

Aquaculture Advisory Council
April 22, 2022
Meeting Minutes- Conference Call Meeting

Members Present: Sec. Douglas Fisher, Mr. Joe Cimino (Comm. Shawn LaTourette), Mr. Loel Muetter (Comm. Judith Persichilli), Mr. Samuel Ratcliff (Dr. Dave Bushek), Dr. Douglas Zemeckis, Mr. Mike De Luca (Dr. Laura Lawson), Mr. Matt Gregg, Ms. Lisa Calvo, Mr. Barney Hollinger [arrived at 1:07pm], Mr. George Mathis (Mr. John Maxwell), Mr. Maury Sheets, Mr. Steve Fleetwood (Mr. Frank Virgilio), Dr. Amanda Wenzel.

Members Absent: Ms. Melanie Willoughby (Sec. Tahesha Way), Mr. Bob Rush (Mr. Richard Herb)

Public in Attendance: Roll call of attendees not taken; names were stated when making comment.

Secretary Fisher called the meeting to order. Quorum was present.

M. Sheets made motion to approve meeting minutes from January 21, 2022. Second by D. Zemeckis. All in favor; so moved.

Public Comment

No comments.

New Business

Ocean Acidification Monitoring Network Presentation- Dr. Grace Saba

Presentation began with Dr. Saba describing the background of her research and the focus on Ocean Acidification (OA).

Dr. Saba reviewed the drivers of ocean acidification, including:

- Globally, increase in atmospheric carbon dioxide that the ocean absorbs. Through complex chemical reactions this decreased pH and aragonite saturation state in the water.
- NJ, large freshwater inputs, typically with a lower pH than the coastal waters.
- NJ, nutrient runoff can increase primary productivity in the surface waters and that can cause an immediate increase in pH. When that organic material dies off, it sinks to the bottom, increases respiration at the seafloor, and cause acidification.
- NJ, seasonal upwelling events bring the lower pH bottom waters to the coast.

NJ is predicted to be at high risk of economic harm from OA conditions because of the above drivers.

Rutgers and NJDEP have partnered to research OA based on the 2019 Executive Order #89 and the state's Climate Action Plan, which mentioned the ocean becoming more acidic because of carbon dioxide emissions. NJDEP, Bureau of Climate Resilience Planning and Bureau of Marine Water Monitoring formed the NJ Ocean Acidification team. The team is organized through the Coastal Management Program and has engaged Dr. Saba and Jean Herb at Rutgers. The team is looking into what is needed for a state ocean acidification action plan.

The first step in the process involved reviewing other states OA plans. The key item to come from that review was the need for a comprehensive statewide monitoring network. Three steps for that process. First, we identified and engaged potential partners. Next, we developed a list of stakeholders with entities from industry to state executive branches to offshore wind partners. For that we engaged around 100 people, inviting them to a virtual workshop held last November. Now we are onto task three which is engaging a wide range of stakeholders in the monitoring network. This group includes those in this meeting. We are engaging this broader group to identify risks, have them help to inform management decisions, and provide us with feedback on this process. We are also looking to partner with stakeholders to enhance the monitoring network. For instance, adding carbonate chemistry monitoring to a hatchery facility, working with partners to expand the OA data collection.

The steps necessary to develop an OA action plan were developed during the November workshop, including feedback after the meeting. This includes five major steps. First is to convene an OA task force or workgroup. The workgroup would inventory monitoring, identify gaps, and then fill those gaps in the network. It's a group used to expand the expertise beyond the small group of us currently working on this task. The other items noted include, enhance the availability for discrete sample analysis; adopt community best practices to ensure data quality control; develop network data management; and coordinate the OA network. Those four are more logistics of developing the network.

There are some past efforts at the inventorying of data collection. In making the MidAtlantic Coastal Acidification Network, we basically plotted locations where carbonate chemistry data collection was taking place. There are also different platforms, gliders, and ships taking samples at different depths and at different fixed stations. MARCO Ocean Data Portal website allows users to access metadata on collection points as well.

Looking at gaps, there is a need for higher sampling frequency, specifically greater temporal sampling frequency to see changes over time. Data also needs to be collected across the salinity gradient to account for changes in carbonate chemistry from freshwater to saltwater. More parameters need to be collected at sampling locations to fully resolve the carbonate system. Samples at various depths are also missing and are needed.

To fill the data gaps, the current network is looking broadly at stakeholders to assist with data collection. This could be a platform currently used for data collection that adds a sensor for one or two additional parameters.

