For the past several years Bart Baca, Ph.D., and NSUOC students have been culturing two rare seagrasses: Johnson’s seagrass (Halophila johnsonii) and paddle grass (H. decipiens). Johnson’s seagrass was placed on the state of Florida’s endangered species list in 1996 as a result of its rarity in coastal waters and following research on its habitat and life history. It is currently federally threatened for the state. Although not state-listed, paddle grass is similarly a rare species, which grows in deeper waters. Both seagrasses (albeit not true grasses) are being studied because of their protected status, their rarity, and threats from coastal development. The goal of this work is to determine the feasibility and best methods for cultivation and transplantation in order to protect and restore these species and to mitigate for their loss. Funding is provided by the Florida Department of Transportation and Boca Resorts, Inc.; aquaria were donated by Pet Supermarket, Inc.

H. johnsonii was cultivated in 60 aquaria since the spring of 2001 and was first planted in the field in the fall of 2001. Cultivation in aquaria and the field continues to the present with successes in both locations, but with several failures in the field due to unstable (erosional) substrates and siltation (field tests objectively compared all substrates and methods).

H. decipiens was collected from a local marina dredging project in October 2002 and was cultured in 60 aquaria, plus tanks, for reproduction and later replanting as mitigation for dredging. Aquarium culture in the winter 2002–2003 months resulted in reductions in plant numbers, but this was anticipated based on previous winter field and aquarium studies, and plant numbers increased by summer in excess of initial stocking densities.

In the present study, paddle grass grown in aquaria is being transplanted at Bahia Mar Marina, an old and historic marina in Fort Lauderdale. More than five acres will be planted using pre-dredge plants collected in the fall of 2002. More than 5,000 plants will be cultured and transplanted for this project.

A comprehensive, over-wintering field study was also performed on both species as M.S. research by Adriana Sanchez-Gomez, and this showed that both species had reduced numbers in the winter months (centered around January and February). Coverage fell by close to 50 percent and occurrence in quadrants fell by about 40 percent. These numbers returned to normal by the following spring.
M.S. seagrass research is being conducted by students Greg Ward, Adriana Sanchez-Gomez, Brian Shepard, and Irene Arpayaglou. Jessica Craft, Brian Buskirk, Kara Baca, Corrine Anunziata, Ian Gibson, and NSU alumnus Gayle Stone (M.S. 1997, and Bahia Mar project manager) helped with culturing and transplantation.

NSUOC Alumnus Gayle Stone (M.S. 1997, see inset) “raking” seagrass from tank for transplanting.

Typical paddle grass planting unit: five plants (10 leaves) secured by unfolded paper clip in the capable hands of seagrass M.S. researcher Greg Ward (see inset).

Careful, underwater planting of seagrasses along Bahia Mar Marina transect by the skillful hands of student Jessica Craft (see inset).
People on the Move

The weekend of April 12–13 brought twenty-five Broward high school science teachers together for a workshop on the FIO R/V Suncoaster. The workshop was given by Charles Messing, Ph.D., on the deep-water life of the Gulf Stream off Fort Lauderdale. Although the group lost one net on the rugged bottom, they successfully trawled up two rich hauls from a depth of 200 meters that included deep-water electric rays, squat lobsters, flat fishes, crabs, and armored sea robins. The teachers also had a chance to collect and observe living plankton using one of the center’s microscopes connected to a television monitor.

Sean Kennan, Ph.D., attended the first EGS/AGU/EGU (European Geophysics Society/American Geophysics Union/European Geophysics Union) Joint Assembly in Nice, France, held April 7–11. He presented a talk “The NECC in the Eastern Tropical Pacific” (J. Sprintall and P. Niiler, SIO/UCSD coauthors), and poster “New Estimates of the Tropical Pacific Currents as Observed by Drifting Buoys” (P. Niiler, SIO/UCSD coauthor). The meeting was attended by more than 15,000 scientists from across the world. Information about the meeting is available at www.copernicus.org/egsagueug/index.html.

Kennan also attended the CLIVAR/PUMP (Climate Variability/Pacific Upwelling and Mixing Physics) planning workshop in Boulder, Colorado, May 19–20. The meeting was organized by W. Kessler (NOAA/PMEL) and was attended by about 27 oceanographers and atmospheric scientists from across the country. Information about PUMP can be viewed at www.pmel.noaa.gov/~kessler/clivar/pump.html.

