
2003	NC	NC	0	0
2004	8	5	1	1
2005	5	3	1	0
2006	NC	NC	0	0
<i>NMFS/Sea Grant Fellows</i>				
2000	16	4	0	0
2001	11	6	0	0
2002	7	4	0	0
2003	11	4	1	0
2004	10	4	1	0
2005	15	6	1	0
2006	20	4	2	0
<i>Knauss Fellows^b(Class of)</i>				
1999	55	30	4	1
2000	50	(37) 31	2	1
2001	42	(32) 30	4	3
2002	76	(41) 37	3	1
2003	69	(38) 33	(7) 5	1
2004	60	(39) 33	2	1
2005	73	(45) 40	(7) 5	3
2006	82	(49) 42	5	2 ^d
2007	80	(47) (TBD)	3	3
<i>NOAA Coastal Services Center Fellows^c</i>				
2000	20	(14) 5	2	0
2001	20	(14) 6	2	0
2002	14	(10) 5	0	0
2003	29	(14) 5	1	1
2004	37	(14) 6	(6) 3	0
2005	34	(12) 6	(6) 3	0
2006	NA	NA	0	0

^a One Fellow funded from FSG program development funds due to “cash” contribution by matching funds partner.

NA - Not available.

NC - No competition this year.

TBD - To be determined.

^b Number in parenthesis indicate those semi-finalists invited for interview.

^c Numbers in parenthesis indicate those invited for interview but withdrew during or after interview week.

^d One Fellow withdrew prior to the final interview. One was placed.

3. Develop Florida’s position of leadership in ocean and coastal subject areas to promote the flow of information for marine resource development and management and expand the funding base to build a responsive marine academic resource capability.

Florida Sea Grant continued during 2005 to build academic capability and initiate broader working relations with industry and allied interests. Efforts included:

- Membership on the board of directors for BIOFlorida (the statewide trade association), as the invited representative of the UF Institute of Food and Agricultural Sciences. (Seaman)
- Continuation of the Florida Marine Biotechnologies ListServe Internet network to facilitate communication among 77 listees. (Seaman)
- Appointment to four-year term on the legislatively mandated Florida Ocean and Coastal Resources Council. (Cato)
- Member of the Board of the Florida Ocean Alliance and serves as Treasurer. (Cato)

4. Fully engage in regional and national projects.

A. During 2005, Florida Sea Grant was an active participant in at least 10 different regional research or extension projects or activities in which each participant was investing funds. These are presented below in summary form.

Regional Sea Grant projects or activities in which Florida Sea Grant research, extension and communications faculty are involved during 2005.

	Project	Sea Grant Partner/Agency Partner/Industry Partner
1	SEA-COOS: Southeast Atlantic Coastal Ocean Observing System	University of North Carolina (UNC), University of South Carolina (USC), University of South Florida (USF), University of Miami (UM), Skidaway Institute of Oceanography (SIO), Sea Grant (Florida, Georgia, South Carolina, North Carolina), South Carolina Department of Natural Resources
2	GCOOS: Gulf of Mexico Coastal Ocean Observing System	Over 37 organizations, including Florida Sea Grant have signed the memorandum of agreement to participate in GCOOS.
3	Fish Extension Programs for the Gulf of Mexico	Texas, Mississippi/Alabama, Louisiana and Florida Sea Grant
4	Fish Extension Program for the South Atlantic	Florida, Georgia, South Carolina, North Carolina Sea Grant
5	Regional Center for Ocean Science Education Excellence (COSEE) - Gulf of Mexico	University of Southern Mississippi, Dauphin Island Marine Laboratory, University of Texas Marine Science Institute, Louisiana Marine Science Consortium, Mississippi State University, University of Florida (SG)
6	Coastal Storms Initiative Outreach Project (Florida Pilot)	NOAA Coastal Services Center (a national project)
7	Marine Ornamentals ‘06	Hawaii (HSG); Hawaii Aquaculture Development Program; Florida (FSG) Center for Tropical and Subtropical Aquaculture; North Carolina (NCSG); Oregon (OSG); Virginia (VSG); New York (NYSG); Texas (TSG)
8.	Seafood HACCP Alliance (Florida leadership)	Association of Food and Drug Officials; U.S. Food and Drug Administration Office of

		Seafood; National Marine Fisheries Service; National Fisheries Institute; National Food Processors Association; Interstate Shellfish Sanitation Conference; USDA Cooperative Research; Education and Extension Service; Sea Grant Programs in Alaska, California, Florida, Louisiana, North Carolina, Oregon and Virginia
9	Gulf of Mexico Regional Research Plan (Proposal pending)	Texas, Louisiana, Mississippi/Alabama and Florida Sea Grant
10	South Atlantic Regional Research Plan (Proposal pending)	North Carolina, South Carolina, Georgia and Florida Sea Grant

Measures of Accountability: Administrative

Certain administrative objectives will be met which will ensure that the overall administrative goal can be achieved. They are:

1. Long range planning documents in both research and extension will be maintained/updated as appropriate, to enable the development of highly competitive proposals and insure that Sea Grant programs do not duplicate other academic programs.

- A. A new 2006-09 Strategic Plan was developed during summer/fall 2004 and built upon the structure and process began with FSG's first strategic plan in 1996. The plan is FSG's third four-year strategic plan. Strategic planning developed issues in nine goal areas. The process involved over 300 individuals from universities, agencies, companies and the public. A number of planning techniques were used including web-based surveys, mail surveys, workshops, position papers and analysis of existing programs and their impacts. The goals and objectives in the plan directly guide FSG's research, extension and communications programs within each of nine goal areas. An Implementation Plan was developed during 2005 for 2006-07.
- B. Florida Sea Grant also continued its noted annual work plan for 2005. This is the eighth year of this process. The program accomplishments and benefits section of this 2005 Annual Progress Report is based on the 2005 work plan. Specific objectives scheduled for completion in 2005 are contained in section 2.0, and accomplishments and benefits under each goal are reported.

2. Enhance the visibility of Sea Grant, the University of Florida, and the State Board of Education, Division of Colleges and Universities, and provide service statewide, regionally and nationally by participation on boards of both academic and non-academic interests.