M. Sheets- What is the funding for this project. Dr. Saba- As far as I know, we do not have any funding. The report from the workshop will be edited with comments from stakeholders and then incorporated into the NJ OA Action Plan. After that is complete, we are not sure about funding but hoping after that there will be some allocated to this project.

Sec. Fisher- Any general observations as it relates to the shellfish? Question for the group. M. De Luca- Dr. Daphne Munroe has conducted OA research, and the AIC has a platform for monitoring OA that you could use. I have a project starting in May to integrate climate change research,

resiliency planning and monitoring efforts to inform the management of resources in estuaries, particularly Barnegat Bay and Great Bay, where there's quite a bit of aquaculture and shellfish resources. The idea is to initially assess some of the key challenges that state resource managers will be facing over the next 5-10 years, and then to compile the existing sampling and sensing capabilities within those two systems. The idea is to identify gaps in existing observing system capabilities that need to be addressed to answer the key challenges of the resource management community. The final product would be a white paper or blueprint for research and observing system strategy for those two bays. OA should be a component of that. Dr. Saba noted that Barnegat Bay Partnership has been involved in this process and are working through technical items to get monitoring started. R. Schuster- There is long-term monitoring from a 2011 Governor's initiative related to nutrification. It's still ongoing and throughout Barnegat Bay, alkalinity has been added as one of the parameters being monitored. It's a data rich area that would be good to focus on and possibly partner with DEP to enhance the current efforts.

N. Gaine- I would like to hear the answer to the question the Secretary posed on the impacts to shellfish. Dr. Saba- Ocean acidification causes a complex chemical reaction that occurs when CO₂ is absorbed by seawater, and it basically forms carbonic acid. That dissociates to release hydrogen ion and that decreases the pH in the water. There's also a buffering process. The carbonate ions fuse back with the hydrogen ions to form bicarbonate. It's a lot of chemistry, but what's important is the carbonate. The carbon ions decrease and it's the carbonate ions that shellfish need to form their calcium carbonate shells. When ocean acidification occurs, you have an influx of CO₂, it starts stripping the water of carbonate ions, and so there is much less available for shellfish to grow their shells. We don't have a lot of field studies looking at in-situ responses to ocean acidification events, but the lab studies show that adults tend to be more resilient. They've already built their shells; it's the larval stages that are most susceptible because their shells are very thin. There are some species that are most delicate in their first 48 hours so if there is low pH or low aragonite saturation state during that time, there can be high mortality.

We have not had documented die-off events on our coast but on the West Coast in 2007, 2008 they had some pretty several events with Pacific Oyster. There was a big upwelling event that caused really low pH and low aragonite saturation states coming into through the facility leading to a large die off. It hurt them economically for a few years. Those facilities moved to new locations or are treating the incoming seawater with bicarbonate as well as monitoring carbonate chemistry. We have not seen these events, but we are planning for it and being in the proactive stage right now.

N. Gaine- I read a MACAN report about 10 years ago about the West Coast issues in the hatcheries. At that point we had not heard about all of this, and we had not seen anything on the Atlantic Coast. For us, what is the point at which we should be worried? What is the number where we get concerned? Dr. Saba- That's a really good question and one I've been working on with Shannon Meseck's group out of the NOAA Northeast Fisheries Science Center. They have been doing a lot of laboratory work to identify thresholds for surf clams and sea scallops. Based on that work, we are now trying to map a threshold for those species, focusing more on the surf clams. At this point, the message is to stay tuned for the results of our work.

Sec. Fisher- If things keep going in the wrong direction, what are the one or two options that governments have to combat this? Dr. Saba- It may not be for the best reasons, but we are seeing

evidence that the Gulf Stream is starting to encroach northward and with it bring warmer saltier waters with it. That water is higher in pH and high aragonite saturation state, so it actually alleviates any ocean acidification on the outer shelf and starts to become more of a temperature stressor. Closer to shore the stressors of freshwater inputs and eutrophication that may be easier to tackle at a local level, with things like reducing nutrient inputs. Bigger picture solution is the reduction in CO₂ emissions.

M. Sheets- Are we alone in New Jersey in creating this network? Dr. Saba- No, and it's helpful that we can get feedback from other states working through this process. There are definitely other states developing ocean acidification action plans and monitoring networks.

D. Zemeckis- Last year we had a hooked-on ocean acidification educational webinar series. It focused on recreational fisheries but it's relevant here because there was a whole session on shellfish and monitoring. Researchers from VIMS presented their work on mussels and oysters and their physiology.

