

# National Shellfisheries Association

QUARTERLY NEWSLETTER

January 2011



ORONO, ME

## President's Message

Greetings to all members of the National Shellfisheries Association (NSA) and welcome to a new decade. Winston Churchill once reflected, "I never worry about action, but only inaction." He embodied the philosophy that following conventional wisdom more often than not proved counter-productive to achieving goals. Comparison of the NSA's short- and long-term goals to anything remotely Churchillian is perhaps a stretch; however, there is something timeless in his call for action during trying times. Some may feel that the political and economic times we are in call for a period of "laying low" while we wait for conditions to improve. I am certain we can all identify reasons, both personal and professional, to lie low these days, but I have come to realize that the world moves on whether or not we make the choice to participate in finding solutions to what may seem intractable problems.



I take heart, however, in the efforts of many NSA members to conduct good science, contribute to better management policies and work across disciplines to address the very real problems we face. The recent talks in Cancun focused on climate change and a host of problems associated with increasing worldwide CO<sub>2</sub> emissions. While little substantive progress was made on addressing these problems at the Cancun conference, on the Pacific Coast we are already seeing first hand the effects of increased levels of CO<sub>2</sub> in seawater

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## 2011 Annual Meeting March 27-31 Baltimore, Maryland

Plans for the Annual Meeting are progressing well and the Program is a full one. We are welcoming four plenary speakers: Rita Colwell, Michael Lesser, Donal Manahan and Brian Rothschild who will open each day's sessions. Special focused sessions include: Shellfish and Human Health; Shellfish Restoration: National Blue Crab Advanced Research Consortium; Ocean Chemistry and Shellfish; Disease; Carrying Capacity/Modeling and Ecosystem Services; Genetics and Genomics; Offshore Marine Shellfisheries; Feeding; Down on the Farm; Shell Formation; Ecological and Climate Controls of Infectious Diseases in Shellfish Populations; Invasives; Biofouling. The East Coast Shellfish Growers Association and WERA will both be meeting in conjunction with NSA and the students have also planned a panel discussion and presentation entitled, After the Degree.

The Poster Session will be featured on Tuesday and Wednesday afternoons with a happy hour each day. There were close to 300 abstracts submitted, so the poster session is going to be large and busy! All the usual activities are on the docket – the President's Reception on Sunday evening, Student Breakfast on Monday morning, Student Endowment Fund Auction on Tuesday evening and the Business Luncheon on Wednesday. Note: we've added sessions to accommodate the large turnout, so the meeting will continue through Thursday afternoon and end with a Happy Hour. Make your travel arrangements accordingly.

Make your bookings now at the Sheraton Baltimore City Center Hotel! And remember, it's very important that you stay at the conference hotel – not only is it the most convenient location for you to enjoy all of the activities, the restaurant and bar, but it is imperative that we book enough nights to cover the expenses incurred in the use of all the great facilities during the week. Check the Web Page regularly for meeting updates and posting of the complete program.

**Sandy Shumway and Karolyn Hansen**  
Program Coordinators

## Recruits' Corner

Happy New Year! We hope you had a safe and relaxing holiday. But now it's time to prepare for NSA's upcoming 103<sup>rd</sup> Annual Meeting to be held in Baltimore, MD from March 27 - 31. Although the deadline for abstract submission has passed, you can still register for the conference until March 15<sup>th</sup>.



Students who have submitted abstracts, remember you are automatically eligible for the **Thurlow C. Nelson Award** for outstanding oral presentation or the **Gordon Gunter Award** for outstanding poster presentation. For those who have submitted an application for a Student Endowment Fund (SEF) Travel award, winners will be announced at the end of January. Remember, SEF awardees are required to devote a few hours to helping at the conference. Even if you did not apply for SEF support, you are encouraged to volunteer to help. Volunteering at the conference is a great way to meet and talk with other conference attendees. Just send us an email and let us know that you are interested and we'll get you signed up. We will be contacting all winners and volunteers in early February to coordinate the duties and schedule.

Don't miss out on the fun this year; we have a lot of great student activities planned for the Baltimore meeting. This year the Student Recruits are 20 years old! A special celebration involving all the past Student Recruit Chairs is planned in conjunction with the SEF Auction on Tuesday night of the meeting (see below). A student-oriented special session on March 28<sup>th</sup> will feature a career panel with professionals from a wide variety of careers. These panelists have agreed to share their experiences and answer your questions, so don't miss out. Look for more details on the session in the conference handbook. The scavenger hunt will be returning this year and the details on this event will be in your student registration packet!

