

National Shellfisheries Association Quarterly Newsletter

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2015 (4)

President's Message



The holiday season is upon us and we all know what that means: lots of food, family, and some much-appreciated down-time. Some of my holiday favorites are shellfish-related: crab soup, oyster stuffing, shrimp scampi, sea-

food breakfast casserole, fresh oysters, and of course mussels steamed in wine and garlic. How do we get great seafood in Ohio? Easy – we've made friends with our local seafood wholesale supplier who is a whiz at getting almost anything we need. Cheers to the multitude of growers and suppliers (many of whom are NSA members) who work tirelessly to provide a safe and enjoyable product.

We have another very busy season approaching: meeting season. The 108th NSA Annual Meeting will be held as part of the Aquaculture 2016 Triennial from February 22-26 in Las Vegas, Nevada, USA. The NSA event schedule is slightly different since we are at the Triennial – the Opening Reception is on Monday 2/22, the NSA Auction is on Tuesday 2/23 immediately after the Student Reception and Awards ceremony (for all students from all societies), and the NSA Business Luncheon is on Thursday 2/25. In addition, our NSA student Recruits will have a full agenda of activities as part the overall Student Activities at the meeting. Be sure to complete your meeting registration before the early-bird cut-off of January 11, 2016. Please see the Aquaculture 2016 information in this issue of the newsletter for additional details and the link to the meeting website. This promises to be a well-attended meeting so make your travel plans early.

There are many activities going on behind-the-scenes at NSA. We continue to improve our association web-portal operations, we are finalizing the 2016 Ballot, and we are reviewing the applications for Student Awards (travel awards and research awards). It's never too early for our student members to consider submission of their manuscript to the *Journal of Shellfish Research* – all student first

-author papers are considered for the Shumway Best Student Paper Award (\$1,250) for each volume/calendar year. Don't miss your chance - details are at shellfish.org/best-student-paper-in-jsr. Lastly, continued thanks to all of our volunteers who work behind the scenes to keep NSA on track, we really couldn't do it without you.

I look forward to seeing you in Vegas –

Karolyn Hansen

**2016 MEMBERSHIP
RENEWALS ARE NOW
DUE**

Go to: www.shellfish.org

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- *9th International Abalone Symposium*

Recruits' Corner

Hello Recruits!

Registration for the Triennial meeting in Las Vegas, NV is still open! Take a look at the NSA website (www.shellfish.org) for more information regarding registration and other activities we are planning for Vegas. The student registration rate is \$235 until **FEBRUARY 1ST**, after that date the registration cost jumps to \$300 for students, so be sure to get registered on time. We are getting excited for a great NSA student showing in Vegas!



Planning for the Triennial is still very much ongoing, and we are working closely with the student representatives from the World Aquaculture Society and the American Fisheries Society Fish Culture Section to make this a great conference for all students. The student panel entitled "Student Career Planning Seminar" is coming together nicely. Our speakers include Carl Kittel (Head of AFS Fish Culture Section; Texas Parks and Wildlife), Mark Maskill (USFWS Hatchery Service), Carole Engle (retired Director of the Aquaculture and Fisheries Center at UAPB), Paul Picard (Farm Manager at Seaside Aquaculture), Huy Tran (Commercial Aquaponics Producer), Bob Robinson (Kasco Marine), John Ewart (WAS Jobs), and Mike Denson (SC Department of Natural Resources). We hope this will give students the opportunity to hear from a variety of speakers from a diverse range of backgrounds to broaden horizons beyond traditional academic jobs. Other events include a student field trip to a seafood wholesaler and a behind the scenes tour of the Golden Nugget Casino, as well as our usual student mixer before the NSA auction. The Triennial program is still in the works, but keep an eye out on the NSA website for finalized dates for these activities as they become available.

