

Accessing Available Marine Education Resources (For The K-12th Grade User)

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ABSTRACT

As marine education increases in our nation's schools, there is an increasing demand by elementary and secondary schoolteachers and students for general information and curricular materials in marine studies. Often, these people are turning to Marine Science Libraries and Information Centers for assistance. Now there is a place to which the IAMSLIC members can turn for help. The Stout Aquatic Library is a national marine and aquatic education resource center that houses an extensive collection of books, journals, photographic slides, and curricular materials in the marine sciences. In addition, we keep an accessible, computerized bibliography of the articles published in these journals and are networking with other marine education organizations across the country. Come find out about our services and how they can be useful to you in serving the needs of your users.

MARINE EDUCATIONAL MATERIALS

Fellow members of IAMSLIC, I have been asked to speak to you today about accessing materials for pre-college marine education. As librarians of marine science libraries and information centers, I am sure that you are approached by both teachers and students in the pre-college grades who want either general information or curricular assistance. These areas, particularly the latter, are often beyond the scope of your libraries, yet as librarians, I am sure that you would like to be able to help these people find the information they need. I am here today to share with you some information concerning resources for these users. Marine education must be incorporated into the elementary and secondary curricula in this country.

We rely too heavily upon the waters of our world - for food, water, transportation, and natural resources - to remain ignorant of their processes and their value. The majority of our population will soon be living within a day's drive of the coast and yet few people know or understand the processes that go on there. Education is an essential tool to preserving and protecting such valuable resources. Luckily, marine education has a lot of appeal for students and easily crosses discipline lines, thereby also encouraging the development of reading, writing, computer, science, math and citizenship skills as well as developing an appreciation of art, music, history, and political science, to name a few.

In 1982, with some financial support from a local foundation and with the support of Gil Leaf, who was then the Headmaster of the Tower School in Marblehead, MA, where I was teaching eighth grade science and ninth grade oceanography, I set about assessing the needs of marine educators in this country. As a result of my many discussions with other marine educators, it be-

came rapidly apparent that, although good curricular materials had been developed by individuals or by organizations such as Sea Grant, there did not seem to be any one place where one could go to use or acquire these materials. The curricula was scattered piecemeal throughout the country. This made it very difficult for the classroom teacher, particularly the elementary teacher who already has to prepare several subjects a day and whose expertise is probably not in marine studies, to obtain the materials and assistance he or she needed to incorporate marine education into their classes. As a result, it was recognized that there was a great need for a national marine and aquatic education resource center for elementary and secondary teachers and students.

With some more financial assistance from local foundations and with the generous loan of a wealth of material privately collected by Prentice K. Stout, Past-Executive Director and Past-President of the National Marine Educators Association, the Stout Aquatic Library was founded at the Tower School. Gil Leaf left the Tower School as Headmaster in July, 1985 and in the Spring of 1986, it was determined that the Stout Aquatic Library would be moved to the University of Rhode Island in Narragansett, Rhode Island. The center of our operations is now in place at URI, run primarily by Prentice Stout, myself, and with the assistance of a student named Gretchen Zeigler.

What IS the Stout Aquatic Library?

The library has a number of functions and goals, not all of which would be of concern to this group. The three most important functions that would be of value to IAMSLIC members are: 1) answering questions of a general nature about marine education and marine topics 2) providing a computerized bibliography of magazine articles relating to marine education 3) providing curricular materials and assistance to teachers. Our first goal, that of answering questions, is self-explanatory. One merely needs to contact the Library through either Prentice or myself. Our second goal refers to the use of a computerized bibliography. This is the Sawyer Marine Resources Collection which contains over 6,000 bibliographic entries of commonly-read magazine articles relating to marine topics. The material is classified into 110 categories and is drawn from magazines such as *National Geographic*, *Smithsonian*, *Current*, *Natural History*, *Sea Frontiers*, *Oceanus*, *Oceans*, *Audubon* and others. All citations in the collection have hard-copy backup. This bibliography can be used by students for term papers, teachers for curriculum development, and the general public.

What are the Services?

