



Chesapeake Bay Stock Assessment Committee Meeting Minutes

Wednesday, March 30, 2022

Attendees:

Pat Geer (Chair)

Mandy Bromilow (Coord)

Bruce Vogt (Staffer)

Adam Kenyon

Alex Schneider

Alexa Galvan

Alexei Sharov

Challen Hyman

Genine McClair

Justin Shapiro

Marty Gary

Mike Wilberg

Rom Lipcius

Tom Ihde

Tom Miller

I. Welcome and Introduction

- CBSAC welcomes its newest member, Tom Ihde. Tom runs the George Abbe blue crab pot survey at Morgan State University's Patuxent Environmental and Aquatic Research Lab (PEARL). Tom also has extensive experience with ecosystem modeling.

II. Blue Crab Workshop Planning

In this initial discussion, CBSAC members will consider and provide feedback on workshop goals and approaches, potential participants, preparatory tasks, the need for a facilitator, and volunteers for the workshop planning committee.

1. What are the primary goals of the workshop and what approach(es) should we take to meet these goals?
 - The request to hold a blue crab workshop came from the Chesapeake Bay Commission (CBC) to address questions about the need for a new benchmark stock assessment, and what, if anything, can/should be done to address the low abundance concerns.
 - **Genine M: From our last meeting, these three things stuck out as topics or goals we were interested in addressing with the workshop:**
 - **Revisit what we know about blue crab ecology and what new information is available to inform a stock assessment.**
 - **Explore drivers of recruitment and if management actions can be taken to affect them. Explore what data we have to test these hypotheses.**
 - **Explore if female-specific BRPs are still relevant or if we should try to find something better.**
 - **Identify terms of reference for a new stock assessment.**
 - **Tom M: Managers have made it clear that they don't want to do a benchmark assessment; we should focus on an evaluation of the data that could explain drivers of abundance and determine if those mechanisms are controllable through management.**
 - **There are many alternative hypotheses that could explain the low juvenile abundance; the workshop expectation should not be to solve the issues, but provide a better understanding of the drivers and how to handle these issues in the future.**

- Mechanisms to consider include predation (e.g., red drum), sperm limitation (i.e., change in sex ratio), invasive species (e.g., blue catfish), larval survival/recruitment with changing environmental conditions (i.e., climate change), blue crab prey abundance (e.g., polychaetes, clams, etc.)
- The workshop may reveal that we don't have the right data to assess certain hypotheses.
- Rom L: CBSAC should determine if drivers such as predation are predictable; otherwise management measures will likely need to be post-hoc.
 - Pat G: Are red drum more important than blue catfish?
 - Rom is working with Mary Fabrizio to look at feeding habits of blue catfish in combination with Rom's tributary-specific juvenile abundance work.
- Rom L: Are we evaluating the prevalence of inseminated females in the winter?
 - Alex S: Yes, the insemination rate of females is 98-100%.
 - DE Sea Grant has also conducted a sperm limitation study.
- Bruce V: The Fish GIT committed to addressing the low abundance issues in response to CBC. Should this be part of the workshop or revisit these questions in another forum?
- **Rom L: The workshop should not assess the need for a benchmark, but rather determine if the questions that come up in discussions about science and management needs could be answered in a benchmark assessment.**
 - Tom M: Some hypotheses may not be amenable to the current management framework.
- Alexei S: Are age-0 crabs affected by predation? This should be considered/examined prior to the workshop to determine population-level effects.
 - They are recruiting in July-Nov when predation intensity and cannibalism is highest.
- Alexei S: The current assessment model closely follows WDS estimates; it's not worth investing in a benchmark assessment at this time.
 - **The workshop should focus on CBSAC's recommendations listed in the annual advisory report and the science needs provided to the Bay Program (CBP).**
- Mike W: Alexei's points would be good to discuss at the workshop. **We should also consider which data sources we have that are fully utilized in the current assessment, and what data we have that can inform hypotheses about drivers of population dynamics.**
 - **We currently use an annual time step and treat the Bay as a well-mixed hole, but we have information to disaggregate the data spatially and temporally. The first step should be looking at the data we have through a different lens.**
 - We have ChesMMA diet data, but only in the mainstem so blue catfish would not likely be included and red drum are difficult to catch in trawls.
 - MRIP data may be the only data available to look at red drum predation.
 - Bruce V: Which habitat variables should we consider? CBP constantly talks about the connection between SAV and blue crabs, but do we have solid data to back this up?
 - We need to re-evaluate the importance of SAV to crab recruitment.
 - Rom L: Current students have looked/are looking at the importance of marsh (Challen) and Gracilaria (macroalgae) for juvenile recruitment.
- Mike W: Blue crab mortality is highly density-dependent at early life stages and then becomes more density-independent. Population-level predation effects may be disproportionate to the number of crabs eaten. We could look at juvenile abundance before and after the blue catfish invasion.
- Rom L: Cannibalism and intra-cohort mortality also need to be considered.

