

# Dauphin Island Sea Lab

Alabama's Marine Research and Education Institution



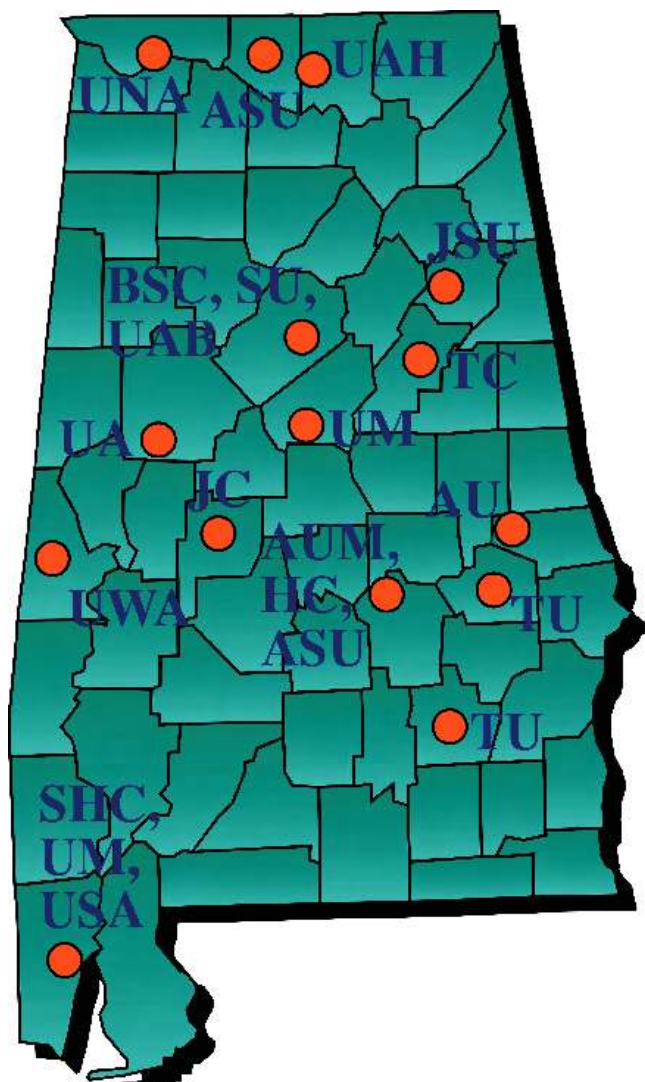
*R/V A.E. Verrill, September 2005,  
post-Hurricane Katrina*



*R/V A.E. Verrill, October 2005,  
recovered*

2005 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.

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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 e-mail Lisa Young, Public Relations Director, at [lyoung@disl.org](mailto:lyoung@disl.org)

*Cover photos of R/V A.E. Verrill:  
Top, Dr. John Dindo  
Bottom, Mike Dardeau*



## Letter from the Executive Director

The biggest problem for DISL in the wake of Hurricane Katrina is a serious case of “survivor guilt” co-mingled with some foreboding about the 2006 tropical season. Our companion laboratories in Louisiana and Mississippi were hit very, very hard by the one-two punch of Katrina and Rita while we suffered very little impact beyond a week without power and sand on the basketball court. Of course, part of the low impact was the fact that the boardwalks around the edges of the Laboratory and The Estuarium had not been rebuilt from the effects of Ivan in 2004!

The directors of the three affected laboratories are working on a document reviewing the perils of coastal field stations and mitigating methods that worked or are obviously needed. The unlikely possibility has emerged that DISL may, in fact, be the least vulnerable of the three, given the location off the mainland where the water has no place to go but up. The unusually sturdy construction of a facility that was originally intended to be “all but ground zero” resistant to nuclear attack from the soviets during the cold war certainly adds to the strength of the facility.

Nevertheless, having had Ivan strike the Florida panhandle and Katrina devastating the Mississippi coast, it is unsettling to recall the old firing range line of “miss to the right, miss to the left”! It is inevitable that the increased storm cycle will continue to plague the coastal stations, including DISL. The addition of the big-time storm shutters to the dormitories will certainly enhance the resistance of the facility and the shift of our summer teaching calendar to earlier in the summer both work to lessen some of our concerns.

On a happier note, the DISL Foundation scored another success by pulling off the first social fund-raiser that we have ever conducted in Mobile. “Cocktails with

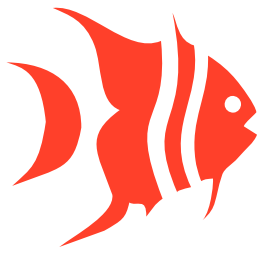
the Critters” attracted a completely different group of supporters than usual. The Board of Trustees combined a visit from our most eminent of supporters, Dr. E.O. Wilson, with the works of Gulf Coast artist Stig Marcussen. They raised some money but greatly elevated the image of the Laboratory in the Mobile community. We were even given a Guy Harvey limited edition print later that year – it appears that we may have arrived!

This event also marked the launching of DISL’s first new research vessel appropriately named the R/V E.O. Wilson. An equally appropriate anecdote was heard when a bridge tender in Louisiana commented over the radio about what a great person the boat was named for as he let her through his bridge! It would have been a truly marvelous year if the events of the hurricane season had not truly spoiled 2005 for so many residents of the central Gulf Coast.

Dr. George F. Crozier  
Executive Director  
Dauphin Island Sea Lab



*Dr. E.O. Wilson at lecturn with Dr. George Crozier at the dedication of the R/V E.O. Wilson*



# 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.

Four buildings located on the south campus of DISL provide over 9,000 sq. ft. of classroom/ laboratory facilities. Marine Science Hall, the main research facility, contains over 14,000 square feet of laboratory and office space. The campus can accommodate 160 persons in residence. Two dormitories, a two-story efficiency 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 7,350 bound volumes and approximately 500 periodical titles, with current subscriptions to many of those periodicals. The library also has numerous

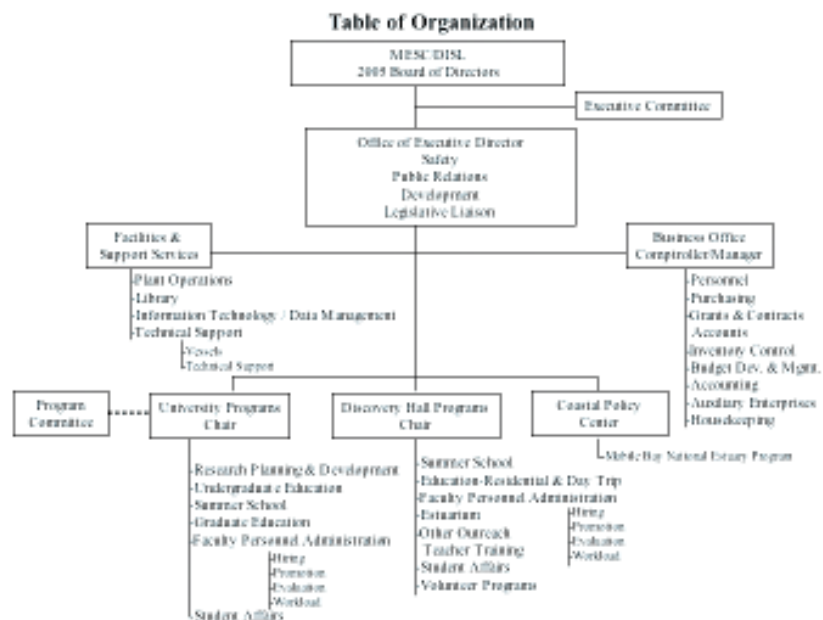
CD-ROM databases, as well as access to a variety of on-line library catalogs. Wet Lab facilities house modular sea-water systems, kreisels, and other instruments for experimental work on living marine organisms. Research laboratories are equipped with state-of-the-art instrumentation for biogeochemical 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, 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 Office of the DISL operates under the principles of Fund Accounting set forth by the National Association of College and University Business Officers. The State Examiners of Public Accountants audit annually the procedures, accounting records and policies of the DISL.



January 2005

### **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 Moss - Contract & Grants Manager  
Dennis Patronas - Assistant

### **Auxiliaries**

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

### **Cafeteria Personnel**

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

### **Estuarium Gift Shop Personnel**

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

### **Information Technology**

The Sea Lab's Information Technology Department provides user services and support for more than 120 users and 226 computers and servers, in both academic and administrative departments. In 2005 we completed construction to expand office space for the IT department, resulting in four renovated offices and a reconfiguration of the lobby in the Administration building.

### **Information Technology Personnel**

Melissa Mills - Manager of Information Technologies  
Lei Hu - Data Manager  
Tommy McNeal - PC and Network Support Specialist

### **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 7350 bound volumes and approximately 500 periodical titles, with current subscriptions to many of those periodicals. Shelf

space has been a problem for some time. To help relieve some of the space, many foreign exchange titles and older unused titles have been weeded from the shelves and offered to other libraries before being sent to recycling. Online full text access to over 75 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.

### **Library Personnel**

Connie Mallon - Librarian

### **Public Relations**

A year of spectacular events, both positive and negative, made it one of the busiest periods ever for the PR Department. Cocktails with the Critters, the first-ever fund-raiser for the DISL Foundation, featured local artist Stig Marcussen, who offered magnificent renderings of Dauphin Island scenes to help raise money for the DISL Foundation. The R/V E.O. Wilson was christened in a dockside ceremony by its namesake, Pulitzer Prize-winner and Alabama native Dr. Edward O. Wilson. Two DISL marine scientists, Dr. Rich Aronson and Dr. Monty Graham, were featured in two National Geographic specials – Strange

Days on Planet Earth and Swarms!, respectively. Dr. John Dindo, Chair of Discovery Hall Programs, was appointed an Outdoor Ambassador by Governor Bob Riley to help promote Alabama's many outdoor treasures. And, although Hurricane Katrina gave the Sea Lab a mere glancing blow, we were deeply saddened by the destruction it caused our community and neighbors to the west.

The PR Department continues to publish the DISL's quarterly newsletter Tidings, available now through e-mail, thanks to Tommy McNeal of Information Technology. Log onto <http://tidings.disl.org> to receive a free e-subscription.

The Public Relations Department is grateful to ExxonMobil for funding a 2005 summer intern, the industrious and delightful John Clark from the



*Gift Shop Manager Jeana Layne*

University  
of South  
Alabama.

**Public  
Relations  
Personnel**

Lisa Young  
- Public  
Relations  
Director

**Plant  
Operations**

Caught  
between  
2004's  
Hurricane  
Ivan and  
2005's  
Hurricane Katrina,  
Plant Ops spent much  
of their time rebuilding,  
refurbishing, and  
realizing that hurricanes  
come much too quickly  
for their tastes! Still,  
some major projects  
were completed, such  
as painting all the faculty  
housing; putting a new  
roof on the Compass  
Port Building; and  
completing the outdoor  
deck behind Marine  
Science Hall. One project  
combined demolition with  
education, as the old Pool House was burned down  
by the local volunteer fire departments as part of a  
training exercise for their participants.

**Plant Operations Personnel**

Steve Ruf - Supervisor  
Bryan Breaux  
Jim Daves  
Ricky Gibbs  
Chris Gillian  
Troy McBride  
Kenneth O'Neal  
Tom Pritchett  
David Yommer

**Household Maintenance Personnel**

Mike Connell  
Shirley Emerson  
Cindy Johnson  
Jenny Johnson



Shirley Kirkpatrick  
Holly Ladnier  
Tammy McClantoc

**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: field instrumentation, laboratory  
instrumentation, wet lab, and scientific  
diving.

Along with the research-dedicated E.O.



Wilson,  
vessels  
ops also  
acquired  
a smaller  
vessel, the  
Oyster,  
purchased  
with funds  
from the  
University  
of South  
Alabama.  
We  
retired the  
Skimmer  
and  
Halodule,  
but  
are still  
operating

(Above) Dr. E.O. Wilson dedicates the new research vessel named in his honor and (below) takes a cruise around Mobile Bay.

the Thalassia, Valisneria, Osprey and a pontoon and  
Whaler.

**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 Lolar - Mate  
Russell Wilson - Captain

2005 Vessel Days at Sea (including 1/2 day ops)

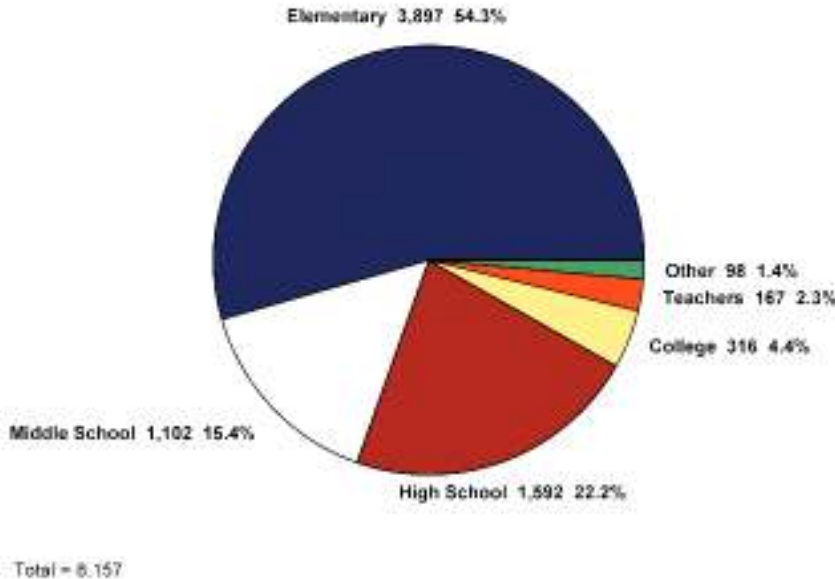
A. E. Verrill	90
E. O. Wilson	37
Small Boats	212



# Discovery Hall Programs

## Discovery Hall Student Participation in 2005

including Southern Programs and Teacher Activities



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.