Resources from the presentation and above discussion included in the chat. Items will be pasted into the chat section at the end of these notes.

Council Committee Reports

Marketing Committee

A. Wenczel- Marketing Committee discussed the Commodity Councils and decided to not pursue that method of marketing and fundraising. The Committee decided that the best option for the aquaculture industry is to determine how to be incorporated within the Jersey Fresh program (labeling, advertising). The Jersey Fresh program incorporates quality standards for producers to be eligible. This requires inspections to ensure the highest quality is retained for those commodities using the Jersey Fresh labeling. For seafood, we are unaware of any such standards and so the committee needs to work on this further.

In a parallel effort, the Committee confirmed the desire to pursue the Specialty Crop designation with the USDA.

Sec. Fisher- I want to hear the thoughts of the Council. Whatever you all want, we will work to make it happen. The Jersey Fresh quality grading standards are the critical item, less so the inspections. It can be a sort of self-policing program, but producers need to voluntarily uphold the standards that the program promotes. For the standards there must be something that is inferior. I don't know what that is, but something that would not make the grade. Or, does everything make the grade? M. Sheets- It basically comes down to freshness. Was it just caught or two weeks old? The only other way to grade is by size.

S. Fleetwood- Anybody that is farming shellfish should be aware of the Model Ordinance. It says what you should do when you harvest, product is supposed to be cleaned, harvested from approved waters. Sec. Fisher- that's perfect, all those things you mentioned. Even though you already do all this, it can be the standards.

N. Gaine- Between the Committee and the recommendations in the most recent Aquaculture Development Plan Update, the industry is fairly unanimous that we want to be in Jersey Fresh. Instead of starting somewhere new, there is a resounding call from industry for inclusion within Jersey Fresh.

Sec. Fisher- Does this require a statutory change or just a rule change? A. Wenczel- After discussions with Joe, this is a statutory change. Sec. Fisher- Ok, we need to find a sponsor for a bill. I'm pretty sure there's a number of folks that would want to sponsor.

L. Muetter- I'm not completely sold on these types of products going into the Jersey Fresh labeling. I do think it's a lot more difficult to do quality and ratings for these types of products. You're going to need the Department of Health to weigh in on this and probably provide some assistance. You have to ensure the product is coming from New Jersey waters, and how these will be sold to other states. There are different caveats that we need to be careful of as we go through this process. Sec. Fisher- I'm sure there are others that may want to discuss this too, so we will work with the other Departments, yours and DEP to see what are concerns, the potential choke points to developing the program. We will work through those, then work on a bill sponsor once we are all ok with the process.

N. Gaine- I'm a little confused as to what implications the regulatory agencies of DOH and DEP would have to a marketing program. It's a marketing program. If it doesn't violate the model ordinance, doesn't violate the NSSP, health code or anything else, why would we need to involve the regulatory agencies? Sec. Fisher- Because you'd be amazed what government can do. I'd rather do it this way. I'd rather take down any objections first, and then run it through the legislative process.

S. Fleetwood- I've used the Jersey Seafood logo on my boxes for 20 years. I didn't know this was an issue. Sec. Fisher- The Jersey Seafood logo is approved, and you can use it. We are talking about using the Jersey Fresh logo.

L. Muetter- I agree with Sec. Fisher and Ned (Gaine) that this is a marketing product, not a DOH issue. We want to ensure that the products and logo are accurate and not deceptive. We want to provide input, we are not trying to prohibit moving forward with this. N. Gaine- I appreciate that comment, and that you do not want to slow this down.

AMP Committee

A. Wenczel- Draft changes from the Committee have been sent to the AAC for review. Any comments from the Council are welcome, send those along for developing final version.

Legislative Committee

A. Wenczel- First discussion of the Committee was to revise the membership of the Council. The Committee looked to increase industry membership and reduce some of the academia. M. De Luca- Two entities mentioned for the Council no longer exist. One is the Aquaculture Information Center, which was at Cumberland Community College. The other is the Aquaculture Technology Transfer Center. It's good to revisit those. The Aquaculture Innovation Center should continue to be represented, maybe not through Dean Lawson, but I would endorse representation of the AIC.

N. Gaine- I agree that the AIC should be there and maybe bring in more of the Extension Service. I'd like the Committee to think about not just getting more farmers on the Council but reducing some of the nonexistent groups. Moving from Commissioner level to maybe more director level representatives. They have more interactions with aquaculturists. Maybe we could have more productive conversation if it's with the middle of the agencies.

