

National Shellfisheries Association

QUARTERLY NEWSLETTER



Fall 1992 - Call For Papers

Lewes, Delaware

President's Message

Plans for the Portland, Oregon meeting (May 30 - June 4, 1993) are moving along well. Please make sure to plan your time and budget to attend. There will be a meeting of the PacRim Shellfish sanitation group immediately prior to or just after our meeting and this should bring some additional folks to NSA. In addition, the Pacific Coast Oyster Growers Association (PCOGA) will assist in a national effort to attract members of the shellfish industry to our meeting. We have had a number of program suggestions for the meeting. To date, the subjects receiving the most interest have been toxic algae and shellfish, shellfish sanitation and shellfish diseases. Please contact Program Chair Tom Soniat or myself if you have further suggestions. We will probably schedule another session of the popular Shellfish Master's Roundtable.

The elections committee will shortly be considering nominees for the Spring election. Please contact a member of the Committee (Sandy Shumway, John Kraeuter or myself) if you have suggestions in this regard.

Students take note of the announcement in this newsletter of the availability of travel awards. The Portland meeting will be an excellent opportunity to present your work to your scientific peers and to a broad spectrum of shellfish managers and industry members.

Last, but not least, Charleston, South Carolina has been selected as the site for the 1994 NSA Annual Meeting, pending negotiation of the conference site. Another great location for an NSA meeting!

Ralph Elston

CALL FOR PAPERS: 1993 NSA ANNUAL MEETING

Program Chair Tom Soniat has announced the *First and Only Call for Papers* for the 1993 National Shellfisheries Association annual meeting, to be held May 30 - June 4, 1993 in Portland, Oregon at the Marriott Hotel. Hotel reservation forms and registration information will be mailed to all NSA members in January 1993. You will find abstract instructions and an abstract form elsewhere in this issue of the Newsletter, as well as instructions and an application for travel money from the Student Endowment Fund. Please note that abstracts must reach Program Chair Tom Soniat

no later than January 15, 1993 at the address listed in the instructions. No FAX transmissions will be accepted. If you require additional abstract forms please contact Tom as soon as possible. If you have suggestions for special session topics or are interested in organizing a session please contact Tom as soon as possible!

NSA Auction at 1993 Annual Meeting

Plans for the auction are progressing nicely. The auction will be held during the Portland, Oregon meeting to benefit the Student Endowment Fund. Philip Butler has very generously donated a number of items including: one Hawaiian pearl oyster shell (10") inscribed by Paul Galtsoff, original copies of Baughman's oyster bibliography and Galtsoff's epic on the American oyster, to mention just a few. Many of you have treasures hidden in your offices and dark closets that you wouldn't mind seeing used, so please take a look around and remember that many of the trinkets you consider dust collectors might actually be of real interest to others. We will consider any and all donations. Don't miss this chance for early spring-cleaning! We are also planning to have a wine table at the auction so plan to bring a bottle or two of your favorite local wine.

Other organizations have made thousands of dollars with similar auctions, so please give some thought to what you might donate. We anticipate an evening of great fun and lively entertainment. You may send any items to either Sandy Shumway or Ralph Elston or you may bring them with you to Portland. Note: please carry your own wine...Sandy and Ralph might never make it to the meeting if the wine is shipped to them!

In This Issue...

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Newsletter Deadline

Deadline for submissions for the next issue (Winter) of the NSA *Quarterly Newsletter* is December 1, 1992.

Recruits Corner

Hello fellow Recruits! Hope classes and research are going well. Our topic for this issue is the Student Endowment Fund.

Established in 1989 to "maintain and expand participation of students in the Association", the Fund currently has about \$3300. These funds are primarily used to defer the costs of presenting a paper (oral or poster) at the annual meeting. Past awards have typically covered registration expenses, hotel expenses, or both. Of course the amount of the award is dependent upon the size of the Endowment Fund and the numbers of awards given in any year.

