

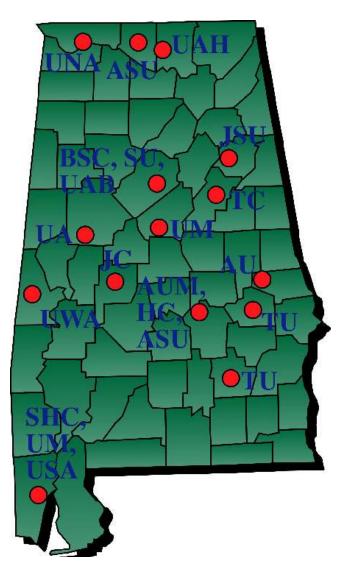
Dauphin Island Sea Lab

Alabama's Marine Science Education and Research Institution



2006 Annual Report

The Twenty-one Member Schools of the Dauphin Island Sea Lab/ Marine Environmental Sciences Consortium



- Alabama State University, Montgomery, AL*
- · Athens State University, Athens, AL
- · Auburn University, Auburn, AL*
- Auburn University at Montgomery, Montgomery, AL
- Birmingham Southern College, Birmingham, AL
- · Huntingdon College, Montgomery, AL
- Jacksonville State University, Jacksonville, AL*
- · Judson College, Marion, AL
- Samford University, Birmingham, AL*
- Spring Hill College, Mobile, AL
- Talladega College, Talladega, AL
- · Troy University, Troy, AL
- Tuskegee University, Tuskegee, AL*
- University of Alabama, Tuscaloosa, AL*
- University of Alabama at Birmingham, Birmingham, AL*
- University of Alabama in Huntsville, Huntsville, AL*
- University of Mobile, Mobile, AL
- University of Montevallo, Montevallo, AL
- University of North Alabama, Florence, AL
- University of South Alabama, Mobile, AL*
- University of West Alabama, Livingston, AL

^{*} Schools with Graduate Degree Programs



Statement of Purpose

The Dauphin Island Sea Lab (DISL) is Alabama's marine research and educational institution. Founded in 1971 by the Alabama legislature to maximize the marine sciences capabilities of several Alabama institutions and minimize duplication, DISL serves twenty-one Alabama colleges and universities, both public and private. DISL and its faculty work toward the combined purposes of conducting pure and applied research, and sponsoring structured educational programs for individuals and organizations interested in and dependent upon the marine environment.

Table of Contents

Member Schools	2
Statement of Purpose/Table of Contents	3
Letter from the Director	
Administration and Facilities	6-8
Business/Finance Auxliaries (Cafeteria, Estuarium Gift Shop)	
Computer Center	
Library	
Community Relations	
Plant Operations Technical Support/Vessels	
Discovery Hall Programs	9-10
Estuarium	
University Programs	
Coastal Policy Center	
Resident Research Faculty	
Faculty Activity	
Board of Directors/Executive Committee/	
Program Committee	
Extramural Funding	
Balance Sheet	
Appendix 1: Full Report of the Mobile National I	
Program/Coastal Policy Center (prepared by	
Capt. David W. Yeager)	26-31
DISL Educational Impact in Alabama,	
by County	Back cover

Dauphin Island Sea Lab/
MESC provides equal
educational opportunity to,
and is open and accessible to,
all qualified students, without
regard to race, color, creed,
national origin, sex or qualified
handicap/disability with
respect to all of its programs
and activities.

Disabled students will be provided "reasonable accommodations" when they have identified themselves and validated their special need(s). Complete confidentiality is maintained unless authorization for release or information has been given in regards to disability.

Dauphin Island Sea Lab 101 Bienville Boulevard Dauphin Island, AL 36528 Ph: (251) 861-2141 Fax: (251) 861-4646 www.disl.org

For questions about this Annual Report, please email Lisa Young, Community Relations Director, at lyoung@disl.org

Cover photos, top row: Contributed DISL Archive; bottom photo: Dr. John Dindo



Letter from the Executive Director



Hurricane Katrina may have devastated the maritime forest behind the classrooms with her salty storm surge, but we're still standing. Photo: Dana Thompson.

How sweet it is! A summer without a hurricane is like a tall glass of sweet tea from the cafeteria and we are most grateful for the respite. It's an interesting comment on our precarious situation when a non-event stands out as the most important occurrence of an entire year – and perhaps it wasn't.

The retirement of Dr. Will Schroeder marks the end of an era at DISL. I met Will in a diving class at Scripps in 1963 when he was an undergraduate at San Diego State and I was in my rst semester of graduate school.

He went on to become a nationally respected SCUBA instructor in addition to receiving his terminal degree at Texas A&M University where I found him in an of ce under some stairs and suggested that he consider joining the U. of Alabama Marine Science Program which had recently moved to Dauphin Island to be part of the consortial effort. We had a unique opportunity to take part in some of the early eld experiments utilizing saturation diving at Hydrolab in the Bahamas where he saved my life during an extended dive near the break.

Will survived the "purge" when the Lab Director at the time dismissed the entire UA faculty (including me) for insubordination, and the destruction of the Lab and bridge by Hurricane Frederic (during which the dummy stayed on the island). He lived through the 20% budget reduction under the rst James administration and innumerable dive trips trying to nd the articial reefs using LORAN. He graciously endured countless jibes at the "Thank God Summer School Is Over" parties (mostly concerning his frugal tendencies and failures at gear recovery), and 20 consecutive years of teaching oceanography (including biological sampling techniques) during the summer sessions, a record never to be approached.



Dr. Crozier (left) presents a drawing of the Sea Lab campus to Dr. Schroeder at his retirement party. Photo: Melissa Mills

Will Schroeder was (and remains) a tireless traveler, both on and below the surface of the ocean. He is one of the best people to travel with (unless you wanted him to pick up the check); a truly great story teller and companion, with more experiences than three ordinary people. He remains a great personal and professional friend and will be sorely missed at Dauphin Island.

George F. Crozier, Ph.D. Executive Director Dauphin Island Sea Lab

George Lewys

We were delighted to host world-renowned scientist Dr. Daniel Pauly, Director of the Fisheries Centre at the University of British Columbia (left photo, standing right) as the 2006 Wiese Distinguished Lecture Series honoree. He joined us and other guests as we dedicated the new Peter V. Wiese Marine Science Hall in 2006. (Right photo) Mrs. Marty Wiese looks at the photo of her late husband, Pete Wiese, which graces the lobby of the new facility.



Administration and Facilities

DISL is located on 36 acres on the eastern end of Dauphin Island, a barrier island approximately three miles from the mainland and 40 miles south of Mobile, Alabama. The Sea Lab spans the island and thus has direct access to the Gulf of Mexico, Mississippi Sound and Mobile Bay. A

causeway and bridge connects the island to the mainland.

A new classroom was built from the old maintenance shed on the South Campus, making a total of 15,309 square feet of instructional space. On the North Campus. a new research laboratory/ of ce space

Peter V. Wiese Marine Science Hall added 10,000 square feet in research and of9ce space in 2006.

was dedicated in 2006 in memory of Sea Lab supporter Peter V. Weise, doubling Marine Science Hall facilities to a total of 20,000 squre feet. 1,500 square feet of the old maintenance shed was converted into lab space and of ces for DISL's FOCAL (Fisheries Oceanography of Coastal Alabama) program, headed by Dr. Frank Hernandez.

The campus can accommodate 160 persons in residence. Two dormitories, a two-story ef ciency apartment building with twelve-units, eight three-bedroom houses, and a cafeteria provide quarters and meals for visiting faculty and students. The DISL library is highly specialized in the marine sciences, particularly those areas relating to the ecology and geology of the Gulf Coast region. Its holdings include more than 7,400 bound volumes and approximately 500 periodical titles, with

current subscriptions to many of those periodicals. The library also has numerous CD-ROM databases, as well as access to a variety of on-line library catalogs. Wet Lab facilities house modular seawater systems, kreisels, and other instruments for experimental work on living marine organisms.

Research laboratories are equipped with state-of-the-art instrumentation for biogeochemical research. Field collection equipment for marine ecological and oceanographic research is available. DISL maintains two large research vessels, including the 65-ft. R/V A.E. Verrill and the 40-ft. E.O.

Wilson, in addition to several small boats and skiffs.

Administrative Personnel

Dr. George F. Crozier - Executive Director Dr. John J. Dindo - Chair, Discovery Hall Programs Dr. Kenneth L. Heck - Chair, University Programs Georgia Mallon - Comptroller/Business-Auxiliaries Manager

Aleada Nicholson - Administrative Assistant to the Executive Director

Business/Finance

The Business Of ce of the DISL operates under the principles of Fund Accounting set forth by the National Association of College and University Business Of cers. The State Examiners of Public Accountants audit annually the procedures, accounting records and policies of the DISL.



Business/Finance Personnel

Georgia Mallon - Comptroller/Business-Auxiliaries Manager Lynn Bryant - Payroll Joyce Carroll - Receptionist Mary Darby - Accounts Payable David England - Bursar Christine Hilburn - Purchasing Sherry Horton - Contract & Grants Manager Dennis Patronas - Assistant

Auxiliaries

Auxiliaries of the DISL include the Cafeteria, Estuarium Gift Shop, Laundromat and vending machines.

Cafeteria Personnel

Classie Beritiech - Manager Judy Barber Rene Cain Rose Cortichiato Cindy Grimes Gail Zirlott

Estuarium Gift Shop Personnel

Jeana Layne - Manager Daphne Wood - Manager/Buyer Nancy Connell Jamelle Ellington Amy Hannah

Information Technology

The Sea Lab's Information Technology Department provides user services and support for more than 120 users and 227 computers and servers, in both academic and administrative departments. In 2006 we made plans to move the current server room

to the second oor space in the administrative building and began construction on this project. It is slated to be completed in summer of 2007. We also welcomed new employee Shane Johnson to the Information Technology staff.

Information Technology Personnel

Melissa Mills - Manger of Information Technologies Shane Johnson - PC and Network Support Specialist Lei Hu - Data Manager

Library

The DISL library is highly specialized in the marine

sciences, particularly those areas relating to the ecology and geology of the Gulf Coast region. Its holdings include more than 7400 bound volumes and approximately 500 periodical titles, with current subscriptions to many of those periodicals. Online full text access to over 80 subscribed titles and hundreds of open access titles is available. Besides free Alabama Virtual Library. subscriptions to online databases Aquatic Sciences and Fisheries Abstracts. Oceanic Abstracts and Current Contents on Diskette continue to give students and faculty current bibliographic resources. Twelve new computers and three large study tables have been added to the library to help provide a more conducive learning enviroment.

Library Personnel

Connie Mallon - Librarian

Community Relations

Blissfully free from dealing with any fallout from tropical occurrences, the Community Relations Department was able to focus on promoting the educational, research and policy programs of the Sea Lab with great results locally, regionally and nationally. Drs. Rich Aronson, John Dindo and Monty Graham were cover subjects featured separately in the "Living" section of the Mobile Press Register. Research projects such as Dr. Ken Heck's seagrass work; Dr. Ron Kiene's Antarctic studies; Dr. Just Cebrian's submerged aquatic vegetation projects; and Dr. Will Schroeder's World War II shipwrecks mapping program all received national and international attention.

The Community Relations Department also helped plan such successful special events as Discovery Day, the Sea Lab's Annual Open House; Spooktacular, the DISL Foundation's Halloween event; the opening of the new Wiese Marine Science Hall; and the 2006 Wiese Distinguished Lecture Series, which featured Dr. Daniel Pauly.

The CR Department continues to publish the DISL's quarterly newsletter *Tidings*, available electronically. Log onto http://tidings.disl.org to receive a free esubscription.

Thanks to ExxonMobil for continued funding of their Community Jobs Program, which helped fund 2006 Community Relations Intern Jenny Brazzell, a student from Spring Hill College, in the summer.

Community Relations Personnel

Lisa Young - Community Relations Director

Plant Operations

The care and maintenance of this former Air Force base

takes constant vigilance, and the Plant Ops staff handled upkeep and upgrades with customary ef ciency. The dorms Beagle and Challenger got new doors and electrical circuits, while Albatross' weight room got a new ceiling, carpet and paint. Generators were added, switched and tested on nearly all the large buildings of the DISL, and the South Campus received a fresh coat of paint. Also getting a facelift was the older section of Marine Science Hall to match the facade of the newly built Wiese Building. A new classroom emerged from the old maintenance shed, and Auburn's Landscape Architecture class were grateful to call it home during their stay at the DISL. Finally, longtime Plant Ops employee and supervisor Steve Ruf went to his well-earned retirement, and Troy McBride seamlessly took over the position of supervisor.