- Rom L: Something unusual happened in 1992. It was the only year that staff at the VA aquarium saw whales off VA Beach. The survival of larval stages offshore is important to consider in terms of climate changes (i.e., ocean circulation, currents, storm events).
- **Tom M: There is also the question of the reliability of the juvenile WDS index given the lack of shallow water sampling. We should discuss the reliability of the available indices at the workshop.**
 - Rom L: There is more concern about inconsistent bias in the indices from year to year.
- Mike W: There are some data sources for oceanic factors and zooplankton (e.g., [EcoMon/MARMAP](#)), but not sure if blue crab larvae are specifically identified.
- **Action: Please send potentially relevant data sources/contacts to Mandy.**
- **Action: Mandy will develop a spreadsheet of all relevant data sources/contacts.**

2. Who should be invited to participate in the workshop?

- Pat G: We are considering inviting 5-7 participants outside of CBSAC. In addition to those outside participants, we may also have several presenters come in just to provide some background information relevant to discussions about population drivers.
 - For example, Mary Fabrizio (VIMS) may join virtually to give a presentation about blue catfish predation on blue crabs. Eric Schott (IMET) may present work on blue crab disease ecology and its role in the peeler fishery.
- Mike W: We may want to invite data managers and ecologists to cover all the bases in answering questions.
 - Tom M: We should reach out to people prior to the workshop to determine what kind of data they collect and prepare them to participate.
- Alexei S: It may be useful to invite folks monitoring and assessing the blue crab stocks in DE Bay and/or NC Sound so we can examine similarities in population dynamics in regions with similar climatic conditions.
 - Rom L: We should also consider adding a rep from LA; they conduct annual updates and assess the stock every 3 years.
- Tom M: We should consider the size of the workshop before identifying participants.
 - Rom L: An effective workshop usually doesn't have more than 15 participants.
- Bruce V: If we hold the workshop over 2 days, we could look at gathering information on the first day and then have focused discussions about what to do with that information on the second day.
- Bruce V: We had also considered bringing in industry reps. Is this something that the managers should decide?
 - Mike W: The breadth of the participant list should depend on the end goals of the workshop. If one of the goals is to bridge the gap between management and science and industry, it would make sense to bring in stakeholders. But we don't want to invite people just to say that industry was involved.
- Genine M: How public will the meeting be? We could let people sit in on the science talks, but limit participation in discussions to the working group.

- Pat G: There would be concerns about opening up the entire meeting to the public, but we could keep a session open for presentations.
 - Alexa G: We could have a small public comment session on the first day to address specific items. That would allow stakeholders to be part of the process without preventing working progress.
 - Action: Send names of potential workshop participants and their affiliations/roles to Mandy.
 - Action: Mandy will develop a spreadsheet of potential workshop participants.
3. Who (of the current CBSAC members) would like to be on the workshop planning committee?
- Genine M and Tom M volunteered to participate on the planning committee.
 - Action: Reach out to Mandy if you are interested in joining the planning committee.
 - Action: Mandy will coordinate a planning committee meeting in the near future to discuss locations, participants, and timeframe for the workshop.
4. Are there any tasks that CBSAC needs to complete prior to the workshop (e.g., analyses, development of materials, terms of reference)?
- Mike W: Will there be time in the workshop to do initial exercises or will it be a brainstorming session to figure out what we'll do and then come back to it?
 - Bruce V: It would be ideal to look at available data and do initial analyses prior to the workshop so we can discuss what's possible, but we'll want to talk with the planning committee about this.
 - Mike W: The turn-around might be too fast to do analyses in advance.
 - Mandy B: We can have people present initial analyses, relevant available data, and partnerships forged to use those data on the first day.
 - Bruce V: We could also have a follow up workshop that focuses on the questions and analyses that come up in the first workshop.
 - Pat G: We have Terms of Reference (TORs) from 2015. Do we need new TORs?
 - Bruce V: We need to get input from the managers about what they want the fishery to look like and their expectations.
 - Pat G: For VA, it's imperative that we have a healthy stock. We don't generally hear any complaints unless there's a major issue.
 - Genine M: MD has similar sentiments. With the recent declines, there have been questions about the management framework and the need for a moratorium.
 - Marty G: PRFC has been pretty vocal in the last year with concerns about the fishery, but if the price is up, there's not as much complaint from crabbers about low harvest. And a lot of crabbers switched to blue catfish last year.
5. Any initial thoughts on where to hold the workshop and if a facilitator would be helpful?
- Tom M: A skilled facilitator would be necessary to make sure you get the input you want from participants.
 - Bruce V: CBP has a facilitator on contract, Sherry Whitt. Kristin Saunders (UMCES-CBP) would also be a good option. Either one could help us move toward specific outcomes during the workshop.

