

# National Shellfisheries Association

## QUARTERLY NEWSLETTER



Fall 1990

Lewes, Delaware

## FIRST CALL FOR PAPERS - NSA ANNUAL MEETING

The first call for papers for the 1991 NSA annual meeting has been announced by Vice-President and Program Chairman Arnold Eversole. The meeting will be held at the Sonesta Hotel in Portland, Maine, from June 23-27, 1991. Special sessions on the following topics are planned, with session chairs noted:

*Lobster Biology and Ecology -*  
Lew Incze (Bigelow Lab., Maine) and John Pringle  
(DFO, Nova Scotia)

*Economic Analysis for Shellfish Enterprises -*  
Bob Pomeroy (Clemson Univ., South Carolina)

*Oyster Recruitment in the Mid-Atlantic States -*  
Roger Newell (Horn Point Environmental Lab.,  
Maryland)

In addition, there are sessions tentatively scheduled on Biology and Management of Economically Important Crabs, Molluscan Recruitment, Shell Microstructure, and general contributed papers on reproduction, growth, culture, genetics, etc. If you have any ideas or suggestions for these or additional sessions, or if you are interested in organizing a special session in your area of expertise, please contact Arnie Eversole as soon as possible.

### TRADE SHOW SCHEDULED FOR 1991 NSA MEETING

A Trade Show is being planned for the 1991 NSA annual meeting in Portland, Maine. Exhibits will be displayed in the same area as the NSA poster sessions, and exhibits and posters will be readily visible during coffee breaks this year. This is an excellent opportunity to showcase your products and services for a very enthusiastic and interested audience. There are a limited number of spaces available for trade show displays so you are encouraged to reserve your space as early as possible. A display fee of \$150.00 will be charged for each space. For further information and to reserve your space, please contact: Carter Newell, Great Eastern Mussel Farms, Inc., P.O. Box 141, Tenants Harbor, ME, 04860, Phone: (207) 372-6317. Carter expects that all Trade Show slots will be filled by November 1990 so contact him as soon as possible!

## PRESIDENT'S MESSAGE

We are about half-way through the term of the present administration, and progress is being made on a number of issues. John Kraeuter and the Constitution Committee have revised the constitution, primarily to divide the duties of the Secretary-Treasurer among a Secretary and a Treasurer, a more realistic situation given the present work load of the combined position. Please send your ballot on the proposed revisions that you received in the mail to Tom Soniat by November 1, 1990. Mike Castagna and the Publications Committee have been drafting a publication policy for the *Journal of Shellfish Research (JSR)* that will serve as a guide for potential authors and for the editorial board. Dot Leonard and the Membership Committee have been drawing attention to NSA and its benefits in a number of ways. And Arnie Eversole, in his role as Chair of the Program Committee, has been soliciting and fielding proposals for special sessions at our next annual meeting in Portland, ME, June 23-27, 1991 (if you have any ideas, get in touch with him immediately).

We need you to help in two ways, if possible. First, there is a brief questionnaire elsewhere in this issue. NSA is here to serve its members. Please provide your comments and criticisms about the society, its meetings, its officers and committees, and its journal so that we can continue to improve all aspects of the society. Second, if your library does not subscribe to JSR, please ask it to do so. Library subscriptions provide important support and allow us to keep individual subscriptions as low as possible.

Finally, please plan to attend the Portland meeting, and remember that we join the World Aquaculture Society and the Fish Culture Section of the American Fisheries Society in Orlando, Florida, May 21-25, 1992, at Aquaculture '92.