There are other services available through the collection such as listings of all marine-related issues of *Nation Geographic Magazine*, marine-related maps depicting underwater topography of the major oceans, and all magazines used in the collection, with their publishers and current subscription rates. Also, teachers can obtain a "Master Marine Education Outline" to help them in planning. The bibliography is currently run using the WORDSTAR/MAILMERGE program by MicroPro on an IBM PC, DOS 1.1 (256K). People can access the collection by either calling Prentice and requesting a search of a few topics and receiving a printout free of charge, or by purchasing either the complete printout or the set of disks containing the bibliography. Unfortunately, we are not "on-line" as we are just not big enough of an operation to warrant the time or the money involved. One can access the bibliography by modem, however, through prior arrangement with Prentice.

The third goal of the Stout Aquatic Library is to provide curricular assistance to teachers. This curricular material is housed both in my office in Melrose, MA (just north of Boston) and at the Library itself in Rhode Island. Duplicates of the materials are at both locations. Teachers can contact us for assistance in developing lesson plans or units for their classrooms or even developing an entire year's curriculum. We can also assist in selecting textbooks and equipment.

The Stout Aquatic Library has one of the most extensive collections of marine-related curricular materials in the country as well as a photographic slide collection numbering around 40,000. We have also developed successful teacher-training and student summer programs that have been offered in the Boston area and can serve as models for other areas. In addition to informing you about the existence and services of the Stout Aquatic Library, I would like to take this opportunity to tell you about some other marine organizations that may be of help to you. I would urge you to consider joining these organizations (or having your libraries join) as well as passing along this information to teachers in your area. The primary organization in this country that specifically targets the needs of marine education teachers, both classroom and non-classroom, of all levels (Kindergarten through college) is the National Marine Educators Association. A small but viable organization, NMEA publishes *Current; The Journal of Marine Education* which is full of useful information, job and study opportunities, book reviews, and curricular material. NMEA also publishes a Newsletter with more timely information, and hosts an Annual Conference. The 1987 Conference will be held in Rhode Island in August. NMEA is also in the process of becoming an affiliate of the National Science Teachers Association.

In addition to the national organization, NMEA has chapters in all of the coastal regions of the country, including the Great Lakes area. These chapters publish their own newsletters, usually containing curricular materials, and host local conferences and meetings. The chapters, as well as the national organization, can provide invaluable assistance to local teachers. I have included a list of the chapter representatives [Appendix I] and a master list according to categories [Appendix II]. I urge you to get in touch with these people if you, or a teacher, need assistance. I hope that I have provided you with some valuable information today and I would like to leave you with the thought that the fate of the oceans will lie in our children's hands. We can have an effect on that outcome through the proper education today. Let us work together to help teachers across this country to incorporate marine education into the curricula of all of our children.

Appendix I Names and Addresses

Stout Aquatic Library

Prentice K. Stout
15 Dockray Road
Wakefield, TI 02879
401-783-0838

Clive K. Tucceri
109 Beech Ave.
Melrose, MA 02062

National Marine Educators Association

Jim Lanler
North Carolina Aquarium at Fort Fisher
Kure Beach, NC 28449

NMEA Chapter Representatives

Consortium of Aquatic and Marine Educators of Ohio/Cameo
c/o Vic Mayer
059 Ramseyer Hall
29 W. Woodruff
Columbus, OH 43210

Florida Marine Science Education Association
c/o Barbara Bammer
9223 SE 78th Place
Miami, FL 33156

Georgia Association of Marine Educators/GAME
c/o Jean Adams
1110 W. Poplar L-1
Griffin, GA 30223

Gulf of Maine Marine Education Association/GOMMEA
c/o Mary Cerullo
Marine Aquarium
Saco, ME

Massachusetts Marine Educators/MME
c/o Clive K. Tucceri
109 Beech Ave.
Melrose, MA 02176

Mid-Atlantic Marine Education Association/MAMEA
c/o Lindy Millman
Virginia Institute of Marine Sciences
Gloucester, Pt., VA 23062

New Jersey Marine Education Association/NJMEA
c/o Mary Masterson
45 Emerson St.
Carteret, NJ 07009

New York State Marine Education Association/NYSMEA
c/o Joel Terel
1355 E. 18th Street
Brooklyn, NY 11230

