

SEMAC Board Meeting Minutes December 10, 2019

Members Present: Scott Lindell, Conrad Caia, Chris Gargiulo, Rick Karney, Andrew Cummings, Jen Mullin, Gregg Morris, Chloe Starr, Ed Baker

Staff and Partners Present: Abigail Archer, Josh Reitsma, Sean Bowen

Co-Chair Rick Karney began the meeting at 9:15AM

2. Michael Brosnahan, Woods Hole Oceanographic Institution – Harmful Algal Bloom Research & Monitoring

Josh Reitsma (JR) informed the group that Michael Brosnahan was at the last minute not able to attend the meeting. JR gave a summary of Brosnahan's research including using a cytobot for Harmful Algal Bloom (HAB) monitoring, looking at when blooms of particular species occur and if there are predictors, and he is looking particularly at *Cochlodinium* blooms. His lab has a bench top monitoring unit and can bring it to sites and help growers with identifying bloom species, but it cannot identify if a toxin is present.

Scott Lindell (SL) sometimes blooms are toxic and sometimes not, the environment triggers it but it's not well understood

Ed Baker (EB) reported that DEM in RI is holding mussels and looking for bioaccumulation of HABS, and the URI GSO dock has a camera for plankton monitoring.

Chris Gargiulo (CG) asked if DMF is starting to acquire monitoring equipment? SL replied that DMF has equipment in the Gulf of Maine. One flow cytometer costs \$120,000. DMF is doing more monitoring with Chrissy Pepitas taking the lead. DMF and the researchers are using different methodologies though. Sean Bowen (SB) explained that under the National Shellfish Sanitation Program there are certain species that DMF has to look for.

Ed Baker asked if anyone doing predictive monitoring? JR- Yes Brosnahan is and he is willing to give an evening seminar for shellfish growers.

Chris Gargiulo suggested it would be useful to know the procedure for collecting a sample. JR: Keep at ambient temperature. Rick Karney – when he has worked with Gary Wikfors to collect samples he wants it kept cold.

SL suggested perhaps Brosnahan could do a webinar? WHOI has facilities

Rick Karney (RK) Asked the group – what's the experience with HABS this year?

RK issues with bay scallop spawning on Martha's Vineyard, dearth of scallop seed across the Island Possible heterosigma blooms, has gotten seed as late as Sept, risk of *Cochlodinium* that throws wrench in plans, this year it wasn't present

GM: late seed didn't do well in Duxbury. Anything that came in late June or July stalled In Duxbury in the last 2 years there was a brownish film but not clear what that was

Chloe Starr (CS): ARC had a good spawning season

JR: reports out of RI 2 years ago in Ninnigret Pond, *Cochlodinium* killed adult oysters

Conrad Caia (CC): Is there a protocol for dealing with *Cochlodinium*? What can you do if you identify it?

JR Dan Ward has learned that you keep oysters away from the surface. Shut off upweller pumps and just run aeration. Get product towards the bottom

CG Is *Cochlodinium* associated with nitrogen blooms? EB - in RI think it's rain events associated

GM Duxbury Bay Maritime school is setting up monitoring program, they are happy to have back data from SEMAC monitoring. They are looking to expand monitoring in Duxbury Bay. Seeing way more green sea lettuce than past and a

couple other macroalgae species. Could be related to the rise in green lawns and sprinkler systems. Seed stalled and product on bottom also growth stalled and probably associated with DO. Gregg will loop Josh into grower discussions about how water quality affects oyster growth in Duxbury Bay. It's called "the brown frown".

Andrew Cummings(AC): Any efforts to correlate Dissolved Oxygen with *Cochlodinium* blooms with YSI monitoring data in Cotuit and Wellfleet? JR: We could do that and will look into it

RK is aware of research on scallops in Peconic Bay, they think it's low DO and high temps

Discussion about not as much wind in the summer as used to be seen – changes over the past 20 years

HABS continue to be an issue

3. SEMAC Project Updates

JR: With current funding SEMAC is maintaining the Disease Research Network and the Water Quality monitoring.

Disease Research Network

Summarized the 2018 DRN results. The last samples were just collected for 2019. Working with Roger Williams University and Roxanna Smolowitz to carry out testing. In 2018 added *Bonamia* to the diseases monitored for in response to requests from USDA and funding from them. Were able to leverage Sea Grant funds to do so. Diane Murphy is continuing work with DRN on a contract basis. In 2019 we will also have hard clam neoplasia results

Discussion about SSO investigations on MV

SL asked if DRN is keeping track of diploid vs triploid JR: Not now but we can do that

RK hatcheries selecting for dermo resistance, MV oysters have dermo

NShore neoplasia in soft shell clams

GM Duxbury had soft shell neoplasia issues

EB Narragansett Bay soft shells also got decimated

AC asked: Do shellfish departments in all the towns get the disease monitoring results info? JR: if Towns help get the samples then they also get the report results Rick Karney and Andrew Cummings suggested maybe having a presentation on shellfish disease at MSOA – important to get this info out to shellfish constables

GM: It's an eye opener for shellfish restoration projects

Discussion about *Bonamia* in European oysters

In Duxbury the European oysters die in a freeze

WQ Monitoring Update

JR summarized weekly averages that are available on the CCCE website. Looking into purchasing new water quality sondes with WHOI surplus funds and a real time transmitter. If it works we'll have real time capability at all sites. Will need to spend some time troubleshooting it - the antenna has to come out of the water. Intertidal on a piling in Orleans WQ info was shared with 7 other groups this year. The instruments are getting old, some of them are 20 years old. YSI maintenance is getting more expensive every year.