Selected Examples (of Director, Associate Director, Assistant Director for Extension and statewide Extension Faculty)

A. International

- 1. Member, Advisory Board, International Association of Aquaculture Economics and Management. (Adams)
- 2. Technical Advisor, USA Delegation for Codex Alimentarius, S. Africa. (Otwell)
- 3. Member, organizing committee for the 4th International Conference for Marine Ornamental Species, held in early 2006, Las Vegas, Nevada. (Cato)
- 4. Executive Board and U.S. Representative, International Association of Fish Inspectors. (Otwell)
- 5. Team Member, Project FISHPORT, World Health Organization/UN Food and Agriculture Organization. (Otwell)
- 6. Executive Director, Seafood Science and Technology Society of the Americas. (Otwell)

7. Member, Expert Group, for organizing Design and Management of Artificial Reefs for Fisheries course, International Center for Advanced Mediterranean Agronomic Studies. (Seaman)
8. Member, External Advisory Board for Seafood PLUS (Europe). (Otwell)

B. National

1. Member, External Relations Committee, Sea Grant Association. (Cato)
2. Member, Sea Grant National Theme Team: Biotechnology (Seaman)
3. Member, Sea Grant National Theme Team: Coastal Communities and Economies (Spranger)
4. Member, Sea Grant National Theme Team: Ensuring Competitiveness of the U.S. Seafood Industry. (Otwell)
5. Member, Sea Grant National Theme Team: Fisheries. (Adams)
6. Member, Advisory Committee to National Plan for Algal Toxins and Harmful Algal Blooms. (Adams)
7. Member, Sea Grant National Theme Team: Coastal Communities and Economics. (Swett)
8. Member, Sea Grant National Theme Team, Ecosystems and Habitats. (Jacoby)
9. Fellow, American Institute of Fishery Research Biologists. (Seaman)
10. Member, Seafood Education Committee, Association of Food and Drug Officials. (Otwell)
11. Member, Technical Advisory Committee, National Fisheries Institute. (Otwell)
12. Member, Technical Advisory Committee, National Shrimp Processors Association. (Otwell)
13. Coordinator, Seafood HACCP Alliance. (Otwell)
14. Member, National Academy of Science panel to study the balance of risks and benefits in consuming seafood (Otwell)
15. Member, Advisory Committee for the National Sea Grant Ports and Harbors Specialist. (Swett)
16. Member, Sea Grant National Theme Team: Marine and Aquatic Science Literacy. (Spranger)
17. Member, Organizing Committee, National Sea Grant Extension Academy. (Spranger)
18. Chair, Education and Professional Development Committee, Assembly of Sea Grant Extension Program Leaders. (Spranger)

C. Regional

1. Member, Scientific and Statistical Committee, Gulf of Mexico Regional Fishery Management Council. (Adams)
2. Member, Early Detection and Rapid Response Work Group for the Gulf of Mexico and South Atlantic Panel of the ANS Task Force. (Jacoby)
3. Chair, Education and Outreach Work Group for the Gulf of Mexico and South Atlantic Regional Panel of the ANS Task Force. (Jacoby)
4. Member, SEACOOS Extension and Education Work Group. (Spranger)
5. Member, GCOOS Board of Directors and Executive Committee. (Spranger)
6. Co-Chair, GCOOS Education and Outreach Council. (Spranger)
7. Member, COSEE Extension and Education Steering Committee. (Spranger)

D. State

1. Member, Board of Directors, Florida Institute of Oceanography, USF. (Cato)
2. Member, Board of Directors and Treasurer, Florida Ocean Alliance. (Cato)
3. Member, Board of Directors, Aylesworth Foundation for the Advancement of Marine Sciences. (Cato)
4. Member, Board of Directors, BIOFlorida. (Seaman)
5. Member, Florida Clean Marina Partnership Board. (Spranger)
6. Member, Education Advisory Committee, The Florida Aquarium (Spranger)
7. Technical Advisor, Apalachicola Oyster Dealers Association. (Otwell)
8. Member, Florida Ocean and Coastal Resources Council (Cato)

3. Provide faculty and cooperators with an efficient, understandable and streamlined administrative structure in order to expedite research, education, and extension programs.

A Faculty Progress Report is written bi-monthly and distributed via our campus coordinators at 16 locations to about 800 faculty members. The report is also available on our web page (www.flseagrant.org) and covers faculty and student funding opportunities and other items of information for faculty and students. For several years, all national and Florida Sea Grant funding opportunities have been advertised via our web page and all proposal guidelines and forms are available there for faculty use and downloading. For the last four funding cycles, Florida Sea Grant has accepted pre-proposals and interim and final reports via email. Since 2004-05 preproposal (Statements of Interest) submission and review has been conducted through a web-based electronic submission process.

4. Work closely with the National Sea Grant Office, NOAA, to insure that Florida's program is competitive and responsive to national priorities.

A. Florida Sea Grant continues to evaluate NSGO drafts of program evaluation guidelines and other documents. Constructive comments are always provided. During proposal preparation, Florida Sea Grant develops a detailed "proposal notebook" for our NSGO program monitor and reviews that information with the monitor on an ongoing basis, both by telephone and through personal visits to Washington, D.C.

5. Maintain personal professional skills and reputation by publishing, making presentations or organizing academic activities. At least two each will be performed by the Director, Associate Director and Assistant Director for Extension.

Cato

Activities during this year focused on contributing to the development of and participation in a number of academic activities as opposed to actual publications or presentations. These included:

- Organizing a panel of speakers for a half-day session on "Economic Values of the Gulf of Mexico" at the State of the Gulf of Mexico Summit, held in early 2006, in Corpus Christi, Texas. Most of the activities occurred during 2005, since the conference was postponed to 2006 due to hurricane activity. The papers from the panel will be developed into a book that will be edited for Texas A&M University Press.
- Served as a member for the 2006-07 Louisiana Sea Grant proposal development panel.
- Chaired the nationwide search for the first director of the newly created University of Florida Water Institute.
- Organized the manual and week-long Program Assessment of Florida Sea Grant College Program by the National Sea Grant Office.
- Attended two two-day meetings of the newly created Florida Ocean and Coastal Resources Council.

Seaman

Seaman, W. In press. Artificial habitats and the restoration of degraded marine ecosystems and fisheries. *Hydrobiologia*.

