

National Shellfisheries Association

Quarterly Newsletter



President Dr. Robert E. Hillman
President-Elect Dr. Robert E. Malouf
Vice President Dr. John Manzi
Secretary-Treasurer Dr. Scott Siddall

Dr. Susan E. Ford, Newsletter Editor
Rutgers Shellfish Research Laboratory
P.O. Box 687
Port Norris, New Jersey 08349

NOVEMBER 1985

Port Norris, New Jersey

77th Annual Convention of NSA and SINA

Two hundred and twenty four persons, 100 of them NSA members, were registered for the 77th joint meeting of the National Shellfisheries Association/Shellfish Institute of North America held at the Omni International Hotel in Norfolk, Virginia from June 16-20, 1985. The technical program, arranged by Bob Malouf (Marine Sciences Center, SUNY), consisted of 56 oral and 4 poster presentations. Special topics were covered in three symposia: "Management of Clam Fisheries" (Jeffery Kassner, Division of Environmental Protection, Town of Brookhaven, NY); "The Virginia Oyster Fishery" (Roger Mann, Virginia Institute of Marine Science); and "Shellfish Fisheries of North America" (Neil Bourne, Pacific Biological Station, Nanaimo, BC, Canada). Roger Mann, Journal of Shellfish Research Editor, gave a presentation entitled "How to publish a paper in the Journal of Shellfish Research". Roger's comments are summarized in the Journal Section of this Newsletter.

The Thurlow C. Nelson Award for the best student paper was won by Standish K. Allen (School of Fisheries, U. of Washington) for his presentation, "A possible sex determining mechanism in Mya arenaria: evidence from abnormal gametogenesis in triploids". Stan's prize is a 5-year membership in NSA. Honorable mention, with 2 year memberships, went to four students: Shaun Moss (College of Marine Studies - U. of Delaware) for "Effects of exogenous androgens on the growth and reproduction of the coot clam, Mulinia lateralis(Say); Stephen T. Tettelbach (Marine Science Institute, U. of Connecticut) for "Intensity of crab predation on northern bay scallops Argopecten irradians: effects of prey size and predator assemblages on seasonal patterns"; J. Evan Ward (CMS - U. of Delaware) for "Effects of the ectoparasite Boonea (=Odostomia) impressa (Gastropoda:Pyramidellidae) on growth rate, filtration rate, and valve movements of the host Crassostrea virginica"; and Marie E. White (Department of Oceanography, Texas A&M U.) for "Perkinsus (Dermocystidium) marinus transfer and intensification by an ectoparasitic gastropod (Boonea impressa), with comments on the growth and biochemical composition of parasitized oysters". Congratulations to each of these students for outstanding research.

Selection of the Nelson Award winners was made by a committee headed by George Abbe (Benedict Estuarine Laboratory, Benedict, MD) and including Mel Carriker (CMS, U. of Delaware) and Susan Ford (Shellfish Research Laboratory, Rutgers). The committee initiated a new system for evaluation in which each candidate was rated in several categories including scientific content, presentation, handling of questions, and quality of visual aids. The committee was concerned with the large number of student papers with multiple authors and decided to set guidelines for future student presentations. These will appear in the next issue of the Newsletter along with the final call for abstracts for the 1986 meeting.

SUMMARY OF THE 1985 EXECUTIVE COMMITTEE (EXCOM) MEETING

The EXCOM meeting was held on Sunday afternoon, June 16, 1985. Secretary-Treasurer Scott Siddall presented the financial report with a summary of accounts:

Revenues	\$18,858
Expenditures	\$19,437
Fund Balance (1985)	\$ 7,418
Fund Balance (1984)	\$ 8,198

Scott reported that revenues had increased because of a successful membership drive. Audit-Budget-Finance Committee Chairman, George Abbe presented the proposed budget for 1986 (attached) noting that an external audit of the Association's books is not due until the close of the 1985-86 fiscal year. Honorary Membership Chairman Bob Hillman reported that the Committee did not nominate anyone for Honorary Membership this year. The nomination of Dexter S. Haven (VIMS) for the David H. Wallace Award was passed unanimously.

Election results for the 1985-86 EXCOM officers were announced:

President (elected in 1984)	Robert E. Hillman Battelle - New England Lab Washington Street Duxbury, MA 02330 (617) 934-5682
President-Elect	Robert Malouf Marine Sciences Research Center State University of New York Stony Brook, NY 11794 (516) 246-3529
Vice President	John Manzi SC Marine Resources Research Institute Charleston, SC (803) 795-6350
Secretary-Treasurer	Scott Siddall Marine Sciences Research Center State University of New York Stony Brook, NY 11794 (516) 246-8678
Member-at-Large (1985-1988)	Ralph Elston Battelle - Pacific Northwest Lab Sequim, Washington (206) 683-4151

NATIONAL SHELLFISHERIES ASSOCIATION, INC.

