

1987-1989 Biennial Report

of the

Marine Environmental Sciences Consortium

Dauphin Island Sea Lab

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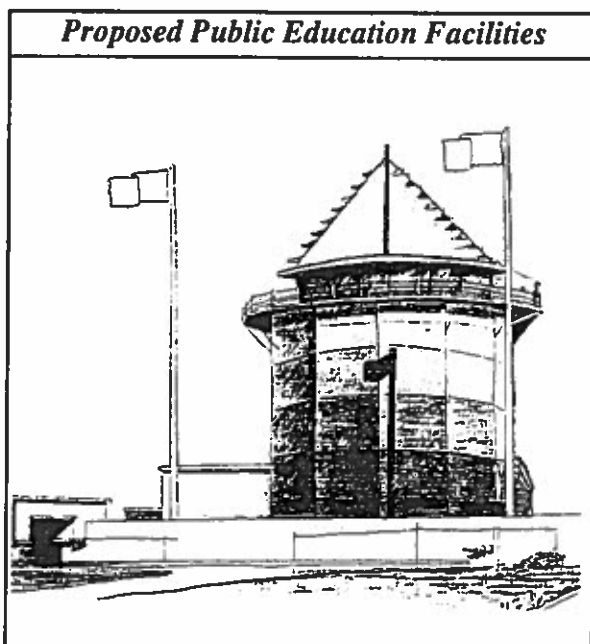
George F. Crozier - Director

Overview...

During the two year reporting period, the Marine Environmental Sciences Consortium launched several new research initiatives. Instructional success is evident with the continuation of growth in the Discovery Hall Program. High levels of enrollment in both summer undergraduate programs and year-round graduate studies were maintained. The functional role of the laboratory-based faculty has expanded at the regional and national level as evidenced by their participation in technical advisory groups, professional meetings, editorial boards and publications.

Administration...

Within the administrative structure there were no significant changes. However, a five-year development plan was developed and approved by the Executive Committee of the Board of Directors. This effort projects a 50% increase in personnel through 1993 and includes a \$2.6 million capital improvement plan. The backbone of this plan is construction of 7,000 square feet of instructional space, renovation of 6,000 square feet of research space and construction/renovation of a public education facility in the former radar building.



Higher Education...

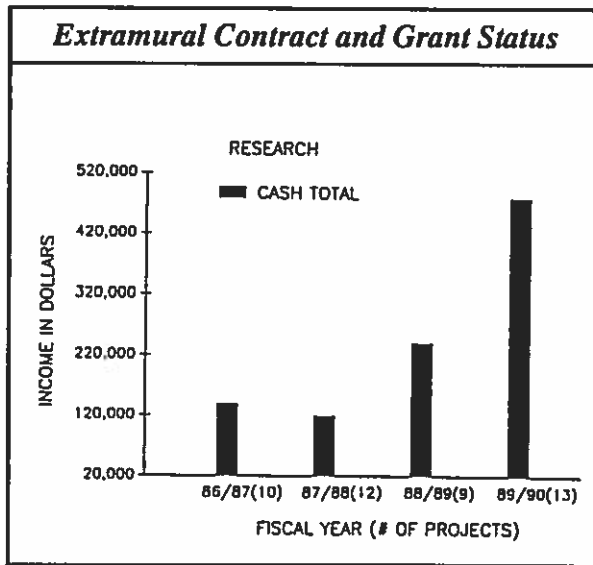
The summer programs ran true to form in '88 and '89 with high enrollments typical for the 17 year history. Undergraduate credit hour production rose slightly during the biennium from 420 to 444 while graduate hours were constant at a little over 100. New courses were added to accommodate demand from school teachers and as a result of the new faculty capabilities.

Graduate studies showed growth over the period and five students completed their graduate programs: four at the M.S. level and one student receiving a Ph.D. Thirteen students at this time are recognized by MESC as program residents. Honors have been received in the form of internships as well as institutional and Sea Grant fellowships.

Research...

Major efforts in chemical ecology, and larval ecology were initiated through the addition of two new faculty and one post-doctoral fellow. Significant commitments to equipment acquisition by the Consortium have been complemented by successful grantsmanship which have resulted in dramatic expansion in analytical capability. Ongoing efforts in benthic and wetland ecology have emphasized revegetation of submerged aquatic vegetation (SAV), secondary production in SAV and characteristics, as well as the nursery role of hardbottom communities offshore including secondary production. The linkages between the nearshore shelf and the estuaries of Alabama are principal objectives as the array of benchmark studies near completion.