Seaman, W. and M. Miller. Accepted. Fisheries conservation and habitat improvement in marine ecosystems. In: J. Nielsen, editor. Proceedings of Fourth World Fisheries Congress, American Fisheries Society, Bethesda, Maryland.

Recognition: Award of Distinction from Florida Public Relations Association for "The Promise of Marine Biotechnology," M. Schrope and W. Seaman (2004), in Focused Communications/Printed Tools of Public Relations category. April 28, 2005.

"National Marine Biotechnology Briefings." November 8-10, 2005, Washington, D.C. area. Organizer and team leader.

"Advances in Marine Biotechnology," at World Congress on Industrial Biotechnology and Bioprocessing. April 21, 2005, Orlando, Florida. Invited session organizer, by Biotechnology Industry Organization.

Spranger

- Spranger, M. 2005. "What is Sea Grant Extension?" New Extension Agent Training. University of Florida IFAS Extension Professional In-Service Training. Gainesville, Florida. 12 January 2005.
- Spranger, M. 2005. "Developing a Sense of Place and Environmental Stewardship." Natural Resource Leadership Institute. Cedar Key, Florida 24 February 2005.
- Spranger, M. "History of Land Grant and Sea Grant System, Program Planning, Leadership and Management" National Sea Grant Extension Academy. Session I. Washington DC. 7-11 March, 2005.
- Spranger, M. 2005. "Opportunities for Training and Education Materials: Ocean Observing Systems and Invasive Species." Florida Marine Science Educator Association. Annual Meeting. St. Augustine, Florida. 16 April 2005.
- Spranger, M. 2005. "Email and Online Protocols: Extension Netiquette." University of Florida Extension Leadership Forum. Gainesville, Florida. 26 May 2005.
- Spranger, M. 2005. "Ocean Observing Systems in the Gulf of Florida, Developing a Sense of Place, and Shellfish Aquaculture Industry: Clamelot in Cedar Key." Center for Ocean Science Education Excellence Summer Teacher Institute. Cedar Key, Florida. 19-24 June 2005.
- Spranger, M. 2005. "Developing a Sense of Place and Ocean Stewardship." Center for Ocean Science Education Excellence Summer Teacher Institute. Online Internet Presentation. 5 July 2005.
- Spranger, M. 2005. "Recreational Boating and SEACOOS: Opportunities for Collaboration." State Clean Boating Partnership Board of Directors. Orlando, Florida. 14 July 2005.
- Spranger, M. and Chris Simoniello. "Ocean Observing Systems in Florida: SEACOOS and GCOOS" Extension Professional Association of Florida. Annual Meeting. Sarasota, Florida. 14 September, 2005.
- Spranger, M., Thigpen, J., and R. Bacon. "Lessons Learned: Development of Outreach and Education Programs in SE United States and Gulf of Mexico." Oceans US 2005 and Marine Technology Society Annual Conference. Washington DC. 21 September 2005.
- Spranger, M. "Ocean Observing Systems, Grant Writing, Making a Difference in Extension Programs." National Sea Grant Extension Academy. Session III. Pensacola, Florida. 26-30 September, 2005.
- Spranger, M., "GCOOS: Organization, Structure and Planned Activities." Florida Caucus of Coastal Ocean Observing Systems (FCOOS) St. Petersburg, Florida. 6 December 2005.

6. Develop an Investigator Profile to ensure that Florida Sea Grant funded faculty represent diversity and all academic ranks and that at least one-half of the research faculty in each biennial core program proposal did not receive funds during the preceding two years.

For 2006-07, 63% of the funded faculty did not receive funds in the previous cycle (proposal developed during 2005).

Florida Sea Grant research investigator profile for core program projects for the three most recent two-year funding cycles.

	<u>2002-2003</u>		<u>2004-2005</u>		<u>2006-07</u>	
	Number	Percent	Number	Percent	Number	Percent
Total Number of Investigators Receiving Funding	31	NA	37	NA	34	NA
Investigators ^a Not Receiving Funding in the Previous Two-Year Core Program	20	65	26	63	23	64
Investigator ^a Profile						
Male	25	81	33	89	29	85
Female	6	19	4	11	5	15
Investigator ^a Academic Rank						
Professor or Above	11	35	7	19	7	21
Associate Professor	4	13	11	30	7	21
Assistant Professor	10	32	6	16	9	26
Post-doc	0	0	1	3	1	3
Other ^b	6	26	12	32	10	29

^a Includes Principal Investigators, Co-Principal and Associate Investigators.

^b Includes such academic titles as senior scientists (at research labs), lawyers and veterinarians (at professional schools), etc.

Florida Sea Grant core proposal competitions also remain highly competitive. During 2005, for projects beginning in February 2006, a total of 85 proposals reviewed resulted in 14 funded projects as shown below.

Number of proposals submitted and funded, core proposal competition, previous three cycles.

Regular (core) proposal competition	2002-2003	2004-2005	2006-07
Preproposals received	83	85	76
Full proposals requested	46	35	31
Full proposals received	44	35	31
Proposals funded	14 (17%)	14 (16%)	14 (18%)

11.0 ADVISORY PROCESS

The Florida Sea Grant College Program uses a multi-layered advisory process involving a number of advisory committees. These committees, both permanent and ad-hoc, provide valuable advice on both programmatic direction and administrative function and processes. Each committee will be described along with a list of the members of each committee. In addition, Figure 1 provides a schematic representation of how these committees provide input into the research, Extension and communications functions of Florida Sea Grant. Figure 2 provides detail on their advisory input according to the administrative level of Florida Sea Grant.

Programmatic (State Level)

Overall Strategic Planning/Priority Setting

Every four years Florida Sea Grant engages in an in-depth strategic planning process. This provides overall programmatic guidance to Florida Sea Grant research, communications and extension priorities and ultimately results in the Florida Sea Grant strategic plan. The strategic plan is then adjusted at two year intervals based on the input of leaders of the overall strategic planning process, until it is time to repeat the in-depth process once again.