As you all know, student volunteers are a big part of the meeting success and in the coming months we will be counting on your help to make this meeting happen. Watch for the call for student volunteers, which work a little differently at the Triennial meeting. We will be sure to send out an email as soon as the official notice for student volunteers is given. The primary responsibility of NSA students at the Triennial is to run the sales booth, but there will also be opportunities to help with registration and A/V for the technical sessions. Recruits are crucial in making sure these activities run smoothly and ensuring a successful meeting, which would not happen without your participation!

In order to facilitate a more cost-effective meeting, we will be creating a room share document that will be available to

all students that have registered for the Triennial meeting. We hope that this will allow for a larger student presence in addition to some good fun! We will be sending an email in the New Year regarding the room share.

We hope to hear from you soon! As always, email us with any problems or questions. If you are interested in getting involved for future meetings, the Student Recruits Chairs are always looking for students to help us with meetings and assisting fellow recruits. If you are interested, please email Hillary (hlane@umces.edu) or Lillian (lilliankuehl@gmail.com) and we can give you more details.

Looking forward to seeing you all in Las Vegas!

*Hillary Lane Glandon
Lillian Kuehl
Maria Rosa*

**Don't forget the
24th Annual Auction
to benefit the
STUDENT ENDOWMENT FUND**

*Remember, nothing is too big or
too small or too tacky!*

**Send items ahead to Sandy Shumway (by Jan 31st
at the latest) or send with a colleague.**

**Books, trinkets, posters, shells, and old
souvenirs – it's a great opportunity to clean**

Members in the news:



Bill Walton was featured in *The Bitter Southerner*. <http://bittersoutherner.com/oysters-alabama-style/>



Leslie Sturmer receives prestigious national Extension award. <https://news.ifas.ufl.edu/2015/03/ufifas-sturmer-recognized-with-prestigious-national-extension-award/>



The NSA store is open for Christmas!

\$5 flat rate shipping on all orders

Great stocking stuffers

Mugs: \$5

Cookbook: \$15 each or 3 for \$35

T-Shirts: short-sleeved \$10
long-sleeved \$15

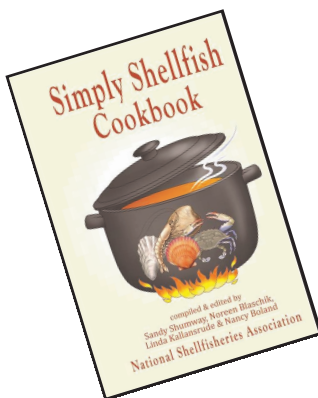
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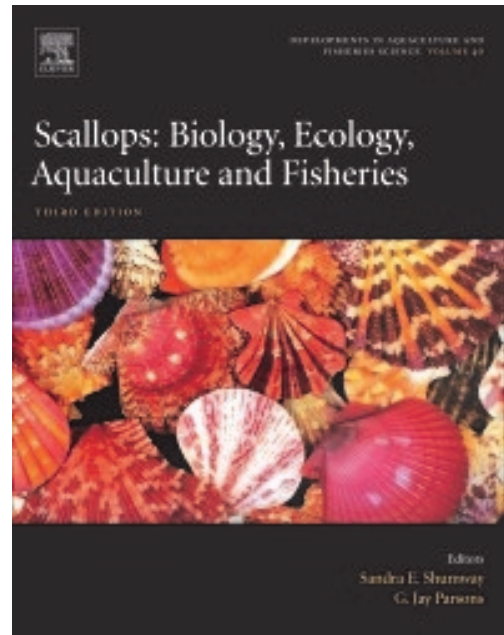
Contact Sandy to place your order

All proceeds benefit the Student Endowment Fund

Consider a gift membership for your favorite student!



Discover interesting facts on 52 different molluscs



Scallops: Biology, Ecology, Aquaculture and Fisheries, 3rd Edition

Scallops: Biology, Ecology, Aquaculture and Fisheries, Third Edition, continues its history as the definitive resource on scallops, covering all facets of scallop biology, including anatomy, taxonomy, physiology, ecology, larval biology, and neurobiology.

More than thirty extensive chapters explore both fisheries and aquaculture for all species of scallops in all countries where they are fished or cultured.