### STUDENT ENDOWMENT FUND 20<sup>th</sup> ANNUAL AUCTION

Tuesday, March 29, 2011

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

Finally, your Recruit Co-chairs are getting close to graduation and plan to step down after the conference in Baltimore. We need one or two volunteers to fill our shoes. The duties of a Recruits Chair consist of writing the Recruits Corner for the *QNL*, planning student activities for the annual conference, and organizing the volunteers who have won SEF travel awards. Don't worry; we'll still be around to provide guidance to the new Student Recruit Chair(s). A leadership position like the Recruits Chair is a great addition to your CV and allows you the opportunity to get to know a lot of colleagues, including the other NSA leaders. This position exists to benefit you, the students, so we need your help and involvement to keep it going! Please contact Max (maxine.chaney@gmail.com) or Stephanie (sreiner@vims.edu) for more details or with any questions you have.

See you in Baltimore!

**Stephanie Reiner and Maxine Chaney**  
Recruits Co-chairs

## Come Celebrate as the Recruits Turn 20!

The NSA Student member organization, the Recruits, will be celebrating its 20<sup>th</sup> Anniversary at the Annual Meeting in Baltimore. As an NSA member, you know how important students are to our Society, and there's a good chance your first NSA experience was as a student. There will be several events and displays at the 2011 Annual Meeting recognizing the efforts and activities of Recruits and the Student Endowment Fund. Your contributions to these efforts are essential.

Please consider contributing to the celebration. We are soliciting:

- Testimonials on how NSA support influenced your career
- NSA Auction photographs
- Pictures of Nelson and Gunter Award winners
- Photos or treasures from the NSA sales booth
- Photographs and information about Castagna and Carriker Award winners
- "Special" and treasured auction items for display
- Photographs of other NSA student activities

Please send items to Maureen Krause, a founding member of the NSA Recruits (contact information on back page).

See you in Baltimore,

**Maureen Krause**  
Vice President

## Presidents Message.....

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on larval viability of shellfish. An increasing number of NSA members and their colleagues are tackling this problem, as will be evident at the session on this topic at the upcoming Annual Meeting in Baltimore. Their efforts will improve our knowledge of how changes in CO<sub>2</sub> and pH impact natural spatfall and the viability of hatchery-produced shellfish seed, both of which are critical to the shellfish industry. This is but one example highlighting projects that range from local to international in scale and scope, that NSA members are involved in.

The shaky U.S. economy and changing political winds are likely to have a significant effect on the U.S. commitment to funding for environmental research. Although NSA is financially sound, what better time than now to affirm your support for our Association and collective vision by renewing your membership and by spreading the word to those outside of NSA about the role our Association serves in addressing key environmental issues. No other professional society in the U.S. combines the interests of scientists, resource managers and industry members in truly collaborative work that crosses a broad spectrum of disciplines.

I am pleased to report that plans are well underway for the 104<sup>th</sup> Annual Meeting that will take place in late March 2012 at the Renaissance Seattle Hotel. Two previous annual meetings (1986 and 2000) were also held at this hotel in the heart of Seattle's restaurant and shopping district. The hotel has just completed a renovation that puts the old property to shame, added wireless internet, and provided a range of meeting spaces perfect for our meeting. In addition, there are plenty of places both in the hotel and in the immediate vicinity to gather over a beer or coffee with the heart of downtown Seattle just steps away. For those that recall our meeting here in 2000, I led an exhaustive tour of oyster bars through downtown Seattle and I may be convinced to come out of retirement to organize a reunion tour in 2011. NSA will also be offering tours of local shellfish companies which will benefit from daylight low tides. I also anticipate working closely with the Pacific Shellfish Growers' Association for additional industry-oriented activities.

But first, there is still much to do to prepare for the upcoming Annual Meeting to be held in Baltimore, MD from March 27-31. The range and variety of sessions that our meeting coordinator, Sandy Shumway, has put together is impressive and will delve into all of the serious issues impacting shellfish and shellfisheries. I urge you to make plans now to attend. Please pay heed to deadlines for registration and important hotel information posted elsewhere in this *Newsletter* and on our Website ([www.shellfish.org](http://www.shellfish.org)). Also, consider contributing your time to any number of volunteer positions within the Association. Inaction is a decision to do nothing at a time when NSA needs your help. You can contact any NSA officer or committee chair using the contact information listed on the back page of this *Newsletter* for more information on

how to get involved. Happy New Year and I look forward to seeing many of you in Baltimore.

**Joth Davis**  
NSA President

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## Pacific Coast Section News

The Pacific Coast Section (PCS) joined the Pacific Coast Shellfish Growers Association to host the 64<sup>th</sup> Annual Shellfish Conference & Tradeshow held in late September at the Hotel Murano in Tacoma, Washington. This year's excellent conference was a forum where members from academia, industry, and government and non-profit agencies came to hear about and discuss the latest in shellfish science. The plenary session on the first day focused on the potential impacts of ocean acidification on shellfish, particularly in light of recent problems experienced by shellfish hatcheries along the West Coast. Other sessions, devoted to abalone restoration and diseases, geoducks, native Olympia oysters, Pacific oysters and burrowing shrimp, were also timely. The PCS thanks the industry, and especially Connie Smith and Robin Downey, for making September's conference a success.