Vic Kennedy

ABSTRACT FORM ENCLOSED --- > > >

## Notes from the Editor of JSR

By now you should all have received your copy of Volume 9(1). You will note that we are continuing to expand and the number of foreign submissions is continuing to increase. In addition, we are now covering a more diverse range of topics. I encourage submission of studies on lesser known/studied species and, as always, I would like to see more papers dealing with crustaceans. If we are not covering one of your pet subjects, please let me know. I spend a considerable amount of time recruiting manuscripts and trying to broaden our scope and distribution and I would like to encourage all of our members to do the same. It's an easy sales pitch! When trying to convince your colleagues to publish their latest results in the *JSR*, point out that our turn-around time is about the fastest in the business and we can usually publish an acceptable manuscript within six months of submission...some are published considerably quicker. Our printing is highly amenable to photographs and the fine detail needed for reproduction of photomicrographs. Our page charges are very reasonable as are the reprints. We have added a handling charge for manuscripts. This is a very real cost and includes postage, xerox (for those who don't send the required number of copies!!), etc. This handling fee (\$20) will only be charged on accepted manuscripts. Promotion of the journal at other conferences is always welcome and we now have some very attractive flyers available to any member willing to distribute them. If you are going to a meeting where these might be distributed please notify me (address on back cover of the Newsletter) and I'll see that you get a supply.

Finally, reviewers are always welcome. Please let me know what topics you are willing to review. As always, I welcome your comments, criticisms and suggestions.

Sandy Shumway

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### Short Communications.....

From The Lincoln County News, Damariscotta, Maine, May 17, 1990:

"Dr. Herbert Hidu, a professor of animal and veterinary sciences at the University of Maine at the Darling Center in Walpole, has been awarded the Presidential Public Service Achievement Award by the university. The award, established in 1983, is for excellence in teaching and research and is given annually to a University of Maine faculty member or member of the professional staff.

Professor Hidu, from Wiscasset, is best known for his pioneering research work in the area of polyploidy. Hidu is quick to point out that much of the credit goes to his students and states that his secret "is finding good students and letting them do their thing". Hidu also gives enormous credit to Sam Champman, a Darling Center aquaculture specialist, who started the center's soft shell hatchery.

Dr. Hidu received his Ph.D. from Rutgers in 1967 and began his professional career as a fisheries biologist with the U.S. Bureau of Commercial Fisheries in Milford, CT. He began working at the University of Maine in 1970 as an assistant professor in the Department of Oceanography. Dr.

Hidu is known as an inspiring teacher and has served on numerous advisory committees for graduate students. Many of his former students are leaders in the field of aquaculture. On five occasions, his graduate students have won the Thurlow C. Nelson Best Student Paper Award given at the annual meeting of the National Shellfisheries Association.

Dr. Hidu is active in a wide variety of scientific and research organizations, including the National Shellfisheries Association, the New England Estuarine Research Society, and the Northeast Aquaculture Consortium of the USDA." Congratulations!!!

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### University of Southwestern Louisiana Named Headquarters for International Crawfish Association

The University of Southwestern Louisiana has become the Secretariat for the International Association of Astacology, the only international association dedicated to the study of crawfish biology. This action was taken during the recent international IAA Symposium in Baton Rouge. Dr. Jay V. Huner, Director of the USL Crawfish Center, will be manager of the office. Dr. Huner is immediate past-Secretary/Treasurer of the Association and assumed the position of President-elect at the conclusion of the meeting. He will hold the post until 1992 when the IAA will hold its next international symposium in Reading, England. Other new officers include President David Holdich of Nottinham, England and Secretary/Treasurer Jostein Skurdal of Lillehammer, Norway. IAA dues are \$12.50 for students, \$25.00 for regular members, and \$50.00 for business members. Membership covers the period between international-symposia, two years in this case. Members receive the quarterly IAA newsletter and a membership directory. Inquiries about IAA may be directed to:

The International Association of Astacology  
Secretariat

P.O. Box 44650

University of Southwestern Louisiana

Lafayette, LA 70504 USA Phone: (318) 231-5239

FAX: (318) 231-5395

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### Joint Meeting of PCOGA and NSAPCS

The 44th annual meeting of the Pacific Coast Oyster Growers Association and the National Shellfisheries Association Pacific Coast Section was held on September 27-29, 1990 at the Shilo Inn Suites Hotel in Portland, Oregon. A diverse number of topics were covered and included: Pacific Coast Shellfish Industry and Regulatory Overview; Broodstock Development, Polyploidy, and Culture-Technology of Oysters; Crustacean Biology; Sea Urchin Biology and Management; Scallop, Abalone, and Clam Aquaculture; Shellfish Pathology; and a technical section on Emerging Commercial Species. NSA Pacific Coast Section elected the following Officers for the 1990-1991 year: Edward Melvin, Chairman; David Armstrong, Vice-Chairman; Sandra Downing, Secretary/Treasurer; Christine Hodgson and John Richards, Members-at-large. Thank you to all those who helped to organize a great meeting!!