Plant Operations Personnel

Steve Ruf - Supervisor, until June 2006 Troy McBride - Supervisor, July 2006 to present Tommie Blocker Bryan Breaux Jim Daves Ricky Gibbs Chris Gilliam Joey Johnson Kenneth O'Neal Tom Pritchett David Yommer

Household Maintenance Personnel

Tammy McClantoc - Supervisor Mike Connell Shirley Emerson Cindy Johnson



A.E. Verrill, photo courtesy Bruce Adkins

Jenny Johnson Shirley Kirkpatrick Holly Ladnier

Technical Support and Vessels

Technical Support strives to provide faculty and students with information, technology, resources and services related to coastal research. Although technicians are subject to almost any conceivable demand, services can generally be grouped into one of four areas: eld instrumentation,

laboratory instrumentation, wet lab, and scienti c diving.

Three Motorboat Operators Certication Courses offered by Vessel Ops taught 17 students and staff the fundamentals of small boat operation. The increased number of users led to over 575 trips in 2006 by the combined eet of 8 vessels.

Technical Support Personnel

Michael Dardeau - Technical Support Supervisor Al Gunter - Field Technician Yantzee Hintz - Wet Lab Technician Laura Linn - Analytical Technician Kyle Weis - Field Technician

Vessel Operations Personnel

Tom Guoba - Vessel Ops Supervisor Rodney Collier - Captain Clark Lollar - Captain Russell Wilson - Captain

2006 Vessel Days at Sea (including 1/2 day ops)

 A. E. Verrill
 125

 E. O. Wilson
 95

 Small Boats
 356



Discovery Hall Programs

Dauphin Island Sea Lab's Discovery Hall Program Totals

Based on the principle that hands-on learning invigorates the desire for in-depth education and life-long interest, Discovery Hall Programs (DHP) offers a broad variety of intensive programs for K-12 students, teachers and the general public.

The Discovery
Hall Program, in
partnership with
the University
of Southern
Mississippi's J.L.
Scott Marine
Education Center

and Mobile County Public School Systems' Environmental Studies Center, worked on a

cooperative marine science education grant funded by the Mississippi-Alabama Sea Grant Consortium. This grant helped provide partial funding for an additional marine educator for DHP and traveling marine science program BayMobile.

BayMobile was constantly in demand in 2006. Site visits included Kids Day in Bienville; Cub Scout Camp; Bayou La Batre Library;

Year	K-5	Middle	High	College	Teachers	Other	Total
		School	School				
1990	7,382	1,364	905	473	185	397	10,706
1991	2,296	745	329	127	254	620	4,371
1992	6,103	2,005	1,187	671	254	351	10,571
1993	7,128	1,784	2,123	765	238	529	12,567
1994	7,634	2,083	1,533	603	356	478	12,687
1995	5,981	1,763	1,137	634	213	336	10,064
1996	6,915	2,318	1,411	456	300	126	11,526
1997	6,312	1,630	1,170	648	269	284	10,313
1998	6,233	2,079	1,484	364	230	352	10,742
1999	4,232	2,055	1,397	479	225	301	8,689
2000	6,567	2,141	1,746	476	199	368	11,497
2001	6,239	1,918	2,485	540	177	277	11,636
2002	4,196	2,924	1,865	460	175	430	10,050
2003	4,605	2,845	2,215	278	230	293	10,466
2004	4,737	1,385	1,435	262	150	188	8,157
2005	3,897	1,102	1,592	316	167	98	7,172
2006	6,576	2,326	2,877	566	117	374	12,836
Total	97,033	32,467	26,891	8,118	3,739	5,802	174,050

Bellingrath Gardens Wonderful Wednesdays; Linden Library; Demopolis Library; Maxwell Air Force Base; Gunter Air Force Base; and the Gulf Shores Museum.



Another enraptured audience listens about who lives with us in Coastal Alabama during a BayMobile visit to Bellingath Gardens. Photo: Jenny Brazzell.

Through a National Science Foundation grant for Centers for Ocean Sciences Excellence in Education-Gulf of Mexico. DHP will host twelve teachers and fourteen scientists at the Sea Lab. This program links science teachers to research scientists in an effort to enhance ocean science literacy.

The Dauphin Island Sea Lab's

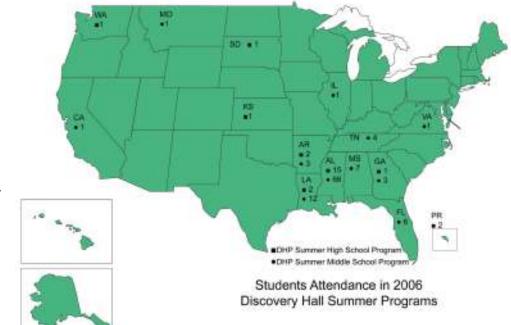
Discovery Hall Programs and University Programs

are part of a National Oceanographic and Atmospheric Administration Cooperative Initiative through Mississippi State University. This \$500,000 grant will be used to study oyster reef restoration, submerged aquatic vegetation and to enhance ocean literacy for K-12 and public education.

Shell Oil once again provided the funding to support the summer minority internship program. This provides an opportunity for minority

undergraduates and graduate students in science or science education to participate in teaching coastal and marine science during the summer months. This internship provides for room and board, a stipend and some travel funds. The interns learn while assisting the marine science educators and conduct outreach activities in marine science throughout the area. Participants for 2006 were Gabrielle Hammons from Tuskegee University and Adam Pettway from Alabama State University.

Summer educational programs were once again highly subscribed. Gulf Island Journey, the middle school residential program, had over 100 participants for its four sessions; the high school



summer program had 25 students from seven different states, and the teacher workshops had over 75 educators come to the Sea Lab for training.

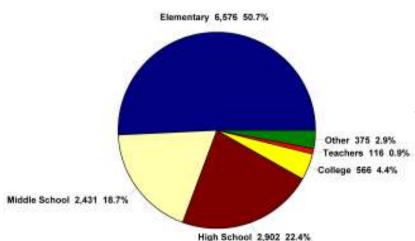
In 2006, DHP conducted programs during the academic year for 12,836 students and teachers, exceeding all numbers of individual taught since 1990.

Discovery Hall Programs Personnel and Faculty

Dr. John J. Dindo, Ph.D. 1991 (University of Alabama at Birmingham) - Department Chair Denise Keaton - Administrative Assistant Pamela Pierce - Scheduler

Discovery Hall Student Participation in 2006

Including Summer Programs and Teacher Workshoos.



Faculty

Jenny Cook, M.S. Marine Science, 1991 (University of South Alabama) - Marine Educator

Greg Graeber, B.S. Science, 2000 (Auburn University) - Marine Educator Mendel Graeber, B.S. Science, 2001 (University of Alabama) - Marine Educator

Joan Turner, B.S. Elementary Science Education, 1999 (University of Alabama, Huntsville) - Marine Educator Hazel Wilson, B.S. Science Education, 1981 (Memphis State University) -Marine Educator



The Estuarium

251.861.7500

Toll Free: 866.403.4409 www.sealabestuarium.org

For the Estuarium, recovering from the physical effects of Hurricane Katrina was nothing compared to the public relations battle the area attractions faced. Although the aquarium was up and running by October 2005, we received repeated calls inquiring whether Dauphin Island was accessible, or if the area had running water and electricity.



Docent Teddy Dismukes cheerfully staffs one of the touch tables in the Estuarium.

Although we have not come close to pre-Katrina attendance numbers, visitation slowly climbed by more than 11,000 the previous year to reach a total of 59,780. Attendance was certainly helped by the state operation of the Mobile Bay Ferry, which now runs year-round.

In 2006 the Estuarium received funds from Mississippi-Alabama Sea Grant Consortium for an exhibit on underwater research and exploration.

Volunteer aquarists assisted greatly in the care and feeding of our animals and the impeccable maintenance of our aquaria. Volunteers for 2006 included Michelle Butler; Lindsey Herron; Angela

Reed: Yvonne Rhodes and Katie Williams. In 2006 Aquarist Stephanie Wright took a leave of absence for an internship at the London Aquarium, and volunteer aquarists Anna Dumas and Brittany Way helped out during her time away.

Some of the mostloved attractions at the Estuarium are not the animals, but the friendly humans who staff the Touch Tables. Their unfailing courtesy and

eagerness to share information about the animals and habitats are what make this facility so inviting. We could not operate this facility without their invaluable participation. For more information on joining the Docent Program, please contact Ms. Denise Keaton at dkeaton@disl.org or (251) 861-7515.

We'd also like to thank our wonderful Landscaping Docents (Blanche Emerson, Anne Ferguson, Rena Schuett, Linda Miller, Carol Standish, Debbie Tallant and Stella Anderson) for their green thumbs in our Butter y Garden. Their beautiful work evokes "oooohh's" and "aaaaah's" of appreciation from all

our visitors to the Sea Lab.

The Estuarium at the Dauphin Island Sea Lab Visitor Totals

Estuariun	Total	Members Passes	Seniors	Adults	Students	Year
Personne		Employees, Comps				
	53,246	2,343	7,774	16,468	26,661	1998
- Estuariur	66,281	2,455	10,427	18,842	34,557	1999
Manager	73,055	2,662	11,887	20,283	38,223	2000
Brian Jone	72,348	2,718	12,112	21,305	36,213	2001
- Senior	72,987	3,056	12,638	21,966	35,327	2002
Aquarist	77,475	3,218	12,435	23,200	38,622	2003
Joe Ingrah	71,856	3,356	12,742	21,300	34,458	2004
- Aquarist	48,812	2,533	6,728	13,050	26,501	2005
Stephanie	59,780	2,940	8,030	15,745	31,059	2006
Wright	595,840		94,773	172,159	301,621	Total

Estuarium Personnel Robert Dixon - Estuarium Manager **Brian Jones** - Senior Aquarist Joe Ingraham - Aquarist Stephanie Wright



University Programs

Summer undergraduate and year-round graduate (M.S. and Ph.D.) education, as well as faculty research are carried out through the University Programs (UP) and its faculty. Seventeen of the 21 MESC member institutions sent students to the DISL for the 2006 Summer Program. UP delivered 870 undergraduate and 172 graduate semester hours of instruction during the summer, and 483 graduate semester hours during the academic year (Figure 1). Six M.S. students and two Ph.D. candidates who conducted their research at DISL and were advised by Sea Lab faculty received their degrees from their home institutions during the past year (Table 1).

For the 7th year in a row, DISL participated in NSF's Research Experience for Undergraduates (REU) program, hosting seven talented undergraduates from colleges and universities around the U.S. who were mentored by UP faculty during twelve weeks of intensive study and research (Table 2, next page).

Table 1: 2006 Graduates

Habitat.M.S. (USA).

Nadia Bood. The recovery and resilience of coral assemblage on managed and unmanaged reefs in Belize: A long-term study. M.S. (USA).

Dale Booth. The impact of oysters on the growth and recruitment of *Halodule wrightii*. M.S. (USA).

Jody Bruton. Fates of methanethiol in coastal seawater. Ph.D. (USA).

Todd Clardy. Stock discrimination between eastern Gulf of Mexico and Atlantic king mackerel, *Scomberomorus cavalla*, using otolith shape analysis. M.S. (USA).

Brad Furman. Effects of Nutrient Enrichment and Grazers on Coral Reefs: An Experimental Assessment. M.S. (USA). **Nathan Geraldi.** Individual and Community Level Responses of Crustaceans and Fish to Restoration of Marine Biogenic

Kevan Gregalis. Evaluation of sheries bene ts of oyster reef restoration along an environmental gradient in Mobile Bay, Alabama. M.S. (USA).

Matthew Johnson. The role of habitat fragmentation per se on the structure and function of seagrass ecosystems in the northern Gulf of Mexico. Ph.D. (USA).

Figure 1.

DISL College Credit Hours Delivered

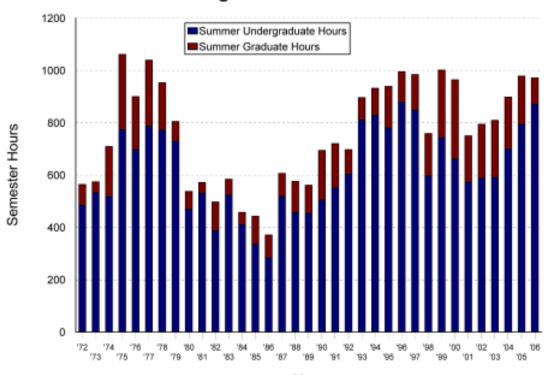


Table 2: 2006 REU Fellows

Meghan Cook, Salem College, Dr. John Valetine - Mentor. Impacts of amphipod grazing on seagrass biomass.

