

MINUTES OF THE MEETING  
OF THE  
DELAWARE BAY SECTION OF THE NEW JERSEY SHELLFISHERIES COUNCIL

Haskin Shellfish Research Laboratory  
MS Teams Conference Call  
Bivalve, NJ  
Tuesday, September 6, 2022  
6:00 PM

Present were: Chairman: Warren Hollinger (Cumberland County)  
Vice Chairman: Steven Fleetwood (Cumberland County)  
Councilman: Richard Malinowski (Salem County)  
Councilman: Scott Sheppard (Cumberland County)  
Councilman: Vacant (Cape May/Salem County)

State/Fed Reps: Russ Babb, Bureau of Shellfisheries  
Jeff Normant, Bureau of Shellfisheries  
Craig Tomlin, Bureau of Shellfisheries  
Andrew Hassall, Bureau of Shellfisheries  
Megan Kelly, Bureau of Shellfisheries  
Robert Schuster, Bureau of Marine Water Monitoring  
Amanda Wenzel, Department of Agriculture

Haskin Lab: David Bushek, Director  
Grace Saba, Rutgers University – NJCMP OA Team

General Public

*Compliance with the Open Public Meetings Act*

Notice of this meeting was posted August 31, 2022, with the Secretary of State's Office, State House, Trenton, NJ pursuant to N.J.S.A. 13:1B-30 et seq.

Mr. Tomlin welcomed everyone to the meeting, performed roll call, then read the above compliance.

- 1. The following minutes are for Council's approval:** January 4, 2022, March 1, 2022, and May 3, 2022

**Councilman Hollinger motioned to approve the minutes. Councilman Sheppard seconded the motion. All were in favor.**

**2. July and August 2022 Revenue**

**Revenue collected for July totaled \$33,244.00 and is summarized as follows:**

License Type	Total	License Type	Total
Oyster Tags	\$30,848.00	Commercial Crab Pot	\$700.00
Nets	\$976.00	Commercial SF	\$150.00
Application Fees	\$48.00	Duplicate Fees	\$14.00
Menhaden	\$260.00	Dredge Boat Fees	\$48.00
DB Crab Dredge	\$200.00		

**Revenue collected for August totaled \$34,008.04.00 and is summarized as follows:**

License Type	Total	License Type	Total
Oyster Tags	\$33,356.04	Commercial Crab Pot	\$500.00
Nets	\$121.00	Assigned Fees	\$7.00
Application Fees	\$24.00		

**Oyster Resource Development Account (082):**

*(as of 09/03/2022)*

Expended	<b>\$185,389.93</b>	
Unexpended	<b>\$486,212.92</b>	

**3. Oyster Vessel Transactions:**

Transferor	Transferee	License #	Vessel Name	Tonnage	Fees
R. Malinowski	Bivalve Packing Company	#30	Julius Michael	8	\$16.00
R. Malinowski	Bivalve Packing Company	#85	Fancy Lady	11	\$22.00

**Councilman Sheppard motioned to approve the transfers. Councilman Hollinger seconded the motion. All were in favor.**

**4. Lease Transactions**

Leaseholder	Applicant	Section	Lot	Acres	Acreage Fee	Application Fee
Richard Riggan	T.C. Reeves & Son Seafood LLC	D	596	29	\$14.50	\$5.00
Richard Riggan	T.C. Reeves & Son Seafood LLC	E	83	12	\$6.00	\$1.00
Richard Riggan	T.C. Reeves & Son Seafood LLC	E	244	12	\$6.00	\$1.00
		Total		53	\$26.50	\$7.00

**Councilman Sheppard motioned to approve the transfers. Councilman Malinowski seconded the motion. All were in favor.**

**5. Old Business**

**5.1 Red Knot Stakeholder Committee Update**

Councilman Hollinger informed the Council that the Red Knot Stakeholder Committee had not met recently. It was noted that some updates were made to the *Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Rufa Red Knot (Calidris canutus rufa)*; a proposed rule by the Fish and Wildlife Service (Service) on