Tried In Situ equipment as an alternative to Yellow Springs Instruments (YSI) It handled fouling better and it's smaller so only has 4 probes. If we purchase In Situ units we'd have to drop a parameter - suggest turbidity. The way they do their chlorophyll readings is proprietary so would have to apply an offset to make the data comparable but when you smooth the data it shows the same general pattern. *Any* new instrumentation does have some differences. We already deal with this in Duxbury which is why we use the same exact instrument over and over.

Brand new YSI for those 4 parameters \$16,000 each Insitu can get a 25% educational discount \$7,000 per instrument

JR suggested purchasing 1 In Situ instrument for now and do data comparisons at each of the 5 water quality monitoring sites, specifically for chlorophyll. We can then also make sure it survives for months at a time per deployment.

EB Where else In Situ units they deployed?

JR Folks at WHOI but they only deploy for 1-2 months. They are happy with them. USGS and NPS giving them a lot of attention.

SB Where are they made? JR HQ in Colorado.

10:20 Scott Lindell left Mike Maguire arrived

MOTION by Gregg Morris, SECONDED by Ed Baker to

Purchase one In Situ water quality monitoring unit

MOTION PASSED – 8-0-0-

Mike Maguire gave an update on staffing changes at Cape Cod Cooperative Extension. Diane's position and responsibilities were split and given to Josh and Abigail. A new Extension Agent has been hired Harriet Booth will start as the new Marine Resource Specialist in January

Abigail Archer explained that there are 2 people wishing to become new members of the SEMAC Board. Chloe Starr to represent the hatchery ARC and Seth Garfield to represent Mass Aquaculture Association.

MOTION by Gregg Morris SECONDED by Ed Baker second

To appoint Chloe Starr as a new SEMAC Board member to represent ARC, and Seth Garfield as a new Board member to represent Mass Aquaculture Association

Consensus was to discuss the SEMAC Bylaws and updating them at the next meeting, The Board members also need to discuss appointing alternates

6. Funding Update given by Sean Bowen, Aquaculture Coordinator for Mass Department of Agricultural Resources

Environmental Bond Bill includes 300,000 for the Aquaculture Centers. Executive Office of Energy and Environmental Affairs and the Administration & Finance Department are the holders of the purse strings for funding from the Bond bill. Sean reached out to them through the MDAR Commissioner – that funding will not be available for FY20.

MDAR will put out another RFP for \$50,000 for the 3 Centers. After first of year MDAR will issue a RFP for funding that will go until June 30, 2020.

Sean will look into administering the Bond bill funds in such a way that the Centers could have a multi-year spending plan.

MM: Cooperative Extension signs multi-year accounts with other state agencies, administratively that would be great. It could allow us to have a strategic plan and give Josh and Abigail an opportunity to plan for the use of the funds. could give J&A to plan better SB

JR DAR has kept Centers' activities alive in absence of Bond Bill funding. Thank you.

RK Wasn't there discussion about updating the Aquaculture White Paper?

SB Mass Shellfish Initiative is ongoing – but that's not the White Paper. The 1995 White Paper was initiated through a Governors order. The MA Shellfish Initiative is not that – the root of MSI is different from strategic white paper and it's limited to shellfish. Aquaculture in Mass encompasses more than just shellfish. A lot of the issues that were identified in the White Paper are still present.

SB – Will bring up updating the White Paper at a future Aquaculture Centers meeting.

7.

Sean also gave an update on the other Aquaculture Centers.

NEMAC at Salem State has been focusing on mussels and soft shell clams

WEMAC in the past has focused on freshwater. Craig Hollingsworth was the first director and then Andy Danylchuck.

Andy has suggested passing this on to other colleagues now. Sean will follow up with him.

8. SEMAC Priorities

Consensus was to put funding towards the same priorities as last year Water Quality Monitoring (WQ) and Disease Research Network (DRN).

Mike Maguire asked the group, Would Mini Grants be useful to you? What projects do you want to see for the Research Farm Network?

GM Mini Grants and Research Farm Network are important, but WQ and DRN are more important. One example of a useful project was using copper to keep snails away

A

C Having someone come up with an idea and implement it on multiple farms is more appealing than mini grant

CG Quantifying data and coming up with predictability is a HUGE priority. Specifically for HABS. We need someone to quantify that data, do analysis, develop a summary of all that data and tell growers when it's coming. We need predictability models Mike Maguire compared this type of work with what Larry Dapsis and Umass do with predicting winter moths

JR asked What do you want to predict?

CG suggested collecting samples at multiple areas on a routine basis as part of RFN?

JR gave a summary of a project that was proposed for funding along with Jennie Rheuban at WHOI to look at coastal acidification. It did not get funded but we'll try again. Sampling for HABS could be added to that.

CC Yarmouth used the mini grant program funds to build infrastructure for upwellers - it was a huge help

JR Funding for monitoring is hard to come by. SEMAC funding is very helpful to keep these data sets.

Adjourned at 12noon.