

Summary Notes

12th Annual Ronald C. Baird Sea Grant Science Symposium

University of Rhode Island Graduate School of Oceanography

The Future of Shellfish in Rhode Island: Providing Sustainable Seafood, Economic Opportunities, and Ecosystem Benefits

November 14, 2013

Purpose:

- Provide local and national knowledge and perspective to enhance the cultural, environmental, and economic aspects of Rhode Island's shellfish resource; and
- Further guide the State's on-going Shellfish Management Plan (SMP) initiative.

Welcome and Symposium Purpose

To open the Symposium, several dignitaries and conference organizers welcomed the approximately 165 attendees and provided guiding comments for the event. University of Rhode Island (URI) Graduate School of Oceanography (GSO) Dean Bruce Corliss told the group that the SMP, by bringing science to the policy table, is representative of GSO's value to the state, and Rhode Island Sea Grant College Program Director Dennis Nixon noted that the kind of collaboration found in the SMP project is a Sea Grant hallmark. Both Rhode Island Department of Environmental Management Director Janet Coit and Rhode Island Coastal Resources Management Council Executive Director Grover Fugate said that the SMP is an opportunity for state agencies to build stronger ties and communication. Rhode Island State Representative Art Handy (D-Dist.18) congratulated the SMP process for efforts to help the Rhode Island General Assembly make resolution of shellfish issues "better and easier," and Azure Cygler, SMP program manager for the URI Coastal Resources Center and the Rhode Island Sea Grant College Program pointed out that many attendees were playing an active role in making the Symposium and the SMP successes.

Shellfish in Rhode Island: Opportunities for Growth

Moderator: Dale Leavitt, Associate Professor, Roger Williams University

Presenter: Robert Rheault, Executive Director, East Coast Shellfish Growers Association

Leavitt introduced Rheault, who provided an overview of shellfish biology and anatomy ("they're the vacuum cleaners of the ocean") and spoke about the increasing need for shellfish – the world's population is growing, he said, and the expectation is that much more food, such as shellfish, a "power-food," will be needed to feed people. Rheault said that answering this food need should be the critical goal of the shellfishing industry – not fighting over which form of shellfishing, wild harvesting or aquaculture farming, is the best. "To me, it's just a gradient of management," he said. He did say that the debate about public/private ownership over shellfish is, in fact, a real issue, but that the end goal – feeding the world's population in less than 20 years

– should be the primary focus for everyone in the field. He said fishermen and farmers should be united in answering the food issue, especially in terms of how the population is growing in China, and in addressing shared challenges such as low-cost imports, ocean warming and acidification and shellfish disease.

After the session, questions focused on the issue of addressing China’s food needs, and on the issue of the potential for oyster reefs to mitigate storm impacts, such as flooding. Rheault said that he thinks it is a worthwhile, if difficult, endeavor for local fishers and farmers to join together to research how to practically provide shellfish to Chinese markets. In terms of oyster reefs as protection mechanisms, Rheault said he thinks there’s some merit to this option, although it’s likely not stand-alone fix.

The Value of Restoring Shellfish

Moderator: James Turek, NOAA Fisheries Restoration Center, Narragansett, R.I.

Presenters:

- Boze Hancock, Marine Restoration Scientist, Global Marine Team, The Nature Conservancy (TNC)
- Jon Grabowski, Associate Professor, Northeastern University
- Carl LoBue, Senior Marine Scientist, Senior Marine Scientist, TNC

Discussant: James Arnoux, President, Ocean State Aquaculture Association

Turek introduced the researchers who presented material on the worth of various aspects of shellfish restoration projects. The group said overall that this is a critical, if largely new, field of study – from the information available, there is growing evidence that these restoration efforts certainly benefit people and the environment; but more data and study is needed to get a firmer handle on what these improvements mean in terms of hard economic numbers: the money value of the shellfish resources, the jobs connected to them, and the returns on these investments. Hancock described how there has been significant investment over the past 15 years in oyster reef restoration in the Northeast, and that while “we know restoration work,” we are only now starting to answer “How much reef is enough? What do we gain?” Grabowski provided an historical overview about the economic worth of oysters to the region, and said that new information about restoration and ecosystem services is starting to make the economic picture clearer. LoBue spoke about several projects in the Long Island area, pointing out that for TNC, “the big goal is ecosystem health; shellfish restoration is one of the avenues.” He also said that it’s important to keep at this work, reminding the audience that shellfish restoration for ecosystem health is generally “one step forward, two steps back,” but that advances are being made every day.