The 2006-09 Strategic Plan was developed during summer/fall 2004 and built upon the structure and process that began with FSG's first strategic plan in 1996. The plan is FSG's third four-year strategic plan. Strategic planning developed issues in nine goal areas. The process involved over 300 individuals from universities, agencies, companies and the public. A number of planning techniques were used including web-based surveys, mail surveys, workshops, position papers and analysis of existing programs and their impacts. The goals and objectives in the plan directly guide FSG's research, extension and communications programs within each of nine goal areas. FSG's plan considered both the National Sea Grant Plan for 2003-08 and the NOAA plan for 2005-10. In fact, the plan demonstrates how FSG's nine goal areas directly link with the other two national plans, and apply those priorities to Florida. The plan contains the key elements of a strategic plan: setting (partners, institutional framework, strengths, weaknesses, opportunities, threats); values; implementation (including how FSG will respond to priorities, the role of management and products, programs and markets); strategic goal areas; and additional resources needed to carry out the plan. Each strategic goal is described, its forces of change highlighted, the overall measurable goal is defined, the audience and products and activities that will be developed for the audience are defined, performance indicators are outlined, the process used to develop the objectives within the goal area is summarized and specific resources needed within the goal area are enumerated.

Advisory Board/Campus Coordinators

The Florida Sea Grant College Program is established as a statewide Center of the Florida Board of Education. Statewide Centers are created when at least two of the 11 public universities under the Board of Education are involved in an academic program with statewide coverage. Each Center is managed by a host campus on behalf of the participating universities in the Center. The Director of each Center reports to the Vice President for Academic Affairs of the host campus. Each Center has an advisory board with a member from each university appointed to the board by the President of each institution. For Sea Grant, several private universities and non-profit laboratories participate in the program. Thus, at the invitation of Florida Sea Grant, each private university also nominates a member to the advisory board.

Florida Sea Grant calls this group its "Campus Coordinators". They meet depending on the need and advice of the group. The Campus Coordinators provide programmatic direction as well as administrative direction regarding the way the Sea Grant program is operated. Florida Sea Grant Management requests their input on such major issues as whether to do annual or biennial proposals, how the review process is organized, and on

operational issues including how best to communicate with 700-800 faculty statewide interested in Sea Grant. All maintain on-campus e-mail or hard mail mailing lists for communicating with faculty regarding calls for proposals and distributing Florida Sea Grant's bi-monthly Faculty Progress Report. The membership at the end of 2004 is given below.

Florida A&M University - Larry Robinson
Florida Atlantic University - Russell Kerr
Florida Gulf Coast University - Greg Tolley
Florida Institute of Technology - Junda Lin
Florida International University - James Fourqurean
Florida State University – Richard Iverson
Harbor Branch Oceanographic Inst. - Dennis Hanisak
Mote Marine Laboratory - Ken Leber
New College of Florida - Sandra Gilchrist
Nova Southeastern University – Andrew Rogerson
University of Central Florida - Linda Walters
University of Florida - William Seaman
University of Miami - Nelson Ehrhardt
University of North Florida - Kelly Smith
University of South Florida - Norman Blake
University of West Florida - William Huth

Advisory Committees

FSG uses a multi-layered advisory process involving a number of advisory committees. These committees, both permanent and ad-hoc, provide valuable advice on both programmatic direction and administrative direction, function and process. Advisors and stakeholders are heavily involved in strategic planning. Statewide stakeholder advisory committees include stakeholders on marine biotechnology, marine ornamental fish and aquatic food products, and an advisory committee at the county or regional level exists for each off-campus extension faculty. Committees meet based on a schedule or when needed basis.

Sea Grant Subject Matter Advisory Committee (State Level)

Marine Biotechnology

Cynthia Barnett, Associate Editor, Florida Trend Magazine, St. Petersburg, FL
William Brown, President, ABC Research Corporation, Gainesville, FL (resigned March 2005)
Debbie Mason, President, Strategists Inc., Perry and Ft. Lauderdale, FL
Jeanie McGuire, Director, Office of Technology Transfer, Boca Raton, FL
Gregory Nelson, Attorney, Akerman Senterfitt, West Palm Beach, FL
Diana Robinson, President, BIOFlorida, West Palm Beach, FL
John B. Rogers, President, EcoArray, Inc., Alachua, FL
Met January 2005; recommended development of business plan

Marine Ornamental Fish

Ilze Berzins, Curator of Animal Health & Research, Florida Aquarium, Tampa, FL
Roy Herndon, President, Sea Critters, Dover, FL
Martin Moe, Green Turtle Publications, Islamorada, FL
Ken Nedimyer, Sea Life, Inc., Tavernier, FL
Denise Petty, College of Veterinary Medicine, University of Florida, Gainesville, FL
Marty Tanner, President, Aquatica Tropicals, Inc., Plant City, FL
Jeff Turner, President, Oceans, Reefs and Aquariums, Inc., Ft. Pierce, FL

Aquatic Food Products

Jim Obrien/Carlos Sanchez - Beaver Street Fisheries, Jacksonville, FL
Tommy Ward --Buddy Ward and Sons Seafood, Apalachicola, FL
Steve Cox - Cox's Seafood, Tampa, FL
Tom Chestnut - Darden's Restaurants, Orlando, FL
Gary Graves - Key's Fisheries, Marathon, FL
Grady Levins - Levins' Seafood, Apalachicola, FL
Jim Craig - Marine Harvest, Pompano Beach, FL
Bob Collette - National Fisheries Institute, McLean, VA
Ted Suor/Randy Graham - Outback Restaurants, Tampa, FL
Guy Pizzuti - Publix Supermarkets, Lakeland, FL
Gib Migliano/Rick Hazelwood - Save On Seafood, St. Petersburg, FL
Howard Shaw - Shaw's Southern Belle Frozen Foods, Jacksonville, FL
Jess Gonzalez/Mike Hayes/Nina Burt - Singleton Seafood, Tampa, FL
Bob Jones - Southeastern Fisheries Assn., Tallahassee, FL
Tony Downs/Ed Keisel/Frank Russo/Paul Schwartz - Syscol (Florida)
Ken Justice - WalMart Supercenters, Bentonville, AK
Rick Armstrong/Terry Levee - Winn-Dixie Stores, Jacksonville, FL

Sea Grant Extension Advisory Committees (County Level)

Each Sea Grant Extension off-campus faculty member at the county level has an advisory committee. These committees usually meet at least twice each year. They provide direct input into the faculty members annual work plan and program direction. They also provide guidance in assisting the faculty members in evaluating the success or impact of the educational effort for the previous year. Each faculty member's plan of work then provides input for the on-campus Sea Grant specialists who coordinate statewide extension programs. These state major programs then become the priority educational themes of the Sea Grant Extension Proposal as part of the overall Florida Sea Grant College Program. While a major proposal for Sea Grant Extension is developed every four years, the plan within Florida is revised every year to take advantage of the advisory committee input. The off-campus faculty and their advisory committees are listed below.

