

# **Technical Committee Report**

Horseshoe Crab

Delaware Bay/Shorebird Issues

*Prepared by:*

Horseshoe Crab Technical Committee

*Presented to:*

Horseshoe Crab Management Board

June 2003

The Horseshoe Crab Technical Committee met near Philadelphia on March 22 and 23, 2003, to discuss horseshoe crab and shorebird issues in Delaware Bay, and to review products of the Stock Assessment Subcommittee. Below is a summary of the meeting.

### **U.S. F&WS Shorebird TC Report**

Overall, the HSC TC supported the work of the Shorebird TC. It deferred judgement to the Shorebird TC on all shorebird issues and made several comments below with regard to horseshoe crab issues in the report. At its meeting, the HSC TC reviewed select sections of the report (Sections 3.0, 4.10, 4.11, 7.5, 7.6, 7.7, 8.0) and the conclusions/recommendations. The peer review report was not available for review by the HSC TC. Unless stated otherwise below, the TC thought the sections it reviewed presented a reasonable summary.

4.11: The TC felt this section was a reasonable summary. However, they noted that the HSC SAS used an alternative analysis to the one referred to in Table 4.2 of the report.

7.6: The TC had concerns that the positive conclusion regarding beach nourishment may have been too strong. There are still questions about from where to draw sand and whether continual replenishment has a detrimental effect on near shore juvenile populations.

8.2: It is not clear what the numbers in the last sentence represent. The TC suggested that the numbers in the text and in Table 8.2, particularly for Port Mahon, be clarified.

8.3: The TC found the conclusions difficult to weigh without seeing a summary table of the data. It suggested that a request be made to obtain the raw data used in this section in order to evaluate the reports conclusions.

The TC had several comments about the Conclusions section:

*Shorebird Population Trends:* The TC found that this section was confusing as it tried to summarize a great deal of information. It would be better if this portion of the conclusions was expanded and clarified.

*Shorebird Population Threats:* The TC found that the phrase in the last sentence, “relative to the early 1990s” implies that it is known that there was more abundance of eggs in the early 1990s relative to recent years.

The TC had several comments about the Recommendations section. Generally, the TC made note that it is important to make the distinction between short term and long term management measures. Also, the several TC members noted that there may be dissention on part of the recommendations.

#### *Direct Management 1.:*

- The phrase “Because crabs caught in Delaware Bay can be landed in New York and Virginia” is not entirely correct. More appropriately, the statement should portray that crabs that are part of the Delaware Bay population could be harvested in federal waters and landed in states other than New Jersey and Delaware.
- The TC noted that this management measure might not result in more eggs on the beach in the short term and that there may better ways to do that.

- While the TC and SAS did not necessarily agree with a 66% reduction, they recognize that the Shorebird TC conducted their analysis and 66% is their best judgement.

*Direct Management 3.:* The TC suggested that if beach nourishment is to be used, then further research into the use of near shore habitat by juvenile horseshoe crab populations is needed in order to avoid negative impacts.

### **Smith/Millard Letter and SAS's DE Bay Stock Status Interim Report**

At the last HSC Board meeting in February, Smith and Millard entered into the record their letter that served as commentary on the status of the horseshoe crab stock with focus on DE Bay. The authors intended for this letter to fill an information gap that had previously been filled by alarming claims regarding the horseshoe crab population with little or no technical justification. The Board directed the SAS and TC to review that letter. Since that time, the letter and its contents have evolved into an interim stock status report for Delaware Bay. This most recent SAS report is attached as Appendix A.

The TC supported the interim report and its conclusions. The general conclusion of the report and the TC was that there is no indication of a horseshoe crab population crash. The TC suggested that current harvest limits (as defined in Addendum I) are sufficient for horseshoe crab populations. However, if there is a greater need of abundance to support shorebird populations, then further management actions may be appropriate.

In order to fill information gaps between stock assessments, the TC tasks the SAS to conduct annual interim reports to include the latest findings from the past year's research. The TC discussed the issue of timing of the report. Ideally, the interim report would be ready by late winter (February). This timing would provide the Management Board the information before the start of that year's horseshoe crab season. However, in order to have the report ready for February additional funds for a part-time worker and modifications and improvements to the custom data input software will be necessary.

### **New Jersey/Delaware Letters and Proposed Actions**

New Jersey and Delaware each submitted letters to the Board at its last meeting in February. The letters outlined the states' concerns regarding horseshoe crab egg availability for migratory shorebirds. They listed emergency measures that they were expecting to implement and also asked the Board to consider capping coastwide harvest at the 2001 levels for all jurisdictional waters. The Board tasked the TC to review the letters and proposed actions.

One of the measures listed as bullets raised concern for the TC, "Limit disturbance on shorebirds exerted by researchers to further allow the shorebirds to feed unmolested." The TC stressed the importance of balancing the value of research with the impact of research on the resource. The TC wants to avoid a situation where important horseshoe crab research is inhibited.

The TC came to consensus that the lack of 300K crabs harvested in the Delaware Bay region may lead to localized depletion in other areas. For example, Massachusetts obtains about 80K

crabs per year from Delaware Bay. Less crabs coming from DE Bay may increase harvest in MA waters. Similarly, Maryland and Virginia could increase harvest to compensate for the lack of harvest in DE Bay, in which case recruitment into the Bay may be affected. However, it is not known whether this may harm the population and there are still harvest caps in place in each jurisdiction.

