



Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: Horseshoe Crab Management Board
FROM: Delaware Bay Ecosystem Technical Committee and ARM Subcommittee
DATE: March 30, 2026
SUBJECT: Committee Recommendations on Utility, Reward, and Harvest Policy Functions

The Delaware Bay Ecosystem Technical Committee (DBETC) and Adaptive Resource Management (ARM) Subcommittee met jointly via webinar on February 23, 2026, to review the results of the January 2026 Stakeholder Workshop and get consensus from TC members about next steps for updating the ARM. The full details of the Committees' discussions are included in the attached meeting summary. Below are the Committees' recommendations for changes to the utility, reward, and harvest policy functions of the ARM Framework.

Horseshoe crab harvest utility function

- Update the value ratio for male to female horseshoe crabs to 2.65 males to 1 female.

The DBETC and ARM Subcommittee support the recommendation from the stakeholder workshop, which reflects the fishing industry stakeholders' current value of females compared to males. The current utility function uses a 2:1 ratio.

Red knot abundance utility function

- Update the utility function based on stakeholder values elicited at the January workshop.

The ARMSC and DBETC had no opposition to changing utility function to be more representative of stakeholder values that were provided in the elicitation during the January workshop. The ARM modeling team will develop a new utility curve to present to stakeholders for review.

Changes to the reward function

- Maintain the current reward function (Annual reward: $r_y = u_y^h + u_y^k + u_y^h u_y^k$)

The DBETC and ARM Subcommittee reached near consensus for maintaining the current reward function in the ARM Framework, which is the sum of the horseshoe crab utility, red knot utility, and the product of the two utilities. While some members expressed a desire to restructure the function to account for other ecosystem values, it was noted that new factors (other than horseshoe crab and red knot abundance) could not be added to the reward function without incorporation of additional data sources and modeling, and an additional peer review process.

Such changes could be considered in the future through a peer-reviewed ARM Framework revision.

Changes to the harvest policy function

- Update the harvest policy function such that there would be no female harvest when the female horseshoe crab abundance is below 7 million crabs.

At the January 2026 workshop, stakeholders expressed an interest in adding a threshold to the harvest policy function such that there would be no female harvest at low horseshoe crab abundance levels. The stakeholders did not provide a specific value for this threshold.

Using an elicitation of the DBETC and ARM Subcommittee members, the Committees recommended a threshold value of 7 million females. This is the median value of the elicited abundance thresholds provided by Committee members. If this change is adopted, it would mean the harvest policy function is revised such that if the CMSA-estimated Delaware Bay population of female horseshoe crabs is below 7 million females, then the ARM Framework would recommend zero female harvest.