

# National Shellfisheries Association

## QUARTERLY NEWSLETTER



Fall 1991 - Call For Papers

LEWES, DELAWARE

### President's Message

I have just returned from an arduous but rewarding visit to the Pacific northwest where I spent 2 days in Portland, Oregon visiting prospective hotels for our 1993 annual meeting. From there it was on to Battelle to bring our President-Elect, Ralph Elston, up-to-date on NSA activities and then on to Nanaimo where I visited with Neil Bourne and Barb Bunting and started planning for the 9th International Pectinid Workshop to be held in Nanaimo in 1993 (yes, we are trying to schedule them close together). From there it was a ferry ride to attend the annual meeting of the Pacific Coast Oyster Growers Association and the Pacific coast section of NSA in Vancouver. The meeting was well organized and attendance was high. It was a treat to see scientists, regulators and growers working so closely together and to see first-hand how beneficial the exchange of information can be to all concerned. Tim Smith (PCOGA) proudly announced at dinner that Washington is now the leading producer of oysters in the United States. I believe we can all learn a lot from the combined efforts of these groups.

We now have two new members: Trevor Jones and Michael Banks. Their presentations were deemed the best student papers by a committee organized by John Richards (University of California). Several people picked up membership forms and I would like to strongly encourage our West coast colleagues to join the NSA. We have a strong contingent in Washington and Oregon with loyal supporters in Canada and California. How about Alaska and Hawaii? Tell your colleagues about us and encourage them to join. I was very impressed with the research being carried out in these areas and would very much like to see a greater representation at our annual meetings.

I am now actively soliciting recipes for inclusion in our planned cookbook. Dot Leonard has very generously offered to help in this endeavor and has already amassed quite a collection of mouthwatering delights. It will be in our best interest to have this available for sale at the Orlando meeting so please send along your favorite concoction NOW!!!

Spring will be here before you know it and Aquaculture '92 is just around the corner. Note that the CALL FOR PAPERS in this Newsletter is the ONLY CALL FOR PAPERS. All indications are that this meeting will be a good one and you can combine it with a vacation in DisneyWorld, so start planning now. See you there!!

### Aquaculture '92: Only Call for Papers Announced

The Call for Papers for Aquaculture '92, the triennial meeting of the National Shellfisheries Association, the World Aquaculture Society and the American Fisheries Society (Fish Culture Section), has been announced by the Crest Organization, the official organizers of the 1992 meeting. All NSA members should have received the Aquaculture '92 Call for Papers and Instructions for Abstracts which were sent as a separate mailing to all members in mid-October. Please note that this is the **ONLY** call for papers that will be published. The abstract deadline is also very early this year - **December 15, 1991 is the last date that your abstract will be accepted** so please be sure to have yours submitted on time. For additional information concerning submission of abstracts please turn to page 6 of this Newsletter.

### New Aquaculture Resource Center Opens

The Delaware Department of Agriculture has provided funds to establish the Delaware Aquaculture Resource Center at the University of Delaware's College of Marine Studies Lewes campus. John Ewart, Aquaculture Specialist with the Delaware Sea Grant Marine Advisory Service, is coordinating operation of the new center. A 1990 report from the Delaware Aquaculture Task Force concluded that the potential contribution of aquaculture to the state's future economic development would be significant and recommended that Delaware develop a comprehensive program to promote and support growth of an aquaculture industry. The Resource Center will act as a clearinghouse for aquaculture information and is available for use by the public. For more information contact:

Mr. John Ewart  
Delaware Sea Grant Marine Advisory Service  
College of Marine Studies  
University of Delaware  
Lewes, DE 19958  
Telephone: (302) 645-4060.

## USDA National Research Initiative

The following is a condensed version of Dr. John Patrick Jordan's address to the National Shellfisheries Association members at the Business Meeting and Luncheon held during the June 1991 NSA Annual Meeting in Portland, Maine. Dr. Jordan discussed the role of aquaculture in the USDA's National Research Initiative. More information on the Initiative will be presented in future issues of the NSA Quarterly Newsletter.