07/15/2021 (Docket RIN 1018-BF87). Mr. Babb relayed to the Council that he had spoken with Wendy Walsh of the Service, and that she stated that she did not have any new or significant information at this time, and that the changes to the document included the addition of a map showing critical habitat in North Carolina. Mr. Babb also reminded the Council that *Biological Opinion on the Effects of Existing and Expanded Structural Aquaculture of Native Bivalves in Delaware Bay, Middle and Lower Townships, Cape May County, New Jersey on the Federally Listed Red Knot (Calidris Canutus Rufa)* (PBO) would expire in 2026, and that the U.S. Army Corps of Engineers will need to be consulted well in advance of the PBO's expiration. Mr. Tomlin noted that no significant changes in the designation of critical habitat for red knots along the Delaware Bay Shore are expected.

## 5.2 Direct Market Update

Mr. Hassall gave the Direct Market Update stating that 88,507 bushels have been reported to have been harvested under the program. 44,667 bushels have been harvested from the High Mortality Region, which temporarily closed on June 13, 2022. 25,360 bushels have been harvested from the Shell Rock region, which temporarily closed in July. 18,480 bushels have been harvested from the Medium Mortality Market region. The High Mortality and Shell Rock regions will reopen once the remaining  $\approx 6,480$  bushels of available quota the Medium Mortality Market region has been harvested.

Mr. Hassall also shared the table shown below. The table depicts which seedbeds had product harvested from them, the region each seedbed can be found in, the number of boat days worked on each seedbed, and the total number of bushels harvested from each seedbed.

Bed Name	Region	Boat Days	Total Bushels
Cohansey	MMM	4	242
Ship John	MMM	147	18,238
Shell Rock	SR	159	25,360
Bennies Sand	HMM	17	2,853
Bennies	HMM	164	29,127
Nantuxent	HMM	109	12,687
	Total MMM	151	18,480
	Total SR	159	25,360
	Total HMM	290	44,667

	Total Boat Days	Total Bushels
All Beds, All Regions	600	88,507

### 5.3 Letters from the Council Updates

#### 5.3.1 Administrative Consent Order from the Commissioner

Mr. Tomlin conveyed to the Council that Commissioner Shawn M. LaTourette acted on the Council's recommendation and issued an Administrative Consent Order (ACO) to allow for a relaxation of N.J.A.C. § 7:25A-1.4 (e)4 in response to the unforeseen and unavoidable damage done to an industry vessel by a rouge barge on the Maurice River, which occurred in May 2022. The Council expressed their appreciation for the ACO.

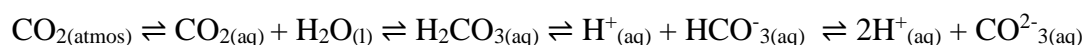
#### 5.3.2 Letter to Aids to Navigation

Mr. Tomlin reminded the Council that two meetings ago, it was decided that a letter should be sent from the Council to the Department of Environmental Protection, Division of Coastal Engineering – Aids to Navigation team expressing the need for two additional navigational buoys at the entrance of the Nantuxent Creek Channel. Mr. Tomlin went on to say that when he contacted the Aids to Navigation team, they were very receptive of the idea and stated a letter was not necessary. Moreover, the buoys will not be installed this year, but at the start of the 2023 season. The Council expressed their approval and appreciation of Aids to Navigation's plan. It was also remarked that a follow up call expressing the importance of this channel and need for early deployment may be appropriate.