DHP, in partnership with the University of Southern Mississippi's J.L. Scott Marine Education Center, has been successful in acquiring funding from the Mississippi-Alabama Sea Grant Consortium (MASGC). Ten thousand dollars were awarded to each facility for the construction of a deep-sea submersible exhibit

and a Sea Grant kiosk. Students will learn how scientists study the deep sea through modern technology. The ROV will be capable of being operated by students and the general public in the Estuarium's large salt water aquarium. MASGC also provided funds for DHP to work with Dr. Jay Grimes from the University of Southern Mississippi on an exhibit that will feature remote sensing and molecular detection of *Vibrio* and its health-related risks in oyster consumption. These exhibits will be open to the public in June of 2006. In addition each facility has received \$60,000 per year for two years to support and enhance marine education.

DHP also received a grant of \$36,000 a year for two years from the University of South Alabama's Oyster Restoration. DHP faculty are working with Drs. Heck, Powers and Shipp on designing curricula on oysters and oyster restoration to be used in all DHP classes and the Estuarium public education. The oyster exhibit in the Estuarium will be revamped by the fall of 2006.

## Dauphin Island Sea Lab's Discovery Hall Program Totals

Year	K-5	Middle School	High School	College	Teachers	Other	Total
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
<b>Total</b>	<b>90,457</b>	<b>30,141</b>	<b>24,014</b>	<b>7,552</b>	<b>3,622</b>	<b>5,428</b>	<b>161,214</b>





*Technology really works (left) as a participant in Treasure Island learns how to use a GPS system to find buried treasure. This 1/2 day program for 9-11 year olds proved to be enormously popular, and requests were made to reserve spaces for 2006.*

The National Science Foundation has awarded DHP, the J.L. Scott Education Center in Mississippi, the University of Florida in Gainesville, and the Louisiana State University a five-year grant titled "Centers for Oceans Sciences Education Excellence." The project will provide hands-on experience with scientists from each research facility; ocean science literacy; and classroom activities for middle and high school teachers. DHP will receive \$72,000 a year for each of the five years.

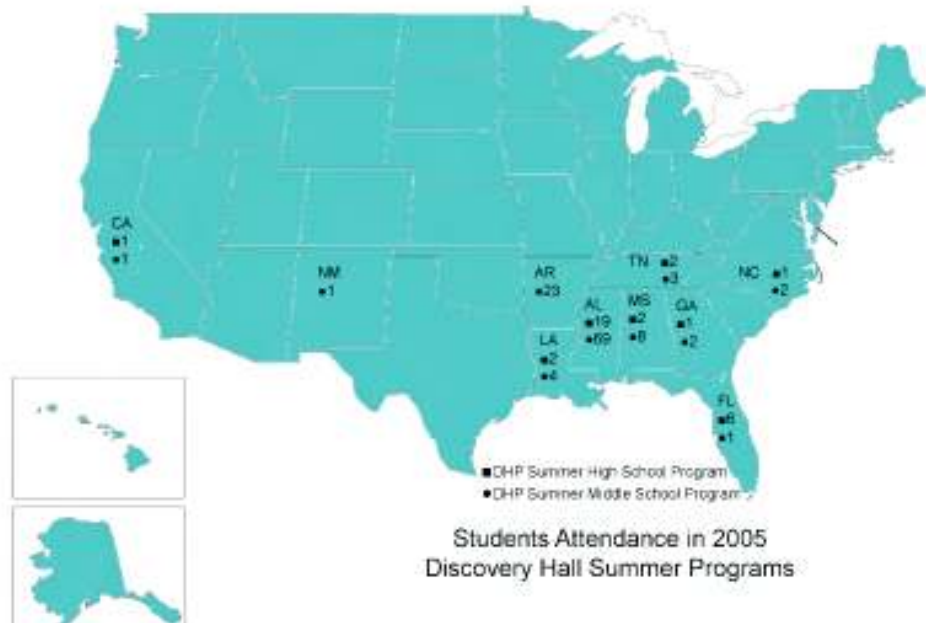
Shell Oil Foundation funded the third year of the minority internship program with the Discovery Hall Programs. One student and two teachers assisted in teaching the summer Discovery Hall Programs, teacher workshops, high school and middle school. Additionally, they assisted in BayMobile outreach programs around the area. Each student received a \$3,000 stipend plus room and board.

**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

**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

Annual Totals	1998	1999	2000	2001	2002	2003	2004	2005
	53,246	65,297	69,137	71,856	72,746	77,475	71,856	47,769

When Ivan hit in 2004, the Estuarium lost the Living Marsh Boardwalk, just as the southern part of the campus lost the Sea Pines Trail. Repair and replacement were just underway when Hurricane Katrina hit, forcing completion of repairs to wait until 2006.

As a result of both Hurricanes Ivan and Katrina, the fall attendance in 2004 and 2005 were greatly reduced - total attendance for the Estuarium in 2005 was 47,769, compared to 71,856 in 2004. The Sea Lab was involved in major clean-up and repair and schools across the state were impacted with loss of days and ability to travel. However, the number of groups using the Estuarium is coming back slowly and the state operation of the Mobile Bay Ferry has increased visitors.

In the midst of all the storm turmoil, the Estuarium staff still managed to install some new exhibits, including:

- Pitcher Plant Audio Kiosk
- Jellyfish Computer Kiosk
- Small Critter Exhibit Tanks
- Mola mola Exhibit

As this publication goes to print, the Estuarium boardwalk is now open to the public and the

Sea Pines Trail is open to our school groups. We are installing deck level lighting along the entire boardwalk which will enhance the use of the boardwalk for special events, weddings, and parties. If you are interested in having a special event, please contact Ms. Georgia Mallon at (251) 861-7512.

We cannot adequately express our thanks to our many hard-working docents, without whose help we could not operate this facility. Their commitment to sharing new experiences with visitors at the Touch Table is what sets this aquarium apart for those looking for more than just a museum to visit. Currently we have 63 active volunteers in our Docent Program

Special thanks to Blanche Emerson, Rena Schuett, Ami Perci, Linda Miller, and Stella Anderson for their excellent gardening skills - the Butterfly Garden shows every sign of their love and attention. Next time you walk by the Cafeteria be certain to stop and take notice of this work of art and creation.

Docent classes are offered every two years. For more information on joining the Docent Program, please contact Ms. Denise Keaton at [dkeaton@disl.org](mailto:dkeaton@disl.org) or (251) 861-7515

## Estuarium

### Personnel

Robert Dixon - Estuarium Manager  
 Brian Jones - Senior Aquarist  
 Joe Ingraham - Aquarist  
 Jennifer Randolph - Aquarist, End 3/2005  
 Stephanie Wright - Aquarist, Began 4/2005



Marine technician and talented artist Kyle Weis made a fibreglass mold of this juvenile mola mola carcass (left) to make the stunning display in the Estuarium (right).



## 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. Sixteen of the 21 MESC member institutions sent students to the DISL for the 2005 Summer Program. UP delivered 785 undergraduate and 30 graduate semester hours of instruction during the summer, an increase of nearly 10% from the previous year, and 413 graduate semester hours during the academic year (Figure 1, next page). Four M.S. students and three Ph.D. candidates who conducted their research at DISL and were advised by Sea Lab faculty received their degrees from their home institutions (UA and USA) during the past year (Table 1).

For the 6th year in a row, DISL participated in NSF's Research Experience for Undergraduates (REU)



REU student Justin Liefer tests equipment aboard the R/V E.O. Wilson.

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).

**Table 1.**

### 2005 Graduates

**Derrick C. Blackmon.** "Diel Vertical Migration of Seagrass-Associated Benthic Invertebrates: A Novel Escape Mechanism that Provides an Allochthonous Input of Seagrass-Based Production to Coral Reef Resident Predators," Ph.D. (University of South Alabama).

**John Higgins, III.** "Overcoming gamete dilution in free-spawning zooplankton: How the moon jellyfish, *Aurelia* sp., exploits the water column to maximize fertilization success," Ph.D. (University of South Alabama).

**Amy Hunter.** "The effects of anthropogenic eutrophication on the carbon budget of black needlerush, *Juncus roemerianus*, marshes," Ph.D. (University of Alabama).

**Katherine Lindsey Kramer.** "Has marine reserve protection made a difference? Fish community structure, grazing intensity and coral recruitment on protected patch reefs," M.S. (University of South Alabama).

**Ryan Kroutil.** "An experimental assessment of the impacts of coral loss on fish community composition in the Florida Keys National Marine Sanctuary," M.S. (University of South Alabama).

**Chad Lopez.** "Sediment Plume Variability and Associated Phytoplankton Responses in the Alabama Coastal Shelf Waters Using Satellite Imagery," M.S. (University of South Alabama).

**Jonathan Martin.** "A multiscale analysis of the spatial variability of gelatinous zooplankton in the northern Gulf of Mexico," M.S. (University of South Alabama).

Sea Lab faculty continued to produce research products at a high rate during the past year, with a total of 29 refereed articles in scientific journals,

**Table 2.**

### 2005 REU Research Projects

**Jonathan Dean,** Auburn University, Dr. Ron Kiene - Mentor. "Effect of acute H2O2 stress on DMSP/DMS production in two strains of *Emiliana huxleyi*."

**Gretchen Goodrich,** University of Virginia, Dr. John Valentine - Mentor. "The influence of sea urchin (*Lytechinus variegatus*) grazing on the production of chemical defenses in subtropical turtlegrass (*Thalassia testudinum*) meadows."

**Julia Griffin,** Duke University, Dr. Sean Powers - Mentor. "Indirect effects of oyster reefs on predator-prey dynamics."

**Aaron Lewis,** Central Missouri State, Dr. Monty Graham - Mentor. "Copepod-escape responses to a flow field at different dissolved oxygen concentrations."

**Justin Liefer,** Grand Valley State University, Dr. Hugh MacIntyre - Mentor. "Nutrient loading and microalgal populations in Little Lagoon, Alabama."

**Erin Morgan,** The College of William and Mary, Dr. Ken Heck - Mentor. "Effects of live-bait shrimp trawling on a wideongrass (*Ruppia maritima*) beds and catch in the Grand Bay National Estuarium Research Reserve."

**Savannah Williams,** Alabama State University, Dr. Tammy McGovern and Dr. Rich Aronson - Mentors. "The effects of nutrients inputs from Mobile Bay on *Ruppia maritima* in Coastal Alabama."

Figure 1.