Northwest Association of Marine Educators/NAME
c/o Gene Williamson
Cedar Park Middle School
P.O. Box 200
Beaverton, OR 97075

OCEANIA
c/o Liz Kumabe
Waikiki Aquarium
2777 Kalakaua Ave.
Honolulu, HI 96564

Southeastern Association of Marine Educators/SAME
c/o Leslie Bruce
Gulf Coast Research Lab
Ocean Springs, MS 39564

Southeastern New England Marine Educators/SENEME
c/o Sandra Ryack-Bell
Save the Bay
434 South Street
Providence, RI 09208

Southwest Marine Education Association/SWMEA
c/o Craig Strang
Oceanic Society
Building E, Fort Mason
San Francisco, CA 94123

Texas Marine Education Association/TMEA
c/o Jack Clason
Galveston College
4015 Aqe. Q
Galveston, TX 77550

Appendix II

SAWYER MARINE RESOURCES COLLECTION

c/o Stout Aquatic Library

Master List According to Categories

- | | |
|----------------------------|---------------------|
| 1. Porifera | 2. Coelenterata |
| 3. Ctenophera | 4. Platyhelminthes |
| 5. Nemeritina | 6. Annelida |
| 7. Mollusca | 8. Arthropoda |
| 9. Echinodermata | 10. Hemichordata |
| 11. Chordata, incl. sharks | 12. Mammals, marine |

- 13. Turtles
- 15. Red tide
- 17. Bioluminescence
- 19. Ecology, Marsh
- 21. Ecology, general, Marine communities,
Food webs
- 23. Pollution, Chemical
- 25. Limulus
- 27. Intertidal Zone
- 29. Biological Clocks
- 31. Territorial
- 33. CZM (Coastal Zone Mgt)
- 35. Beaches
- 37. Supertankers, Deepwater Ports
- 39. Currents, Tides
- 41. Food from the Sea
- 43. Medical - sea
- 45. Living in the Sea
- 47. Estuary, Salt Ponds
- 49. Ocean Mining
- 51. Ocean Energy
- 53.
- 55. Sargasso Sea
- 57. Salvaging
- 59. Water
- 61. Underwater photography
- 63. Collecting methods
- 65.
- 67. Physical Oceanography
- 69. Pollution, General
- 71. Offshore oil material
- 73. Ocean dumping
- 75.
- 77. Marine trade
- 79. Marine Voc-tech schools
- 81. Music and the Sea
- 83. Archaeology, marine
- 85. Lighthouses-Lightships
- 87. Lifesaving boats, etc.
- 89. Navigation
- 91. Diving - all phases
- 93. Hypothermia
- 95. Phylum Cnidaria
- 97. Origins of Life
- 99. Research Institutions
- 100.
- 101.
- 107.
- 108
- 109.
- 14. Plankton
- 16. Algae, marine
- 18. Fossil Fish
- 20. Ecology, Reef
- 22. Birds
- 24. Pollution, Oil
- 26. Phragmites
- 28.
- 30. Adaptation
- 32. Deep Sea
- 33. Mississippi River & Great Lakes
- 36. Plate tectonics, Geology
- 38. Waves
- 40. Weather, Climate/Ocean Interface
- 42. Chemistry & Physics of the Sea
- 44. Aquaculture
- 46. Arctic-Antarctica
- 48. Ocean Formation
- 50.
- 52. Seagrasses
- 54. U.S. Coast Guard
- 56. The Great Lakes
- 58. Fish migrations, navigation, shoaling
- 60.
- 62. Sounds in the sea, communication
- 64. Aquariums, etc.
- 66. Thermoclines
- 68. Pollution Statistics
- 70. Pollution, Nuclear
- 72. Offshore structures
- 74. Mangroves
- 76. Law of the Sea
- 78. Marine Education
- 80. Literature/Language and the Sea
- 82. Art and the Sea
- 84. Maritime history, Folklore
- 86. Museums
- 88. Ships
- 90. Fishing and Fishermen
- 92. Cooking and the Sea
- 94. Fouling Organisms
- 96. The Dead Sea
- 98. Research Tools
- 102.
- 103.
- 104.
- 105.
- 106.
- 110. Activities and Experiments