After the presentations, Arnoux asked the presenters to offer what they think are the most important ecosystem services provided by shellfish. Increased fish production, improved water quality and storm mitigation were noted. The panelists advised the audience that in planning restoration projects to reap improved ecosystem services, it is important to keep goals and project scales as clear as possible in order to keep expected outcomes as realistic as possible.

Growing the Crop

Moderator: Dave Beutel, Aquaculture Coordinator, R.I. Coastal Resources Management Council

Presenters:

- Michael A. Rice, Department of Fisheries, Animal & Veterinary Science, University of Rhode Island
- Robert Rheault, Executive Director, East Coast Shellfish Growers Association
- Rich Langan, Director, Coastal and Ocean Technology Programs; Professor, School of Marine Science and Ocean Engineering, University of New Hampshire

Discussants:

- Rick Karney, Shellfish Biologist; Director, Martha's Vineyard Shellfish Group, Inc.
- Graham Brawley, Managing Partner, Ocean State Shellfish Cooperative

After Beutel introduced the presenters, each provided a perspective on the human effort to cultivate shellfish. Rice gave an historical overview about Rhode Island's long dependence on shellfish and the ways in which people have impacted, decimated and replenished the resource; Rheault gave an Atlantic state-by-state summary of shellfish aquaculture industry statistics, and Langan described different kinds of projects and equipment being used to grow mussels both regionally and in other parts of the world.

After the presentations, Karney and Brawley initiated a broad discussion of several aspects of shellfish aquaculture. The group and the audience talked about how shellfishing resources, while they may never return to the levels of previous centuries, are slowly but surely recovering. The group also discussed how aquaculture is in great part a newer venture – thus many mistakes will likely be made before each great success or breakthrough. Other key points were that Rhode Island's aquaculture industry is developed enough that while mistakes and learning are still part and parcel of the process, a solid set of best management practices and other guidance is nonetheless helping the field to progress at a steady and sure pace. Beutel said that Rhode Island's regulations for aquaculture are being consulted as a model by Delaware.

Lunch

Plenary

Moderator: Bryan DeAngelis, North American Coastal restoration Coordinator, The Nature Conservancy

Presenter: Bill Dewey, Taylor Shellfish Farms

DeAngelis introduced Dewey who gave an overview about a collaborative effort undertaken in the State of Washington to grow the shellfish industry and job opportunities and promote shellfish activities as recreational tourism. One of Dewey's key points is that the effort to engage government, the private sector, and community groups in a cooperative initiative to foster the shellfish industry resulted in cohesive management and tangible, fundable activities. He said the

initiative's broad stakeholder process has included many interests, including Native American tribes, and that Rhode Island's work with the SMP is similar to the project undertaken in Washington.

After the presentation, the audience discussed the potential of a regional process, possibly termed the Northeast Shellfish Initiative, as an outgrowth of the SMP, and talked about the importance of building trusting relationships with stakeholder groups in order to make a participatory process work.

Maximizing Harvest

Moderator: Mike McGiveney, President, R.I. Shellfishermen's Association; Commercial Shellfisherman

Presenters:

- Jeff Mercer, Principal Biologist, R.I. Department of Environmental Management
- John Kraeuter, Marine Science Center, University of New England; Haskin Shellfish Research Lab, Rutgers University

Discussants:

- Jeff Grant, Vice President, R.I. Shellfishermen's Association; Commercial Shellfisherman
- Katie Eagan, Commercial Shellfisherman

After providing an historical overview of the history of shellfishing in Rhode Island, McGiveney introduced Mercer, who described the state's efforts to research and understand how shellfish are dispersed in Narragansett Bay, and Kraeuter, who explained why, from a research angle, it can be a challenge to attain accurate data sets pertaining to shellfish. It's important, both researchers indicated, to obtain as clear a picture as possible of where and how shellfish inhabit the ocean, as this is necessary for planning any restoration or enhancement projects. In general, more good data is now being developed for such "pictures" of shellfish distribution, but the work is complicated – especially in terms of understanding which shellfish travel where, when and at what age. More assessments are needed to improve this understanding.

