

# National Shellfisheries Association

QUARTERLY NEWSLETTER

MAY 2007

GROTON, CT



## President's Message

I am honored to begin serving as President of NSA as the Association celebrates its centennial year. During the past century, NSA has grown into an international association of researchers, managers and industry members from 40 countries that work on virtually every aspect of shellfish imaginable. The recent passing of Dr. Melbourne Romaine Carriker, a long-time member, Past President and friend of NSA, caused me to reflect on the contributions that many leading members have made over the past century. It is humbling indeed. While we are saddened by the loss of friends like Mel, we are fortunate to have known them and grateful for their contributions to NSA. Mel's book "The Taming of the Oyster" provides an engaging account of our history and is recommended reading for all. It describes a strong foundation that projects a bright future for NSA, but that future requires an active membership that constantly seeks ways to help the Association grow and stay involved with important, relevant and timely issues as those that preceded us have done so well. Therefore, I call upon each and every one of you to serve NSA as best you can. What you get from NSA largely depends upon what you and other members contribute, not only financially, but also in service; so be a leader and help where you can:

- attend meetings to share your knowledge, concerns and needs
- submit articles and items of interest for the Newsletter
- publish research findings in the *Journal of Shellfish Research*
- serve on a committee or run for an office
- organize a special session at our annual meeting to highlight a need
- seek support for a special issue of JSR to advance knowledge about a topic
- support students as a mentor or with a financial contribution to the Student Endowment Fund
- above all, recruit your colleagues to join and participate.

If you missed Aquaculture 2007 you missed a great Triennial meeting. With 94 sessions containing 1,120 oral presentations and 244 posters as well as 210 exhibitors there was plenty to keep the 3,250 attendees busy. Such a large meeting can be overwhelming, but thanks to Sandy Shumway (Aquaculture '07 Program Chair) and LeRoy

Creswell (NSA Program Representative), it was easy to find the shellfish-focused sessions. Not counting the daily shrimp sessions, there were more than a dozen that focused exclusively on shellfish, while many more included overarching topics applicable to shellfish aquaculture, biology, fisheries, economics and management. At least 145 of you checked off the box indicating that you were a member of NSA. Your support is greatly appreciated as that attendance number helps determine how meeting revenues are split among the sponsoring organizations.

The Annual Business Meeting was held on Thursday and resulted in several important actions, announcements and initiatives. A fitting tribute and formal resolution to Mel

Continued on page 3



President Lou D'Abramo passes the gavel to President-Elect Dave Bushek at the annual business meeting in San Antonio.

### *In this issue:*

- *San Antonio Recap*
- *Army Corps Permit*
- *Industry Report*
- *Student Award Winners*
- *In Memoriam*

\$100,000



10k

## Army Corps Establishes New Shellfish Permit

With the continuing decline of wild populations of many shellfish species, more focus is being aimed toward the use of intensive aquaculture as a means of meeting the domestic shellfish demand in the United States. Shellfish aquaculture has been practiced in the U.S. for decades, but as new and better techniques were developed the industry has grown. With this growth, issues such as permitting and regulation, user group conflicts, and environmental impacts have gained more attention.

As a testament to how important some of these issues have become, the Army Corps of Engineers (COE) added a new Nationwide Permit (NWP) to its program this year that specifically addresses commercial shellfish aquaculture activities. Nationwide permits are a “type of general permit issued by the Chief of Engineers and are designed to regulate, with little if any delay or paperwork, certain activities that have minimal impacts.”<sup>1</sup> In theory these permits are designed to make culture activities easier, but given the broad scale over which they apply, the wide



range of culture methods used, and existing regional and state regulations, their exact impact of COE permits on the industry is not clear.

NWP 48, originally NWP D, was posted to the Federal Register in September of 2006 for comment. The three main advocacy groups for shellfish growers in the U.S., the East Coast Shellfish Growers Association (ECSGA), the Pacific Coast Shellfish Growers Association (PCSGA) and the Gulf Oyster Industry Council (GOIC) all worked closely with each other and met with the COE to discuss and address concerns with the new proposed permit. The final COE permit conditions were published on March 19, 2007 and are currently in a 45 day period of examination for consistency by the Environmental Protection Agency (EPA) and the National Oceanic and Atmospheric Association (NOAA). While the permit became active on March 19<sup>th</sup> 2007, the possibility does exist that the language

## Congratulations to Student Award Winners !!

Congratulations go out to NSA students who received presentation awards at the 99th Annual Meeting in San Antonio, Texas!

The Thurlow C. Nelson Award for best oral presentation was presented to Elodie Fleury from IFREMER, France, for her talk, “The identification of bone morphogenic protein (BMP) from the oyster *Crassostrea gigas* that is differentially expressed in progeny exhibiting opposed susceptibility to summer mortality.” Honorable mention for outstanding student oral presentations were also awarded to Jessica Moss, Virginia Institute of Marine Science, for “Characterization of a novel *Perkinsus* spp. parasite from *Crassostrea ariakensis* and *Crassostrea hongkongensis* from southern China;” and to Dane Frank, University of Connecticut, for “Investigating the control of water pumping in bivalve molluscs: new understanding through the application of new techniques.”

The Gordon Gunter Poster Award was presented to Caitlin Vaughn, University of Rhode Island, for her poster, “Expression and activation of matrix metalloproteinases in the eastern oyster *Crassostrea virginica* in response to experimental infections with *Perkinsus marinus* and *Roseovarius crassostreae*.”

As judging is a time consuming but important task, NSA would like to thank the following members for donating their time and expertise to judge student talks and/or posters at the meeting: Marta Gómez-Chiarri, Kim Reece, Karen Burnett, Missy Southworth, Chris Dungan, Steve Allen, Paul Rawson, Stan Allen, John Ewart, Tom Soniat, Chris Langdon, and Tommy Leggett. If you would like to judge student presentations at next year’s meeting, be sure to check the box on the registration form indicating your willingness to help.

**Ami Wilbur**  
**Ryan Carnegie**  
**Student Endowment and Awards Committee**

## Volunteers Needed to Organize Sessions at 100th Annual Meeting of NSA (2008)

Contact Karolyn Hansen, Vice-President, or Sandy Shumway, Local Arrangements, as soon as possible with your ideas (contact info on back page).

Continued on page 6

## **President's Message...** Continued from page 1.

Carriker was made, along with some heartfelt comments from the floor by Dr. Sammy Ray who first met Mel at the 1951 NSA meeting. In the spirit of the wild west, Bill Walton "shot" his way through the Resolutions with a six gun pistol – my ears are still ringing. Dr. Fusui Zhang of the Institute of Oceanology at the Chinese Academy of Sciences was recognized for his contributions in promoting shellfish aquaculture throughout China. The Executive Committee announced that Linda Kallansrude has been hired as Secretariat. Linda will assume the responsibilities of bookkeeper and take on a variety of other administrative duties. Lou D'Abramo described upgrades that will soon take effect on our web portal. In addition to a fresh look and more user-friendly navigation, the upgrade includes management improvements that should enhance your experience with meeting registrations, abstract submissions, online payments, managing your account and simply finding information. Lou also announced a new contract with BioOne to deliver JSR articles online. Sandy Shumway has planning well underway for the 100th Annual Meeting and reviewed some of the highlights. **This will be one meeting you do not want to miss!**