"It gives me a great deal of pleasure to be with you today as you discuss the future direction of the shellfish industry. The challenges and opportunities, the pain of change and excitement of new frontiers are a part of any evolving industry.

The challenges facing the shellfish industry are not necessarily the problems of the shellfish industry alone: conflicting needs of society, conflicting needs within an industry and the urgent need to balance all of those claims against an atmosphere of finite resources and a fragile environment are surely the lot of many sectors of business. But the short time span that seems allotted for moving the shellfish industry from a venture solely of the hunter/gatherer fishing in the wild type to a technology-based commercial aquaculture production system is perhaps unique.

It does appear that the laws of nature and the edicts of man will bring about many changes in the shellfish industry. The winds of change are blowing and with them comes the need for this industry to address the direction in which those winds will travel... and it had better be done soon. I don't have to point out to this group the massive decline in the various shellfish industries in the Northeast both at the "farm gate" and in the value-added sector. The decline of the "soup clam" is a specific example that comes to mind. The industry's problems certainly aren't confined to the Northeast or the "soup clam". Change is in the wind for all sectors of the industry, in all parts of the country. And this change calls for a redirection and a refocus of the industry.

The task of developing a strategic plan for the revitalization of the shellfish industry requires a partnership effort. It calls for assistance from researchers working in industry, academic and government laboratories. It also involves business leaders, producers and suppliers, state and federal government program directors and regulators as well as public spirited groups that surely will have some say in how the industry evolves and operates.

As you probably know, the National Aquaculture Act of 1980 and the National Aquaculture Improvement Act of 1985 authorized the Joint Subcommittee on Aquaculture to coordinate research support programs at the federal level. The U.S. Department of Agriculture is the lead agency of this committee and the Secretary of Agriculture serves as its permanent chair. At this time, some 15 federal agencies having some interest in aquaculture are represented on the committee. As such, the USDA has a vital interest in aquaculture and the future of the fisheries industries, because of our legislative responsibility and because of our historic stewardship of the land and natural resources and our commitment to supporting the best practices of providing safe, high quality and affordable food, fiber, and fuel.

It is within this context that I want to focus on two essential elements in the managing of change within the shellfish industry... leadership and research. In this era of information overload, a lot of words have been written and uttered about both. And most of them have fallen to the ground, unheeded and unnoticed. So I'll try to keep it tight and bright.

### Leadership

There is no question that a strategic plan for the revitalization of the shellfish industry is needed. There also is no question that in order for that to happen someone must take a leadership position. There probably needs to be a lead federal agency and there certainly is a need for individual leaders in this effort. There is also a need for effective managers.

The question of leadership vs. management is a hot topic at most business schools, both in continuing education in MPA programs. The shellfish industry needs both. Leaders to achieve effective change and managers to cope with the complexity of problems. If I were asked which was most needed right now, I'd put my money on leadership. There are those business experts who say that our Nation's industries are in danger of being over-managed and under-led and I would say the same might be true of our research enterprise if we let it.

Clearly we need some visionaries who can see the whole picture, establish the direction for meeting our present and future needs and then can alter the agenda so new directions and new priorities get attention. We need effective managers who can help us stay the course in implementing change. Strong leadership with weak management is not better, and sometimes is actually worse than the reverse.

In addressing the problems within the shellfish industry, we need to pull that partnership of interests into a tight, cohesive unit that recognizes that the overall mission of the project is paramount and a unilateral deviation from planned agenda may be counter-productive to all our interests. The establishment of state/federal planning committees, citizens advisory groups and scientific and technical project teams are quite probably part of the future of the shellfish industry. The questions then center on structure, organization and function.