Kathy Maxson, center librarian, attended the Thirteenth Annual SAIL Conference 2003, held at Harbor Branch Oceanographic Institution from May 14–16. SAIL is a regional group of marine science librarians and information managers. The conference was titled, “Navigating rough waters in a sea of information.” A tour of the facility was part of the agenda, and talks presented were a mix of library-related issues and information on scientific research being conducted at Harbor Branch.

Veljko Dragolovich, Ph.D., and student David E. Meede gave an oral presentation at the Florida Annual Meeting and Exposition 2003 held in Orlando, Florida, May 8–10, organized by the American Chemical Society. The presentation was titled, “Catalytic Ruthenium Tetroxide Oxidation of Ethers in Dimethyl Carbonate/Water.”

Edward O. Keith, Ph.D., attended several symposia and conferences. February 1–5 he attended the Miami Winter Symposia in Miami Beach, Florida. These symposia honored James Watson and Francis Crick on the 50th anniversary of their elucidation of the structure of DNA and celebrated the 50th anniversary of the founding of the University of Miami School of Medicine.


(Continued on page 4)
Keith and a large contingent of M.S. graduate students attended the Southeast and Mid-Atlantic Marine Mammal Symposium (SEAMMAMS) held March 28–30, 2003, in Newport News, Virginia. Several of Keith’s students presented at this meeting: **Milan Manasijevic, D.V.M.,** gave an oral presentation on some preliminary results of his thesis project examining the histopathology of the cardiovascular system in rough-toothed dolphins (Steno bredanensis) that were necropsied after three mass stranding events in the Florida Keys during 1997, 1998, and 2001. **Rebecca Walker,** in an oral session, presented the results of her thesis research examining the seasonality of cetacean mass strandings in Florida over the past 25 years. **Jaime Hilliard** and **Ryan Goldman** presented a poster session at the Greater Everglades Ecosystem Conference held in Tampa in April. The poster was based on her dissertation topic “Biology and ecology of epigean crayfish that inhabit Everglades environments Procambarus alleni (Faxon) and Procambarus fallax (Hagen).”

**Grants and Awards**

**Alexander Soloviev,** Ph.D., received a grant of $12,495 from Bermello, Ajami & Partners, Inc. “Environmental Conditions at the Library and Cargo Port locations/Grand Turk, T.C.” The purpose of the grant is to study multi-year wave climatology on the shelf off Grand Turk Island for construction of a port terminal.

NSUOC’s Sea Turtle Conservation Program was funded for another year by Broward County’s Department of Planning and Environmental Protection (DEPEP) in the amount of $137,375. The PI is **Curtis Burney, Ph.D.,** and the project manager is **Stefanie Ouellette.**

On January 11, **Edward O. Keith, Ph.D.,** was notified by **Charles Messing, Ph.D.,** chair of the FCAS faculty development committee, that his request for $1000 to support a preliminary study of mercury contamination in the Alvarado Lagoon System (ALS) in Mexico, was approved. Subsequently, from February 27 through March 9, Keith traveled to Mexico, accompanied by his collaborator, Jane Guentzel, Ph.D., from Coastal Carolina University in Conway, South Carolina. During this trip, Keith and Guentzel met with collaborators from the Consejo para el Desarrollo del Papaloapan (CODEPAP) and the Institututo para Investigaciones Biológicas (IIB) with the University of Veracruz and made several trips into the major rivers of the ALS to obtain water samples for mercury contamination analysis. They also purchased a variety of fish from the fish market in Alvarado, Mexico, and brought these fish back for subsequent analysis as well.

On May 21, four of the center’s faculty were the recipients of NSU’s President’s Faculty Research and Development Grants, each for $10,000. **Edward O. Keith, Ph.D.,** was the recipient of two grants. The first will support a research project examining the home range of selected small cetaceans in the southern Tañon Strait, located in the central Philippine Islands. Lemnuel Aragones, Ph.D., adjunct assistant professor at the University of Miami’s Rosenstiel School of Marine and Atmospheric Sciences, is a co-investigator on the project. He has extensive experience working with cetaceans and other marine mammals in the Philippines. The second presidential award was entitled “Exploring Bioinformatics at Nova Southeastern University: Integrating Biology, Computer Science and Mathematics. Co-principal investigators (Co-PI) on this project were Ph.D.’s Matthew He and Emily Schmitt from the Division of Math, Science, and Technology in the Farquhar College of Arts and Sciences and Jumping Sun from the Graduate School of Computer and Information Science.