Dianne Behringer (Broward County)

Kenneth Banks - Broward County Environmental Protection Department, Plantation, FL
Carol Fretwell - Nova Southeastern University Oceanographic Center, Dania Beach, FL
Frank Herhold - Marine Industries Association of South Florida, Fort Lauderdale, FL
Peg McPherson - South Florida Water Management District, Plantation, FL
Steven Weinsier - Allstate Resource Management, Davie, FL
Jeff Torode - South Florida Diving Headquarters, Pompano, FL
Jason Schratwieser - International Game Fish Association Dania, FL

Brian Cameron (Bay County) (New hire February, 2005)

Appointment of committee in process.

Chris Combs (Brevard County) (Resigned early 2006)

Mr. David Bates - President, Fleet Marine, Inc., Port Canaveral, FL
Ms. Sue Carlson - Brevard County Commissioner, Viera, FL
Mr. Robert Day – Senior Project Scientist, Johns River Water Management District, Palm Bay, FL
Mr. Clarry Edwards – Chairman, Brevard Marine Advisory Committee, West Melbourne, FL
Mr. Bud Crisafulli - President, Brevard County Farm Bureau, Merritt Island, FL
Ms. Evelyn Guyton - Banana River Marine Services, Marina and Boatyard, Merritt Island, FL

Mr. Doug Jaren - President, Banana River Marina Services & Marina, Merritt Island, FL
Ms. Andrea Leibzeit - Harris Engineering, Palm Bay, FL
Ms. Kristen Poole - US National Park Ranger, Canaveral National Seashore, Titusville, FL
Mr. Patrick Smith - Historical Florida Novelist, Merritt Island, FL
Ms. Lauralee Thompson – Manager, Dixie Crossroads Seafood Restaurant, Titusville, FL
Mr. Paul Williams – Wilbro U-Pic Farms, Palm Bay, FL
Ms. Phyllis Woodford – President, Woodford Shellfish Farms, Merritt Island, FL

Marella Crane (Dade County)

Mike Brescher, Pelican Harbor Marina, Miami, FL
Eva Berman, E & R International Seafood, Miami Beach, FL
Phil Everingham, Merrill-Stevens Boatyard, Coral Gables, FL
Sallye Jude, Miami River Inn, Miami, FL
Theo Long, Biscayne Nature Center, Miami, FL
Capt. Gerald C. McGinley, Jr., Admiral Oil, Coral Gables, FL
Gil Muratori, South Dade Anglers Fish Club, Miami, FL
Audrey Ordenes, Environmental Education, Miami, FL
Roberto Torres, Commercial Fishermen, Miami, FL
Joan Vernon, Greater Miami Billfish Tournament, Key Biscayne, FL

LeRoy Creswell (St. Lucie County)

Dr. Sabine Alshuth, Indian River Community College, Ft. Pierce, FL
Jerry Corsaut, Sportdive, Collector, Ft. Pierce, FL
Dean Kebutchik, Ft. Pierce City Marina, Ft. Pierce, FL
Dr. John Scarpa, Harbor Branch Oceanographic Institution, Ft. Pierce, FL
John Holt, Harbor Branch Oceanographic Institution, Ft. Pierce, FL
Mark Tamblin, Florida Inland Navigational District, Stuart, FL
Jim Wharton, Smithsonian Institution, Ft. Pierce, FL
Dr. Courtney Ohs, UF/IRREC, Ft. Pierce, FL
Ms. Mary Gregory, St. Lucie County District Public School, Ft. Pierce, FL
John Smith, recreational fisherman, Port St. Lucie, FL

Andrew Diller (Escambia County)

Eilene Beard, Florida Artificial Reef Advisory Board & Scuba Shack/Wet Dream Charters, Inc.
Gene Ferguson, Scuba Shack/Wet Dream Charters, Inc.
Eleanor Godwin, West Florida Regional Planning Council
Amanda Carrigan Grissom, Gulf Islands National Seashore
Mary Gutierrez, Florida Department of Environmental Protection
Richie Anne Marple – Pensacola Beach Leaseholders Association
Neil Richards – The Window Factory
Earl Rader – Pensacola Recreational Fisherman’s Association
Leo Choron – Gulf Coast Outdoors

Bryan Fluech (Collier County) (new hire early 2006)

Doug Gregory (Monroe County)

John Clarke – Mote Marine Laboratory, Ramrod Key, FL
Jeff Cramer, Organized Fishermen of Florida, Conch Key, FL
Humberto Garrido, Jr. – Key West, FL
Debra Harrison - World Wildlife Fund, Marathon, FL
Richard Hanson - Islamorada, FL
Bob Holston – CeCe Roycraft, Key West Pro Dive Shop, Key West, FL

Karl Lessard - Gulf of Mexico Fishery Management Council, Marathon, FL
John Magursky - Islamorada Charter Boat Association, Key Largo, FL
Martin Moe – Islamorada, FL
Ken Nedimyer – Tavernier, FL
George Niles - Summerland Key, FL
Bruce Popham – Marathon Boatyard, Marathon, FL
Capt. Jim Sharpe - Summerland Key, FL
Simon Stafford - Lower Keys OFF Chapter, Key West, FL
Bill Wickers - Key West Charter Boat Association, Key West, FL

L. Scott Jackson (Okaloosa/Walton counties)

Ross Hamilton, Niceville, FL
Mark Christy, Destin, FL
Lockey Goodwin, Santa Rosa Beach, FL
Edwin Goodwin, Santa Rosa Beach, FL
Beverly Kraska, Santa Rosa Beach, FL
Sharon Maxwell, Niceville, FL
Jim Moyers, Seagrove Beach, FL
Jim Robertson, Ft. Walton Beach, FL
Scott Robson, Destin, FL
Laura Sparks, Once De Leon, FL
Brittany Stark, Ponce De Leon, FL
Bob Walker, Niceville, FL

