

National Shellfisheries Association

QUARTERLY NEWSLETTER

January 2010

ORONO, ME



President's Message

I want to wish NSA members a happy and healthful New Year. Aquaculture 2010, the triennial meeting of the NSA, World Aquaculture Society and American Fisheries Society-Fish Culture Section in San Diego (March 1-5) is fast approaching and marks NSA's 102nd anniversary. I hope many of you are planning to attend as considerable effort



has been expended to produce a diverse and interesting program. Shellfish oriented papers abound with sessions on Multitrophic Aquaculture, Sea Urchins, New Species for Shellfish Culture, and Olympia Oysters, highlighting the opening day of contributed sessions on Tuesday, March 2nd. Wednesday's program includes sessions on Shellfish Safety and Water Quality, Ocean Acidification, and Geoducks while sessions continue on Thursday and Friday with Mollusc Diseases and Defenses, Abalone, Quagga Mussels, and Primary Productivity and Bivalve Aquaculture. Sandy Shumway, Steering Committee Chair for Aquaculture 2010, is to be commended for ensuring that conference attendees will enjoy a broad diversity of shellfish topics on a daily basis.

The Triennial Meeting typically draws up to 4000 attendees from over 80 countries. The breadth of this meeting is impressive and includes all components of marine and freshwater aquaculture and the world's largest aquaculture trade show. Given that the global reach of aquaculture is continuously expanding, I encourage NSA members, especially students, to take advantage of the diverse program and attend sessions out of their area of specific research interest. Please note, the early bird registration for Aquaculture 2010 closes on January 25th and don't forget that NSA's Annual Business Lunch will be held on Thursday, March 4th. Additional information on the meeting can be found throughout this *Newsletter* and I look forward to seeing many of you at the Triennial!

This is also the time of year when I ask you for your continued support of NSA through the timely renewal of your membership. Dues statements have been sent

out and I hope you have taken the time to go online and renew your 2010 membership. I believe I can speak for many members when I say that I count some of my most valued professional and personal friendships among the membership of NSA. Additional benefits, however, include a discounted member rate for annual meetings and continued hard copy delivery of the *Journal of Shellfish Research* and the *Quarterly Newsletter*. Members also have online access to *JSR* and the *QNL* via the NSA website (www.shellfish.org). Renewing by January 31st will eliminate the added expense associated with sending you back issues of *JSR*, so please take a moment to renew your membership, today.

Continued on page 2



The Town and Country Resort and Convention Center is the venue for Aquaculture 2010, to be held March 1-5, 2010. Be sure to register for the meeting and make your reservations at the Town and Country today.

In this issue:

- ***In Memoriam: Victor G. Burrell***
- ***In Memoriam: Arthur S. Merrill***
- ***David H. Wallace Award***
- ***Quagga Mussels Invade Southwest***
- ***Book Review: Freshwater Prawns***

President's Message...Continued from page 1

I also want to provide some information about our updated website. The Web Committee, spearheaded by Past-President Dave Bushek and Karolyn Mueller-Hanson, has been working hard over the last year on improvements to help make your use of the NSA website a more efficient, informative and enjoyable experience. The website has been redesigned with pull down menus below each major heading to make navigation seamless and much more user-friendly. NSA members have already taken advantage of submitting abstracts, registering for meetings, and paying dues online. These functions, as well as information on conferences, are now clearly and readily available on the site. If you have not done so recently, visit our website soon and check out the "Shellfish in the News" link. This is an RSS feed that filters and aggregates news references to shellfish on an hourly basis. Students should check out the "For Students" menu that includes links to the Recruits' Home Page, as well as links to information on NSA student awards and grants and current job opportunities. The "About NSA" menu includes a link to information on NSA's long history, while the "Publication" menu provides access to recent issues of *JSR* via a link to BioOne. Older issues of *JSR* are available through the link to the Bio Heritage Library website, while the "Publication" menu also provides a link to current and past issues of the *Quarterly Newsletter*.

A particularly valuable asset provided by NSA is the establishment of strong linkages among scientists, government and private agencies dealing with shellfish-related issues, and the shellfish industry, through our annual meeting. I believe, however, that we need to ramp up our efforts a notch to organize multi-disciplinary sessions that will draw scientists who currently are not regularly associated with our Association to our annual meetings, as well as helping to build new and different linkages among NSA members. Thus, in an effort to make our 103rd Annual Meeting in Baltimore (March 27th-31st, 2011) more valuable to membership, I encourage you to contact Sandy Shumway or me, as soon as possible, with ideas for sessions you would like to have included in the program. In addition to maintaining NSA's mix of regular

sessions, my goal is to broaden NSA's focus by providing more special sessions. This, in turn, requires dedicated effort from you to identify, support, and implement these sessions.