### Research

The scientific and technical project groups will be invaluable in establishing the researchable questions facing this industry. Questions such as which species will be studied/introduced? The benefits, values, handicaps to current "wild" harvest type vs. the potential aquaculture farm harvest. Comparative economic projections must be made. And questions must be answered relating to the types of existing technology and the kinds of needed research and development for addressing the questions at hand. Consideration might be given to research programs in:

- Breeding
- Culture techniques
- Animal Health
- Nutrition
- Value-added sectors/food processing
- Operational technology
- Education and technology transfer programs (continued)

(continued from page 2)

...A panoply of subjects for a forward-thinking industry.

### **National Research Initiative**

Such a broad array of questions will require infusions of funding. And Aquaculture investigators should be creative in seeking funding resources. Within the Special Programs Office of the Cooperative State Research Service, we do have an outstanding aquaculture program. But we also have other programs and initiatives with which you should be intimately acquainted. The National Research Initiative for Research on Agriculture, Food and Environment, commonly called the NRI, is a Presidential Initiative started in fiscal year 1991. It calls for a major infusion of funding for USDA-sponsored research programs. The program is managed as a USDA Science and Education effort with the Competitive Research Grants Office of the Cooperative State Research Service administering the program.

Obviously the NRI is one source of funding for the types of new research efforts we have been discussing. But in reviewing the funding initiatives within the NRI or any other program, don't stop with the obvious. Just because a grant solicitation doesn't specifically say "aquaculture" doesn't mean that aquaculture research proposals won't be funded. If you are studying diseases in oysters look at the animal health program. If you are addressing processing questions look at the food safety program. Crustacean breeding questions might fall into the category of animal reproductive biology. When one looks close enough at the NRI, there appears to be something for just about everyone. And you may find similar pots of gold in other funded programs if you are creative in your project proposals.

In the interest of still keeping this "tight and bright" rather than littering the ground with a lot of unheard words, I would like to close with a couple of final thoughts. A leader leads and a boss or manager drives. A leader has the wisdom of an owl, courage of a lion, and speed and grace of a gazelle. A boss needs a hog's nose, a deer's legs and a donkey's back. And with those characteristics in its leaders and managers, the aquaculture industry is sure to rise to the legacy of stewardship left us by our English forefathers: "Live as if you are going to die tomorrow, but farm as though you will live forever."

Thank you for letting me join you today."

Please contact Dr. Jordan for more information on the National Research Initiative: Dr. John Patrick Jordan, United States Department of Agriculture, Cooperative State Research Service, Office of the Administrator, Washington, DC 20250, USA. Telephone: (202) 447-4423.

## **NSA Pacific Coast Section Meeting**

This year's joint meeting between the Pacific Coast Oyster Growers Association (PCOGA) and the Pacific Coast Section of NSA (PCS-NSA) was held September 12-14, 1991 in Vancouver, British Columbia; the British Columbia Oysters Growers Association (BCOGA) also participated in the meeting this year. These annual meetings allow and encourage researchers, regulators and industry

members to exchange ideas on needs as well as to present experimental results. Of special interest this year were the FDA workshop on Shellfish Sanitation, the panel discussion on the Future of Shellfish, and the workshop on Broodstock Development. Technical talks included sections on genetics, culture, pathology, and special sessions on the razor clam and algae and nutrition. Trevor Jones, from the University of British Columbia, was awarded runner-up for best student paper while Michael Banks, from Bodega Bay Marine Laboratory, won the best student paper award for his talk entitled "Discriminating Kumamoto and Pacific Oysters Using Molecular Markers".