By now you should be well aware of the Centennial Campaign for the Student Endowment Fund. With the blessing of the Executive Committee in Monterey, Sandy Shumway began a capital campaign to raise \$100,000 for the Student Endowment Fund (SEF). The SEF was established in 1989 by Past President Scott Siddall to provide financial assistance for student members to attend the annual conference where they could meet and mingle with senior scientists, discuss research and arrange for future employment. To date, the primary source of funds for the SEF has come through funds generated by the Annual Auction, and secondarily through generous contributions of members or proceeds made at the NSA sales booth. The fund has been growing slowly and needs a more solid base. If we work together, the goal of \$100,000 is not as formidable as you might think. At the EXCOM meeting Chris Davis solidified commitments from every single member of the Executive Committee totaling more than \$6,000 – now it's your turn! With nearly 800 members, if every member contributes \$100 on average, that's \$80,000. You needn't contribute it all at once, contribute what you can now in 2007 and then pledge to match that in 2008 and we'll reach our goal before the Centennial meeting! **DONATE TO THE SEF CAPITAL CAMPAIGN TODAY!**

At the Business Meeting Chris Davis reported that our financial status is good and will therefore not result in any increases in dues for 2008. This is good news for us all. However, he and Sandy pointed out that there are two problems with late renewals of memberships. First, it makes budgeting for the upcoming year difficult. Second, it substantially increases costs due to the postage required to mail back issues of JSR that the member missed due to

late renewal. This problem led to quite a bit of discussion among the EXCOM that culminated in a motion to apply a fee to cover the costs of shipping back issues of JSR to late renewals. The fees will not go into effect until 2008 with the goal being to reduce or eliminate late renewals so that we can keep the cost of membership down. So please renew early next year.

Obviously, there is much to be done as we continue to move the Association forward. Thankfully, we have a competent and able group of individuals that have been elected or graciously accepted appointments to help lead the association. Three positions were up for elections this year and all were decided by a small margin. Joth Davis became President-Elect and will work closely with me for the next two years until he replaces me in 2009. Karolyn Hansen was elected Vice President and will serve as Program Chair for our centennial meeting in Providence, RI next year. Finally, Ryan Carnegie edged out John Ewart by a mere three votes, but since Karolyn Hansen must vacate her final year as Member-at-Large to begin her term as Vice President, the Executive Committee asked and John agreed to complete Karolyn's final year as Member-at-Large. Chris Davis continues as Treasurer, Maureen Krause as Secretary, Bill Walton as Member-at-Large, and Sandy Shumway as Editor of JSR. Lou D'Abramo moves into the Immediate Past President position which carries with it a variety of duties to help ensure continuity of the organization. One of those duties is the identification of individuals for Honored Life Member and Wallace awards. Contact Lou if you have suggestions for worthy recipients. Many of the Committee Chairs have agreed to continue serving as indicated on the back of the newsletter and on the web portal. One important change is that LaDon Swann, who served as Webmaster for the past two years, has stepped down and Karolyn Hansen stepped up. This will work well as Karolyn will be intimately involved with the web portal as she works as Program Chair for the 100<sup>th</sup> meeting. Thank you LaDon for your past service, and thank you Karolyn for taking on this new role. A complete list of the Executive Committee and Committee Chairs is on the back of this newsletter and I personally thank them all for agreeing to serve. They are all dedicated individuals that have generously donated their time and energy to NSA in the past and I am confident that they will continue to serve the Association well.

As we move forward, I will do my best to keep you informed through this newsletter and on our website ([www.shellfish.org](http://www.shellfish.org)). As I indicated above, your help is essential and there are many opportunities for you to get involved. So, after you read through this newsletter, consider what you might be able to do to serve NSA; then contact me or one of the individuals on the back of this newsletter.

**Dave Bushek,  
President**

## Recruits' Corner

A big Texas **THANK YOU** to all the student workers and volunteers who helped with every point in the meeting, especially at the sales booth and auction. Thanks also to all the student presenters who made this year's Triennial meeting a big success! At this year's meeting of NSA officers, we (Recruits co-chairs) suggested that two new positions on the Recruits Committee be established. With these new positions, we can extend the opportunity for valuable experience and resume-building involvement in a professional scientific society. The two positions for which we are now seeking volunteers are Recruits webpage coordinator and student representative to the local planning committee. The webpage coordinator will manage content on the Recruits page within the NSA website. This task will be ongoing and does not involve programming (so no special expertise is necessary!). The student representative to the local planning committee will assist in the planning of student activities for the next meeting and should reside in, or be a native of the area in which the meeting will be held. For example, next year's meeting will be in Providence, RI, so we are currently looking for someone very familiar with that area who can provide information on places to go and things to do that would be of interest to student attendees. Anyone interested in either of these positions should contact Nature or Dane using the contact information on the back of this newsletter. Come on, get involved!

Next year's meeting will be NSA's 100th! That's right, we are celebrating our Centennial in Providence, Rhode Island. And as a result of clever planning on the part of Sandy Shumway, we will be given the opportunity to mix and mingle with likeminded scientists attending the 2008 Benthic Ecology Meeting as well. Their annual meeting will follow ours, with a one day overlap. So get to work now, have a productive year and start thinking about what you will present at the historic Centennial meeting in Providence, RI!

### **Nature McGinn & Dane Frank Student Recruits**



Nature and Dane attend the annual ExCom meeting in San Antonio.

## Student Research Grants Awarded

The annual competition for the Carriker and Castagna Student Research Grants concluded in February. Student proposals were reviewed for quality and intellectual merit by a twelve-member panel. Rankings from this panel were then used to select the following grant recipients.

Hélène Hégaret, Department of Marine Sciences, University of Connecticut, was awarded the 2006 Carriker Grant for her proposal, "Effect of Harmful Algae and Parasites on Protein Expression in Bivalve Molluscs Using a New Proteomic Technology."

James Reinhardt, Department of Marine Sciences, University of Connecticut, was awarded the 2006 Castagna Grant for his proposal, "The Control of Biofoulers in Shellfish Aquaculture: the Use of Acetic Acid and Gastropod Biocontrols." An honorable mention was given to Jaclyn Taylor of Rutgers University, Haskin Shellfish Research Laboratory.

Congratulations to the 2006 award recipients!! NSA also thanks panel members who judged the proposal including: Chris Davis, Joth Davis, Jay Parsons, Neil Bourne, LeRoy Creswell, Bob Bayer, Aswani Voley, Maureen Krause, Karolyn Hansen, Islay Marsden, Lewis Deaton, and Bill Fisher.

The deadline for applications for the 2007 Carriker and Castagna Awards (<http://shellfish.org/grants.htm>) is November 30, 2007. Students, this is a great way to fund a portion of your research and build your resume.

### **Karolyn Hansen Vice President**



Castagna Grant awardee James Reinhardt (far left) and Carriker Grant awardee Hélène Hégaret (far right) with Past-President Lou D'Abramo (center left) and Vice-President Karolyn Hansen (center right).

## Book Review

**Methods for the Study of Marine Benthos, 3<sup>rd</sup> Edition** by Anastasios Eleftheriou and Alasdair McIntyre (eds.); Blackwell Publishing, Oxford, England; 2005; ISBN 0-632-05488-3, 418 pp.