Student support continues to be an essential part of the PCS mission. Students delivered 12 out of the roughly 48 presentations made at the meeting. The best paper award was given to Lisa Crosson (University of Washington) for her presentation entitled "Influence of Rickettsial Pathogens on Black Abalone (*Haliotis cracherodii*): Differential Susceptibility and Host Response" co-authored by N. Wight, S. Roberts, G. Van Blaricom and C. Friedman. Lisa was awarded membership in NSA/PCS and \$500 toward attending the NSA meeting in Baltimore where you will get a chance to hear more about her work. Congratulations, Lisa!! The PCS is grateful to the NOAA Aquaculture program (Michael Rubino and Carole Reb) for helping provide travel funds to 11 students to attend the meeting this year. Additional thanks to all who contributed to the auction which netted \$2,220 for PCS. We look forward to a great new year and the next meeting in Salem, Oregon.

New PCS officers elected at the membership meeting were: Brett Dumbauld (USDA-ARS, Chair), Cathy Stanley (Tulalip Tribe, Vice Chair), Lisa Crosson (University of Washington, Secretary) and Chris Whitehead (Jamestown S'Klallam Tribe, Treasurer) though Chris unfortunately had to leave us and move to the other side of the country. New Members-at-Large Sean McDonald, Brent Vadopalas, Emma Timmins-Schiffman, Chris Burns and Sarah Dudas round out the roster. Thanks so much to outgoing officers Teri King, Kristi Straus, and Tamara Gage for all of your help and continued service!

**Brett Dumbauld**  
Pacific Coast Section Chair



## Industry Perspective: Changing Attitudes and Production

Maryland has had a long and contentious history of shellfish aquaculture. In 1830, Maryland was one of the first three states in the nation to enact a lease law, although conflict has been the norm ever since. Watermen, the public harvesters who dominated the industry until recently, used their political power to minimize leasing of submerged public lands. The century-long battle between watermen, the politicians who supported them, and scientists who urged private cultivation as a means of expanding production has been well chronicled in the recent book “The Oyster Question” by Christine Keiner of the Rochester Institute of Technology. The diseases MSX and Dermo became the principal cause of the downfall of the resource during the 1980s and 90s. During this time, harvests declined from an annual average of 2.5-3 million to 100-150,000 bushels of oysters. While advances combating disease pressure and other problems were being made in the area of restoration aquaculture, private cultivation was still elusive as even the small number of harvesters left in the State’s oyster aquaculture industry protested any loosening of the highly restrictive lease laws that had developed over the previous century.



Several recent commissions and task forces, however, have recognized the need to increase private cultivation. In 2009, the Maryland General Assembly, at the urging of the Governor, unanimously passed a major renovation to the leasing program. In doing so, it wiped out prohibitions on leasing that had been placed on many of the potentially productive Eastern Shore counties, deleted prohibitions on corporations and nonresidents having leases, and did away with limitations on the size of leases that could be obtained. The changes enacted by the General Assembly replaced these prohibitions with “use or lose” provisions mandating production plans as part of the lease application procedure. In determining use, the State now requires annual reporting of inputs and production, and will use periodic oversight to determine compliance.

To help spur industry development, the State has begun a low interest loan fund. It will provide non-collateralized funds to watermen and others to help get the industry started. While non-watermen are able to obtain some of the funds, two-thirds of the money is allocated to harvesters. The loan requires quarterly interest payments until harvest begins. At that point, principal repayment starts but there is forty percent forgiveness which makes the loans highly desirable for new growers.

University of Maryland Extension has been funded to develop a three year Oyster Aquaculture Education & Training Program with funds provided by the Maryland

Department of Natural Resources and the National Oceanic and Atmospheric Administration (NOAA). This program includes classroom and hands-on training for growers to teach them the skills needed for transitioning from wild harvest to shellfish farming. The program will develop written and electronic training materials with online services to include the addition of video and voiceover presentations for ease of access by those with internet connections. Short courses on hatchery operations and annual conferences are included in the project.

A concurrent part of the development program has the Oyster Recovery Partnership, a unique Maryland organization, providing oyster setting systems to growers to assist with seed production. Larvae for these systems will be produced by the University of Maryland Horn Point Hatchery, one of the largest hatcheries in the nation. The Horn Point Hatchery currently produces vast quantities of larvae and seed for various restoration projects in the region. It also has the capacity to produce native non-selected, genetically improved, and triploid oysters, depending upon the environmental characteristics of and likelihood of disease epizootics at any given production area.

With the opening of the new lease program in September 2010, there have been over twenty applications submitted for new bottom leases and a dozen applications for off bottom culture. The new leases range in size from a few to several hundred acres and are located in many areas of the Chesapeake and coastal bays. Along with expanding the lease acreage in Maryland, the new law allows Aquaculture Enterprise Zones where the State obtains the necessary federal permits and subleases to individuals. The intent is to minimize the amount of time and work that a producer must go through to get a business started. For aquaculture to be successful, investors must be afforded as few barriers as possible with the encouragement of a government that wants to see that investment.