## 6 New Business

### 6.1 Ocean Acidification Monitoring Network Presentation – Grace Saba, Rutgers University

Dr. Saba began by introducing herself and thanked the Council for the opportunity to share a presentation titled *Recommendations for Developing a Statewide New Jersey Ocean Acidification Monitoring Network*, which summarized the work Rutgers has been doing in conjunction with New Jersey's Department of Environmental Protection on ocean acidification in New Jersey's waters. The presentation began by reviewing the fundamentals of ocean acidification. As part of the global carbon cycle, carbon dioxide (CO<sub>2</sub>) is produced and introduced into the atmosphere by natural and anthropogenic sources. Since the start of the industrial revolution in the 1800s, atmospheric CO<sub>2</sub> has increased by approximately forty percent, which has led to a drop of 0.1 for the oceans' average pH, which equates to a 28% increase in ocean acidity with a project 100-150 % increase by 2100. Approximately one third of the CO<sub>2</sub> released into the atmosphere at any given time is destined to be absorbed by the oceans. The absorption of CO<sub>2</sub> into water (H<sub>2</sub>O) naturally produces bicarbonate acid (H<sub>2</sub>CO<sub>3</sub>), which then dissociates to bicarbonate ions (HCO<sub>3</sub><sup>-</sup>), carbonate ions (CO<sub>3</sub><sup>2-</sup>), and one or two hydrogen ions (H<sup>+</sup>), depending at what point the bicarbonate has dissociated.



The release of  $H^+$  and formation of  $CO_3^{2-}$ , shown in the above equation, into the oceans contributes to ocean acidification in unique ways. With increased concentrations of  $H^+$  in the oceans, a shift from alkaline to acidic on the pH scale can be measured. A solution with a higher concentration of  $H^+$  is placed below seven on the pH scale and therefore an acidic solution, while solutions with lower concentrations of  $H^+$  are basic or alkaline solutions and listed above seven on the pH scale.

Ocean water is described as an alkaline solution, currently with an average pH of 8.1. This is due to the oceans' buffer system, which is supported by the presence of calcium ions ( $Ca^{2+}$ ). Ocean water is  $\approx 400$  ppm of  $Ca^{2+}$ , whereas rivers measure 1 to 2 ppm on average, but can reach as high as 100 ppm if lime is present. As the  $CO_3^{2-}$  is neutralized by the presence of  $Ca^{2+}$ , calcium carbonate ( $CaCO_3$ ), a key component of bivalve shells, is formed. When  $CaCO_3$  is formed, it is formed as a precipitate (solid) and drops out of suspension, becoming part of the sediment. As such,  $Ca^{2+}$  becomes less available for bivalves for shell development due to increased atmospheric  $CO_2$ .

$CO_2$  can enter the oceans in other ways, which can lead to acidification of the oceans. As phytoplankton is photosynthesizing, it consumes  $CO_2$ . When phytoplankton dies and sinks to the bottom, decomposers break down the remains, which causes respiration and the release of  $CO_2$ . The  $CO_2$ , being molecularly heavier than  $H_2O$ , stays in the bottom waters where the above chemical reaction can begin shifting the system from alkaline to acidic. This is particularly harmful to benthic organisms, such as oysters, clams, scallops, etc., that can experience increased mortality, decreased calcification (similar to osteoporosis in humans) or thinner, brittle shells, decreased growth, impaired development, and changes in energy allocation. Upwelling events can bring some relief to benthic organisms by bringing bottom waters up where short-term, temporal spikes in acidity have been observed in surface waters. In short, the oceans have overindulged in  $CO_2$  and are in desperate need of a few Roloids.

The effects of ocean acidification are particularly harmful to organisms still in their larval phase. In 2008/2009 an 80% decrease in production in oysters was linked to ocean acidification, in the waters off Washington and Oregon. In 2012 the Ocean Acidification Blue Ribbon Panel convened to address the effects of ocean acidification on WA's shellfish resources. The Panel identified 42 actions toward increasing "capacity to understand, reduce, remediate, and where possible adapt to the consequences of ocean acidification." Region-wide impact led to the multi-state Pacific Coast Collaborative. In 2015 a report was released that placed southern New Jersey counties at second in economic dependence on shellfish. The report also predicted New Jersey is at high risk of economic harm from ocean acidification.