**PRELIMINARY CALL FOR PAPERS** for the 1991 Annual Meeting of the National Shellfisheries Association, June 23-27, 1991, Portland, Maine

### ● INSTRUCTIONS FOR ABSTRACT FORMS

#### **ABSTRACTS FOR PAPERS MUST REACH THE PROGRAM CHAIRMAN BY FEBRUARY 15, 1991**

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 abstracts from any author or co-author will be accepted for presentation. Submission of the same subject for a paper 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 fields 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. An additional charge of \$10.00 will be assessed if an accepted abstract has to be re-typed because of errors, etc.

### ● PREPARING THE ABSTRACT

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

Type the title (all capitals) and name(s) of the 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 at first use, followed by the abbreviation in parentheses. Any symbols, such as Greek letters, not in your typing element 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 therefore eligible for the Thurlow 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 the Endowment Fund application form and submit it with your abstract.

Prepare one original abstract form and send it with two (2) copies and your personal or institutional check for \$20.00 (checks must be drawn on a US bank and made out to NSA) to the Program Chairman at the address below. Additional abstract forms may be obtained from the Program Chairman. All abstracts MUST reach the Program Chairman NO LATER THAN 5:00 P.M., FEBRUARY 15, 1991. If you desire an acknowledgement of the receipt of your abstract, please enclose a self-addressed, stamped envelope.

#### **Send all abstracts to:**

Dr. Arnold Eversole  
Department of Aquaculture, Fisheries and Wildlife  
Clemson University  
Clemson, SC 29634-0362 USA

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#### **NATIONAL SHELLFISHERIES ASSOCIATION STUDENT ENDOWMENT FUND**

Objective: to maintain and expand student participation in the Association

Approach: establish an Endowment Fund by soliciting charitable contributions from members and non-members. Appoint or elect a committee to administer the endowment fund and recommend disbursements. Disburse funds as necessary and when available to meet the above objectives.

#### **GUIDELINES**

1. Contributions to the Fund will be accepted from members and non-members throughout the year. Contributions will be solicited through the Associations 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.

2. Funds will be maintained in a separate, interest-bearing bank account under the management of the Secretary-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.

(continued on page 4)

*NSA Student Endowment Fund*  
(continued from page 3)

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 a donor stipulates how their contribution is to be applied, all of that donation should be used for the stipulated purposes, however 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 student indicating the details of costs for which support is sought, relevant academic accomplishments such as publications, thesis title, etc., and signatures of the student and an advisor who can confirm the applicant's status as a bona fide student. In addition, a letter of recommendation from the advisor may also be submitted.

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

8. The Secretary-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

Fill out a copy of the application blank below or provide the requested information on a separate sheet of paper. Mail your application WITH YOUR ABSTRACT by February 15, 1991 to NSA Program Chairman Arnold Eversole, Department of Aquaculture, Fisheries and Wildlife, Clemson University, Clemson, SC 29634-0362, USA.

Student Name: \_\_\_\_\_

STUDENT SIGNATURE

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

ADVISOR'S NAME AND SIGNATURE  
(please print name)

Institution: \_\_\_\_\_

Telephone: \_\_\_\_\_

Costs for which support is sought: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Title of enclosed abstract: \_\_\_\_\_  
\_\_\_\_\_

Relevant academic accomplishments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

First author's mailing address if different from above:

Same

First author's telephone number:

(516) 632-8668

Preferred method of presentation:

☒ Oral

☐ Poster

☐ Either

First author is a student or recent graduate?  
(eligible for Nelson Award)

☒ No

☐ Yes

Abbreviated title: (seven words or less):		
First author's mailing address if different from above:		
First author's telephone number:		
Preferred method of presentation:	<input type="checkbox"/> Oral	<input type="checkbox"/> Poster <input type="checkbox"/> Either
First author is a student or recent graduate? (eligible for Nelson Award)	<input type="checkbox"/> No	<input type="checkbox"/> Yes

# NSA MEMBER QUESTIONNAIRE

Please fill out this brief questionnaire and return it as soon as possible (preferably by mid-November; questionnaire may be photocopied).