Money for the Student Endowment Fund is derived from Tax-deductible contributions, sale of NSA merchandise (shirts, mugs, pins, etc...), and fund raisers (e.g. raffles). Clearly, more money in the Fund means more support for students. We are hoping to build the fund so that it will be self-sustaining -- awards will then be drawn from interest payments rather than depleting the Fund each year. You may help raise funds by selling NSA merchandise at the annual meeting or at your lab, developing/assisting with fund raising events, or even soliciting donations. Last year a meeting T-shirt and an NSA mug were awarded to Maureen Krause for selling the most raffle tickets at Aquaculture '92. This year a similar contest will most likely take place in Portland, Oregon. Look for more information in future issues of the NSA *Quarterly Newsletter*. If you wish to sell NSA merchandise, please contact NSA Treasurer Steve Tettelbach (address on back cover of Newsletter). If you have any fund raising ideas please contact one of the Recruits organizers (Dave Bushek, Marty Chintala, Mike Moyer, Jay Parsons or Ami Wilbur - all addresses in Summer 1992 issue of Newsletter).

Any student member presenting a poster or paper at the annual meeting is eligible for an award. The application form is enclosed in this issue of the Newsletter along with abstract submission instructions. To apply, complete the form and mail it with your abstract materials, CV, and a letter of recommendation (usually from your advisor) to Program Chair Tom Soniat by January 15, 1993 (see abstract instructions for address). Any questions should be directed to Endowment/Student Awards Committee Chair Susan Bower, Department of Fisheries and Oceans, Pacific Biological Station, P.O. Box 100, Nanaimo, BC V9R 5J9.

This fund is for us, so let's do what we can to keep it going strong!

Dave Bushek

Nuisance Species Workshop

A workshop to discuss non-indigenous aquatic* invertebrate species, particularly from the perspective of their being or becoming nuisances if and when introduced into North and Central America, the Caribbean area and the Hawaii-Central Pacific islands is now in the planning stage.

The feasibility of preparing a much needed handbook or catalogue, especially of molluscan and crustacean nuisance species, will be emphasized. The workshop will be convened as part of the 85th annual meeting of the National Shellfisheries Association in Portland, Oregon, May 29-June 4, 1993. It will serve as a forum for planning future workshops, as appropriate, selecting the handbook/catalogue editor(s), refining the format, nominating additional candidates as contributing authorities for species synopses, and for developing coordination mechanisms for interacting with organizations. It is anticipated that the handbook in addition to having identifying photographs will contain information about each species. Although funds are not available to issue special invitations to workshop participants, it would be very desirable for regular meeting attendees having an interest in the workshop subject to take this opportunity to attend and contribute ideas. For further information, please contact: Aaron Rosenfield, Phone (410) 226-5193 or FAX (410) 226-5925.

* For purposes of the workshop the following definitions apply:

Non-indigenous species: (= exotic, alien, foreign, non-native) any species or viable biological material that enters an ecosystem beyond its historic range.

Aquatic Nuisance Species: a non-indigenous species that presently or potentially threatens the diversity, behavior, or abundance of native species or the ecological-aesthetic stability of infested waters or the commercial, agricultural, or recreational activities dependent on such waters.

Employment

Wildlife Ecology/Aquaculture M.S. Research Assistantships Mississippi State University, Department of Wildlife and Fisheries. Program: research in development and testing of feeds for larval fish and crustaceans. Start date: January 1, 1993. For more information please contact Dr. Louis D'Abramo (601) 325-7492. Send for Graduate School admissions packet: Office of Admissions, Mississippi State University, Mississippi State, MS 39762.

Shellfish Biologist An Associate Marine Scientist position is available immediately for a shellfish biologist with experience in development and management of native bivalve fisheries. Experience in the ecology of oysters and oyster culture is desired. The successful candidate will participate in applied research programs to develop and enhance existing oyster and clam fisheries and to assess the ecological role of oysters in South Carolina estuaries. This permanent, state-funded position at the Marine Resources Research Institute, SC Wildlife and Marine Resources Department, is available immediately. Applications must be received prior to December 15, 1992. Please send CV, statement of research interests and goals (3 pages), and three letters of reference to: Dr. Fred Holland, Marine Resources Research Institute, P.O. Box 12559, Charleston, SC 29422-2559. The SCWMRD prohibits discrimination on the basis of race, sex, color, national origin, handicap, or age.