While shellfish aquaculture is not an easy business, the skills of many current harvesters make them well suited for success. Learning the techniques of aquaculture will allow them to begin operations that should become successful. Maryland has recognized that developing shellfish aquaculture will lead to enhanced economic growth and added employment in rural, bay-front communities, while also providing strong environmental benefits through increased biofiltration and nutrient transfer.

**Don Webster**  
**University of Maryland Extension**



## Marine Disease Ecology

Those who have had the opportunity to take part in research-intensive summer courses know that such courses can provide students and faculty an opportunity to explore topics in great depth and discover new approaches to studying long-standing problems in a “hands-on”, collaborative setting. This was certainly the case for students enrolled in the Ecology of Infectious Diseases course offered this past summer at the University of Washington’s Friday Harbor Labs (FHL). Co-taught by Drew Harvell, Carolyn Friedman, and Steven Roberts, this five week course was designed to address the increasing incidence of infectious disease in both commercially important and non-commercial marine species, and to begin to fill gaps in our knowledge of the processes influencing the outbreaks of disease, including pathogen virulence and host susceptibility to infection.

To reach these goals, the instructors combined lectures with training in a variety of diagnostic tools for identifying viral, bacterial, protozoan and fungal infections of invertebrates. The course also included an in-depth coverage of the invertebrate innate immune response to pathogens, an introduction to bioinformatics and molecular biology, as well as considering how climate change directly affects host immune response, the dynamics of parasitism and symbiosis and the ecological health of temperate coastal communities. Shellfish figured prominently in many course projects and a unique aspect of the course was a focus on identifying novel host-pathogen interactions through field work in the Friday Harbor region.

Students from across the United States and beyond were drawn to the course for a variety of reasons. For many students, the course was an integral part of their graduate program of study. For example, Emma Timmins-Schiffman, from the University of Washington, is studying the interaction between climate change and pathogens in Pacific oysters. Similarly, Alanna Martin from Occidental College and Marie La-Riviere from University of the Mediterranean in France, examined the interaction of temperature and pathogens in sea anemones. Other students, such as Tiffany Yap a doctoral student from the University of California at Los Angeles, saw this course as an opportunity to broaden their perspective on the impacts of climate change while learning new skills and research approaches.



*Instructor Carolyn Friedman assists course participants Sarah Hu and Carolyn Keogh in the lab (left) while Alanna Martin conducts field sampling (right) during the FHL Ecology of Infectious Diseases course.*

Many students, as well as the course teaching assistant Lisa Crosson (University of Washington), commented that an attractive feature of the course was its use of cutting edge methods to focus on emerging issues. For example, one course project examined the immune response in *Littorina* by comparing gene expression in populations of snails with



*Attendees and instructors in the FHL Ecology of Infectious Diseases course included Steven Roberts, Lisa Crosson, Matthew Eng, Alanna Martin, Marie La Riviere, Tiffany Yap, Sarah Hu, Carolyn Keogh, Kathleen Morrow, Lisa Fong, Drew Harvell, Nick Armstrong, Morgan Mouchka, Carolyn Friedman, James Soda.*

high rates of trematode infection to control populations where infection rates are much lower. Another project determined that a bacterium in the genus *Rickettsia* was the cause of lesions in the nudibranch *Armina sp.*, commonly used in other summer courses taught at FHL.

Although similar marine pathology courses are offered on main campus at University of Washington, this is the first time the subject has been offered as a five-week intensive summer course at the Friday Harbor Labs. By all accounts the course was quite successful. Although there are no formal plans, as yet, to offer the course again, the instructors suggested that they are considering offering the course every other year at Friday Harbor. Those interested in more information on the course and future offerings should contact course instructors Drew Harvell ([cdh5@cornell.edu](mailto:cdh5@cornell.edu)), Carolyn Friedman ([carolynf@u.washington.edu](mailto:carolynf@u.washington.edu)), or Steven Roberts ([sr320@u.washington.edu](mailto:sr320@u.washington.edu)).

## Metamorphoses

Nature McGinn recently completed her Ph.D. at the University of California, Davis while Dane Frank has completed his at the University of Connecticut.

**CONGRATULATIONS to  
Drs. McGinn and Frank!**



# Michael Castagna 2010 Student Research Grant Project Update

Awardee: Andrew J. Ray

“Comparing differences in shrimp (*Litopenaeus vannamei*) production and chemical dynamics among biofloc culture systems containing achemoautotrophic and three types of heterotrophic bacterial communities.”