NSA-PCS Officers for the coming year: Ed Melvin, re-elected Chairperson, Carolyn Friedman, elected Vice-Chairperson, Sandy Downing continues as Secretary/Treasurer and Brett Dumbauld, Dennis Hedgecock, Christine Hodgson and Sylvia Yamada were elected as Members-at-Large. The 1992 PCS-NSA/PCOGA meeting is scheduled for late September in the Seattle, Washington area - look for meeting information in the 1992 Spring and Summer issues of the Newsletter

## **Recruits Corner**

The *Recruits* are presently planning two activities for the NSA 84th annual meeting in Orlando, Florida. David Bushek is attempting to organize a pancake breakfast fundraiser the profits of which will be donated to the Student Endowment Fund. Maureen Krause is in the process of arranging a panel discussion concerning obtaining employment, applying for grants and funding. NSA President Sandy Shumway will be present at one of the student events to discuss the concerns and involvement of NSA student members. Look for more information on these events in the Winter and Spring 1992 Newsletters.

The National Shellfisheries Association is planning to join the World Aquaculture Society in offering an employment service on a cooperative basis at the Orlando meeting. The employment service acts as a clearinghouse for position announcements and resumes, not as a placement service, per se. Anyone who has a job description or resume which they would like to have posted can forward the information to me (Greg Shatkin, 327 Hitchner Hall, University of Maine, Orono, ME 04469). Students planning to attend the Orlando meeting may also contact me at the address above for information on sharing hotel accommodations with other students. Send me your name, address and phone number and I'll put you in touch with others interested in sharing the cost of a room. Hotel rooms may go fast - send me your inquiries as soon as possible.

I have a limited number of collector's edition sweatshirts which are a steal at \$15.00 each and may be ordered by sending a check to the address above. Don't forget that we are compiling a directory of NSA student members so please send in your information request forms (see Summer 1991 NSA Quarterly Newsletter) as well as your entry for the *Recruits* logo design. We need to select a winner and get busy on printing T-shirts for the Aquaculture '92/Orlando meeting. NSA will have a products table at the meeting where you may purchase mugs, lapel pins, sweatshirts and back issues of the *Journal of Shellfish Research*.



## Book Reviews

*Shellfish: A Guide to Oysters, Mussels, Scallops, Clams and Similar Products for the Commercial User* by Ian Dore. Van Nostrand Reinhold 1991 240 pp. \$67.95.

This comprehensive guide to the commercial aspects of shellfish utilization provides a wealth of detailed and practical information of use not only to those engaged in buying, selling and serving shellfish but also to interested lay readers and students. The book is divided into two parts. The first five chapters cover shellfish markets and marketing, safety issues, management and conservation, aquaculture and handling. These chapters provide clear and concise explanations of such entities as the National Shellfish Sanitation Program, nutritional aspects of shellfish, classifications of growing waters, relaying, harvesting, tags, licenses, storage, shucking practices, labelling, shipping and purification. Further discussions follow on biological contaminants such as *Vibrio*, *E. coli*, and biotoxins. The chapter on handling of shellfish moves quickly through the procedures utilized from time of collection to retail displays and handling of frozen shellfish products.

The remaining five chapters are devoted to specific groups of shellfish: oysters, mussels, scallops, clams, cockles and arkshells and 'other'. Each of these chapters provides a brief description of the species, their relative importance to the shellfish industry and then gives specific information regarding handling, processing, grading and marketing. I found the chapter on 'other shellfish' particularly interesting as it briefly discusses such species as *Crepidula*, abalone, whelk (scungili), queen conch and periwinkles.

There are 24 informative tables dispersed throughout the book along with illustrations of various species. While the figures are rather over-sized, they are of reasonable quality and will allow the less familiar readers to identify individual species. A listing of magazines, newsletters and other publications of interest to readers is provided along with addresses for obtaining them. The bibliography is up-to-date and generally covers publications after 1980. The index is usable and the book is easy to read and comprehend.

Ian Dore has succeeded once again in bringing together a quagmire of information and boiling it down to the essentials for his readers. This book should provide useful reading for a wide audience and might even be considered as an introductory text for courses in aquaculture, marketing and food management. Finally, in a world of over-priced books, it is refreshing to see such an effort at an affordable price.