PROPOSED BUDGET 1985 - 1986

Fiscal Year Ending May 31, 1986

Budget category	PROPOSED 1984-85	ACTUAL 1984-85	PROPOSED 1985-86
<u>REVENUES</u>			
Membership dues	\$10,000.00	\$12,312.00	\$ 8,400.00
JSR subscriptions	2,000.00	1,798.00	1,800.00
JSR page charges	4,000.00**	1,535.00*	3,000.00**
JSR reprints	1,000.00**	527.00*	1,000.00**
Proceedings, back issues	200.00	255.75	250.00
Meeting abstracts	150.00	203.00	175.00
Abstract page charges	750.00	610.00	600.00
Interest on savings acc't	400.00	504.55	400.00
Contributions	-0-	350.00	-0-
Miscellaneous	100.00	763.15	-0-
	<hr/>	<hr/>	<hr/>
TOTALS:	\$18,600.00	\$18,858.45	\$15,625.00
<u>EXPENDITURES</u>			
JSR printing	\$ 8,500.00***	\$ 7,765.94**	\$11,500.00***
JSR typesetting	2,900.00**	2,195.00**	3,300.00***
Meeting abstracts	700.00	725.00	700.00
Newsletter printing	800.00	750.80	750.00
Abstract forms	75.00	92.73	80.00
Other printing, copying	200.00	571.72	300.00
Postage	2,000.00***	1,329.75	2,000.00***
Postal permits	120.00	180.00	90.00
BIOSIS fees	-0-	40.00	40.00
Secretarial services	300.00	300.00	50.00
Mailing lists, labels	50.00	-0-	50.00
Office supplies	300.00	432.65	300.00
Telephone	250.00	318.55	300.00
EXCOM expenses	200.00	-0-	150.00
Legal/accounting services	200.00	650.00	-0-
Award plaques	300.00	215.50	300.00
Bank charges	75.00	17.25	50.00
Computer system purchase	-0-	2,581.95#	-0-
Miscellaneous	100.00	1,269.95##	100.00
	<hr/>	<hr/>	<hr/>
TOTALS:	\$17,070.00	\$19,436.79	\$20,060.00

* one issue of JSR; ** two issues of JSR; *** three issues of JSR

one time only expenditure

\$1,157.05 for 1984 picnic; \$1,013.15 covered by ticket sales and contributions

Constitutional Revision Studied

During a discussion of changing the name "Honorary Member" to "Honored Life Member", it became clear that there were a number of apparent flaws in the Constitution and Bylaws. Particularly troublesome was the fact that the Bylaws, which should govern the routine operation of an organization, cannot be changed without a vote by the general membership, thus making it impossible for the Executive Committee to make even minor or routine changes in the rules governing the Association's everyday business. President-Elect Bob Hillman appointed an ad hoc Constitutional Revision Committee to review the entire document and make recommendations for change to the general membership during 1985-86.

SUMMARY OF THE 1985 ANNUAL BUSINESS MEETING

Forty-nine members were present for the business meeting held on Wednesday June 19. President Ed Cake thanked those members who had carried out various jobs in the organization during the year and outlined two major goals for the future as the prompt publication of the Journal and continued growth of the organization's membership. Secretary-Treasurer Scott Siddall reviewed expenditures, revenues, and fund balances, noting that the excess expenditure in 1984-85 was principally due to the acquisition of the \$2600 computer system and a shortfall in revenues from JSR page charges.

President Cake's review of the status of the Journal is covered later in this Newsletter. Site and Registration Committee Chairman, Mike Castagna, reported that arrangements are underway for the 1986 meeting in Seattle, and that the 1987 and 1988 meetings should take place on the northeast and Gulf coasts, respectively.

Bob Hillman, Chairman of the Honorary Membership Committee presented the 1985 David H. Wallace Memorial Award to Dexter S. Haven of the Virginia Institute of Marine Science for his efforts in promoting cooperation and understanding between industry and research.

Secretary-Treasurer Scott Siddall outlined the changes in membership during the past year. At the end of May, 1984, there were 606 active members. Between new applicants through usual channels and the recruitment drive, 224 new members were added bringing the total to 830. Two months after all members had been invoiced the second time for 1985 dues, 149 non-paying members were dropped leaving the currently active membership at 681. Most of the dropped members had been active in the Association for more than 4 years. The need to retain members through prompt publication of the Journal was discussed.

President Ed Cake then turned over the gavel to incoming President Bob Hillman who presented a "long-overdue award" to Ed for his many years on the Executive Committee, as Secretary-Treasurer/Newsletter Editor, Vice President, President-Elect, and President. Ed received an enthusiastic and well-deserved standing ovation from the membership.

President Hillman announced that he had appointed the following persons to serve as committee chairmen and members:

Audit/Budget/Finance:	George Abbe
Honorary Membership:	Bob Malouf
Membership:	Roger Newell
Nominating:	Ed Cake
Program	John Manzi
Members:	Elizabeth Wenner (1983-86)
	Thomas Soniat (1984-87)
	Scott Gallager (1985-88)
Publications:	Rich Lutz
Members:	Roger Mann
	Ed Cake
	Robert Hillman
Resolutions:	Ed Cake
Site and Registration:	Ralph Elston
Members:	Rene Lavoie
Aquaculture Council:	Ken Chew
Newsletter Editor	Susan Ford
Constitutional Revision:	Vic Kennedy
Members:	Ed Cake
	Bob Hillman
	John Manzi
	Scott Siddall

Membership Dues Raised

A motion was made and passed to accept the EXCOM recommendation to raise regular member dues to \$18 per year (US, Canada, and Mexico), \$20 for foreign members, and to create a new dues category for students at \$15 per year. Student status would have to be certified by the student's advisor. The new dues structure will go into effect January 1, 1986 and members will be billed at that time.