NSA Membership Drive

The NSA Membership Committee has initiated a contest to recruit new members. You don't have to be a committee member to participate in this worthy effort. The person who recruits the most new members by next year's meeting in Portland will receive 2 years free membership in NSA!! (Offer void in Maine - no, just kidding.) When the new member joins, have them write on the application form that they were referred by (your name here); Treasurer Steve Tettelbach will tally the forms as they come in. So get out there and help the cause! You can photocopy the membership application which appears toward the end of the latest volume of JSR and in some issues of the Newsletter. Remember that 1992 dues are \$33.00 for regular members and \$22.00 for students. 1993 dues will be \$40.00 for regular members and \$25.00 for student members. Any questions can be addressed to Membership Committee Co-Chairs Carolyn Friedman and Joedy Gray (see back cover of Newsletter). Good luck!

Book Review

Oyster Culture in the Caribbean, edited by Gary F. Newkirk and Becky A. Field. Mollusc Culture Network, Dalhousie University, Halifax, NS Canada, 1991, 244 pages, paperback \$20.00 Canadian for addresses in Canada; \$20.00 US (surface mail) or \$25.00 US (air mail) for addresses outside Canada.

The mangrove oyster, *Crassostrea rhizophorae* (Guilding), is almost identical morphologically to *C. virginica* (Gmelin). Some workers consider that the two taxa are simply ecotypes, while others that they are valid separate species. All of this aside, though, the mangrove oyster occurs natively intertidally in high salinity seawater on the roots and branches of mangrove trees in the Gulf of Mexico, Caribbean, Antilles and Brazil. Although common and widespread, efforts to enhance its production through aquaculture generally have met with little success; and exception is Cuba.

Reasons for this general lack of success in the Caribbean region have never been examined. On November 19-22, 1990, the International Development Research Centre, Canada, sponsored the Oyster Culture in the Caribbean Workshop in Jamaica, arranged by the Mollusc Culture Network, the Institute for Social and Economic Research, the University of the West Indies, and the Ministry of Agriculture, Jamaica. Gary Newkirk and Becky Field carried out the Workshop and produced the *Proceedings of the Workshop, Oyster Culture in the Caribbean*. The purpose of the workshop was to bring together people from the greater Caribbean region who are involved in the biology, culture technology, marketing, financing, regulation, public health and social community aspects of mangrove oyster production. Papers presented at the workshop ranged from reviews of the biology of reproduction of *C. rhizophorae* to socio-economic analyses of oyster culture.

Oyster Culture in the Caribbean includes invited papers, country reports, a synopsis of extended group discussions, and an up-to-date bibliography of the literature of *C. rhizophorae*, presented by speakers from Antigua/Barbuda, Brazil, Colombia, Cuba, Dominica, Grenada, Jamaica, Panama, St. Lucia, Trinidad and Tobago, and Venezuela. I would like to draw attention especially to Newkirk's thoughtful Introduction, the review of mollusc culture experiences in Latin America by Hernandez, the detailed account of pests and predators of cultivated mangrove oysters by Littlewood, and the interesting paper on mangrove oyster culture in Cuba by Frias and Rodriguez. Cuba has the region's largest oyster production and is now building hatcheries to supply additional oyster seed for its thriving industry.

Newkirk notes that oyster culture has potential only in those Caribbean countries where mangrove coasts or moderately large estuaries are present, and where reliable sources of oyster seed and markets exist. He emphasizes that integration of oyster culture development with broader coastal zone management is essential!

As is evident in the list of countries represented in the *Proceedings*, the main limitation of the workshop was a lack of more complete representation of Central American countries.

The paper in the *Proceedings* by Muise on aquacultural development in eastern Canada, which has grown over the past 15 years from experimental and pilot scale studies to an aggressive industry, serves as a model of a successful venture that in time could be achieved in the Caribbean.

Newkirk and Field are to be congratulated for publishing an attractive, well-illustrated, timely, interesting work that should do much to stimulate further development of oyster culture in the Caribbean - the potential is there.