*The Seafood Industry* Edited by Roy E. Martin and George Flick. Van Nostrand Reinhold 1990. 445 pp. \$78.95

While this book does not deal exclusively with shellfish, it provides the reader with up-to-date information on topics such as processing, packaging, merchandising, labelling, sanitation regulations, transportation, distribution and

warehousing which is applicable across the spectrum of seafood products. The chapters dealing specifically with molluscs and crustaceans present brief overviews of the species most commonly harvested along with notes on processing methods employed. The chapter on nutrition and preparation covers the basic components of seafood and offers some suggestions for the preparation of fish. A table listing and comparing the major components of fish and shellfish would have been a useful addition. The chapter on cleaning and sanitation is presented in sufficient detail for readers to obtain an understanding of the many potential health hazards associated with seafood and provides recommendations for preventative actions. Aquaculture is covered only in a very general sense with a brief history of the field and short summaries of production for several species (shrimp and oysters each received less than one half page of coverage).

Waste treatment and utilization are presented in one of the more comprehensive chapters. Several tables and figures summarize characteristics of wastewater, EPA pollutant guidelines for seafood processing industries and water-treatment systems. A similarly comprehensive presentation is made for regulations imposed on the seafood industry and for transportation, distribution and warehousing of seafood products.

The publishers indicate that this book will be invaluable for "everyone involved in seafood - processors, managers, wholesale buyers, merchandisers, retailers, brokers, distributors, exporters, extension agents and consumers" and I agree. I recommend the book to anyone with an interest in the commercial aspects of the seafood industry. It is an especially good introductory volume for those with little or no prior exposure to the field and would make a good text for courses in food science or a supplementary text for courses in aquaculture. At \$78.95 (17.7 cents per page) it's a good investment!

Books reviewed by Sandy Shumway

### NSA Quarterly Newsletter Contributions

By now you have received two issues of the Newsletter that feature our new "regular" columns (Canadian Connection, Recruits Corner) as well as other news of interest to our membership. There is still plenty of room for more contributions so please consider sending a short article, book review or research update for publication in the Newsletter - you will reach over 900+ individuals! Contributions may be sent to me (address on back cover) as hard copy, on disk (IBM WordPerfect 4.2, 5.0 and 5.1) or via FAX (302-645-4007). Deadlines for the next two issues are December 1, 1991 and February 20, 1992. I also welcome your comments and suggestions as to how to improve the Newsletter - are we covering topics of interest to you? do you like or dislike the style of the Newsletter? do you have any suggestions for new columns? Just let me know and I'll try to incorporate your ideas. Thanks, and I look forward to hearing from you.

Karolyn Mueller Hansen

### From The Editor of JSR...

By the time you read this, Volume 10(2) will be on its way to the printer. The quality of manuscripts submitted continues to improve as does the number of foreign submissions. As a result, we have added several new foreign subscribers to our distribution. Through your efforts we can continue to grow - if you plan to attend an appropriate meeting, either in the US or abroad, take some advertising materials with you. Call me or the co-Chairs of the Membership Committee (Dot Leonard and Mike Crosby) for *Journal* flyers, membership forms and other materials.

\$\$\$\$\$ Page charges continue to plague us. Publication costs are high and going higher. While authors' ability to cover page charges is not a consideration in evaluating the merits of a manuscript, it will be a factor in determining the time of publication. Some manuscripts may have to be held for publication in later issues of the *Journal* if page charges cannot be covered. Whenever possible, please try to locate funds (even partial payment helps) for these charges. It is still my hope that one day we will be able to eliminate them altogether, but in the meantime the continued success of the *Journal* depends upon them.

Some of you may have noticed that the scientific names and authorities of organisms are not published in the form they were submitted. The *Journal* is adhering to the common and scientific names of mollusks and crustaceans as they appear in: *Common and Scientific Names of Aquatic Invertebrates from the United States and Canada: Mollusks and CSNAIUSC: Decapod Crustaceans*. These are published by the American Fisheries Society as Special Publications 16 and 17, respectively. These publications provide the most up-to-date, authoritative listing of mollusks and crustaceans and there are plans to provide annotated, periodic up-dated versions. Please be sure to adhere to these references when submitting your papers not only to *JSR* but to other scientific journals also.