Inquiries about membership matters should be directed to

Dr. Scott Siddall
NSA Secretary-Treasurer
Marine Sciences Research Center
State University of New York
Stony Brook, NY 11794-5000 USA
(516) 246-8678

MEMBERS HONORED FOR TEACHING AND RESEARCH

Four long-time members of NSA were honored during the year as they retired from official duties. Colleagues gathered to toast James Hanks at the NMFS Milford Laboratory on February 6, Mel Carriker at the University of Delaware on February 7, Hal Haskin at Rutgers Shellfish Research Laboratory on April 12, and Winston Menzel, at the University of Florida on October 10. Happily, each man will continue an active research program at his respective institution.

78TH ANNUAL NSA MEETING - 1986

The 78th Annual Convention of NSA and SINA is scheduled for Sunday, June 22 through Thursday, June 26, 1986. The meeting will be held at the Crown Plaza Holiday Inn in Seattle, Washington. Questions about local arrangements can be directed to

Dr. Kenneth K. Chew
School of Fisheries, WH-10
University of Washington
Seattle, WA 98195
(206) 543-4290

John Manzi, Program Chairman suggests that members begin thinking now about a presentation for next year. The January 1986 Newsletter will contain abstract forms and instructions. Abstracts will be due in April. Several special sessions have been suggested:

Crab Workshop
Clam Mariculture in North America
Shellfish Genetics
Commercial Shellfish Aquaculture: A Status Report
Depuration: A US Perspective

These topics are suggestions only. Please send comments, further suggestions, and questions to

Dr. John J. Manzi
Marine Resources Research Institute
PO Box 12559
Charleston, SC 29412
(803) 795-6350

PACIFIC COAST NSA MEETING

The Pacific Coast Section of NSA held a joint meeting with the Pacific Coast Oyster Growers Association at the Thunderbird Inn in Portland, Oregon on September 27-28, 1985. There were more than 225 persons registered. The Best Student Paper Award went to Sandra L. Downing (School of Fisheries, U. of Washington) for her paper "Optimization of triploid oyster production for commercial use".

New officers for the Pacific Coast Section are

Chairperson	Robert K. Cox Fisheries Branch, Ministry of Environment Victoria, BC
Vice-Chairperson	Carolyn Gangmark EPA
Secretary-Treasurer	Ralph Elston Battelle Northwest
Members-at-Large	James Donaldson Coast Oyster Company Dick Burge Washington State Dept. of Fisheries

JOURNAL OF SHELLFISH RESEARCH

In a special presentation at the Annual NSA Meeting, JSR Editor, Roger Mann gave a presentation entitled "How to Publish a Paper in the Journal of Shellfish Research." Roger said that many papers sent to him were essentially first drafts. He requested authors to circulate manuscripts among colleagues at their home institution for criticism before a final draft is sent to JSR. Authors are also reminded that instructions to authors are found on the inside back cover of the Journal. Manuscripts that are not in the proper JSR format, or otherwise requiring extensive editing, will be returned to the author immediately. Roger reports that since his talk, he has received fewer, but higher quality, manuscripts. He points out that the review process is greatly speeded when manuscripts arrive in the proper form; therefore, it is in an author's own best interest to make sure that this happens.

Managing Editor Ed Cake mailed Volume 3(2) of the Journal to members in mid summer. He reports that Volume 4(1 & 2) has been typeset and will be mailed by early December. Volume 5(1) is ready to be typeset. Ed has located a new printing company with expanded typesetting capacity that should put the Journal back on schedule.

For further information on JSR, please contact one of the editors:

SUBSCRIPTIONS, PROOFS, REPRINTS

Dr. Edwin Cake, Jr.
Managing Editor, JSR
Gulf Coast Research Laboratory
Ocean Springs, MS 39564 USA
(601) 875-2244

MANUSCRIPTS, PEER-REVIEWS

Dr. Roger Mann
Editor, JSR
VIMS
Gloucester Point, VA 23062 USA
(804) 642-7360

NSA HISTORIAN APPOINTED

At the Annual Meeting in Norfolk this past June, President Bob Hillman appointed Ed Rhodes as Historian of the National Shellfisheries Association. Ed's duties will include documenting the more interesting aspects of our history, producing vignettes (i.e., literary sketches having intimate charm and subtlety) of our notable members, and, if nothing else, trying to develop as complete a list as possible of our officers and their terms of office from our inception through the present. The need for this kind of documentation was pointed out last year when someone who was doing a piece on the life of Dr. Paul Galtsoff called several members of NSA to find out which years Dr. Galtsoff was our President. No one was able to supply that information.

At this point, the "office" of Historian is not a constitutional one. Ed has volunteered his services for this difficult task. If anyone has items that are relevant and interesting, please send them to Ed at

National Marine Fisheries Service
Biological Laboratory
Milford, CT 06460
(203) 783-4200

We hope to prevail upon Ed to present one of his vignettes at each of the annual meetings.