William T. “Bill” Mahan (Franklin County)

David Barber, Barber’s Seafood
Ronnie Gilbert, Oyster Harvester, Seafood Workers Assoc.
Anita Grove, Apalachicola Chamber of Commerce
Grady Leavins, Leavins Seafood
Lynn Martina, VP, Oyster Dealers Association
David McLain, Task Force Coordinator
Vance Millender, Millender & Sons Seafood’s
Smokey Parrish, Buddy Ward’s Seafood
Bevin Putnal, County Commissioner
Steve Rash, Waterstreet Seafood
Tommy Ward, President, Oyster Dealers Association

Maia McGuire

Dick Balduzzi, St. Johns County WAV Coordinators, St. Augustine
Chris Benjamin, St. Augustine
Linda Bremer, Jacksonville
Jan Brewer, Environmental Planner, St. Johns County, St. Augustine
Mike Hollingsworth, Jacksonville
Pete Johnson, Regulatory Scientist, SJRWMD, Jacksonville
Jerry Full, Palm Coast
Rick Gleeson, GTM NERR, St. Augustine
Carl Hampp, Marineland, St. Augustine
Kevin Lussier, Amelia Island Yacht Basin, Amelia Island
Richard and Carole McCleery, Palm Coast
Cheryl McCrory, St. Johns County WAV Coordinator, St. Augustine
Kevin Micieli, Flagler County Public Works, Bunnell
Steve Nichols, Waterways Coordinator and Dockmaster, Metropolitan Park & Marina, Jacksonville

Christina Nelson, Amelia Island Plantation, Amelia Island
Renee Paolini, Washington Oaks State Gardens, Palm Coast
Bonnie Simms, Palm Coast
Howard Sklar, Flagler Bridge Boatworks and Marina, Flagler Beach
Kelly Smith, UNF Dept. of Natural Sciences, Jacksonville
Lex Waters, Jacksonville

Justin Sapp (Taylor County) (New hire February, 2005)

Appointment of committee in process.

Chris Simoniello (SEACOOS Education Coordinator)

Bill Arnold, Florida Fish and Wildlife Research Institute (FL)
Charlie Barans, South Carolina Department of Natural Resources (SC)
Andy Clark, Ocean US (Washington DC)
Braxton Davis, University of South Carolina (SC)
Jen Dorton, University of North Carolina-Wilmington (NC)
Sandy Eslinger, NOAA Coastal Services Center (SC)
Madilyn Fletcher, University of South Carolina (SC)
Rick Gleeson, GTM NEER (FL)
Katie Greganti, Georgia Marine Extension (GA)
Mike Henderson, NOAA Fisheries
Brian Keller, Florida Keys National Marine Sanctuary (FL)
Parker Lumpkin, SECOORA (NC)
Mark Luther, University of South Florida (FL)
Frank Muller Karger, University of South Florida (FL)
Jim Nelson, Skidaway Institute of Oceanography (GA)
Kathleen O'Keefe, Florida Fish and Wildlife Research Institute (FL)
Geno Olmi, NOAA Coastal Services Center (SC)
Charlie Paxton, NWS – Weather Forecast Office – Tampa (FL)
Mitch Roffer, Roff's Fish Forecasting Service (FL)
Howard Rutherford, Florida COSEE/Pier Aquarium (FL)
Harvey Seim, University of North Carolina-Chapel Hill (NC)
Lundie Spence, Southeast COSEE (SC)
Vembu Subramanian, University of South Florida (FL)
Jim Sullivan, Gray's Reef NMS (GA)
Sandy Vargo, Florida Institute of Oceanography (FL)
Bob Weisberg, University of South Florida (FL)
Cisco Werner, University of North Carolina (NC)
Lizz Williams, University of Miami (FL)

Betty Staugler (Charlotte County)

Ralph Allen, King FisherFleet, fishing charters, nature cruises, Punta Gorda Boating Alliance member
Maran Hilgendorf, Charlotte Harbor National Estuary Program
Jim Joseph, Fantasea Scuba, Dive Shop and Dive Instructor
Mike Mannis, Next Tide Backcountry Charters, Ingman Marine
Paul Marcuzzo, 4 Winds, Marine Electronics, U.S. Coast Guard Auxiliary member and Charlotte County Marine Advisory Committee member
Brad Robbins, Mote Marine Laboratory
Jeff Steele, Spare-Time Dive Charters, Commercial Clam Farmer, Crabber & Shrimper

Greg Tolley, Florida Gulf Coast University

John Stevely (Manatee, Sarasota & Collier Counties)

Buddy Watts - City of Bradenton Beach
Bill Ireland - Coastal Conservation Association
Pat Wilcox - Trailer Estates
Charlie Hunsicker - Ecosystems Manager
Jonathan Davis - Fishing Guide
Larry Borden - Scuba Diver
Clayton Robertson - Conservation Consultants, Inc.
Gary Raulerson - SBNEP
Jim Cutway - Scuba Quest
Greg Fagan - Manatee County Parks and Recreation
Gail Cole - Mayor, Bradenton Beach
Kevin Lausman - Coastal Conservation Association
Joe Burnhard - Manatee County Sheriff's Department
Jack Gorseman - Manatee County Environmental Management Department
James Zacharis - Fishing Guide
Karen Bell - Bell Fish Company
Rick Meyers - Manasota Fish & Game Association
Todd Barber - Reef Balls, Inc.
Sheila Mora - Sigma Inc.
Bob Fluke - Manatee County Environmental Management Department
Wayne Hamblen - Trailer Estates
Jack Wieler - Boaters World

Leslie Sturmer (Multi-County Aquaculture)