I am convinced of the role shellfish play in providing broad benefits to mankind in ecological, economical, and nutritional terms. NSA's critical and necessary task is to bring together sound research and a clear understanding of sustainable practices to provide society with the means to address emerging issues, such as those associated with climate change. I believe that NSA is well poised to meet this challenge; our annual meetings, publications, and website are conduits of sound information on and about shellfish for scientists, the shellfish industry, and the public. I believe this historic role is ours to retain and enlarge if we work at it.

Joth Davis
President

Student Travel and Presentation Awards

Judging by the high quality of the abstracts received by the Student Endowment Fund (SEF) Committee, Aquaculture 2010 in San Diego promises to be the venue for yet another intense and exciting competition for the NSA Student Presentation Awards. We received 24 applications for SEF Student Presentation and Travel Awards to support travel to attend Aquaculture 2010. Applications were independently evaluated by 21 scientists, from a diversity of research fields, who generously volunteered their services to NSA. We were able to provide 15 Travel Awards to the students with the top-ranking abstracts.

We wish to thank our dedicated team of judges, Bassem Allam, Ryan Carnegie, Marty Chintala, Sarah Culloty, Susan Ford, Pat Gaffney, Steve Geiger, Karolyn Hansen, John Kraeuter, Jerome LaPeyre, Sean McDonald, Gulni Ozbay, Emmanuelle Palles-Espinosa, John Scarpa, Gail Scott, Roxanna Smolowitz, Missy Southworth, Nancy Stokes, and Ami Wilbur. A reminder that all students presenting at the upcoming meeting are eligible for either the Thurlow C. Nelson Award for best oral presentation or the Gordon Gunther Award for best poster presentation. Thus, we will need plenty more volunteers to help with judging and we hope we can count on you to evaluate the student presentations at the meeting! If you are attending Aquaculture 2010 and are willing to participate in judging the oral and/or poster presentations, contact Chris Dungan (cdungan@dnr.state.md.us) or Marta Gómez-Chiarri (gomezchi@uri.edu).

Looking forward to a great meeting!

Chris Dungan and Marta Gómez-Chiarri
Co-Chairs, Student Endowment Fund Committee

Student Endowment Fund Auction Tuesday, March 2nd

Send auction items to Sandy Shumway by
February 12th or bring them the meeting.
Items shellfishy or fishy welcome and
nothing is too tacky or trivial.

Recruits' Corner

Hello Recruits! Aquaculture 2010 is fast approaching and we have some updates to share with you. Student representatives from the NSA, World Aquaculture Society, and American Fisheries Society will be hosting several events of interest to all students. The first event is a student orientation on the afternoon of Monday, March 1st. This brief orientation will provide information on all the happenings at the conference that will be of particular interest to students. It will also provide a prime opportunity for you to mingle with students from the different societies, and meet your teammates and check out the competition for the special student scavenger hunt. The scavenger hunt is an event that we are very excited about! Students from all three societies will be organized into small teams and given a list of items to find while at the conference. The winning team will be well rewarded!



Another event we want to bring to your attention is a session titled, *After the Degree: Careers in Aquaculture and Fisheries Sciences*, which will be held on Thursday, March 4th. This session will feature a panel of professionals in the aquatic sciences that will answer your questions about career options and the variety of jobs suitable for a scientist with a master's or Ph.D. degree. Room and time information for the orientation meeting and other important conference information will be in the packet you receive when you check in at the NSA desk in San Diego. Also, be sure to check the conference schedule for information on other special events, including the Quiz Bowl and the *Women in Science* session.

If you're still looking to share a room or need a roommate for the conference, please email Stephanie Reiner (slreiner@vims.edu). Include your name, school affiliation, and an email address where you can be reached. Rooms with quadruple occupancy have been set aside for student use. This includes those who already have roommates but want a student room – just make sure the name and affiliation of all roommates you have already identified are included in the email and be aware that you will still be assigned four to a room.

As always, if you have any questions about Aquaculture 2010, the Recruits, or NSA, please feel free to contact us (slreiner@vims.edu, mchaney@usc.edu). See you in San Diego!

Maxine Chaney and Stephanie Reiner
Recruits Co-Chairs

Aquaculture 2010

The Triennial Meeting of NSA, the World Aquaculture Society and the American Fisheries Society-Fish Culture Section is just around the corner (March 1-5). Whether you are presenting a paper or not, hopefully you have already made plans to attend this exciting meeting. There will be a healthy dose of shellfish sessions, including sessions on Geoducks, Abalone Aquaculture and Restoration, Quagga Mussels, Shellfish Genetics and Genomics, and Shellfish Safety and Water Quality. As a Triennial Meeting, Aquaculture 2010 will also provide a much broader array of talks than is typically available at an NSA annual meeting, including sessions on Multi-trophic Aquaculture, Parasites and Fish Health, Tuna Aquaculture and Offshore Aquaculture, to name a few. And don't forget, in addition to being the largest aquaculture meeting in the world, the Triennial includes the field's largest trade show.