MEETING ANNOUNCEMENTS

AQUACULTURE ASSOCIATION OF CANADA

First announcement and Call for Papers

The Third Annual Meeting of the Aquaculture Association of Canada will be held at the University of Guelph, Guelph, Ontario from June 4-7, 1986. The program will include invited speakers and submitted papers (oral and poster). Two special symposia are planned: Canada's Contribution to Aquaculture in Developing Countries and Quality and Marketing of Aquaculture Products. Topics for technical and business-related papers are welcome in all areas relating to aquaculture. Oral presentations will be limited to 15 minutes. Topics will include

- Engineering and Technological Development
- Financial and Economic Considerations
- Nutrition
- Diseases
- Genetics
- Education and Training
- Seedstock Supply

Commercial aquaculturists are particularly encouraged to submit papers on topics they feel would be of interest. Titles and abstracts should be submitted no later than November 15, 1985 to Program Coordinator, Gary Newkirk, Biology Department, Dalhousie University, Halifax, Nova Scotia, Canada B3H 4J1. Contact Dr. Newkirk for abstract forms.

The AAC will hold a Trade Show during the Annual Meeting. Persons interested in displaying products, service, equipment, etc. should contact Nigel Robbins, RR #2, Holland Centre, Ontario, Canada, NOH 1R0.

WORLD MARICULTURE SOCIETY - AQUACULTURE '86

NSA is an affiliate sponsor of the Annual Meeting of the World Mariculture Society in Reno, Nevada in January, 1986. More than 200 papers have been scheduled for presentations. Information and registration forms are included in this newsletter.

SEWELL HOPKINS MEMORIAL SCHOLARSHIP

A Memorial Scholarship Fund has been established at Texas A&M University in honor of Dr. Sewell Hopkins who died earlier this year. An annual award will be made to the student who submits the best Master's Thesis in Zoology to the Biology Department of Texas A&M University. The awards committee will consist of Winston Menzel (Oceanography Dept., Florida State U.), Sammy M. Ray (Marine Biology Dept., Texas A&M U.), and Merrill H. Sweet (Biology Dept., Texas A&M U.). Contributions should be sent to

- The Sewell H. Hopkins Memorial Scholarship Fund
- Development Foundation
- Texas A&M University
- PO Box J-7
- College Station, TX 77844

BOOK REVIEW

THE MOLLUSCA
Karl M. Wilbur, Editor-in-Chief
Academic Press, New York

The two-volume set "Physiology of Mollusca", edited by Karl Wilbur and Maurice Yonge, has been an invaluable reference for most of us who have had any thing to do with molluscs in the years since their publication in 1964 and 1966. These classic volumes are now being replaced by an ambitious multi-volume series entitled "THE MOLLUSCA". Karl Wilbur has again undertaken the chief editorship, this time without Sir Maurice, but with assistance of numerous experts who have edited individual volumes. To date, seven have been issued:

- Volume 1: Metabolic Biochemistry and Molecular Biomechanics, Peter W. Hochachka.
- Volume 2: Environmental Biochemistry and Physiology, Peter W. Hochachka.
- Volume 3: Development, N.H. Verdonk, J.A.M. van den Biggelaar, and A.S. Tompa.
- Volume 4: Physiology, Part 1, A.S.M. Saleuddin and Karl M. Wilbur
- Volume 5: Physiology, Part 2, A.S.M. Saleuddin and Karl M. Wilbur
- Volume 6: Ecology, W.D. Russell-Hunter
- Volume 7: Reproduction, A.S. Tompa, N.H. Verdonk, and J.A.M. van den Biggelaar.

An additional 4 volumes covering the fields of Neurology and Behavior, Evolution, and Structure and Function are in press. Another volume covering Evolution of Cephalopods is being prepared. Costs per volume range from \$40 to \$70. Editor Wilbur reports that Academic Press will publish all volumes starting with number 9 in paperback as well as in hardback, at about half the hardback price.

The scientific quality of the series has been assured by chapter authors who are recognized authorities in their field. Many of the topics covered in "Physiology of Mollusca", such as ecology, feeding and digestion, circulation, reproduction, development, shell formation, and excretion have been updated, and in some cases greatly expanded. A variety of new topics have been added, including biomechanics of molluscan tissues, metabolism and toxic effects of metals, biochemical and population genetics, endocrinology, energy metabolism, and immunobiology. The series has clearly been assembled as a reference collection with the reader in mind. Each chapter is prefaced by a Table of Contents and the text is arranged with headings and subheadings so that specific topics can be located easily. The books are well illustrated with photographs, diagrams and tables.

THE MOLLUSCA is the most comprehensive review of molluscan biology likely to be published and is a must for any library serving teachers or researchers dealing with molluscs. In time, its volumes should become as dogeared from use as those of its predecessor "Physiology of Mollusca".

JOB PLACEMENT SECTION

POSITIONS OPEN

Clemson University - Professor and head of the Department of Aquaculture, Fisheries, and Wildlife

Position available 1 January, 1986, or as soon as a qualified candidate can be found. Salary commensurate with qualifications. A Ph.D. in aquaculture, fisheries, wildlife biology, or a closely related field is required. Abilities to communicate effectively and to cooperate with other agencies, to develop and promote departmental programs, and to attract funding are essential. Demonstrated scholarly accomplishments, administrative ability, leadership, and a thorough understanding of, and experience in, the land grant university system are desirable. Interested persons should forward a letter of interest, resume, transcripts, and three letters of reference to Dr. John R. Sweeney, Chairman, Search Committee, Dept. of Aquaculture, Fisheries, and Wildlife, Clemson University, Clemson, SC 29634-0362.