**Richard Spieler, Ph.D.,** received his grant for his project titled “A New Model for the Study of the Vertebrate Cerebellum: The Yellow Stingray, Urobatis jamaicensis.” Co-PI for this study is Robin Sherman, Ph.D., and the student-PI is Jeremy Barnes. They are doing the study because the function of the cerebellum in vertebrates, including humans, is poorly understood in part because of the conflicting data obtained from the common vertebrate models (mice and rats). Fish, in general,
have several advantages as vertebrate models for basic brain function and a number of neurological and endocrine functions relevant to human health. Fish are phylogenetically closer than mammals to the basic vertebrate blueprint and thus allow behavioral and neurological studies of fundamental brain systems without the interaction of more recently evolved functions. Further, the absence of a highly developed telencephalon allows ready access to many structures without cerebral interference. However, a disadvantage of working with most fish is the relatively small size of the brain that often hinders or precludes the use of many standard neurological techniques. In contrast, a group of chondrichthians (the stingrays), has a brain size rivaling mammalian rodent models. Of particular interest to their research are stingrays, which like mammals, have a large, complex, three-lobed cerebellum. However, in the yellow stingray, these lobes are completely separated. The potential for these animals as vertebrate models of cerebellar-controlled behavior will be examined in this research.

Ph.D. Veljko Dragolovich’s research was titled, “Catalytic ruthenium tetroxide oxidations of iodoalkanes, ethers and polychlorinated biphenyls.” In the course of research supported by the previous President’s Faculty Scholarship Award (2001/2002), Dragolovich and his students developed an environmentally friendly process for a catalytic ruthenium tetroxide oxidation. Broad, long-term objectives of this project are to further develop this methodology and apply it on catalytic ruthenium tetroxide oxidation of iodoalkanes, ethers and polychlorinated biphenyls. Two centers (Oceanographic Center and Farquhar College of Arts and Sciences) will be involved in this project. The results will be reported at conferences and in peer reviewed journals.

Jim Thomas, Ph.D., received an award for his research titled, “Phylogeny and biogeography of the commensal amphipod families Anamixidae and Leucothoidae Gammaridea.”

The objective of his research project will be to conduct basic scientific research of the commensal amphipod superfamily Leucothoidae, primarily the families Anamixidae and Leucothoidae, which are endocommensals in sponges and tunicates. Specimens and data acquired from these activities will be incorporated into biogeographical analysis. The results will be applied to conservation efforts for coral reef biodiversity at both local and global scales.

Aquariums Donated

Two 180-gallon saltwater fishtanks were donated to the center by Edison Irvine, owner of Strataglass. Along with the tanks, Irvine also provided inhabitants for the tanks. The marine creatures are all native to the Pacific, including purple tangs, clownfish, Japanese wrasse, mandarinfish, anemones, and coral. The two prizes in the tanks are the Tridacna clams that rely on photosynthetic algae, much like corals do. (See back page for picture of aquaria.)

Irvine helped set up the tanks and generously provided supplies they would need for their upkeep. M.S. student, Heather Halter is in charge of maintaining the tanks, but she will rely on other OC students volunteering to help out on a daily basis.

Other News

Along with graduate student Brian Walker, Edward O. Keith, Ph.D., developed a brochure to be distributed to the public at John U. Lloyd Beach State Park. The brochure contains a map of the offshore reefs in the park and the major features of the park. There is also some information about coral reefs and sea turtles to inform the public about these important, and threatened, natural resources.

David Gilliam, Ph.D., recently received an appointment to the Coral Advisory Panel of the South Atlantic Fisheries Management Council. The South Atlantic Fishery Management Council, headquartered in Charleston, South Carolina, is responsible for the conservation and management of fish stocks within the federal 200-mile limit of the Atlantic off the coasts of North Carolina, South Carolina, Georgia, and east Florida to Key West. Council members are citizens from each of these southeastern states who are knowledgeable of some aspects of the fisheries. They serve three-year terms and are appointed by the secretary of commerce from lists of nominees submitted by the governors of the states. Regular meetings of the panel are held in Charleston.
Summer Term Classes
July 7–September 17