This treatise has been updated to include the most recent advances in research and the newest developments within the industry. As aquaculture remains one of the fastest-growing animal food-producing sectors, this reference becomes even more vital. It has all the available information on scallops needed to equip researchers to deal with the unique global issues in the field.

Key features include:

- Provides chapters on various cultures of scallops in China, Japan, Scandinavia, Europe, South America, Eastern North America, and Western North America
- Includes details of scallop reproduction, nervous system, and behavior, genetics, diseases, parasites, and much more
- Completely updated edition with valuable information on one of the most widely distributed shellfish in the world.

Now available to pre-order. Use the discount code **ATR30** at checkout and receive **30% off your purchase**. Visit www.store.elsevier.com and pre-order your copy today.

NSA Pacific Coast Section News



The 69th annual meeting of the Pacific Coast Section of the National Shellfisheries Association (NSA-PCS) was held from September 22-24 in Hood River, Oregon, in conjunction with the Pacific Coast Shellfish Growers Association (PCSGA). The venue provided an enjoyable opportunity for academics, industry, government agencies, tribal representatives and environmental organizations to exchange information. PCS sincerely thanks the shellfish industry and the conference planning committee, Margaret Barrette, Connie Smith, and Becky Mabardy for making this annual joint conference a great success. Over 230 people registered for the conference, of which 62 were NSA members!

The keynote speaker, Ian Duthie (SeaPerfect, Tasmania), was welcomed as the first recipient of the John Lentz Profiles in Innovation Speaker Series. Duthie discussed his experiences with shellfish aquaculture from “Down-Under”. He has been actively involved in the Australian Pacific oyster and broader shellfish industry for over 25 years, including the management and establishment of shellfish hatcheries, nurseries, and grow-out production systems for oysters and mussels. Recognizing that shellfish industries face many of the same challenges and opportunities globally, his presentation demonstrated how collective intelligence—sharing ideas, innovations, and working collaboratively—can help us all. The keynote was followed by Anna Priester (University of Maryland) who demonstrated this collective intelligence by sharing her work on the effects of salinity on remote settlement of eastern oysters. Next up was an engaging session, ‘Making the Connection’, which included talks on oyster consumption surveys, building customer relationships using social media, a new mobile application for tablets and smart phones, shellfish classroom curricula, and the Marine Studies Initiative at Oregon State University. A fascinating film entitled “Wildlife Detectives: The Poaching of Puget Sound” followed, which documented illegal harvest and sales of shellfish in Washington. Award-winning film producer Katie Campbell (KCTS) was on hand to answer questions and speak about making the documentary.

The conference was filled with concurrent sessions on topics such as resource user conflicts, shellfish culture/habitat interactions, crustaceans, pathogens/disease, partnerships, seafood inspection/human health, algae production, genetics, resource assessment, ocean conditions, emerging species, and shellfish culture/eelgrass interactions. There were several lively workshops and discussion sessions that focused on reporting production numbers, establishing research priorities, and implementing a new *Vibrio* control plan. A novel breakfast session brought together researchers and industry for a “Tech Tool and Equipment Information Exchange” which featured new technology for monitoring environmental conditions on shellfish farms.

Student involvement continues to be a primary focus of the PCS mission and funding was made available to support the participation of 11 students. There were 14 student presenta-

tions which accounted for approximately 20% of the talks at the conference. The Best Student Paper Award was given to Laura Newcomb from the University of Washington for her presentation entitled “Monitoring risk: ocean conditions influence mussel attachment”. She and Daniel Gillon (UW), who received an honorable mention for his presentation on the effects of ocean acidification on Pacific oysters, were awarded NSA-PCS memberships and Laura received \$250. Support for students to attend the meeting was generously provided by the Dr. Ken Chew Student Scholarship Fund, as well as contributions from the NOAA Office of Aquaculture, Arcadia Point Seafoods, Aquatechnics, Inc., Chuckanut Shellfish, Humboldt Bay Oyster Co., Rock Point Oyster Co., Taylor Shellfish, and Whiskey Creek Hatchery. The PCS would also like to give a special thank you to Jake Heare, a graduate student at UW, who took the lead on AV for the conference, diligently ensuring all sessions ran smoothly!

