

To: The Honorable David W. Marsden
Chair, Senate Committee on Agriculture, Conservation and Natural Resources

The Honorable Alfonso H. Lopez
Chair, House Committee on Agriculture, Chesapeake and Natural Resources

David Bulova, Secretary of Natural and Historic Resources

Matt Cierie, Ecological Reference Points Workgroup Chair, Atlantic States Marine Fisheries Commission

Commissioner Joseph Grist, Virginia Marine Resources Commission, Menhaden Management Advisory Committee

From: Megan La Peyre
Associate Dean of Research & Advisory Services

Date: October 6, 2026

Re: Fiscal Year 2027 Scope of Work on Developing a Scientifically and Ecologically Meaningful Harvest Cap for Atlantic Menhaden in Chesapeake Bay

This report is submitted in compliance with Item 145.Q of HB30 Item 145 (VIMS) Educational and General Programs. HB30 - Reenrolled which required:

Q. 1. Out of this appropriation, \$1,000,000 the first year and \$1,000,000 the second year from the general fund is designated for Atlantic menhaden research and reporting. This funding shall be used for Atlantic menhaden research necessary to inform a scientifically defensible and ecologically meaningful Chesapeake Bay harvest cap. This report will be generated by the Virginia Institute of Marine Science (VIMS) in collaboration with the Virginia Marine Resources Commission, and with the cooperation of relevant stakeholders, including recreational anglers, the reduction and bait fishery sectors, and non-governmental organizations. VIMS will create an annual proposal to draw from this funding, until delivery of the final report that provides an approach to setting a scientifically-defensible Chesapeake Bay harvest cap. The development of this approach may be informed by research on (i) the seasonal abundance of Atlantic menhaden in the Chesapeake Bay; (ii) the movement rates of Atlantic menhaden between the Atlantic coast and the Chesapeake Bay; (iii) the impacts of predator (e.g. striped bass, osprey, and other species) demand and consumption of Atlantic menhaden on the Atlantic menhaden population; (iv) the spatial and temporal patterns of the Atlantic menhaden commercial fishing effort in the

Chesapeake Bay; (v) and the possibility of localized depletion of Atlantic menhaden in the Chesapeake Bay. This work can utilize recommendations from the report delivered October 1, 2023, titled "Atlantic Menhaden Research Planning" and/or the expected December 2026 deliverables from the SCEMFIS-funded project titled "Development of a Research Roadmap for Atlantic Menhaden in the Chesapeake Bay."

2. The Virginia Department of Workforce Development and Advancement and the Virginia Economic Development Authority, in consultation with the Menhaden Management Advisory Committee of the Virginia Marine Resource Commission, will contribute analysis and recommendations to the Menhaden report on potential workforce impacts. Beginning with fiscal year 2028 and in subsequent fiscal years thereafter, the Virginia Marine Resource Commission shall provide new scientific data and research products generated under this item by the Virginia Institute of Marine Science, to inform the annual discussion and deliberations of Atlantic States Marine Fisheries Commission on any proposed changes to the coastwide or Chesapeake Bay total allowable catch levels. The committee report shall include (i) projected workforce impacts from coastwide and Chesapeake Bay changes in total allowable catch and (ii) recommendations for addressing impacts to workers by changes in total allowable catch.

3. VIMS shall present report progress, current findings and any recommendations, along with their annual proposal to draw from the menhaden funding for the following year to the Chairmen of the Senate Committee on Agriculture, Conservation and Natural Resources, the House Committee on Agriculture, Chesapeake and Natural Resources, the Secretary of Natural and Historic Resources, the Ecological Reference Points Workgroup of the Atlantic States Marine Fisheries Commission, and the Menhaden Management Advisory Committee of the Virginia Marine Resources Commission, yearly by October 1.

Should you have any questions about this report, please feel free to contact me at (804)684-7108 or mlapeyre@vims.edu.

**Developing a Scientifically Defensible and Ecologically Meaningful Harvest Cap
for Atlantic Menhaden in Chesapeake Bay**

Fiscal Year 2027

Progress Report

Submitted in response to Item 145.Q of the 2026-2028 Biennium Budget (HB30)

Virginia Institute of Marine Science

William & Mary

PREFACE

Item 145.Q of the 2026-2028 Biennium Budget directs the Virginia Institute of Marine Science to conduct scientific research supporting the development of a scientifically defensible and ecologically meaningful harvest cap for Atlantic menhaden in Chesapeake Bay.

The planned projects described in this report build upon recommendations contained in the 2023 Atlantic Menhaden Research Planning document and consider work completed on the forthcoming Atlantic Menhaden Research Roadmap supported through the Scientific Committee on Ecosystem Modeling for Fisheries Management and Sustainability (SCEMFIS).