Karen Fisher, University of North Carolina at Chapel Hill, Dr. Ken Heck - Mentor. The effects of nutrient enrichment on growth, fecundity and stoichiometry of epiphyte grazers in *Thallassis testudinum* beds.

Emily Foley, Mount Union College, Dr. Kyeong Park - Mentor. The concept of eutrophication: a tool for outreach to the general public.

Sara Heintzman, University of Virginia, Dr. Ron Kiene - Mentor. Searching for the missing sulfur: seawater to ctenophores.

Matt Kenworthy, North Carolina State University, Dr. Sean Powers - Mentor. Multiple predator effects within oyster reefs: foraging behavior of oyster drills and stone crabs.

Kelsey Pickard, Colorado College, Dr. Just Cebrian - Mentor. Effects of short-term shading and sediment fertilization on seagrass growth and density.

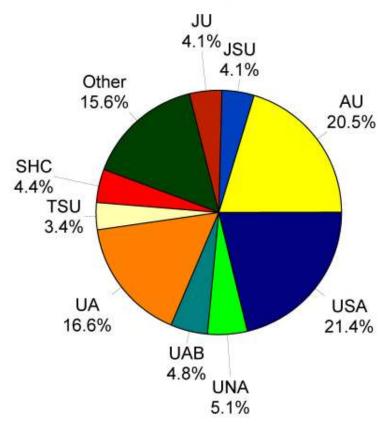
Ryan Sacksteder, University of North Carolina at Wilmington, Dr. Rich Aronson - Mentor. Fecal enegetics and dietary assimilation of the blue crab *Callinectes sapidus* in Alabama state marshes.

UP research awards again increased in 2006, and UP contributed \$2,194,985 to the Sea Lab's total extramural funding of over \$4.2 million. Research projects included oyster reef restoration; hydrological modi cation study; examining the effects of Hurricane Ivan, and many, many others. A complete listing of extramural grants can be found on pages 22-24.

University Programs Personnel

Dr. Kenneth L. Heck - Department Chair Sally Brennan - University Programs Registrar Carolyn Wood - Administrative Assistant

Summer - 2006 Total Credit Hour Breakdown by Institution





Coastal Policy Center Mobile Bay National Estuary Program

The Coastal Policy Center completed an update of the public access points on the Alabama coast in October. The effort was funded by the Coastal Section of ADCNR with the expressed intent of not only updating the list but assessing the residual impact of Hurricane Katrina. The effort also led to funding of a project aimed at rehabilitating a long neglected park in the City of Chickasaw. This will involve the Auburn Landscape Architectural studio planned for early next year.

Dr. Crozier continues to actively support the educational activities of grassroots, inc., an environmental education effort based in the continuing education efforts of local real estate organizations. This group has been preparing a web-based presentation which will be made available nationwide some time next year. The material has been altered to provide

The Auburn Landscape Architecture class display their water access plans with the public during a meeting in March 2006.

continuing education to in-service engineers as well.

The Dauphin Island Sea Lab's long term interests in research, education and the provision of information and science for citizens and decision makers to support wise management of the Alabama's coastal resources continue to be well-served by providing an organizational home for the Mobile Bay National Estuary Program (MBNEP) as an integral part of its Coastal Policy Center. MBNEP assists in providing this vital public service component of the DISL mission through encouraging a

community-based approach to watershed management by empowering citizens, grassroots organizations, government agencies, and educational establishments to work together to address local environmental challenges. Engagement of these groups in protecting Mobile Bay, our associated coastal waters and their surrounding watersheds will help ensure their protection and conservation for our lifetime and beyond.

For a complete version of the MBNEP Annual Report, see Appendix 1, pages 26-31.

Coastal Policy Center Personnel

Dr. George F. Crozier - Executive Director, DISL Captain David W. Yeager - Associate Director, CPC; Director, MBNEP

Michael Dardeau - Marine Scientist, DISL

Dr. John Dindo - Chair, Discovery Hall Programs, DISL

Aleada Nicholson -Administrative Assistant Dr. John Valentine - Senior Marine Scientist, DISL Marla Valentine - Intern



Captain David W. Yeager -Director. Roberta Swann - Deputy Director Tom Herder - Science

Program Personnel

Communicator Kara Lankford - Watershed Facilitator

Tiffany England - Business Manager



Oyster Gardening in Mobile Bay



Resident Research Faculty

Richard B. Aronson, Ph.D. (Harvard University, 1985) Senior Marine Scientist, DISL and Professor of Marine Science, University of South Alabama. Ecology and paleoecology of disease outbreaks on coral reefs. Climate change and community paleoecology in Antarctica.

Just Cebrian, Ph.D. (Polytechnic University of Catalonia, Spain, 1996) Senior Marine Scientist, DISL and Assistant Professor of Marine Sciences, University of South Alabama. Trophic interactions and carbon budgets in marine ecosystems. Nature and controls of trophic routes of primary production in marine and terrestrial ecosystems.

Ruth Carmichael, Ph.D. (Boston University, 2004) Senior Marine Scientist, DISL. Employing natural abundance stable isotopes to understand biological and physiological responses to environmental perturbations, assess nutritional importance of food sources, discern physiological state of organisms, and determine time scales of ecosystem-level change. *Hired in 2006, began in January, 2007.

George F. Crozier, Ph.D. (Scripps Institute of Oceanography, 1966) Executive Director, DISL. Active on most of the state and regional technical planning groups and involved in translating basic research into the real world of coastal resource management.

Michael R. Dardeau, M.S. University of South Alabama, 1982). Marine Scientist, DISL and Supervisor, Marine Technical Support & Operations. Coordinating marine operations including wet lab, dive locker, marine chemical and eld instrumentation, and vessel operations. Research interests include coastal policy relating to living resources.

John J. Dindo, Ph.D. (University of Alabama at Birmingham, 1991). Senior Marine Scientist, DISL, and Chair, Discovery Hall Programs. Interests include marine vertebrate ecology; avian breeding biology;

predator-prey relationships in avian and herpetological fauna, habitat assessments; and age, size class and recruitment rates of sh on hardbottoms.

Monty Graham, Ph.D. (University of California, Santa Cruz, 1994) Senior Marine Scientist, DISL, and Associate Professor of Marine Science, University of South Alabama. Physical and behavioral mechanisms that cause plankton to be distributed in patches. Also interested in processes that in uence the formation and fate of detrital particles known as "marine snow."

Kenneth L. Heck, Ph.D. (Florida State University, 1976) Senior Marine Scientist, DISL, Professor of Marine Science, University of South Alabama, Chair of University Programs. Ecological studies of interactions between seagrasses and associated macrofauna, especially shrimps, crabs, and shes. Current research includes a global assessment of seagrass nursery value, and experimental investigations of herbivory, nutrient enrichment and over shing as they impact seagrass ecosystems.

Ronald P. Kiene, Ph.D. (SUNY Stony Brook, 1986) Senior Marine Scientist, DISL and Professor of Marine Science, University of South Alabama. Biogeochemical cycling of organic matter in coastal and ocean systems with emphasis on compounds containing sulfur and nitrogen. Cycling of climatically important trace gases in relation to phytoplankton and food web dynamics. Microbial ecology and biogeochemistry in sediments.

Hugh MacIntyre, Ph.D. (University of Delaware, 1996) Senior Marine Scientist, DISL. Research interests include photosynthetic physiology and the dynamics of phytoplankton blooms (including harmful algal blooms) and in-water optical monitoring of water quality and productivity dynamics.

Tammy McGovern, Ph.D. (Florida State University, 2001). Coastal Marine Scholar, DISL. Research interests include reproductive ecology and

evolution in clonal and hermaphroditic organisms, particularly plasticity in reproductive allocation. *Here until December 2006.

Kyeong Park, Ph.D. (College of William and Mary, 1993) Senior Marine Scientist, DISL and Associate Professor of Marine Science, University of South Alabama. Physical transport processes and their effects on water quality and living resources in tidal rivers, estuaries and coastal systems, using eld data, theoretical analyses and numerical models. Speci c topics include estuarine residual circulation, dispersion of pollutants, sediment transport, eutrophication, hypoxia/anoxia, etc.

Sean P. Powers, Ph.D. (Texas A&M University, 1997). Senior Marine Scientist, DISL, and Assistant Professor of Marine Sciences, University of South Alabama. Fisheries, experimental ecology, conservation and restoration of coastal shell sh and n sh populations.

William W. Schroeder, Ph.D. (Texas A&M University, 1971) Senior Marine Scientist, DISL and Professor and Coordinator of the Graduate Marine Science Program, University of Alabama. Interdisciplinary oceanography.

LaDon D. Swann, Ph.D. (Purdue University, 1999) Director, Mississippi-Alabama Sea Grant Consortium, Assistant Research Professor, Auburn University. Biological research focuses on marine aquaculture with an emphasis on oyster reproduction. Educational research interest focuses on distance education for adult learners.

John F. Valentine, Ph.D. (University of Alabama, 1989) Senior Marine Scientist, DISL and Associate Professor of Marine Science, University of South Alabama. The role of biotic processes in controlling the ow of energy in seagrass communities, conservation biology, and the potential for marine protected areas to restore food web function in seagrass-coral reef systems.



Faculty Activity

Book Chapters and Projects

Aronson, R. B. 2006. Co-editor (with R. L. Karlson and P. J. Mumby). Section on Large-Scale Processes. In: Y. Suzuki, T. Nakamori, M. Hidaka, H. Kayanne, B. E. Casareto, K. Nadaoka, H. Yamano and M. Tsuchiya (Eds.), Proceedings of the Tenth International Coral Reef Symposium, Okinawa.

Valentine, J. F. and J. Emmett Duffy. 2006. The Central Role of Grazing in Seagrass Ecology. Pp. 463-501 In: T. Larkum, R. Orth and C. Duarte (Eds.), Seagrass: Biology, Ecology and their Conservation. Springer.

Heck, K. L., Jr. and R. J. Orth. 2006. Predation in seagrass meadows. Pp. 537-550 In: A.W.D. Larkum, R. J. Orth and C. Duarte (Eds.), Seagrasses: Biology, Ecology and their Conservation. Kluwer, Amsterdam.

Peer Reviewed Publications:

Aronson, R. B. and W. F. Precht. 2006. Conservation, precaution, and coral reefs. Coral Reefs 25:441-450.

Aronson, R. B., I. G. Macintyre, S. A. Lewis and N. L. Hilbun. 2005. Emergent zonation and geographic convergence of coral reefs. Ecology 86:2586-2600.

Bishop, M. J., **S. P. Powers**, H. J. Porter and C.H. Peterson. 2006. Benthic biological effects of seasonal hypoxia in a eutrophic estuary predate rapid coastal development. Estuarine, Coastal and Shelf Science 70:415-426.

Bolton, T. F. and **W. M. Graham**. 2006. Jelly sh on the Rocks: Bioinvasion Threat of the International Trade in Aquarium Live Rock. Biological Invasions 8(4):651-653.

Graham, W. M. and K. M Bayha. 2006. Biological invasions by marine jelly sh. Ecological Studies 193:239-255.

Hauxwell, J., **J. Cebrian** and I. Valiela. 2006. Light dependence of *Zostera marina* annual growth dynamics in estuaries subject to different degrees of eutrophication. Aquatic Botany 84: 17-25.

Heck, K. L., Jr. and **J. F. Valentine**. 2006. Plant-Herbivore Interactions in Seagrass Meadows. Journal of Experimental Marine Biology and Ecology 330:420-436.

Heck, K. L., Jr., J. F. Valentine, J. R. Pennock, G. Chaplin and P. M. Spitzer. 2006. Effects of Nutrient Enrichment and Grazing on Shoal Grass (*Halodule wrighti*i) and its Epiphytes: Results of a Field Experiment. Marine Ecology Progress Series 326: 145-156.

Ibarra-Obando, S. E., K. L. Heck, Jr. and P. M. Spitzer. 2005. Response of turtlegrass to natural and reduced light regimes under conditions of rhizome isolation. Gulf of Mexico Science 23: 197-210.

Johnson, M. W. and **K. L. Heck, Jr.** 2006. Seagrass patch characteristics alter direct and indirect interactions in a tri-trophic estuarine food web. Estuaries and Coasts 29:499-510.

Johnson, M. W. and K. L. Heck, Jr. 2006. Effects of Habitat Fragmentation per se on Decapods and Fishes Inhabiting Seagrass Meadows in the Northern Gulf of Mexico. Marine Ecology Progress Series 306:233-246.

Johnson, M. W., K. L. Heck, Jr. and J. W. Fourqurean. 2006. Nutrient content of seagrasses and epiphytes in the northern Gulf of Mexico: evidence of phosphorus and nitrogen limitation. Aquatic Botany 85:103-111.