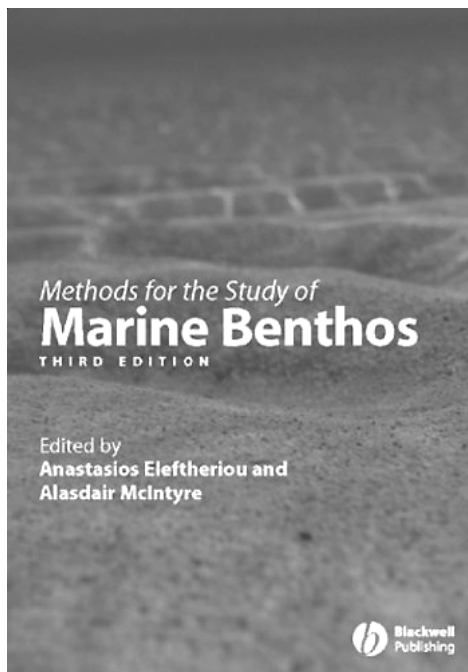
Every field of science has its 'how to' handbook and **Methods for the Study of Marine Benthos** has filled that niche for researchers studying the biology of the soft-bottom benthos for more than three decades. As a first-year graduate student, I vividly recall my major advisor's edict that I thoroughly read the first edition (published in 1971) from cover-to-cover to gain an appreciation of the approaches researchers use to study the benthos, and to obtain key references and appropriate techniques for benthic sampling and sample processing. His advice was well taken and during my first few years of graduate study I frequently consulted the handbook for the details of some particular technique. In the ensuing years I have directed many graduate students to the second edition (published in 1984) for salient information on matters ranging from advantages and disadvantages of different types of benthic sampling devices to approaches for estimating benthic secondary production, and trade-offs between sieve mesh size and sampling efficiency.

The 3<sup>rd</sup> Edition of **Methods** appears about two decades after the publication of the 2<sup>nd</sup> Edition and includes new chapters (Imaging Techniques, Deep-Sea Benthic Sampling) as well as updated expositions of the original chapters. Chapters contained in the 2<sup>nd</sup> edition on phyto-benthos and estimating benthic primary production and ship and gear positioning were not included in the most recent edition. Only two of the 19 authors of the latest edition contributed to chapters in the 2<sup>nd</sup> edition, and Anastaios Eleftherious, who replaced the late Norman Holme, and Alasdair McIntyre serve as editors of the volume.

As with previous editions, this edition of **Methods** primarily focuses on procedures for conducting large-scale benthic sampling surveys. Chapter 1 (Underwood and Chapman) provides an overview of the design and analysis of benthic surveys with particular emphasis on assessing environmental impacts. The authors provide sound advice regarding assessment of adequate temporal sampling replication, appropriate data transformations and how best to structure sampling designs to accommodate natural

gradients in environmental variability. Bale and Kenny (Chapter 2) review methods for assessing standard bulk sediment properties as well as other measures of sediment properties such as organic matter content. Focus is placed on methods associated with estimating bulk sediment properties as well as remote sensing techniques for characterizing the seabed over larger spatial scales. The latter approaches are becoming more widely used, especially in light of assessing the effects of large-scale disturbances (e.g. fishing impacts) on benthic populations and the design of marine protected areas. Smith and Rumohr (Chapter 3) provide a brief overview of various types of acoustical and optical imaging techniques used to study the seafloor. Large advances in this arena have been made over the past several decades to better understand benthic ecological processes. Most techniques are non-destructive which allows repeated sampling over large spatial scales with no sampling disturbance. Chapter 4 (Munro) discusses different types of shallow water dive systems for studying the benthos, as well as methods for data collection and techniques for conducting underwater surveys and sampling. The relatively recent introduction of mixed gas diving to the scientific community has resulted in a far better understanding of deep-water benthic species, especially in areas where the use of submersibles and remote-operated vehicles is limited or too costly. Chapters 5 (Eleftheriou and Moore) and 6 (Somerfield, Warwick and Moens) provide exhaustive treatments of techniques for sampling and sorting of macrofauna and meiofauna, respectively. The latter chapter also includes a discussion of energy flow measurements. Gage and Bett (Chapter 7) provide an overview of various types of deep-sea benthic sampling gear, and Chapter 8 (van der Meer, Heip, Herman, Moens and van Oevelen) provides a lucid and comprehensive treatment of various ways for assessing the flow of energy in benthic populations.

As the editors note, the evolution of methodologies and approaches for soft-sediment sampling over the past twenty years has been rather uneven. Some areas (e.g. techniques for processing sediments and organisms) have remained relatively stagnant, while other areas (seafloor imaging, deep-sea landers) have shown impressive advancement. Extraction of organisms from sediments and identification procedures often remain the rate-limiting steps for conducting large-scale benthic surveys, and while



Continued on page 7

## COE Shellfish Permit... Continued from page 2.

or conditions of the permit may be altered depending on the recommendations of the EPA, NOAA and state consistency reviews. NWP 48 covers a wide variety of species including oysters, clams, geoducks, mussels and scallops. According to Bob Rheault, president of the ECSGA, the overall feeling by the growers is generally positive, but there are still some concerns.

Perhaps one of the most positive points of the new NWP is the recognition that “shellfish improve water quality and increase production,” thus providing a “net increase in aquatic resource functions in estuaries and bays where shellfish are produced.”<sup>2</sup> NWP 48 also recognizes that the potential for adverse effects by existing operations is minimal, and supports an increase in aquaculture based shellfish production in the U.S. Another positive point is the recognition that harvesting techniques such as dredging will have minimal effects on the environment. One caveat, however, concerns harvesting by dredging in areas with submerged aquatic vegetation (SAV). A pre-construction notification (PCN) is required to dredge in an area with SAV. Whereas the permit does restrict the definition of SAV to rooted vascular plants (eliminating



protections for species of macroalgae), the language does not specify what constitutes an eelgrass patch or how dense the eelgrass must be to be considered a continuous patch. The interpretation of this clause (and many other terms such as “spawning area” and “unduly impact”) is largely left up to the discretion of the District Engineers, which may vary widely from location to location.

NWP 48 also requires a PCN for any project over 100 acres. Whereas this size was increased from the originally proposed 25 acre limit, it still is a major issue of concern. Many existing operations defined by the permit as “one that has been granted a permit, license or lease from a state or local agency specifically authorizing commercial aquaculture activities and which has undertaken such activities prior to the issuance of this NWP,”<sup>2</sup> exceed the 100 acre size limit and thus are required to file a PCN. Whether the District Engineer requires a grower to file for an Individual Permit is again largely at his/her discretion. In

the Commonwealth of Virginia, where the current general permit is a joint permit between the Commonwealth’s regulatory agency, the Virginia Marine Resources Commission (VMRC) and the COE, industry members petitioned to amend the Code of Virginia to include a section relating specifically to shellfish aquaculture. According to AJ Erskine, a representative of the industry who was involved in the amendment, the philosophy was to have the legislation in place to demonstrate to the District Engineer (who will review the PCNs and ultimately decide their fate) the importance of aquaculture to the Commonwealth of Virginia.

As part of the NWP implementation, the COE would like to gather information on existing operations to examine the impact of shellfish aquaculture by requiring reports from every grower regardless of size or PCN requirement. They further give the Division Engineers the authority to conduct regional reviews of commercial shellfish aquaculture activities over the next five years. Because this NWP applies only to existing operations - i.e. operations that already have a permit on a regional, state and/or local level (depending on requirements) - much of this information is already available. Essentially, NWP 48 is doubling the paperwork required nationwide.