DISTANCE EDUCATION COURSES

Marine Mammal Management
OCMB-6330, (5994)
The course is designed to serve as a source of information and ideas providing an introductory awareness of a diversity of issues including the morphology, physiology, adaptation, and behavior of these species and their interaction with humans and other predatory mammals. A secondary objective is how marine mammal species are interconnected to the rest of the natural environment. A third objective is to help the student to begin to consider the linkages between the ways in which we regard marine mammals and our actions toward them. Two papers are required. Instructor: Keith Ronald

Environmental GIS
CZMT-0645 (6067)
Increasingly, work in coastal zone management requires at least a passable knowledge of Geographic information systems (GIS) and remote sensing. This course provides hands-on training with the latest GIS and remote sensing techniques. This Web-based course includes interactive hands-on computer training and lesson-based Web instruction. Areas covered by the Environmental GIS course includes GIS theory, importing GPS polygons, establishing database and multimedia hot links, importing tables, joining, building queries, creating arcIMS sites, charting, and map creation. Class instruction will focus on application of these tools and techniques to actual environmental case studies/projects. The course curriculum also uses ESRI Incorporated’s Virtual Campus tutorials. Instructor: Buddy Robson

Marine Geology (for CZM only)
OCOR-5604 (5995)
Marine Geology provides an overview of the major formative processes of the earth’s surface, such as plate tectonics, seafloor spreading, and sedimentary processes in the shallow and deep sea. It also provides students with a brief history of the oceans bordering North America and touches on some of the tools used by marine geologists. At the end of the course, students will have a basic understanding why the earth looks as it does, why the oceans are where they are, and where to go to learn more. The course is richly illustrated and provides numerous Web links. Instructor: Bernie Riehl

Water: Cross-cultural, Scientific, and Spiritual Perspectives
CZMT-0710 (6066)
This course will introduce students to the expanding international dialogue regarding water and the coastal zone that is now occurring amongst the scientific, interfaith, and policy communities. We will consider and evaluate whether this may result in new understanding and a greater commitment toward our stewardship of water and particularly the coastal environment. Instructor: O. P. Dwivedi

CORE CLASSES

Marine Chemistry
OCOR-5605 (5986)
Mondays, 6:30–9:30 p.m.
This course is one of the five core courses required for all master’s specialties. The class will review the properties and composition of seawater and the importance, distribution, relationships, and cycling of major nutrients, dissolved gasses, trace metals, and organic compounds. A self-paced laboratory is included in the course activities. Problem solving is supplemented with interactive microcomputer work. $50 LAB FEE. Instructor: Curtis Burney

Biostatistics
OCOR-5606 (5987)
Tuesdays, 6:30–9:30 p.m.
The purpose of this course is to introduce students to the fundamentals of statistics. More specifically, this course is designed to teach students:
1. how statistics relates to science and life in general
2. basic terminology and notations used in statistics
3. techniques for describing and summarizing large amounts of data
4. methods for using a limited set of observed data (sample) to make inferences about a broader set of data (population)
5. techniques for conducting statistical tests of scientific hypotheses

At the end of this course, students should be able to identify appropriate procedures for examining different types of data, analyze data and interpret results, use statistical results to draw reasonable conclusions about data, and evaluate the appropriateness of statistical tests conducted by others. Instructor: Patrick C. Hardigan

ELECTIVES

Marine Mammals
OCMB-6340 (5988)/MEVS-5017 (6064)
Wednesdays, 6:30–9:30 p.m.
This course provides an overview of the anatomy, biomedicine, evolution, husbandry, natural history, pathology, and physiology of the cetaceans, pinnipeds, sirenians, and allies. The course consists of lectures, laboratory exercises, field trips, and a research paper. Instructor: Edward Keith
FIELD COURSES

Marine Botany
OCMB-6070 (5989)/CZMT-0808
(5990)/MEVS-5115 (6065)
Thursdays, 6:30–9:30 p.m.
Field trip dates tentatively scheduled for July 27–August 1, 2003
$450 Lab Fee

All marine biologists should know their marine plants (algae, seagrasses, mangroves, marshes), and this is the hands-on course where you can do that. This is a field course where introductory lectures are followed by one week in the beautiful and thinly populated island of Grand Bahamas (tentatively scheduled for July 27–August 1). Transport is by Discovery Cruise Line, using the best group rates obtainable for the week, depending on class size and room occupancy. Daily Bahamas schedule begins with field collections where plant groups to be studied that day are collected through wading or snorkeling. They are transported to the laboratory at College of the Bahamas where they are separated into pans. Then a lecture is given on the particular group, followed by lunch. The afternoon is spent in a laboratory examining and learning live marine plants, which are returned to the sea at the end of the day. Microscopes and lab equipment are provided. Daily field trips include the beautiful Lucayan National Park and Paradise Cove, where snorkeling or wading to pristine coral reefs, abundant mangroves, and algal and seagrass beds begins on some of the most beautiful beaches in the Bahamas. Instructor: Bart Baca

