Dauphin Island Sea Lab
Alabama’s Marine Science Education and Research Institution

2006 Annual Report
The Twenty-one Member Schools of the Dauphin Island Sea Lab/Marine Environmental Sciences Consortium

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

* Schools with Graduate Degree Programs
Statement of Purpose

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

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

The retirement of Dr. Will Schroeder marks the end of an era at DISL. I met Will in a diving class at Scripps in 1963 when he was an undergraduate at San Diego State and I was in my first semester of graduate school. He went on to become a nationally respected SCUBA instructor in addition to receiving his terminal degree at Texas A&M University where I found him in an office under some stairs and suggested that he consider joining the U. of Alabama Marine Science Program which had recently moved to Dauphin Island to be part of the consortial effort. We had a unique opportunity to take part in some of the early field experiments utilizing saturation diving at Hydrolab in the Bahamas where he saved my life during an extended dive near the break.

Hurricane Katrina may have devastated the maritime forest behind the classrooms with her salty storm surge, but we’re still standing.

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

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

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

We were delighted to host world-renowned scientist Dr. Daniel Pauly, Director of the Fisheries Centre at the University of British Columbia (left photo, standing right) as the 2006 Wiese Distinguished Lecture Series honoree. He joined us and other guests as we dedicated the new Peter V. Wiese Marine Science Hall in 2006. (Right photo) Mrs. Marty Wiese looks at the photo of her late husband, Pete Wiese, which graces the lobby of the new facility.
DISL is located on 36 acres on the eastern end of Dauphin Island, a barrier island approximately three miles from the mainland and 40 miles south of Mobile, Alabama. The Sea Lab spans the island and thus has direct access to the Gulf of Mexico, Mississippi Sound and Mobile Bay. A causeway and bridge connects the island to the mainland.

A new classroom was built from the old maintenance shed on the South Campus, making a total of 15,309 square feet of instructional space. On the North Campus, a new research laboratory/office space was dedicated in 2006 in memory of Sea Lab supporter Peter V. Weise, doubling Marine Science Hall facilities to a total of 20,000 square feet. 1,500 square feet of the old maintenance shed was converted into lab space and offices for DISL’s FOCAL (Fisheries Oceanography of Coastal Alabama) program, headed by Dr. Frank Hernandez.

The campus can accommodate 160 persons in residence. Two dormitories, a two-story 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 7,400 bound volumes and approximately 500 periodical titles, with current subscriptions to many of those periodicals. The library also has numerous CD-ROM databases, as well as access to a variety of on-line library catalogs. Wet Lab facilities house modular seawater systems, kreisels, and other instruments for experimental work on living marine organisms.

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

**Administrative Personnel**

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

**Business/Finance**

The Business 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.
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**Table of Organization**

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

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

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

**Estuarium Gift Shop Personnel**
- Jeana Layne - Manager
- Daphne Wood - Manager/Buyer
- Nancy Connell
- Jamelle Ellington
- Amy Hannah

**Information Technology**
The Sea Lab's Information Technology Department provides user services and support for more than 120 users and 227 computers and servers, in both academic and administrative departments. In 2006 we made plans to move the current server room to the second floor space in the administrative building and began construction on this project. It is slated to be completed in summer of 2007. We also welcomed new employee Shane Johnson to the Information Technology staff.

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

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

**Library Personnel**
- Connie Mallon - Librarian

**Community Relations**
Blissfully free from dealing with any fallout from tropical occurrences, the Community Relations Department was able to focus on promoting the educational, research and policy programs of the Sea Lab with great results locally, regionally and nationally. Drs. Rich Aronson, John Dindo and Monty Graham were cover subjects featured separately in the “Living” section of the Mobile Press Register. Research projects such as Dr. Ken Heck’s seagrass work; Dr. Ron Kiene’s Antarctic studies; Dr. Just Cebrian’s submerged aquatic vegetation projects; and Dr. Will Schroeder’s World War II shipwrecks mapping program all received national and international attention.
The Community Relations Department also helped plan such successful special events as Discovery Day, the Sea Lab’s Annual Open House; Spooktacular, the DISL Foundation’s Halloween event; the opening of the new Wiese Marine Science Hall; and the 2006 Wiese Distinguished Lecture Series, which featured Dr. Daniel Pauly.

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

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

Community Relations Personnel
Lisa Young - Community Relations Director

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

Plant Operations Personnel
Steve Ruf - Supervisor, until June 2006
Troy McBride - Supervisor, July 2006 to present
Tommie Blocker
Bryan Breaux
Jim Daves
Ricky Gibbs

Chris Gilliam
Joey Johnson
Kenneth O’Neal
Tom Pritchett
David Yommer

Household Maintenance Personnel
Tammy McClantoc - Supervisor
Mike Connell
Shirley Emerson
Cindy Johnson
Jenny Johnson
Shirley Kirkpatrick
Holly Ladnier

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

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

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

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

2006 Vessel Days at Sea (including 1/2 day ops)
A. E. Verrill 125
E. O. Wilson 95
Small Boats 356
Based on the principle that hands-on learning invigorates the desire for in-depth education and life-long interest, Discovery Hall Programs (DHP) offers a broad variety of intensive programs for K-12 students, teachers and the general public.