Melbourne R. Carriger
College of Marine Studies
University of Delaware
Lewes, DE 19958

Gulf of Mexico Oyster Bibliography

Texas A&M University Sea Grant has published a *Gulf of Mexico Oyster Bibliography* which was compiled by T.M. Soniat, J.D. Simons, and E.N. Powell. The bibliography contains more than 900 references arranged alphabetically and indexed geographically (by state) and by subject matter. The publication (TAMU-SG-92-602) can be obtained by sending US\$5.00 to: Texas A&M Sea Grant Program, TAMU Galveston, P.O. Box 1675, Galveston, Texas 77553.

From the Editor of JSR...

Volume 11(2) has been sent to the printer and you should receive your copy before Christmas. I would like to take this opportunity to thank our out-going Editorial Board members: Les Watling, Tony Calabrese and Ken Chew. The Editorial Board is a great help to me and the efforts of these people are truly appreciated. New members to be welcomed aboard are: Bob Elner, Alan Campbell, Andy Brand and Roger Newell. I am looking forward to working with them all. I'm always in need of reviewers and some tend to be over-worked. If you are interested in reviewing manuscripts, please contact me.

Sandy Shumway

International Symposium Summary

On May 25-26, immediately following the Aquaculture '92 meeting in Orlando, Florida, an international symposium was held on the "History, Present Condition, and Future of Molluscan Fisheries of North America and Europe". The Symposium was sponsored by the National Marine Fisheries Service, National Marine Fisheries Service's Office of Protected Species, the National Ocean Services's Office of Ocean Resources, Conservation and Assessment, The National Shellfisheries Association, Florida Department of Natural Resources, and Canada's Department of Fisheries and Oceans.

Thirty distinguished shellfishery authorities and scientists from the United States and Canada, and countries of Central America, the Caribbean Sea area, and Europe made informative presentations. The purpose of their reports was to fully describe and interpret past and present events and conditions as they affect shellfisheries. Such documentation will allow decision makers to avoid repetition of past mistakes. It will assist them to put into position those strategies and plans providing for continued resource productivity while assuring that ecologic and economic compatibility are sustained.

The symposium was very well attended. Several meaningful and provocative subjects related to the symposium's theme were brought to the fore, either as parts of the paper presentations or during discussion periods. Some fascinating historical aspects were uncovered -- some going back to the times of antiquity -- the Crusades, for example, and the landings of Columbus in the "New World", and the findings of kitchen middens in many locations where primitive tribes lived. The growth of aquaculture, its ramifications, and the impact it has or may have on traditional fisheries and habitat integrity, the discovery or recognition of exploitable new molluscan stocks, alternative resource species, marketing and trade issues, pollution, and societal-political-economic influences were included as prominent topics covered -- all of which led to interpreting dialogue and promises of later contacts among speakers and the audience. In summary, the objectives of the symposium were fully achieved.

Full papers that will result from the reports given during the symposium will be compiled, reviewed, and published in a special issue of the *Marine Fisheries Review*, as a monograph. For further information about the symposium, contact Clyde L. MacKenzie, Jr., NOAA/NMFS Sandy Hook Laboratory, Highlands, New Jersey 07732, Phone 908-872-3019.

Notes From Abroad...

Mel Carriker passed along this account of his trip to Italy:

The 11th International Malacologica Congress, Unitas Malacologica, was held in the ancient, picturesque city of Siena, Italy, August 31 - September 4, 1992. The meeting was organized by Folco Giusti, President, and Giuseppe Manganelli, General Secretary, of the Organizing Committee, and held in the spacious, functional facility of the Complesso Didattico degli Istituti Biologici, Facolta di Medicina e Chirurgia, University of Siena, located just outside the massive, old city walls surrounding Siena.