Taxonomy of Marine Inverbrates
OCMB-6085 (5991)
Trip Dates: August 3–9,
Lectures July 25 and August 1
Limited to 15 Students.
$350 Lab Fee

This course will cover the taxonomy and ecology of marine invertebrates (emphasizing shallow tropical western Atlantic species) and train students in their identification. Field work and a self-paced laboratory are integral to the course. Class includes a week-long field trip to the Keys. Instructor: Charles Messing

Tropical Marine Fish Ecology
OCMB- 6120 (5992)/CZMT- 0690 (5993)
Trip Dates: July 20–July 26
Limited to 20 students.
$375 Lab Fee

This course will cover the ecology of tropical fish, including coastal, estuarine, mangrove, and pelagic fish. Emphasis is on identification and natural history of local species. Current theories on distribution and abundance will be discussed in addition to ecological theory. Field work will take place at the Keys Marine Laboratory, Long Key, Florida. On return to the Oceanographic Center, self directed and self-scheduled laboratory study will be required. Instructor: Richard Spieler

Seminars and Dissertations

On February 19, Edward O. Keith, Ph.D., spoke to the NSU Institute for Learning in Retirement. His title was “Manatee conservation in Mexico” and he described his collaboration with Mexican biologists to establish a conservation program for the Antillean manatee (Trichechus manatus manatus) in the Alvarado Lagoon System in the state of Veracruz, Mexico.

M. James C. Crabbe, Ph.D., presented a talk titled, “Modelling coral colony growth; indicators of reef health in the Caribbean and Indo-Pacific” on May 9. Crabbe was visiting from the School of Animal and Microbial Sciences University of Reading, United Kingdom.

Kirtida Oza, Ph.D., presented a talk on May 8 titled, “Nonviolent struggles for environmental change in India: with a particular focus on the role of women.” Oza is an international visiting professor at Randolph-Macon Women’s College.

PH.D. DISSERTATION

Peggy VanArman, “Biology and Ecology of Epigean Crayfish that Inhabit Everglades Environments Procambarus Alleni (Faxon) and Procamarus fallax (Hagen).” Committee members: Bart Baca—chairman, Patricia Blackwelder, Curtis Burney, and Frank Jordan. April 11.

VanArman was a judge for the Science Panel-Pathfinder Scholarship Awards and is a recipient of the Environmental Volunteer Recognition Award from the Arthur R. Marshall Foundation in March.

THESIS


Aaron Hartz, “The Effects of Physical and Biological Parameters on the Survival of Fecal Indicator Bacteria in Beach Sand and Seawater in a Sub-Tropical Environment.” Committee members: Andrew Rogerson, Don McCorquodale, and Scott Schatz (NSU Health Professions Division). July 10.

CAPSTONE REVIEW


Student Awards

NSU Oceanographic Center student Rebekah Walker has been awarded one of five Coastal Management Fellowships from the NOAA Coastal Services Center.

The Coastal Management Fellowship was established in 1996 to provide on-the-job education and training opportunities in coastal resource management and policy for postgraduate students and to provide project assistance to state coastal zone management programs. The program matches postgraduate students with state coastal zone programs to work on projects proposed by the state and selected by the fellowship sponsor, the National Oceanographic and Atmospheric Administration (NOAA) Coastal Services Center.

From the nominations submitted by Sea Grant directors, 12 semi-finalists are selected according to the criteria outlined above by a panel appointed by the Branch chief of Coastal Management Services at the NOAA Coastal Services Center. The selection panel includes representation from Sea Grant, the NOAA Office of Coastal Resource Management, State Coastal Zone Management (CZM) Programs, current and former fellows, and the executive director of the Coastal States Organization. A workshop to match states with fellows took place in Charleston, South Carolina, in April 2003. Of the 12 semi-finalists selected in 2003, five were placed with a host state.