The Discovery Hall Program, in partnership with the University of Southern Mississippi’s J.L. Scott Marine Education Center and Mobile County Public School Systems’ Environmental Studies Center, worked on a cooperative marine science education grant funded by the Mississippi-Alabama Sea Grant Consortium. This grant helped provide partial funding for an additional marine educator for DHP and traveling marine science program BayMobile.

BayMobile was constantly in demand in 2006. Site visits included Kids Day in Bienville; Cub Scout Camp; Bayou La Batre Library; Bellingrath Gardens Wonderful Wednesdays; Linden Library; Demopolis Library; Maxwell Air Force Base; Gunter Air Force Base; and the Gulf Shores Museum.

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

The Dauphin Island Sea Lab's...
Discovery Hall Programs and University Programs are part of a National Oceanographic and Atmospheric Administration Cooperative Initiative through Mississippi State University. This $500,000 grant will be used to study oyster reef restoration, submerged aquatic vegetation and to enhance ocean literacy for K-12 and public education.

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

Summer educational programs were once again highly subscribed. Gulf Island Journey, the middle school residential program, had over 100 participants for its four sessions; the high school summer program had 25 students from seven different states, and the teacher workshops had over 75 educators come to the Sea Lab for training.

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

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

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

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

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

Volunteer aquarists assisted greatly in the care and feeding of our animals and the impeccable maintenance of our aquaria. Volunteers for 2006 included Michelle Butler; Lindsey Herron; Angela Reed; Yvonne Rhodes and Katie Williams. In 2006 Aquarist Stephanie Wright took a leave of absence for an internship at the London Aquarium, and volunteer aquarists Anna Dumas and Brittany Way helped out during her time away.

Some of the most-loved attractions at the Estuarium are not the animals, but the friendly humans who staff the Touch Tables. Their unfailing courtesy and eagerness to share information about the animals and habitats are what make this facility so inviting. We could not operate this facility without their invaluable participation. For more information on joining the Docent Program, please contact Ms. Denise Keaton at dkeaton@disl.org or (251) 861-7515.

We’d also like to thank our wonderful Landscaping Docents (Blanche Emerson, Anne Ferguson, Rena Schuett, Linda Miller, Carol Standish, Debbie Tallant and Stella Anderson) for their green thumbs in our Butterfly Garden. Their beautiful work evokes “ooohh’s” and “aaaaah’s” of appreciation from all our visitors to the Sea Lab.
University Programs

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

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

Table 1: 2006 Graduates

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Degree</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nadia Bood</td>
<td>The recovery and resilience of coral assemblage on managed and unmanaged reefs in Belize: A long-term study</td>
<td>M.S.</td>
<td>USA</td>
</tr>
<tr>
<td>Dale Booth</td>
<td>The impact of oysters on the growth and recruitment of <em>Halodule wrightii</em></td>
<td>M.S.</td>
<td>USA</td>
</tr>
<tr>
<td>Jody Bruton</td>
<td>Fates of methanethiol in coastal seawater</td>
<td>Ph.D.</td>
<td>USA</td>
</tr>
<tr>
<td>Todd Clardy</td>
<td>Stock discrimination between eastern Gulf of Mexico and Atlantic king mackerel, <em>Scomberomorus cavalla</em>, using otolith shape analysis</td>
<td>M.S.</td>
<td>USA</td>
</tr>
<tr>
<td>Brad Furman</td>
<td>Effects of Nutrient Enrichment and Grazers on Coral Reefs: An Experimental Assessment</td>
<td>M.S.</td>
<td>USA</td>
</tr>
<tr>
<td>Nathan Geraldi</td>
<td>Individual and Community Level Responses of Crustaceans and Fish to Restoration of Marine Biogenic Habitat</td>
<td>M.S.</td>
<td>USA</td>
</tr>
<tr>
<td>Kevan Gregalis</td>
<td>Evaluation of fisheries benefits of oyster reef restoration along an environmental gradient in Mobile Bay, Alabama</td>
<td>M.S.</td>
<td>USA</td>
</tr>
<tr>
<td>Matthew Johnson</td>
<td>The role of habitat fragmentation per se on the structure and function of seagrass ecosystems in the northern Gulf of Mexico</td>
<td>Ph.D.</td>
<td>USA</td>
</tr>
</tbody>
</table>