Lipcius, R. N., D. B. Eggleston, K. L. Heck, Jr., R. D. Seitz and J. van Montfrans. 2006. Post-settlement abundance, survival, and growth of postlarvae and young juvenile blue crabs in nursery habitats. Pp. 535-564 In: V. S. Kennedy and L. E. Cronin (Eds.), The Blue Crab, Callinectes sapidus. Maryland Sea Grant. College Park, MD. 800 p.

Macintyre, I. G. and **R. B. Aronson**. 2006. Lithi ed and unlithi ed Mg-calcite precipitates in tropical reef environments. Journal of Sedimentary Research 76:81-90

Mateo, M. A., **J. Cebrian**, K. Dunton and T. Mutchler. 2006. Carbon ux in seagrass ecosystems. Pp. 159-192 In: A. W. D. Larkum, R. J. Orth and C. M. Duarte (Eds.), Seagrasses: Biology, Ecology and Conservation. Springer, New York.

Moksnes, P.-O. and **K. L. Heck, Jr.** 2006. The relative importance of Habitat Selection and Predation for the Distribution of Blue Crab Megalopae and Young Juveniles. Marine Ecology Progress Series 308:165-181.

Orth, Robert J., Tim J. B. Carruthers, William C. Dennison, Carlos M. Duarte, James W. Fourqurean, **Kenneth L. Heck**, Jr., A. Randall Hughes, Gary A. Kendrick, W. Judson Kenworthy, Suzanne Olyarnik, Fred T. Short, Michelle Waycott and Susan L. Williams. 2006. A Global Crisis for Seagrass Ecosystems. Bioscience 56:987-996.

Precht, W. F. and **R. B. Aronson**. 2006. Death and resurrection of Caribbean coral reefs: a paleoecological perspective. Pp. 40-77 In: I. C t and J. Reynolds (Eds.), Coral reef conservation. Cambridge University Press, Cambridge, UK.

Powers, S. P., C. H. Peterson, R. R. Christian, E. Sullivan, M. J. Powers, M. Bishop and C. P. Buzzelli. 2005. Effects of eutrophication on bottom habitat and prey resources of demersal shes. Marine Ecology Progress Series 302:233-243.

Powers, S. P., M. A. Bishop, J. H. Grabowski and C. H. Peterson. 2006. Distribution of the invasive bivalve *Mya arenaria* L. on intertidal ats of southcentral Alaska. Journal of Sea Research 55:207-216.

Rakow, K. C. and **W. M. Graham**. 2006). Oriented swimming by the scyphomedusa *Aurelia* sp. against shear ow. Limnology and Oceanography 51(2):1097-1106.

Stutes, A. L., **J. Cebrian** and A. A. Corcoran. 2006. Effects of nutrient enrichment and shading on sediment primary production and metabolism in eutrophic estuaries. Mar. Ecol. Prog. Ser. 312:29-43.

Toole D. A., D. Slezak, **R. P. Kiene**, D. J. Kieber and D. A. Siegel. 2006. Effects of solar radiation on dimethylsul de cycling in the Western Atlantic Ocean. Deep-Sea Res. 53:136-153. doi:10.1016/j.dsr.2005.09.003.

Woo, M., C. Pattiaratchi and **W. W. Schroeder**. 2006. Summer Surface Circulation on the Gascoyne Continental Shelf, Western Australia. Continental Shelf Research 26:132-152.

Woo, Mun, Charitha Pattiaratchi and **William Schroeder**. 2006. Dynamics of the Ningaloo Current off Point Cloates,

Western Australia. Marine and Freshwater Research 57:291-301, CSIRO Publishing.

Other Publications/Technical Reports Aronson, R. B. and W. F. Precht. 2005. Monitoring at the Flower Garden Banks: methodology, evolution, and future. Pp. 459-461 in M. McKay and J. Nides (Eds.), 23rd Gulf of Mexico Information Transfer Meeting. MMS–OCS Study 2005-066, Minerals Management Service, New Orleans. LA.

Etnoyer, P., S. D. Cairns, J. A. Sanchez, J. K. Reed, J. V. Lopez, W. W. Schroeder, S. D. Brooke, L. Watling, A. Baco-Taylor, G. C. Williams, A. Lindner, S. C. France and A. W. Bruckner. 2006. Deep-Sea Coral Collection Protocols. U. S. Department of Commerce, NOAA, NMFS. NOAA Technical Memorandum NMFS-OPR-28, August.

Graham, W. M. 2006. Relationship between invasive and native jelly sh and OCS platforms: A literature review and eld investigation. U.S. Dept. of the Interior, Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, LA. OCS Study MMS 2007, 211pp.

Powers, S. P., M. A. Bishop and E. Clesceri. 2005. Characterization of energy and potential contaminant pathways in a subarctic estuarine habitats: ecology of tidal at communities of Copper River Delta, Alaska. Final Report to Prince William Sound Regional Citizen Advisory Council. 25 pages.

Precht, W. F., R. B. Aronson, K. J. P. Deslarzes, M. L. Robbart and L. Kaufman. 2005. Long-term reef monitoring of the East and West Flower Garden Banks: new surprises. Pp. 456-458 In: M. McKay and J. Nides (Eds.), 23rd Gulf of Mexico Information Transfer Meeting. MMS–OCS Study 2005-066, Minerals Management Service, New Orleans, LA.

Valentine, J. F. and S. Sklenar. 2005. Assessment of Sediment Contamination in the Lower Mobile-Tensaw Delta (Rangia Study). Final Report to the Mobile Bay National Estuary Program. 38 pages.

Valentine, J. F. and S. Sklenar. 2006. Mobile – Tensaw delta hydrological modi cations impact study. A nal report. Mobile Bay Keepers and Mobile Bay National Estuary Program. 176 pages.

Valentine, J. F., K. D. Kirsch and D. C. Blackmon. 2006. An analysis of the long term sheries assessment and monitoring program data set collected by the Marine Resources Division of the Alabama Department of Conservation and Natural Resources. Final Report to the Mobile Bay National Estuary Program, 17 pages.

Abstracts & Presentations

Anton, A., C. D. Foster, K. Sheehan, J. Goff, M. E. Miller and **J. Cebrian**. The effects of Hurricane Katrina on the ecological services provided by seagrass

(Halodule wrightii and Ruppia maritima) meadows. 35th Annual Marine Benthic Ecology Meeting, Quebec City (Canada), March 8-12, 2006.

Anton, A., **J. Cebrian**, C. M. Duarte, C. D. Foster, K. Sheehan, J. Goff and M. E. Miller. The effects of Hurricane Katrina on the Metabolism and Primary Productivity of Seagrass (*Halodule wrightii* and *Ruppia maritima*) meadows. 8thAnnual Graduate Student Symposium, Dauphin Island Sea Lab, Alabama, February 3-4, 2006.

Bayha, K. M., T. Bolton and **W. M. Graham**. Worldwide phylogeography of the invasive jelly sh *Phyllorhiza punctata*. Evolution 2006: Joint meeting of the Society for the Study of Evolution, the Society of Systematic Biologists, and the American Society of Naturalists. Stony Brook, New York. June 23-27 2006.

Beck, A., S. Muffelman, F. J. Hernandez, Jr., **S. P. Powers** and **W. M. Graham**. 2006. A comparison of mesh sizes for the collection of ichthyoplankton in the northern Gulf of Mexico. American Fisheries Society Annual Meeting (Larval Fish Symposium), Lake Placid, New York . September 7-12.

Beck, A., S. Muffelman, F. Hernandez, Jr., **S. Powers** and **W. Graham**. A comparison of mesh sizes for the collection of ichthyoplankton in the northern Gulf of Mexico Alabama, USA). 30th Annual Larval Fish Conference. Lake Placid, NY. 10-14 September 2006.

Bishop, M. A. and **S. P. Powers**. 2006. Ecology of nearshore areas of the Copper River Delta. Alaska Marine Sciences Symposium, Anchorage, Alaska. January 21-24

Chiaverano, L. M. and **W. M. Graham**. Phenotypic plasticity in polyps of the moon jelly sh *Aurelia* sp. (Cnidaria: Scyphozoa) in response to developmental temperature and food availability. Evolution 2006: Joint meeting of the Society for the Study of Evolution, the Society of Systematic Biologists, and the American Society of Naturalists. Stony Brook, New York. June 23-27 2006.

del Valle, D. A., D. J. Kieber, J. Bisgrove and **R. P. Kiene**. DMS consumption and DMSO production in the Ross Sea. Ocean Sciences, Honolulu, Hawaii, February 20-24, 2006.

del Valle, D. A., D. J. Kieber, J. Bisgrove, D. A. Toole and **R. P. Kiene**. Effect of light on dimethylsulfoxide (DMSO) production in the Ross Sea, Antarctica. Fourth International Symposium on DMS(P) and related compounds. Norwich, United Kingdom. May 2-6, 2006.

Ditullio, G., A. Gabric, P. Matrai, D. Kieber, R. Kiene, R. Simo, J. Dacey and R. Najjar. Modeling the marine DMS/DMSP cycle in a subtropical gyre. Ocean Sciences, Honolulu, Hawaii, February 20-24, 2006.

Geraldi, N. and **S. P. Powers**. 2006. Trait mediated interaction in a common estuarine food web- Red drum, blue crabs and hard clams. Benthic Ecology Annual Meeting, Quebec, Canada. March 8-12.

Gregalis, K. C. and **S. P. Powers**. 2006. Evaluating sheries bene ts of restored oyster reefs along an environmental gradient. American Fisheries Society, Southern Division Annual Meeting. San Antonio, Texas. February 9-11.

Harada, H and **R. P. Kiene**. Characteristics of DMSP lyase activity in seawater and phytoplankton cultures. Fourth International Symposium on DMS(P) and related compounds. Norwich, United Kingdom. May 2-6, 2006.

Hernandez, F., Jr., S. P. Powers, K. Park and W.M. Graham. 2006. Winter ichthyoplankton assemblages in the northern Gulf of Mexico: vertical distributions and offshore intrusions - oral presentation. American Fisheries Society Annual Meeting (Larval Fish Symposium), Lake Placid, New York . September 7-12.

Hernandez, F. J., Jr., S. Powers, K. Park and W. Graham. Winter ichthyoplankton assemblages in the northern Gulf of Mexico: vertical distributions and offshore intrusions. 30th Annual Larval Fish Conference, Lake Placid, NY. 10-14 September 2006.

Kieber, D. J., D. A. Toole, G. W. Westby, J. Bisgrove, **R. P. Kiene**, D. A. del Valle, D. Slezak. Dimethylsul de photochemistry in the Ross Sea. Fourth International Symposium on DMS(P) and related compounds. Norwich, United Kingdom. May 2-6, 2006.

Kieber, D. J., G. R. Westby, J. Bisgrove, D. A. Toole, **R. P. Kiene**, D. A. del Valle, D. Slezak and P. J. Neale. Spectrally-resolved dimethylsulfoxide photoproduction and dimethylsul de photolysis in Antarctic waters. Ocean Sciences, Honolulu, Hawaii, February 20-24, 2006.

Kiene, R. P., D. Slezak, D. J. Kieber and D. A. del Valle. Critical assessment of methods for DMS and DMSP sample collection and analysis – are we getting good data? Fourth International Symposium on DMS(P) and related compounds. Norwich, United Kingdom. May 2-6, 2006.

Kiene, R. P., D. J. Kieber, D. Slezak, D. Toole, D. A. del Valle, J. Bisgrove, J. Brinkley and A. Rellinger. Distribution and cycling of dimethylsulfoniopropionate and dimethylsul de during spring and early summer in the Southern Ocean south of New Zealand. Fourth International Symposium on DMS(P) and related compounds. Norwich, United Kingdom. May 2-6, 2006.

Kiene, R. P., P. A. Matrai, D. Slezak, D. A. del Valle, D. A. Toole, G. R. Westby, K. Bailey, M. Vila, D. Kieber, J. Dacey,

G. DiTullio, R. Najjar and R. Simo. Biogeochemical cycling of DMSP and DMS in two contrasting mesoscale eddies in the Sargasso Sea near Bermuda. Ocean Sciences, Honolulu, Hawaii, February 20-24, 2006.

Kim, C.-K., K. Park, H.-S. Jung and W. W. Schroeder. 2006. Water exchange through Main Pass and Pass-aux-Herons in Mobile Bay, Alabama. P. 28, In: Abstracts for the 2006 Gulf of Mexico Graduate Student Symposium, Dauphin Island, AL, February 3-5, 2006.