After the presentations, discussion emerged about science questions confronting the shellfish industry on a practical basis. For example, shellfishermen knew during the 2003 Greenwich Bay fish-kill that the anoxic event would level shellfish predators and allow many more than usual shellfish to grow to adulthood for catching. What would the outcome be, the group discussed, if, say, predatory fish groups were purposely deterred from preying on shellfish – would this ultimately be good for the industry, the environment and Rhode Island? Overall, attendees said that an ecosystem management type of approach is important; thus, managing one kind of animal to ensure the success of another may not be a sustainable choice. At the end of the session, the personal perspective of a wild harvest shellfisher prompted the group to think once again about the issues that remain between the wild harvest and aquaculture industries; is there room for both kinds of work and how is this to be managed so jobs and resources are available to all?

Shellfish and Water quality

Moderator: Chris Deacutis, Supervising Environmental Scientist, R.I. Department of Environmental Management

Presenters:

- Lisa Kellogg, Research Scientist, Virginia Institute of Marine Science
- Tom Uva, Director of Planning, Policy and Regulation, Narragansett Bay Commission

Discussant: Jody King, Commercial Shellfisherman

Deacutis introduced the speakers who shared case studies about how coastal places are working to improve water quality and what the impacts of these improvements may be for shellfish. Kellogg explained how longer term efforts to clear pollution from Chesapeake Bay are benefitting the ecosystem, and Uva described how a major combined sewer overflow (CSO) project in Providence is keeping more pollution than ever from entering Narragansett Bay. After the presentations, attendees talked about the importance of water quality for shellfishing, but noted the irony that shellfishing resources tend to flourish with certain amounts of effluent. “How clean is too clean?” was the question. After the pollution discussion, King highlighted the good attendance to the Symposium by wild harvest shellfishermen, something that has not happened at past science events to this magnitude. King also spoke to the group about the need to encourage young people to keep up the tradition of shellfishing in Rhode Island.

Selling Shellfish at Home

Moderator: Ken Ayers, Chief, Division of Agriculture, R.I. Department of Environmental Management

Presenters:

- Maureen Pothier, Chair, College of Culinary Arts, Johnson and Wales University; Member, board of directors, Farm Fresh Rhode Island
- Peter Ramsden, President & CEO, M.F. Foley Company, Inc.
- Perry Raso, Owner and Operator, Matunuck Oyster Bar and Matunuck Oyster Farm

Ayers introduced the presenters who offered perspectives from their own lives about the opportunities and challenges of selling shellfish locally. Pothier, who has worked in the restaurant industry and is now active as a college instructor and a promoter of selling fresh food locally, said that while it can be extra work to forge farm-to-table paths, much needs to be done in Rhode Island to explore these avenues and do the networking necessary to achieve the goal. Foley said that he would be happy, as an owner of a seafood wholesaler/distributor business, to work with the local shellfish industry to develop such ties, but he explained that doing local business means creating partnerships that reflect joint commitment to providing a demanding customer base regularly with dependable product – no ifs, and or buts. Raso described how as an entrepreneur he has used his creativity to develop smart opportunities for selling homegrown food locally – he developed partnerships, opened a restaurant, and started a vegetable farm to

open doors for local shellfish commerce. Ayers told the group, as it discussed different ways to bring local foods to the Rhode Island market and about the Seafood Marketing Collaborative DEM is currently leading, that the state is starting to get serious about studying the issue, but much more work needs to be done to support a true marketing effort for local seafood, including shellfish.

Where Do We Go From Here?