If you're looking to plan your time in San Diego down to the minute, be sure to check out the program schedule which has been posted on the WAS website (www.was.org). While there you can also access information on rooms at the Town and Country Resort and Convention Center, the venue for the meeting. As of January 1, there were still rooms available at the discount rate of US \$169-179 per night. And be sure to register for the meeting – the early bird registration rate is available through January 25th.

The meeting need not be all work and no play. Several tours are being offered through WAS website and The Town and Country Resort is located quite near a trolley line into downtown San Diego so you can also explore the variety of attractions the city has to offer, on your own. With all that who could possible stay home!

Sandy Shumway
Chair, Steering Committee



In Memoriam

Victor Gregory Burrell 1925-2009



Former NSA President and Honored Life Member, Vic Burrell, passed away on the morning of December 20, 2009. Vic was born September 12, 1925 in Wilmington, NC, but grew up in Florence, SC. He joined the U.S. Navy in 1943 and saw action in Okinawa and Ie Shima. After the war, he received a B.S.

from the College of Charleston and began working in a family meat packing business, during which time he also owned and operated a charter boat and oyster business. He returned to school to earn both an M.S. and Ph.D. in Marine Science from the College of William and Mary.

While at VIMS, Vic worked as a field party chief and helped to establish the Marine Advisory Program, for which he was the first industry liaison officer. He served as scientist on several joint Canadian, Russian and U.S. cruises in the North Atlantic (IGNAF) before returning to South Carolina in 1972 as an Associate Marine Scientist at the South Carolina Marine Resources Research Institute. In 1973, he became Assistant Director and in 1974 the Director of the Institute. Using IGNAF program methods, Vic initiated the Marine Mapping and Assessment Program (MARMAP) for the South Atlantic coast of the U.S.

Vic helped to organize the South Carolina Fisheries Workers Association and was a charter member of the Southeastern Estuarine Research Society. He served as president and was eventually elected an Honorary Life Member of the Society. Vic held adjunct faculty appointments at the College of Charleston, Medical University of South Carolina, and The Citadel.

After "retiring" in 1991, Vic wrote several histories of important South Carolina fisheries and continued to publish scientific papers. He served on the founding board of the South Carolina Aquarium and was chosen Fishery Conservationist of the Year in 2007 by the South Carolina chapter of the American Fisheries Society.

Vic Burrell is survived by four daughters, eight grandchildren, and twelve great grandchildren. Known as a mild mannered gentleman from the South, Vic will be remembered dearly by all who had the pleasure of knowing him.

Dave Bushek

Arthur S. Merrill 1916-2009



Arthur S. Merrill, former President of NSA and Editor of its *Proceedings*, died this past year at the age of 93. Arthur was born in Savannah, GA on April 16, 1916. He enlisted in the Army in 1942, eventually serving as a B-24 Liberator pilot and obtaining the rank of First Lieutenant. After service, Arthur obtained a high school diploma

and entered the University of Miami where he majored in Zoology with a Geology minor. He completed his degree at Miami in 1952, obtained an M.A. from Harvard in 1961 and received his Ph.D. in 1970 from the University of Delaware for his study of the Architectonicidae of the Western Atlantic.

Arthur was a long time researcher and administrator with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) and, as a senior administrator, he oversaw much of the research conducted at numerous NMFS labs along the Atlantic and Gulf coasts. From 1958 to 1964, he was a Research Biologist with the USFWS Biological Laboratory in Woods Hole, MA. He was appointed Assistant Laboratory Director of the Oxford Biological Laboratory at Oxford, MD and in 1968 was promoted to Director of the Oxford lab. From 1971 to 1976, he served as Director of Resource Assessment Investigations at the NMFS Middle Atlantic Coastal Fisheries Center and was stationed in both Oxford, MD and Highlands, NJ.

Arthur's contributions to shellfish research were extensive. He added some 7,330 lots of molluscs, from Maine to Florida, to the collection at Harvard's Museum of Comparative Zoology. He contributed nearly 100 publications and reports on shellfish, including papers written with the great oyster expert, Paul S. Galtsoff and two widely cited and pioneering papers on the Quaternary marine environments on the Atlantic Continental Shelf coauthored with eminent marine geologist Kenneth O. Emery. Arthur served as Vice President and President of the Malacological Union (1968-1972) and was, at various times, on the editorial boards of *The Nautilus*, the *Fisheries Bulletin*, and the *Proceedings of the National Shellfisheries Association*. The latter expanded and flourished under his guidance and in 1968 Arthur was cited by NSA Executive Committee for his outstanding leadership and service as editor of the *Proceedings*.

Richard Johnson

David H. Wallace Award Bestowed on Sandra Shumway

We chose to nominate Dr. Sandra Shumway for the National Shellfisheries Association's David H. Wallace Award after reading a description of the award as one: "presented to those scientists who deserve to be recognized for their dedicated service in promoting research, understanding and cooperation among shellfish scientist, culturists, managers, producers and regulators". We looked at the list of past winners of this prestigious award on the NSA website and found one name conspicuous in its absence, Sandra Shumway. There is little doubt that Sandy fits the criteria for the Wallace Award.

