Atlantic States Marine Fisheries Commission

1050 N. Highland Street • Suite 200A-N • Arlington, VA 22201
703.842.0740 • asmfc.org

MEMORANDUM

TO: **Atlantic Striped Bass Management Board**

FROM: **Atlantic Striped Bass Stock Assessment Committee**

DATE: **January 22, 2026**

SUBJECT: **Request for Board Guidance on Biological Reference Points and Spatial Management**

Term of Reference #6 for the 2027 Atlantic striped bass benchmark stock assessment is:

> *Update or redefine biological reference points (BRPs; point estimates or proxies for BMSY, SSBMSY, FMSY, MSY). Define stock status based on BRPs by stock component where possible.*

As the Stock Assessment Subcommittee (SAS) continues work on the assessment, they request guidance from the Board in order to develop biological reference points (BRPs) if the Board is looking for alternatives to the current BRPs.

This memo describes the history and rationale for the current BRPs and lays out the two areas that the SAS is looking for guidance on from the Board.

History of Current BRPs

The current spawning stock biomass (SSB) threshold for Atlantic striped bass is the estimate of female SSB in 1995, and the current SSB target is 125% of that value. The stock is declared overfished when SSB drops below the threshold. The current fishing mortality (*F*) target and threshold are the *F* rates that will maintain the population at the SSB target and threshold, respectively, in the long term. Overfishing occurs when *F* exceeds the *F* threshold. Because the Amendment 7 recruitment trigger was tripped prior to the most recent assessment update, the current values for the *F* target and *F* threshold are calculated using the current low recruitment regime (2008-2023) (Figure 1). This results in a lower *F* target and threshold than would be estimated from the longer time-series of recruitment used when the recruitment trigger has not been tripped.

The 1995 value of SSB was chosen as the threshold because the stock was declared rebuilt in 1995 based on 1) an increasing proportion of age-8+ (mature) female fish in the spawning population as a sign of an expanding age structure and a more productive, resilient spawning stock; and 2) a projection model that used life history information and *F* rates from tagging and catch curves to estimate SSB from the MD young-of-year (YOY) index over time. The MD YOY index extends back to the mid-1950s, so the estimates of SSB after the moratorium in the late 1980s were compared to estimates of SSB pre-collapse (1960-1972) to determine whether the

stock had recovered. The projection model indicated that in 1995, SSB was at the 1960-1972 reference level, so the stock was considered re-built to pre-collapse levels.

The threshold was set on the basis of empirical/historical metrics, including managers' and stakeholders' satisfaction with the stock condition in the 1960s. The target was a somewhat arbitrary level (25%) above the 1995 value. Since the stock is managed based on the target, it is important to have sufficient board input as to the values which should be reflected in the target level so that it is no longer based on a somewhat arbitrary decision.

From 2003 to 2013, the *F* threshold was defined as F_{MSY}, but during the 2013 assessment, projections indicated that the population would stabilize below the SSB threshold if it was fished at F_{MSY}. Therefore, the definition of the *F* target and threshold were changed to align with the definition of the SSB target and threshold. The decision to maintain the SSB target and threshold definitions and change the *F* target and threshold was based on the FMP objectives around SSB and population structure as well as concerns about the reliability of F_{MSY} estimates, given the uncertainty in the stock-recruitment relationship used to derive it. During the 2019 benchmark, SPR-based reference points were explored, but the estimates of $F_{40\%SPR}$ and $F_{30\%SPR}$ from the single-stock model were lower than the empirical *F* values and resulted in an SSB target and threshold that were much higher than the 1995-based target and threshold.

Although SSB exceeded the target in the early 2000s for four years and was close to the target (i.e., the confidence intervals on the estimates of SSB included the target) for 11 years (Figure 1), some Board members have voiced concerns that the SSB reference points are too high and are biologically unattainable, especially during the current period of very low recruitment.

Request for Board Guidance

The SAS is planning to explore both empirical BRPs and model-based BRPs (e.g., SPR-based reference points), including spatial BRPs through the 2027 benchmark. The SAS has identified two major questions that would benefit from Board guidance as the assessment progresses.

1. How does the Board want to balance preserving SSB and allowing fishing?
2. What does the Board want from a spatial management framework?

The SAS is not asking the Board to select a specific BRP definition or come to consensus on these questions at this time, but understanding the range of opinions and the factors the Board considers important will help the SAS develop BRP options that best address different management objectives.

Balancing SSB and F

There is a trade-off between preserving SSB and allowing fishing, and determining the best balance between these two parameters requires management input. If the Board wanted to establish a lower SSB target and threshold – for example, setting the target to the 1995 estimate of SSB and the threshold to some lower percentage of that value – then the *F* target and *F* threshold values could increase, depending on the assumptions about future recruitment. Or the Board could set higher *F* target and threshold values based on a stable period in the

fishery and calculate the SSB target and threshold values associated with those *F* rates in the long term, which would be lower than the current values.

