



Atlantic States Marine Fisheries Commission

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Horseshoe Crab Biomedical Best Management Practices Work Group Meeting Summary

Webinar
January 4, 2023

Work Group Members: Benjie Swan (Limuli Labs), Brett Hoffmeister (Associates of Cape Cod), Daniel Sasson (SC DNR), Derek Perry (MA DMF), Katie Rodrigue (RI DEM), Nora Blair (Charles River Labs), Samantha MacQuesten (NJ DEP), Steve Doctor (MD DNR)

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Public: Robert LaFrance, Susan Linder, Ben Levitan (Earthjustice)

In November 2022, the Horseshoe Crab Management Board formed a work group to review and update the best management practices (BMPs) for handling biomedical catch, which were originally developed in 2011. The work group (WG) includes technical committee and advisory panel members with expertise in horseshoe crab biology, ecology, and biomedical processing.

The WG met on January 4, 2023, to begin working on the Board task. Staff reviewed the task, and the WG raised issues with the BMPs that should be discussed. Daniel Sasson raised the issue that across the states with biomedical collections, there are different practices that are used. For example, in SC they only allow collection by hand, and then use holding ponds for crabs between collection and transport to the bleeding facility. For that reason, it is worth considering where the BMPs could be made more general. Derek Perry also mentioned that MA rarely used trawling as a biomedical collection method until this year, so it would be worth thinking about methods that are not used now but may be in the future. The group suggested that the section of BMPs related to collection should include sub-headers with BMPs that are specific to certain collection methods.

The group also suggested adding a new section for “penning or holding” to come before the “holding at facility” section. While the group saw value in adding more detail to the BMPs, one member reminded the group that the BMPs were originally developed to document industry practices, not to regulate industry. Practices have evolved over time, and there are a wide variety of methods for harvest, transportation, etc., and therefore the BMPs should tend to be more general. The group agreed it would be helpful to document and describe what general methods are used in each state. The WG noted that when summarizing practiced by state there could be some issues with proprietary information, so summaries should be general.

Derek suggested that the product of the WG should include recommendations for some broad-based regulations that could serve as baselines for biomedical practices coastwide. This would

set limits to ensure that the minimum standards accepted by the industry continue to be followed. He also suggested the group develop a list of research recommendations that would help inform improvements to BMPs in the future. Daniel noted that there are some research papers available the group could refer to that could inform BMPs related to how long crabs can be held in ponds, density, and water quality.

The WG had a discussion about the marking of crabs after they are bled with the purpose of avoiding bleeding crabs more than once in a season. In most places crabs are marked. In MD they use a tool to make a dent (but not perforate) the shell. MA uses waterproof paint applied at the bleeding facility, and rotates through four different marks each year. It was noted that the bleeding season seems to be getting longer so there is some uncertainty about whether the paint mark will continue to last through the season. Associates of Cape Cod did a small study in conjunction with Massachusetts DMF by marking a small number of crabs and placing them in an aquarium tank; this study demonstrated the mark was visible after several months when applied correctly. In addition, observations in the LAL manufacturing plant have showed evidence of marks from previous years showing up the next year. For SC the group was not sure if all crabs are marked after bleeding, but Nora Blair indicated that Charles River Labs' current practice is to mark crabs after bleeding. In the past some facilities have used scarring of the membrane to try and assess if the crab was previously bled.

Not all members of the WG agreed that the language in the BMPs on marking crabs should state that crabs "should" be marked. One person preferred that the language to remain as is, and say "if crabs are marked." It was noted that marking crabs can add additional time before returning crabs to sea, and in some areas may be unnecessary due to the large population. In tagging studies done by Limuli Labs they found they were not re-catching crabs that had already been bled that year, presumably due to the large number of crabs in the Delaware Bay area. The group suggested adding examples of marking methods to the BMPs.

The WG also began to discuss whether the BMPs should address the seasonality of collection, or collecting crabs from spawning beaches. Some members were concerned about harvest and penning during spawning season because it could limit the reproduction potential of the population. Others thought that this issue might be outside the scope of the document, which they argued was to reduce mortality and keep crabs healthy from when they are collected for biomedical purposes to when they are returned to the sea.

On the BMP related to appropriate tow times for trawling, the WG agreed that specifying a tow time was not necessary because there are other variables, like the number of crabs, that would affect what tow times are best. The WG suggested changing the language to encourage "minimizing" tow times.

The WG discussed the BMP related to "proper handling" of crabs. Some members thought there should be a more specific description of what "proper handling" entails. Others were concerned that defining it too narrowly could create unnecessary problems for the industry when practices differ. The group agreed to continue this discussion at its next meeting.

The following tasks were assigned to WG members to prepare for the next meeting:

- WG members will provide descriptions from each state on general biomedical practices used (e.g., collection methods, holding practices, seasonality, time out of the water, transport methods, release practices, etc.)
- Daniel will provide literature on handling for group to review, and literature on holding crabs and water quality
- All WG members will bring specific suggestions for changes to BMPs for next meeting, as well as research recommendations
- WG members will identify BMPs that could apply coastwide as baseline regulations for the group to consider

The WG will meet next month to continue work on this Board task.