D. Zemeckis- I like what Ned was suggestion with retaining academia with research represented and extension represented. Whether that is me, Lisa's replacement, someone else from Rutgers or even NJ Sea Grant.

A. Wenczel- This will all be brought back to the Committee. Good to note that there are open seats now that growers can seek out. There is a vacancy and John Maxwell has expressed wanting to step down. That's a Speaker of the Assembly seat and a Governor's appointee seat. I'm not sure what we at NJDA can do to help, but if you run into any issues seeking out appointment, please let me know. M. Sheets also noted that he wishes to step down soon.

A. Wenczel- Legislative Committee also looked at the aquaculture related bill before the legislature. Noted the bills and what they entail. S428- right to farm is discussed later in this meeting. S436- fund marketing and the Committee is in support of this bill, would like to send a letter to sponsors in support.

N. Gaine- I would ask the committee consider today's conversation, maybe reevaluate the letter of support to say that we appreciate the bill, but we urge a change to get the industry into Jersey Fresh. Use the opportunity to start the dialogue and include money. Not use Jersey Seafood as an interim step. A. Wenczel- We need to confer with Joe Atchison to see what would be required for a statutory change to get farmed seafood under Jersey Fresh. I think it would be a larger ask than amending the bill currently in the legislature. I also think this ask would delay the appropriations that are included in the current bill.

N. Gaine- To follow-up, how far will the \$100,000 go towards Jersey Seafood? If it's not designated specifically to aquacultured seafood, it goes to all Jersey Seafood, that's a drop in the bucket. We're just putting a little bit of money into starting something that we're actually trying to get out of and into something better. A. Wenczel- I understand, but even if the switch to Jersey Fresh were to occur, that does not mean that any appropriations would occur. If the only thing that happens is the name change without funding that's going to fall flat. I think we can get some funding and then the name change.

B. Hollinger- I agree with you and I agree with Ned. I think we need to talk with Joe and work this out. I think we have time, until July. Sec. Fisher- Legislature is out in July, so it would be the fall. Is the money going to Jersey Seafood? A. Wenczel- it's for the promotion of aquacultured products as a part of the Jersey Fresh program. Sec. Fisher- They can put \$100,000 into a bill and pass that one, and then we have time to put together the program for moving under Jersey Fresh.

M. Gregg- Did we miss a bill from the Committee? A. Wenczel- Sunday Harvest bill but we did not have anything to put forward.

M. Gregg- One of my concerns is that if we send things back to committee were looking at another three months before we discuss again with the Council and make a decision. We should be acting sooner on this appropriations bill.

Discussion ensued on the process for email notifications and voting. **B. Hollinger- Motion to allow an email vote by the Council on the information and best path forward with Marketing bill after Amanda discussed with Joe. M. Gregg Second. All in favor- so moved.**

Shellfish Council Updates

B. Hollinger- Still looking at leasing but no updates from last meeting.

G. Mathis- Atlantic Coast reviewed the spatial planning tool for aquaculture and cancelled the April meeting.

Red Knot- Aquaculture Update- None.

Councilmember Comments

M. Gregg- Noticed before this meeting that the Vibrio Plan is out. Is there a protocol to send that to license holders or dealers? The ADP had a recommendation to release the plan 90 days prior to the season. R. Schuster- The Plan was written in February, ahead of time this year. Then it goes through reviews.

Discussion on the lists DEP & DOH use to reach parties that must follow the Vibrio Plan.

M. Gregg- Two years ago Doug hosted a talk by Virginia (Wheatley, NJDOH) and that was really helpful. If there is an opportunity to do that again it would be good for all the new growers in the state. D. Zemeckis agreed to work on scheduling that meeting. Via the chat, Virginia agreed present.

Old Business

Aquaculture Right to Farm

A. Wenzel- After the last AAC meeting, there was a meeting with SADC (State Agriculture Development Committee), staff from NJDA, and a group of growers who have been the most engaged with this topic. Discussed the Right to Farm Act, where some of the limitations are for aquaculture, and see where we can develop a better bill to achieve the intended protections. Process is still underway; updates will be provided to the Council when available.

B. Hollinger- Reminder that growers are expecting something from the SADC-NJDA within the month timeframe we agreed to in the meeting. A. Wenzel- Yes, we are working under that timeframe. M. Gregg- Will the redline bill from SADC include NJDA comments. A. Wenzel- Yes, it will be a collective response from the two agencies. N. Gaine- Will this include suggested changes or just a strikethrough of items? A. Wenzel- It will have suggested new language.