Sandy started her career in science about the age of 4 at her family's summer home in Portsmouth, Rhode Island where she would explore the bay in her little motor boat and "test things", all the while interacting with the fishermen and locals gaining what would become a life-long admiration and respect for "local knowledge". She carried out a research project on shellfish and pollution that lasted 7 years, culminated with winning the Massachusetts State Science Fair, and set the course for a future in shellfish biology. At the age of 12 she asked for a filing cabinet for Christmas, no doubt in preparation to be a journal editor. She went on to receive her undergraduate degree in 1974 from the Southampton College of Long Island University where she graduated *summa cum laude*. From there, she attended the University College of North Wales (now University of Wales) as a Marshall Scholar and earned her Ph.D. in 1976. This was followed by post-graduate work in Wales, New Zealand, and New York. Sandy was awarded a Doctorate of Science (D.Sc.) degree from the University of Wales in 1992, and this year was honored with the distinction of Honorary Fellow from the same institution. As a researcher, professor, editor and advocate for shellfish and aquaculture, Sandy's work has taken her around the world including stints in Connecticut, Georgia, New York, Maine, North Carolina, and Washington, as well as Australia, New Zealand, Japan, Brazil, Canada, China, Korea, Mexico, Norway and Spain, to name just a few.

Sandy Shumway has spent a lifetime (over 30 years and still going!) on research devoted to furthering a knowledge of shellfish and shellfisheries. Her professional life has been devoted simultaneously to basic research and the support and growth of aquaculture, worldwide. Sandy has performed physiological experiments on nearly every phyla of benthic organism and has tailored her research to benefit industry. From her early work with pandalid shrimp and sea scallops in Maine, to her work with harmful algal species (HABs) and their deleterious effects on commercially important shellfish species and human health, she has had a substantial impact on global legislation and policies.

Hers may not yet be a household name, but Sandy's efforts

have impacted families worldwide. She has been active in providing scientific expertise for the compilation of shellfish listings for the Seafood Watch cards which can be found in most any supermarket, and was instrumental in getting the northeast shellfish industry their own card. She regularly writes and speaks on behalf of the shellfish industry, not only in the U.S., but also abroad. She has made numerous invited trips, especially to developing countries, such as the Philippines, China, Mexico, and South America, to provide guidance on HABs and shellfish issues. Sandy has regularly participated in panels on aquaculture, fisheries and HABs to help the shellfish industries flourish in these parts of the world. Some of her works on HABs have been translated and published in Chinese.



Sandra Shumway was presented the David H. Wallace Award by past recipient Bill Dewey and NSA president Joth Davis at the NSA Pacific Coast Section Annual Meeting, last October.

Sandy is the editor of four international journals, *Journal of Shellfish Research*, *Journal of Experimental Marine Biology and Ecology*, *Reviews in Fisheries Science*, and *Harmful Algae*, the latter of which she co-founded. She has been an outspoken advocate for aquaculture and its benefits and has carried this message from small local newspapers to Congress. Most recently, she organized a workshop for NOAA on Shellfish Aquaculture and the Environment. Since her early start in science, Sandy has published over 150 articles, edited more than ten volumes on bivalves and aquaculture, and served on the committees of countless graduate students, worldwide. She is an Aldo Leopold Fellow, a Fellow of the American Association for the Advancement of Science (AAAS), and has received numerous honors and awards for teaching, science and advocacy.

In summary, Sandy has devoted the bulk of her professional career to the study and promotion of shellfisheries science both in the U.S. and abroad. She has worked tirelessly to coordinate industry and academia toward the betterment of shellfisheries worldwide. It is for these reasons that Sandy Shumway so richly deserved this year's David H. Wallace Award.

Dane Frank and LeRoy Creswell

Industry Perspective

Recent debate in the media, at the docks, on the streets, and in the halls of Congress has focused on the FDA's position on the harvest of oysters from the Gulf of Mexico region. The primary concern is over human illness associated with *Vibrio vulnificus* (Vv), particularly during warm water months (April-October).



Vibrios are chitogenous bacteria that play an important environmental role in estuaries, so they are prevalent in highly productive areas where shellfish thrive. Most Vv are environmental strains. A few strains, however, can become pathogenic to humans with preexisting medical conditions, especially those with compromised immune systems and temperatures above 24°C allow Vv to multiply exponentially in molluscan shellfish, post-harvest.

The debate over whether to require the post-harvest treatment of oysters has been on-going for several decades through the Interstate Shellfish Sanitation Conference's (ISSC) *Vibrio vulnificus* management committee, which was organized to address Vv pathogenicity and public health. Educational efforts have focused on at-risk consumers; yet, some 30 illnesses still occur annually with a 50% mortality rate. Seven years ago, the ISSC voted on a plan to reduce such illness by 40% within four years and 60% within six years, or time/temperature harvest restrictions, closures, and other mandatory regulations would be considered. These goals were not met, so stricter regulations are being initiated by state shellfish sanitation authorities. New regulations include requiring refrigeration within two hours of first harvest, potential monthly or seasonal closures, and the increased use of post-harvest treatment (PHT) to reduce Vv in oysters to non-detectable levels. Onboard refrigeration is perhaps the most likely solution, but nearly 70% of the vessels in Gulf fleet are too small.