Kline, T. C., C. A. Woody, M. A. Bishop, **S. P. Powers**, and E. E. Knoudsen. 2006. Assessment of marine-derived nutrients in the Copper River Delta, Alaska using natural abundance of the stable isotopes of Nitrogen, Sulfur and Carbon. Pp. 103-115 In: C. A. Woody (Ed.), Sockeye salmon ecology, evolution, and management. American Fisheries Society Symposium 53

Kline, T. C., C. A. Woody, M. A. Bishop, S. P. Powers, G. H. Reeves, R. Doucett and E. E. Knoudsen. 2006. Preliminary assessment of marine-derived nutrients in the Copper River Delta, Alaska using stable isotope analysis. Alaska Marine Sciences Symposium, Anchorage, Alaska. January 21-24.

MacIntyre, H. L. 2006. The good, the bad and the ugly: microalgae in Mobile Bay. Weeks Bay NERR 20th Anniversary Coastal Topics Presentation Series, April 15, 2006.

MacIntyre, H. L., E. Lawrenz and T. Richardson. 2006. Taxonomic Discrimination Between Microalgae Using Spectral Fluorescence Excitation. ASLO Conference, Vancouver, BC, Canada. June 4-9, 2006.

MacIntyre, H. L., A. L. Stutes, J. Liefer, A. Canion, W. Smith, C. Dorsey, D. Murray, H.R. Granade, A. Abraham and R.W. Dickey. 2005. Water quality, mixing and harmful algal blooms: Mobile Bay, Alabama. ERF Biannual Conference, Norfolk, VA. October 16-20, 2005.

Martin, C. and J. F. Valentine. 2006. Effects of Invasive Eurasian Milfoil (*Myriophyllum spicatum*) on Trophic Interactions and Community Structure of Estuarine and Freshwater Fishes in the Mobile-Tensaw Delta. Alabama-Mississippi Bays and Bayous Symposium, Mobile, Alabama

Powers, S. P. 2006. The impact of large schools of migratory cownose rays on local shell sh populations: source sink dynamics. American Fisheries Society, Southern Division Annual Meeting. San Antonio, Texas. February 9-11.

Powers, S. P. 2006. Density dependent predation creates sink populations in a shallow water benthic system. Benthic Ecology Annual Meeting, Quebec, Canada. March 8-12.

Powers, S. P., M. A. Bishop, G. Reeves. 2006. Determination of estuarine residence time of sockeye and coho salmon from otolith microchemistry. Alaska Marine Sciences Symposium, Anchorage, Alaska. January 21- 24.

Powers, S. P., M. A. Bishop, S. Mof t and G. H. Reeves. 2006. Variability in freshwater, estuarine and marine residence of sockeye salmon (*Oncorhynchus nerka*) within the Copper and Bering River Deltas, Alaska. Pp. 15-31, In: C. A. Woody (Ed.), Sockeye salmon ecology, evolution, and management. American Fisheries Society Symposium 53.

Rellinger, A. N., R. P. Kiene, D. Slezak, D. A. del Valle, H. Harada, J. Bisgrove and D. J. Kieber. Rapid cycling of DMSP and DMS in the deep waters of the Ross Sea, Antarctica during the late *Phaeocystis* sp. bloom phase. Ocean Sciences, Honolulu, Hawaii, February 20-24, 2006.

Rellinger, A N., **R. P. Kiene**, D. Slezak, D. A. del Valle, H. Harada, J. Bisgrove and D. J. Kieber. Export and rapid cycling of DMSP and DMS in the deep waters of the Ross Sea, Antarctica. Fourth International Symposium on DMS(P) and related compounds. Norwich, United Kingdom. May 2-6, 2006.

Schroeder, W. W. Lophelia pertusa distribution and seabed characteristics at Viosca Knoll 826, northeastern Gulf of Mexico. International Society for Reef Studies European Meeting, Bremen Germany, September 19-22, 2006.

Slezak, D., D. A. Toole, **R. P. Kiene**, D. A. del Valle, D. J. Kieber, R. Simo, M. Vila-Costa and P. A. Matrai. Quantitative contribution of bacteria to the dynamics of DMSP and DMS in two contrasting oceanic systems: Sargasso Sea and Ross Sea Polynya. Fourth International Symposium on DMS(P) and related compounds. Norwich, United Kingdom. May 2-6, 2006.

Stutes, J. P. and **J. Cebrian**.

Reassessment of the effects of grazing on seagrass epiphytes: implications for grazer-mediated change in epiphyte productivity and its implementation in grazing rate calculations. 8th Annual Graduate Student Symposium, Dauphin Island Sea Lab, Alabama, February 3-4, 2006.

Stutes, J. P. and J. Cebrian.

Reassessment of the effects of grazing on seagrass epiphytes: implications for grazer-mediated change in epiphyte productivity and its implementation in grazing rate calculations. 35th Annual Marine Benthic Ecology Meeting, Quebec City (Canada), March 8-12, 2006.

Toole, D. A., D. Slezak, D. A. del Valle, D. J. Kieber and **R. P. Kiene**. The effect of ultraviolet radiation on DMS production rates in the Ross Sea. Fourth International Symposium on DMS(P) and related compounds. Norwich, United Kingdom. May 2-6, 2006.

Valentine, J. F. and K. L. Heck, Jr. 2006. Impacts of over shing on trophic links at the coral reef-seagrass interface: an evaluation using "no-take" zones in the Florida Keys National Marine Sanctuary. 2006. Benthic Ecology Meeting, Quebec, Canada.

Valentine, J. F., S. A. Sklenar, C. Martin and M. Goecker. 2006. Impacts of the Mobile Bay Causeway on ecosystem structure and function in the lower Mobile-Tensaw Delta. Alabama-Mississippi Bays and Bayous Symposium. Mobile Alabama.

Vila-Costa, M., R. Simo, H. Harada, J. M. Gasol, D. Slezak, **R. P. Kiene**. DMSP uptake by marine phytoplankton. Fourth International Symposium on DMS(P) and related compounds. Norwich, United Kingdom. May 2-6, 2006.

Public Outreach & Other Service Rich Aronson

Traveling Exhibit on Coral Reefs, 2006; Our reefs: Caribbean connections. Sponsored by NOAA, Smithsonian Tropical Research Institute and others. Contributing photographer. DISL Summer School Colloquium, July 2006; Death and Resurrection of

Caribbean Coral Reefs.
DISL Discovery Day, April 2006; public display of coral reefs and Antarctic research for open-house event.
Estuarium Boardwalk, April 2006; interpretive poster on salt-marsh restoration for public display.
Estuarium Exhibitry, March 2006-present; conception and design of future display on "Endangered Seafood."

Research Roundup, DISL, October 2005; research brie ng for staff and students, "Showdown at the OK Coral (Reef)."

Just Cebrian

Presentation to an EPA evaluation panel. June 2006. MBNEP Implementation Review Panel of MBNEP-funded research to restore and manage SAV. Volunteer in Spooktacular, a Halloween show for children, celebrated at DISL. October 2006.

Consultant on seagrass fauna identi cation to Mr. Arthur Hosey Jr. for efforts to preserve valuable habitat in Perdido Key (Florida), November 2006.

Television and press reports: Marsh restoration project funded by MASGC: WLOX (Coastal Mississippi TV station, April 10 and 20 2006), Mobile Register (April 12 2006), United Press International (April 20 2006), Alabama Public Television (May 11 2006)

Newspaper Article on SAV restoration project - efforts and involvement of highschool students funded by MBNEP: The Islander (Weekly Newspaper in Gulf Shores, April 29 2006)

Newspaper Article on Marsh conservation research funded by ACES - Description of the importance of the work for the local community: The Daphne Bulletin (May 6 2006)

Television and press reports: Research on management and protection of Posidonia

oceanica ecosystems funded by FBVVA: TVE2 (Spanish Television, May 25 and 26 2006), El Pais (July 27 2006), El Periodico de Catalunya (August 6 2006)

Monty Graham

Hosted DIALOG VII (DISL); Presentations on Tenure, Negotiation and Proposal Preparation, December 3-10, 2005. Jelly sh Ecology at the Dauphin Island Sea Lab. DISL 'Research Roundup' presentation (January 2006). NMFS/DISL Cooperative Institute Science Steering Committee (produced short steering document), 2006 Coordinator ADCNR-Sponsored Fisheries Oceanography in Coastal Alabama (FOCAL) Program, 2006. Science Olympiad Coach, St. Luke's Episcopal School, Mobile (2002-2006). Science outreach poster for Mljet National Park (Croatia) 'Blago Jezera' ('Treasure of the Lakes') written in Croatian and English,

Hosted French documentary crew for Gedeon Productions (Paris) during Iming and interviews for special on jelly sh blooms, 2006.

Interviewed for National Public Radio segment (August), 2006.

Featured in Mobile Press-Register article on jelly sh research, 2006.

Ron Kiene

Antarctic Adventure – Interactive presentations, including e-mail dialogs with 5th grade students at O'Rourke Elementary School, before, during and after Antarctic research cruise. http://press.disl.org/1_26_05Antartica.html

Interview, for article published in Antarctic Sun, a newsletter published at McMurdo Station, Antarctica. http://antarcticsun.usap.gov/oldissues2004-2005/Sun122604/index.htm#

Antarctic web log – Palmer Station. http://biogeochemistrylab.disl.org/artic/artic.htm

Hugh MacIntyre

Developed and presented displays (posters and hands-on demonstrations) for Discovery Day (4/1/06).

Presented a public talk, "The Good, The Bad and The Ugly: Microalgae in Mobile Bay" at the Weeks Bay NERR 20th Anniversary - Coastal Topics Presentation Series (4/15/06)

Supervised a science project by Lydia Dorsey, Junior in the International Baccalaureate program, Murphy High School, Mobile. Ms Dorsey's presentation, on nutrient loading and microalgal responses in Little Lagoon, "Water We Doing?" which won the following awards: Mobile County Science Fair: 1st Place in Botany; Best in Show, High School Division Regional Science Fair: 1st Place in Earth and Space Science

Alabama State Science Fair: 1st Place in Earth and Space Science; UAH Director's Award; Water Environmental Federation Award

Wrote an article for *Tidings* (Vol. 17(3), Sept. 2006) on my research efforts at CNRS in France, "Studying Toxins in the South of France, or How I Spent My

Summer 'Vacation".

Presented a Research Roundup talk, "I Beg Your Pardon, I Never Promised You an (Underwater) Rose Garden" (3/29/06).

Kyeong Park

Hosted visiting scientists:
Kim, Sung-Jae (Jan 19 - Feb 16, 2006), Professor, Department of Marine Environmental Engineering, Gyeongsang National University, Tongyeong, Gyeongsangnam-do, Korea Kim, Kuk-Jin (Jan 24 - Mar 4, 2006), Research Professor, Regional Research Center for Coastal Environments of Yellow Sea, Inha University, Inchon, Korea Hyun, Sang Kwon (Feb 18 - Mar 4, 2006), Deputy General Manager, R&D Institute, Korea Ocean Science & Engineering Corp., Seoul, Korea

Sean Powers

Expanding Your Horizon's conference, a workshop to promote science to female high school students. University of South Alabama, October 2006.

DISL, Research-round up: "Ecology you can eat." A presentation to the DISL community.

Mobile Jaycee's, Alabama Deep Sea Rodeo, Assistant Rodeo Judge, 2006. Mobile Jaycee's Roy Martin Young Angler Tournament, Assistant Judge, 2006. DISL, Summer teacher workshops, Presenter, 2006.

Fox 10 news, interview on sheries and arti cial reefs, May 2006

John Valentine

Mobile United Natural Resources Presentation, 2006 Baldwin County League of Women Voters Presentation, 2006 Azalea Trail Run Volunteer, 2006 GMAC Bowl: 1st and 10 Club, 2005present Mobile Bay NEP Mobile and Baldwin County Elected Of cials, 2006

Of ces, Boards & Panels

Environmental Awareness Forum

Rich Aronson

International Society for Reef Studies - President-Elect (2007-10); Vice President (2003-06); Corresponding Secretary (1999-2002).

World Bank Working Group on Diseases of Coral Reef Organisms; member of advisory board (2002-present).

Journal of Experimental Marine Biology and Ecology; member of Editorial Advisory Board (1997-present).

Advisory Board for Conference on Coral Reef Conservation, Washington, DC (2006); conference hosted by T&F Informa Group, Westborough, MA.

