INTERSTATE FISHERIES MANAGEMENT PROGRAM OVERVIEW

Atlantic Menhaden

Species Range
Coastwide (Maine through Florida)

Stock Status
In August 2022, the Board accepted the results of the Single-Species Update Assessment. Under the Ecological Reference Points (ERPs), which were approved by the Board in August 2020, Atlantic menhaden are neither overfished nor experiencing overfishing. In 2021, population fecundity (FEC), a measure of reproductive capacity of the population, was above the ERP threshold and target ($FEC_{2021}/FEC_{ERPThreshold}$ = 1.76; $FEC_{2021}/FEC_{ERPTarget}$ = 1.28), and fishing mortality (F) was below the ERP overfishing threshold and target ($F_{2021}/F_{ERPThreshold}$ = 0.28; $F_{2021}/F_{ERPTarget}$ = 0.85).

The ERP assessment explores the status of menhaden while accounting for the species' role as a forage fish. Specifically, the assessment uses a combination of the single-species model (Beaufort Assessment Model) and the Northwest Atlantic Coastal Shelf Model of Intermediate Complexity for Ecosystems (NWACS-MICE) to explore both the impacts of predators on menhaden biomass and the effects of menhaden harvest on predator populations.

Although the ERP assessment indicates that the fishing mortality reference points for menhaden should be lower than the single-species reference points, it also concluded that the final ERP definitions and values, including the appropriate harvest level for menhaden, depends on the management objectives for the ecosystem (i.e., management objectives for both Atlantic menhaden and its predators). The approved ERPs are as follows (note that the ERP fecundity (FEC) were updated based on the ERP F target and threshold, and were approved by the Board in October 2020):

ERP F target is the maximum fishing mortality rate (F) on Atlantic menhaden that sustains Atlantic striped bass at their biomass target when striped bass are fished at their F target

ERP F threshold is the maximum F on Atlantic menhaden that keeps Atlantic striped bass at their biomass threshold when striped bass are fished at their F target.

ERP FEC target and threshold are defined as the equilibrium fecundity that results when the population is fished at the ERP F target and threshold, respectively.

Involved States and Jurisdictions
ME, NH, MA, RI, CT, NY, PA, NJ, DE, MD, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS

Active Boards/Committees
Atlantic Menhaden Management Board, Technical Committee, Stock Assessment Subcommittee, Plan Review Team, Plan Development Team, Advisory Panel, Ecological Reference Points Work Group

Chairs
Board, Chair – John Clark (5/2024); Vice-Chair – Joe Cimino
Technical Committee, Chair – Caitlin Craig (2/2023); Vice-Chair – Vacant
Advisory Panel, Chair – Megan Lapp (10/2020)

Staff Lead
James Boyle, jboyle@asmfc.org

Management Plan History
Amendment 1 (July 2001)
Amendment 1 completely replaces all previous Commission management plans for Atlantic menhaden. The goal of Amendment 1 is:

> *To manage the Atlantic menhaden fishery in a manner that is biologically, economically, socially and ecologically sound, while protecting the resource and those who benefit from it.*

Addendum I (August 2004)
This Addendum addresses Biological Reference Points for menhaden, the frequency of stock assessments, and updating the habitat section currently in Amendment 1.

Addendum II (October 2005)
Addendum II was initiated by the Atlantic Menhaden Management Board in February 2005 to address two issues: a cap on the Atlantic menhaden harvest and a research program for Atlantic menhaden in Chesapeake Bay. Addendum II to Amendment 1 of the Atlantic Menhaden Management Plan institutes a harvest cap on Atlantic menhaden by the reduction fishery in Chesapeake Bay at the average landings from 1999-2004. This cap was in place for the fishing seasons starting in 2006 and going through 2010. The Atlantic Menhaden Technical Committee determined the following research priorities to examine the possibility of localized depletion of Atlantic menhaden in Chesapeake Bay: determine menhaden abundance in Chesapeake Bay; determine estimates of removal of menhaden by predators; exchange of menhaden between bay and coastal systems; and larval Studies (determining recruitment to the Bay).