ADP Recommendation Status

A. Wenczel- No updates other than the actions of the Legislative Committee.

Public Comment

N. Gaine- What is the timeline for in-person meetings? Sec. Fisher- There is no reason you cannot have live meetings now. The offices are maskless unless someone wants to wear a mask.

N. Gaine- We successfully passed the ADP for 2022 and that took a lot of time. We have five years until the next one. When should we start working on that one? Sec. Fisher- If this is every five years, two years out from the end of this one. So that is 2024.

M. Williams requested a copy of the AMP recommendations so that he and others can review. A. Wenczel will send to M. Williams as well as any other growers or attendees that request a copy. Since it is a draft copy, it was not sent out widely, but can be emailed upon request.

M. Williams- Does anyone have any updates on research on the cape shore, shore birds. M. De Luca- You should have been contacted by Elizabeth Bouchard. She is conducting a second-year study looking at the interactions between red knots and horseshoe crabs. She's looking at how horseshoe crab eggs are distributed in relation to oyster farms and shore bird foraging patterns. Preliminary results from last year show that horseshoe crabs are concentrated on the beach rarely on the tidal flats, where the oyster farms are located. She has not detected any difference in the number of horseshoe crab eggs in areas with and without farms.

M. Williams- I am asking to see if there is anything new that is coming out so the Red Knot Committee will have something to review. If we know something is going on, maybe we can push for science in certain areas and then work on moving the conservation measures in a reasonable way for us.

Sec. Fisher- It is a tribute to all of you working in this area that you have worked through these measures and are continuing to operate. You continue to have the horseshoe crabs make it to the beach to supply eggs for the birds.

M. Williams- We are trying to look forward a bit. It's nice to have an idea of what's going on and how the growers can push for certain items.

N. Gaine- Jumping off of Matt's comments, we have a timeline to the PBO, and we will have a second one coming on after this one. It would be nice to have science out in front of the next PBO. Work with the agencies to figure out the next timeline. Sec. Fisher- Who would you like to come and speak before the Council? B. Hollinger- US Fish and Wildlife. Sec. Fisher- then we invite them to the next meeting. B. Hollinger- The PBO will be a topic but also the listing of critical habitat is also important.

M. De Luca- I am organizing a research symposium on the aquaculture research at Rutgers for September, October and include some of the bird related research. We are in the process of organizing it now, it will probably be lightning talks. It will be a good opportunity for industry to attend. It may be a half day or three-quarters of a day.

M. Sheets gave credit to Ned Gainé for his work on the Board of Managers for the NJ Ag Experiment Stations and involving them more in aquaculture.

Meeting adjourned.

**Pertinent comments provided in the “chat” window during the meeting are included here. The chat is not moderated during the meeting to provide responses beyond acknowledging comments received.*

[4/22 1:15 PM] Wenczel, Amanda [AG]
MARCO Data Portal Link <https://portal.midatlanticocean.org/>
Mid-Atlantic Coastal Acidification Network <https://midacan.org/>
Please contact Dr. Grace Saba at saba@marine.rutgers.edu

[4/22 1:26 PM] Douglas Zemeckis
FYI - We did a "Hooked On Ocean Acidification" educational program in 2021 --- rec fishing focused, but included shellfish and some aquaculture content:
<https://midacan.org/news/f/hooked-on-ocean-acidification-series-for-recreational-anglers>

MACAN has educational resources, including Effects of Acidification on Mollusks:
<https://midacan.org/mollusks>

[4/22 1:40 PM] Gordon, Zachary
Just thought I mention there is a current project at the Milford lab looking at lab effects of OA on bay scallops

[4/22 2:25 PM] Wenczel, Amanda [AG]
From Dave Bushek...FYI: https://www.globalseafood.org/blog/first-gsa-consumer-marketing-campaign/?utm_medium=email&_hsmi=210457201&_hsenc=p2ANqtz-8E54FNGms-4NZryXQwsMGQoWPrQ_OnSD-XWsRtSnvjcQGDZu4383YQGGJd7brjbFZRx0VNfvEJ5ITqwysJ9kdmls_-og&utm_content=210457201&utm_source=hs_email
First GSA Consumer Marketing Campaign Launched...The campaign is designed to capitalize on consumers’ shift to more seafood consumption and preference for fish that’s responsibly sourced.