I'd like to start a file of possible cover photos. I frequently find myself running around at the last minute looking for a suitable picture. If you have something you'd like to have considered, please send it along. Photos should be high contrast, 8x10 prints (color or black and white). Please be sure to include a brief description and put your name on the back of the photo.

Finally, I am continuing in my quest to have the *JSR* reinstated at Current Contents. It is going to be an up-hill fight but I think we'll make it.

Sandy Shumway

## Canadian Connection

The following contribution, submitted by Christa Bourque and Tom Sephton, is the first of a projected series of short profiles of Canadian research organizations, and researchers, whose work may be of interest to NSA members.

### FOCUS ON CANADA DEPARTMENT OF FISHERIES AND OCEANS GULF REGION

The Gulf region (headquartered at the Gulf Fisheries Centre in Moncton, New Brunswick) is one of six regional organizations established by the federal Department of Fisheries and Oceans (DFO) to provide decentralized

fisheries management services. Its mandate is to manage the fisheries resources of the Gulf of St. Lawrence, in conjunction with the Quebec Region, and to increase industry participation in policy development and decision making. The Gulf Region offers its services in both official languages since approximately 30% of the fishermen in the region are French-speaking.

Gulf Region Science Branch, under the direction of John Loch, undertakes research on: conservation, preservation, restoration, and augmentation of aquatic resources; aquaculture development; and fish habitat management. It is also used for planning, evaluation and management of commercial, recreational and native fisheries. The Science Branch is divided into three Divisions: Invertebrates, Fish Habitat and Enhancement, and the Marine and Anadromous Fish Division, of which two are of interest to NSA members.

One is the Invertebrates Division, directed by Paul Lamoureux, which contains three research units. The Molluscan Aquaculture Section, headed by Tom Sephton, works on biological and environmental factors determining the productivity of mollusc populations, particularly cultivated and commercially exploited species. Current research includes the Giant Sea Scallop projects lead by Marc Lantaigne, and Mollusc (mussels, oysters and quahogs) projects, under Thomas Landry. Sharon McGladdery, also in the Molluscan Aquaculture Section, is in charge of parasite disease surveys of indigenous molluscs and introduced species in support of the Gulf aquaculture industry.

Mikio Moriyasu heads a Population Survey Section which undertakes research on the life cycle of the snow crab, *Chionoecetes opilio* and provides scientific advice to resource managers and industry on management of snow crab stocks in the Gulf of St. Lawrence. Yvon Chiasson is responsible for the annual stock assessments, Pierre Mallet leads a biology and survey group, while Claude Gallant and Elmer Wade are responsible for computer analysis.

The Population Modelling Section, under the leadership of Gerard Conan, designs heuristic and experimental approaches to population survey and assessment of invertebrate stocks. Don Maynard leads the lobster group which collects and interprets biological information on Gulf lobster populations. Michael Comeau is responsible for experimental field studies conducted by the Section.

The other Division is Fish Habitat and Enhancement under the leadership of Alex Bielak. The Habitat Ecology Section, headed by Jean Worms, comprises two groups: one, lead by Rick Cunjack, is primarily concerned with freshwater fish habitat and the way its alteration impacts on fish productivity; the second, under John Smith and Steve Bates, studies the environmental and biological factors that trigger certain species of phytoplankton to bloom and produce toxins in the marine environment.