Figure 1.
### Table 2: 2006 REU Fellows

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
<th>Mentor</th>
<th>Project Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meghan Cook</td>
<td>Salem College</td>
<td>Dr. John Valetine</td>
<td>Impacts of amphipod grazing on seagrass biomass.</td>
</tr>
<tr>
<td>Karen Fisher</td>
<td>University of North Carolina at Chapel Hill</td>
<td>Dr. Ken Heck</td>
<td>The effects of nutrient enrichment on growth, fecundity and stoichiometry of epiphyte grazers in <em>Thalassis testudinum</em> beds.</td>
</tr>
<tr>
<td>Emily Foley</td>
<td>Mount Union College</td>
<td>Dr. Kyeong Park</td>
<td>The concept of eutrophication: a tool for outreach to the general public.</td>
</tr>
<tr>
<td>Sara Heintzman</td>
<td>University of Virginia</td>
<td>Dr. Ron Kiene</td>
<td>Searching for the missing sulfur: seawater to ctenophores.</td>
</tr>
<tr>
<td>Matt Kenworthy</td>
<td>North Carolina State University</td>
<td>Dr. Sean Powers</td>
<td>Multiple predator effects within oyster reefs: foraging behavior of oyster drills and stone crabs.</td>
</tr>
<tr>
<td>Kelsey Pickard</td>
<td>Colorado College</td>
<td>Dr. Just Cebrian</td>
<td>Effects of short-term shading and sediment fertilization on seagrass growth and density.</td>
</tr>
<tr>
<td>Ryan Sacksteder</td>
<td>University of North Carolina at Wilmington</td>
<td>Dr. Rich Aronson</td>
<td>Fecal energetics and dietary assimilation of the blue crab <em>Callinectes sapidus</em> in Alabama state marshes.</td>
</tr>
</tbody>
</table>

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

**University Programs Personnel**

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

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**Summer - 2006 Total Credit Hour Breakdown by Institution**

- AU: 20.5%  
- USA: 21.4%  
- UAB: 4.8%  
- UNA: 5.1%  
- UA: 16.6%  
- TSU: 3.4%  
- SHC: 4.4%  
- Other: 15.6%  
- JSU: 4.1%  
- JU: 4.1%
The Coastal Policy Center completed an update of the public access points on the Alabama coast in October. The effort was funded by the Coastal Section of ADCNR with the expressed intent of not only updating the list but assessing the residual impact of Hurricane Katrina. The effort also led to funding of a project aimed at rehabilitating a long neglected park in the City of Chickasaw. This will involve the Auburn Landscape Architectural studio planned for early next year.

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

The Dauphin Island Sea Lab’s long term interests in research, education and the provision of information and science for citizens and decision makers to support wise management of the Alabama’s coastal resources continue to be well-served by providing an organizational home for the Mobile Bay National Estuary Program (MBNEP) as an integral part of its Coastal Policy Center. MBNEP assists in providing this vital public service component of the DISL mission through encouraging a community-based approach to watershed management by empowering citizens, grassroots organizations, government agencies, and educational establishments to work together to address local environmental challenges. Engagement of these groups in protecting Mobile Bay, our associated coastal waters and their surrounding watersheds will help ensure their protection and conservation for our lifetime and beyond.

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

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

Mobile Bay National Estuary Program Personnel
Captain David W. Yeager - Director.
Roberta Swann - Deputy Director
Tom Herder - Science Communicator
Kara Lankford - Watershed Facilitator
Tiffany England - Business Manager
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. Ecological studies of interactions between seagrasses and associated macrofauna, especially shrimps, crabs, and fish. Current research includes a global assessment of seagrass nursery value, and experimental investigations of herbivory, nutrient enrichment and over-shing as they impact seagrass ecosystems.

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

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

Tammy McGovern, Ph.D. (Florida State University, 2001). Coastal Marine Scholar, DISL. Research interests include reproductive ecology and evolution in clonal and hermaphroditic organisms, particularly plasticity in reproductive allocation. "Here until December 2006."

Kyeong Park, Ph.D. (College of William and Mary, 1993) Senior Marine Scientist, DISL and Associate Professor of Marine Science, University of South Alabama. Physical transport processes and their effects on water quality and living resources in tidal rivers, estuaries and coastal systems, using "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 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.
Book Chapters and Projects


Peer Reviewed Publications:


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

Other Publications/Technical Reports


Abstracts & Presentations
Anton, A., C. D. Foster, K. Sheehan, J. Goff, M. E. Miller and J. Cebrian. The effects of Hurricane Katrina on the ecological services provided by seagrass (Halodule wrightii and Ruppia maritima) meadows. 35th Annual Marine Benthic Ecology Meeting, Quebec City (Canada), March 8-12, 2006.