In 2019, Executive Order 89 was signed into law, which reads, "The Commissioner of the Department of Environmental Protection ("DEP") shall appoint a Chief Resilience Officer of the State of New Jersey to lead development and implementation of the Statewide Climate Change Resilience Strategy. The Chief Resilience Officer shall direct and be supported by the Climate and Flood Resilience Program established herein..." Furthermore, "By September 1, 2020, the Chief Resilience Officer, with the support of

the Interagency Council, shall deliver to the Governor a Statewide Climate Change Resilience Strategy to promote the long-term mitigation, adaptation, and resilience of New Jersey's economy, communities, infrastructure, and natural resources throughout the State in a manner consistent with the Scientific Report on Climate Change." Contained in this report is a section *titled Climate Science Fact: Increasing CO<sub>2</sub> emissions are making the ocean more acidic and harmful for New Jersey's shellfish.*

Following the release of the report on climate change the Bureau of Climate Resilience Planning and Bureau of Marine Water Monitoring formed New Jersey's ocean acidification team. The New Jersey Coastal Management Program Ocean Acidification team engaged with Rutgers University in a collaborative effort to develop a comprehensive, statewide monitoring network.

To develop the New Jersey Ocean Acidification Monitoring Network, the team's first task was to identify and engage potential partners to plan for a statewide Acidification Monitoring Network. Once that was completed a virtual workshop to outline the approach for developing the network was held in November 2021. Since then the team has been engaging stakeholders in a proposed monitoring network to convey how a statewide monitoring network would greatly enhance knowledge on potential risks to specific species and ecosystems in New Jersey; obtain feedback on interest and willingness to modify existing facilities or field efforts to optimize/expand the statewide monitoring network; and obtain feedback on logistical considerations for adding carbonate chemistry sensors or measurements into their operations.

In addition to stakeholder engagement, the ocean acidification team has begun to inventory current monitoring assets and assess gaps in monitoring. The team recommends higher sampling frequency; monitoring across a salinity gradient; measurements of multiple carbonate chemistry parameters such as aragonite saturation which is directly linked to bivalve shells; higher-resolution depth-profiling measurements; observe ocean acidification with other stressors; co-located biological response monitoring; and what monitoring is required to understand baseline conditions? The team has identified opportunities to improve the network such as partnering with other agencies to add carbonate chemistry parameters to existing monitoring stations, enhance nearshore monitoring with the use of Slocum gliders; and partnering with industry groups to begin monitoring at economic sites of interest.

Following the presentation, the Council informed Dr. Saba that aquaculture cages, which could be equipped with pH probes, are deployed year-round and maintained on a nearly bi-weekly basis by industry members and discussed available buoy and monitoring stations already present in the Delaware Bay. The Council also inquired if there were any projections on when mortality due to acidification would start to take place. Dr. Saba responded that there was no current data predicting such events but acknowledge reports of unexplained die-offs, that may or may not be linked to acidification, of Mid-Atlantic shellfish. Dr. Saba did note that reports of unexplained die-offs **have not** been made for species like sea scallops and surf clams, which reside in deeper bottom-waters where acidity can build up. Dr. Saba also remarked that she suspects that the initial effects of acidification on shellfish populations would be more subtle with

effects such as decreased growth, issues with production or hatching success, which are not being monitored, currently. The Council expressed their appreciation for the presentation.

## 6.2 Avian Deterrents and Vibrio Update

### 6.2.1 Avian Deterrents

Mr. Schuster spoke about the importance of bird deterrents for floating aquaculture gear. Key points Mr. Schuster made on the subject are that it is a greater concern on Atlantic Coast leases. Observations of floating gear covered in bird waste have been made. These observations have led the Bureau of Marine Water Monitoring to be concerned that if left untreated, water quality could decline. That is, measurements were taken at one facility when birds were present, which resulted in fecal coliform counts of 1200. A count of 1400 for fecal coliform is the maximum for approved waters. If counts rose high enough in a leasing area, the area would be degraded affecting both floating and on-bottom commercial shellfish production in that area. There was an outbreak this year in Rhode Island that was linked to floating gear and bird waste.

The Council asked if a letter has been sent to the industry. Mr. Schuster replied no because there is only a limited number of growers currently at risk, and that individual meetings have taken place to discuss remedies. One grower stated that the product is submerged for seven days prior to going to market to ensure public health. In Delaware, growers are required to submerge the product for twenty-one days prior to harvest. While this helps to alleviate human-health concerns linked to the consumption of raw shellfish, it does not alleviate long-term water quality concerns.