So the topic of the recent debate is nothing new and clearly change is at hand, but the FDA's unilateral decision regarding mandatory post-harvest processing of Gulf oysters from April-October *was* news. Post-harvest treatment was debated and failed to pass at this year's ISSC meeting, with conference members voting to hold-the-course on its current Vv management plans. After a convincing public and political outcry, the FDA has tabled its decision for now, hoping to foster further PHT research, development and capacity.

The outcry over the FDA's decision has centered on consumer choice. Oyster lovers claimed they prefer a traditional raw oyster over the PHT product, with many citing taste and texture differences. After reading the mandatory consumer information message on restaurant menus, some consumers

are still choosing to eat raw oysters, whether they are at-risk or not. The current choice at most oyster bars is between traditional raw or cooked, because rarely do restaurants carry both PHT and raw oysters. Unfortunately, the debate has done little to win back a large percentage of the population who used to eat oysters but are afraid to. Neither has it helped to increase consumption by those who have never tried oysters.

How to determine levels of risk associated with eating oysters has also been debated. Mathematical risk assessment has been included in the ISSC proceedings and is used to design state-level management plans. At the heart of this public health issue is that some consumers may be eating raw oysters and don't know they have compromised health and thus, an increased risk; hence, the FDA's position. But isn't going through life not knowing one's health condition the greatest risk of all? This has been the perspective taken by health professionals and determining risk to disease is a major focus of our modern health care system.

The industry has made claims of a "nanny state" in recent weeks as part of its response to federal action. I, for one, have a mother and love her dearly and I don't need anyone else trying to telling me what to do. I conduct my own risk assessment when ordering shellfish. I ask to see the harvest/health tag required by law for all harvested molluscan shellfish. It tells me the location, harvester, dealer and harvest date, which helps me determine freshness. I ask to sample one. Saltiness implies less freshwater exposure. I prefer nothing harvested more than a week prior to my meal; the date of harvest tells me a lot about the restaurant, its purchasing habits and sales capacity. I prefer to eat shellfish at the bar so I can watch how they are handled. If they are not served cold at the table I send them back. If the wait staff knows nothing about tags I question the restaurant's commitment to quality and training and order the shellfish cooked. I know of the National Shellfish Sanitation Program and count on FDA's oversight to assure compliance. Plus, I've had an annual physical for the past 16 years with the same doctor who knows I eat raw shellfish (he does too). So far, my risk assessment has worked for me.

This is how consumers should make an educated choice about their own risk. It's the type of education not being emphasized, but should be. This is no news to members of NSA; but it is our challenge, and a challenge for the industry, public health educators, restaurants, nutritionists, pharmacists, nurses, doctors, and Indian chefs to teach this to others.

John Supan
Industry Committee Chair



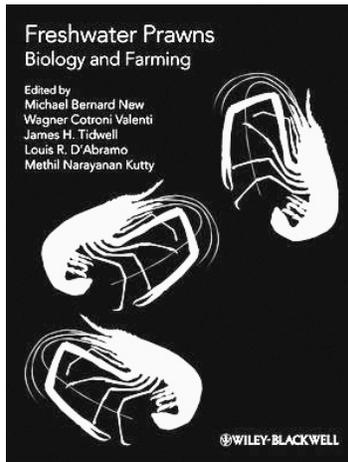
Book Review

Freshwater Prawns Biology and Farming, edited by Michael New, Wagner Valenti, James Tidwell, Louis D'Abramo, and Methil Kutty. Wiley-Blackwell, 2009. 560 pages. ISBN: 978-1-4051-4861-0, \$US 255 (hardcover).

This new volume published by Wiley-Blackwell publishers is an outstanding reference work covering all aspects of freshwater prawn farming in great detail. The editors have decades of experience with aquaculture, in general, and freshwater prawn farming, in particular. Their global coverage and network of collaborators provide a comprehensive look at the diversity of freshwater prawn culture around the world. The 44 contributors to this volume include many of the world's experts on the culture of freshwater prawns. The editors have done an excellent job of getting each contributor to provide comprehensive

input on their area of expertise and then organizing all of this information into a coherent framework. The detailed table of contents and 14 page index allow the reader to quickly navigate through the book to discover good information on almost all topics related to the biology and farming of these commercially important crustaceans.