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


Monty Graham

Ron Kiene

Hugh MacIntyre
Developed and presented displays (posters and hands-on demonstrations) for Discovery Day (4/1/06). Presented a public talk, “The Good, The Bad and The Ugly: Microalgae in Mobile Bay” at the Weeks Bay NERR 20th Anniversary - Coastal Topics Presentation Series (4/15/06) Supervised a science project by Lydia Dorsey, Junior in the International Baccalaureate program, Murphy High School, Mobile. Ms. Dorsey’s presentation, on nutrient loading and microagal responses in Little Lagoon, “Water We Doing?” won which the following awards: Mobile County Science Fair: 1st Place in Botany; Best in Show, High School Division Regional Science Fair: 1st Place in Earth and Space Science Alabama State Science Fair: 1st Place in Earth and Space Science; UAH Director’s Award; Water Environmental Federation Award Wrote an article for Tidings (Vol. 17(3), Sept. 2006) on my research efforts at CNRS in France, “Studying Toxins in the South of France, or How I Spent My Summer “Vacation”. Presented a Research Roundup talk, “I Beg Your Pardon, I Never Promised You an (Underwater) Rose Garden” (3/29/06).

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

Sean Powers

John Valentine

Rich Aronson

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

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

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

Ron Kiene
Marine Ecology-Progress Series, Formal Reviewer

Hugh MacIntyre
Editor, Aquatic Microbial Ecology, Appointed 4/28/06 Member, Scientific Advisory Committee on Chlorophyll Fluorescence, Alliance for Coastal Technologies (Solomon’s Island, MD). Member, Gulf of Mexico Coastal Ocean Observing System (GCOOS) Task Team on Public Health.

Kyeong Park

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

John Valentine
Marine Ecology Progress Series Review Editor, 2006-present
The Board of Directors is comprised of the Presidents of each of the 21 member institutions.

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

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

**Schools with Graduate Programs**

**Alabama State University**
President: Dr. Joe A. Lee
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
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. John G. Veres
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