A lower SSB would mean lower availability of larger fish. Even if the *F* target is increased, that may not translate into a higher harvest or yield, since that *F* rate is applied to a smaller population. In addition, lower availability of larger fish means lower encounter rates overall, particularly for the ocean region.

If the Board is interested in considering options for a set of BRPs with a higher *F* and lower SSB targets and thresholds, it would be helpful to receive input on things like:

- the preferred balance between SSB and *F*
- the relative importance of maximizing yield vs. maximizing catch rates or the availability of trophy size fish
- acceptable level of risk when it comes to preventing stock collapse
- alternative metrics for stock health such as total abundance or abundance of specific size or age classes instead of female SSB
- a preferred historical time-period for *F* reference points (i.e., when was the Board satisfied with fishery performance?)
- a preferred historical time-period for SSB reference points
- a lower limit on acceptable SSB levels, relative to 1995 levels or based on the preferred historical time-period

These items represent a range of possible management objectives and are not necessarily mutually exclusive of one another. The SAS could explore methods to evaluate tradeoffs between objectives and estimate optimal reference points to achieve multiple objectives. What is needed by the SAS is direction from the Board as to what is most valued from the fishery.

BRPs in a Spatial Management Framework

Currently, striped bass are assessed with a single set of BRPs for the entire stock-complex with region-specific management regimes to account for differences in availability of fish and other spatial dynamics. The SAS is exploring a new spatial, stock-specific model for this assessment and is seeking guidance on what the Board wants from a spatial management framework and how the Board would like to handle regions like Delaware Bay and the Hudson River.

Delaware Bay removals are part of the "ocean" fleet in the current single-stock model. The Delaware Bay stock was grouped with the Hudson River stock to form an "ocean" stock in the previous two-stock spatial model that did not pass peer review in 2019. If the Delaware Bay cannot be modeled as a separate region, due to data limitations, it could be grouped with either the Chesapeake Bay region/stock or with the "ocean" region again. Grouping Delaware Bay with the Chesapeake Bay would better align with recent research on the genetic similarity of fish from these areas and the frequent movement of both adult and juvenile fish between Bays through the C&D canal, but it would mean any stock- or region-specific BRPs would represent a joint Chesapeake Bay-Delaware Bay region/stock.

It would be helpful to receive input from the Board on their objectives for spatial management, such as:

- Is the Board interested in spatial BRPs – that is, having specific targets and thresholds by region to evaluate stock status against – or would the Board prefer to keep coastwide reference points and use spatial management regimes to attempt to achieve those targets?
- Would a Chesapeake/Delaware Bay region be acceptable to the Board, or would the Board prefer to keep Chesapeake Bay distinct from other regions?
- Is the Board interested in developing BRPs for the Hudson River as a distinct region if the data supported that, or would the Board prefer to keep the Hudson River with the "ocean" region?

The SAS notes that, similar to the current management framework, having coastwide or broader spatial BRPs would not prevent the use of finer scale regional management regimes.

The SAS noted that researchers at Virginia Tech have been working on a spatial management strategy evaluation for striped bass. The SAS will consider any available results from that project, as well as recent public comments on FMP objectives, that could inform potential biological reference point development and stakeholder priorities.

Timeline

If the Board is able to provide guidance to the SAS by the May 2026 Board Meeting, prior to the Assessment Workshop in August 2026, the SAS will be better able to develop options for BRPs that reflect the Board's management direction. The SAS intends to have the BRPs or BRP methodologies peer reviewed along with the assessment models through the 2027 Northeast (NRCC) Research Track, making them available for management consideration as soon as the assessment and review process is complete.