Dr. Shirley Baker, UF Department of Fisheries and Aquatic Science, Gainesville
Mark Berrigan, FL Department of Agriculture and Consumer Services, Division of Aquaculture
Rose Cantwell, Dog Island Blues, Cedar Key
Sue Colson, Clamalot Farm, City Commissioner, Cedar Key
Ricky Cooke, Cedar Key Oystermen's Association, Cooke's Oysters and Seafood, Cedar Key
Tony Heeb, Cutthroat Clams, St. James City
Mike Hodges, Cedar Key Aquaculture Association, Hodges Seafood, Cedar Key
Roy Kibbe, Kibbe & Company, St. James City
Van Lewis, St. Teresa Shellfish, Panacea
Dan Leonard, Bull Bay Clam Farm, Englewood
Ed Mangano, Orchid Island Shellfish Company, Sebastian
Dr. John Scarpa, Harbor Branch Oceanographic Institution, Ft. Pierce
Dan Solano, Cedar Key Aquaculture Farms, Inc., DACS Aquaculture Review Council, Cedar Key
Chris Toppings, Clamtastic, Cedar Key
Rick Viele, Rick's Seafood, Inc., Cedar Key
Joe Weissman, Harbor Branch Clams, Ft. Pierce
Phyllis Woodford, Woodford Shellfish, Merritt Island

Don Sweat (Citrus, Hernando, Pasco and Pinellas Counties)

Citrus/Hernando

Jeff Carter – Marina Owner, Homosassa
Brian Thompson – Commercial Fisherman
Bob/Cathy Gill - Owners, Shrimp Landing Fish House

Gary Maidof - Citrus County Planning Department
Andy Rose - Sumter County Cooperative Extension Service
Sam Lyons - Charter Dive Shop Owner
Walter Wynn - Retired
Kelly Tyler - County School System
Kevin Cunningham - Local Businessman
Bobby Witt – Commercial Fisherman

Pasco/Pinellas

Blake Longacre - Businessman, Sport Fisherman/Boater
Dr. Norm Blake - Dept. Of Marine Science, USF, St. Petersburg, FL
Jarvis Everett - Suncoast Tarpon Roundup Committee, St. Petersburg, FL
Mark Godcharles – National Marine Fisheries Service, St. Petersburg, FL
Terry Newkirk - Boat/Yacht Broker, St. Petersburg, FL
Howard Rutherford – Executive Director, St. Petersburg Pier Aquarium, Inc.
Dave Zalewski - Charter Boat Service Owner/Captain, Largo, FL

Chris Verlinde (Santa Rosa County)

Dave Barker, Blue Dolphin Kayak Tours, Navarre, FL
Mackenzie Fosselman, Emerald CoastKeepers, Pensacola, FL
Mary Johnson, Santa Rosa School Board Science Coordinator, Milton, Florida
Ricky Jones, Fl. Division of Forestry, Milton FL
Carolyn Kolb, Pensacola Bay League of Women Voters, Navarre, FL
Harold Kelker, Aquaculture, Milton, FL
Deborah Holland, NW FL Aquatic Preserve Office, Milton, FL
Marty and Brenda Stokes, Navarre Beach Marine Sanctuary, Navarre, FL
Martha Szmoniak and Bill Hay, West Florida Canoe Club, Milton, FL
Capt. Robert Turpin, Gulf Breeze, FL
Romi White, Tourist Development
Dr. Eleanor Williams, Go Native Plant Nursery, Milton, FL

Bob Wasno (Lee County)

Chuck Listowski, WCIND, Venice, FL
Rudy Busch, Director, Keep Lee County Beautiful, Inc., Ft. Myers, FL
Dennis Henderson, Owner, Trico Shrimp Co., Ft. Myers Beach, FL
George Gala, Owner, Trico Shrimp Co., Ft. Myers Beach, FL
Dr. Tom Fraser, Dex Bender and Assoc. Environmental Consultants, Ft. Myers, FL
Dr. Rob Loflin, City of Sanibel, Natural Resources, Sanibel, FL
Capt. Denis Grealish, Florida Fish & Wildlife Conservation Commission SW Region, Ft. Myers, FL
Commissioner Ray Judah, Lee County Board of Commissioners, Ft. Myers, FL
Jack Waldock, Ohio Sea Grant (Retired), Ft. Myers, FL
Ken Stead, SW Florida Marine Trades Association, N. Ft. Myers, FL
Heather Stafford, FDEP-Estero Bay Aquatic Preserve Office, Ft. Myers Beach, FL
Dr. Greg Tolley, Florida Gulf Coast University, Ft. Myers, FL
Dave Ceilley, Environmental Biologist, Conservancy of SW Florida, Naples, FL
Dr. Steve Bortone, Director, Sanibel-Captiva Conservation Foundation Marine Laboratory, Sanibel
Tomma Barnes, Environmental Scientist, South Florida Water Management District, Ft. Myers, FL
Betsy Clayton, News Press, Ft. Myers, FL