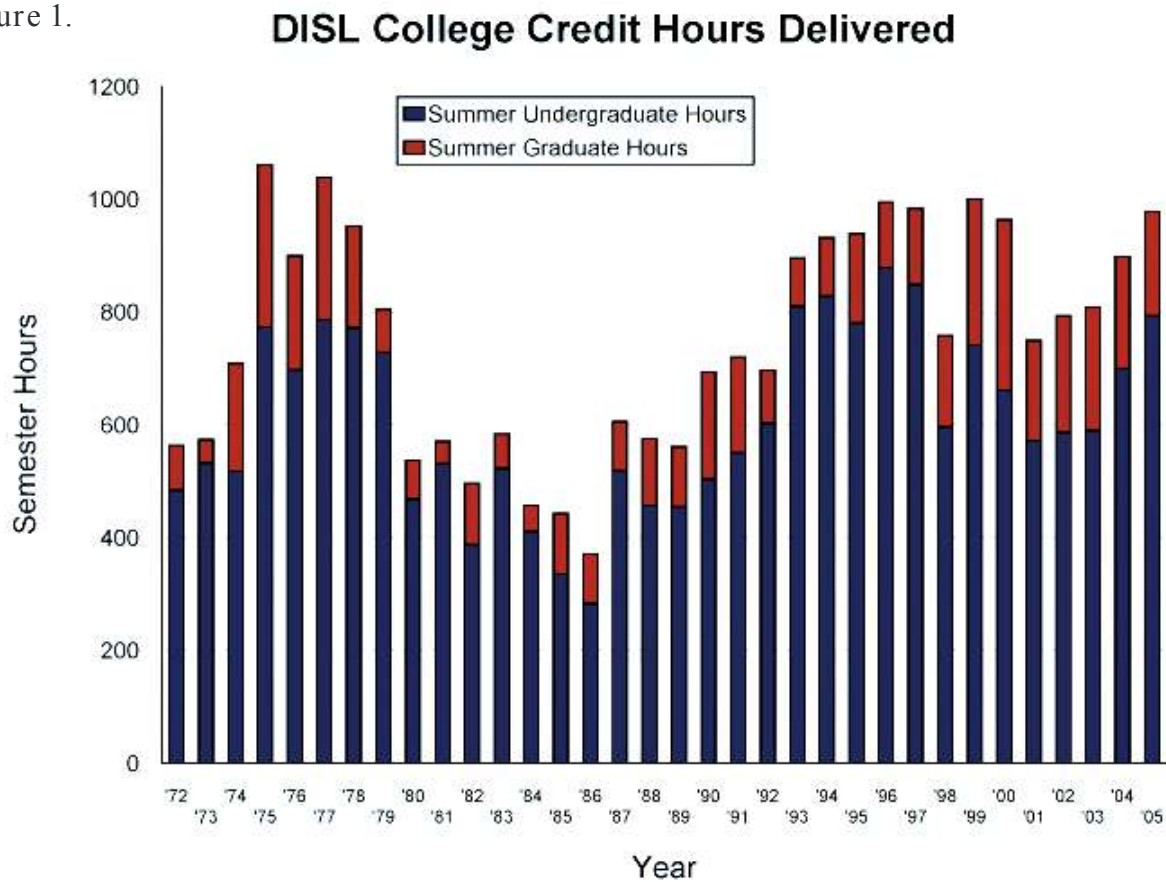
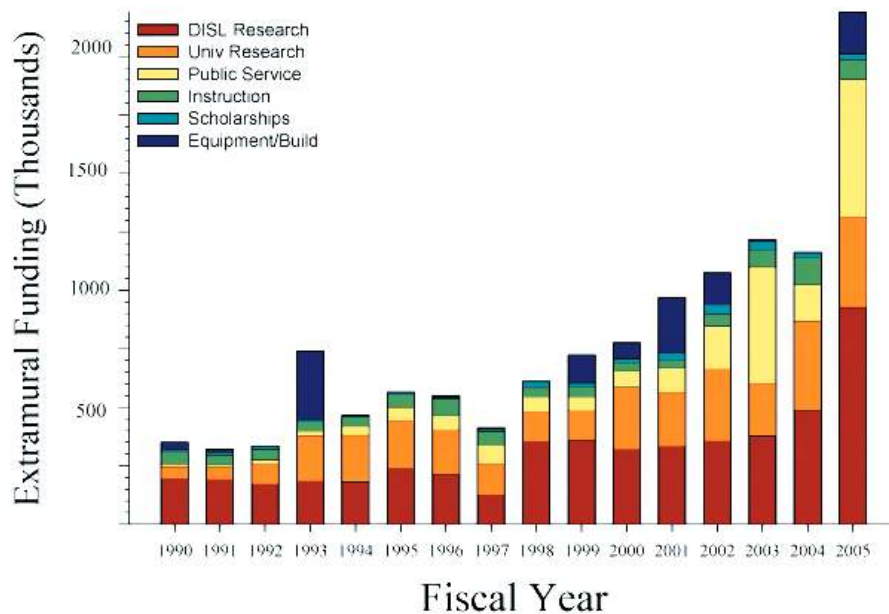


Figure 2.

9 non-refereed publications, 53 presentations at scientific meetings, and 8 public presentations. UP research awards increased dramatically during the past year, and UP contributed \$1,789,125 to the Sea Lab's total extramural funding of over \$3.5 million. This funding supported a large amount of work in local waters, including Mobile Bay and the northern Gulf of Mexico, as well as studies in coastal waters of places as distant as Croatia, Panama and Antarctica (Figure 2).

\*Note, an additional \$772,872 was spent by DISL faculty through USA and UA.

### Extramural Funding



#### University Programs Personnel

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



## Coastal Policy Center Mobile Bay National Estuary Program

Dr. Crozier's involvement with Grassroots, Inc. has expanded from real estate continuing education to include the engineering community. The group is also developing a web-based course for the realtors statewide which will emphasize the impacts of non-point pollution on Mobile bay at the bottom of the watershed.

The Mobile Bay National Estuary Program (MBNEP) is an integral part of the Coastal Policy Center (CPC). It assists in providing a 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



*This aerial photo, taken by Dr. John Dindo, shows the breach on the west end of Dauphin Island after Hurricane Katrina's surge.*



*One of the water quality/meteorological stations in Mobile Bay.*

educational establishments to work together to address local environmental challenges.

MBNEP has made much progress in the last year. Over \$1.5 million in federal and local funds and services have been obtained and directed through this program in 2005 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 despite the setbacks provided by the impacts (in two successive years) in our study area of two of the most damaging hurricanes to ever strike the U.S. However, our progress can also be measured by renewed enthusiasm about the program and the expanded and recognized roles of MBNEP in our coastal community as a valued partner, capacity builder, honest broker and community resource. A few of its successes are described below:

- Established partnership with the University of Illinois/National Atmospheric Deposition Program (NADP), ADEM, Mobile County and Baldwin County to establish National Trends Network (NTN) monitoring sites to measure nutrient and mercury atmospheric deposition.



Among the many projects funded by the MBNEP was the submerged aquatic vegetation research of Dr. Just Cebrian, Senior Marine Scientist DISL (right), pictured here with student volunteers from Gulf Shores High School.

- Helped establish the first long-term water quality/meteorological network in Mobile Bay. In a nearly unprecedented collaboration of effort, a variety of agencies have pooled their resources to establish the long needed continuous (24/7) monitoring capability available through the Northern Gulf of Mexico Coastal Observing System.

- Funded part of a multi-year study to collect data assessing causeway impacts and the potential impact of altered fresh water inflow (as influenced by upstream release from hydroelectric plants, locks and dams) on the ecology of the lower Mobile-Tensaw

- Provided increased funding with ADEM for water monitoring in tributary streams for Mobile Bay. This provides a basis for qualitative and quantitative assessment of water quality in these critical, local tributaries.

For a full report of MBNEP activities during the reporting year, please refer to Appendix 1 (page 26).

The impacts of Hurricane Katrina have again focused considerable scrutiny on Dauphin Island, both as a community and a barrier island. The CPC has been actively engaged with the town council as they prepare project requests for FEMA and as they wrestle with the complexities of rebuilding the economic infrastructure of the town.

Dr. Crozier continues to facilitate the State's waterways and marinas management task force. Concerns for beachfront development as well as the scarcity of prime land seem to have pushed developers farther inland along the intracoastal waterway in Baldwin County. The growing demand for recreational boating opportunities is beginning to appear to be as big a threat as it is opportunity. The conflict between recreational boaters and the barge industry in the waterway appears to be inevitable at this point.

With the assistance of the Landscape Architecture Design Studio from Auburn University and financial support from ExxonMobil and the NEP, CPC carried out a public access study for south Mobile County. The recommendations will be presented to the general public in the spring of 2006.

**Coastal Policy Center Personnel**

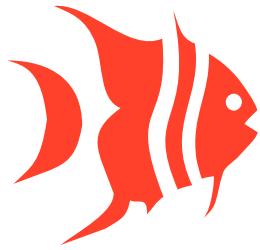
- Dr. George F. Crozier - Executive Director, DISL
- Michael Dardeau - Marine Scientist, DISL
- Dr. John Dindo - Chair, Discovery Hall Programs, DISL
- Aleada Nicholson - Administrative Assistant
- Dr. John Valentine - Senior Marine Scientist, DISL
- Captain David W. Yeager - Associate Director, CPC; Director, MBNEP



Landscape Architecture students from Auburn University will present plans on public water access in the spring 2006.

**Mobile Bay National Estuary Program Personnel**

- Captain David W. Yeager - Director,
- Tiffany England - Business Manager
- Kara Lankford - Watershed Facilitator
- Roberta Swann - Deputy Director
- Lee Yokel - Outreach Coordinator



## 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.

**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 field 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 fish 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 influence 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 fishes. Current research includes a global assessment of seagrass nursery value, and experimental investigations of herbivory, nutrient enrichment and overfishing 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.

**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 field data, theoretical analyses and numerical models. Specific 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 shellfish and finfish 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 flow 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 Reviews

**Aronson, R. B.** 2005. *Marine Reserves: A Guide to Science, Design, and Use* by J. Sobel and C. Dahlgren. *Ecology* 86:1961-1962.

### Refereed Articles

Armitage, A. R., T. A. Frankovich, **K. L. Heck, Jr.** and J. W. Fourqurean. 2005. Complexity in the Response of Benthic Primary Producers Within a Seagrass Community to Nutrient Enrichment. *Estuaries* 28:422-242.

**Aronson, R. B.**, I. G. Macintyre and W. F. Precht. 2005. Event preservation in lagoonal reef systems. *Geology* 33:717-720. (DISL Contribution No. 364)

**Aronson, R. B.**, W. F. Precht, T. J. T. Murdoch and M. L. Robbart. 2005. Long-term persistence of coral assemblages on the Flower Garden Banks, northwestern Gulf of Mexico: implications for science and management. *Gulf of Mexico Science* 23:84-94. (DISL Contribution No. 360)

**Cebrian, J.** 2004: Grazing on benthic primary producers. Pp. 153-185, In: S.L. Nielsen, G.T. Banta and M.F. Pedersen (Eds.), *Estuarine nutrient cycling: the influence of primary producers*. Kluwer Academic Publishers, Dordrecht, Boston, London.

Colin, S. P., J. H. Costello, **W. M. Graham** and J. H. Higgins. (2005) Omnivory by the small hydromedusae *Aglaura hemistoma*. *Limnology and Oceanography*. 50: 1264-1268

Goecker, M.E., **K.L. Heck, Jr.** and **J.F. Valentine**. 2005. Effects of nitrogen content in turtlegrass, *Thalassia testudinum*, on consumption by the bucktooth parrotfish, *Sparisoma radians*. *Marine Ecology Progress Series*. 286: 239-248.

Grabowski, J.H. and **S. P. Powers**. 2004. Habitat complexity mitigates trophic transfer on oyster reefs. *Marine Ecology Progress Series*, 277: 291-295.

Grabowski, J.H., C.H. Peterson, **S.P. Powers**, D. Gaskill, and H.C. Summerson. 2004. Growth and survivorship of non-native (*Crassostrea gigas* and *Crassostrea ariakensis*) vs. native (*Crassostrea virginica*) oysters. *Journal of Shellfish Research*, 23: 781-793.

Johnson, D. R., H. M. Perry and **W. M. Graham**. (2005) Using nowcast model currents to explore transport of non-indigenous jellyfish into the Gulf of Mexico. *Marine Ecology Progress Series*. 302: 211-218.

Kana, T. M., M. W. Lomas, **H. L. MacIntyre**, J. C. Cornwell and C. J. Gobler. Stimulation of a brown tide organism, *Aureococcus anophagefferens*, by selective nutrient additions to in situ mesocosms. *Harmful Algae* 3:403-438.

Kuo, A.Y., **K. Park** [corresponding author], S.-C. Kim, and J. Lin. 2005. A tidal prism water quality model for small coastal basins. *Coastal Management*, 33(1), 101-117.

Lomas, M. W., T. M. Kana, **H. L. MacIntyre**, and J. C. Cornwell. 2004. Interannual variability of *Aureococcus anophagefferens* in Quantuck Bay, Long Island: Natural test of the DON hypothesis. *Harmful Algae* 3:389-402.

**MacIntyre, H. L.**, M. W. Lomas, J. C. Cornwell, D. J. Suggett, E. W. Koch, C. J. Gobler and T. M. Kana. 2004. Mediation of benthic-pelagic coupling by microphytobenthos: An energy- and material-based model for initiation of blooms of *Aureococcus anophagefferens*. *Harmful Algae* 3:403-438.

Malmstrom, R.R., **R. P. Kiene**, M. Vila and D. L. Kirchman. 2005. Dimethylsulfoniopropionate (DMSP) assimilation by *Synechococcus* in the Gulf of Mexico and Northwest Atlantic Ocean. *Limnology and Oceanography*: 50: 1924-1931.

Moran, M.A., Buchan, A., Gonzalez, J.M., Heidelberg, J.F., Whitman, W.B., **Kiene, R.P.**, Henriksen, J.R., King, G.M., Belas, R., Fuqua, C., Brinkac, L., Lewis, M., Johri, S., Weaver, B., Pai, G., Eisen, J.A., Rahe, E., Sheldon, W.M., Ye, W., Miller, T.R., Carlton, J., Rasko, D.A., Paulsen, I.T., Ren, Q., Daugherty, S.C., Deboy, R.T., Dodson, R.J., Durkin, A.S., Madupu, R., Nelson, W.C., Sullivan, S.A., Rosovitz, M.J., Haft, D.H., Selengut, J., Ward, N. 2004. Genome Sequence of *Silicibacter pomeroyi* reveals unique adaptations to the marine environment. *Nature* 432: 910-913.

**Park, K.**, H.-S. Jung, H.-S. Kim, and S.-M. Ahn. 2005. Three-dimensional hydrodynamic-eutrophication model (HEM-3D): Application to Kwang-Yang Bay, Korea. *Marine Environmental Research*, 60(2), 171-193.