### 6.2.2 Vibrio Update

The Council asked Mr. Schuster for a Vibrio update. Mr. Schuster declared there had been some single-source cases in the State this year, but nothing that lead to an outbreak. Also, some cases of *Vibrio vulnificus* infections occurred this year. Records are being reviewed at this time and many of these cases are linked to multiple sources. Mr. Schuster also mentioned that post-landing care of the product may have contributed these cases. The Council thanked Mr. Schuster for his time.

## 6.3 Regulatory Update

Mr. Babb reminded the Council that a little more than a year ago, the Council sent out a letter to all leaseholders about general industry compliance with all state and federal permits. The Atlantic Coast Section of the New Jersey Shellfisheries Council sent out a similar letter. The Bureau received a very small response to the letter. It was the Bureau's hope that the letter would help engagement with the industry by assisting growers to confirm if they are compliant, and if not assist growers in contacting the correct personnel in the right agencies to become fully compliant. The Bureau has not seen any improvement in since the letters were sent out. Furthermore, it is the Bureau's opinion that the industry is wildly out of compliance regarding structural aquaculture. The Bureau has recently sent a follow up letter on the matter, which has garnered some more responses. Furthermore, a new website has been published to aid growers by consolidating the various agencies contact information and general permitting requirements for aquaculture. Mr. Babb also estimated that there are thirty to forty leasing entities that utilize structural systems throughout the State. The Council asked how egregious the violations were. Mr. Babb answered that non-compliance with structural aquaculture permitting could be as little as missing one special

condition in a permit to no permitting beyond a shellfish license and lease. Lastly, given the number of warnings and reminders sent to growers, in the future as the Bureau becomes aware of compliance issues; the Bureau will be formally reporting compliance issues to Coastal Enforcement due to the liabilities associated with administering a leasing program.

#### 6.4 NJ Commercial Shellfish Aquaculture Website

Ms. Kelly presented the new *NJ Commercial Shellfish Aquaculture Website*, which can be found at: <https://dep.nj.gov/aquaculture/>. The website is designed to walk new industry members through the leasing, licensing, and permitting process, while making the information easily accessible to experienced growers as well, who may only need direct answers to clarifying questions. On the website's header bar, there are tabs titled *FAQs*, *News and Notices*, *Resources*, *Permitting*, *Quick Links*, and *Contacts*. Under the *News and Notices* tab, there will be links and notices of things like Council meetings, the Vibrio Control plan, Closures, etc. The *Resources* tab has links to policy documents, reports, and charts. Under *Permitting* there are links to permitting agencies with short summaries on their requirements for aquaculture. The *Quick Links* tab has links to information on obtaining a *Commercial Shellfish License*, *Harvester Training*, *Commercial Shellfish Leases*, and more. Lastly, the *Contacts* tab lists names, email addresses, numbers, addresses of representatives for the various agencies involved with overseeing the State's aquaculture industry. The site became public in August 2022. The Council thanked Ms. Kelly for her time.

#### 6.5 Maurice River Cove Survey Update

Mr. Tomlin reminded the Council that at the last meeting the Council expressed interest in looking at the Maurice River Cove tongers beds to assess the feasibility of a transplant. Mr. Tomlin informed that the results of the survey work done in the Cove since the last meeting show a decline in oyster densities. This is compared to data collected in the Cove in 2009 and 2014. Therefore, the Bureau advises against a transplant from the "Restricted" waters to the "Conditionally Approved" waters. The Council asked if the area that was planned with S.O.A.R. project oysters was surveyed. Mr. Tomlin replied, yes it was, but the numbers are still low for that area. No objections to forgoing a transplant in the Maurice River Cove prior to the start of the 2022-23 tonging season were raised by either the Council or members of the Public.

### 7 Date, time, and place of next meeting: - Council

DATE: Tuesday, November 1, 2022

TIME: 6:00 PM

LOCATION: T.B.D.

Councilman Hollinger reviewed the date and time of the next meeting and noted the location was to be determined.

**Councilman Sheppard motioned to adjourn the meeting. Councilman Malinowski seconded the motion. All were in favor and the motion passed.**

**The meeting was adjourned at 7:35 P.M**