The Fish Habitat and Aquaculture Section is headed by Sandy Campbell. It provides comprehensive fish health diagnostic and consultative service to the Region's aquaculture industry, to federal and provincial fish culture facilities, and for fish kills in the wild. Also within the Fish Habitat and Enhancement Division are Ross Alexander, in charge of science issues that encompass environmental impact and habitat assessment, and Kevin Davidson who is Senior

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*First, Last and Only call for papers for the 1992 Annual Meeting of the National Shellfisheries Association, May 21-25, 1992, Orlando, Florida.*

**ABSTRACTS FOR ALL PRESENTATIONS (ORAL AND POSTER) MUST REACH THE MEETING ORGANIZERS BY DECEMBER 15, 1991.**

At its annual meeting, the National Shellfisheries Association will have papers for both oral and poster presentation. NSA sessions will run concurrently with those of the American Fisheries Society - Fish Culture Section and the World Aquaculture Society. 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 oral or poster presentation is permitted, however only one of the two will be accepted.

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 fee 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 are to be sent to the meeting organizers while the abstract fee is to be sent to Program Chairman John Kraeuter. The Abstract Fee must be paid in order for your abstract to be published in the Journal of Shellfish Research.

**PREPARING THE ABSTRACT**

Abstracts should be prepared and submitted to the meeting organizers according to the Call for Papers and Abstract Transmittal Forms sent to you as a separate mailing in mid-October. If you did not receive the mailing or should you require additional abstract transmittal forms, please contact NSA Program Chairman John Kraeuter at the address below.

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.

**PLEASE NOTE: NO ABSTRACTS WILL BE ACCEPTED VIA FAX TRANSMISSION; YOUR MUST ABSTRACT MUST REACH THE MEETING ORGANIZERS BY DECEMBER 15, 1991.**

**SEND ABSTRACT FEES TO:**

Dr. John Kraeuter  
Haskin Shellfisheries Research Laboratory  
Rutgers University  
Box 8  
Port Norris, NJ 08349

**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.

**ENDOWMENT FUND APPLICATION**

Fill out a copy of the application form and send it along with one (1) copy of your abstract to: NSA Program Chairman John Kraeuter, Haskin Shellfisheries Research Lab, Rutgers University, Box 8, Port Norris, NJ 08349, USA. Applications and abstracts are due no later than December 15, 1991.

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 (please print or type) and signature \_\_\_\_\_

Address \_\_\_\_\_

Telephone number \_\_\_\_\_

Institutional affiliation \_\_\_\_\_

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

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

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

Advisor's name and signature \_\_\_\_\_

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) copy of abstract
- \_\_\_ completed Endowment Fund application form
- \_\_\_ letter of recommendation
- \_\_\_ curriculum vitae or resume

**\*\*as per instructions on the Abstract Transmittal Form (sent as a separate mailing) NSA regular and student members must send an Abstract Fee of \$20.00 (check or money order payable to NSA) to Program Chairman John Kraeuter (address at left). Applicants for Endowment Fund support may send their Abstract Fee along with their application.**

Hatchery Biologist responsible for the salmonid enhancement activities of the Region's four fish culture stations.

NSA members interested in contacting individual Gulf Region researchers should write to: Canada Department of Fisheries and Oceans, Science Branch, Gulf Fisheries Centre, P.O. Box 5030, Moncton, New Brunswick, Canada E1C 9B6, or call (506) 851-6201.

Contributions to this column should be submitted to Peter Lawton or Shawn Robinson, The Biological Station, St. Andrews, New Brunswick, E0G 2X0, Canada. Phone: (506) 529-8854, FAX (506) 529-4274. Deadlines: November 15, 1991 and January 30, 1992.

## Conferences/Meetings

The *Crustacean Society* will be sponsoring a summer meeting from June 11-14, 1992 in Charleston, South Carolina. International participation is encouraged. Symposia and contributed paper sessions dealing with larval biology and recruitment, taxonomy, aquaculture, ecology, physiology and fisheries biology are planned. Abstract deadline is March 1, 1992. The Call for Papers and conference information may be obtained from: Dr. Elizabeth Wenner, Marine Resources Research Institute, Box 12559, Charleston, SC 29422-2559 USA

*Aquaculture '92*: Triennial Meeting of the National Shellfisheries Association, the World Aquaculture Society and the American Fisheries Society-Fish Culture Section, May 21-25, 1992, Orlando, Florida. Abstract deadline is December 15, 1991. Contact: Program Chair John Kraeuter, Haskin Shellfish Lab, Rutgers University, Box 8, Port Norris, NJ 08349, Phone: (609) 785-0074.