One issue that has been a concern for several years was the idea that shellfish seed may be considered “fill” under the Clean Water Act. NWP 48 authorizes “discharges of dredged or fill material in all waters of the United States for the purposes of commercial seeding, rearing, cultivating, transplanting and harvesting of shellfish which may involve the installation of buoys, floats, racks, trays, nets, lines, tubes and containers, as well as other associated structures and work.”<sup>2</sup> It also authorizes the use of shellfish seed in support of aquaculture and gives a relatively broad definition of shellfish seed that consists of immature individuals, or individuals attached to a shell or shell fragment. It further defines suitable substrate to include gravel, concrete or limestone in addition to shellfish shells and shell fragments. The language in the NWP is such that while technically seed is broadly defined as “fill,” its use is supported under the broad scope of the permit.

Overall the reaction by the industry to NWP 48 is one of caution. The permitting implementation is still very much in the early stages, and the overall impact, be it good or bad, on the shellfish aquaculture industry as a whole remains to be determined.

1. The Wetlands Regulation Center 33 CFR Part 330 – Nationwide Permit Program; <http://www.wetlands.com/reg/tlpge03a.htm>
2. Federal Register / Vol. 72, No. 47 / Monday March 12, 2007 / Notices p11144

**Missy Southworth**  
**NSA Newsletter Reporter**

## Book Review... Continued from page 5.

techniques such as sediment-profiling imagery have become increasingly popular, the lack of biological ground-truthing is always worrisome, especially when assessing the influence of environmental impacts on biodiversity, changes in species composition and benthic-pelagic coupling processes.

The newest edition provides useful updates on a broad spectrum of methods for studying the soft-sediment benthos. Of the 1140+ references, more than half were published after the appearance of the 2<sup>nd</sup> edition. It is unfortunate that topics such as the ever-growing use of methods for conducting manipulative field experiments and *in situ* approaches for assessing biogeochemical fluxes at the sediment-water interface and down-sediment core profiles of chemical properties were not addressed in this edition. Coverage of approaches for studying the influence of the physical environment on sediment dynamics and population/community responses are generally lacking and it would have been helpful to include some treatment of various geotechnical methods and measurements, since these can be helpful in ascertaining faunal responses to large-scale anthropogenic disturbances. While **Methods** may not be on my current graduate students' 'must read' list, the treatise remains an invaluable compendium of information for researchers in the field of marine soft sediment biology and a copy should reside on the shelves of marine science libraries.

**Robert B. Whitlatch**  
**Department of Marine Sciences**  
**University of Connecticut**

[This review is also being published in the Journal of Experimental Marine Biology & Ecology]

### **\*\* Attention Students \*\***

Do you want to go to the ERF meeting in Providence but money is tight? Why not apply to work at ERF 2007 in exchange for meeting registration? Besides the financial benefit, you will have the chance to work alongside the conference organizers to see how such a large event works, and get a free t-shirt! Your registration fee will be reimbursed in exchange for working 2 half-day shifts (up to 6 hours each shift).

For further information, please contact:

Janet Nestlerode  
[nestlerode.janet@epa.gov](mailto:nestlerode.janet@epa.gov)  
850-934-2492

Marty Chintala  
[chintala.marty@epa.gov](mailto:chintala.marty@epa.gov)  
401-782-3155

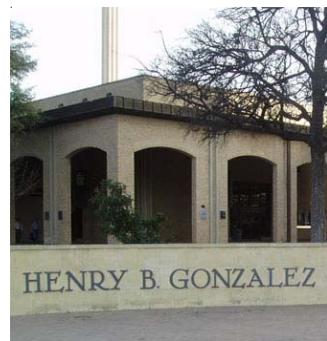
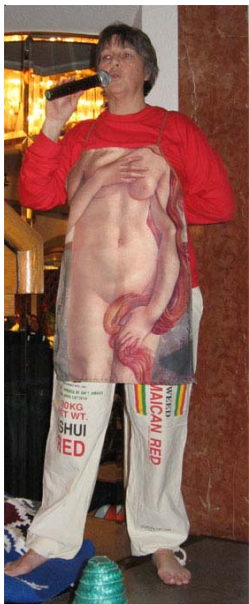
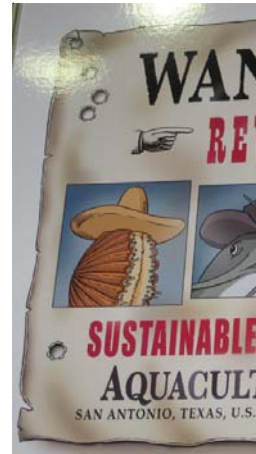
## Industry Update

Regulatory issues important to the shellfish industry have taken center stage of late. At the national level the US Army Corp of Engineers (COE) recently issued a new Nation Wide Permit D for Shellfish Aquaculture (see report on page 2 of this issue). The permit supports the US Department of Commerce Aquaculture Policy in helping to develop a competitive, sustainable US shellfish industry and supports the language in the National Aquaculture Act of 1980 with respect to the importance of aquaculture to the US national interest. New language covering current shellfish aquaculture was largely supported by the shellfish industry with notable exceptions relating primarily to definitions of, and documentation needs for pre-existing environmental conditions, triggers for inducing regulatory oversight when expanding operations, and questions about industry practices when working in submerged aquatic vegetation. Whether barriers to aquaculture development at the national level remain in place is unknown and the outcomes of the permitting process (development of Regional General Permits may follow) will likely set the regulatory tenor for the industry for years to come. The request for public comment during the NWP review process afforded the shellfish industry the opportunity for significant self reflection and it was gratifying to see the industry work together on a national basis to support common goals.

The old adage that all politics are local is certainly alive and well in Washington State. Here, shellfish aquaculture activity continues to generate strong opinions among the public with respect to the perceived effects of new culture activities, mainly associated with geoduck clams and other intensive methods of shellfish cultivation. Concerns include co-option of intertidal habitat by geoduck farms that preclude other uses such as shellfish gathering or other recreation, changes in ecological interactions among benthic plant and animal communities, changes in habitat use by fishes and other mobile animals, and other issues including genetic and esthetic considerations. The shellfish industry, on the other hand has endeavored to deliver the message that culture activities are in fact a positive means for delivering important environmental services to near-shore regions. Suspension-feeding bivalves help to increase water clarity by reducing excess seston, and to cycle and sequester nutrients including nitrogen and phosphorus. As ecosystem engineers the physical presence of bivalves, coupled with their physiological activities induce ecological interactions in both the water column and the benthos. Large assemblages of bivalves can serve to increase local diversity for a plethora of other invertebrates and fishes, and may offer the provision of a managed ecosystem for the benefit of many near shore marine inhabitants. The dramatic increase in shellfish restoration activities world wide is clearly the best evidence that shellfish can have a critical role in managing and

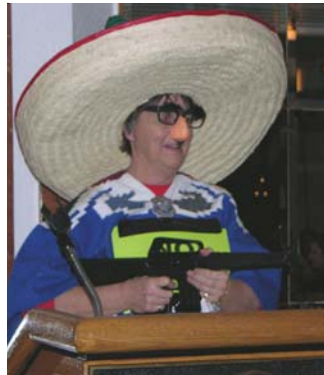
Continued on page 10

# IMAGES FROM THE 99<sup>th</sup> ANNUAL





# ANNUAL MEETING IN SAN ANTONIO



## Industry Update... Continued from page 7.

perhaps helping to reverse man-induced declines in marine ecosystem health.