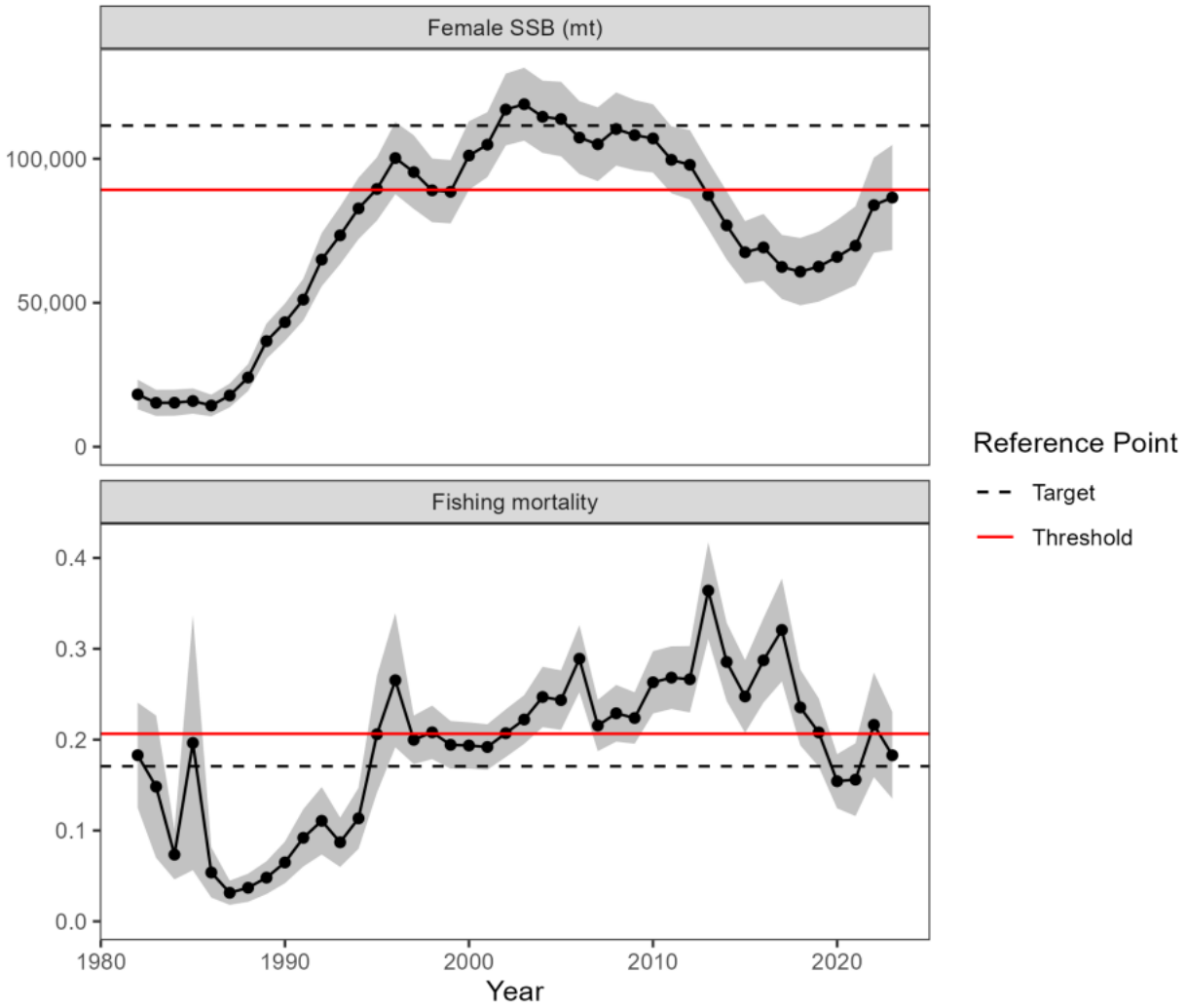

Figure 1. Female SSB (top) and total F estimates (bottom) plotted with their respective targets and thresholds. Shaded area indicates 95% confidence intervals of the estimates. Source: 2024 Stock Assessment Update.

Appendix 1: FMP Goal and Objectives in Amendment 7 Sections 2.3 and 2.4

The goal of Amendment 7 to the Interstate Fishery Management Plan for Atlantic Striped Bass is to perpetuate, through cooperative interstate fishery management, migratory stocks of striped bass; to allow commercial and recreational fisheries consistent with the long-term maintenance of a broad age structure, a self-sustaining spawning stock; and also to provide for the restoration and maintenance of their essential habitat.

In support of this goal, the following objectives are specified:

1. Manage striped bass fisheries under a control rule designed to maintain stock size at or above the target female spawning stock biomass level and a level of fishing mortality at or below the target exploitation rate.
2. Manage fishing mortality to maintain an age structure that provides adequate spawning potential to sustain long-term abundance of striped bass populations.
3. Provide a management plan that strives, to the extent practical, to maintain coastwide consistency of implemented measures, while allowing the states defined flexibility to implement alternative strategies that accomplish the objectives of the FMP.
4. Foster quality and economically-viable recreational, for-hire, and commercial fisheries.
5. Maximize cost effectiveness of current information gathering and prioritize state obligations in order to minimize costs of monitoring and management.
6. Adopt a long-term management regime that minimizes or eliminates the need to make annual changes or modifications to management measures.
7. Establish a fishing mortality target that will result in a net increase in the abundance (pounds) of age 15 and older striped bass in the population, relative to the 2000 estimate.