Limited exchange, superintensive, biofloc shrimp culture systems can offer an environmentally friendly alternative to traditional shrimp culture techniques. In these systems little, if any, water is exchanged reducing the risks of disease transmission and

pollution discharge, while creating opportunities for inland aquaculture. A microbial community develops in the water column that is responsible for cycling otherwise toxic nitrogen compounds. These microbes may also provide supplemental nutrition for shrimp. Some biofloc systems rely on chemoautotrophic nitrification for nitrogen cycling. During this process bacteria convert total ammonia nitrogen (TAN) to nitrite-nitrogen ( $\text{NO}_2\text{-N}$ ) and eventually to nitrate-nitrogen ( $\text{NO}_3\text{-N}$ ), which is much less toxic than the former two compounds. Other biofloc systems rely on heterotrophic bacteria to directly assimilate TAN to build cellular proteins, thereby eliminating the oxidative reactions of nitrification. To encourage bacterial TAN assimilation, various carbohydrate sources can be added to the water column to increase the carbon: nitrogen (C:N) ratio. Recent research has indicated that the nutritional value of microbes for shrimp may depend on the type of carbohydrate used. The purpose of my project was to compare differences in chemical dynamics and shrimp production between systems with three types of heterotrophic bacterial communities, each encouraged through the addition of different carbohydrate sources.

My experiment consisted of  $0.5 \text{ m}^3$  tanks filled with water (16 ppt. salinity) that had previously been used to culture shrimp and in which chemoautotrophic nitrification had been established. I used four replicated tanks for each of four treatments: a control nitrification (T-N) only treatment in which no additional carbohydrates were added and three experimental treatments to which either sucrose (T-HS), molasses (T-HM) or glycerol (T-HG) was added. The three carbohydrates were added in such a way that the combined C:N for the shrimp feed and carbohydrate source was held at 25:1 in an effort to drive each system to heterotrophic bacterial domination. Shrimp (*Litopenaeus vannamei*) were stocked at  $300 \text{ m}^{-3}$  with a mean weight of 6.8 g. Total suspended solids, turbidity, biochemical oxygen demand (BOD), TAN,  $\text{NO}_2\text{-N}$ ,  $\text{NO}_3\text{-N}$ , orthophosphate ( $\text{PO}_4$ ), and alkalinity were each measured weekly.

Although my experiment was terminated after eight weeks, in December of 2010, I am still analyzing the data and present preliminary results from only the first five weeks. Treatment-specific variations were evident for all three forms of nitrogen (Fig. 1). There was an initial spike of  $\text{NO}_2\text{-N}$  spike ( $8.6 \pm 0.3 \text{ mg L}^{-1}$ ) in the T-N treatment during week two which was followed by steadily increasing  $\text{NO}_3\text{-N}$  concentrations in the same treatment, a sign that nitrification had been established in the control tanks. TAN was typically  $< 1.0 \text{ mg L}^{-1}$  and often less than  $< 0.05 \text{ mg L}^{-1}$  indicating minimal build up of this toxic form of nitrogen in most treatments. The clear exception was in the T-HM treatment during the third week of the experiment when there was a large spike in TAN concentration ( $2.1 \pm 0.4 \text{ mg L}^{-1}$ ). Abnormally high shrimp mortality was also observed during this time in the T-HM tanks, although at present the exact cause of the mortality is unclear.

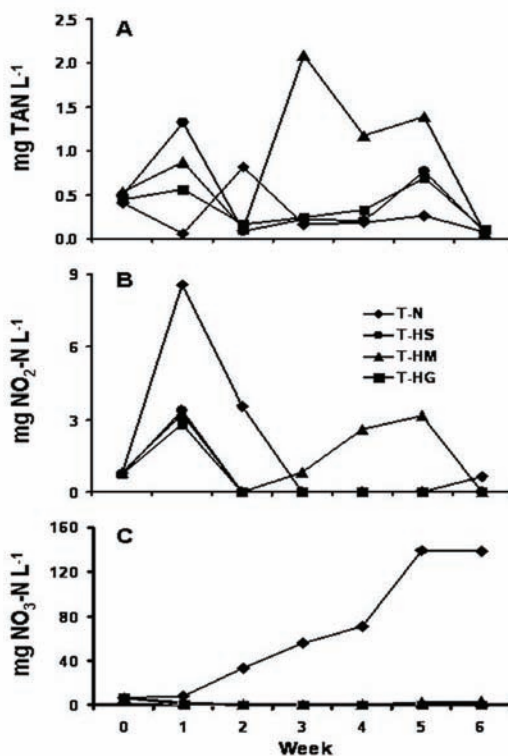


Figure 1. Variation in TAN (A),  $\text{NO}_2\text{-N}$  (B), and  $\text{NO}_3\text{-N}$  (C) concentrations in in each treatment over the first 5 weeks of the study. Samples from the last three weeks are still being analyzed.