Technical Addendum I (February 2006)
Technical Addendum I implements "a 5-year annual cap, beginning in 2006, of the landing of Atlantic Menhaden caught in the Chesapeake Bay by the reduction fishery, to be the mean of the annual landing by the reduction fishery in Chesapeake Bay for the 5-year period ending in 2004, as determined by the Menhaden Technical Committee, and for any overages in any given

year to be subtracted from the subsequent year, and any underages not to be added to the subsequent year."

Addendum III (October 2006)
Before its first year of implementation, the cap was revised through Addendum III to Amendment 1 to be the average landings from 2001 to 2005, or 109,020 mt Addendum III was initiated in response to a proposal submitted by the Commonwealth of Virginia that essentially mirrors the intent and provisions of Addendum II.

Currently in place is a five-year annual cap on reduction fishery landings in Chesapeake Bay. The cap, based on the mean landings from 2001 – 2005, is in place from 2006 through 2010. Addendum III also allows a harvest underage in one year to be added to the next year's quota. The maximum cap in a given year is 122,740 metric tons. Though not required by the plan, other states have implemented more conservation management measures in their waters.

Addendum IV (November 2009)
Addendum IV extends the provisions of Addendum III from 2011 through 2013.

Addendum V (November 2011)
Addendum V establishes a new interim fishing mortality threshold and target rate (based on maximum spawning potential or MSP) with the goal of increasing abundance, spawning stock biomass, and menhaden availability as a forage species.

Amendment 2 (December 2012)
Amendment 2 establishes a 170,800 mt total allowable catch (TAC) beginning in 2013. The TAC represents a 20% reduction from the average of landings from 2009-2011 and an approximately 25% reduction from 2011 levels. In 2015, the TAC was increased by 10% to 187,880 MT for the 2015 and 2016 fishing years. The Amendment also establishes new biological reference points for biomass based on maximum spawning potential (MSP), with the goal of increasing abundance, spawning stock biomass, and menhaden availability as a forage species. These new abundance points use the same metric (e.g., MSP) as that used for defining overfishing (fishing mortality target of $F_{30\%MSP}$) and overfished (fishing mortality threshold of $F_{15\%MSP}$).

The Amendment allocates the TAC on a state-by-state basis based on landings history of the fishery from 2009-2011; allocation will be revisited three years after implementation. Further, it reduces the Chesapeake Bay reduction fishery harvest cap by 20% (this is an adjustment of cap which was in place since 2006). States will be required to close their fisheries when the state-specific portion of the TAC has been reached; any overages must be paid back the following year. The Amendment establishes a bycatch allowance of up to 6,000 pounds of menhaden per trip for non-directed fisheries following the closure of a state's directed fishery. All catch prior to the closure of a state's fishery counts towards its closure.

Technical Addendum I to Amendment 2 (May 2013)

Amendment 2 enables the Atlantic Menhaden Management Board to set aside 1% of the overall total allowable catch (TAC) for episodic events (Section 4.2.1.8). Episodic events are times and areas where Atlantic menhaden are available in more abundance than they normally occur. The set aside is designed to enable increased harvest of Atlantic menhaden during episodic events. The technical addendum establishes a mechanism for New England state(s) to use the set aside through Board action that includes a qualifying definition of episodic events, required effort controls to scale a state's fishery to the set aside amount, and a timely reporting system to monitor the set aside. Any Episodic Event set aside quota that is unused as of October 31 is redistributed to all the states on November 1 based on the Amendment 2 allocation percentages.

Addendum I to Amendment 2 (August 2016)

Addendum I modifies the bycatch provision for Atlantic menhaden by allowing two permitted commercial fishermen working together from the same vessel using stationary multi-species gear to land up to 12,000 pounds of menhaden per trip per day. In this addendum, stationary multi-species gears are defined as pound nets, anchored/staked gillnets, and fyke nets. This addendum is intended to allow for cooperative fishing, a historic practice which primarily takes place in the Chesapeake Bay pound net fishery.