Yet, based on experience with ongoing west coast conflicts the complexity of the various issues has stalled the delivery of the message. Public opposition to farming shellfish is dramatically increasing at the very time that non-point sources of contamination, increased storm water runoff, and excess nutrients and pollutants continue to degrade the ecological integrity and resilience of near shore habitats, including the decertification of waters for safe shellfish gathering and harvest. Shellfish growing operations are increasingly the target for residents who perceive that bivalves are directly responsible for decreasing water quality, and individuals have gone on record to state a preference for polluted water in the bay fronting their homes over the presence of a shellfish farm. From the perspective of a biologist and shellfish farmer, things are clearly grimmer as small yet effective groups of NGO's work to galvanize the public with miss-information about shellfish growing practices and the effects of suspension feeding bivalves on the marine environment. What is needed is independent, peer reviewed research on the quantitative effects, both positive and negative, of shellfish and culture activities on the environment. Documentation of the effects of shellfish culture over relevant temporal and spatial scales can provide the public with the "tools" for making land-use decisions on a local and national basis to enable shellfish aquaculture and harvesting to remain an integral feature of working waterfronts in the United States. Of course, sustainability of culture activities is the key. How that particular buzzword is defined and the framework for implementation of "sustainable" practices with respect to the local ecological footprint of a farm or managed shellfish bed, temporal and spatial components associated with the cumulative effect(s) of ecological changes, and business and community development (including use of resources and the public good) necessitates continuous education as we move forward.

**Joth Davis**  
President-Elect & Co-Chair Industry Committee

**Stay Informed, Stay Connected,  
Stay Active....**

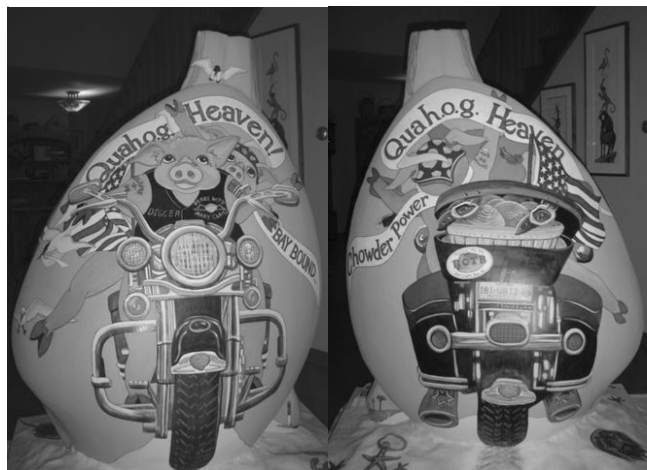
**Visit <http://shellfish.org>**

## Giant Clams Help ReClam the Bay

The Giant Clams of Ocean County, Public Art and Education project is part of the Barnegat Bay Shellfish Restoration Program (BBSRP) being run by Rutgers Cooperative Extension of Ocean County, and the NJDEP Bureau of Shellfisheries. ReClam the Bay, a volunteer support organization working with BBSRP, initiated the Giant Clam project to draw attention to and support shellfish restoration efforts in the Bay. These 5½ foot, fiberglass clams are painted by local artists and will become part of the "Clam Trail" which will lead curious members of the public along a fun-filled and educational journey through Southern Ocean County and Long Beach Island.

South Jersey artist Kathy Johnston painted one of the first giant clams. Titled "The Freedom Clam in Qua H.O.G. Heaven" (H.O.G. stands for Harley Owners Group.), it features two pigs riding a Harley motorcycle, one tattooed with Clams 'R' U.S. An American flag is prominent, the tour bag is filled with clams, seagulls hold the title in a banner and the Barnegat Lighthouse appears in the distance. On one shell, the hogs are coming towards us; on the back shell, we eat their dust. This giant clam is sure to be a run-away success! For more information and more Giant Clams see [reclamthebay.org](http://reclamthebay.org).

**Gef Flimlin**  
Co-Chair, Industry Committee



The Freedom Clam in Qua H.O.G. Heaven, painted by South-Jersey artist Kathy Johnston. A color picture of the clam appears in the center collage of this newsletter.



## Florida Oyster Restoration Summit

March 14-15, 2007, St. Petersburg, FL

Oysters (*Crassostrea virginica*) have long been valued as a food item but their ecosystem services are only recently becoming fully appreciated despite a multi-decade bibliography of reports describing those services. In Florida, as elsewhere in the range of *C. virginica*, many reefs have been degraded or entirely destroyed due to impacts from fishing, coastal development, and changes in water quality and delivery patterns. In response to our increased awareness of the ecological value of oyster reefs, various efforts have been initiated to “restore” reefs and their ecological function. The Florida Oyster Restoration Summit was convened by Bill Arnold (Florida Fish and Wildlife Research Institute), Laura Geselbracht (The Nature Conservancy), and Mark Berrigan (Florida Department of Agriculture and Consumer Services) in an effort to bring together all parties in Florida who were actively engaged in oyster reef restoration or were considering such efforts in the future.

The primary goals of the workshop were to introduce those active in reef restoration to one another, to learn the specific details of the many restoration projects that are underway, to provide those practitioners with an ecological and regulatory framework within which to consider their restoration projects, and to establish a durable conduit for communication among groups. To accomplish these goals, the first day of this two-day workshop was devoted to presentations from scientists and managers regarding oyster reef ecology and function, physical structure of reefs, present status of reefs in Florida coastal waters, practical considerations for building a reef, and the permitting requirements associate with reef construction. The second day of the workshop was then devoted to descriptions of specific reef restoration projects, and a total of eleven case studies were presented. The workshop ended with a panel discussion of issues and considerations regarding reef restoration and function.

The workshop was surprisingly well-attended and rewardingly well-received. Over 80 representatives from government, academia, NGOs, and private interests attended to hear a total of 26 presentations. Opportunities to meet, greet, and discuss topics of interest occurred during morning and afternoon hospitality sessions, during lunch, and during evening grazing expeditions. However, the true value of the workshop will only be realized with regard to the achievement of those original goals, with particular emphasis on increased communication among the various groups. Work is underway to develop a web-based communication scheme.

As a footnote, Dr. Roy Crabtree, director of the Southeast Regional Office of NOAA, presented plenary speaker and

NSA member Dr. Loren Coen with an award for his many contributions to oyster biology and restoration along the Atlantic and Gulf coasts of the United States.

**Bill Arnold**  
Florida Fish and Wildlife Research Institute



## Student Endowment Awards Given for San Antonio Meeting

NSA students delivered 19 oral and 8 poster presentations at the Annual Meeting in San Antonio, Texas. A total of 16 students received NSA Student Endowment Awards in the form of complementary registration or lodging for the meeting. Congratulations go to endowment awardees Elodie Fleury, Galina Kolyuchkina, Suttinee Limtham-mahisorn, Karlo Dante Natividad, Kristi Straus, Nature McGinn, Jessica Moss, Maille Lyons, Mickael Perrigault, Tony Robson, Justin Manley, Paul Lang, Dane Frank, H el ene H egaret, Robin Varney and Michelle Lamendola.