Many countries, mainly European, were represented. There were four and a half days of papers and an impressively large display of posters. A total of 275 authors and co-authors participated. Excursions were held in the middle of the week. The opening plenary lecture on molecular genetics and taxonomic discrimination was delivered in his usual capable form by George M. Davis. There followed during the week, symposia on freshwater bivalves, molluscan reproduction, molluscan palaeontology, molluscan behavior, molecular techniques and molluscan phylogeny, and a fitting memorial to Alan Solem on diversity and conservation of molluscs. There were two workshops, one on medical and applied malacology, and a second on systematics and ecology of opisthobranchs; and in addition many individual papers on marine and non-marine molluscan phylogeny and systematics. Abstracts of papers given at the meeting, edited by F. Giusti and G. Manganelli and published by the University of Siena, and a well prepared program of the meeting, were distributed to participants at the time of registration.

Outstanding special events included an evening organ recital in the magnificent Siena Cathedral, and a closing social dinner in one of the narrow, cobblestone-paved streets of Siena. Rain half-way through dinner scattered participants into neighboring buildings, enhancing communication and accelerating the flow of justly famous Italian wine.

The next meeting of Unitas Malacologica will take place in Vigo, northwestern Spain, near the coast, in 1995.

DON'T FORGET: ABSTRACT DEADLINE FOR PAPERS FOR THE 1993 NSA ANNUAL MEETING IS JANUARY 15, 1993!!

FIRST, LAST AND ONLY CALL FOR PAPERS for the 1993 Annual Meeting of the National Shellfisheries Association, May 30 - June 4, 1993, Portland, Oregon.

● INSTRUCTIONS FOR ABSTRACT FORMS

ABSTRACTS FOR ALL PRESENTATIONS (ORAL AND POSTER) MUST REACH THE PROGRAM CHAIRMAN BY JANUARY 15, 1993.

At its annual meeting, the National Shellfisheries Association will have papers for both oral and poster presentation. Any individual may submit as many abstracts as she or he desires; however no more than two (2) abstracts from any author or co-author will be accepted for presentation. Submission of the same subject for oral or poster presentation is permitted, however, only one of the two will be accepted. For poster sessions, tackboards will be provided but no electrical outlets, projection equipment, or tables will be available.

Abstracts will be selected for inclusion in the program on the basis of significance in the field of shellfish research, informative nature, and broad interest. Subject matter must not have been previously published. The first author will be notified in writing concerning the acceptance of the abstract for inclusion in the program.

A page charge of \$20.00 must be submitted with each abstract. This payment will be returned only if the abstract is not accepted. Please note that the abstracts, abstract fee and student endowment fund application (if applicable) are to be sent to Program Chairman Tom Soniat (address below). The Abstract Fee must be paid in order for your abstract to be published in the *Journal of Shellfish Research*.

● PREPARING THE ABSTRACT

All accepted abstracts will be re-typed and included in the *Journal of Shellfish Research*, therefore, it is not necessary to have abstracts in camera ready form. However, it is essential that abstracts comply with the instructions below.

Type the title (all capitals) and name(s) of author(s) (all capitals for last names), indenting lines and punctuating as shown in the accompanying example. An asterisk (*) should be placed after the last name of the author presenting the paper. DOUBLE SPACE all typing on the abstract form. Do not leave more than one space between the title information and the body of the abstract. The body of the abstract should not be indented, although paragraphs other than the first should begin three (3) spaces in from the margin.

The entire abstract must be placed within the rectangular outline of the abstract form. THE SPACE IS DESIGNED TO ACCOMMODATE AN AVERAGE OF 250 WORDS TYPED DOUBLE-SPACED WITH A STANDARD ELITE TYPEFACE. When using abbreviations, spell out in full use first, followed by the abbreviation in parentheses. Any symbols, such as Greek letters, not in your typing ele-

ment may be drawn by hand in black ink. PLEASE PROOFREAD ABSTRACTS BEFORE SUBMISSION.

The accompanying abstract form can be used for both oral and poster presentations; specify the preferred method of presentation in the space provided on the form. Check the appropriate box if the first author is a student or recent graduate and is eligible for the Thurlow C. Nelson Award.

In order to maintain and expand student participation in the Association, a Student Endowment Fund has been established. For those students wishing to apply for travel support for presentation of a paper or poster, please fill out an Endowment Fund application form and submit it with your abstract fee to the Program Chairman.