## NSA 2011 Elections

The upcoming Annual Meeting indicates that it is once again time to elect officers for open positions in NSA. There are 12 positions on the Executive Committee, which is the governing body for our Association: President, Past President, President-Elect, Vice President, Secretary, Treasurer, three Members-at-Large, PCS Chair, JSR Editor, and Association Financial Officer. The last two positions are appointed by the sitting ExCom and the Publications Committee, but the others are all volunteers elected by the membership. The Elections Committee (President Joth Davis, President-Elect Leroy Creswell and Past President David Bushek) has worked hard to identify willing and able members to fill offices with terms ending in 2011: President Elect, Vice President, Treasurer and one Member-at-Large. Ballots along with short biographies of each candidate will be mailed in early January and the ballots must be returned to LeRoy Creswell by March 21, 2011 to be counted. The election results will be announced at the NSA Annual Business Luncheon in Baltimore, MD on March 30, 2011.

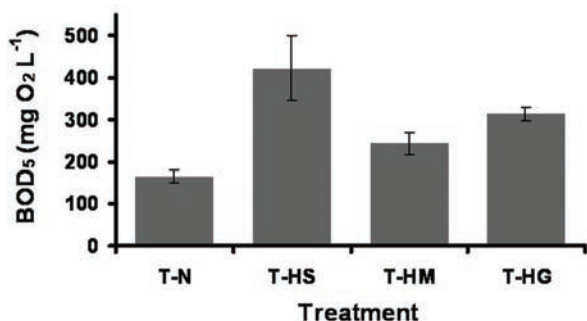


Figure 2. Treatment-specific 5 day biochemical oxygen demand during week 4 of the experiment. Error bars represent one standard error around the mean.

Other differences I observed among the treatments included higher PO<sub>4</sub> concentrations and lower alkalinity in the control (T-N) treatment and higher TSS and turbidity in all three of the heterotrophic treatments (not shown). The latter observations are indicative of higher biofloc particle concentrations. Finally, recent BOD measurements indicate that BOD is substantially lower in the T-N treatment and highest in the T-HS treatment while BOD in the other two experimental treatments reached intermediate values (Fig. 2). BOD measurements provide an indication of how management protocols affect the relative oxygen demand in shrimp culture systems. Oxygen supplementation can be a substantial expense in intensive aquaculture systems and because a large portion of the oxygen demand in biofloc systems is microbial based, my analysis of BOD will be critical to elucidating the relative value of each treatment regime. The variation in shrimp production is also still being analyzed but I predict that shrimp growth and production will have been strongly affected by the differences in chemical dynamics associated with the treatments used in this study. I anticipate that this experiment will illustrate the effects that management tactics can have on microbial function and shrimp production in biofloc shrimp culture systems.



This years candidates for NSA officers are (clockwise from upper left):

**President Elect** - Chris Davis, Executive Director, Maine Aquaculture Innovation Center

**Vice President** - Gef Flimlin, Associate Professor, Rutgers Cooperative Research and Extension

**Treasurer** - John Scarpa, Research Professor, Harbor Branch Oceanographic Institute at Florida Atlantic University

**Member-at-Large (2011-14)** - Steven Roberts, Assistant Professor, University of Washington

**Member-at-Large (2011-14)** - Chris Dungan, Oyster Disease Research Scientist, Maryland Department of Natural Resources.

## Call for Papers World Aquaculture 2011

World Aquaculture 2011 is being held in Natal, Brazil from June 6-10<sup>th</sup>. Aquaculture in Brazil continues to expand and this meeting promises to be an extremely popular one. Shellfish, especially shrimp, will be well represented, and plans are also underway for a mollusc session. All topics are welcome. If you have an interest in participating in the mollusc session, please contact Jose Carlos Gastelu (larviaquicultura@yahoo.com.br) or Sandy Shumway (Sandra.shumway@uconn.edu). Meeting updates can be found at [www.was.org](http://www.was.org).

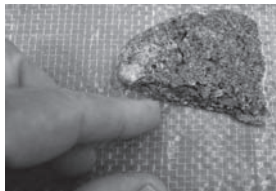
## Record Shellfish Sets on Martha's Vineyard

In a time when the decline of natural shellfish stocks tends to be the norm rather than the exception, and restoration is the word on everyone's lips, 2010 on Martha's Vineyard was an incredibly good year for shellfish. Oysters set in astounding numbers in several ponds on the island and the potential for a decent harvest in three years is good. Tisbury Great Pond has one of the most promising outlooks.

While managers and specialists in places like Delaware Bay and Chesapeake Bay have spent a number of years working hard to restore their oyster populations, their colleagues on Martha's Vineyard are relatively new to the oyster restoration game. Dermo, a well known oyster disease, was first detected in Vineyard ponds in 1996. And while the route of transmission of this disease to ponds on the Vineyard is still unknown, the decimation it caused has been tremendous. Dermo spread rapidly and by the summer of 2001 Tisbury Great Pond had lost at least 95% of its population leading to collapse of the oyster fishery. The good news is that the ponds have been slowly recovering. In a 2006 study of Edgartown Great Pond, the first pond where oysters tested positive for Dermo, Schiller, Romano and Roberts found that oysters were showing resistance to the disease. An investigation of oysters in Tisbury Great Pond, by Emma Green-Beach in 2008, further confirmed the development of resistance to Dermo in local oysters.