Pergent-Martini, C., V. Leoni, V. Pasqualini, G. D. Ardizzone, E. Balestri, R. Bedini, A. Belluscio, T. Belsher, J. Borg, C. F. Boudouresque, S. Boumaza, J. M. Bouquegneau, M. C. Buia, S. Calvo, **J. Cebrian**, E. Charbonnel, F. Cinelli, A. Cossu, G. Di Maida, B. Dural, P. Francour, S. Gobert, G. Lepoint, A. Meinesz, H. Molenaar, H. M. Mansour, P. Panayotidis, A. Peirano, G. Pergent, L. Piazza, M. Pirrotta, G. Relini, J. Romero, J. L. Sanchez-Lisazo, R. Semroud, P. Shembri, A. Shili, A. Tomasello and B. Velimirov. 2005. Descriptors of *Posidonia oceanica* meadows: Use and application. *Ecological Indicators* 5(3):213-230.

Precht, W. F., M. L. Robbart and **R. B. Aronson**. 2004. The potential listing of *Acropora* species under the US Endangered Species Act. *Marine Pollution Bulletin* 49:534-536.

Precht, W. F., **R. B. Aronson**, S. L. Miller, B. D. Keller and B. Causey. 2005. The folly of coral restoration programs following natural disturbances in the Florida Keys National Marine Sanctuary. *Ecological Restoration* 23:24-28. (DISL Contribution No. 359)

Pustizzi, F., **H. L. MacIntyre**, M. E. Warner and D. A. Hutchins. 2004. Interaction of nitrogen source and light intensity on the growth and photosynthesis of the brown tide alga *Aureococcus anophagefferens*. *Harmful Algae* 3:343-360.

Suggett, D. J. **H. L. MacIntyre** and R. J. Geider. 2004. Biophysical and optical determinations of light absorption by photosystem II in phytoplankton. *Limnol. Oceanogr. Methods* 2:316-332.

**Valentine, J. F.** and **K. L. Heck, Jr.** 2005. Interaction strength at the coral reef-seagrass interface: has overfishing diminished the importance of seagrass habitat production for coral reef food webs? *Coral Reefs*. 24: 209-213

**Valentine, J. F.**, and J. Emmett Duffy. 2005. The central role of grazing in seagrass ecology. In: T. Larkum, R. Orth



And C. Duarte (Eds.), *Seagrass: Biology, Ecology and Their Conservation*, Springer.

#### Other Publications

**Cebrian, J.** Effects of anthropogenic eutrophication on the ecosystem services provided by shoalgrass (*Halodule wrightii*) meadows. *Sea Briefs, New Highlights from the Mississippi-Alabama Sea Grant Consortium*, Vol. 4, No. 3, 2004.

**Graham, W. M.** and T. F. Bolton (2005). Understanding a novel marine bioinvasion through theory, modeling and new molecular techniques. *Current* 21: 10-12.

Ivany, L. C., D. B. Blake, **R. B. Aronson** and K. C. Lohmann. 2004. Studying the effects of global cooling on Antarctic marine ecosystems. *American Paleontologist* 12(3):18-21.

**MacIntyre, H.L.**, and J.J. Cullen. 2004. Using cultures to investigate the physiological ecology of microalgae. Pp. 287-326. In: R.A. Anderson (Ed.), *Algal Culture Techniques*. Elsevier Academic Press, Burlington, MA.

Turner, J., L. Allen, A. Anton, M. Miller, R. Swann and **J. Cebrian**. 2005. *SAVing the Gulf: Education, Restoration, Conservation*. Mobile Bay National Estuary Program and Mississippi-Alabama Sea Grant Consortium, 32 pages.

#### Invited Workshops and Symposia; Advisory and Other Activities

**Aronson, R.B.** 2005. Coral Reef Ecology and DISL Summer Programs. University of Montevallo, AL.

Benfield, M.C., S.F. Keenan, **S.P. Powers**, H. Brown, N. Gerald, and M. Sisak. 2005. Blue runner movement patterns and feeding ecology around a Gulf of Mexico petroleum platform.. American Fisheries Society Meeting, Anchorage, AK.

**Cebrian, J.**, A. L. Stutes, A. A. Corcoran, J. P. Stutes and A. E. Hunter. 2005. Impact of sediment nutrient enrichment on benthic microalgal communities: a comparison between clear coastal lagoons and turbid estuaries. 18th Biennial Conference of the Estuarine Research Federation, Norfolk, VA.

Ivany, L. C., **R. B. Aronson**, D. B. Blake, K. C. Lohmann and J. E. Werner. 2005. Symposium on Polar Paleontology: The Fossil Record of High-Latitude Environments; Faunal change correlates with climate change in the Eocene of Seymour Island. North American Paleontological Convention, Halifax.

**Kiene, R. P.** 2005. The influence of sunlight on chemical and microbial cycling of organic compounds in the marginal ice zone with focus on sulfur.

Gordon Research Conference on Polar Marine Science. Ventura CA.

**MacIntyre H. L.** 2004. Benthic-pelagic coupling and microalgal dynamics in shallow waters. University of Southern Mississippi, Stennis Space Center, MS.

**MacIntyre H. L.** 2004. Using Optics to Monitor Microalgal Population Dynamics. Southeastern Phycological Colloquy, Dauphin Island, AL.

**MacIntyre H. L.** 2005. Identification and distribution of harmful microalgae in Mobile Bay. Mobile Bay NEP Management Meeting, Daphne, AL.

Patterson, D. A., J. Lehrter, **J. Cebrian**, J. P. Stutes, A. L. Stutes, A. Hunter and A. A. Corcoran. 2005. Nitrogen loads and residence times as regulators of nitrogen accumulation in three coastal lagoons in the Northern Gulf of Mexico. 18th Biennial Conference of the Estuarine Research Federation, Norfolk, VA.

**Powers, S.P.**, M. A. Bishop, G. Reeves. 2005. Estuaries as essential fish habitat for juvenile coho and sockeye salmon in Alaska. American Fisheries Society Annual Meeting, Anchorage, AK.

Precht, W. F. and **R. B. Aronson**. 2004. Symposium on Coral Reef Conservation; Death and resurrection of Caribbean acroporids: a historical perspective. Zoological Society of London/Fisheries Conservation Foundation, London.

Suggett, D. J., **H. L. MacIntyre**, C. M. Moore and R. J. Geider, 2005. Biophysical and optical determinations of light absorption by phytoplankton in vivo and in situ. ASLO/TOS Conference, Honolulu, HI,

**Valentine, J. F.** 2005. Marine Food Web Interactions in the 21st Century: Experimental evaluation of the impacts of overfishing on trophic interactions at the coral reef-seagrass interface. Hüsö Biological Station.

**Valentine, J. F.** 2005. Marine Food Web Interactions in the 21st Century: Experimental evaluation of the impacts of overfishing on trophic interactions at the coral reef-seagrass interface. Kristineberg Marine Station,

**Valentine, J. F.** 2004. a) Marine food web interactions in the 21st century: experimental evidence that intense harvests of large predators has altered trophic exchanges at the coral reef-seagrass interface; and b) Mobile-Tensaw Delta: A jewel in denial. Southampton College, NY.

**Valentine, J. F.** 2004. Marine reserve effectiveness in restoring coastal food webs: multitrophic level comparison. Jacksonville State University, AL.

#### Papers Presented at Scientific Meetings and Published Abstracts

Benfield, M.C., S.F. Keenan, and **S.P. Powers**. 2005. 3-D Acoustic localization of pelagic fishes around petroleum platforms. Minerals Management Service, Information Transfer Meeting, New Orleans, LA.

Bishop, M.A., S.P. Powers, and G. Reeves. 2005. Estuarine residence of coho and sockeye smolts within the Copper River Delta Estuary. Alaska Marine Sciences Symposium. Anchorage, AK.

Blackmon, D. and **J.F. Valentine**. 2005. Evidence of a new pathway for the allochthonous input of seagrass-based production for coral reef predators in the Florida Keys. Marine Benthic Ecology Meeting, Williamsburg, VA.

**Cebrian, J.** 2005. Changes in herbivory with eutrophication-induced seagrass replacement by macroalgae: a tale of anoxia? 2005 American Society for Limnology and Oceanography Summer Meeting. Santiago de Compostela, Spain.

del Valle, D., M. Vila, D. Slezak, R. Simó, and **R.P. Kiene**. 2004. Substrate specificity of DMS consuming microbes in seawater. Surface Ocean Lower Atmosphere Open Science Conference, Halifax, Nova Scotia.

Dunsmuir-Stutes, A.L., A. Corcoran and **J. Cebrian**. 2004. Effects of reduced light availability and nutrient enrichment on the metabolism and production of estuarine microphytobenthic communities. 26th Annual Southeastern Phycological Colloquium, Dauphin Island, AL.

Foster, C. D., **J. Cebrian**, M. Miller, A. Anton, K. Major and R. Plutchak. 2005. The short-term impact of Hurricane Ivan on the biomass and productivity of microalgal communities in tidal creeks of the Northern Gulf of Mexico. Spring 2005 Gulf Estuarine Research Society/ Society of Wetland Scientists (South Central Chapter) Joint Society Meeting. Gulf Breeze, FL.

Foster, C. D., M. Miller, A. Anton, R. Plutchak, K. Major and **J. Cebrian**. 2005. The impact of Hurricane Ivan on the biomass and production of microalgal communities in six tidal creeks in the Northern Gulf of Mexico. 7th Annual Graduate Student Symposium, LUMCOM, LA.

Grabowski, J.H., **S.P. Powers**, and C.H. Peterson. 2004. Growth and survivorship of non-native (*Crassostrea gigas* and *C. ariakensis*) versus native eastern (*C. virginica*) oysters. International Conference on Shellfish Restoration, Charleston, SC.