Moderator: Jennifer McCann, Director, Rhode Island Sea Grant College Program Extension Programs; Director, URI Coastal Resources Center U.S. Coastal Programs

Presenters:

- Janet Coit, Director, R.I. Department of Environmental Management
- Grover Fugate, Executive Director, R.I. Coastal resources Management Council
- Dale Leavitt, Associate Professor, Roger Williams University

McCann wrapped up the Symposium by asking each of the presenters to summarize their thoughts on next steps; the group shared similar responses – all would like to see continued collaboration on the SMP process, and they said the Symposium had provided valuable data sharing and networking for the attendees who make up a critical SMP audience. Leavitt noted the opening comments from Rheault that both the wild harvest fishing industry and the aquaculture industry are “united by common challenges” and that the divide should be closed through partnerships between these groups. McCann noted that there is “magic” around shellfish and this is something we can all attest to; let this guide our energies and fuel our efforts as we forge forward with the SMP. McCann also said that the SMP project will continue with the stakeholder process bringing to stakeholders in 2014 SMP recommendations for public review and comment. She thanked all in attendance for coming, and for making the Symposium a great event.

PLEASE NOTE: *The ideas presented below are in response to the question: “If you were the King or Queen of all things shellfish for a day, what is the first thing you would change?” The responses were offered by individuals who attended the 12th annual Ronald C. Baird Sea Grant Science Symposium on November 14th, 2013. Responses were recorded in this document as they were provided. The intention of this exercise was to be a thought-provoking way to gather ideas from stakeholders regarding the shellfish resource and industries in Rhode Island. The ideas in the responses below do not necessarily reflect the current issues being discussed in the SMP process or the opinions of the SMP Coordinating Team or stakeholders. The majority of the ideas below have been captured previously throughout the SMP public process. Those that have not been expressed will be reviewed and considered by the SMP Coordinating Team and Technical Advisory Committees.*

If you were the King or Queen of all things shellfish for a day, what is the first thing would you change?

1. Education of Local Products	25. Restoration behind closed lines
2. 4 aquaculture schools like CT	26. Education on benefits of aquaculture: health and economic
3. Make them easier to open	27. Incentivize people to aquaculture
4. Restoration set specific goal for how much we need to do for what purpose for long term	28. Public education about all things shellfish : ecosystem services, wild harvest, rec harvest, aquaculture, water quality, nutrition, etc
5. Get rid of “not in my backyard” mentality	29. Start up 2 “Rhody fresh” initiative for seafood → DEM working on this → seafood collaborative
6. Make it easier to buy local RI oysters	30. Manage and recognize services other than harvest
7. Create quahog institute like the lobster institute	31. Promote aquaculture habitat, restoration benefits
8. Equal support to wild fishery as aquaculture	32. Think about success un a holistic way- and act accordingly
9. Easier start up	33. Ecosystem based management
10. Reduce bureaucracy for businesses	34. Familiarize public with knowledge and processes of aquaculture
11. Easier permitting of float gear	35. More shellfish
12. 3” minimum oyster requirement	36. Use fewer acronyms ASAP (so I can understand what you’re saying)
13. Find the end of the rainbow so we can satisfy all these wishes	37. ↑ water quality
14. Assure that entry-level opportunities in shell fishing are available to let in newcomers to the industry	38. Improve infrastructure
15. Seed oysters in polluted areas	39. I would insist that environmental economics would be a major aspect of coastal planning protocols
16. Establish an intertidal state park	40. Better marketing of Rhode Island shellfish in local markets and restaurants
17. Restoration	41. Management rotate harvest closed/ open areas
18. Ecotourism	42. Less government intervention, and return to reason
19. Broodstock haven	43. FDA, Health dept. mandatory recalls and product
20. All RI marine waters meet approved criteria for shellfish harvesting	
21. Provide more full time employment with benefits	
22. Market mobile/ JWU	
23. Integrates multi trophic aquaculture	
24. Look at the estuary as a whole and manage the system	

PLEASE NOTE: *The ideas presented below are in response to the question: “If you were the King or Queen of all things shellfish for a day, what is the first thing you would change?” The responses were offered by individuals who attended the 12th annual Ronald C. Baird Sea Grant Science Symposium on November 14th, 2013. Responses were recorded in this document as they were provided. The intention of this exercise was to be a thought-provoking way to gather ideas from stakeholders regarding the shellfish resource and industries in Rhode Island. The ideas in the responses below do not necessarily reflect the current issues being discussed in the SMP process or the opinions of the SMP Coordinating Team or stakeholders. The majority of the ideas below have been captured previously throughout the SMP public process. Those that have not been expressed will be reviewed and considered by the SMP Coordinating Team and Technical Advisory Committees.*