Amendment 3 (November 2017)

Amendment 3 maintains the management program's current single-species biological reference points until the review and adoption of menhaden-specific ecological reference points as part of the 2019 benchmark stock assessment process. Amendment 3 changes fishery allocations in order to strike an improved balance between gear types and jurisdictions. The Amendment allocates a baseline quota of 0.5% to each jurisdiction, and then allocates the rest of the TAC based on historic landings between 2009 and 2011 (see table below). The amendment also maintains the quota transfer process, prohibits the rollover of unused quota, maintains the 6,000 lb trip limit for non-directed and small-scale gears following the closure of a directed fishery, and sets aside 1% of the TAC for episodic events in the states of New York through Maine.

Table 1. Addendum I Atlantic Menhaden Allocations*

State	Allocation (%)
ME	4.80%
NH	1.19%
MA	2.12%
RI	0.81%
CT	0.33%
NY	0.84%
NJ	11.00%
PA	0.01%
DE	0.27%
MD	1.17%
PRFC	1.09%
VA	75.21%
NC	0.37%
SC	0.25%
GA	0.25%
FL	0.29%

*Note: Allocation percentages shown here are rounded for clarity, quotas are based on unrounded percentages values.

Additionally, the amendment reduces the Chesapeake Bay cap to 51,000 mt from 87,216 mt, capping recent reduction landings from the Bay to current levels.

Addendum I to Amendment 3 (November 2022)

Addendum I changes the allocations for the commercial fishery. It creates a three-tiered system for minimum allocations to the states, with Pennsylvania receiving 0.01%; South Carolina, Georgia, Connecticut, Delaware, North Carolina, and Florida receiving 0.25%; and the remaining states continuing to receive a minimum of 0.5%. Furthermore, the Addendum allocates the

remainder of the TAC, excluding the 1% reserved for the Episodic Event Set Aside (EESA) Program, on a state-by-state basis based on landings history of the fishery from 2018, 2019, and 2021. Regarding the Incidental Catch/Small-Scale Fishery (IC/SSF) provision, the Addendum codifies the ability for states to elect to divide their quotas into sectors, enabling individual sectors to enter into the provision at different times. Additionally, the Addendum removes purse seines as a permitted small-scale directed gear, thereby, prohibiting them from harvesting under the IC/SSF provision. Finally, the Addendum counts IC/SSF landings against the TAC and if IC/SSF landings cause the TAC to be exceeded, then the Board must take action to modify one or both of permitted gear types and trip limits under the provision. The new TAC and allocations became effective January 1, 2023; all remaining measures became effective May 1, 2023.

Technical Addendum I to Addendum I
Technical Addendum I corrects a paragraph in Addendum I to redistribute relinquished quota based on landings from 2018, 2019, 2021. This change is consistent with the timeframe approved by the Board in Addendum I to allocate commercial quota. The Technical Addendum became effective for the 2023 fishing year.

Annual Events

- PRT reviews state compliance reports and updates the FMP Review.
- TC meets if tasked by the Board or to update the stock assessment during assessment years.
- The AP meets in person or via conference call on an annual basis.

Other Items of Interest

Stakeholder Groups
Several non-governmental groups (NGOs) are dedicated to protecting the ecological role of menhaden.

Omega Protein, based in Houston, Texas, operates the last remaining menhaden processing plant on the Atlantic coast in Reedville, VA.

Recent and Pending Action

In August 2024, the Board established a Work Group to gain additional information and evaluate options for further precautionary management in Chesapeake Bay, including time/area closures. The Work Group met nine times from September 2024 to April 2025, and develop a report based on Chesapeake Bay predator and fishery data. The Work Group addressed its task without determining if there is or is not an adequate supply of menhaden to support predatory demand in the Bay; instead, it is the responsibility of the Board to determine if or when it is necessary to implement them. Based on the life history of the predators examined, the nature of Chesapeake Bay menhaden fisheries, and recent changes in menhaden availability, the Work Group discussed a number of precautionary management options that the Board could consider for further action (see Work Group Report). The Board discussed tasking the TC with evaluating options in the report, but in consideration of the priority for the

TC and ERP Work Group to complete the single-species assessment update and ERP benchmark assessment for presentation to the Board at the Annual Meeting, the Board decided to continue the discussion of the report at the Summer Meeting.