- Graham, W. M.**, Higgins, J. E. ; Martin, J. C. ; Rakow, K. C. 2005. Beneath the surface: vertical structure of gelatinous zooplankton aggregations in shallow coastal waters. American Society for Limnology and Oceanography, Summer Meeting Santiago de Compostela, Spain.
- Gregalis, K.C. and **S.P. Powers**. 2005. Evaluating fisheries benefits of restored oyster reefs along an environmental gradient. American Fisheries Society Annual Meeting, Anchorage, AK.
- Harada, H. and **R.P. Kiene**. 2005. Dimethylsulfoniopropionate lyase activity in ocean plankton and monospecific phytoplankton cultures. American Society for Limnology and Oceanography Aquatic Sciences Meeting, Salt Lake City, UT.
- Harada, H. and **R.P. Kiene**. 2005. Dimethylsulfoniopropionate lyase activity in Phaeocystis cultures and waters of the Ross Sea. SCOR Conference on Phaeocystis. Groningen, The Netherlands.
- Heck, K. L., J. Cebrian, S. P. Powers**, D. A. Byron, C. D. Foster and N. Gerald. 2005. Ecosystem Services Provided by Oyster Reefs: an Experimental Assessment. 8th International Conference on Shellfish Restoration: "Enhancement and sustainability of shellfish resources". Brest, France.
- Heck, K. L., Jr.** 2005. Historical Background on Estuarine Habitat Loss and Current Status. Regional Habitat Restoration Conference, Moss Point, MS.
- Heck, K. L., Jr.** and **J. F. Valentine**. 2005. Plant-Herbivore Interactions in Seagrass Meadows. Marine Benthic Ecology Meeting, Williamsburg, VA.
- Heck, K.L., Jr., J. Cebrian,** and **S.P. Powers**. 2004. Ecosystem services provided by oyster reefs: an Experimental assessment. International Conference on Shellfish Restoration, Charleston, SC.
- Hilbun, N. L., **R. B. Aronson** and T. S. Bianchi. 2005. Utilization of biogeochemical tracers to identify mechanisms of coral community phase shifts in Bahía Almirante, Bocas del Toro, Panama. Marine Benthic Ecology Meeting, Williamsburg, VA.
- Hilbun, N. L., T. S. Bianchi and **R. B. Aronson**. 2005. Agricultural development, storm events, and species turnover on lagoonal reefs in Panama. American Society of Limnology and Oceanography, Santiago de Compostela, Spain .
- Hunter, Amy E., J. Stutes and **J. Cebrian**. 2005. A comparison of primary production, decomposition, and herbivory in two *Juncus roemerianus* marshes on the northern Gulf of Mexico. Spring 2005 Gulf Estuarine Research Society/Society of Wetland Scientists (South Central Chapter) Joint Society Meeting, Gulf Breeze, FL.
- Ivany, L. C., D. B. Blake, **R. B. Aronson** and K. C. Lohmann. 2004. Eocene cooling recorded in the chemistry of La Meseta mollusks, Seymour Island, Antarctic Peninsula. International Symposium on the Geology and Geophysics of the Southernmost Andes, the Scotia Arc and the Antarctic Peninsula, Buenos Aires, Argentina.
- Ivany, L. C., D. B. Blake, **R. B. Aronson** and K. C. Lohmann. 2004. Eocene cooling recorded in the chemistry of La Meseta mollusks, Seymour Island, Antarctic Peninsula. Boletino di Geofisica 45(Suppl. 2):242-245.
- Ivany, L. C., K. C. Lohmann, D. B. Blake and **R. B. Aronson**. 2004. Delta 18O values of Eocene bivalves reveal high-latitude shelf cooling, Seymour Island, Antarctica. Geological Society of America Abstracts with Programs 36(5):303.
- Ivany, L. C., K. C. Lohmann, D. B. Blake and **R. B. Aronson**. 2004. Delta 18O values of Eocene bivalves reveal high-latitude shelf cooling, Seymour Island, Antarctica (poster). Geological Society of America Annual Meeting, Denver, CO.
- Ivany, L. C., **R. B. Aronson**, D. B. Blake, K. C. Lohmann and J. E. Werner. 2005. Faunal change correlates with climate change in the Eocene of Seymour Island. Paleobios 25(Supplement to No. 2):63-64.
- Johnson, Matthew W. and **K.L. Heck, Jr.** 2005. Can Habitat Fragmentation and Trophic Structure Influence Habitat Preference? A Mesocosm Experiment. Marine Benthic Ecology Meeting, Williamsburg, VA.
- Kieber, D.J., D.A. Toole, G. Westby, J. Bisgrove, **R.P. Kiene**, D.A. del Valle, and D. Slezak. 2004. Dimethylsulfide photochemistry in Antarctic waters. Surface Ocean Lower Atmosphere Open Science Conference, Halifax, Nova Scotia.
- Kiene, R.P.**, D.J. Kieber, D. Slezak, D. Toole, D. del Valle, and H. Harada. 2004. Distribution and cycling of dimethylsulfoniopropionate and dimethylsulfide during early spring in the Southern Ocean south of New Zealand. Surface Ocean Lower Atmosphere Open Science Conference, Halifax, Nova Scotia.
- Lehrter, J., **J. Cebrian** (presenter), J. Stutes, A. Stutes, A. Hunter and A. Corcoran. 2005. Standing stocks and loading rates of total dissolved nitrogen into three coastal lagoons in the Northern Gulf of Mexico. Spring 2005 Gulf Estuarine Research Society/Society of Wetland Scientists (South Central Chapter) Joint Society Meeting. Gulf Breeze, FL.
- Lehrter, J.C., J. R. Pennock, and **R. P. Kiene**. 2005. A comparative analysis of nutrient loading, estuarine nutrient fluxes and net ecosystem metabolism in three tidal river estuaries differing predominately by their watershed land-use types. Estuarine Research Federation biannual meeting, Norfolk, VA.
- Macintyre, I. G. and **R. B. Aronson**. 2004. Study of the recent history of the lagoonal reefs in the Rhomboid Cays, Belize. Page 16 in K. Rützler, ed. Caribbean Coral Reef Ecosystems, Progress Report 2002-2004. National Museum of Natural History, Smithsonian Institution, Washington, DC.
- Malmstrom, R R., **R. P. Kiene**, M. Vila, R. Simó, P. Gasol, and D. L. Kirchman. 2005. Uptake of dimethylsulfoniopropionate (DMSP) by *Synechococcus* in the Northwest Atlantic Ocean. American Society for Limnology and Oceanography Aquatic Sciences Meeting, Salt Lake City, UT.
- Matrai, P.A., J. Dacey, G. DiTullio, D. Erickson, A. Gabric, W. Gregg, **R.P. Kiene**, D. Kieber, R. Najjar, R. Simo. 2005. Complex molecular to global interactions and feedbacks in the marine DMS cycle: I- Subtropical gyre. American Society for Limnology and Oceanography Meeting, Santiago de Compostela Spain.
- Miller, G.A. and **S.P. Powers**. 2005. Species-richness-productivity relationships in fish: Potential influences of phylogenetic similarity, trophic level and structure.
- N. R. Gerald and **S.P. Powers**. 2005. Individual and community level responses of fish to restoration of marine biogenic habitat. Marine Benthic Ecology Meeting, Williamsburg, VA.
- Park, K.** 2005. Water quality modeling in Chesapeake Bay: Concept and an example application. Gyeongsang National University, Tongyoung, Gyeongsang-nam-do, Korea.
- Park, K.** 2005. Water quality modeling in estuarine and coastal waters: Concept and example application. Inha University, Incheon, Korea.
- Park, K.** 2004. Water quality modeling in the upper Chesapeake Bay. GeoSystem Research Corporation, Gunpo City, Kyonggi-do, Korea.
- Park, K.** 2004. Water quality modeling in estuarine and coastal waters: Concept and example application. Gulf Ecology Division, US EPA, Gulf Breeze, FL.

**Powers, S.P.** and **K.L. Heck, Jr.** 2004. Restoration of oyster reefs in Mobile Bay, Alabama. Evaluating expectations of fishery benefits across an environmental gradient. International Conference on Shellfish Restoration, Charleston, SC.

**Powers, S.P.** and M.A. Bishop. 2005. Plenary talk: Ecology of the Copper River Delta. Alaska Marine Sciences Symposium, Anchorage, AK.

Precht, W. F. and **R. B. Aronson**. 2005. Death and resurrection of Caribbean coral reefs. Marine Benthic Ecology Meeting, Williamsburg, VA.

Slezak, D., **R.P. Kiene**, C.M. Smith. 2005. Dimethylsulfoniopropionate utilization in Antarctic waters: Carbon and sulfur utilization by bacteria. American Society for Limnology and Oceanography Meeting, Santiago de Compostela Spain.

Werner, J. E., D. B. Blake and **R. B. Aronson**. 2004. Effects of late Eocene cooling on antarctic marine communities. International Symposium on the Geology and Geophysics of the Southernmost Andes, the Scotia Arc and the Antarctic Peninsula, Buenos Aires, Argentina.

Werner, J. E., D. B. Blake and **R. B. Aronson**. 2004. Effects of late Eocene cooling on antarctic marine communities. *Boletino di Geofisica* 45(Suppl. 2):262-265.

Westby, G.R., D. J. Kieber, J. Bisgrove, D. A. Toole, **R. P. Kiene**, D. del Valle, and D. Slezak. 2005. Dimethylsulfide photolysis in Antarctic waters. American Society for Limnology and Oceanography Meeting, Santiago de Compostela Spain.

#### **Offices, Boards, Panels and Workshops**

##### **Richard B. Aronson**

International Society for Reef Studies, Vice President, 2003-2006  
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  
NIH International Cooperative Biodiversity Group (ICBG); grant-review panel on bioprospecting and drug discovery, August 2005

##### **Just Cebrian**

Marine Ecology Progress Series, Staff Referee, 2002-2005; Review Editor, 2005-2010  
Aquatic Botany, Staff Referee, 2004-2005  
EPA Workshop: "Response of Aquatic Food Webs to Nutrient Enrichment: Assessing the State of the Science" Presenter/Moderator. EPA Gulf Breeze Laboratory, March 2-4, 2005

##### **Kenneth L. Heck**

Senior Sub-Editor, Marine Ecology Progress Series, 1997-Present  
GOM Fishery Management Council, Coral Reef Panel, 1999-Present  
GOM Management Council, Ecosystem Panel  
MASGC Technical Review Panel

##### **Sean Powers**

Gulf of Mexico Science, Associate Editor, 2004 – present  
National Marine Fisheries Service, MARFIN panel (alternate member), 2004-2006  
NOAA Coastal Ocean Program, coastal hypoxia research panel, 2005  
Mobile Bay National Estuary Program, Development of Bay wide indicators. Mobile, AL. 2005  
Alabama/Mississippi habitat restoration workshop, Alabama/Mississippi Seagrass, Moss Point, MS, 2005.  
The Nature Conservancy, Marine Initiative's Shellfish Restoration Planning workshop, Dauphin Island, AL, 2005.

##### **John Valentine**

Organizer, Benthic Ecology Meetings, 2004.  
National Science Foundation-Long Term Ecological Research Panel, 2004  
Marine Ecology Progress Series Review Staff, 2002-present

#### **Other Service and Outreach**

##### **Richard B. Aronson**

National Geographic Television/PBS, "Strange Days on Planet Earth" series (premiere April 2005); reef-coring work featured in Episode 3: Predators.  
Ecological Society of America (ESA) and Coalition for National Science Funding (CNSF) Capitol Hill event/visit to U.S. Congress in support of NSF budget, Washington, DC (September 2005).  
DISL Faculty Representative, recruiting for summer program, University of Montevallo (March 2005).

##### **Just Cebrian**

SAV Planting Fest - restoration of SAV as part of the NEP grant "Submerged aquatic vegetation gardening: evaluating ecosystems services regained with SAV restoration." Highlight: TV appearances on WKRG TV5-6PM 04/19/05; WALA Fox 10 04/18/05, 04/19/05 and 04/20/05; Alabama Public Television 04/19/05; Alabama Public Radio 04/20/05.  
March 2005. Presentation for high school students at Bayside Academy (title: 'Becoming a scientist: the value of hard-work and dedication) as part of Professional Orientation Day.

##### **Monty Graham**

Corporate presentations of the Compass Port program to Conoco Phillips, Inc. personnel, February, 2005.  
Hosted DIALOG VI meeting at DISL, 2004.  
Workshop on Gelatinous Zooplankton Ecology in the Adriatic Sea (Participants Winter Meeting), Marine Biological Laboratory, Wood's Hole, MA (Dec 2004)

LNG Monitoring Guideline meeting, New Orleans (August)  
Science Olympiad Coach, St. Luke's Episcopal School, Mobile (2002-2005)  
DISL Spooktacular, Public Outreach Event (October 2004)  
Featured on National Geographic Channel production 'Swarms' aired July 2005  
Eagle Scout Review Board for Mr. Tyler McCleery (2005)

##### **Hugh MacIntyre**

Member, Scientific Advisory Committee on Chlorophyll Fluorescence, Alliance for Coastal Technology (Solomon's Island, MD) - developing materials for educating researchers and coastal zone managers in use of chlorophyll fluorescence.  
ACT/GMOOS Workshop on Applications of in situ Fluorometers in Nearshore Waters (Cape Elizabeth, ME, 2/2 - 4/05); and  
ACT Workshop to Develop Protocols for Verification of In Situ Chlorophyll Fluorometers (Solomon's Island, MD, 3/9 - 11/05).  
Presentation at MBNEP management meeting on Harmful Algal in Mobile Bay. The talk was the basis of an article in the Gulf Coast Newspapers (Harmful toxins discussed at Mobile Bay meeting by Deborah Jessup, 6/22/05) and the presentation was posted on the NEP website.  
Interview on the potential deleterious effects on water quality of draining Hurricane Katrina storm-waters from New Orleans to Fox 10 News (9/8/05).  
Email career interviews with high-school students: Melanie Wise (junior) at Phoenixville Area High School, Phoenixville, PA; Desiree Bourey (senior) Ledyard High School, Ledyard, CT; Ben Christ (10th grade) Fox High School, Arnold, MO.

##### **Kyeong Park**

2nd Quality Assurance of Real-Time Ocean Data (QARTOD II), Feb 28 - Mar 2, 2005, Sheraton Hotel, Norfolk, VA, Organized by Center for Operational Oceanographic Products and Services (CO-OPS), National Ocean Service (NOS), NOAA.

##### **Sean Powers**

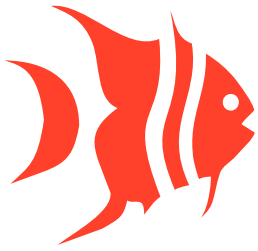
Oyster reef by design, NC Coastwatch Magazine, (autumn 2004 edition)  
United Nations World Bank. Review of draft Environmental Impact Statement for LNG facility in Peru, 2005.  
NOAA Damage Assessment & Restoration. Quantitative assessment of habitat restoration options for the Bermann tanker grounding and oil spill near San Juan, Puerto Rico, 2004-2005.

##### **John Valentine**

Judge, Graduate Student Association Meeting, 2003

#### **Grants**

A listing of grants and extramural activity can be seen on pages 22-24.



## Board of Directors Executive Committee Program Committee

The Board of Directors is comprised of the Presidents of each of the 21 member institutions. In 2005, Troy State University at Dothan was merged with Troy State University under the new moniker Troy University.

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.