1. How important are the following to you? (please circle your choice)  
1 - very      2 - somewhat      3 - slightly      4 - not  
The society as a whole?      1      2      3      4  
The annual meeting?      1      2      3      4  
The Journal of Shellfish Research?      1      2      3      4
2. Have the dates of the recent meetings been satisfactory?      yes      no  
If not, what dates are best for you? \_\_\_\_\_
3. Have the costs of the recent meetings been too high?      yes      no  
If so, how would you suggest that costs be trimmed? \_\_\_\_\_
4. Has the content of recent meetings been of generally high quality?      yes      no  
If not, how might the content be improved? \_\_\_\_\_
5. Is JSR generally useful to you?      yes      no  
If not, how could it be improved? \_\_\_\_\_
6. What do you think of the quality of recent papers in JSR? \_\_\_\_\_
7. Have you published in JSR?      yes      no
8. Would you submit your best work on shellfish to JSR?      yes      no  
If not, why not? \_\_\_\_\_
9. Is there anything else you would like to tell us about NSA, the annual meeting, officers or committees, or the journal?  
\_\_\_\_\_  
\_\_\_\_\_
10. Do you think the terms of officers need to be changed?      yes      no  
If so, how? \_\_\_\_\_
11. What is your primary work activity?  
Research scientist:    academia \_\_\_\_\_ industry \_\_\_\_\_ government \_\_\_\_\_  
Manager \_\_\_\_\_ Administrator \_\_\_\_\_  
Commercial harvester \_\_\_\_\_ Aquaculturist \_\_\_\_\_  
Graduate student \_\_\_\_\_ Educator \_\_\_\_\_  
Other \_\_\_\_\_

NOTE: NSA presents the David Wallace Memorial Award to that member of NSA who has had outstanding success in bringing shellfish scientists and industry officials together for the benefit of shellfisheries in general. Do you have a nominee?

Name and position:

Thank you for your comments and advice. Please return this questionnaire to:

Vic Kennedy  
NSA President  
P.O. Box 775  
Cambridge, MD 21613 USA

## Meetings/ Conferences/ Courses

### *Shellfish Depuration Course*

Shellfish Testing Services (STS) is offering an intensive one-day seminar on commercial shellfish depuration in Orlando, Florida on November 2, 1990. The seminar will provide shellfish producers and buyers with practical information on designing, operating and monitoring a commercial shellfish depuration facility based on National Shellfish Sanitation Program guidelines. For more information, please contact:

Dr. Ken Kasweck  
Shellfish Testing Services  
Box 541  
Grant, Florida 32949  
Phone: (407) 727-1623

### *1990 Chesapeake Research Conference*

The Chesapeake Bay Program is sponsoring the 1990 Chesapeake Research Conference to be held at the Radisson Plaza Lord Baltimore Hotel, Baltimore, Maryland, on December 4-6, 1990. The title of this years conference is: New Perspectives in the Chesapeake System: A Research and Management Partnership. Plenary sessions will examine recent research findings from the following areas: coastal ecosystem models; functional role of estuarine benthos; effectiveness of best management practices; ecological risk assessment; economics of pollution control; ecological value of non-tidal wetlands; and, groundwater as a source of nutrients and contaminants to the Bay. For more information, please contact:

Chesapeake System Research and Management Conference

c/o Chesapeake Research Consortium, Inc.  
P.O. Box 1280  
Solomons, MD 20688  
Phone: (301) 326-6700  
FAX: (301) 326-6773

### *1991 Texas Aquaculture Association Conference*

The 1991 Texas Aquaculture Association Conference and Trade Show is scheduled for January 9-12, 1991 at the Adams Mark Hotel in Houston, Texas. The conference is co-sponsored by the Texas Agricultural Extension Service. The conference will feature technical presentations, trade displays, a one-day U.S./Latin American Aquaculture Congress, and a one-day workshop on Bird Depredation. For more information, please contact:

