Horseshoe Crab Advisory Panel Report

April 23, 2010

The Advisory Panel met April 23rd to review recent landings and monitoring, the stock assessment, and the Adaptive Resource Management (ARM) Framework. The group also discussed North Carolina's quota transfer request and other issues outside of the Delaware Bay region. Panel members in attendance represented harvesters (horseshoe crab and conch), processors, and biomedical companies. The meeting was held at the Holiday Inn – BWI Airport in Linthicum, Maryland. The following is a summary of the meeting, including recommendations to the Board.

Attendees

Advisory Panel Members

Jim Cooper (SC), Chair
Rick Robins (VA)
Peter Wenczel (NY)
Jay Harrington (MA)
Brett Hoffmeister, proxy for Mick Dawson (MA)
Allen Burgenson (MD)
Jeff Eutsler (MD)
Brad Spear (ASMFC), Staff

Guests

Conor McGowan (USGS)
Mike Sheer (UMd)

Biomedical Industry

The AP reviewed the biomedical landings and mortality estimate table prepared by the Plan Review Team for its annual FMP Review. The group felt the 15% mortality estimate applied to bled crabs is too high. While the AP acknowledges regional differences, members also pointed out that handling techniques for return of specimen have significantly improved over the years. A biomedical company from Maryland reported a study where about 3% mortality occurred after the bleeding process. The AP recommends that the PRT reports mortality estimates using a range of percentages, from 3 – 15%, to reflect the range of studies on this topic. The AP also recommends more studies be conducted to refine estimates of mortality on bled crabs.

Massachusetts DMF recently conducted another study to help inform this issue. With crabs provided by the biomedical industry and its harvesters, MA observed mortality up to 30%. The results of this study have not been published. The AP urges caution when interpreting these preliminary results because of a lack of uniformity for controlled experiments. One AP member noted stressors not accounted for during the initial study likely contributed to higher mortality rates. For example, HSCs often need a steady supply of food and fresh sea water to clean their shells and clear their waste.

Starting this season, South Carolina initiated a study using Sea Grant funding to, in part, investigate the effect of bleeding on HSC survival. The AP recommends that states considering starting studies of bleeding mortality use the Panel as a resource to review proposals and comment on study design. In addition, the AP would like to review all relevant published studies before they are presented to the Board.

Virginia Tech Benthic Trawl Survey
The AP reviewed the VT survey and made a few comments. It was noted that the New York apex core area of the survey should be moved more east almost to the fork of Long Island. This is relevant because the main spawning area is off Great South Bay.

The AP highlights that the Delaware Bay portion of the survey this past year was sampled later in the season than normal due to adverse weather conditions. The later sampling period could explain why the numbers of mature and newly mature adults were down in 2009.

Currently, the estimates of abundance numbers produced from the survey results include an assumption of 100% catchability of crabs. Because this leads to an underestimation of abundance estimates, the AP recommends, in the future, a gear efficiency study be conducted as part the survey.

Funding for the VT survey is secure only through 2010. VT is seeking to obtain funds for beyond this year. AP members agreed that continuation of the survey is critical to sound management of the horseshoe crab and shorebirds. The AP recommends the Board members and interested states provide any help they can to ensure continued funding.

2009 HSC Stock Assessment and Peer Review
The assessment concluded that abundance in the regions of New York and New England are decreasing. The Panel urges caution when interpreting the data and trends. The surveys in these regions catch relatively few crabs. This is because the surveys do not target areas of known horseshoe crab concentrations and do not use gear designed to catch horseshoe crabs.

The assessment models indicate the Delaware Bay population is recovering. Despite the development of the ARM Framework, Panel members feel it is still important for managers to use biological reference points (BRPs) for horseshoe crabs as a single species. BRPs provide another frame of reference.

Adaptive Resource Management (ARM) Framework
Conor McGowan, lead ARM modeler, presented an overview of the structured decision making (SDM) framework and ARM models to the AP. Conor satisfactorily addressed the AP's concerns and questions. The AP recognizes the ARM Framework limitations but recommends the Board move forward with its implementation.

The AP forwards the following suggestions for the Board's consideration:

- The ARM Framework should be implemented with the option to set multi-year specifications that can be adjusted if warranted by significant changes in model inputs.
- The harvest alternatives currently in the Framework should include at least another option that allows a large male and small female harvest
- If the Board uses the ARM Framework for management, allocation of crabs among the Delaware Bay region states must be based on the best available analysis of tagging data.

- The Board should consider the governance of advisory bodies from which it receives input. It is important to clearly separate technical and value-based input through the proper committee structure and operating procedures.

HSC and Shellfish Interaction
HSCs are known to be heavy predators of shellfish (e.g., surf clams, quahogs, mussels). Panel members suggested that scientists estimate how much effect horseshoe crab abundance has on populations of shellfish. The AP suspects as HSC populations continue to rebuild, their impact on commercially important shellfish stock could be significant.

It is possible to develop an ARM Framework that addresses this multi-species issue. The first step is to develop a unified objective statement that incorporates all views.

North Carolina Quota Transfer Request
The AP recommends the Board grant North Carolina its request for transferring quota from Georgia.