**Jacksonville State University**
President: Dr. William A. Meehan
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. Andrew Westmoreland
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<td>Strategic Assessment of Priority Habitat Needs in Coastal Alabama and Establishment of the Coastal Habitat Coordinating Team</td>
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<td>A Rapid Assessment Survey of Non-Aquatic Species in Alabama and Mississippi</td>
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<td>Human Induced Changes in the Cross-habitat Flow of Energy in a Subtropical Marine Ecosystem: Experimental Assessments using newly created Marine Reserves in the Florida Keys</td>
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<td>Interactions Between Anthropogenic Eutrophication and the Black Needle rush</td>
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<td>Predicting Seagrass Survival in Nutrient Enriched Waters: Toward a New View of an Existing Program</td>
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<td>Quantifying Fisheries Benefits of Oyster Reef Restoration in Mobile Bay</td>
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<td>MASGC JC</td>
<td>Effects of Anthropogenic Eutrophication on the Ecosystem Provided by Shoalgrass Meadows</td>
<td>Feb-04 Jan-06</td>
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<td>NEP JD</td>
<td>Coastal Bird Nesting Survey</td>
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<td>MASGC MG</td>
<td>A Molecular Genetic Assay for Identifying and Quantifying a Cryptic Marine Bioinvader</td>
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<td>MASGC JD</td>
<td>Educational Efforts at the Scott Marine Education Center and Aquarium and the Dauphin Island Sea Lab Discovery Hall and Estuarium</td>
<td>Feb-04 Jul-06</td>
<td>$45,788.00</td>
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<td>USA HM</td>
<td>Biomass, Taxonomic Distribution and Productivity of Microalgae in Mobile and Weeks Bay</td>
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<td>USA KH JC SP</td>
<td>Ecosystem Services Provided by Oyster Reefs: An Experimental Assessment</td>
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<td>EPA HM</td>
<td>Environmental Monitoring and Primary Production in Mobile Bay</td>
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<td>Exhibits Supporting the Mission of MASGC at the Dauphin Island Sea Lab and the Estuarium</td>
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<td>MBW/MBK, ALA POWER, THE FORUM, WATER KEEPER ALLIANCE JV</td>
<td>Hydrological Modification Impact Study</td>
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<td>USA JV</td>
<td>Educational Outreach Component</td>
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<td>NSF JC</td>
<td>SGER: Examining the Effects of Hurricane Ivan in Coastal Alabama and Northwestern Florida: A Positive Impact on Shallow Coastal Lagoons?</td>
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<td>MASGC JC</td>
<td>Examining the Effects of Hurricane Ivan in Coastal Alabama and Northwestern Florida: A Positive Impact on Shallow Coastal Lagoons?</td>
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<td>USA JC</td>
<td>Examining the Effects of Hurricane Ivan in Coastal Alabama</td>
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<td>Developing an Adriatic Summer Institute for Marine Environmental Complexity</td>
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<td>FSML: Expansion of Research and Education Infrastructure within Dauphin Island Sea Lab’s Marine Science Hall</td>
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<td>ADCNR JV</td>
<td>Assessment of Sediment Contamination in the Lower Mobile-Tensaw Delta</td>
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<td>MASGC JD</td>
<td>The Use of Remote Sensing and Molecular Detection to Predict the Risk of Infection by Vibrio Parahaemolyticus</td>
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<td>Variability in Phytoplankton Productivity on Hourly to Monthly Time Scales and Its Coupling with Nitrogen Inputs to Weeks Bay, Alabama</td>
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<td>REU Site: Undergraduate Research Experiences in Coastal and Nearshore Marine Systems of the Northeastern Gulf of Mexico</td>
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<td>Land Use and Reef Development in Central America</td>
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<td>Coral Population Dynamics in Fully Protected Zones of the Florida Keys</td>
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<td>National Park Service</td>
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<td>Post Hurricane Katrina Damage Assessment of Seagrass Resources of the Mississippi Islands–Gulf Islands National Seashore</td>
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<td>Little Lagoon as an Incubator Site for the Harmful Bloom-Forming Diatom, Pseudo-nitzschia sp.</td>
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<td>ADCNR</td>
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<td>Post Hurricane Katrina Monitoring of Colonial Nesting Birds in Coastal Alabama</td>
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<td>Harmful Algal Blooms and Oyster Restoration in Mobile Bay</td>
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<tr>
<td>MASGC</td>
<td>HM</td>
<td>Remote Sensing of Harmful Algal Blooms in the Northern Gulf of Mexico</td>
<td>Apr-05 - Dec-06</td>
<td>$7,500.00 - $2,873.00</td>
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<tr>
<td>USA</td>
<td>KH</td>
<td>Restoring Estuarine Landscapes in Alabama Coastal Waters Through Creation of Oyster Reefs</td>
<td>Sep-05 - Aug-07</td>
<td>$165,108.00 - $30,050.00</td>
<td></td>
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<tr>
<td>USA</td>
<td>JV</td>
<td>Understanding Human Modifications of Coastal Water</td>
<td>Nov-06 - Oct-07</td>
<td>$155,337.00 - $15,349.00</td>
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<tr>
<td>USA</td>
<td>HM</td>
<td>ACES</td>
<td>Nov-05 - Oct-07</td>
<td>$25,004.00 - $5,763.00</td>
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<tr>
<td>MASGC</td>
<td>JC</td>
<td>Evaluating the Role of Restored Black Needlerush Marsh as a Buffer of Anthropogenic Eutrophication of Coastal Systems Systems: An Isotope Enrichment Approach</td>
<td>Feb-06 - Jan-08</td>
<td>$106,309.00 - $20,502.00</td>
<td></td>
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<tr>
<td>USA</td>
<td>JV</td>
<td>ACES</td>
<td>Nov-05 - Oct-07</td>
<td>$87,383.00 - $39,099.00</td>
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</tr>
<tr>
<td>NOAA</td>
<td>KH</td>
<td>Evaluating Species Interactions in Reef Fish Communities: The potential Impact of Red Snapper on Recruitment of Vermillion Smapper</td>
<td>Apr-06 - Jan-08</td>
<td>$103,720.00 - $61,308.00</td>
<td></td>
<td></td>
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<tr>
<td>USA</td>
<td>RA</td>
<td>Impacts of Salt Marsh Restoration on Ecosystem Function and Export to Estuarine Environments</td>
<td>Nov-05 - Sep-07</td>
<td>$152,019.00 - $23,646.00</td>
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<tr>
<td>EXXON</td>
<td>GC</td>
<td>Exxon Summer Intern</td>
<td>May-06 - Sep-06</td>
<td>$6,000.00 - $6,000.00</td>
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<tr>
<td>National Marine Sanctuary Foundation</td>
<td>JD</td>
<td>Learning Ocean Science through Ocean Exploration</td>
<td>Jul-06 - May-08</td>
<td>$29,000.00 - $1,239.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MASGC</td>
<td>JD</td>
<td>Facilitating the GOMA Environmental Education Priorities Through the Employment of an Educator and Outreach Coordinator</td>
<td>Jun-06 - May-08</td>
<td>$99,981.00 - $21,884.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOAA</td>
<td>GC</td>
<td>Construction of the Center for Ecosystem-Based Fisheries Management, Construction of the Mesocosm Facility, and the Completion of Wiese Marine Science Hall</td>
<td>Jul-06 - Jun-09</td>
<td>$4,411,204.00 - $470,000.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Con/Phil</td>
<td>SP</td>
<td>Baseline monitoring for ichthyoplankton and demersal fish in Alabama coastal waters</td>
<td>Jun-04 - Aug-07</td>
<td>$363,000.00 - $173,173.00</td>
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<tr>
<td>Con/Phil</td>
<td>MG</td>
<td>Assessment of Red Drum Spawning and Ichthyoplankton Abundance in Alabama Coastal Waters</td>
<td>Jun-04 - Aug-07</td>
<td>$1,667,972.00 - $691,564.00</td>
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<tr>
<td>Con/Phil</td>
<td>MG</td>
<td>Assessment of Red Drum Spawning</td>
<td>Aug-05 - Aug-07</td>
<td>$241,388.00 - $165,710.00</td>
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<td></td>
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<tr>
<td>Total</td>
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<td></td>
<td></td>
<td>$4,231,117.00</td>
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</table>
## Annual Report 2006 - page 25