A collaboration of several groups on the island, including the Martha's Vineyard Shellfish Group and the town Shellfish Departments for Chilmark and West Tisbury have employed a variety of techniques to help the restoration along in Tisbury Great Pond, including the planting of cultch, deployment of "spawner" sanctuary floats with Dermo resistant broodstock, collection of natural oyster spat in shell bags, remote setting of Dermo resistant larvae, and the culture of single oyster seed on microcultch.

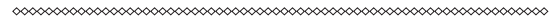
Enter the summer of 2010 when oyster spat set in record numbers in Tisbury Great Pond, as well as several other ponds on the Vineyard. In the words of Rick Karney, the director of the Martha's Vineyard Shellfish Group, "The observed spatfall was of truly historic proportions. Some shells were coated with over a thousand spat (see photo at right). It even set on sheets of *Ulva* – a testament to the remarkable fecundity of the species".



Evidence of the successful spawn can be seen everywhere you look. Scientists hope to gain some understanding of what led to the historic oyster set. The main question is how much of the spat set can be attributed to the restoration efforts and how much to favorable environmental conditions.

Environmental conditions in 2010 were warm and dry, conditions that can be conducive to successful oyster spawns. Favorable environmental conditions may also be linked to an historically high set of bay scallops in Cape Pogue Pond, another pond located on the Vineyard. For both the oysters and scallops, scientists believe that peak spawning occurred during the last two weeks of June and into early July. Although this observation suggests that environmental conditions have had an impact on shellfish sets in the region, there is still a lot to be learned. If scientists can determine to what extent their restoration efforts have helped they can use the lessons learned in Great Tisbury Pond to help restore oyster populations in other ponds on the Vineyard and maybe even extend what they've learned to other regions that have seen declines in shellfish populations. Despite reports of an outbreak of another oyster disease, MSX, in the Northeast this past year, the oysters on Martha's Vineyard fared well. Thus, whatever may have led to the successful sets of both oysters and scallops in the Vineyard ponds, the local watermen are looking forward to the future harvest and the benefits will hopefully last for many years to come.

**Melissa Southworth**  
**Virginia Institute of Marine Science**



## Susan Ford Named to BioOne Board

For many years NSA has discussed options and methods to provide electronic access to *JSR*. Soon after she became co-Chair of our Publications Committee, Dr. Susan Ford identified BioOne as an ideal option. Susan efficiently and effectively negotiated an agreement with BioOne that met with NSA Executive Board approval and soon thereafter *JSR* became one of the premier journals in the BioOne.2 collection. NSA and *JSR* benefit by having the Journal available electronically and receiving a share of the revenue BioOne collects. Improved access appears to have increased the visibility and citation rate of the papers published in *JSR*, helping NSA meet its primary mission. Susan's talents and attention to detail did not go unnoticed by the folks at BioOne, who recently invited her to become a member of their Board of Directors. NSA thanks Dr. Ford for her dedication to our Association and congratulates her on this appointment.





## Membership Update

At the end of 2010, NSA membership totaled 657 members in good standing, of which 123 were student members. This total is a substantial decrease from our membership totals of 758 and 748 in 2008 and 2009, respectively. It is, however, a slight increase above the membership (641) we saw during the last triennial meeting year in 2007. As we head into 2011, I hope that you will make every effort to renew your membership and that you will recommend NSA membership to your colleagues as one of the best professional investments that they can make.

Benefits of NSA membership include:

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

You can renew your membership by mailing your NSA dues together with the invoice that you should have received by now. Alternatively, you can renew online. Simply log in to the NSA Website ([shellfish.org/user/login](http://shellfish.org/user/login)) using your username (or e-mail address) and password (which can be retrieved, if forgotten). Once logged in, you'll find a notice in the upper left that your 2011 dues are payable; click on 'Details' and you'll be taken to a page showing your dues payment history. Click on 'Pay Dues' at which time you will be given the option of joining the Pacific Coast Section or donating to the Student Endowment Fund. After making your choices, click 'Pay Now' and you will be taken to a secure encrypted site where you can enter your credit card information. If you prefer to pay by mail, click 'Pay by Mail' which will generate a personalized invoice you can submit with your check or credit card information via postal mail. While online, please consider updating your member profile.

Renewing by January 31<sup>st</sup> will eliminate the expense of sending you back issues of *JSR* and the *QNL*. Avoid the shipping surcharges (\$20 in North America; \$40 outside North America) required to send you back issues by renewing your membership, today.