Prepare one original abstract form and send it with two (2) copies, your personal or institutional check for \$20.00 (checks must be drawn on a US bank and made out to NSA), and your Student Endowment Fund application (if applicable) to Program Chairman Tom Soniat at the address below. PLEASE NOTE: NO ABSTRACTS WILL BE ACCEPTED VIA FAX TRANSMISSION; YOUR ABSTRACT MUST REACH PROGRAM CHAIRMAN TOM SONIAT NO LATER THAN 5:00 P.M., JANUARY 15, 1993. If you desire an acknowledgement of the receipt of your abstract, please enclose a self-addressed, stamped envelope.

SEND ABSTRACT, ABSTRACT FEE AND STUDENT ENDOWMENT FUND APPLICATION (if applicable) TO:

Dr. Thomas Soniat, NSA Program Chair
Department of Biological Sciences
Nicholls State University
Thibodaux, LA 70310

NATIONAL SHELLFISHERIES ASSOCIATION STUDENT ENDOWMENT FUND

The National Shellfisheries Association Student Endowment Fund was established in 1989 to maintain and expand the participation of students in the Association. Contributions for the Fund are tax-deductible and are used to defray the costs associated with presenting oral and poster presentations at the Annual meeting. The funds are administered by an appointed committee which reviews student applications and makes recommendations for disbursement of funds.

GUIDELINES

1. Contributions to the Fund will be accepted from members and non-members throughout the year. Contributions will be solicited through the Association's Quarterly Newsletter, direct mailings, and personal contacts. The non-profit nature of the Association and potential tax benefits of donations should be emphasized. The Executive Committee can elect to transfer Association funds to this account as well.

(continued on page 6)

*NSA Student Endowment Fund
(continued from page 5)*

2. Funds will be maintained in a separate interest-bearing bank account under the management of the Treasurer. The account will have the same signators as do other accounts of the Association. Costs of administering the Fund will be borne by the general funds of the Association.

3. Unless otherwise stated by the donor, all funds will be held as principal in the Endowment Fund; this principal will be used only to generate interest. Only 80% of the interest can be disbursed; the remaining 20% of earned interest will be used to augment the principal of the Fund and as a hedge against inflation.

4. Endowment funds can be used to defray costs incurred by students presenting papers at the Association's Annual Meeting. Examples of costs include travel, lodging, drafting and slide preparation, etc.

5. If the donor stipulates how their contribution is to be applied, all of that donation should be used for the stipulated purpose although the Endowment Committee will be responsible for choosing the recipient of the award. If there are no student papers qualifying for the stipulated support, the funds will be held over for the next year or their use respecified by the donor.

6. The NSA abstract form will be accompanied by instructions for filing an application for support from the Fund. The application should consist of: (a) the abstract itself, (b) a single page form to be filled out by the applicant indicating the details of costs for which support is sought, relevant academic accomplishments such as publications, thesis title, etc., and signatures of the applicant and an advisor who can confirm the applicant's status as a bona fide student, (c) a curriculum vitae or resume, and (d) a letter of recommendation from the advisor.

7. At each Annual Meeting, the Executive Committee will appoint an Endowment sub-committee to examine all student abstracts and applications submitted for the next Annual Meeting. The Endowment Committee will consult the Treasurer on availability of funds, then make recommendations to the Executive Committee for awards. The Endowment Committee will submit brief minutes of meetings and a summary of applications received and actions taken. The Treasurer's annual report should include a separate section on the Endowment Fund.

8. The Treasurer will disburse award checks directly to successful applicants as soon as possible prior to the Annual Meeting. If a recipient cannot use the funds as intended, the check or funds must be returned immediately.

**STUDENT ENDOWMENT FUND APPLICATION FOR THE 1993 ANNUAL
MEETING OF THE NATIONAL SHELLFISHERIES ASSOCIATION**

Fill out a copy of the application form and send it along with your abstract to: NSA Program Chairman Tom Soniat, Department of Biological Sciences, Nicholls State University, Thibodaux, LA 70310, USA. Applications and abstracts are due **no later than January 15, 1993**. In order to defray meeting costs for as many students as possible, funding requests are limited this year to hotel lodging and meeting registration fees. Should additional funds become available, other requests will be considered by the Endowment Fund Committee.