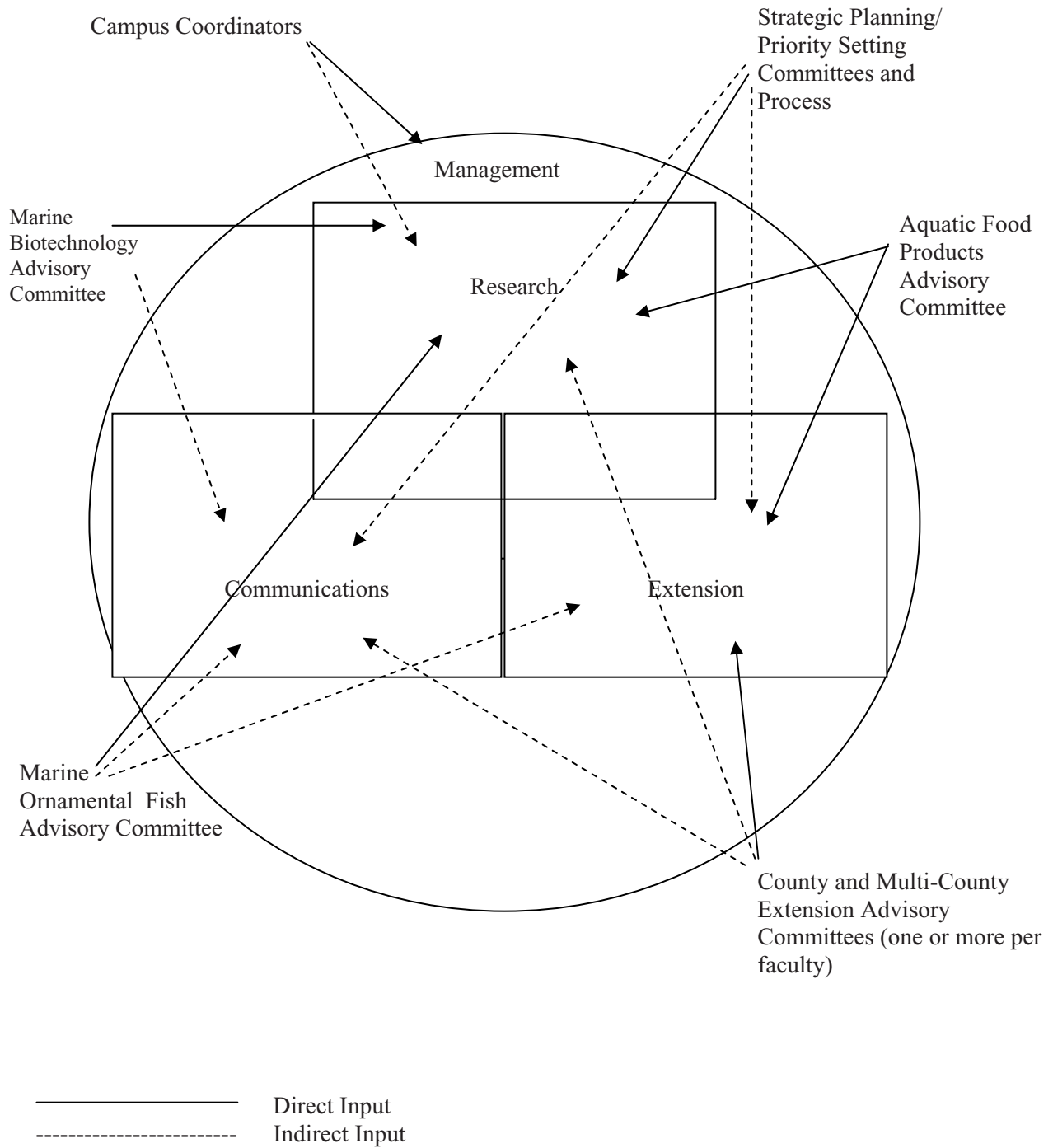


Figure 1. The input of advisory committees into research, extension and communications functions of Florida Sea Grant.

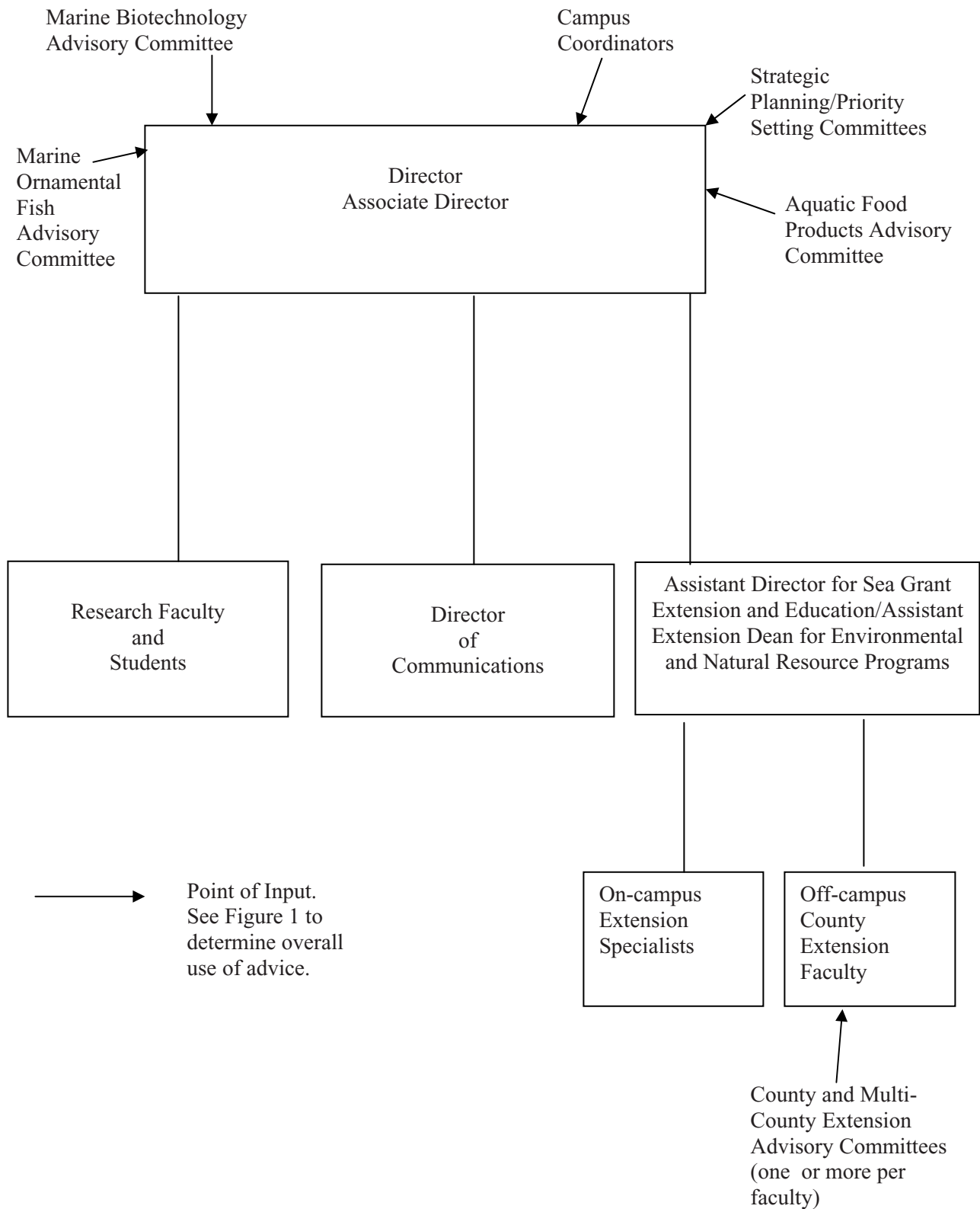


Figure 2. The point of first contact or direct input of advisory committees into the administrative structure of Florida Sea Grant.