The book is organized into 24 chapters. With notable exceptions, most of the chapters are quite similar in name and content to those in the first edition published by Michael New and Wagner Valenti in 2000 under the title, *Freshwater Prawn Culture, The Farming of Macrobrachium rosenbergii*. Beginning with chapters on history, nomenclature and taxonomy, biology, broodstock management, hatchery and nursery systems, the new edition provides expanded coverage on each topic. For example, the new edition has separate chapters on flow-through and recirculating hatchery systems resulting in greatly increased depth for these topics. The chapters on grow-out systems, nutrition, and health have all been expanded, with new or additional authors bringing new perspectives to each subject and introducing the reader



to updated technologies. The chapter on genetics is a good addition to the book and the chapters on size variation, commercial farming around the world, post-harvest handling and marketing, and economics have all been updated and expanded. The coverage of prawn species has been broadened by the inclusion of new chapters with detailed information on *M. nipponense* and *M. amazonicum*. A chapter on fisheries and enhancement in the previous volume has been combined with the discussion of commercial farming and enhancement around the world in the new volume, allowing the reader to study farming and enhancement together in context for most major producing countries. Although some updates have been made to the final chapter on sustainability, a comparison shows how many of the issues and opportunities remain the same ten years later.

According to the editors, the global farming of *M. rosenbergii* has continued to expand rapidly over the last decade while production of a second major species, *M. nipponense*, has soared in China. They report total annual production in 2007 at 460,000 ton, with a value exceeding US \$1.86 billion. Clearly, the continued growth and importance of the sector more than justifies this important revision and update. In summary, the new edition of this essential text on freshwater prawn farming will replace the previous edition as the authoritative reference book on the topic. Full of practical information, it is well written, illustrated and organized. It will provide a key reference and textbook for industry, scientists, students, governmental and non-governmental organizations, and others interested in this important sector of freshwater aquaculture.

Craig Browdy
Waddell Mariculture Center
U.S. Shrimp Farming Program

JSR Recognized by Association TRENDS

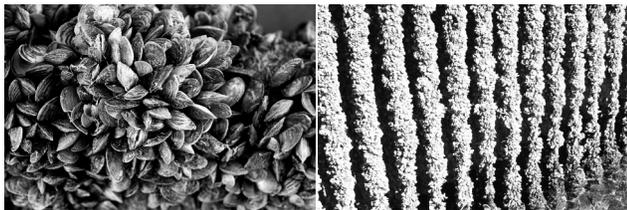
The *Journal of Shellfish Research* has received an award for excellence in another national competition. The *Journal* was awarded a bronze medal in the scholarly publication category for associations with an annual budget of less than one million dollars in the Association TRENDS' 2009 All-Media Contest. The TRENDS' All-Media Contest is an annual competition held exclusively for associations, recognizing the most creative and effective communication vehicles developed in the industry over the prior year. The 2009 competition included more than 425 entries in 26 categories of association communications.

JSR will be honored at the 31st Annual Salute to Association Excellence, to be held February 23, 2010 at the Capital Hilton in Washington DC. The *Journal* will be on display at the event, along with the other winners. In addition to being honored at the Salute to Association Excellence, the 2009 All-Media Contest winners will be featured in the January 2010 issue of TRENDS and on Association TRENDS' website. More information on Association TRENDS and the competition can be found at www.associationtrends.com.

Invasive Quagga Mussels Problematic in U.S. Southwest

Most of us have heard of the zebra mussel, an invasive freshwater mussel species that has wreaked havoc in the Great Lakes. But quagga mussels? It turns out that zebra and quagga mussels are close relatives in a number of ways. Both species belong to the genus *Dreissena*, both are believed to have been introduced to the U.S. via ballast water in the 1980s, and both are invasive species that are causing tremendous ecological and economic damage in the U.S.

The quagga mussel, *Dreissena rostriformis bugensis*, is native to Ukraine. Although it was first observed in Lake Erie in 1989 it wasn't identified as a separate species until 1991. By January 2007, however, the first infestation in the Southwest was declared when quagga mussels were found in Lake Mead and in December of the same year veligers were detected in Sweetwater Lake in San Diego. The speed at which this species has spread in the region is unprecedented.



Although individual quagga mussels may be physically small (left), their rapid spread and increasing population size has led to severe problems with biofouling (right), as well as other ecological and economic impacts on the water bodies throughout the southwestern United States.

So why does this mussel pose such a significant threat to the region? Compared to other U.S. locations where quagga mussels have been found, annual water temperatures in the Southwest are above the lower threshold for mussel reproduction and lakes and rivers in the region have more dissolved calcium and hard substrate to aid development and settlement. This has led to rapidly increasing populations. In Lake Mead, for example, mussel density increased from zero to 55,000 per square meter in 18 months. Even though monitoring and prevention programs are in place, the mussel has continued to spread and has infested the lower Colorado River, as well as lakes and reservoirs in Arizona, California, Colorado, and Utah.