Student name and signature _____
(please print then sign)

Advisor's name and signature _____
(please print then sign)

Address _____

Telephone number _____

Institutional affiliation _____

Costs for which support is sought _____

Title of enclosed abstract _____

Relevant academic accomplishments: (c.v. or resume will suffice) _____

Endowment Fund applicants should check to be sure that the following items are included in the packet to be sent to the Program Chairman: one (1) original abstract form and two (2) copies, US\$20.00 abstract fee (US bank check payable to NSA), completed Endowment Fund application form, letter of recommendation, curriculum vitae or resume.

Abbreviated Title: _____
(seven words or less)

First Author's Mailing Address: _____
(if different from above) _____

Telephone: _____

Preferred Method of Presentation: _____ Oral _____ Poster _____ Either
IS FIRST AUTHOR A STUDENT OR RECENT GRADUATE? _____ YES _____ NO
(all student authors are eligible for T.C. Nelson Award)

USE OF DISPERSION MODELS FOR PREDICTION OF BIVALVE LARVAL RECRUITMENT

SIDDALL,* Scott E., Malouf, Robert E., Marine Sciences Research Center, State University of New York, Stony Brook, NY 11794; VIEIRA, Mario E., Chesapeake Bay Institute, Johns Hopkins University, Baltimore, MD 21218.

In support of efforts to manage Long Island's economically important fisheries for the hard clam (*Mercenaria mercenaria*) and the bay scallop (*Argopecten irradians*), computer models calibrated against hydrographic data have been developed to predict distribution of larvae in the Great South Bay and the Peconic Bays Estuary. The goal of the research in the Great South bay was to evaluate the potential contributions to recruitment from populations of hard clams in uncertified waters and in man-made "spawner sanctuaries." This quantitative evaluation required the simulation of advective and diffusive dispersal of particles whose number was reduced over time to simulate larval survival. Results of the model forecast locations of maximum recruitment from chosen sanctuary sites. Town shellfish management programs have created spawner sanctuaries at sites predicted to result in maximum recruitment in areas favorable for growth and survival.

The goal of the modeling for the Peconic Bays Estuary was to predict sites for spawner sanctuaries of bay scallops which will be created to help rebuild scallop populations following an apparent failure of natural recruitment caused by an extraordinary phytoplankton bloom in 1985. This more qualitative evaluation of recruitment required forecasting the dispersal of larvae from proposed spawner sanctuaries and hindcasting the locations of spawning stocks whose larvae recruit to areas favorable for growth and survival. The utility of this modeling approach in shellfish management is discussed in view of the physical and biological assumptions inherent in the models.

Abbreviated Title: Dispersion models of bivalve recruitment
(seven words or less)

First Author's Mailing Address: same
(if different from above) _____

Telephone: (516) 632-8668

Preferred Method of Presentation: X Oral Poster Either

IS FIRST AUTHOR A STUDENT OR RECENT GRADUATE? YES X NO
(all student authors are eligible for T.C. Nelson Award)

NSA MEMBERS' 30% DISCOUNT PROGRAM
 for Elsevier's
"DEVELOPMENTS IN AQUACULTURE AND FISHERIES SCIENCE" Series

VOL.	Author	Title	List Price	Member Price
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2	Korringa	Farming the Cupped Oysters of the Genus <u>Crassostrea</u> (1976)	93.25	65.30
3	Korringa	Farming the Flat Oysters of the Genus <u>Ostrea</u> (1976)	93.25	65.30
4	Korringa	Farming Marine Fishes and Shrimps	93.25	65.30
7	Lutz	Mussel Culture and Harvest: A North American Perspective (1980)	120.00	84.00
9	Boyd	Water Quality Management for Pond Fish Culture (1982)	111.00	77.70
13	Allen, et al.	Bioeconomics of Aquaculture (1984)	138.50	96.95
16	Bird & Benson	Seaweed Cultivation for Renewable Resources (1987)	147.00	102.90
17	Sindermann & Lightner	Disease Diagnosis and Control in North American Marine Aquaculture (1988)	126.50	88.55
18	Saila, et al.	BASIC Fishery Science Programs (1988)	87.00	60.90
19	Manzi & Castagna	Clam Mariculture in North America (1989)	128.75	90.15
20	Huguenin & Colt	Design and Operating Guide for Aquaculture Seawater Systems (1989)	83.00	58.10
21	Shumway	Scallops: Biology, Ecology and Aquaculture (1991)	171.50	120.05
22	DeLoach, et al.	Frontiers of Shrimp Research (1991)	103.00	72.10
23	Fast & Lester	Marine Shrimp Culture: Principles and Practice (1991)	160.00	112.00