**\*\*Schools with Graduate Programs**

### **\*\*Alabama State University**

President: Dr. Joe A. Lee  
Executive Committee Vice Chair (10/02-10/05)  
Program Committee: Dr. B.K. Robertson  
brobertson@alasu.edu  
Department of Biological Sciences  
915 S. Jackson Street  
Montgomery, AL 36104  
Ph: (334) 229-4423  
Fax: (334) 229-1007

### **Athens State University**

President: Dr. Jerry F. Bartlett  
Program Committee: Dr. Christopher J. Otto  
ottocj@athens.edu  
300 N. Beaty Street  
Department of Biology  
Athens, AL 35611  
Ph: (256) 233-8255  
Fax: (256) 233-8164

### **\*\*Auburn University**

Interim President: Dr. Edward R. Richardson  
Executive Committee Member (10/03-10/06)  
Program Committee: Dr. Ken Halanych  
ken@auburn.edu  
Dept. of Biological Sciences  
101 Rouse Building  
Auburn, AL 36849  
Ph: (334) 844-3222  
Fax: (334) 844-2333

### **Auburn University at Montgomery**

Chancellor: Dr. Guin A. Nance  
Program Committee: Dr. John Aho  
jaho@mail.aum.edu  
Department of Biology  
Montgomery, AL 36124  
Ph: (334) 244-3787  
Fax: (334) 244-3826

### **Birmingham Southern College**

President: Dr. G. David Pollick  
Program Committee: Dr. Andrew Gannon  
agannon@bsc.edu  
Department of Biology  
Box 549022  
Birmingham, AL 35254  
Ph: (205) 226-4899  
Fax: (205) 226-3078

### **Huntingdon College**

President: Rev. J. Cameron West  
Program Committee: Dr. Paul Gier  
pgier@huntingdon.edu  
Department of Biology  
1500 East Fairview Ave.  
Montgomery, AL 36106  
Ph: (334) 833-4510  
Fax: (334) 833-4486

### **\*\*Jacksonville State University**

President: Dr. William A. Meehan  
Executive Committee Member (10-02-10/05)  
Program Committee: Dr. George Cline  
gcline@jsu.edu  
Department of Biology  
700 Pelham Road North  
Jacksonville, AL 36265-1602  
Ph: (256) 782-5798  
Fax: (256) 782-5587

### **Judson College**

President: Dr. Jerry B. Cain  
Program Committee: Dr. Thomas Wilson  
twilson@future.judson.edu  
Department of Biology  
Bibb Street  
Marion, AL 36756  
Ph: (334) 683-5179  
Fax: (334) 683-5147

**\*\*Samford University**

President: Dr. Thomas E. Corts  
Program Committee: Dr. Robert Stiles  
rastiles@samford.edu  
Department of Biology  
Birmingham, AL 35229  
Ph: (205) 762-2928  
Fax: (205) 762-2479

**Spring Hill College**

President: Rev. Gregory Lucey, S.J.  
Program Committee: Dr. Charles Chester  
cchester@shc.edu  
Department of Biology  
Mobile, AL 36608  
Ph: (251) 380-3071  
Fax: (251) 460-2198

**Talladega College**

President: Dr. Henry Ponder  
Program Committee: Dr. Lawrence Drummond  
ldrummond@talladega.edu  
Division of Natural & Computational Sciences  
627 West Battle St.  
Talladega, AL 35160  
Ph: (256) 761-6307  
Fax: (256) 761-6437

**Troy University**

Chancellor: Dr. Jack Hawkins, Jr.  
Program Committee: Dr. Stephen Landers  
slanders@troy.edu  
Department of Biological & Environmental Sciences  
Troy, AL 36082  
Ph: (334) 670-3661  
Fax: (334) 670-3662

**Troy State University at Dothan**

- 2005 (see above)  
President: Dr. Barbara Alford  
Program Committee: Dr. Stacey Mixon

**\*\*Tuskegee University**

President: Dr. Benjamin F. Payton  
Program Committee: Dr. Douglas Hileman  
hilemand@tuskegee.edu  
Tuskegee University  
Department of Biology  
Tuskegee, AL 36088  
Ph: (334) 727-8828  
Fax: (334) 724-3919

**\*\*University of Alabama**

President: Dr. Robert Witt  
Executive Committee Member (10/03-10/06)  
Program Committee: Dr. Julie Olson  
jolson@bama.ua.edu  
Department of Biological Science  
Box 870344  
Tuscaloosa, AL 35487-0344  
Ph: (205) 348-2633  
Fax: (205) 348-1786

**\*\*University of Alabama at Birmingham**

President: Dr. Carol Z. Garrison  
Program Committee: Dr. Ken Marion  
kmarion@uab.edu  
Department of Biology  
University Station  
Birmingham, AL 35294  
Ph: (205) 934-4290/934-8308  
Fax: (205) 975-6097

**\*\*University of Alabama at Huntsville**

President: Dr. Frank A. Franz  
Program Committee: Dr. Bruce Stallsmith  
stallsb@email.uah.edu  
Department of Biological Sciences  
Huntsville, AL 35899  
Ph: (256) 824-6992  
Fax: (256) 824-6305

**University of Mobile**

President: Dr. Mark Foley  
Program Committee: Dr. Tina Miller-Way  
tinamiller-way@free.umobile.edu  
Department of Natural Sciences  
P. O. Box 13220  
Mobile, AL 36663  
Ph: (251) 442-2298  
Fax: (251) 442-2523

**University of Montevallo**

President: Dr. Robert M. McChesney  
Program Committee: Dr. Michael Hardig  
hardigm@montevallo.edu  
Department of Biology, Chemistry & Mathematics  
Montevallo, AL 35115  
Ph: (205) 665-6463  
Fax: (205) 665-6477

**University of North Alabama**

President (2005): Dr. Garry Warren  
Forthcoming president: Dr. William G. Cale, Jr.  
Program Committee: Dr. Terry Richardson  
tdrichardson@una.edu  
Department of Biology  
Florence, AL 35632  
Ph: (256) 765-4429  
Fax: (256) 765-4430

**\*\*University of South Alabama**

President: Mr. Gordon V. Moulton  
Executive Committee Chair (10/03-10/06)  
Program Committee: Dr. Jack O'Brien  
jobrien@jaguar1.usouthal.edu  
Department of Biological Sciences  
Mobile, AL 36688  
Ph: (251) 460-7525  
Fax: (251) 414-8220

**University of West Alabama**

President: Dr. Richard Holland  
Program Committee: Dr. John McCall  
jmccall@uwa.edu  
University of West Alabama  
Department of Biological & Environmental Sciences  
Livingston, AL 35470  
Ph: (205) 652-3724



## Extramural Funding

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	\$ 96,910.00
City of Mobile/ Mobile County/ Various Donations	DY	Mobile Bay National Estuary Program	Mar-05	Sep-05	\$ 556,778.49	\$ 168,299.00
ADCNR	DY	ADCNR MOA	Oct-04	Sep-07	\$ 60,000.00	\$ 12,426.00
ADCNR	DY	Mobile Bay Environmental Monitoring for				
	JV	Public Data Access in Two Coastal Counties	Dec-01	Nov-05	\$ 225,000.00	\$ 16,674.00
ADCNR	DY	Living Resources Data Analysis	Dec-01	Jul-05	\$ 40,000.00	\$ 17,981.00
ADCNR	JV	Living Resources Data Analysis	Dec-01	Jul-05	\$ 40,000.00	\$ 17,981.00
EPA	DY	Wetlands Resource Measurement Baseline	Sep-02	May-06	\$ 170,000.00	\$ 15,306.00
GMF	DY	Shellfish Restoration & Crab Trap Recovery	Jan-03	Dec-04	\$ 42,981.00	\$ 7,904.00
EPA	DY	Submerged Aquatic Vegetation Gardening	Jul-03	Jun-06	\$ 31,500.00	\$ 29,274.00
	JC	Submerged Aquatic Vegetation Gardening	Jul-03	Jun-06	\$ 31,500.00	\$ 29,274.00
	JC	Assessment of Causeway Impacts on the				
ADCNR	DY	Ecology of the Lower Mobile-Tensaw Delta	Dec-01	May-05	\$ 125,000.00	\$ 2,122.00
EPA	DY	Mobile Bay National Estuary Program	Oct-03	Mar-08	\$ 1,525,635.00	\$ 448,815.00
ADCNR	DY	Education and Outreach Activities	Oct-03	Sep-05	\$ 10,000.00	\$ 6,423.00
		Strategic Assessment of Priority				
		Habitat Needs in Coastal Alabama and				
		Establishment of the Coastal Habitat				
EPA	DY	Coordinating Team	Jan-04	Mar-06	\$ 26,099.00	\$ 18,348.00
		Sustainable Agriculture for Future Economies				
UG	DY	(SAFE)	Apr-03	Mar-06	\$ 10,000.00	\$ 7,306.00
		Statement of Work for Mobile Bay National				
		Estuary Program Participation in the AMRAT				
		Survey of the MS Coast for Non-Indigenous				
USM	DY	Aquatic Species	May-04	May-05	\$ 10,000.00	\$ 7,386.00
		A Rapid Assessment Survey of Non-Aquatic				
USM	DY	Species in Alabama and Mississippi	May-04	Dec-06	\$ 20,000.00	\$ 10,705.00
		AL Phase 1 Monitoring Eight Mile Creek				
EPA	DY	FY2004	Jun-04	Dec-07	\$ 63,250.00	\$ 15,605.00
ADCNR	DY	Habitat Mapping and Classification	Oct-02	Mar-06	\$ 200,000.00	\$ 150,000.00
NEW	DY	Mobile Bay Oyster Gardening Program	Jan-04	Dec-04	\$ 9,100.00	\$ 9,100.00
		Coffee Island Restoration Plan & Outreach				
ADCNR	DY	Activities	Oct-04	Mar-06	\$ 25,000.00	\$ 4,550.00
		Global Climate Change and the Evolutionary				
		Ecology of Anarctic Mollusks in the Late				
NSF	RA	Eocene	Sep-00	Aug-05	\$ 100,793.00	\$ 10,929.00
		Human Induced Changes in the Cross-				
		habitat Flow of Energy in a Subtropical				
		Marine Ecosystem: Experimental				
NATURE		Assessments using newly creaed Marine				
CONSERVANCY	JV	Reserves in the Florida Keys	Nov-00	Dec-04	\$ 179,996.00	\$ 32,195.00
EXXON MOBIL	GC	Graduate Fellowships	Oct-00	Apr-06	\$ 40,000.00	\$ 41,785.00
SHELL	JD	Shell Oil Special Fund				\$ 12,226.92
		Marine Reserve Effectiveness in Restoring				
		Coastal Food Webs: An Experimental Test				
		Using the Special Protection Areas and an				
		Ecologocial Reserve in the Florida Keys				
NOAA	JV	National Marine Sanctuary	Dec-01	Nov-04	\$ 183,578.00	\$ 16,555.00
		REU Site: Undergraduate Research				
		Experiences in Coastal and Nearshore				
		Marine Systems of the Northeastern Gulf of				
NSF	KH	Mexico	Mar-02	Feb-06	\$ 148,680.00	\$ 25,483.00

USA	JC	Interactions Between Anthropogenic Eutrophication and the Black Needlegrass	Apr-03	Mar-06	\$ 109,714.00	\$ 16,295.00
USA	KH JV	Predicting Seagrass Survival in Nutrient Enriched Waters: Toward a New View of an Existing Program	Jan-03	Dec-05	\$ 139,926.00	\$ 16,909.00
USA	SP KH	Quantifying Fisheries Benefits of Oyster Reef Restoration in Mobile Bay	Jul-03	Jun-06	\$ 78,910.00	\$ 47,397.00
USM	JD	Sea Grant Aquatic Nuisance Species Research Program: Southeast Regional Strategic Outreach Network	Jun-03	Jan-06	\$ 83,168.00	\$ 17,369.00
USM	JD	Sea Grant Marine Environmental Biotechnology Program-Southeast Education Network	Jan-03	Jan-06	\$ 36,303.00	\$ 3,952.00
USA	KH	Aces Administration 2004	Jan-04	Oct-06	\$ 142,586.00	\$ 41,853.00
USM	JC	Effects of Anthropogenic Eutrophication on the Ecosystem Provided by Shoalgrass Meadows	Feb-04	Jan-06	\$ 122,052.00	\$ 81,754.00
NEP	JD	Coastal Bird Nesting Survey	May-04	May-06	\$ 29,000.00	\$ 1,392.00
ADCNR	JD	Interpretative Kiosks/Shelters on the Estuarium Boardwalk	Mar-04	Dec-04	\$ 4,000.00	\$ 3,895.00
USM	MG	A Molecular Genetic Assay for Identifying and Quantifying a Cryptic Marine Bioinvader	Feb-04	Jul-06	\$ 71,469.00	\$ 73,007.00
USM	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	\$ 1,677.00
PBS&J	RA	Long Term Monitoring at the East & West Flower Garden Banks National Marine Sanctuary	Aug-04	Aug-05	\$ 240.00	\$ 240.00
USA	HM	Biomass, Taxonomic Distribution and Productivity of Microalgae in Mobile and Weeks Bay	Sep-04	Aug-06	\$ 42,702.00	\$ 25,805.00
USA	KH JC SP	Ecosystem Services Provided by Oyster Reefs: An Experimental Assessment	Jul-03	Jun-06	\$ 162,772.00	\$ 71,925.00
USM	JD	Invasive Species Issue for the Journal, Current	Sep-04	Aug-05	\$ 9,000.00	\$ 9,000.00
EPA	HM	Environmental Monitoring and Primary Production in Mobile Bay	Aug-04	Jul-06	\$ 436,000.00	\$ 256,754.00
USA	KH	The Role of Habitat Fragmentation on the Structure and Function of Seagrass Ecosystems in the Northern Gulf of Mexico	Sep-04	Aug-05	\$ 22,272.00	\$ 20,816.00
STATE OF ALABAMA EMA	GC	Hurricane Shuttering Program	Jul-04	May-05	\$ 147,965.00	\$ 147,965.00
USM	JD	Exhibits Supporting the Mission of MASGC at the Dauphin Island Sea Lab and the Estuarium			\$ 10,000.00	\$ 8,572.00
ADCNR	KH	Post Hurricane Ivan Damage Assessment of Seagrass Resources of Coastal Alabama	Oct-04	Mar-05	\$ 5,000.00	\$ 5,000.00
STATE OF ALABAMA MBW/MBK, ALA POWER, THE FORUM, WATER KEEPER ALLIANCE	JD JV	MAST	Oct-04	Sep-05	\$ 76,102.00	\$ 72,082.00
NEP	MD	Hydrological Modification Impact Study	Oct-04	Jul-06	\$ 151,998.00	\$ 85,173.00
USA	JV	Real Time Monitoring in Mobile Bay	Oct-04	Sep-05	\$ 30,000.00	\$ 30,000.00
USA	JV	Educational Outreach Component	Oct-04	Sep-06	\$ 71,635.00	\$ 4,421.00
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	\$ 23,652.00
USM	JC	Examining the Effects of Hurricane Ivan in Coastal Alabama and Northwestern Florida: A Positive Impact on Shallow Coastal Lagoons?	May-05	Apr-06	\$ 10,000.00	\$ 1,444.00
USA	JC	Examining the Effects of Hurricane Ivan in Coastal Alabama	Jan-05	Oct-06	\$ 16,085.00	\$ 1,616.00