New members may join either online or by mail simply by following the instructions at [shellfish.org/join.htm](http://shellfish.org/join.htm). As always, students enjoy special low membership rates of \$45 per year. We hope you will join us. Here's to a wonderful 2011 for NSA and our members!

**Bill Walton**  
**Membership Committee Chair**

## Publication Ethics

We would like to remind authors of articles submitted to the *Journal of Shellfish Research* that they are expected to ensure that their manuscripts follow accepted ethical standards for publication in scientific journals. Discussions and guidelines can be found at a number of excellent websites (see below). We have abstracted guidelines for two of the most critical ethical issues, *proper attribution of findings and ideas of others*, and *proper designation of authorship*, from these websites.

Concepts, wording and results that come from the work of others must be properly cited in the text and Literature Cited. Unpublished information obtained via correspondence or conversation with third parties can be cited only with the explicit, written permission of that party and must be cited as a personal communication, indicating the source's name, institution and date of communication.

Authorship should be limited to persons who have made a significant contribution to the idea, design, execution, analysis, interpretation, or writing of the paper, and should be able to defend its conclusions. Lesser contributions (e.g., provision of samples or simple membership on a student committee) should be credited in the acknowledgments. It is the responsibility of the corresponding author to ensure that each co-author has agreed to authorship and has approved the final version of the manuscript for publication.

Authors are encouraged to visit the following websites for further guidance:

[http://www.elsevier.com/wps/find/intro.cws\\_home/ethical\\_guidelines#Duties%20of%20Authors](http://www.elsevier.com/wps/find/intro.cws_home/ethical_guidelines#Duties%20of%20Authors)

<http://www.springer.com/authors/journal+authors?SGWID=0-154202-0-0-0>

[http://authorservices.wiley.com/bauthor/publicationethics.asp#\\_Toc149460095](http://authorservices.wiley.com/bauthor/publicationethics.asp#_Toc149460095)

**Publications Committee**  
**National Shellfisheries Association**

### QUILT RAFFLE

A beautiful quilt, crafted by Sandra Scarpa, will be raffled off to support the Student Endowment Fund during the 103<sup>rd</sup> Annual Meeting in Baltimore.

Be sure to purchase your tickets at the meeting or contact any NSA officer for tickets if you can't attend the meeting.

# CULTURING DIVERSITY AND SUCCESS

Loews Hôtel le Concorde  
Québec City, Québec  
May 8<sup>th</sup> - 11<sup>th</sup>, 2011

[WWW.AQUACULTUREASSOCIATION.CA](http://WWW.AQUACULTUREASSOCIATION.CA)

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NSA thanks the Aquaculture Association of Canada for sponsoring this issue of the *Quarterly Newsletter*.

## Upcoming Events

**Delaware Estuary Science and Environmental Summit, Connections - Land to Sea, Shore to Shore & Science to Outreach:** January 30-February 2, 2011, The Grand Hotel, Cape May, NJ, USA. For information visit [www.DelawareEstuary.org](http://www.DelawareEstuary.org).

**31<sup>st</sup> Milford Aquaculture Seminar:** February 7-9, 2011, Courtyard Marriott, Shelton, CT, USA. For information visit <http://mi.nefsc.noaa.gov/seminarworkshop>.

**Aquaculture America 2011:** February 28-March 3, 2011, New Orleans Marriott, New Orleans, LA, USA. For more information visit [www.was.org](http://www.was.org).

**National Shellfisheries Association, 103<sup>rd</sup> Annual Meeting:** March 27-31, 2011, Sheraton City Center Hotel, Baltimore, MD, USA. For more information visit [www.shellfish.org](http://www.shellfish.org).

**Eighteenth International Pectinid Workshop:** April 20-26, 2011, Haiqing Hotel, Qingdao, China. For more information visit [www.18ipw.com](http://www.18ipw.com).

**Aquaculture Canada, Culturing Diversity and Success:** May 8-11, 2011, Loews Hôtel Le Concorde, Québec City, Québec, Canada. For more information visit [www.aquacultureassociation.ca](http://www.aquacultureassociation.ca)

**World Aquaculture 2011, Aquaculture in a Changing World:** June 6-10, 2011, Natal Convention Center, Natal, Brazil. For more information visit [www.was.org](http://www.was.org).

**Eighth International Conference on Molluscan Shellfish Safety:** June 12-17, 2011, Charlottetown, Prince Edward Island, Canada. For more information visit [www.gov.pe.ca/icmss2011/](http://www.gov.pe.ca/icmss2011/).

**Second International Congress on Invertebrate Morphology:** June 20-23, 2011, Harvard University, Boston, MA, USA. For more information visit <http://icim.harvard.edu>.

**World Conference on Marine Biodiversity:** September 26-30, 2011, Aberdeen Exhibition and Conference Center, Aberdeen, Scotland, UK. For more information visit [www.marine-biodiversity.org/](http://www.marine-biodiversity.org/).

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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](mailto:prawson@maine.edu)).

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