Louisian State University - Two Aquaculture Positions in the Agricultural Engineering Department

Assistant Professor (tenure track) -- Successful candidate will join an established aquaculture research team to conduct research in the area of crawfish harvesting. Applicant should have a Ph.D. in Agricultural Engineering or a related field with emphasis in the area of aquaculture and mechanical harvesting.

Research Associate -- Candidate will join an established research team to work in the area of aquaculture production and harvesting. Applicant should have received at least a B.S. degree in engineering or aquatic sciences with an emphasis in water quality and/or environmental sciences.

For further details on both positions, please contact John C. Nye, Professor and Head, Agricultural Engineering Department, Louisiana State University, Baton Rouge, LA 70803-4505. Phone (504) 388-3153.

New Zealand Salmon Co. Ltd.

Qualified applicants are sought for positions in hatchery/ocean ranching and sea cage operations. Apply to Rob Lawrence, PO Box 13, Southbridge, New Zealand.

University of Hawaii, Half-time Graduate Research Assistantship

Candidate can concentrate in one of the following fields:

1. Design, construction, and testing of production equipment for freshwater prawns and marine shrimp; 2. analysis and modelling of aquaculture production systems; or 3. design of aquaculture production facilities. Applicant should have a B.S. degree in Agricultural Engineering or other engineering field and must be accepted by the University of Hawaii Graduate Division. Deadline for Fall 1986 Semester admission is March 1, 1986. This is an 11-month appointment with a salary of \$6,936, tuition exemption, state-supported health insurance, and free life insurance. For information contact Dr. Jaw-Kai Wang, Agricultural Engineering Department, University of Hawaii, 3050 Maile Way #111, Honolulu, Hawaii 96822. Phone (808) 948-8154.

POSITION SOUGHT

Graduate Research Assistantship

Shellfish hatchery biologist (31 years old) seeks graduate research assistantship leading to Ph.D. anywhere in the US. Candidate has an MS degree in marine biology; scientific training in shellfish hatchery design, operation and management, in axenic algal culture, and in bivalve molluscan mariculture; and research experience in induced spawning, larval and postlarval biology of mussels, oysters, and scallops. Currently engaged in research on aquaculture potential of the Asian scallop. Available January, 1986. Please reply c/o NSA Newsletter Editor, PO Box 687, Port Norris, NJ 08349.

INSTRUCTIONS FOR JOB PLACEMENT SECTION

Employment opportunities in shellfish research, management, and industry, including graduate student assistantships; and personal summaries for individuals seeking employment in these fields will be listed in the Newsletter. Employment openings should be described in no more than 300 words and personal summaries should not exceed 150 words. We cannot guarantee that employment announcements will appear before posted closing dates. Anonymous postal box returns are available for persons not wishing to publicize their search for employment.

Please forward descriptions of positions open or sought, or any other items of interest to NSA members to

Dr. Susan E. Ford
NSA Newsletter Editor
Rutgers Shellfish Research Laboratory
PO Box 687
Port Norris, NJ 08349
USA
(609) 785-0074