Quagga mussels are great biofoulers. At Hoover Dam, they clog water lines used to cool turbines and dam operators have been forced to periodically shut down the plant that supplies electricity to 1.6 million people. Quagga mussels out-compete most, if not all, indigenous species. They rapidly filter large volumes of water and negatively influence trophic dynamics by removing particulates and food that directly or indirectly support higher trophic levels. Their activity also results in greater bioaccumulation of toxins and

leads to hypoxia resulting from increased fecal deposition and decomposition. In addition, they appear to be selective feeders leading to an increase in cyanobacteria which, in turn, jeopardizes municipal water supplies for the more than 25 million people that currently rely on the lower Colorado River Basin for drinking water and irrigation.

How do you deal with an invasion of this magnitude? Chlorine is a favorite industrial treatment for fouling organisms like quagga mussels, primarily because it is the only licensed treatment option. Unfortunately, chlorine generates toxic byproducts and low doses do not effectively kill quagga mussels. Results from lab experiments suggest the bacteria *Pseudomonas fluorescens* can kill quagga mussels without harming other organisms but, to date, there have been no field tests. Currently, mussels are physically removed from industrial operations. Such treatment, however, is only temporarily effective and is likely become more expensive over time. Because it is unlikely that quagga mussels can be 100% eradicated with any method, on-going research is seeking workable, multifaceted solutions to minimize the economic and environmental impacts of quagga mussels in the Southwest.

For more information, be sure to attend the *Quagga Mussels in the Western United States* session at the Aquaculture 2010 this March in San Diego or contact David Wong at david.wong@unlv.edu.

**Lisa Milke, NSA Reporter and
David Wong, University of Nevada at Las Vegas**

Renew Your Membership

Visit www.shellfish.org and renew your membership by January 31st.

Encourage your friends and colleagues to join, too!

Session Organizers Needed for 103rd Annual Meeting

Organizers are needed for scientific sessions to be presented at NSA's 103rd Annual Meeting, March 27-31, in Baltimore, MD. If you are interested in organizing a session or have an idea for a special session topic, email Sandy Shumway (sandra.shumway@uconn.edu), **AS SOON AS POSSIBLE**. The meeting will only be as interesting and successful as the participants make it, so get involved and help put together high quality sessions. We look forward to hearing from you.

Membership Update

As of early December 2009, NSA had 747 members in good standing, of which 147 were student members. I want to sincerely thank all NSA members for your past support of the Association. I also want to encourage you to renew your membership for 2010 and recommend membership in NSA to your colleagues.

Benefits of a NSA membership include:

- Both hard copy delivery and online access to the *Journal of Shellfish Research (JSR)*,
- Discounted member rate at annual meetings.
- Delivery of the *Quarterly Newsletter*, and
- Interactions with other scientists, management officials and industry members that share your interest in shellfish.

Renewing and updating a membership is now easier than ever. Even if your membership has lapsed, you can renew online by logging in with your username (or e-mail address) and password at shellfish.org/user/login. Once logged in, you'll find a notice in the upper left that your 2010 dues are payable. Click on 'Details' and you'll be taken to a page showing your dues payment history as well as the option to pay your dues for 2010 (and even 2011 if you'd

like!). Click on 'Pay Dues' where you'll also be given the options of joining the Pacific Coast Section and making a donation to the Student Endowment Fund. Finally, click 'Pay Now' and you will be taken to a secure site where you can enter your credit card information. If you prefer to pay by mail, you can click the 'Pay by Mail' option which will generate a personalized invoice that you can submit with your check or credit card payment via postal mail.

Renewing by January 31st will eliminate the expense of sending you back issues of *JSR* and the *QNL* (\$20 for those in North America and \$40 for those outside North America). So please take a moment now, if you haven't already, and avoid those shipping surcharges required to send you back issues should you delay in renewing your membership. And while you are online, be sure to update your member profile.

If you or a colleague are new to NSA, detailed instructions for joining are available at www.shellfish.org/join.htm. Don't forget our special low rates for students of \$45 per year. We hope you will join us. Here's to a wonderful 2010 for NSA and our members!

William Walton
Membership Committee Chair

Newsletter Electronic Delivery Established

The list of members choosing to get the *Quarterly Newsletter* delivered electronically is growing. In fact, this issue was "sent" electronically to every member so you can see how e-delivery works. Because some email servers strip attachments or reject messages with large attachments or addressed to multiple recipients, we cannot send the *QNL* as an attachment to a mass mailing. Instead, the day the hard copy of the *Newsletter* is sent to the printer a pdf version is posted on the NSA website where it is available for members to access once they log in. We then send an email to each member with a direct link to the *Newsletter* pdf. When you click the link or copy and paste it into your web browser you are taken directly to the *Newsletter*. You can save a copy to your desktop or print it to read later.

Providing the *Newsletter* in this fashion saves paper and postage. You also get nearly instantaneous delivery, avoiding any delays at the printer or at the post office. Nevertheless, we will continue to offer the paper version and you may opt for paper, electronic delivery, or both, if you like. To opt for e-delivery simply log in to www.shellfish.org and edit your membership profile by checking the appropriate boxes. Alternatively, you can send an email to *Newsletter* Editor Paul Rawson (prawson@maine.edu) and we'll get it set up for you.