Special thanks are owed to Steven Roberts, Marty Chintala, Marta G omez-Chiarri, Bill Arnold, Jay Parsons, Gail Scott, Dianna Padilla and Mark Camara for judging endowment award applications. Also, congratulations to those students who received Nelson and Gunter presentation awards (see page 2).

**Ami Wilbur**  
**Ryan Carnegie**  
Student Endowment and Awards Committee



## In Memoriam

### Dr. James Elden Hanks



Dr. James E. Hanks, who served as Director of the National Marine Fisheries Service Laboratory in Milford, Connecticut for 25 years, died on March 27<sup>th</sup>, 2007 in Madison, CT, following a long illness.

Born in Augusta, Maine, in 1924, Dr. Hanks spent his early years in Springfield, MA. In 1942 during World War II, he enlisted in the U. S. Army Signal Corps and served four

years in the South Pacific Theater as a teletype operator and cryptographer. His efforts, in part, assured critical communications for General Douglas MacArthur. He served an additional two years as a Message Center Chief at Fort Monroe, Virginia with a rank of Staff Sergeant. He was honorably discharged in 1948 to pursue a college education, completing a B.S. in 1952 and an M.S. in 1953 at the University of New Hampshire (UNH). During the mid 1950's, Dr. Hanks was employed as a researcher at the Milford Laboratory and then pursued graduate work at the University of Hawaii, before returning to UNH, where he completed a Ph.D. in Zoology in 1960. While attending UNH, Dr. Hanks conducted research at the Woods Hole Oceanographic Institute, under the mentorship of molluscan biologist Dr. Harry Turner. Dr. Hanks devoted his Masters and Ph.D. research to the study of oyster predators, including several species of shell-boring snails.

In 1960, he accepted the position of Assistant Director of the U.S. Fish and Wildlife Service's Bureau of Commercial Fisheries Laboratory in Oxford, Maryland. Two years later, Dr. Hanks moved to the Bureau of Commercial Fisheries Laboratory, now the National Marine Fisheries Service, in Milford, CT, where he succeeded Dr. Victor Loosanoff as Director. From 1969-1970, Dr. Hanks was stationed in London, England on assignment from the Office of Naval Research, where he acted as liaison to the European Marine Biological Laboratories. Dr. Hanks served as Director of the Milford Laboratory until 1985 and remained at the facility, acting as a liaison to the aquaculture industry, until his retirement in 1990.

Shortly after becoming Director at Milford in the early 1960's, Dr. Hanks oversaw the design and construction of a modern 28,000-square foot marine laboratory, which then represented the most advanced research facility of its kind. The laboratory included a complex seawater system capable of delivering hot, ambient and refrigerated seawater to 15

laboratory rooms. The Milford Laboratory design has been used as a model for construction of other marine laboratories in the U.S. and throughout the world.

Under the direction of Dr. Hanks, the Milford Laboratory grew from a modest facility with a staff of 15 to a large laboratory of more than 53 scientists as part of the National Oceanic and Atmospheric Administration (NOAA), Northeast Fisheries Science Center. Research efforts at Milford expanded from the study of oyster biology to development of protocols for the aquaculture of mollusks and the study of pollutant effects on marine organisms. Molluscan research contributed to the early successful development of an aquaculture industry in the U.S. by advancing genetic selection, disease control, microalgal feeding and culture techniques. Studies on the effects of pollutants, which included assessment of physiological, biochemical, immunological and chemical impacts, led to a better understanding of anthropogenic influences on the marine community.

As the Director, Dr. Hanks encouraged professional development of his staff. Dr. Hanks was an early proponent of Equal Employment Opportunity, providing significant training and employment opportunities for women and minorities. Under his leadership, he created many cooperative education and student internships positions at Milford Laboratory.

Dr. Hanks actively promoted the transfer of technology from Milford Laboratory to the aquaculture community in the U.S. and internationally. He established a research library at the Milford Laboratory with an extensive collection of scientific journals and books, which continues to be a resource for scientists. Dr. Hanks provided many training opportunities for individuals from commercial enterprises, academic institutions and government agencies, both domestic and international, so that methodologies developed at Milford were made widely available.

Dr. Hanks will be remembered for his keen interest in the professional development of his staff, his staunch support of Milford Laboratory research initiatives and for his significant contributions toward promoting aquaculture in the U.S. and the world. During his career, he published a number of scientific papers devoted primarily to bivalve research. Throughout his retirement years, Dr. Hanks remained strongly committed to the future of aquaculture and to the Milford Laboratory.

Dr. Hanks was predeceased by his wife of 51 years, Verna Brown. He is survived by a son, Gregory Merritt Hanks, a retired 82<sup>nd</sup> airborne paratrooper living in Jacksonville, AR and a brother, Robert W. Hanks, of Winter Harbor, ME.

**Renee Mercaldo-Allen, Ronald Goldberg,  
Anthony Calabrese, Catherine Kuropat,  
Lori Romick, Steven Tettelbach**

## In Memoriam

### Dr. Melbourne R. Carriker



Dr. Melbourne (Mel) R. Carriker, Professor Emeritus at the University of Delaware, College of Marine and Earth Studies, passed away at the age of 92 on February 25<sup>th</sup> in Lewes, Delaware.

Born in Santa Marta, Colombia in 1915, Mel was a world recognized authority on marine subjects as diverse as functional morphology, biomineralization, and larval ecology interactions. Obtain-

ing a Bachelors degree from Rutgers University (NJ) in 1938, Mel entered a graduate program at the University of Wisconsin, Madison, and completed his Ph.D. in 1943. During World War II, he served aboard a naval patrol ship (YPT 780), patrolling the entrance to Pearl Harbor (HI) and the Aleutian Island Chain (AK).

During his career, Mel held several positions including Assistant Professor at UNC, Chapel Hill, and Director of the Systematics-Ecology Program at the Marine Biological Laboratory, Woods Hole, MA. In 1972 Mel accepted a professorship at the College of Marine Studies, University of Delaware. He would remain at Delaware for the rest of his career, retiring in 1985 at the age of 70. Mel was named Professor Emeritus and continued active, scholarly pursuits up until several days before suffering a stroke.

Mel participated in his first NSA meeting in 1942, and served the Association in various capacities, including: Secretary-Treasurer (1953-1954), Vice President (1955-1957), and President (1957-1959). In 1978, Mel was presented with the Honored Life Member award by NSA, and in 1998 recognized when the first NSA student research award was named in his honor. During the past few years Mel served as Historian of NSA, and completed a book entitled "Taming of the Oyster," which chronicles the history of NSA as it emerged from earlier oyster meetings and groups.

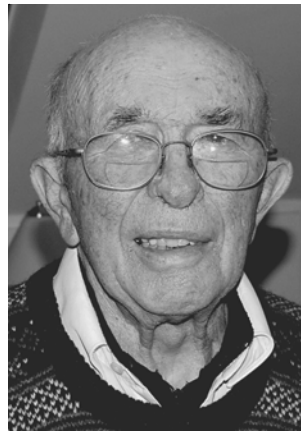
Over his lifetime, Mel published 160 papers, 45 abstracts and made more than 250 professional presentations at scientific meetings. He is survived by his wife of 63 years, Meriel R. "Scottie" Carriker; four sons; a sister and brother; six grandchildren and six great-grandchildren.

Mel will be remembered for many things, but perhaps above all as a gentle caring man who treated everyone like family. He mentored with grace and friendship, and touched the lives and helped shape the careers of many.