### Balance Sheet

**MARINE ENVIRONMENTAL SCIENCE CONSORTIUM**

**DAUPHIN ISLAND SEA LAB**

**Statement of Net Assets**

**September 30, 2006**

### ASSETS

#### Current Assets

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>$297,292</td>
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<tr>
<td>Accounts Receivable</td>
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<td>Inventories</td>
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<td><strong>Total Current Assets</strong></td>
<td>$1,297,518</td>
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#### Noncurrent Assets

**Capital Assets:**

<table>
<thead>
<tr>
<th>Description</th>
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<tbody>
<tr>
<td>Land</td>
<td>$658,757</td>
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<tr>
<td>Improvements Other Than Buildings</td>
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<td>Buildings</td>
<td>$9,117,037</td>
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<td>Equipment</td>
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<td>Vessels</td>
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<td>Library Holdings</td>
<td>$715,629</td>
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<tr>
<td>Less: Accumulated Depreciation</td>
<td>$(4,080,293)</td>
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<tr>
<td><strong>Total Capital Assets, net of Depreciation</strong></td>
<td>$8,419,973</td>
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</table>

**Total Noncurrent Assets**

<table>
<thead>
<tr>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>$8,419,973</td>
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</tbody>
</table>

**Total Assets**

<table>
<thead>
<tr>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>$9,717,490</td>
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### LIABILITIES

#### Current Liabilities

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounts Payable</td>
<td>$2,751</td>
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<tr>
<td>Lease Obligations</td>
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<tr>
<td>Short Term Note Payable</td>
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<tr>
<td>Compensated Absences</td>
<td>$19,710</td>
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<tr>
<td>Deposits Held for Others</td>
<td>$98,009</td>
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<tr>
<td><strong>Total Current Liabilities</strong></td>
<td>$885,794</td>
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#### Noncurrent Liabilities

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Lease Obligations</td>
<td>$710,462</td>
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<tr>
<td>Compensated Absences</td>
<td>$308,791</td>
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<tr>
<td><strong>Total Noncurrent Liabilities</strong></td>
<td>$1,019,253</td>
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</table>

**Total Liabilities**

<table>
<thead>
<tr>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1,905,046</td>
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</table>

### NET ASSETS

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invested in Capital Assets, net of related debt</td>
<td>$7,444,187</td>
</tr>
<tr>
<td>Restricted for</td>
<td></td>
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<tr>
<td>Expendable</td>
<td></td>
</tr>
<tr>
<td>Scholarships and fellowships</td>
<td>$28,102</td>
</tr>
<tr>
<td>Research &amp; Public Outreach</td>
<td>$81,018</td>
</tr>
<tr>
<td>Capital projects</td>
<td>$103,077</td>
</tr>
<tr>
<td>Unrestricted</td>
<td>$156,061</td>
</tr>
<tr>
<td><strong>Total Net Assets</strong></td>
<td>$7,812,444</td>
</tr>
</tbody>
</table>
The Dauphin Island Sea Lab’s long term interests in research, education and the provision of information and science for citizens and decision makers to support wise management of the Alabama’s coastal resources continue to be well-served by providing an organizational home for the Mobile Bay National Estuary Program (MBNEP) as an integral part of its Coastal Policy Center. MBNEP assists in providing this vital public service component of the DISL mission through encouraging a community-based approach to watershed management by empowering citizens, grassroots organizations, government agencies, and educational establishments to work together to address local environmental challenges. Engagement of these groups in protecting Mobile Bay, our associated coastal waters and their surrounding watersheds will help ensure their protection and conservation for our lifetime and beyond. MBNEP is directed by David W. Yeager. Yeager is also Associate Director of the Coastal Policy Center. Other staff include: Ms. Roberta Swann, Deputy Director, MBNEP; Mr. Tom Herder, Science Communicator, MBNEP; Ms. Kara Lankford, Watershed Facilitator, MBNEP; and Ms. Tiffany England, Business Manager, MBNEP.