NSF	MG	Developing an Adriatic Summer Institute for Marine Environmental Complexity	Aug-04	Jul-06	\$ 43,428.00	\$ 2,193.00
NSF	MG	FSML: Expansion of Research and Education Infrastructure within Dauphin Island Sea Lab's Marine Science Hall	Feb-05	Jan-08	\$ 335,000.00	\$ 201,568.00
ADCNR	JV	Assessment of Sediment Contamination in the Lower Mobile-Tensaw Delta	Apr-05	Mar-06	\$ 10,000.00	\$ 9,894.00
USM	JD	Regional Center for Ocean Science Education Excellence (COSEE)	Jan-03	Aug-06	\$ 129,190.00	\$ 60,278.00
EXXON	GC	Exxon Summer Intern	May-05	Sep-05	\$ 6,000.00	\$ 6,000.00
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	\$ 1,296.00
USM	GC	Habitat Protection and Restoration Website and Database	Jul-05	Jun-06	\$ 10,000.00	\$ 7,222.00
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	\$ 30,405.00
USA	MG	Development of a Molecular Genetic Method to Quantify Crassostrea Virginica Veliger	Sep-05	Aug-07	\$ 112,297.00	\$ 31,292.00
USF	RA	Coral Population Dynamics in Fully Protected Zones of the Florida Keys	Jun-04	May-06	\$ 79,896.00	\$ 44,860.00
USA	KH	Aces Administration 2005	Jan-05	Oct-06	\$ 149,383.00	\$ 28,310.00
Con/Phil	SP	Baseline monitoring for ichthyoplankton and demersal fish in Alabama coastal waters	Jun-04	Aug-07	\$ 345,000.00	\$ 189,827.00
Con/Phil	MG KH KP SP MD	Assessment of Red Drum Spawning and Ichthyoplankton Abundance in Alabama Coastal Waters	Jun-04	Aug-07	\$ 1,667,972.00	\$ 678,730.00
Con/Phil	MG SP	Assessment of Red Drum Spawning	Aug-05	Aug-07	\$ 589,872.00	\$ 4,943.00
					<b>Total</b>	<b>\$ 3,551,090.92</b>

PI - Principle Investigator initials:

DY - Capt. David Yeager (MBNEP Director)  
GC - Dr. George Crozier (DISL)  
HM - Dr. Hugh MacIntyre (DISL)  
JC - Dr. Just Cebrian (DISL)  
JD - Dr. John Dindo (DISL)  
JV - Dr. John Valentine (DISL)  
KH - Dr. Ken Heck (DISL)  
KP - Dr. Kyeong Park (DISL)  
MD - Mike Dardeau (DISL)  
MG - Dr. Monty Graham (DISL)  
RA - Dr. Richard Aronson (DISL)  
SP - Dr. Sean Powers (DISL)





# Balance Sheet

MARINE ENVIRONMENTAL SCIENCE CONSORTIUM  
DAUPHIN ISLAND SEA LAB  
Statement of Net Assets  
September 30, 2005

## **ASSETS**

### **Current Assets**

Cash	\$ 417,652
Accounts Receivable	\$ 1,302,138
Inventories	\$ 173,076
Total Current Assets	\$ 1,892,867

### **Noncurrent Assets**

Capital Assets:	
Land	\$ 658,757
Improvements Other Than Buildings	\$ 77,444
Buildings	\$ 7,167,244
Equipment	\$ 1,393,686
Vessels	\$ 545,335
Library Holdings	\$ 947,212
Constriction in Progress	\$ 243,908
Less: Accumulated Depreciation	\$ (4,115,228)
Total Capital Assets, net of Depreciation	\$ 6,918,359
Total Noncurrent Assets	\$ 6,918,359
Total Assets	\$ 8,811,226

## **LIABILITIES**

### **Current Liabilities**

Accounts Payable	\$ 6,203
Lease Obligations	\$ 254,408
Compensated Absences	\$ 17,805
Deposits Held for Others	\$ 84,058
Total Current Liabilities	\$ 362,473

### **Noncurrent Liabilities**

Lease Obligations	\$ 975,786
Compensated Absences	\$ 278,940
Total Noncurrent Liabilities	\$ 1,254,726
Total Liabilities	\$ 1,617,199

## **NET ASSETS**

Invested in Capital Assets, net of related debt	\$ 5,688,165
Restricted for	
Expendable	
Scholarships and fellowships	\$ (2,168)
Research	\$ (68,942)
Public Outreach	\$ 464,612
Capital projects	\$ 103,077
Other	\$ 4,762
Unrestricted	\$ 1,004,520
Total Net Assets	\$ 7,194,026



## Appendix 1: Report of the Mobile Bay National Estuary Program/Coastal Policy Center Prepared by Capt. David W. Yeager

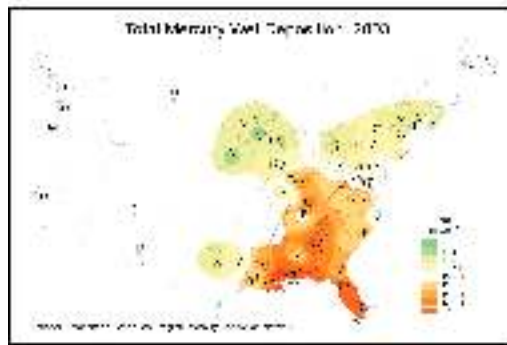
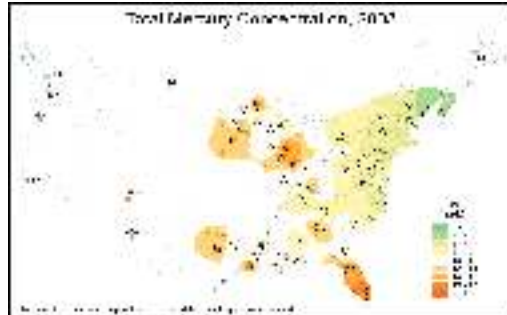
The Coastal Policy Center continues to be a viable and integral part of the Sea Lab's support and service to the resource management agencies, governments and citizens of coastal Alabama. The Dauphin Island Sea Lab's long term interests in research, education and the provision of information and science for citizens and decision makers to support wise management of the Alabama's coastal resources makes it a natural as the organizational home for the Mobile Bay National Estuary Program (MBNEP). MBNEP is an integral part of the Dauphin Island Sea Lab Coastal Policy Center. It 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; Ms. Lee Yokel, Outreach Coordinator, MBNEP; Ms. Kara Lankford, Watershed Facilitator, MBNEP; and Ms. Tiffany England, MBNEP Business Manager.

MBNEP has made much progress in the last year. Well over \$1.5 million in federal and local funds and services have been obtained and directed through this program in 2005 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 despite the setbacks provided by the impacts (in two successive years) in our study area of two of the most damaging hurricanes to ever strike the U.S. However, our progress can also be measured by renewed enthusiasm about the program and the expanded and recognized roles of MBNEP in our coastal community as a valued partner, capacity builder, honest broker and community resource. A few of our successes are described below:

### Water Quality

#### Atmospheric Deposition

MBNEP continued an established partnership with the University of Illinois/National Atmospheric Deposition Program (NADP), ADEM, Mobile County and Baldwin County to establish National Trends Network (NTN) monitoring sites to measure nutrient and mercury atmospheric deposition. The data is gathered to support efforts surrounding Total Maximum Daily Load (TMDL) assessments and subsequent permitting processes and non-point source control plans in addition to providing data that will help area scientists and the public understand sources and impacts of nutrient and mercury loadings in our area waters.



#### Mobile Bay Real-time Water Monitoring

The first long-term water quality/meteorological network has been established in Mobile Bay. In a nearly unprecedented collaboration of effort, a variety of agencies have pooled their resources to establish the

long needed continuous (24/7) monitoring capability available through this Northern Gulf of Mexico Coastal Observing System. This monitoring effort, by MBNEP in partnership with the Dauphin Island Sea Lab, and the USA Center for Estuarine Studies includes the establishment of instrumentation at four different sites throughout Mobile Bay (Meaher Park, Middle Bay Light, Weeks Bay and DISL) to take continuous measurements of air and water temperature, relative humidity, wind speed and direction, barometric pressure, precipitation, quantum radiation, water depth, salinity, turbidity, dissolved oxygen.

#### Delta Hydrologic Monitoring

MBNEP funded part of a multi-year study to collect data assessing causeway impacts and the potential impact of altered fresh water inflow (as influenced by upstream release from hydroelectric plants, locks and dams) on the ecology of the lower Mobile-Tensaw Delta in partnership with DISL, The Nature Conservancy, Alabama Power Company, Mobile Bay Watch. The large dike-like causeway has sealed off a number of once open bays from immediate contact



with the Gulf. These hydrological modifications have potentially altered the hydrography of one of North America's largest, most productive and diverse

estuaries on a local and system-wide basis. It is hypothesized that these modifications have altered the productivity of ecological communities within the lower Delta via reduced water exchange and altered circulation patterns, changes in nutrient cycling and increased incidences of exotic and invasive plant species. Dr. John Valentine of DISL is the P.I for this study.

**Sub-Estuary Watershed Monitoring**

MBNEP entered into a contract with ADEM to provide increased funding for water monitoring in tributary streams for Mobile Bay. This provides a basis for qualitative and quantitative assessment of water quality in these critical, local tributaries. Sub-estuaries include Bon Secour, Bayou La Batre, and Dog River. One sub-estuary a year is sampled on a quarterly basis starting with the Bon Secour watershed. Long term plans include adding Fowl River and Fish River to the program. Monitoring will include a thorough investigation of water and sediment parameters. These include measurements on water chemistry, pathogens, and metals. Once analysis is complete, information will be made available through MBNEP's website, [www.mobilebaynep.com](http://www.mobilebaynep.com). Data will be incorporated into MBNEP DIMS hosted at the Dauphin Island Sea Lab. This program represents a significant expansion of the ALAMAP monitoring project in coastal Alabama, that would not have been carried out without the additional emphasis and funding provided by MBNEP.



**Eight Mile Creek Pathogen Source Identification**

In 2004, MBNEP, ADEM, Mobile Engineering Company and the South Alabama Regional Planning Commission

(SARPC) partnered to in an effort to either remove Eight Mile Creek and Gum Tree Branch from the Alabama 303(d) list and to provide data on these waters that could be used verify the success of corrective actions to address Sanitary Sewage Overflows (SSO) and associated TMDLS for these segments.

Ten monitoring stations were established , GIS information about the water bodies was incorporated into a 3-dimensional model for analysis and the final result will include compilation of information about various potential sources of pollutants in the watersheds. Current information on sources is largely anecdotal and the degree of contribution from each of these sources is unknown. Identification of potential sources and thus the identification of remediation actions will result.

**Non-Point Source/319**

**Coastal Alabama Clean Water Partnership**

MBNEP, in partnership with Mobile and Baldwin County Soil and Water Conservation Districts, ADEM, has supported the Coastal Alabama Clean Water Partnership (CACWP) since its inception with MBNEP director as its first chair (and later co-chair). Recent developments have made this program an integral component of MBNEP activities providing MBNEP a lead role in coordinating Section 319 programs in coastal

Alabama. This role includes providing the CACWP Basin Facilitator from MBNEP staff through a contract with the Baldwin and Mobile County Soil Conservation Districts. This is supported by our continuing efforts to include all the waters in coastal Alabama to our study area



and the fact that the Mobile Basin Plan (developed by SARPC under contract to the CACWP) is largely based on MBNEP CCMP.

**Lake Forest/D'Olive Bay Watershed Studies**

Accelerated erosion within the watersheds of D'Olive and Tiwassee creeks in Daphne and Spanish Fort, Alabama and the eventual increased sediment inputs into Mobile Bay, have long been identified as major local environmental concerns. This situation

has served as a “poster child” for the impacts of increased storm water run-off and sediment loading in coastal Alabama since the mid-1970’s when the area became the site of one of Alabama’s largest subdivisions.