PENDING APPLICATIONS FOR MEMBERSHIP

Member	Address	Research interests
Rothwell K. Ahulau	P. O. Box 4111 Kaneohe	HI 96744 <i>Atya bisulcata</i> , freshwater crustaceans
Noel C. Alon	Baruch Institute University of South	SC 29208 crustacean aquaculture, reproductive e
Irwin M. Alperin	Atlantic States Mari Fisheries Commissi	DC 20036 interstate regulation/management of sh
Tissa Amaratunga	Fisheries and Oceans Invertebrates and Ma	shellfish R & D. molluscan aquaculture
Greg Anderson	1312 Washington Stre Bath	ME 04530 management, aquaculture, ecology
Scott Andree	Sea Grant Extension P. O. Box 820	FL 32347 oysters, clams, scallops, fisheries, a
Nicholas L. Appelmans	P. O. Box 203 Fisher's Island	NY 06390 hard clam culture
R. E. Arden	Fisheries Internatio 19346 Baeley Street	CA 91748 <i>Macrobrachium</i> , <i>Penaeidae</i> , <i>Crassostrea</i>
Roy D. Ary	Department of Biolog Science	LA 70148 blue crab biology, closed system aquac
B. G. Smith & Sons	Oyster Co., Inc. Sharps	VA 22548
John H. Batchelder	P. O. Box 565 Quilcene	WA 98376 oysters, clams, hatcheries
A. J. Battistone	431 North 24th Street Phoenix	AZ 85008 transportation of shellfish to receive
Kim Baxter	Hana Hana Oyster N. 36904 Hwy. 101	WA 98555 oyster business
Aldor Beaudin	R. R. #2 Site 13, Laeque	aquaculture
Jonne L. Berning	Rt 3, Box 209 Lake Charles	LA 70605
Thomas E. Bettinger	Point Whitney Shellf Hatchery	WA 98320 molluscs
Fred P. Binkowski	Center for Great Lak Univ. of Wisconsin-M	WI 53204
Robert S. Bisker	P. O. Box 254 Melfa	VA 23410 culture and research on marine bivalve
Luther Black	3925 Bagley Avenue N Seattle	WA 98103 molluscan aquaculture
Bernard J. Blum	67-11 Beach Channel Arverne Queens	NY 11692 Long Island molluscs
Gregg Bonacker	Little Skookum Shell Growers	WA 98584 management and third world aquaculture
Dale B. Bonar	Department of Zoology University of Maryla	MD 20742 molluscan development, metamorphosis,
Bob D. Bower	2620 Madrona Beach R Olympia	WA 98502 oyster farming
William A. Bray	993 Ribbontail Corpus Christi	TX 78418 penaeid reproduction
Earl R. Brenner	V.V. Brenner Oyster P. O. Box 1667	WA 98507 oyster and clam growing
Noel V. Brodtmann	4813 West Napoleon A Metairie	LA 70001 oyster ecology
Jim Brown	Department of Biolog Sciences	oyster culture, coastal resource manag
Bonnie L. Brown	910 E. Ocean View Av Number 15	VA 23503 <i>Mercenaria mercenaria</i> culture, <i>Penaeus</i>
Bull and Cole	122 Cheramie Lane Golden Meadow	LA 70350 research, crustacean and molluscan cul
Christine Burbank	Coast Oyster Company P. O. Box 327	WA 98376 phycology, mariculture
Terry L. Burke	6770 Lake Ellenor Dr Orlando	FL 32809 oysters
William C. Callahan	1011 Lewis Circle Santa Cruz	CA 95062 commercial shellfish aquaculture, biva
Canadian Benthic Ltd	P. O. Box 97 Banfield	shellfish nursery
Thomas R. Capo	466 Boxberry Hill Ro E. Falmouth	MA 02536 larval culture
Attilio Castano	P. O. Box 10909 Guavaquail	shrimp, oysters
Marie Castiglione	5832 S. Alameda Apt. Corpus Christi	TX 78412 ecology - estuarine and Gulf of Mexico
Jose L. Castorena	3110 West 133 Street Hawthorne	CA 90250 penaeid shrimp culture, intensive and
Kashane Chalermwat	P. O. Box 7240 U. S. M.	MS 39406 bivalve feeding and digestion
Ernest S. Chang	University of Califo Bodega Marine Lab	CA 94923 crustacean and molluscan endocrinology
Robert L. Collette	National Fisheries I 2000 M Street N.W.	DC 20036 shellfisheries NFI-SINA staff
L. Bernard Colvin	c/o Maritek Corporat 4825 Everhart, #7	TX 78411 shrimp mariculture, bivalves, polycult
W. F. Conley	RCV Seafood Corporat P. O. Box 85	VA 22523 oyster production
S. Lake Cowart	Cowart Seafood Corp. P. O. Box 200	VA 22511 oysters - in shell, shucked, frozen
John W. Crenshaw	School of Biology Georgia Institute of	GA 30332 genetic selection, bay scallops, hard
Lee R. Crockett	Marine Sciences Inst University of Connec	CT 06340 shellfish management and aquaculture
Dr. Robert E. Croonenberghs	Bureau of Shellfish 109 Governor Street	VA 23219 pollution/ecology, resources managemen
Flinn Curren	Marine Resources Div P. O. Box B	96941 management and hatchery techniques - T
Dr. Charles N. D'Asaro	Department of Biolog University of West F	FL 32514 reproduction of prosobranchs
Dr. Luisa Da Ros	Lab. Co. S. P. A. V. Viale Stazione 5	shellfish pathology, microbiology