Thanks also to Ralph Riccio and Molly Jackson for all of their hard work envisioning and executing IRONCLAM (a follow-up to last year’s Bivalvathon). This triple relay event included jumping through hoops for permits, scootering to acquire seed, and donning hip boots to plant seed in sand filled kiddie pools—a true geoduck farming experience!. Big thanks go to all those who solicited and donated items for the silent auction. Proceeds from both events made the meeting a success for PCS and will help sponsor students attending future meetings.

The NSA-PCS held its annual business meeting during the 2015 conference. Elections were held and the current PCS officers are: Laura Hoberecht (NOAA Aquaculture Program) Chair, Sean McDonald (UW) Vice Chair, Philippa Kohn (WA Dept. of Fish and Wildlife), newly-elected Secretary, Bethany Stevick (WA Dept. of Fish and Wildlife) re-elected Treasurer, and members-at-large Molly Jackson (Taylor Shellfish), David Fyfe (Northwest Indian Fisheries Commission), and newly-elected Julie Barber (Swinomish Tribe).

Timing of the 2015 meeting was good for college-affiliated NSA-PCS members (students and advisors) as it occurred before the start of the academic year. Next year’s October dates will be challenging for many. The PCS plans to designate session leads for the next year conference to develop themes and solicit presentations for more comprehensive session content.

The 2016 NSA-PCS/PCSGA annual conference will be held October 10–13, 2016, at Campbell’s Resort in Chelan, WA. Abstracts will be due summer 2016, so start planning now. Let us know early if you have an idea for a special session.

Follow the NSA-PCS Twitter feed and Facebook page for news and information about the PCS, events and the annual meeting. Twitter: @nsapcs, Facebook: <https://www.facebook.com/pages/Pacific-Coast-Section-of-the-National-Shellfisheries-Association/1438569826443936>

Looking forward to seeing many of you at the Triennial in Las Vegas this coming February.

Laura Hoberecht
Pacific Coast Section Chair



Industry perspective: *Interstate Shellfish Sanitation Conference* — *In a Nut Shell*

The annual Interstate Shellfish Sanitation Conference (ISSC) was held in Salt Lake City, Utah during the last week of October. Some attendees were musing that Halloween costumes and disguises would have made the meetings more interesting.

Compared to the last few meetings, this year was relatively low key. Discussion rarely got heated, and I think we avoided any damaging changes to the Model Ordinance. We added a few tools to the toolbox and kicked a bunch of issues back to committee for refinement.

The ISSC has about 45 committees, 8 subcommittees, and 18 workgroups on subjects ranging from *Vibrio* education to growing area classification and patrol. Many of these groups are tasked with massaging proposals from previous years to see if they find language that a majority can support. In an effort to trim the conference from 7 days to 6, the ISSC tried to get many of the committees to do some of their work via conference call before the actual meeting. For those of us on a lot of committees it meant a lot of long calls, but the effort paid off and once we got to Salt Lake much of the wordsmithing had been done. Still, the law of unintended consequences often rears up, and someone in the room often identifies an unforeseen problem, and the ensuing controversy often condemns a proposal to go back to committee until the next conference.

What was achieved in a nut shell:

We approved a few new rapid algal toxin tests, and codified the use of some *Vibrio* quantification methods that were being used with interim approval already.

Several proposals were adopted using Male Specific Coliphage (MSC), a surrogate virus that mimics Norovirus in sewage very well. We don't have a huge problem with Norovirus in shellfish in the US, but it is the leading cause of foodborne illness and is a big problem in other countries. We don't have a tool to measure live, infective NoV – and PCR methods only tell us if there is NoV RNA in the waters. There is no way to tell if that NoV RNA has been inactivated or if it is still infective. We can grow and measure MSC so it (like fecal coliform bacteria) is used as a sewage indicator. Authorities can now use MSC to refine the closure area around wastewater treatment plants. This has the potential to open vast areas around high-performing UV-treatment plants. MSC is also a tool that can now be used to accelerate openings after sewage spills and to assess depuration effectiveness.