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

**New Management Conference**
MBNEP initiated a reorganization of the Management Conference. The structure was revised to better provide a mix of Policy Makers (both public and private), Implementers (both public and private), and Grassroots (community groups and citizens) to ensure expanding support for CCMP implementation and identification and engagement of emerging issues related to CCMP objectives. The ultimate goal is an increased ability to function as a community capacity builder and provide improved public services in the environmental area to our coastal communities. The Mobile Bay NEP Management Conference now consists of four main committees: Community Action Committee, Community Resources Committee, Government Networks Committee, and Project Implementation Committee.

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

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

**Strategic Planning**
MBNEP completed a strategic planning process to focus its limited resources on areas of the CCMP most critical to sustaining the estuary and to develop the organizational structure necessary to best implement action. With a goal of revitalizing efforts already underway to implement the CCMP, MBNEP worked with stakeholders to revisit CCMP objectives...
and action plans; evaluate gaps in implementation; and develop a strategy that included priorities for implementation, updating of objectives, and modifications to the CCMP as needed. The MBNEP boundaries were approved for expansion by the Management Conference as a result of the Strategic Planning Process and now include the entirety of Mobile and Baldwin Counties. This is much better with many of the resource agencies with whom we work in coastal Alabama.

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

Water Quality

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

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

Eight Mile Creek
The MBNEP made strides in moving forward on a project to identify potential and actual pathogen inputs to segments of Eight Mile Creek and Gum Tree Branch. During the last program period ADEM collected two geo-means during the months of December and January. Data from these monitoring activities showed that all problems/exceedences were found in the Gum Tree watershed or in the mouth of Eight Mile Creek. During the last period problems were encountered with the collection of information including number of septic systems and storm and sewer pipe systems for Prichard and Chickasaw, AL. Efforts to obtain this information were thwarted due to a pending lawsuit against the City of Prichard. However, on the ground methods including GPS location of inputs was begun by Mobile Engineering LLC.

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

Living Resources

Long Term Fisheries Assessment and Monitoring Program
During the 2006 program period (funded under a separate grant using CIAP funding), a historical analysis of 20 years of fisheries data was completed. The preliminary results of this analysis indicated that there had been no significant change in fish populations throughout coastal Alabama. However, the analysis did suggest additional sampling of brown shrimp and blue crab to confirm trends in their populations.

Oyster Gardening
During the 2006 season, our seventh year of Oyster Gardening, 33 volunteers grew over 60,000 oysters which were planted on Boykin and Shellbanks reefs in Mobile Bay. In addition, students from Alma Bryant High School chose to work with the Oyster Gardening program as part of a project with Coastal America’s Coastal Ecosystem Learning Center at the Dauphin Island Sea Lab. Their project included working with Mississippi Alabama Sea Grant, Auburn University Marine Extension and Research Center.
(AUMERC) and MBNEP in counting, collecting and deploying oysters. The students assisted AUMERC with placing an additional 50,000 oysters on Boykin Reef and 5,000 on Shellbank Reef.

**Habitat Management**

**The Mississippi-Alabama Habitats Database**

During the summer of 2005, MASCG and MBNEP worked with the DISL to develop an online habitat conservation, restoration, and enhancement database to track habitat conservation activities in the eleven coastal counties of Mississippi and Alabama. A mechanism was thereby established for tracking data such as 1) habitat projects planned, in progress, or completed along the northern Gulf of Mexico; 2) types of habitat conserved; 3) conservation techniques employed; 4) the variety of funding sources used; and 5) the locations of such projects. The database’s development was funded by MASGC, and it resides on a Microsoft SQL server managed by the DISL at [http://restoration.disl.org/database](http://restoration.disl.org/database).

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

**Habitat Mapping**

During the 2006 program period, the National Wetlands Research Center (NWRC) of the United States Geological Survey (USGS) conducted the first comprehensive baseline habitat mapping project describing wetland and upland habitats for Mobile and Baldwin Counties. The project was accomplished under contract to MBNEP acting for a partnership that included the Alabama Department of Conservation and Natural Resources (ADCNR) State Lands Coastal Section, Gulf of Mexico Program, the Baldwin County Commission, the Mobile County Commission, EPA, and NOAA. These habitat maps were generated from digital color-infrared, geo-referenced photography acquired by the USGS, again under contract to MBNEP on behalf of the several partners, for Mobile County in 2002. Digital color, infrared photography from 2001 of the same resolution was provided by the Baldwin County Commission. These habitat and wetland maps will provide information for conservation, restoration, protection, and enhancement of Alabama’s coastal habitats. This project also provides the most recent update to the National Wetlands Inventory (NWI) for Baldwin and Mobile Counties. Products from this mapping project provide long needed geographic information system layers for Alabama’s coastal counties. The total cost of this project was over $1.6 million obtained through the MBNEP and its partners.