destruct	63. Make/ mandate that all RI restaurants that serve seafood provide RI shellfish. (and seafood for that matter) even if it's in combination with imports
44. A vision that looks at the entire picture	64. Regulation enforcement education about : ecology, and what's clean and not
45. Where do we do restoration, how do we decide, how do we police	65. Make sure that RI aquaculture is small-scale, family operations- prevent industrialization or excessive accumulation of use rights/leases (eq. owner- operator requirement, cap on size of lease) to ensure equity opportunity
46. Allocate funds to restoration efforts and post-restoration monitoring programs	66. Spend more money into restoration projects
47. Make permitting process better , make it happen	67. More compatibility between CRMC + DEM not so much friction
48. Allow the use of closed areas for seed collection in water column for seeding mussel farms	68. More restoration
49. More dialogue between wild harvest and farmer to reduce use conflict	69. Reduce shellfish closure area by 50% by 2020
50. We need a method of assessing stocks, restored, aquaculture or fishery stocks. This gives ability to understand stock recruitment, ecosystem service levels, harvest impacts	70. Initiate RI or NE shellfish initiative to leverage attention to jobs, ecosystem, etc
51. More shellfish geneticists	71. Loan + grant access to seed \$ for research projects for small to get growers
52. More long-term monitoring (integrated)	72. Educate move people in RI about the shell fisherman to “recruit” new, young people in the field
53. Bring more kids into what we are doing, education!	73. Price supports consistent markets we do it for aquaculture we should do it for aquaculture
54. Get rid of less bickering	74. Start a citizen science & fisherman based mandatory project
55. Incorporate spatial planning into everything	75. No more CSO's no septic systems in flood zone move STP outfall outside bay
56. If Wednesday is prince spaghetti say, Tuesday should be chowder day	76. Set clear goals
57. Commercial fishermen can sell in green market	77. Be realistic and honest
58. Do ogre in narrow river	78. Try things, monitor, adapt, report out
59. Oysters would be disease free + they would grow quickly	79. Smooth out leasing and permitting for shellfish aquaculture and/or set up pre-permitting district or “aquaculture enterprise zone”
60. Pass national aquaculture act	
61. Create state hatchery for restoration owned and run by stakeholders (no government)	
62. Create some sort of a revue for fishermen to play more active role in marketing of their catch (eq. direct or semi direct marketing)	

PLEASE NOTE: *The ideas presented below are in response to the question: “If you were the King or Queen of all things shellfish for a day, what is the first thing you would change?” The responses were offered by individuals who attended the 12th annual Ronald C. Baird Sea Grant Science Symposium on November 14th, 2013. Responses were recorded in this document as they were provided. The intention of this exercise was to be a thought-provoking way to gather ideas from stakeholders regarding the shellfish resource and industries in Rhode Island. The ideas in the responses below do not necessarily reflect the current issues being discussed in the SMP process or the opinions of the SMP Coordinating Team or stakeholders. The majority of the ideas below have been captured previously throughout the SMP public process. Those that have not been expressed will be reviewed and considered by the SMP Coordinating Team and Technical Advisory Committees.*

80. Help is understand how to monetize ecosystem services (not just quantity)
81. Reduce focus on self-sustaining populations. It is often an unattainable goal + limits possibilities for enhancement activities
82. More \$ for restoration
83. Mussel farm at sewage discharge points. Use protein for animal feed.
84. Use common sense
85. Create an “apprentice program for the shell fishing trade. Teachers would be shell fishermen, often benefits like reduced license fees, etc. if people take class/ apprenticeship
86. Seafood education in k-12 schools (“seafood nation” need to eat seafood at least 2x a week_
87. Need to emphasize on the carbon sequestration of shellfish in addition to other uses of shellfish
88. Grow my own mussels
89. Jerusalem facility, use it! Revitalize fir restoration and management
90. Develop instate market for local seafood (Blount= maine=because RI not reliable market
91. Limit wild oyster harvest to recreational use, not commercial
92. Consideration as a key piece to multiple aspects
93. Greater public knowledge
94. Stick with business model vs not (being adaptive)
95. Use JWU as outlet for education and promotion of local seafood (wild aquaculture)
96. Shellfish education center→ try + learn about products
97. Education of local products