Texas Aquaculture Association  
P.O. Box 13285  
Capitol Station  
Austin, TX 78711  
Phone: (512) 474-4600  
FAX: (512) 474-5263

### *Marine Invertebrate Cell Culture*

The Invertebrate Division of the Tissue Culture Association and the Society for Invertebrate Pathology will co-sponsor a workshop on Marine Invertebrate Cell and Tissue Culture as part of the World Congress on Cell and Tissue Culture in Anaheim, California, on June 16-20, 1991. The workshop will explore the possible reasons for the lack of

success, despite vigorous attempts over a period of more than forty years, to continuously grow lines of cells derived from tissues of marine invertebrate species. For more information, please contact:

Aaron Rosenfield  
NMFS, Northeast Fisheries Center  
Oxford Laboratory  
Oxford, MD 21654  
Phone: (301) 226-5193  
FAX: (301) 226-5925

### *NSA Technical Session*

A technical session on the history, biology, and management of economically important crab species from North and Central America is being planned for the 1991 NSA Annual Meeting to be held in Portland, Maine on June 23-27. Species to be covered can include not only those crab species used for food, but also those that are of economic importance for medical and industrial purposes and those that may be considered nuisance species. For further information on participating in the session, please contact:

Dr. Aaron Rosenfield  
NMFS, Northeast Fisheries Center  
Oxford Laboratory  
Oxford, MD 21654  
Phone: (301) 226-5193

### *Larvi '91*

The Fish and Crustacean Larviculture Symposium "larvi '91" will be held on August 27-30, 1991 in Ghent, Belgium. The symposium is being organized by Patrick Sorgeloos and Patrick Lavens of the State University in Ghent, Belgium, Frans Ollevier of the Catholic University of Leuven, Belgium, and Edmonde Jaspers of the Institute for Marine Scientific Research, Bredene, Belgium. The scope of the symposium includes evaluation of recent progress in larviculture as well as identification of future needs for successful hatchery outputs (e.g. dietary requirements, egg and larval quality, pathology and disease control). For more information, please contact:

Laboratory of Aquaculture and Artemia Reference Center

State University of Ghent  
Rozier 44  
B-9000 Ghent, Belgium  
Phone: +32-91-257571 ext. 4219 or 4247  
FAX: +32-91-236406

### *Third Asian Fisheries Forum*

The Asian Fisheries Society has announced a call for papers for the Third Asian Fisheries Forum to be held in Singapore on October 26-30, 1992. The forum will be co-sponsored by the National University of Singapore, the Malaysian Fisheries Society, the South East Asian Fisheries Development Center, The Republic of Singapore, and the World Aquaculture Society. Topics to be covered include: aquaculture; diseases; genetics; capture fisheries; nutrition; reproduction; post-harvest technology; etc. Symposia on Hormones in Aquaculture, Intensive Farming Systems, and Molecular Biology and Biotechnology of Aquatic Organisms are also planned.

(continued on page 7)



(continued from page 6)

For more information on the forum, please contact:  
Chairman

Local Organizing Committee  
c/o ITP SERVICES PTE. LTD.  
994 Bendemeer Road  
#04-03 Singapore 1233  
Republic of Singapore

For more information on the Asian Fisheries Society,  
please contact: Executive Secretary, Asian Fisheries  
Society, MC P.O. Box 1501, Makati, Metro Manila, Philip-  
pines.

## Publications of Interest

*Genetics in Aquaculture III: Proceedings of the Third In-  
ternational Symposium on Genetics in Aquaculture.*

Symposium held at Trondheim, Norway, June 20-24,  
1988; edited by T. Gjedrem. Contents: Biotechnology, Gene  
Markers, Immunobiology, Breeding Plans, Phenotypic and  
Genetic Parameters, Selection, Ploidy Manipulation and  
Performance, New Fish Species. US\$112.75 in Canada and  
the United States.

Ordering information:

Elsevier Science Publishing Co., Inc.  
P.O. Box 882  
Madison Square Station  
New York, NY 10159 USA

### New Journal

*Journal of Applied Aquaculture*, to be published by  
Haworth Press. Editor: Douglas Tave, Ph.D.