Just Cebrian

Aquatic Botany, Staff Referee, 2004present Marine Ecology Progress Series, Review Editor, 2005-2010 NCEAS (National Center for Ecological Analysis and Synthesis) working group "Trophic Structure Comparisons," Santa Barbara (California), October 2005-October 2007

Monty Graham

Environmental Protection Agency STAR Fellowship Panel, Washington , DC, February 2006

Ken Heck

Senior Sub-Editor, Marine Ecology Progress Series (1997-Present)

Ron Kiene

Marine Ecology-Progress Series, Formal Reviewer

Hugh MacIntyre

Editor, Aquatic Microbial Ecology, Appointed 4/28/06 Member, Scienti c Advisory Committee on Chlorophyll Fluorescence, Alliance for Coastal Technologies (Solomon's Island,

Member, Gulf of Mexico Coastal Ocean Observing System (GCOOS) Task Team on Public Health.

Kyeong Park

Panelist (2006), Symposium on Hypoxia in the Northern Gulf of Mexico: Assessing the State of the Science, April 25-27, 2006, New Orleans, LA, US EPA and NOAA

Sean Powers

Associate Editor, Gulf of Mexico Science, 2004-present
American Association of Underwater
Scientists (AAUS) Graduate Scholarship selection committee, 2006.

John Valentine

Marine Ecology Progress Series Review Editor, 2006-present



The Board of Directors is comprised of the Presidents of each of the 21 member institutions.

The Executive Committee has full power and authority in the interval between meetings of the Board of Directors to do all acts and perform all functions which the Board of Directors itself might do or perform, except that it shall have no power to amend the bylaws. Among its duties are to review and approve the annual budget; approve curricular options and other major policies and procedures; and facilitate and stimulate the development of education and research programs.

The Program Committee Members consists of one faculty member, appointed by the President, from each of the member institutions. These members serve as the primary liaison between the member institution and the Sea Lab, and are responsible for advising the Sea Lab's Executive Director in planning and implementing the education, research and service programs of the DISL.

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AGENCY	P.I.'s	TITLE	BEGIN DATE	END DATE	AMOUNT FUNDED	INCOME FY 2004/2005
EPA	DY	Mobile Bay National Estuary Program	Mar-02	Jun-07	\$1,337,664.00	\$150,798.00
City of Mobile/ Mobile County/ Various Donations	DY	Mobile Bay National Estuary Program	Mar-05	Sep-06	\$556,778.49	\$161,917.00
ADCNR	DY	ADCNR MOA	Oct-04	Sep-07	\$180,000.00	\$63,783.00
ADCNR	JV DY	Mobile Bay Environmental Monitoring for Public Data Access in Two Coastal Counties	Dec-01	Nov-05	\$225,000.00	\$253.00
EPA	DY JC	Submerged Aquatic Vegetation Gardening	Jul-03	Jun-06	\$31,500.00	\$633.00
EPA	DY	Mobile Bay National Estuary Program	Oct-03	Mar-08	\$1,525,635.00	\$556,725.00
EPA	DY	Strategic Assessment of Priority Habitat Needs in Coastal Alabama and Establishment of the Coastal Habitat Coordinating Team	Jan-04	Mar-06	\$26,099.00	\$7,419.00
UG	DY	Sustainable Agriculture for Future Economies (SAFE)	Apr-03	Mar-06	\$10,000.00	\$558.00
MASGC	DY	A Rapid Assessment Survey of Non-Aquatic Species in Alabama and Mississippi	May-04	Dec-06	\$20,000.00	\$1,144.00
EPA	DY	AL Phase 1 Monitoring Eight Mile Creek FY2004	Jun-04	Dec-07	\$63,250.00	\$47,635.00
ADCNR	DY	Coffee Island Restoration Plan & Outreach Activities	Oct-04	Mar-06	\$25,000.00	\$20,182.00
EPA	DY	Environmental Education Grant	Jul-05	Nov-07	\$24,438.00	\$10,051.00
ADCNR	DY	Development of an Alabama Aquatic Nuisance Species Management Plan	Oct-05	Sep-06	\$9,775.00	\$9,775.00
ADCNR	DY	Wetlands Status and Trends Report and Alabama Current Connection	Oct-05	Jan-08	\$31,000.00	\$5,490.00
Mobile County Baldwin County	DY	Mobile/Escatawpa/Perdido Watershed(s) Facilitator	Jan-06	Dec-06	\$17,561.00	\$17,561.00
NATURE CONSERVANCY	JV	Human Induced Changes in the Cross-habitat Flow of Energy in a Subtropical Marine Ecosystem: Experimental Asssessments using newly creaed Marine Reserves in the Florida Keys	Nov-00	Dec-04	\$179,996.00	\$10,262.00
EXXON MOBIL	GC	Graduate Fellowships	Oct-00	Apr-06	\$40,000.00	\$16,331.00
EXXON MOBIL	JD	BayMobile			\$70,000.00	\$1,108.00
SHELL	JD	Shell Oil Special Fund			\$62,500.00	\$7,170.00
USA	JC	Interactions Between Anthropogenic Eutrophication and the Black Needlerush	Apr-03	Mar-06	\$109,714.00	\$342.00
USA	KH JV	Predicting Seagrass Survival in Nutrient Enriched Waters: Toward a New View of an Existing Program	Jan-03	Dec-06	\$139,926.00	\$33,431.00
USA	SP KH	Quantifying Fisheries Bene ts of Oyster Reef Restoration in Mobile Bay	Jul-03	Jun-06	\$78,910.00	\$11,069.00
MASGC	JD	Sea Grant Aquatic Nuisance Species Research Program: Southeast Regional Strategic Outreach Network	Jun-03	May-07	\$83,168.00	\$58,606.00
MASGC	JD	Sea Grant Marine Environmental Biotechnology Program-Southeast Education Network	Jun-03	Jan-06	\$36,303.00	\$15,154.00
USA	KH	Aces Administration 2004	Jan-04	Oct-06	\$142,586.00	\$12,253.00

MASGC	JC	Effects of Anthropogenic Eutrophication on the Ecosystem Provided by Shoalgrass Meadows	Feb-04	Jan-06	\$122,052.00	\$3,529.00
NEP	JD	Coastal Bird Nesting Survey	May-04	May-06	\$29,000.00	\$27,096.00
MASGC	MG	A Molecular Genetic Assay for Identifying and Quantifying a Cryptic Marine Bioinvader	Feb-04	Jul-06	\$131,118.00	\$57,966.00
MASGC	JD	Educational Efforts at the Scott Marine Education Center and Aquarium and the Dauphin Island Sea Lab Discovery Hall and Estuarium	Feb-04	Jul-06	\$45,788.00	\$44,111.00
USA	НМ	Biomass, Taxonomic Distribution and Productivity of Microalgae in Mobile and Weeks Bay	Sep-04	Aug-06	\$42,702.00	\$7,262.00
USA	KH JC SP	Ecosystem Services Provided by Oyster Reefs: An Experimental Assessment	Jul-03	Jun-06	\$162,772.00	\$57,636.00
EPA	НМ	Environmental Monitoring and Primary Production in Mobile Bay	Aug-04	Jul-06	\$436,000.00	\$179,249.00
MASGC	JD	Exibits Supporting the Mission of MASGC at the Dauphin Island Sea Lab and the Estuarium			\$10,000.00	\$1,428.00
MBW/MBK, ALA POWER, THE FORUM, WATER KEEPER ALLIANCE	JV	Hydrological Modi cation Impact Study	Oct-04	Jul-06	\$151,998.00	\$51,327.00
USA	JV	Educational Outreach Component	Oct-04	Sep-06	\$71,635.00	\$45,632.00
NSF	JC	SGER: Examining the Effects of Hurricane Ivan in Coastal Alabama and Northwestern Florida: A Positive Impact on Shallow Coastal Lagoons?	Feb-05	Jan-07	\$40,249.00	\$15,822.00
MASGC	JC	Examining the Effects of Hurricane Ivan in Coastal Alabama and Northwestern Florida: A Positive Impact on Shallow Coastal Lagoons?	May-05	Apr-06	\$20,000.00	\$12,685.00
USA	JC	Examining the Effects of Hurricane Ivan in Coastal Alabama	Jan-05	Oct-06	\$16,085.00	\$14,469.00
NSF	MG	Developing an Adriatic Summer Institute for Marine Environmental Complexity	Aug-04	Jul-06	\$43,428.00	\$35,072.00
NSF	MG	FSML: Expansion of Research and Education Infrastructure within Dauphin Island Sea Lab's Marine Science Hall	Feb-05	Jan-08	\$411,285.00	\$209,717.00
ADCNR	JV	Assessment of Sediment Contamination in the Lower Mobile-Tensaw Delta	Apr-05	Mar-06	\$10,000.00	\$105.00
ADCNR	JC	Datalogger	Apr-05	Mar-06	\$12,000.00	\$12,000.00
MASGC	JD	The Use of Remote Sensing and Molecular Detection to Predict the Risk of Infection by Vibrio Parahaemolyticus	Sep-04	Aug-06	\$23,000.00	\$2,811.00
MASGC	JD	Regional Center for Ocean Science Education Excellence (COSEE)	Jan-03	Aug-06	\$129,190.00	\$2,379.00
NOAA	GC	Variability in Phytoplankton Productivity on Hourly to Monthly Time Scales and Its Coupling with Nitrogen Inputs to Weeks Bay, Alabama	Jun-05	May-07	\$40,000.00	\$23,567.00
NEP	GC	Data Information Management Support	Oct-04	Sep-06	\$40,000.00	\$40,000.00
MASGC	GC	Habitat Protection and Restoration Website and Database	Jul-05	Jun-06	\$10,000.00	\$2,778.00
NSF	KH	REU Site: Undergraduate Research Experiences in Coastal and Nearshore Marine Systems of the Northeastern Gulf of Mexico	Apr-05	Mar-06	\$52,599.00	\$54,948.00
USA	MG	Development of a Molecular Genetic Method to Quantify Crassostrea Virginica Veliger	Sep-05	Aug-07	\$112,297.00	\$49,627.00
National Geographic	RA	Land Use and Reef Development in Central America			\$21,000.00	\$19,028.00
USF	RA	Coral Population Dynamics in Fully Protected Zones of the Florida Keys	Jun-04	May-06	\$79,896.00	\$28,097.00
USA	KH	Aces Administration 2005	Jan-05	Oct-06	\$149,383.00	\$116,519.00

National Park Service	KH	Post Hurricane Katrina Damage Assessment of Seagrass Resources of the Mississippi IslandsGulf Islands National Seashore	Oct-05	Jul-06	\$12,140.00	\$12,410.00
ADCNR	GC	Update of the 2000 Coastal Alabama Public Access Site Inventory	Oct-05	Sep-06	\$2,000.00	\$2,000.00
ADCNR	НМ	Little Lagoon as an Incubator Site for the Harmful Bloom-Forming Diatom, Pseudonitzschia sp.	Oct-05	Sep-08	\$25,000.00	\$7,846.00
ADCNR	JD	Post Hurricane Katrina Monitoring of Colonial Nesting Birds in Coastal Alabama	Oct-05	Sep-08	\$26,650.00	\$3,659.00
ADCNR	KH	Post Hurricane Katrina Damage Assessment of Seagrass Resources of Coastal Alabama	Oct-05	Sep-08	\$5,000.00	\$4,799.00
ADCNR	MD	Alabama Coastal Observing System	Oct-05	Sep-08	\$25,000.00	\$13,818.00
ADCNR	RA	Trophic Dynamics of a Created Salt Marsh in Coastal Alabama	Oct-05	Sep-08	\$25,000.00	\$25,000.00
UA	GC	EPSCOR	Sep-05	Apr-06	\$50,000.00	\$50,000.00
USA	НМ	Harmful Algal Blooms and Oyster Restoration in Mobile Bay	Nov-05	Apr-07	\$38,776.00	\$35,174.00
Gulf of Mexico Foundation	KH	Robinson Island Restoration Project	Jan-06	Dec-07	\$56,641.00	\$13,741.00
MASGC	НМ	Remote Sensing of Harmful Algal Blooms in the Northern Gulf of Mexico	Apr-05	Dec-06	\$7,500.00	\$2,873.00
USA	KH	Restoring Estuarine Landscapes in Alabama Coastal Waters Through Creation of Oyster Reefs	Sep-05	Aug-07	\$165,108.00	\$30,050.00
USA	JV	Understanding Human Modi cations of Coastal Water	Nov-06	Oct-07	\$155,337.00	\$15,349.00
USA	НМ	ACES	Nov-05	Oct-07	\$25,004.00	\$5,763.00
MASGC	JC	Evaluating the Role of Restored Black Needlerush Marsh as a Buffer of Anthropogenic Eutrophication of Coastal Systems Systems: An Isotope Enrichment Approach	Feb-06	Jan-08	\$106,309.00	\$20,502.00
USA	JV	ACES	Nov-05	Oct-07	\$87,383.00	\$39,099.00
NOAA	KH	Evaluating Species Interactions in Reef Fish Communities: The potential Impact of Red Snapper on Recruitment of Vermillion Smapper	Apr-06	Jan-08	\$103,720.00	\$61,308.00
USA	RA	Impacts of Salt Marsh Restoration on Ecosystem Function and Export to Estuarine Environments	Nov-05	Sep-07	\$152,019.00	\$23,646.00
EXXON	GC	Exxon Summer Intern	May-06	Sep-06	\$6,000.00	\$6,000.00
National Marine Sanctuary Foundation	JD	Learning Ocean Science through Ocean Exploration	Jul-06	May-08	\$29,000.00	\$1,239.00
MASGC	JD	Facilitating the GOMA Environmental Education Priorities Through the Employment of an Educator and Outreach Coordinator	Jun-06	May-08	\$99,981.00	\$21,884.00
NOAA	GC	Construction of the Center for Ecosystem- Based Fisheries Management, Construction of the Mesocosm Facility, and the Completion of Wiese Marine Science Hall	Jul-06	Jun-09	\$4,411,204.00	\$470,000.00
Con/Phil	SP	Baseline monitoring for ichthyoplankton and demersal sh in Alabama coastal waters	Jun-04	Aug-07	\$363,000.00	\$173,173.00
Con/Phil	MG KH KP SP MD	Assessment of Red Drum Spawning and Icthyoplankton Abundance in Alabama Coastal Waters	Jun-04	Aug-07	\$1,667,972.00	\$691,564.00
Con/Phil	MG SP	Assessment of Red Drum Spawning	Aug-05	Aug-07	\$241,388.00	\$165,710.00
					Total	\$4,231,117.00