Walker will be working in Charleston, South Carolina, on a molluscan shellfish management plan with Steve Moore at South Carolina’s Department of Health and Environmental Control and Bill Anderson at South Carolina’s Department of Natural Resources. She will be

- evaluating state laws, policies, and the shellfish management framework to determine if adequate protection of South Carolina’s shellfish resources exist
- investigating methods and incorporating stakeholder expertise to restore the resource
- producing a document that illustrates management issues related to the shellfish resources

More information on the Coastal Management Fellowships can be found at www.csc.noaa.gov/cms/fellows.html.

Ph.D. candidate Paul Arena was nominated for NSU Student of the Year, representing the center at the fourth annual Student Life Achievement Awards. Arena was the student body president from 1998–2000. He has excelled academically in his studies and research and has shouldered responsibility as an undergraduate teaching assistant as well. Arena has represented NSU at several international meetings where he presented results of his research. The awards ceremony was held on April 15.

Tina Qwaltney formally began her Ph.D. research on June 1 with funding from NOAA’s National Estuarine Research Reserve Graduate Fellowship Program. Her proposed research is titled, “Role of micrograzers in the microbial degradation of mangrove leaf litter and the possible influence of anthropogenic inputs.” She has been recommended for three years of funding and hopes to complete her degree by May 2006. As part of the NERRS program, she will conduct her research within the Rookery Bay Reserve in Naples, Florida.

Tina Gwaltney in the marine microbiology laboratory
Taking a giant leap away from marine ecosystem studies in order to attempt to understand the complex cultural and resource management issues that indigenous people face in the depths of the world’s greatest river system, eight NSUOC graduate students undertook an independent, student-led journey into the heart of the Huaorani Territory. For the first two weeks of February 2003, Jessica Craft, Greg Foster, Kristi Foster, Amy Hall, Arlo Hemphill, Brian Shepard, Lauren Shuman, and Greg Ward journeyed first to Quito, Ecuador’s capital in the Andean highlands, and then on into the Amazonian lowlands.

Departing from Quito, the journey to Bameno consisted of three days of travel by taxi, bus, ranchero (a local open-air bus built on the back of a flat-bed), motorized canoe, and foot. The greater portion of the journey consisted of cruising through backwater tributaries of the Napo River (itself an enormous tributary of the Amazon), on the border between the chartered Huaorani Territory and the immense green expanses of Yasuni National Park. The journey was a naturalist’s dream and the students were able to closely observe such remarkable Amazonian faunal species as piranhas, anaconda, capybara (the world’s largest rodent), and a vast array of other enigmatic birds, fish, reptiles, amphibians, and arthropods as well as plants.

Three days were spent with the Huaorani, an indigenous people that occupy a vast tract of territory in one of the most remote regions of the Ecuadorian Amazon. While there, the students participated in the Huaorani’s everyday life, learning how to hunt for caiman and peccary with lances, how to craft and use blowguns, how to prepare the sacred ayahuasca beverage as well as dart poison for hunting, how to weave baskets and other household goods from plant fibers, how ceremonial dances are conducted, and were even allowed the ultimate privilege of participating in a clandestine shamanic ceremony.

Belize Independent Study

After having previously done an internship for TIDE (Toledo Institute for Development and Environment) for her undergraduate degree, M.S. student Nicolle Cushion was contacted again about participating in the PHMR baseline studies. TIDE co-manages Port Honduras Marine Reserve (PHMR) with the local communities, working toward sustainable fishing practices. Cushion worked out an independent study under the supervision of Dave Gilliam, Ph.D., and has been aiding in the establishment of permanent coral reef monitoring transects and sites and doing fish censuses. The marine reserve has different zones, including general use (sustainable fishing allowed), conservation (no take, but tourism and catch and release fishing permitted), and a preservation area (off-limits). The information gained will be used to aid management decisions and view the effectiveness of the differing zones. TIDE’s Web site is www.tidebelize.org.

The Huaorani in traditional dress from the village of Bameno with students (L-R) Greg Foster, Kristi Foster, Jessica Craft, Brian Shepard, Amy Hall, Arlo Hemphill, Lauren Shuman, and Greg Ward. Friend and guide, Moi Enomenga is far right. (Photo courtesy of Brian Shepard).
A survivor! The U.S.S. Cole arrives in Fort Lauderdale for Fleet Week, April 28–May 2.

The Center thanks Edison Irvine for the gift of the aquariums now set up in the lobby.