New Members - new member letter sent already

PENDING APPLICATIONS FOR MEMBERSHIP

Member	Address	Research interests
Carl J. Kittel	49-139 Kam Highway Kaneohe	HI 96744 shrimp hatchery and growout
Michael S. Knowles	700 S. W. 34th St Ft. Lauderdale	FL 33315 conch and oyster mariculture
Silvard P. Kool	721 3rd Street S.W. Washington	DC 20024 predators on oysters Urosalpinx and ot
Ann Korman	94 Marmora Road Parsippany	NJ 07054 Mercenaria mercenaria, Crassostrea vir
Benjie Lynn Korol	Marine Sciences Rese Center	NY 11794 scallop biology, aquaculture
M. Bowie Kotrla	Department of Biolog Science Conradi	FL 32306 bivalve reproduction, esp. gametogenes
Ted Kuiper	912 K Street Eureka	CA 95501 production of oyster and clam seedling
Joseph G. Lacotte	Riggin and Robbins The Gorton Group	NJ 08332 surf clams, ocean quahogs
Matthew Landau	Oceanic Institute Makapuu Point	HI 96795 crustaceans
Denis Larrivee	2143 De Calais Jonquiere, Q. C.	shrimp culture, growth, reproduction,
Dr. Addison L. Lawrence	Texas A & M Universi P. O. Drawer Q	TX 78373 penaeid shrimp, nutrition, larvicultur
Lee Liopert	P. O. Box 8766 Jacksonville	FL 32239 shrimp, crab, lobster
Steven W. Lloyd	Deer Creek Apt. 21 Leland	MS 38756 mollusc ecology, mariculture
John Loret	2 Motts Lane Glenwood Landing	NY 11547 shellfish culture
D. Lotoski	181 Citrus Avenue Imperial Beach	CA 92032 oysters
Luami Oyster Proq.	616 Kwina Road Bellingham	WA 98226 oyster production
N. Darlene Madenwald	Western Washington U Lindquist Marine Lab	WA 98221 paralytic shellfish poisoning, detoxif
Peter A. Maistrellis	P. O. Box 530 Ipswich	MA 01938
Steve Malinowski	The Clam Farm, Inc. P. O. Box 402	NY 06390 hard clam population ecology and cultu
Dr. John F. Maloney	Fisheries Resource D 192 Joseph Zatzman D	
Robert W. Matthews	P. O. Box 494 Ocean Park	WA 98640 oyster setting station, phytoplankton
G. C. Matthiessen	P. O. Box 194 Fisher's Island	NY 06390 oyster culture
Dorothy McCall	706 Ridgecrest Avenu Marion	NC 28752 conchology clubs, continuing education
Anne B. McCrary	411 Summer Rest Road Wilmington	NC 28403 malacology and aquaculture
D. McKee	142 Louisiana	LA penaeid culture
Kathleen A. McMurrer	P. O. Box 31 Strafford	VT 05072 bivalve mariculture
Daniel J. Medina	11 Phillips Street Salem	MA 01970 molluscan genetics and nutrition
Frederick M. Mencher	Aquaculture Associat 1110 Richards Street	HI 96813 mariculture of shrimp and molluscs
Renee S. Mercaldo	National Marine Fish Service	CT 06460 bay scallops, aquaculture, lobsters, l
Max Dean Miner	P. O. Box 631 Quilcene	WA 98376 bivalve aquaculture
John D. Monte	R. D. 1 Box 293-B Hillsboro	DE 19966 Spisula and Mercenaria mariculture
Doreen M. Monteleone	Marine Sciences Rese Center	NY 11794 bivalve larvae
Douglas E. Morgan	RFD #1 Box 105 Wawecus Hill Road	CT 06334 mariculture, bay scallops, oysters, ha
William C. Morgan II	Rte. 1 P. O. Box 24 Weems	VA 22576
John F. Mulhall	Long Island Oyster F P. O. Box AD	NY 11944 oyster/clam production
Chris Nelson	Marine Sciences Rese Center	NY 11794 molluscan aquaculture
Edmund A. Nelson	1912 Lyden Road Timonium	MD 21093 oyster farming
John Ray Nelson	Bon Secour Fisheries P. O. Box 60	AL 36511 oysters
Oscar W. Nelson, Jr.	Ellis Bay Packing Co Box P1	MD 21840 oyster planting
Richard A. Neve	Senior Science Advis Office of the Govern	AK 99811
New York Shell Club	American Museum of N History	NY 10024 molluscs
Nisbet Oyster Co.	Box 355 Bay Center	WA 98527 oysters, clams, scallops
Steven Olson	2230 Chestnut Glenview	IL 60025 crab, lobster, scallop
Oregon Oyster Co.	208 S.W. Ankeny Stre Portland	OR 97204 oyster farming
Ralph V. Pausina	6551 Louisville Stre New Orleans	LA 70124 oysters
Jeremy Penner	42 Cielo Vista Plaza San Angelo	TX 76904 culturing techniques
William Perret	Louisiana Dept. of W and Fisheries	LA 70895 oyster biology, habitat and environmen
Talia A. Peters	P. O. Box 574 Lusby	MD 20657 molluscan taxonomy
Raul H. Piedrahita	Department of Agricu Engineering	CA 95616 depuration, engineering, algae culture