The FDA tried to push through regulations requiring new rules designed to control *Clostridium botulinum* in shucked shellfish meats. The FDA maintains that they have detected the deadly soil bacteria in meats, and that theoretically there is a risk worthy of forcing all shuckers to redesign their packaging and put temperature recorders on individual containers. Industry pointed out that there have been no recorded botulism cases

associated with shellfish since the invention of refrigeration, suggesting that our limited regulatory and scientific resources should focus on issues that are getting real people sick. Task Force II tried to kill the proposal, but it was resurrected by the state regulators at General Assembly and sent to committee for refinement.



Bob "Skid" Rheault

I had submitted a couple of proposals trying to clarify aquaculture facility inspections and the length of time a grower needs to ensure that seed from nurseries in prohibited waters meets acceptable standards. Inspections are now annual, but the seed issue was punted back to committee with the added task of rewriting the entire aquaculture chapter. That should be an interesting exercise. This committee spent the better part of an hour arguing the difference between "hatchery-reared" and "reared in a hatchery." When someone suggested that we define "hatchery" I was at a loss as to how anyone could somehow misconstrue the meaning of the word. My hair started to hurt.

There was an effort to rewrite the interpretation of the tiered approach to sporadic Vp illnesses that was passed in San Antonio last year. Some believed that two illnesses should result in a precautionary closure, but Task Force II reaffirmed that the intent of the original change was to avoid closures when an "implicated area" has less than four sporadic illnesses.

States are now required to report monthly landings at the end of each year to inform risk per serving calculations. Reconditioning of shellstock recalled following an outbreak of Vp or Vv is now permitted under various circumstances; however, developing a definition of "resubmergence" following exposure turned out to be too challenging so it was sent back to committee.

Lastly – we voted not to change the name "Conference" to "Congress" as it would have opened a huge can of federal agency worms (the worst kind) – and then we voted to go back to biennial meetings as annual meetings were too costly.

ISSC meetings typically feature a half day of presentations, and this year's offerings were excellent. Kristin DeRosia-Banik (from the Connecticut Department of Agriculture, Bureau of Aquaculture) presented some of her data on rapid cooling (discussed in the last QNL) and Chris Schillaci (Aquaculture Coordinator and *Vibrio* Specialist for Massachusetts DMF) presented some of the work he has been coordinating in Massachusetts.

Confirmed *Vibrio parahaemolyticus* cases linked to MA harvest areas increased from 9 in 2012, to 33 in 2013 triggering significant revisions to the state's Control Plan. Illnesses dropped to 14 in 2014, but in 2015 they climbed to 27 with

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some cases still pending investigation. The vast majority of cases turned out to be caused by the O4:K12 strain of Vp.

Interestingly, less than a quarter of the cases were related to oysters grown intertidally. Chris' studies showed that *Vibrio* levels in intertidal oysters climb when the animals were exposed, in some cases 2-6X background, but he also showed that levels went back to background after being resubmerged for one or two tides.

Chris also reported on what happens to *Vibrio* levels in oysters that are held out of the water for 48 hours as might be done to control fouling. Again, as expected, *Vibrio* levels climb during emersion, but after prolonged exposure it took as long as four days for levels to subside back to background.

Chris is looking forward to repeating these studies next year, as well as testing the hypothesis that *Vibrio* levels may correlate with the organic content of sediments and the proximity of the oysters to resuspended silt. Studies like these should lead to more effective harvest controls and management measures that should help us find ways to minimize illnesses going forward.

Norm Bloom shared some drone video footage of his son Jimmy harvesting oysters on one of their dredge boats, filling six huge containers with oysters, all set up to rapid chill each cage to well below 50°F within minutes. It was an impressive display of massive investments and of how industry can be very creative to meet the regulatory challenges we face.