*Special Symposium: "The History, Present Condition and Future of the Molluscan Fisheries of North America and Europe"* to be held in Orlando, Florida immediately after *Aquaculture '92*. The one and one-half day symposium will feature talks by 20 international shellfish biologists and by four marketing, habitat conservation, sanitation and economics experts. Talks will be published as a monograph in a special issue of *Marine Fisheries Review*. Symposium organizers are Clyde MacKenzie, Jr., Aaron Rosenfield and Victor Burrell. For more information contact: Clyde MacKenzie, Jr., NMFS Sandy Hook Laboratory, Building 74, McGruder Road, Highlands, New Jersey 07732.

## Employment

*Sea Water Facilities Technician*, Louisiana Universities Marine Consortium (LUMCON). Duties include maintenance of sea water system, tanks and aquaria, laboratory flume facility and associated instrumentation. Qualifications: B.S. in physical or marine science required and/or equivalent relevant experience with laboratory sea water systems. Send letter, resume and names of three references (include telephone numbers) to:

Sea Water Technician Search, LUMCON, Chauvin, LA 70344. Telephone: (504) 851-2800.

*Marine Ecologist*: Full-time temporary sabbatical replacement in Department of Biology, Hood College, Frederick, Maryland. Duties: teach three courses during Spring 1992 semester (Environmental Studies, Marine Ecology and Principles of Ecology). Ph.D. preferred. Send letter of application, CV and three letters of recommendation by November 1, 1992 to: Dr. John Commito, Department of Biology, Hood College, Frederick, MD 21701. Telephone: (301) 663-3131 ext. 421.

## Publications of Interest

*Seafood and Health: Risks and Prevention of Seafood-Borne Illness* by Sue Kuenstner. approx. 100 pp. \$25.00. A welcome addition to the literature, it provides a clear and concise review of bacteria, viruses, shellfish and fish toxins, and parasites and their role in seafood-borne illnesses. Available from the New England Fisheries Development Association, 309 World Trade Center, Boston, MA 02210-2001.

*New Book Program Announcement*: Haworth Press is initiating a book program, FPP Food Products Marketing, under the editorship of John Stanton, Ph.D. Examples of food categories appropriate for the program include specialty foods, and prepared foods and food products (seafood should qualify!). Potential authors should send a table of contents, a sample chapter, and an introduction explaining the approach taken for the book and the target market. For more information please contact: Sandra Jones Sickels, The Haworth Press, 10 Alice Street, Binghamton, NY 13904-1580.

*Of Interest*: Aquaculture Association of Canada Bulletin - June 1991, Proceedings of a Workshop on Summer Mortality in Cultured Blue Mussels, available for US\$5.00 and September 1991, Proceedings of the 1991 Annual Meeting held in St. Andrews, NB in June, available for US\$10.00. Contact: AAC, Box 1987, St. Andrews, NB E0G 2X0 or order by FAX (506-529-4274) with VISA card number and expiration date.

## NSA Membership Information

National Shellfisheries Association membership applications are available from Sandy Shumway, Dot Leonard, Michael Crosby and Karolyn Mueller Hansen (addresses on the back cover of the Newsletter). Please note that the dues for 1992 are US\$33.00 for regular members and US\$22.00 for student members. If you are not receiving your Newsletters or *Journal of Shellfish Research*, please contact Treasurer Steve Tettelbach and verify that your dues have been paid and that we have your correct address.



Dr. Karolyn Mueller Hansen  
NSA Quarterly Newsletter  
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