New Members - new member letter sent already

PENDING APPLICATIONS FOR MEMBERSHIP

Member	Address	Research interests
Eric N. Powell	Department of Oceanography Texas A & M University TX 77843	oysters
Lisa M. Raone	104 Conwell Avenue Newfield NJ 08344	oyster culture, MSX disease
Bryce W. Rhodes	3190 A Airport Loop Costa Mesa CA 92626	mussel cultivation
William L. Rickards	Virginia Sea Grant Program 203 Monroe Hill House VA 22903	culture and management
William H. Riggin	Wm. P. Riggin & Son, 13 South Temperance NJ 08349	clams and oysters
Jim Roberts	851 Camino Pescadero Apartment 76 CA 93117	oysters, clams, lobsters, shrimp
William Robertson	Box 2398 Espanola, Ontario	
Dr. Edwin H. Robinson	Department of Wildlife Fisheries Sciences TX 77843	crayfish
Dr. Robert P. Rowaire	School of Forestry, and Fisheries LA 70803	crayfish, shrimp, oysters, aquaculture
Matthew Salinger	P. O. Box 30181 Charleston SC 29417	shrimp, oysters
Gregory Sawyer	8 Tobey Lane Mattapoisett MA 02739	mariculture
Jerry K. Schaaf	ITT Rayonier Inc. Box 299 WA 98550	fecal coliform impact on shellfish ind
Ralph H. Schley	Pine Lake Marketing 330 S. W. 43rd Street WA 98055	manufacturer of shellfish industry sup
John W. Schneider	Florida Department of Resources FL 32303	resource management, depuration, sanit
Paul Schwartz	Superior Fisheries of 705 Muldoon #53 AK 99504	scallop and nori mariculture
Eric Silberhon	4813 West Napoleon Avenue Metairie LA 70001	oyster toxicology, biology
Edward Silvestri	222 McNaughton Avenue Cheektowaga NY 14225	prosobranchs, opisthobranchs
John D. Slapcinsky	5310 Hexagon Place Fairfax VA 22030	
Lorene E. Smith	Dept. of Biological University of New Orleans LA 70148	oyster biology and ecology
William L. Smith	Alabama State Health Mobile Branch Lab AL 36618	sanitary quality of shellfish, shellfi
Sean C. Smith	Box 10 Site 13, R. R. 5	ovster culture, mussel culture
Hawaiian Malacolog. Society	P. O. Box 10391 Honolulu HI 96816	
Susie Spencer	P. O. Box 124 Russell	hatchery
Jay Sprinkel	Mote Marine Laboratory 1600 City Island Park FL 33577	oysters
Robert W. Stacey	14541 S. E. 167 Renton WA 98058	ovster growing
R. N. Steele	239 Chuckanut Bow WA 98232	oyster grower, packer, seed processor
Albert H. Surprenant	Cape Cod Oyster Co., 262 Bridge Street MA 02655	oyster and hard clams
Dr. R. G. Thomson	Atlantic Veterinary University of Prince	
Robert S. Tomlinson	1 Greenfield court Durham NC 27705	
Luther Tucker	R. D. Box 494 Easton MD 21601	oyster, blue crab, shrimp
Dennis F. Tufts	P. O. Box 236 Ocean Park WA 98640	ovster culture, processing, clam cultu
Two Cousins Fish Mkt	255 Woodcleft Avenue Freeport NY 11520	
James C. VanLoon	730 Brookdale Garden Bloomfield NJ 07003	aquaculture
J. H. Waite	Orthopaedics Research University of Connec CT 06032	byssal attachment, fouling, postlarval
Eric Waldner	4412 N. Cramer St. Shorewood WI 53202	prawn, crab, lobster, shrimp
W. Arnold Waring	Coast Oyster Co. 1437 Elliott West WA 98119	
Bruce J. Watts	Rt 2 Box 1280 Sulphur LA 70663	oysters
Alfred B. Wiegand	16812 Camberford Street Derwood MD 20855	ecology, aquaculture
Beatrice E. Winner	342 Southwind Drive North Palm Beach FL 33408	gastropod molluscs
Hal Winters	Department of Marine State House Station ME 04333	sanitation and management
Jean M. Worms	D. F. O. Marine Biological Re Pectinidae and cephalopods	
Kirk E. Wright	RFD 3 Brayton Road Pole 4 RI 02917	Unio for pearl culture
Won Tack Yang	2705 Beluche Drive Galveston TX 77551	
Brenda L. Young	Department of Biology University of South SC 29208	oyster (Crassostrea virginica) settlem
Donald J. Young	11975 Third Street E Treasure Island FL 33706	bivalves and gastropods

THE NATIONAL SHELLFISHERIES ASSOCIATION
WANTS YOU !!

The National Shellfisheries Association (NSA) is an international organization of scientists, management officials, and members of industry that is deeply concerned and dedicated to the formulation of ideas and promotion of knowledge pertinent to the biology, ecology, production, economics, and management of shellfish resources. The Association has a membership of nearly 700 from all parts of the USA, Canada and 18 other nations; the Association strongly encourages graduate student's membership and participation.

WHAT DOES IT DO?

- Sponsors an annual scientific conference.
- Publishes the peer-reviewed Journal of Shellfish Research.
- Produces a Quarterly Newsletter.
- Interacts with other associations and industry.

AS AN NSA MEMBER, YOU WILL

- Meet kindred scientists, managers and industry officials at annual meetings.
- Have peer review through presentation of papers at annual meetings.
- Benefit from the experience of your elders or be rejuvenated by the fresh ideas of youth.
- Make useful contacts for your job search if you are a student, or meet promising young people if you are a potential employer.
- Receive a scientific journal containing important research articles.
- Receive a Quarterly Newsletter providing information on the Association and its activities, a book review section, information on other societies and their meetings, a job placement section, and much more.

HOW TO JOIN OR LEARN MORE

- Contact the NSA member whose name appears on the back of this sheet

-OR-

- Fill out and mail the application below. The dues are ONLY \$12 (US) per year and that includes the Journal and the Newsletter!

NATIONAL SHELLFISHERIES ASSOCIATION - APPLICATION FOR MEMBERSHIP

For the calendar year _____ Date _____

Name _____ Regular or Student Member _____

Mailing address _____

Shellfishery interests _____

Sponsor (NSA member) _____

Make check (MUST be drawn on a US bank) or international postal money order for \$12 payable to the National Shellfisheries Association and send to Dr. Scott E. Siddall, Secretary-Treasurer, Marine Sciences Research Center, State University of New York, Stony Brook, NY 11794 USA. (516) 246-8678.