A note from the recipient of the Best Student Poster Award

The 9th International Abalone Symposium (IAS), held this year in Yeosu, South Korea, was truly a delightful experience. Who knew abalone, such an unusual though quaint little creature, could bring farmers, industry leaders, and academics from all over the world together, to share current research results, innovations in farming techniques, and technology as well as wild fisheries management and conservation developments. The most important outcome remains the collaboration between countries sharing ideas and highlighting new research directions.



This was my very first International Abalone Symposium and I think it's an enlightening experience to see what powerful outcomes can be achieved when people come together to address pressing issues, improving the sustainability and survival of the industry. I'd like to thank the IAS for the privilege and opportunity to present a student poster. Receiving the award for Best Student poster along with one year membership with the National Shellfisheries Association (NSA) and free subscription to the *Journal of Shellfish Research (JSR)* was far more than I could have imagined. It was a wonderful experience!

Warm Regards,
Jessica Buss — Flinders University, South Australia

9th International Abalone Symposium



The 9th International Abalone Symposium, was held in Yeosu, South Korea from 5th to 10th October 2015. Over the past few years, Korea has become one of the world's major abalone producers and, thus, the choice of Korea as a symposium venue was particularly appropriate.

This Symposium followed in the tradition of the previous International Abalone Symposia that have been held at roughly three-yearly intervals in Mexico, Australia, the U.S.A., South Africa, China, Chile, and Thailand. The 2015 Symposium was attended by more than 200 delegates, and included presentations on international abalone production and marketing; fisheries management; aquaculture technology; larval biology & settlement; pathology & diseases; nutrition & feeding; genetics; physiology, biochemistry & biotechnology; harvest & processing; and aquaculture certification. In addition, almost 60 posters were displayed and these proved a great success and attracted keen interest.

The local Program Committee, under the Chairmanship of Kwang-Sik Choi, put a great deal of effort into organizing the program for this symposium, and the range of topics covered was sufficient to challenge the minds of all participants. Everyone left with a renewed respect for the amount of research that has been undertaken, over the years, on abalone.

The venue for the Symposium, the MVL Hotel in Yeosu, was nothing less than spectacular, offering delegates superior accommodation as well as modern and well-equipped conference facilities. On the final night of the conference, the Presidential Dinner was held in the open-air, on the roof of the hotel – an occasion that will be long-remembered by all.

The formal symposium was followed by a field trip to Wando County, where delegates were able to view a seaweed Expo, an abalone hatchery, and abalone cage-culture installations. It was fascinating to learn more about the rapid development of the abalone farming industry in Korea and to marvel at the size of the on-growing operations. Prior to about 2000, abalone in Korea, were farmed in land-based tanks, but since moving to off-shore cage production around 2003, production has accelerated quickly such that by 2014 farm production was about 9400 mt. Korea has now become the world's second largest producer of farmed abalone.

Peter Cook

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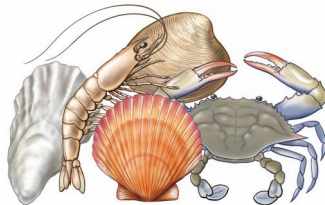
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Upcoming Events

Milford Aquaculture Seminar—36th Annual Seminar. January 11-13, 2016. Shelton, Connecticut. For more information, visit: <http://www.nefsc.noaa.gov/nefsc/Milford/seminarworkshop.html>

International Conference on Aquatic Resources and Sustainable Management: February 17-19, 2016. Science City, J.B.S Haldane Avenue, Kolkata, West Bengal 700046. For more information: <http://ccscoy.in/registration>

Aquaculture 2016. February 22 – 26, 2016. Las Vegas, Nevada. Triennial meeting of WAS, NSA, AFS. For more information, visit: <http://www.shellfish.org>.

4th International Symposium on Genomics in Aquaculture: April 20-22, 2016. Athens, Greece. For more information: <http://www.gia2016.com/index.ph>

If you would like to announce a meeting, conference, workshop, or publication that might be of interest to NSA members, please con-