**J. Evan Ward**

## In Memoriam

### Mr. Dana E. Wallace



Shellfish growers, harvesters and managers in Maine mourn the passing of one of their own. Dana E. Wallace passed away on March 19<sup>th</sup> at the age of 89, though Dana's legacy far surpassed the boundaries of the Downeast State.

Dana retired in 1983 after a 38-year career as Assistant Research Director and Director of Industry Services at Maine DMR. A hands-on

guy, he initiated the Maine Clam Conferences, informal gatherings of those involved in industry, research and management which fostered communication among participants. The Beals Island Regional Shellfish Hatchery was named "The Dana E. Wallace Education Center" in 1991 as a way of recognizing his spirit of cooperation and grassroots effort to help increase clam harvests in Maine and improve the quality of life for those who depend on clamming.

Mr. Wallace served as Chairman of the Atlantic States Marine Fisheries Commission, working extensively with the Fisheries Research Board of Canada to devise techniques for transplanting seed clams from areas of high to those of low productivity. He was instrumental in organizing meetings in Washington with Senator John F. Kennedy and Leverett Saltonstall which led to the Saltonstall-Kennedy Act that still supplies funds for fisheries research. Mr. Wallace also served as Treasurer and Secretary of NSA.

Active in aquaculture throughout his life, Dana raised quahogs and oysters, and served on the Board of Directors for the Maine Aquaculture Association. He performed clam flat surveys as a consultant to help communities manage their resources. A staunch advocate for clean water and habitat conservation, he shared his expertise and knowledge of marine resource issues with legislators.

Above all, Dana was an educator, mentor, and friend to all. As his business partner Peter Horne said, he was "a wonderful, generous man who would always find what is good in life no matter what his circumstances." He will be sorely missed.

**Sandy Macfarlane**  
**Brian Beal**  
**Peter Horne**

\$100,000

\*\*\*\*\*

## NSA Continues Major Fund Raising Campaign

\*\*\*\*\*

10k



The Capital Campaign to provide long-term financial stability to the Student Endowment Fund is moving along. The EXCOM pledged \$6000 during their meeting in San Antonio and that only took about twenty minutes! No donation is too small and our goal of \$100,000 by the Centennial meeting in Providence is only achievable if everyone helps out. Approach your friends and relatives - you'll be surprised how generous they can be if you are enthusiastic. Please check the WEB page, download the flier, distribute widely and watch that siphon grow!

The students are our future - please make an extra effort to make this campaign a success - the future of NSA depends upon it.

**Sandy Shumway**  
Past-President



## Upcoming Events

**International Symposium on Science and Conservation of Horseshoe Crabs:** June 11-14, 2007, Dowling College, Oakdale, NY. For information and registration visit [www.lsc.usgs.gov/isschc07/index.html](http://www.lsc.usgs.gov/isschc07/index.html).

**World Congress of Malacology:** July 15-20, 2007, Antwerp, Belgium. The Congress will also host the 73rd annual meeting of the American Malacological Society (AMS). For information and registration visit [www.ucd.ie/zoology/unitas/](http://www.ucd.ie/zoology/unitas/).

**International Sclerochronology Conference 2007:** July 17-21, 2007, Hilton Hotel, St. Petersburg, FL. For information visit <http://conference.ifas.ufl.edu/sclerochronology/> or contact Bill Arnold at [bill.arnold@myfwc.com](mailto:bill.arnold@myfwc.com).

**40th Annual Meeting of the Western Society of Malacologists:** July 25-28, 2007, La Paz, BCS, Mexico. For information visit [www.uabcs.mx/maestros/ccaceres/wsm](http://www.uabcs.mx/maestros/ccaceres/wsm) or contact Carlos Caceres at [ccaceres@uabcs.mx](mailto:ccaceres@uabcs.mx).

**8th International Conference and Workshop on Lobster Biology and Management:** Sept 23-28, 2007, Delta Prince Edward in Charlottetown, Prince Edward Island, Canada. For information visit [www.lobsterscience.ca](http://www.lobsterscience.ca).

**Estuarine Research Federation Meeting, Science and Management: Observations/Syntheses/Solutions:** November 4-8, 2007, Convention Center, Providence, RI. For information visit [www.erf.org/erf2007/](http://www.erf.org/erf2007/).

**10th International Conference on Shellfish Restoration (ICSR):** November 13-16, 2007, The Netherlands, "Innovation in the exploitation and management of shellfish resources." For information visit [www.wageningenimares.wur.nl/UK/icsr2007/](http://www.wageningenimares.wur.nl/UK/icsr2007/).

**National Shellfisheries Association, 100th Annual Meeting:** April 6-10, 2008, Providence, RI. For information visit [www.shellfish.org](http://www.shellfish.org).

**Benthic Ecology Meeting:** April 10-13, 2008, Providence, RI. For information visit [www.benthicecology2008.uconn.edu](http://www.benthicecology2008.uconn.edu).

**World Aquaculture 2008:** May 19 -23, 2008, Busan Korea. For information visit [www.was.org](http://www.was.org).

\*\*\*\*\*

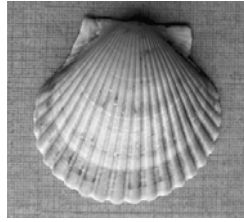
If you would like to announce a meeting, conference or workshop that might be of interest to NSA members, please contact Evan Ward (see back page for contact information).



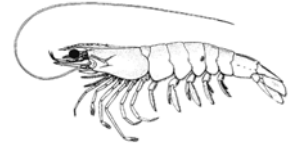
# THE PENULTIMATE PAGE

## Get to know your shellfish

*Argopecten irradians* (Lamarck) - Atlantic Bay Scallop. This coarsely ribbed, blue-eyed scallop is a common inshore inhabitant. At least 4 subspecies are known and range from Cape Cod to the Gulf of Mexico and northern Columbia. It grows to 3 inches in shell height and can be found in waters from 1 to 60 feet, often on sandy bottoms and in eel-grass beds. When threatened, this bivalve rapidly adducts its valves and can "swim" for short distances. [Source: American Seashells, 1974, R.T. Abbott, Litton Ed. Publ., Inc.; *A Field Guide to the Atlantic Seashore*, 1978, K.L. Gosner, Houghton Mifflin Co. Publ.]



*Penaeus duorarum* Burkenroad - Pink Shrimp. This abundant species grows to 8 inches in length and can be found from shoreline down to about 200 feet. It ranges from the Chesapeake Bay south to the Caribbean. Considered a benthic species, adults often migrate to shallow waters at night. Eggs are laid offshore and young drift landward in bottom currents where they grow to adult size in bays and sounds. When mature, adults return to more open waters. This shrimp is fished commercially and recreationally. [*A Field Guide to the Atlantic Seashore*, 1978, K.L. Gosner, Houghton Mifflin Co. Publ.]



## Recipes of the Quarter

### Honey Mustard Basil Mussels

Preparation Time: 40 minutes  
Yield: 50 appetizers

1 lb frozen mussel meats  
½ cup sour cream  
¼ cup honey mustard  
½ tsp fresh basil, chopped  
1 small shallot, chopped  
Gourmet crackers (ca. 50)

1. Allow frozen mussel meats to thaw for about 30 minutes.
2. Meanwhile, combine sour cream, honey-mustard, basil, and shallot in a small bowl and blend well. Refrigerate.
3. On each cracker, place ½ teaspoon of sauce and one mussel meat. Cover meat with another ½ teaspoon of sauce. Garnish with a small piece of red pepper or sprig of parsley. Makes a great appetizer.