- Mike W: If we are going to use a facilitator, it would be a good idea to bring them in as early as possible to help structure the workshop and develop the agenda to meet our objectives.
- The current plan is to hold the workshop in the fall (Sep/Oct), but we don't have specific dates yet. We should get something on the calendar asap.
- The planning committee will discuss potential locations.

III. Revisiting the Logic & Action Plan

Review the [2022-2023 Blue Crab Logic & Action Plan](#) and task assignments. Discuss next steps to make progress on listed actions with a focus on Management Approach 2.

2.1 Synthesize results of previous efforts to examine habitat and environmental effects on catchability and evaluate options for next steps - Lead: Mike W

- Focusing on WDS data
- Mike W is meeting with Glenn D and Rom L to discuss catchability and how the surveys are tracking abundance

2.2 Develop goals and recommendations for standardized cooperative fisheries data collection programs across the Bay, and identify the necessary resources to implement such programs at VMRC and PRFC - Lead: Glenn D

- Pat G has had internal conversations within VMRC on how to proceed
- **Action: Mandy will coordinate a meeting with the jurisdiction leaders on how to proceed with developing goals and standards**

2.3 PRFC pilot electronic reporting program - Lead: Marty G

- PRFC has been recruiting volunteers and picked 12 to test out the program
 - The participants will still be submitting regular paper reports in addition to the electronic reports
- Things are on schedule and going well. The program starts next week (Apr 4)

2.3 Develop a standard operating procedure for updating the management reference points - Lead: Pat G

- **Action: Mandy will work with Pat to coordinate a full CBSAC meeting to discuss this effort**

2.3 Identify all available blue crab indices in the Bay and develop a plan to: (1) compare and standardize the indices; and (2) determine the best indices and approaches for stock assessment - Leads: Rom L, Tom M

- Rom L and his students are already looking at different indices including the WDS index and trawl survey indices, including tributary-specific indices, and how they can be better utilized
- Mike W: Monthly indices should be developed if we plan to incorporate them into the stock assessment in the future
 - Rom L: It would be great to get Mike W's input on how to do this when moving forward
- The MD and George Abbe surveys may need to be included separately
 - Tom I: The Abbe crab pot survey has continued and it could be worthwhile to touch base on the data available
- Rom L: We should contact Matt Ogburn as well to discuss availability/utility of SERC's Rhode River blue crab data

- A subgroup may be able to focus on this topic at the workshop given that the PEARL and SERC data may already be available
- **Action: Rom L will touch base with Tom I and Matt Ogburn to discuss data availability for development of blue crab indices**

2.3 Evaluate the efficacy of the Winter Dredge Survey as an index of abundance - Lead: Tom M

- Tom is working with a graduate student on this and making progress
- May be beneficial to work with other task leads as some of these actions are tied together

***Mandy will start setting up check-ins in with task leads and working groups to help coordinate and work through any issues and needs related to these actions.

IV. Member Updates

- Science needs presented to the Management Board
 - The SFGIT presented the prioritized blue crab science needs to the Management Board for their awareness and to update the STAR database.
- WDS analysis plans and comms coordination
 - The WDS analysis and release date are on the typical trajectory
 - Glenn will be crunching numbers very soon
 - Jurisdictions will coordinate the press release with each other and with NCBO/CBP as usual
- PRFC's new hire (to replace Ellen) is scheduled to start on July 1st
 - The application period is open until April 8th
 - PRFC hopes that the new hire will be a productive member of CBSAC
 - Marty is interested to hear CSBAC's thoughts on this