**Habitat Acquisition**

The State of Alabama’s Forever Wild Program purchased a 1,642 acre tract of pine plantations in coastal Mobile County adjacent to existing Forever Wild Tracts. It will be used for education, conservation of coastal wetland ecosystems, and research. Although it was purchased with financial assistance from the U.S. Fish and Wildlife Service through a National Coastal Wetlands Grant, the MBNEP provided a letter of support in the early stages of the grant application indicating that this and similar parcels in coastal Mobile County had been identified as priorities for conservation protection in a strategic assessment conducted by the MBNEP. Although the financial commitment by
the MBNEP was small ($10,000), the support of the MBNEP for this tract’s acquisition was identified as very important to the success of the grant application.

Human Use Issues

D’Olive Creek

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

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

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

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

Regional Stormwater Management

In March 2004, the City of Fairhope and MBNEP jointly hosted a local workshop by the National Association of Flood and Stormwater Management Agencies (NAFSMA). NAFSMA represents municipal and public agencies responsible for management of stormwater run-off nationwide. Since this time, other municipalities have supported conducting a feasibility analysis and developing an outline plan for creating a regional Stormwater Management Authority in Baldwin County. In 2006 MBNEP assumed a leadership role for organizing and facilitating the Baldwin County Stormwater working Group. In July we placed a team led by Mr. Andy Reese of AMEC Inc. and Dr. Melissa Pringle of Eco-Systems Inc. under contract to help us: (1) determine the feasibility of a regional authority and, if considered feasible by the participants, how should we organize this effort within the county, (2) educate our local governments on possible mechanisms for creating such a revenue source, and (3) draft the core principles necessary to be included in any enabling legislation for establishment of a storm water user fee funding method for the County and its
towns and cities to be put forward by our legislative delegation. Some 26-30 participants worked hard at examining options, playing devil’s advocate and joining together to work on these tasks, and coming to a consensus position. The conclusion was that such a utility was not only feasible but that a compelling case could be made for its creation, and sooner rather than later.

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

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

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

Outreach and Education

Alabama Mississippi Bays and Bayous Symposium
On Tuesday and Wednesday, November 28-29, 2006, MBNEP, MASGC, University of Southern Mississippi Gulf Coast Research Laboratory, and the Alabama Center for Estuarine Studies hosted a two-day symposium for over 250 agency employees, researchers, educators, students, consultants, engineers, and community representatives. The purpose of this symposium was to exchange information, data, and ideas on the status and health of the northern Gulf. Guest speakers included Dr. Sylvia Earle, Dr. Nancy Rabalais, Dr. Orin Pilkey, and Dr. Frank Muller-Karger. Oral presentations were categorized by topic into Water Quality, Living Resources, Habitat Management, and Natural Hazards and Coastal Development. Thirty-seven posters were displayed in the concourse and presented Tuesday evening. Vendors/sponsors with displays in the concourse included AUMERC, FEMA, Grand Bay NERR, C. C. Lynch & Associates, MBNEP, NOAA, and Vittor and Associates, Inc.

Elected Officials Workshop
The Mobile Bay National Estuary Program, in coordination with members of the Baldwin County and Mobile County legislative delegations, sponsored an environmental seminar on November 15, 2006. According to State Senator Bradley Byrne (R. Montrose), “Our aim was to develop a common level of understanding among elected officials from both Baldwin and Mobile Counties about the environmental and conservation issues facing coastal Alabama and target specific actions for accomplishment or further development.”

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

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

Events
MBNEP facilitated, organized, and/or participated in a number of events during the 2006 period, including: Earth Day, Coastal Clean-up, Coastal Kids Quiz, Discovery Day, Coastal Alabama Birdfest,
Derelict Crab Trap Recovery, The Dog River Paddle, Baldwin County Groundwater Festival, Environmental Studies Center Open House among others. Attendance varied widely from 300 to nearly 5,000 participants.

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

**Alliances with Other Locally Managed Coastal Federal Funding Sources**
Since the establishment of a formalized Memorandum of Agreement between MBNEP; ADCNR, and the DISL, there has been a continuing commitment of funding, time and resources among the organizations to work cooperatively for environmental improvement in coastal Alabama, and leveraging scarce resources available in an 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 other areas of resource planning and management. The alliance has become so well established that the ADCNR’s Coastal Section, MASGC, and MBNEP are often colloquially referred to as a “coastal trinity”.

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

**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 and increasingly committed to cooperation and leveraging scarce funding on the priority issues facing the estuary. In addition, the maturation of the Program has shown the true personality of MBNEP as a consensus builder to develop and implement solutions, overcoming the parochialism and mistrust inherent in the initial natural struggles to develop a conservation plan.