In addition to the SAV projects, exciting new initiatives investigating the biogeochemistry of Mobile Bay and Weeks Bay are under way. These are currently baseline in nature because there are such limited data sets. For the first time, projects indirectly related to fishery resource development have been designed for hard clam, oyster, blue crab, red drum and speckled trout. Funding has been received from NSF (EPSCoR) and the National Marine Fisheries Service.



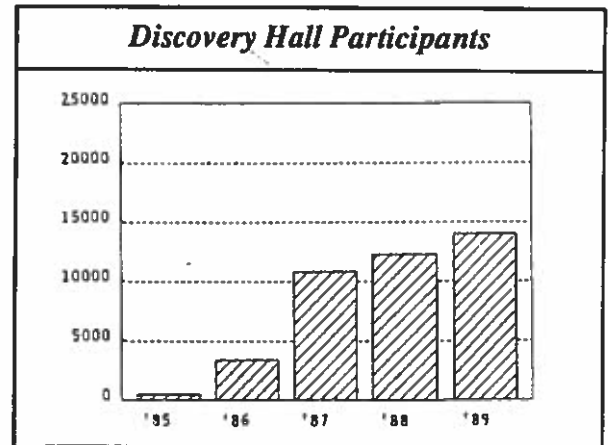
Science and Coastal Policy...

Sea Lab influence regionally is evidenced by broad representation within the Gulf of Mexico Program, the Perdido Bay Pilot Project, Coastal Resources Advisory Committee, Weeks Bay Estuarine Research Reserve and others. A variety of citizen groups continue to depend upon Sea Lab scientists for credible management review while oil companies and state insurance groups have come to rely on MESC objective comment. This element may emerge as a cornerstone of program development.

Discovery Hall...

Residential programs and day-trips were again successful. A supplemental appropriation in '87-'88 produced explosive growth in this program. Discovery was recognized by receiving an NSF Young Scholars grant which operated during both summers. Forty-eight "alumni" of both the Discovery Hall Program and previous summer institutes came to the Sea Lab to participate in a variety of ongoing research projects. The program was further honored by the Governor's office and the State Environmental Education Association as one of the best state science programs. Mr. Dindo is a member of the Board of Directors of the National Marine Education Association and has increased the program to the point that 59 of 67 counties in Alabama participate.

John Dindo - Discovery Hall Director



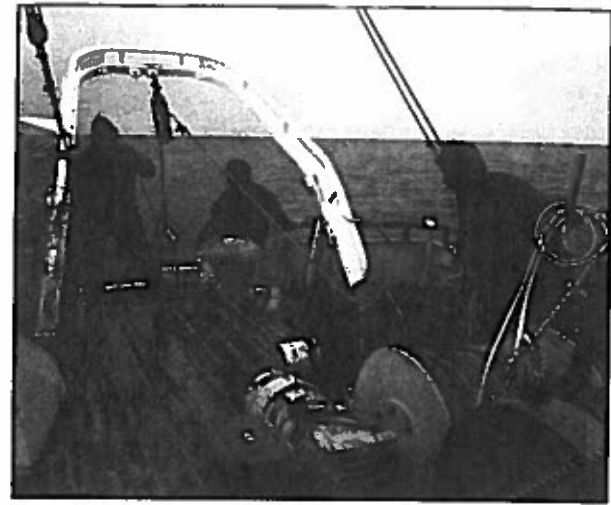
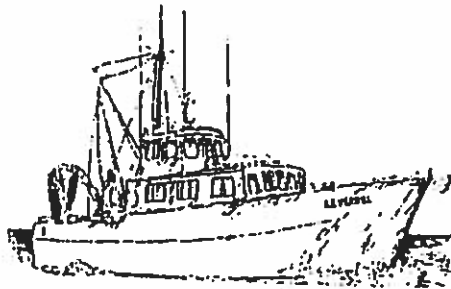
Operations...

Early in the reporting period, the Experimental Wet Lab renovation was completed and recently over 5,000 square feet of instructional and research space have been renovated. These efforts include new air-conditioning, flooring, walls, ceiling, lighting and cabinetry in four laboratories, three classrooms and six offices. Striking improvements in the external appearance have been accomplished through landscaping, fence removal and the addition of signs for the buildings.