The *Journal of Applied Aquaculture* is a quarterly,  
refereed, international journal devoted to innovative and sig-  
nificant research and ideas that will advance knowledge  
about the production, domestication, and husbandry of  
aquatic animals and plants. Papers are now welcome for  
review; please contact the editor for "Instructions for  
Authors" brochure. Volume 1(1) is scheduled for publica-  
tion in Spring 1991. Subscription rates per year: \$28 for in-  
dividuals, \$48 for institutions, \$75 for libraries. For more  
information, please contact:

Dr. Douglas Tave, Editor  
Journal of Applied Aquaculture  
University of Arkansas at Pine Bluff  
Pine Bluff, Arkansas 71601 USA

### Aquaculture Programs in Canada

The Aquaculture Association of Canada (AAC) has  
recently prepared a Directory of Canadian Education and  
Training Programs in Aquaculture and Related Fields. The  
directory, published in June 1990, was prepared by the AAC  
Student Affairs Committee to aid students who are con-  
templating a career in aquaculture and related fields. For  
more information, please contact:

Cyr Couturier and Kim Harrison  
Aquaculture Association of Canada  
P.O. Box 1987  
St. Andrews, NB E0G 2X0  
Phone: (506) 529-8854  
FAX: (506) 529-4274

## Employment

### Plankton Laboratory Technicians

Available immediately - two technician positions (BS or  
MS level) in plankton laboratory. Duties include field sam-  
pling and identification of larval marine fish and inver-  
tebrates (particularly decapod crustaceans). For more  
information, please telephone:

James Hanifen  
Louisiana Department of Wildlife and Fisheries  
Baton Rouge, Louisiana  
Phone: (504) 765-2382

### Postdoctoral Position: Rosenstiel School of Marine and Atmospheric Science

A postdoctoral fellowship is available for up to two years  
starting June 1991. Applications are welcome in any facet  
of research related to Marine Biology and Fisheries. The  
Division currently has 23 faculty covering a wide range of in-  
terests. Salary: \$30,000. Apply by December 1, 1990, to:

Dr. Peter Lutz, Chairman  
Division of Marine Biology and Fisheries  
Rosenstiel School of Marine and Atmospheric Science  
4600 Rickenbacker Causeway  
Miami, FL 33149 USA  
Phone: (303) 361-4177

### Marine/Estuarine Ecologist: U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers Waterways Experi-  
ment Station in Vicksburg, Mississippi, is seeking a Marine  
or Estuarine Ecologist for the Coastal Ecology Group of the  
Environmental Laboratory. The Coastal Ecology Group's  
projects are field and laboratory oriented research on the ef-  
fects of engineering activities on the Coastal Zone.  
Qualifications: MS or Ph.D. in benthic ecology or fisheries.  
Salary: GS-9/11 for MS (\$24,705-29,891) and GS-11/12 for  
Ph.D. (\$29,891-35,825). For more information, please con-  
tact:

Mr. Jack Pullen  
Waterways Experiment Station  
ATTN: CEWES-ER-C  
3909 Halls Ferry Road  
Vicksburg, MS 39180-6199 USA  
Phone: (601) 634-3650

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### Photographs Wanted!

Sandy Shumway, Editor of the Journal of Shellfish  
Research, is looking for photographs to grace the cover JSR.  
Should you have any photos that would make for an interest-  
ing cover of JSR, please send them to Sandy (address on the  
back cover of this Newsletter) or call her at (207) 633-5572  
for more details.

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Submission deadline for next issue of Newsletter is Decem-  
ber 1, 1990.

NSA Quarterly Newsletter  
College of Marine Studies  
University of Delaware  
Lewes, DE 19958



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## Officers, Committee Chairs and Staff of the National Shellfisheries Association

Dr. Victor S. Kennedy, **President,**  
**NSA Representative to the Aquaculture**  
**'92 Steering Committee**  
Horn Point Environmental Laboratories  
University of Maryland  
Cambridge, MD 21613  
(301) 228-8200

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