MARINE ENVIRONMENTAL SCIENCE CONSORTIUM DAUPHIN ISLAND SEA LAB Statement of Net Assets September 30, 2006

ASSETS	
Current Assets	
Cash Accounts Receivable Inventories Total Current Assets	\$ 297,292 822,746 177,479 1,297,518
Noncurrent Assets	
Capital Assets: Land Improvements Other Than Buildings Buildings Equipment Vessels Library Holdings Less: Accumulated Depreciation Total Capital Assets, net of Depreciation Total Noncurrent Assets	658,757 77,444 9,117,037 1,377,684 553,714 715,629 (4,080,293) 8,419,973 8,419,973
Total Assets	9,717,490
LIABILITIES Current Liabilities Accounts Payable Lease Obligations Short Term Note Payable Compensated Absences Deposits Held for Others Total Current Liabilities	2,751 265,324 500,000 19,710 98,009 885,794
Noncurrent Liabilities Lease Obligations Compensated Absences Total Noncurrent Liabilities Total Liabilities	710,462 308,791 1,019,253 1,905,046
NET ASSETS Invested in Capital Assets, net of related debt Restricted for	7,444,187
Expendable Scholarships and fellowships Research & Public Outreach Capital projects Unrestricted	28,102 81,018 103,077 156,061
Total Net Assets	\$ 7,812,444



The Dauphin Island Sea Lab's long term interests in research, education and the provision of information and science for citizens and decision makers to support wise management of the Alabama's coastal resources continue to be well-served by providing an organizational home for the Mobile Bay National Estuary Program (MBNEP) as an integral part of its Coastal Policy Center. MBNEP assists in providing this vital public service component of the DISL mission through encouraging a community-based approach to watershed management by empowering citizens, grassroots organizations, government agencies, and educational establishments to work together to address local environmental challenges. Engagement of these groups in protecting Mobile Bay, our associated coastal waters and their surrounding watersheds will help ensure their protection and conservation for our lifetime and beyond. MBNEP is directed by David W. Yeager. Yeager is also Associate Director of the Coastal Policy Center. Other staff include: Ms. Roberta Swann, Deputy Director, MBNEP; Mr. Tom Herder, Science Communicator, MBNEP; Ms. Kara Lankford, Watershed Facilitator, MBNEP; and Ms. Tiffany England, Business Manager, MBNEP.

MBNEP has made much progress in the last year. Well over \$1.3 million in federal and local funds and services were obtained and directed through this program in 2006 to support environmental initiatives in our area. The MBNEP currently manages over 15 active grants and another 15 individual contracts. Numerous environmental projects have been accomplished during the last year. However, one of the most signi cant changes is the evolution of the MBNEP as part of the Coastal Policy Center into a community capacity-builder rather than simply a grantor and environmental project facilitator. The MBNEP is excited and pleased with the renewed enthusiasm for and about the program and its expanded and recognized roles of in our coastal community as a valued partner, capacity builder, honest broker and community resource. A few of our successes for 2006 are described below:

New Management Conference

MBNEP initiated a reorganization of the Management Conference. The structure was revised to better provide a mix of Policy Makers (both public and private), Implementers (both public and private), and Grassroots (community groups and citizens) to ensure expanding support for CCMP implementation and identication and engagement of emerging issues related to CCMP objectives. The ultimate goal is an increased ability to function as a community capacity builder and provide

improved public services in the environmental area to our coastal communities. The Mobile Bay NEP Management Conference now consists of four main committees: Community Action Committee, Community Resources Committee, Government Networks Committee, and Project Implementation Committee.

- The Community Action Committee is comprised by representatives of environmental grassroots organizations who work together to network, share information, develop issues, and provide cooperative training.
- The Community Resources Committee brings together a balance of interested community leaders from industry, business, environmental services, and the non-pro t sector to identify commonalities among sectors to resolve coastal issues that impact their interests.
- The Government Networks Committee is made up of state agency heads, regional government administrators, and local of cials of the target area to more effectively communicate local needs.
- The Project Implementation Committee includes representatives of resource management agencies and organizations to undertake projects related to CCMP objectives and goals.

A Science Advisory Committee includes experts from the various scientic disciplines who provide insights and a sound basis to be used by the other committees in their decision making processes. An Executive Committee – made up of representatives from each of the four main committees, an EPA Region IV representative, a representative from the Science Advisory Committee, and a minimum of three at-large members – develops policies on issues and funding, reviews/approves work plans and budgets, evaluates the performance of the Director, and sets nancial goals for non-federal share.

Strategic Planning

MBNEP completed a strategic planning process to focus its limited resources on areas of the CCMP most critical to sustaining the estuary and to develop the organizational structure necessary to best implement action. With a goal of revitalizing efforts already underway to implement the CCMP, MBNEP worked with stakeholders to revisit CCMP objectives

and action plans; evaluate gaps in implementation; and develop a strategy that included priorities for implementation, updating of objectives, and modi cations to the CCMP as needed. The MBNEP boundaries were approved for expansion by the Management Conference as a result of the Strategic Planning Process and now include the entirety of Mobile and Baldwin Counties. This ts much better with many of the resource agencies with whom we work in coastal Alabama.

Currently in draft form and available for comment, the Strategic Plan will be of cially approved in the coming months by the newly established Executive Committee.

Water Quality

Sub-Estuary Modeling

MBNEP continues its commitment of support to monitoring activities throughout the estuary. Through a contract with the Alabama Department of Environmental Management (ADEM), water quality assessments of ve sub-estuaries along the perimeter of Mobile Bay are being undertaken. ADEM monitored parameters including, but not limited to, in situ water chemistry, turbidity, ammonia, DRP (orthophosphates), chlorophyll a, and pathogens. In addition, sediment sampling was conducted for approximately 15 metals of concern, polyaromatic hydrocarbons, and pesticides. During the 2006 program (funded under a separate grant) the Bon Secour Estuary was completed and the Bayou la Batre Estuary monitoring began.

Mobile Bay Real-time Water Monitoring

During the year 2006, a major accomplishment was the re-establishment of the real time monitoring of hydrological and meteorological conditions at Meaher Park, completed after its destruction during Hurricanes Ivan and Katrina. This site is now up and running and information generated can be viewed at www.mymobilebay.com. This website, in development, will be connected to a larger network of stations as part of the Gulf Coast Ocean Observing System. Information to be made available to the public will include research reports, maps, and other information.

Eight Mile Creek

The MBNEP made strides in moving forward on a project to identify potential and actual pathogen inputs to segments of Eight Mile Creek and Gum Tree Branch. During the last program period ADEM collected two geo-means during the months of December and January. Data from these monitoring activities showed that all problems/exceedences were found in the Gum Tree watershed or in the mouth of Eight Mile Creek. During the last period problems were encountered with the collection of information including number of septic systems and storm and sewer pipe systems for Prichard and

Chickasaw, AL. Efforts to obtain this information were thwarted due to a pending lawsuit against the City of Prichard. However, on the ground methods including GPS location of inputs was begun by Mobile Engineering LLC.

Coastal Alabama Clean Water Partnership

MBNEP holds the contract with the Alabama Clean Water Partnership to host the Coastal Alabama chapter. This program works toward clean water integrity throughout Alabama through pilot projects and outreach using CWA §319 funding. This award parallels current CCMP activities and improves our abilities to work outside the traditional MBNEP program boundaries (note the MBNEP boundaries were approved for expansion by the Management Conference as a result of the Strategic Planning Process and now include the entirety of Mobile and Baldwin Counties). The project is part of the State of Alabama's CWA Section 319 implementation strategy.

Living Resources

Long Term Fisheries Assessment and Monitoring Program

During the 2006 program period (funded under a separate grant using CIAP funding), a historical analysis of 20 years of sheries data was completed. The preliminary results of this analysis indicated that there had been no signi cant change in sh populations throughout coastal Alabama. However, the analysis did suggest additional sampling of brown shrimp and blue crab to con rm trends in their populations.



Oyster Gardening

During the 2006 season, our seventh year of Oyster Gardening,, 33 volunteers grew over 60,000 oysters which were planted on Boykin and Shellbanks reefs in Mobile Bay. In addition, students from Alma Bryant High School chose to work with the Oyster Gardening program as part of a project with Coastal America's Coastal Ecosystem Learning Center at the Dauphin Island Sea Lab. Their project included working with Mississippi Alabama Sea Grant, Auburn University Marine Extension and Research Center

(AUMERC) and MBNEP in counting, collecting and deploying oysters. The students assisted AUMERC with placing an additional 50,000 oysters on Boykin Reef and 5,000 on Shellbank Reef.

Habitat Management

The Mississippi-Alabama Habitats Database

During the summer of 2005, MASCG and MBNEP worked with the DISL to develop an online habitat conservation, restoration, and enhancement

database to track habitat conservation activities in the eleven coastal counties of Mississippi and Alabama. A mechanism was thereby established for tracking data such as 1) habitat projects planned, in progress, or completed along the northern Gulf of Mexico; 2) types of habitat conserved: 3) conservation

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techniques employed; 4) the variety of funding sources used; and 5) the locations of such projects. The database's development was funded by MASGC, and it resides on a Microsoft SQL server managed by the DISL at http://restoration.disl.org/database.

The database was put online for Mississippi and Alabama agency access for data entry. Managed by MBNEP, it is robust yet simple to use in that registered users may add or modify projects using a simple one-page online form. Any user, registered or not, may search projects by project name, organization, state, county, habitat type, or conservation method. In addition, an interactive map allows users to rapidly identify project locations. The database is currently being population to capture over 60 different restoration projects throughout the region.

Habitat Mapping

During the 2006 program period, the National Wetlands Research Center (NWRC) of the United States Geological Survey (USGS) conducted the rst comprehensive baseline habitat mapping project describing wetland and upland habitats for Mobile and Baldwin Counties. The project was accomplished under contract to the MBNEP acting for a partnership that included the Alabama Department of Conservation and Natural Resources (ADCNR) State Lands Coastal Section, Gulf of Mexico Program, the Baldwin County Commission, the Mobile County Commission, EPA, and NOAA. These habitat maps were generated from digital color-infrared, geo-referenced photography

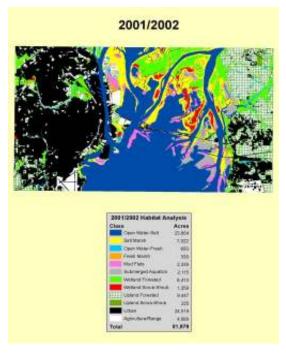
acquired by the USGS, again under contract to MBNEP on behalf of the several partners, for Mobile County in 2002. Digital color, infrared photography from 2001 of the same resolution was provided by the Baldwin County Commission. These habitat and wetland maps will provide information for conservation, restoration, protection, and enhancement of Alabama's coastal habitats. This project also provides the most recent update to the National Wetlands Inventory (NWI) for Baldwin and Mobile Counties. Products from this

mapping project provide long needed geographic information system layers for Alabama's coastal counties. The total cost of this project was over \$1.6 million obtained through the MBNEP and its partners.