Vessel operations have increased significantly. In 1988-1989 MESC vessels logged over 5,400 nautical miles during 128 cruises which carried over 2,300 people from seven states. Seventy-seven of the trips were educational in nature and carried the vast majority of the participants. Activity increased by roughly 25 percent and participants by over 35 percent. The addition of the 26' research vessel will further expand the system's capability in shallow water.

Steve Jorgensen - Operations Director

	87-88	88-89	Increase
Educational Cruises	63	77	22%
Research Cruises	43	56	25%
Nautical Miles	4725	5700	22%
Participants	1746	2300	37%



Financial Statement...

Combined General and Auxiliary Funds September 30, 1989

<u>Assets</u>		<u>Liabilities & Fund Bal.</u>	
Cash	190,532.83	Accounts Payable	448.76
Investments	131,178.75	Prepaid Invoices	833.00
Accts. Receiv.	21,551.50	Deposits Payable	650.00
Due From	98,246.63	Sal/Cont. Payable	327.80
Inventory	12,157.65	Fund Balance	451,407.80
TOTALS	<u>\$453,667.36</u>		<u>\$453,667.36</u>

September 30, 1988

<u>Assets</u>		<u>Liabilities & Fund Bal.</u>	
Cash	222,119.53	Accounts Payable	1,229.29
Investments	28,826.68	Prepaid Invoices	883.00
Accts. Receiv.	112,875.63	Deposits Payable	400.00
Due From	11,321.03	Fund Balance	384,090.86
Inventory	11,460.28		
TOTALS	<u>\$386,603.15</u>		<u>\$386,603.15</u>

Georgia Mallon - Business Manager
Lynn Bryant - Bursar

Resident Faculty and Their Research Interests...

George F. Crozier, Ph.D. 1966. (Scripps Institution of Oceanography, UCSD). Senior Marine Scientist and Director, MESC. Active on most of the state and regional technical planning groups and involved in translating basic research advances in knowledge into the real world of coastal resource management.

Michael R. Dardeau, M.S. 1982. (Univ. of South Alabama). Marine Scientist and Curator of Collections. Taxonomy, community structure and ecological relationships of marine invertebrates particularly food web interactions in both soft and hardbottom communities.

John J. Dindo, M.S. 1979. (Univ. of Alabama at Birmingham). Marine Scientist. 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 hard bottoms.

Kenneth L. Heck, Ph.D. 1976. (Florida State Univ.). Senior Marine Scientist. Ecological studies of seagrass-associated macrofauna, especially shrimps, crabs, and fishes. Current studies include assessment of the nursery value and rates of secondary production in seagrass habitats along the Atlantic and Gulf coasts of the U.S., and investigations of the role of herbivory and bioturbation as they influence the size and growth of seagrass meadows.

Thomas S. Hopkins, Ph.D. 1967. (Scripps Institution of Oceanography, UCSD). Senior Marine Scientist. The study of nearshore and outer continental shelf invertebrate fauna with emphasis on the seasonal cycles of Caribbean species of coelenterates, decapod crustaceans, echinoderms, and molluscs in relation to their associated substrate preference.

Jonathan R. Pennock, Ph.D. 1983. (Univ. of Delaware). Senior Marine Scientist. The interaction between plankton and their physical and chemical environments. Current research is examining the impact of human and natural biogeochemical processes on estuarine and near-coastal nutrient dynamics.

William W. Schroeder, Ph.D. 1971. (Texas A & M Univ.). Senior Marine Scientist. Interdisciplinary oceanography of coastal zone and continental shelf environments. Emphasis is placed on descriptive and semi-quantitative characterizations of the physical and geological environments.

Robert L. Shipp, Ph.D. 1970 (Florida State Univ.) Professor, Biological Sciences. Marine zoogeography, speciation of marine fishes, artificial reef ecology.

Judy P. Stout, Ph.D. 1978. (Univ. of Alabama). Senior Marine Scientist and Director of Academic Affairs. The ecology of coastal and shallow water habitats especially salt marshes, estuarine grassbeds and beach/dune systems including primary productivity, temporal and spatial variability, plant-animal interactions, and restoration of habitats.

Richard K. Zimmer-Faust, Ph.D. 1982. (Univ. of California at Santa Barbara). Senior Marine Scientist. Evolution, ecology and physiology of the chemical senses (olfaction and taste) especially their role in predator-prey interactions and in larval settlement by benthic invertebrates.