OTHER ELSEVIER BOOKS OF INTEREST:

Chapman	Wet Coastal Ecosystems (1977)	138.50	96.95
Gall	Genetics in Aquaculture II (1987)	150.50	105.35
Gjedrem	Genetics in Aquaculture III (1990)	125.75	88.00
Hellawell	Biological Indicators of Freshwater Pollution and Environmental Management (1986)	190.00	133.00
Ketchum	Estuaries and Closed Seas (1983)	270.50	189.35
Kramer & Liston	Seafood Quality Determination (1987)	261.25	182.90
Mance	Pollution Threat of Heavy Metals in Aquatic Environments (1987)	138.00	96.60
Michael	Managed Aquatic Ecosystems (1987)	132.00	92.40
Nash	Production of Aquatic Animals (1991)	154.50	108.15
Stadler	Algal Biotechnology (1988)	148.00	103.60
Straskraba	Freshwater Ecosystems (1985)	135.00	94.50

BOOK ORDER FORM

Quantity	Author and Title	NSA Member Price	Total

Orders originating outside the U.S. and Canada will be shipped by SEA MAIL at no extra charge (delivery time > 8 weeks). For AIR MAIL delivery, please add the appropriate additional charge PER BOOK: Central America, \$15.00; Europe and South America, \$20.00; elsewhere in world, \$30.00.

TOTAL ORDER \$ _____

Name and Address:

Make check payable to The National Shellfisheries Association. Payment MUST be in U.S. Dollars (checks drawn on U.S. banks only). Books will be shipped by Elsevier, Postage Paid, within 6-8 weeks of your order; Sea Mail delivery may take longer than 8 weeks.

Send Order Form and Payment to:

Dr. Stephen Tettelbach, Treasurer
National Shellfisheries Association
Southampton College
Long Island University
Southampton, NY 11968 USA

SUPPORT THE NSA STUDENT ENDOWMENT FUND

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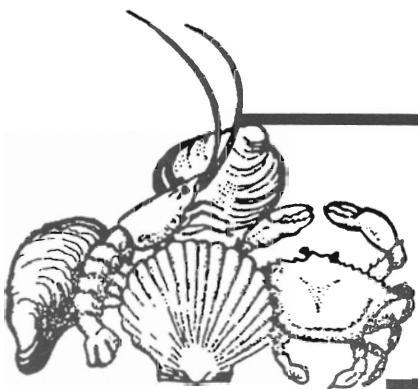
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National Shellfisheries Association
Southampton College, Long Island University
Southampton, NY 11968 USA



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National Shellfisheries Association COOKBOOK

SEND US YOUR FAVORITE RECIPES

All shellfish group will be included. Books will be available at annual meeting in Portland Oregon. May 29—June 4, 1993. to benefit Student Endowment Fund.

Recipes from the Kitchen of: _____

Important: please return this recipe form not later than February, 1993

Abbreviations to use:

tsp. - teaspoon
tbsp. - tablespoon

pt. - pint
lg. - large

oz. - ounce
sm. - small

qt. - quart
c. - cup

lb. - pound
pkg. - package

Shellfish group: _____

Name of recipe: _____

Ingredients

Shellfish group: _____

Name of recipe: _____

Ingredients

Directions

Directions

Send Recipes by February, 1993 to:

Sandy Shumway
Bigelow Laboratory for Ocean Sciences
McKown Point
West Boothbay Harbor, Maine 04575

Dr. Karolyn Mueller Hansen
NSA Quarterly Newsletter
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