Habitat Acquisition

The State of Alabama's Forever Wild Program purchased a 1,642 acre tract of pine atwoods in coastal Mobile County adjacent to existing

Forever Wild Tracts. It will be used for education, conservation of coastal wetland ecosystems, and research. Although it was purchased with nancial assistance from the U.S. Fish and Wildlife Service through a National Coastal Wetlands Grant, the MBNEP provided a letter of support in the early stages of the grant application indicating that this and similar parcels in coastal Mobile County had been identified as priorities for conservation protection in a strategic assessment conducted by the MBNEP. Although the nancial commitment by





the MBNEP was small (\$10,000), the support of the MBNEP for this tract's acquisition was identi ed as very important to the success of the grant application.

Human Use Issues

D'Olive Creek

Accelerated erosion within the watersheds of D'Olive and Tiawassee Creeks in Daphne and Spanish Fort, Alabama and the increased sediment inputs in D'Olive Bay and Mobile Bay have served as a "poster child" for the impacts of increased storm water run-off and sediment loading in coastal Alabama since the mid-1970s. Due to the negative environmental impacts resulting from its development as one of Alabama's largest subdivisions, the CCMP includes an action to conduct a comprehensive biological, hydrologic, and engineering study of D'Olive Bay that would develop a stepwise strategy for returning the area to a more natural hydrologic condition.

In late 2005, after recognition that solutions to the problem involved the need for a regional approach, local political and property owner representatives approached MBNEP regarding leadership of a renewed effort to take action. Since then MBNEP has been actively leading efforts to begin the systematic and scienti c approach to addressing these non point source issues.

The group now includes NRCS, ADCNR, Baldwin County, City of Daphne, City of Spanish Fort. ADEM, USF&WS, USACOE, members of the Baldwin legislative delegation, Lake Forest Property Owners Association, MBNEP, CACWP and others. A systematic approach to addressing erosion and sedimentation issues associated with three contributing streams as well as the current partially- lled condition of the lake in the Lake Forest subdivision is now well underway. Preliminary results of the bed load sampling are providing new insight into the major contributors to the lake and D'Olive Bay. Where previous examinations began and ended with consideration of the impacts on the lake, there is now a widespread recognition that erosion and sediment loading throughout the watersheds of D'Olive Creek, Tiawassee Creek, and even Yancey Branch, as well as the loss of the lake as a functioning retention system, are all contributors to the increased sediment loadings into Mobile Bay. Systematically addressing this larger regional

problem will result in solutions for more localized problems such as the lake condition.

Additional results include: ADCNR is funding the Geological Survey of Alabama (GSA) to conduct a long-needed watershed assessment. GSA stepped up and volunteered to supplement ADEM's assessment with additional streambed analyses, monitoring 13 sites for bedload and suspended load in the watersheds of D'Olive, Tiawassee, and Yancey Branch. In addition, several short-term actions are already in progress. The USDA Natural Resources Conservation Service/Baldwin County Soil and Water Conservation District is working through the City of Daphne on several local projects including two in the Lake Forest subdivision for stream clean-out and restoration using funding from the Emergency Watershed Protection Program. These two projects total over \$176,000. Another project in Daphne targets degraded conditions in Yancey Branch by restoring its original streambed.

Regional Stormwater Management

In March 2004, the City of Fairhope and MBNEP jointly hosted a local workshop by the National Association of Flood and Stormwater Management Agencies (NAFSMA). NAFSMA represents municipal and public agencies responsible for management of stormwater run-off nationwide. Since this time, other municipalities have supported



conducting a feasibility analysis and developing an outline plan for creating a regional Stormwater Management Authority in Baldwin County. In 2006 MBNEP assumed a leadership role for organizing and facilitating the Baldwin County Stormwater working Group. In July we placed a team led by Mr. Andy Reese of AMEC Inc. and Dr. Melissa Pringle of Eco-Systems Inc. under contract to help us: (1) determine the feasibility of a regional authority and, if considered feasible by the participants, how should we organize this effort within the county, (2) educate our local governments on possible mechanisms for creating such a revenue source, and (3) draft the core principles necessary to be included in any enabling legislation for establishment of a storm water user fee funding method for the County and its

towns and cities to be put forward by our legislative delegation. Some 26-30 participants worked hard at examining options, playing devil's advocate and joining together to work on these tasks, and coming to a consensus position. The conclusion was that such a utility was not only feasible but that a compelling case could be made for its creation, and sooner rather than later.

The Baldwin County Storm Water Working Group led by MBNEP, includes the Weeks Bay National Estuarine Research Reserve and the Alabama Coastal Foundation, and 12 of the 13 municipalities in Baldwin County as well as the county commission. Municipalities and the county helped fund the study and contributed shares based on their population. To date, 12 of 13 incorporated municipalities in Baldwin County and the Baldwin County Commission have passed resolutions supporting creation of enabling legislation for a regional stormwater utility in Baldwin county. The legislative delegation is considering introducing a bill in the Alabama legislature during this session.

The Baldwin County Stormwater Consortium:

- is a voluntary association of local communities.
- is designed to operate on a regional and watershed basis.
- supports local communities in managing ooding, drainage, and water quality problems associated with stormwater runoff.
- will not supplant or usurp any existing county or municipal or state authority,
- will be funded through a small and equitable user fee.
- is not a governing body but a funding mechanism.
- will do what already needs to be done, not invent new things to do.
- will create a cost saving economy of scale.
- will be governed by local communities and is not an independent layer of government.

At present, plans call for the MBNEP to continue working with local communities to work out details of the creation of a viable stormwater entity and educate the public on the need for a regional approach to this emerging environmental problem.

Outreach and Education

Alabama Mississippi Bays and Bayous Symposium

On Tuesday and Wednesday, November 28-29, 2006, MBNEP, MASGC, University of Southern Mississippi Gulf Coast Research Laboratory, and the Alabama Center for Estuarine Studies hosted a two-day symposium for over 250 agency employees, researchers, educators, students, consultants, engineers, and community representatives. The purpose of this symposium was to exchange

information, data, and ideas on the status and health of the northern Gulf. Guest speakers included Dr. Sylvia Earle, Dr. Nancy Rabalais, Dr. Orin Pilkey, and Dr. Frank Muller-Karger. Oral presentations were categorized by topic into Water Quality, Living Resources, Habitat Management, and Natural Hazards and Coastal Development. Thirty-seven posters were displayed in the concourse and presented Tuesday evening. Vendors/sponsors with displays in the concourse included AUMERC, FEMA, Grand Bay NERR, C. C. Lynch & Associates, MBNEP, NOAA, and Vittor and Associates, Inc.

Elected Of cials Workshop
The Mobile Bay National Estuary Program, in
coordination with members of the Baldwin County
and Mobile County legislative delegations,
sponsored an environmental seminar on November
15, 2006. According to State Senator Bradley Byrne
(R. Montrose, "Our aim was to develop a common
level of understanding among elected of cials
from both Baldwin and Mobile Counties about the
environmental and conservation issues facing

coastal Alabama and target speci c actions for

accomplishment or further development."

The target audience included both counties' legislative delegations, County Commissioners, and Mayors. Topics addressed included the tremendous growth and development taking place in coastal Alabama; an issue that has many dimensions. State agency heads responsible for community development, conservation and natural resources, environmental management, transportation planning, and public health attended this event to provide an opportunity for structured dialog between local leaders and state government on issues of local concern. Presenters and participants at the halfday event included: Mr. Jim Clinton, Executive Director of the Southern Growth Policies Board in Raleigh, N.C.; Dr. Doug Phillips, of the University of Alabama and host and Director of the awardwinning "Discovering Alabama" APTV series; and Dr. George Crozier, Executive Director of the Dauphin Island Sea Lab. Several other experts, including Dr. John Dindo, DISL; Dr. John Valentine, DISL; and Dr. Kevin White, USA, participated as subject matter specialists.

This meeting represents the beginning what we hope is a continuing dialogue among the elected leaders of our two counties to help maintain both the environmental integrity and the economic vitality of coastal Alabama. Several of the topics discussed are currently being considered in this legislative session by the Alabama legislature.

Events

MBNEP facilitated, organized, and/or participated in a number of events during the 2006 period, including: Earth Day, Coastal Clean-up, Coastal Kids Quiz, Discovery Day, Coastal Alabama Birdfest,

Derelict Crab Trap Recovery, The Dog River Paddle, Baldwin County Groundwater Festival, Environmental Studies Center Open House among others. Attendance varied widely from 300 to nearly 5,000 participants.

Website Redesign

At the close of the 2006 period, MBNEP worked to launch its new website, completely re-designed by Melissa Mills of the DISL Information Technology Department with direction from the MBNEP staff. The more user-friendly site with improved organization and navigation will represent a signi cant improvement towards communicating our message of community involvement in the stewardship of the water quality and living resources of the Mobile Bay estuary.

Alliances with Other Locally Managed Coastal Federal Funding Sources_

Since the establishment of a formalized Memorandum of Agreement between MBNEP; ADCNR, and the DISL, there has been a continuing commitment of funding, time and resources







among the organizations to work cooperatively for environmental improvement in coastal Alabama. and leveraging scarce resources available in an ef cient and effective manner that better addresses priority issues. An alliance of MBNEP and ADCNR with the Mississippi-Alabama Sea Grant Consortium (MASGC) has resulted in a signi cant cooperative relationship that now comprises the three primary sources of federal funding to address and improve coastal environmental conditions for the state of Alabama. Each of these programs provide leadership in either research and extension, monitoring and capacity building.

or land management while also playing supportive roles to other areas of resource planning and management. The alliance has become so well established that the ADCNR's Coastal Section, MASGC, and MBNEP are often colloquially referred to as a "coastal trinity".

Strengthened Relationships with Other Federal Environmental Agencies

MBNEP has enjoyed better relationships with the Federal agencies that are represented on the Management Conference. Federal agencies like the Army Corps of Engineers and the US Fish and Wildlife Service are known to uniquely refer to MBNEP as the collaborative "we", instead of as a third party. As a result, the work of these agencies, through representation on the Management Conference, has become closely integrated with that of MBNEP.



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Strengthened Relationships with State Environmental Agencies

By supporting sampling and other ongoing programs of coastal emphasis with ADEM when funding has been short, MBNEP has bettered its relationship with ADEM. There is more consistent and direct contact with the agency's eld of ce in Mobile.

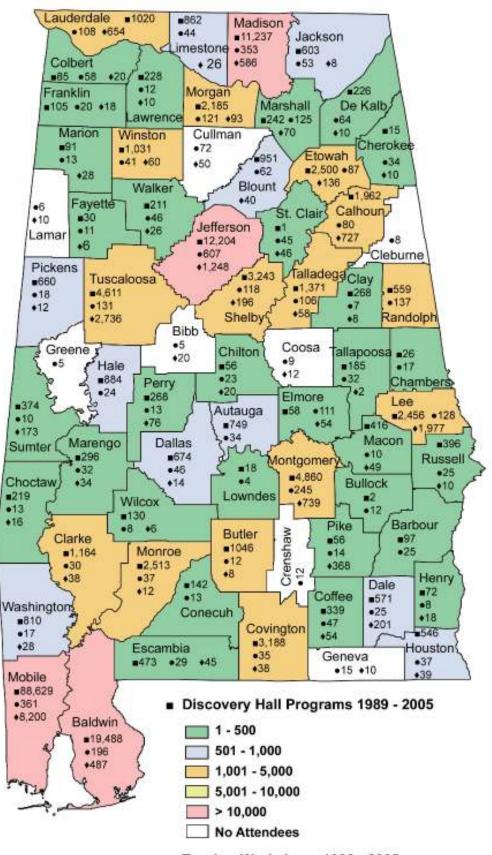
Strengthened Relationships with Local Government Of cials

Signi cant strides have been made in reaching local governments. Relations with Baldwin County and Mobile counties have been strengthened signi cantly. This is re ected in increased commitments to match funding that occurred in 2005. At a recent meeting of the South Alabama Regional Planning Commission, the mayor of the City of Prichard introduced a resolution commending and supporting the work of MBNEP.

Enhanced Credibility Through Partnerships, Maturation

The formal alliance with the DISL has brought new leadership and enthusiasm to the Program and the continued strengthening of the relationships with the agencies has given stakeholders con dence that the MBNEP is moving in the right direction and increasingly committed to cooperation and leveraging scarce funding on the priority issues facing the estuary. In addition, the maturation of the Program has shown the true personality of MBNEP as a consensus builder to develop and implement solutions, overcoming the parochialism and mistrust inherent in the initial natural struggles to develop a conservation plan.

Dauphin Island Sea Lab Participation Totals, and Graduate and Undergraduate Credit Hours Earned



- Teacher Workshops 1988 2005
- College Credit Hours 1989 2005