In 2005, after recognition that solution to the problem involved the need for a regional approach, local political and property owner representatives approached MBNEP regarding leadership of an effort to take action. MBNEP has been actively leading efforts to begin the systematic and scientific approach to addressing these non point source issues and achieved a major immediate success having this area moved up in priority for a complete watershed assessment by ADEM to begin in 2006. MBNEP played a pivotal role in promoting the increased local interest and momentum and “acting as a force multiplier”/capacity builder among residents, municipal and county governments so necessary for making environmental results a reality.

## Wetlands

### Energy Analysis

In 2004, MBNEP contracted with TAI/Strand Associates to conduct a study that would provide an analysis of economic values across a wide variety of resources, both man-made and natural such as wetlands, using the formal process of Emergy Analysis. Emergy is a measure of the available energy required, directly and indirectly to make a product or service. Emergy analysis can be used in the design of sustainable development at all scales of the environment.

The Emergy analysis of wetlands, coastal zones and their restoration, and of entire watersheds may lead to the development of sustainable designs in harmony with both man and nature. The cost benefit analysis of large-scale environmental restoration projects can be accomplished using the tools provided by Emergy analysis. This was a pilot project which focused on wetlands particularly in the area of Fish River in Baldwin County. This pilot project serves as a valuable reference for local valuation and characterization of wetland resources in our coastal area.

### Habitat Mapping

Beginning in 2002, MBNEP contracted with the United States Geological Survey to gather digital color-infrared geo-referenced photography of Mobile and Baldwin Counties to determine a baseline for habitat and wetlands loss. Baldwin and Mobile counties have been mapped to provide classification

of wetland and upland habitats using Cowardin, et.al wetland classification system, and uplands using Anderson/Handley level II upland classification scheme. This will provide the first comprehensive National Wetland Inventory update for coastal Alabama using contemporary data and provide the first comprehensive mapping of upland habitats. It will provide a basis for status and trends evaluation. This data will be compared to previously collected data to determine status and trends for Mobile and Baldwin Counties. The Mobile County project was completed in 2005 and Baldwin County will be complete in 2006. This is a project costing in excess of \$1 million that MBNEP put together with several partners including counties, GOMP, and the State of Alabama and the U.S. Geological Survey.

### Coastal Habitats Coordinating Team

The Coastal Habitats Coordinating Team (CHCT) is part of MBNEP’s on-going effort to create public/private partnerships to conserve critical habitats throughout MBNEP area. In 2005, this diverse group of conservation organizations and government partners developed a list of 17 priority acquisition sites and 31 priority restoration sites for coastal Alabama. In addition, this group began to identify partnerships for achieving protection of these sites. Several of these sites are being actively acquired and preserved by partners in this effort. The overall goal of the CHCT is to improve coordination and cooperation of organizations with habitat protection goals and better focus individual efforts. This project

also has been cited by the Alabama Department of Conservation in development of its plans and priorities under the Coastal and Estuarine Land Conservation Program (CELCP). The CHCT sites are included in this document.

In related developments, MBNEP has partnered with MASGC to develop an online, interactive data base for cataloguing habitat conservation and restoration efforts of all partners of coastal Alabama and Mississippi. This will result in better coordination of resources and efforts.

### Isle of Herbes (Coffee Island) and Dauphin Island Causeway Restorations

In the 2005 National Coastal Condition Report (EPA, 2005), the Gulf of Mexico was ranked in the poor category relative to the status of estuarine habitats. Between 1990 and 2000 approximately 7,750 acres of estuarine wetland was lost in the



Gulf region (excluding coastal Louisiana). Loss was associated with coastal development, sea-level rise, subsidence, and the interference with normal erosion/depositional processes.

Recently, MBNEP, MASGC, Alabama Department of Conservation and Natural Resources Coastal Section and Marine Resources (ADCNR and MRD), US Fish and Wildlife Service (UFWS), National Marine Fisheries Service (NMFS), and USACE came together to request and plan for two additional "beneficial use" (of dredged materials) projects to help restore critical wetlands within the Mobile Estuary-Dauphin Island Causeway and again on Isle of Herbes.

The Dauphin Island Causeway project will consist of the construction of approximately 3,960 feet of protective artificial reef wave break offshore to create a semi enclosed area for wetland re-establishment. *Spartina alterniflora* and *Spartina patens* will be the primary species

of cordgrass planted to colonize the area for wetland habitat along the 3,960 feet of shoreline (approx. 4 acres.) In addition, 2,250 cubic yards of dead oyster shells (hard bottom substrate) will be emplaced to promote oyster habitat. The objectives of this project are to stabilize sediments in the shallow near shore waters and reduce turbidity and erosion, improving water quality. This project is in the combined planning and development phase and is estimated to cost approximately \$439,000. It is estimated that construction will begin by summer, 2006.

#### **SAV Historical Coverage and Changes (since 1940)**

In 2002, MBNEP commissioned the first aerial photographic baseline study for current SAV coverage in Coastal Alabama (Photos can be accessed at <http://gulfsci.usgs.gov/>). Barry Vittor and Associates was contracted to produce aerial true color digital orthophotoquads along the coast. Certain photographic signatures indicate various plant species. Once identified in aerials, interpretation was "ground-truthed" by physically checking the plants in the field. Maps of SAV coverage were then created. In a follow-up study, Barry Vittor and Associates then obtained historical aerial photosets of Mobile County from 1940 and

Baldwin County from 1955 and 1966 to compare to the 2002 photosets.

Between 1940 and 2002, SAV acres in Mobile County decreased from 1924 acres to just 855 acres of SAV. Most of the loss was south of Dog River, and 691 fewer acres along the western shore. Baldwin County analysis revealed a disturbing 88.3% loss between 1955 and 2002. The 1955 photoset revealed SAV from just north of Point Clear south to Bon Secour Bay. In 2002, no SAV were identified from that area. Between 1966 and 2002, the northeastern shore of Mobile Bay lost 328 acres or a 71% decrease.

#### **Hurricane Impacts on SAVs (2004)**

In November 2004, the vegetated coastal locations visited by Vittor and Associates in 2002 were resampled by Dr. K.L. Heck and D. Byron (DISL) to assess changes in seagrass distribution that may have occurred as a result of the effects of Hurricane Ivan. The Alabama Two areas that were found to contain newly discovered occurrences or species of SAV were

selected for more intensive study. These sites included several locations on the west end of Dauphin Island found to support seagrass for the first time, and a location in Little Lagoon, where turtlegrass was reported for the first time in Alabama by Vittor and Associates (2003).

#### **Land Use / Land Cover Baldwin County**

In 2005, MBNEP partnered with the Baldwin County Commission to complete an inventory land use/land cover for Baldwin County, Alabama using the Florida Land Use/Land Cover Classification System (FLUCC). The product integrates previous land use coverages already developed at the state and local levels and land cover types resulting from the wetland habitat mapping projects. The resolution of the maps is one meter. This activity is critical to understanding the impact of land use decisions on natural resources like water quality and habitat. It provides another tool for our local governments to use in planning and assessing growth impacts.

#### **Living Resources**

##### **Alabama-Mississippi Rapid Assessment Team (AMRAT)**

Lead by MBNEP in partnership with the University of Southern Mississippi/College of Marine Sciences/



*Gulf Guardian Award presented to Harriet Perry and David Yeager by EPA Administrator Bill Johnson at Gulf of Mexico Summit- March 2006*

Gulf Coast Research Laboratory, the ADCNR/Marine Resources Division, the WBNEER, the DISL, the Mississippi-Alabama Sea Grant Consortium, the Mississippi Department of Marine Resources, the Gulf States Marine Fisheries Commission (GSMFC), and many volunteers, AMRAT consisted of the collection and identification of native and non-native (exotic) animals and plants in Mississippi and Alabama coastal waters in snapshot surveys over a two year period (2003-2004). Over 120 participants from 22 organizations worked together to complete the two surveys. AMRAT received the 2005 EPA GOMP Gulf Guardian First Place Award in the Partnerships Category.

#### **Alabama Aquatic Nuisance Species Task Force**

Alabama was the last gulf state to initiate action on the development of a management plan for aquatic nuisance species. In August, 2005, MBNEP committed funding for the development of this plan for the State of Alabama. In partnership with the Alabama Department of Conservation and Natural Resources Freshwater Fisheries, ADCNR-Marine Resources Divisions, and Southeast Aquatic Resources Partnership at Louisiana State University, a group of over 50 representatives from state agencies and other stakeholders was assembled to identify issues and begin development of an ANS Management Plan. This effort has an anticipated completion date planned for October 2006. The Governor's Executive Order establishing the Alabama Aquatic Nuisance Species Task Force and MBNEP's role on the Executive Committee is a result of increased attention focused on this problem in part by MBNEP.

#### **Analysis and Interpretation of Historical Fisheries Data**

In 2005, the analysis of 20 plus years of previously unanalyzed fisheries population data collected by the Marine Resources Division of ADCNR was completed under a contract between MBNEP and Dr. John Valentine (DISL.) Results from these analyses show that the composition and relative abundances of the community of fishes and epifaunal invertebrates collected by the FAMP base changed little over time. The analysis also showed areas where additional sampling and information collection would be beneficial and areas for further study and analysis. It is the first such analysis in many years and was made possible by MBNEP funding leveraged from other sources (CIAP, NOAA).

#### **Human Uses**

##### **Helen W. Wood Park**

MBNEP in partnership with ADCNR-State Lands Division and the City of Mobile undertook a project to improve a seven and a half acre site on the east side of the Dauphin Island Parkway and adjoining the north side of the Mobile Yacht Club to increase public access to Mobile Bay. Improvements included the control of nonnative vegetation, planting of native

species, removal of asphalt paving and replacement with permeable material, and the addition of safety lighting and benches. A section of boardwalk was installed on a perimeter of the parking area. Other enhancements that will be installed in the future include a boardwalk skirting the marsh area and an observation kiosk and interpretive signage for wildlife watching. The project was completed in early 2006.

MBNEP leveraged considerable funding in the creation of this project. It currently amounts to almost Three-quarters of a million dollars when the value of the land (\$500,000) is added and more will accrue as the entire project is completed.

#### **Public Access Assessment-Mobile County**

Building on the already strong relationship between the Dauphin Island Sea Lab and the Auburn University Center for Landscape Architecture and Design, the MBNEP chartered a study of potential new public access facilities in South Mobile County. Several promising sites were investigated and analyzed and results presented at a large public meeting. As a result, new ideas were gathered, investigated and added to the preliminary assessment. The Mobile County Commission is now actively engaged in further efforts to begin development of at least one of the sites in the near term and is investigating another in the long term.

#### **Outreach and Education**

##### **Workshops**

MBNEP has played a significant role in facilitating training, workshops and assessments to reduce Non Point Source Pollution (NPS) and to educate citizens, developers and local governments on NPS issues. The Daphne community has established a sediment containment officer to deal with construction run-off and MBNEP is working with Spanish Fort to do similarly. MBNEP is currently in discussions with eastern shore municipalities to develop plans for a stormwater authority and to draft model legislation for the state. Fairhope has adopted BMPs including protections from NPS and along with Foley and Daphne is developing a tri-cities watershed management plan. Both Mobile and Baldwin Counties have adopted and implemented new subdivision regulations limiting and controlling NPS.

##### **Environmental Indicators**

MBNEP worked with over 65 community leader to develop an initial set of indicators for tracking the environmental condition of Mobile Bay and coastal Alabama. An intensive one day workshop bringing together scientists, resource managers and citizens resulted in this preliminary list. The list will be pared to ensure indicators that: 1) can easily be used to communicate with the public, 2) are currently monitored or considered sufficiently important to warrant additional monitoring and 3) sufficiently represent an accurate assessment of environmental conditions.

## Public Awareness

The Community Advisory Committee continued activities during this year, holding periodic “environmental Happy Hours” to discuss local environmental issues. Although attendance has been less than desired, those that remain active have been productive in several different ways: n a number of positive articles in the Baldwin County newspapers have been published about the MBNEP and its progress toward environmental challenges; a bumper sticker was developed through a contest among area ninth graders to raise public awareness about local environmental concerns. In addition, several local newspaper articles have highlighted marine science (for example Harmful Algal Blooms present).

## Alliances with Other Locally Managed Coastal Federal Funding Sources

Since the establishment of a formalized Memorandum of Agreement between MBNEP, the Alabama Department of Conservation and Natural Resources (ADCNR), Coastal Programs Office and the DISL (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 efficient 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 significant 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 in other areas of resource planning and management. The alliance has become so well established that the ADCNR’s Coastal Section, Mississippi Sea Grant Consortium (MASGC) and the Mobile Bay National Estuary Program (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.



Mobile Bay National Estuary Program  
4172 Commanders Drive  
Mobile, AL. 36615  
(251) 431-6409  
Fax: (251) 431-6450  
[www.mobilebaynep.com](http://www.mobilebaynep.com)

## 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 field office in Mobile.

## Strengthened Relationships with Local Government Officials

Significant strides have been made in reaching local governments. Relations with Baldwin County and Mobile counties have been strengthened significantly. This is reflected 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 confidence that the MBNEP is moving in the right direction, is increasingly committed to cooperation, and to 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