\*\*\*\*\*

Both recipes adapted from "The Shellfish Artistry Cookbook," Shumway and Leonard, eds., NSA.

### Sea Scallop Soup

Cooking Time: 80 minutes  
Yield: 4-6 servings

2 lb sea scallop meats  
1 tbsp chopped garlic  
2 tbsp chopped shallots  
2 tbsp chopped fresh basil  
1 qt clam stock or juice  
½ qt heavy cream  
1 cup seeded chopped tomatoes  
½ cup dry vermouth  
1 bunch of leeks, cleaned well, and sliced (white part only)

1. Saute scallops with garlic, shallots, leeks and fresh herbs.
2. Deglaze the pan with vermouth and reduce for one minute. Add the clam stock and bring to boil. Let cool slightly.
3. Puree mixture in small batches in a blender and return to the pan. Pour in the heavy cream, add the tomatoes and simmer for 1 hour (be careful not to boil).

## In the News

NSA student member H el ene H egaret has been elected to Phi Beta Kappa, the oldest academic honors organization in the US. The Society has pursued its mission of fostering and recognizing excellence in the liberal arts and sciences since 1776.

For up-to-date news about shellfish, from around the world visit the following NSA website:  
<http://shellfish.org/aggregator>

**Ms. Nancy Lewis**  
**NSA Bookkeeper**  
**P.O. Box 302**  
**Accomac, VA 23301**

**Forwarding Service Requested**

First Class Mail  
US Postage  
Paid  
Groton, CT 06340  
Permit #25

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

Dr. David Bushek, **President**  
Rutgers University  
Haskin Shellfish Research Laboratory  
Port Norris, NJ 08349  
Phone: (856) 785-0074 ext. 4327  
Email: bushek@hsrl.rutgers.edu

Dr. Jonathan (Joth) Davis, **President-Elect; Co-Chair, Industry Committee**  
Taylor Shellfish Farms  
15425 Smoland Lane  
Bainbridge Island, WA 98110  
Phone: (360) 765-3566  
Email: jdavis@bainbridge.net

Dr. Karolyn Mueller Hansen, **Vice-President; Program Chair 2008; Webmaster (content)**  
University of Dayton Research Institute  
300 College Park  
Dayton, OH 45469  
Phone: (937) 229-2141  
Email: karolina@mindspring.com

Dr. Maureen Krause, **Secretary**  
Hofstra University  
Biology Department  
Hempstead, NY 11549  
Phone: (516) 463-6178  
Email: biomkk@hofstra.edu

Dr. Chris Davis, **Treasurer**  
Pemaquid Oyster Company  
P.O. Box 302  
Waldoboro, ME 04572  
Phone: (207) 832-6067 (call before faxing)  
Email: cdavis@midcoast.com

Mr. John Ewart, **2007-2008 Member at Large**  
University of Delaware  
Delaware Aquaculture Resource Center  
Lewes, DE 19958  
Phone: (302) 645-4060  
Email: ewart@udel.edu

Dr. William C. Walton, **2006-2009 Member-at-Large; Chair, Membership Committee**  
Cape Cod Cooperative Extension/Woods Hole  
P.O. Box 367  
Barnstable, MA 02630  
Phone: (508) 375-6849  
Email: wwalton@whoi.edu

Dr. Ryan Carnegie, **2007-2010 Member-at-Large; Co-Chair, Endowment / Student Awards Committee**  
Virginia Institute of Marine Science  
P.O. Box 1346  
Gloucester Point, VA 23062  
Phone: (804) 684-7713  
Email: carnegie@vims.edu

Mr. George Abbe, **Chair, Audit-Budget-Finance Committee**  
Morgan State University, Estuarine Research Center  
10545 Mackall Road  
St. Leonard, MD 20685  
Phone: (410) 586-9709  
Email: gabbe@moac.morgan.edu

Ms. Nancy Lewis, **Bookkeeper**  
P. O. Box 302  
Accomac, VA 23301  
Phone: (757) 787-2198  
Email: nlewis@dmv.com

Dr. Sandra Shumway, **Editor, Journal of Shellfish Research; Local Arrangements 2008**  
University of Connecticut  
Department of Marine Sciences  
1080 Shennecossett Road  
Groton, CT 06340  
Phone: (860) 405-9282; Fax: (860) 405-9153  
Email: sandra.shumway@uconn.edu

Dr. Evan Ward, **Editor, NSA Quarterly Newsletter**  
University of Connecticut  
Department of Marine Science  
1080 Shennecossett Road  
Groton, CT 06340  
Phone (860) 405-9073; Fax: (860) 405-9153  
Email: evan.ward@uconn.edu

Dr. Ami Wilbur, **Co-Chair, Endowment / Student Awards Committee**  
University of North Carolina Wilmington  
Department of Biology and Marine Biology  
Wilmington, NC 28409  
Phone: (910) 962-2389  
Email: wilbura@uncw.edu

Dr. Susan E. Ford, **Historian**  
Rutgers University  
Haskin Shellfish Research Laboratory  
Port Norris, NJ 08349  
Phone: (856) 785 0074 ext. 4305  
Email: susan@hsrl.rutgers.edu

Mr. George (GEF) Flimlin, **Co-Chair, Industry Committee**  
Rutgers Cooperative Extension  
530 East Jimmie Leeds Road  
Toms River, NJ 08755  
Phone: (732) 349-1152  
Email: flimlin@aesop.rutgers.edu

Mr. Richard C. Karney, **Co-Chair, Industry Comm.**  
Martha's Vineyard Shellfish Group  
RFD Box 1153  
Vineyard Haven, MA 02568  
Phone: (508) 693-0391  
Email: MVSG@adelphia.net

Mr. Don Velasquez, **Chair, Pacific Coast Section**  
Washington Dept. of Fish and Wildlife  
16018 Mill Creek Boulevard  
Mill Creek, WA 98012  
Phone (425) 775-1311 X112  
Email: velasdev@dfw.wa.gov

Dr. Lou D'Abramo, **Chair, Past-President's, Elections & Awards Committees**  
Mississippi State University  
Department of Wildlife and Fisheries  
Mississippi State, MS 39762  
Phone: (662) 325-7492  
Email: ldabramo@cfr.msstate.edu

Dr. John N. Kraeuter, **Chair, Publications Comm.**  
Rutgers University  
Haskin Shellfish Research Laboratory  
Port Norris, NJ 08349  
Phone: (856) 785 0074  
Email: kraeuter@hsrl.rutgers.edu

Ms. Nature McGinn, **Co-Chair, Student Recruits**  
Bodega Marine Lab  
P.O. Box 247  
Bodega Bay, CA 94923  
Phone: (707) 875-1973  
E-mail: nameginn@ucdavis.edu

Mr. Dane Frank, **Co-Chair, Student Recruits**  
University of Connecticut  
Department of Marine Sciences  
Groton, CT 06340  
Phone: (860) 405-9235  
E-mail: dana.frank@uconn.edu

Dr. Scott E. Siddall, **Webmaster (technical)**  
Denison University  
Granville, OH 43023  
Phone: (740) 587-5799  
Email: Siddall@denison.edu