New York has concerns about capping its quota at its 2001 harvest level. Its quota for that year was cut due to an earlier overage. The consensus of the TC was that a blanket cap at the 2001 level was not acceptable coastwide, but each state should individually look at its past landings and evaluate the situation to determine if additional restrictions may be needed.

### **SAS's Draft Terms of Reference for 2004 Stock Assessment**

The SAS drafted new Terms of Reference for the upcoming stock assessment. The TC reviewed the document and suggested minor editorial changes. The Board should move to approve or disapprove the document (Appendix B).

In order for the SAS to ensure that they receive from the states all pertinent information, it recommended that letters be sent out to the Board and TC members in each member jurisdiction. The letters would serve as a formal request for information and set a deadline of August 1, 2003. There was concern that all relevant data was not made available for the last stock assessment.

### **Coordinated Delaware Bay-wide Horseshoe Crab Egg Survey**

The idea of a coordinated Delaware Bay-wide egg survey has been discussed by the TC at several meetings. At present there are several independent surveys (not all focused on abundance) taking place around the Bay with different methodologies. The TC agrees that a coordinated survey would produce more useful data than the fragmented approach currently in place. However, the TC and SAS determined that a coordinated survey would entail significant effort and expense.

Dave Smith has prepared a proposal for the survey, which he estimated would cost \$120K. The intention of the proposal is to initiate a new baywide sampling regime as opposed to piecing together existing surveys. The baywide survey would not expand on current efforts, but would seek to calibrate old data (i.e. New Jersey's) so that data were not lost. The TC and SAS support the Shorebird TC's recommendation for such monitoring and felt it was important to recognize the relevance of this survey for better understanding the horseshoe crab-shorebird interaction issue. However, this survey would not be essential to the HSC stock assessment. The TC and SAS endorse and will assist in the development of the methodology, in addition to providing other technical advice.

### **Biomedical Survey**

The Biomedical Working Group was tasked to redistribute the survey regarding horseshoe crab utilization in the biomedical industry. The survey has been modified and endorsed by the TC. The TC suggested sending out surveys to request information for 2001, 2002, and 2003 to collect

past data and to give the biomedical companies a heads up that we will be asking for this information for every year. The question of from who should the cover letter be addressed came up. The TC also suggested changing the FMP to require states to solicit the information asked for in the survey from biomedical companies within its territory and to make the recommendation that states require the transfer of crabs used in the biomedical industry to the bait industry. The most recent biomedical survey is attached as Appendix C.

### **Changes to the FMP in anticipation of the next Addendum/Amendment**

Both the Board and TC have raised several issues regarding outdated monitoring requirements and language in the FMP. They questioned the relative importance of Monitoring Component A, specifically the portion that requires that, “Each state must characterize a portion of the commercial catch based on prosomal width by sex.” The SAS reported that that information is not currently essential to their work. However, the TC and SAS encourage states to continue characterizing the commercial catch. The SAS will need maturity data from the commercial catch in the future to run its full stock assessment model. Once a technique is developed to obtain this information completely and accurately, reporting of maturity will be required of states.

At its last meeting, the Board also raised an issue regarding Monitoring Component F. It asked whether states should be required every year to monitor spawning habitat. This component is required annually by the FMP as currently written. However, the TC recognizes that the original intent was to identify spawning habitat for conservation and permit review purposes. Therefore, if a state is confident with its knowledge of potential and actual spawning habitat, then no more monitoring is required. However, the TC reminds states to remain aware of changes in habitat use over time.

The TC also reviewed several other portions of the FMP and discussed other areas that need updating. The TC chair and staff have made note of those areas.

### **Potential Uncounted Harvest of Horseshoe Crabs**

At the last TC meeting in February, concern was raised about harvest of horseshoe crabs for curio/live trade and personal harvest for use as bait. The group had little sense of what extent either practice was occurring. Bob Unsworth (TC member) looked into the issue and found that these harvests are being counted toward the overall harvest and they seem to occur at a very small scale.

### **Virginia Tech Horseshoe Crab Research**

Virginia Tech will receive an earmark of \$633 K from this year’s NMFS budget to conduct horseshoe crab-related research. Presently, the Virginia Tech team is proposing six projects: 1) (a) annual trawl survey for third year with new partners and new gear working toward coastwide expansion; (b) continue exploring methodologies for accurately identifying newly recruited females; 2) continue aerial videography to get spawning counts; 3) study of spawning habitat loss over time (focussed on DE Bay); 4) acoustic tracking of HSCs in deep water pilot study; 5)

shorebird study using exclosures to get at whether HSC eggs are a limiting resource; and 6) population modeling to figure out population dynamics give HSC life history. The TC will be providing feedback on the proposed projects to Virginia Tech.

### **Alternative Bait Workshop 2003**

New Jersey has provided funds to the ASMFC to conduct another alternative bait workshop. The workshop will likely be held in late summer/early fall with participants from along the coast and from a variety of backgrounds. TC members will be asked to help in the development of the workshop. One potential shortcoming is the lack of funding to implement any agreed upon alternatives resulting from the workshop.