New NSA Acquisitions in the Biodiversity Heritage Library

Thanks to the Shawn McLaughlin, Jay Lewis, and NOAA's Oxford (Maryland) Laboratory, users can now access published versions of some of the earliest presentations given at NSA meetings. The Oxford Lab kindly lent its rare copies of NSA Convention addresses from 1943-1950 to be scanned and placed on the BHL website. A set of Addresses from 1943 to 1953 (note, there was no NSA meeting in 1945) is now available for download at <http://www.biodiversitylibrary.org/bibliography/3939>. The NSA publications available on the BHL site are now complete from 1943 through 2004. From 2005 to the present, *Journal of Shellfish Research* volumes are found on the BioOne website (www.bioone.org).

The BHL is working to organize the collection so that it can be searched for individual articles directly, but for now, users are advised to know the volume and page numbers of the article they wish to access. The pull-down menu "Download/About this book" allows the user to obtain pdf or ocr (optical character recognition) files of selected pages or the entire issue, which will be emailed within minutes of being selected. BHL will ask for information about the requested article (Title, Author(s), Subject). Please respond, as this information will help setup the searchable database.

NSA thanks the Aquaculture Association of Canada and Newfoundland Aquaculture Industry Association for sponsoring this issue of the *Quarterly Newsletter*

Aquaculture Canada^{OM} 2010 & NAIA Cold HarvestTM 2010

“Successful partnerships for a sustainable future”

May 16-19th, 2010, Delta Hotel and Conference Centre, St. John’s, Newfoundland, Canada

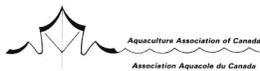


Sessions Planned:

International Mussel Forum - Marine Finfish Culture Developments - Trends in Ecolabelling and Certification - Market Outlook for Farmed Seafood - Farmed Salmon and Mussel Production Trends - Carbon Footprint and Farm Impacts - Programs Updates on DFO AIMAP and ACRDP - Aquatic Animal Health Advances - Public Awareness and Social Licence – Socio-Economic Aspects of Aquaculture in Canada

General Information:

Conference Coordinator : Joanne Burry Tel: 709-437-7203 Email: jmburry@nl.rogers.com
Tradeshow Coordinator : Victoria Hamlyn Tel : 709-754-2854 Email : victoria@naia.ca



www.aquacultureassociation.ca

www.naia.ca



Upcoming Events

30th Milford Aquaculture Seminar: February 8-10, 2010, Courtyard Marriot, Shelton, CT, USA. For information see <http://mi.nefsc.noaa.gov/seminarworkshop> or contact Walter Blogoslawski at wblogosl@clam.mi.nmfs.gov.

Aquaculture 2010 / National Shellfisheries Association, 102nd Annual Meeting: March 2-5, 2010, San Diego, CA, USA. For information visit www.shellfish.org or <https://www.was.org/WasMeetings/meetings/Default.aspx?code=AQ2010>.

Aquaculture Canada 2010 and NAIA Cold Harvest 2010: May 16-19, 2010, St. John’s, Newfoundland, Canada. For information visit www.aquacultureassociation.ca/meeting/aquaculture-canada-2010.

Australasia Aquaculture 2010 Conference and Exposition: May 23-26, 2010, Hotel Grand Chancellor Hobart, Hobart, Tasmania, Australia. For information visit www.was.org.

Sixth International Conference on Marine Pollution and Ecotoxicology: May 31-June 3, 2010, City University of Hong Kong, Hong Kong. For information visit www.cityu.edu.hk/bch/conf2010.

World Congress of Malacology: July 18-24, 2010, Phuket, Thailand. For more information, registration and abstract submission visit <http://www.wcm2010.com> or <http://www.ucd.ie/zoology/unitas/>.

Sixth International Symposium on Aquatic Animal Health (ISA AH-6): September 5 - 9, 2010, Tampa Marriott Waterside Hotel, Tampa, FL, USA. For information visit <http://aquaticpath.epi.ufl.edu/isaah6>.

Aquaculture Europe 2010: October 5-8, 2010, Centro de Congressos da Alfândega, Porto Portugal. For more information visit www.marevent.org.

Fifth National Conference and EXPO on Coastal and Estuarine Habitat Restoration: November 13-17, 2010, Galveston Island Convention Center, Galveston, TX. For more information visit www.estuaries.org/conference/.

2010 Northeast Aquaculture Conference and Expo (NACE): December 1-3, 2010, Radisson Inn, Plymouth, MA, USA. For more information contact Joe Buttner (jbuttner@salemstate.edu) or Craig Hollingsworth (chollingsworth@umext.umass.edu).

If you would like to announce a meeting, conference, workshop or publication that might be of interest to NSA members, please contact the *QNL* Editor, Paul Rawson (prawson@maine.edu).



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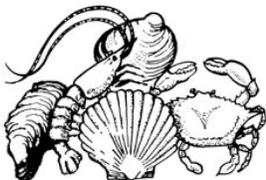
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