This report presents the Fiscal Year 2027 scope of work designed by VIMS and approved by the Office of the Secretary of Natural and Historic Resources on September 8, 2026.

This report is submitted in compliance with Item 145Q of HB30 (Item 145 (VIMS) Educational and General Programs. HB30 - Reenrolled) requiring VIMS to submit a yearly report for each year of the two-year study. This is the first report documenting activities from July 1, 2026 through September 30, 2026.

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EXECUTIVE SUMMARY

Atlantic menhaden are a foundational forage species in Chesapeake Bay that support commercial fisheries and provide an important food source for numerous fish, bird, and marine mammal species. Effective management requires scientifically robust estimates of abundance, exploitation rates, predator consumption, and fishery distribution patterns.

In response to Item 145.Q of the 2026 Appropriation Act, VIMS will initiate a coordinated research program during FY2027 to address critical information needs related to Atlantic menhaden management in Chesapeake Bay.

Three major projects will be undertaken:

1. Development of a large-scale mark-recapture program to estimate abundance, exploitation rates, and exchange between Chesapeake Bay and coastal waters;
2. Quantification of predator consumption of Atlantic menhaden relative to stock size and harvest levels;
3. Analysis of reduction fishery distribution and effort patterns together with fisheries-independent indicators of abundance.

Collectively, these projects will provide scientifically defensible information necessary to evaluate future harvest management approaches and ecosystem impacts within Chesapeake Bay.

During the initial reporting period (July 1, 2026 through September 30, 2026), VIMS focused on establishing the scientific, administrative, and operational framework necessary to execute the multi-year study. Activities included personnel recruitment, procurement of tagging and detection equipment, development of collaborative agreements with fishery partners, and refinement of analytical methods for estimating Atlantic menhaden consumption by predators.

INTRODUCTION

The Commonwealth of Virginia has identified the need for improved scientific information regarding Atlantic menhaden populations, fishery harvest dynamics, and ecosystem interactions within Chesapeake Bay.

To address these needs, Item 145.Q directs VIMS to conduct research supporting development of a scientifically defensible and ecologically meaningful harvest cap for Atlantic menhaden in Chesapeake Bay.

The FY2027 work outlined below represents the initial phase of a multi-year research program designed to generate the biological and ecological information necessary to support future management decisions.

This scope of work, developed as three individual projects outlined below, was generated by the VIMS research team led by Dr. Rob Latour, PhD, Professor, and included Dr. James Gartland, Senior Research Scientist, and Dr. Gina Ralph, Assistant Research Scientist.

VIMS will continue implementation of this research program and will provide annual updates on progress, findings, recommendations, and future funding proposals as required by Item 145.Q.

PROGRESS DURING FY2027 (July 1, 2026 through September 30, 2026)

During this initial period, VIMS has worked to establish the scientific framework, and initiated necessary operational infrastructure to support the Atlantic menhaden research program, including:

- development of scope of work, detailing three individual projects (detailed below), to address the identified priorities,
- recruitment and hiring of personnel needed for this work,
- procurement of necessary equipment and supplies for the tagging and vessel-tag detection work,
- development of an MOU for work with different parties involved in the study, and
- development of methods to update menhaden consumption estimation,
- Development of a spend plan that supports:
 - Personnel
 - PIT tags and detection equipment
 - Supplies for field data collection
 - Vessel operations
 - Data management
 - Statistical analysis

These efforts are intended to provide scientifically rigorous information for future consideration by Commonwealth resource managers and policymakers.

PROJECT 1: Quantifying Atlantic Menhaden Exploitation Rate, Abundance, and Bay-Ocean Exchange Through Mark-Recapture Methods

This project will require multiple years of field sampling (2027, 2028) in order to collect the data to quantify exploitation rates, abundance and bay-ocean exchange through mark-recapture methods.

VIMS will initiate a large-scale mark-recapture program for Atlantic menhaden in FY27, addressing Item 145.Q.1 priorities (i) and (ii).

Staff will collaborate with the commercial bait and reduction fisheries operating in the Chesapeake Bay and coastal ocean to capture, tag, and release at least 50,000 Atlantic menhaden prior to July 2027.

Fish will be marked with Passive Integrated Transponder (PIT) tags, and staff will work with Ocean Harvesters and Omega Protein to install equipment on their vessels and in their plant to record recaptures. Data on the number and locations of all fish tagged and those recaptured by the reduction fishery, along with reduction catch, will yield reduction exploitation rates, bay abundance, and bay-ocean exchange. Data on commercial bait catch will be coupled with these bay abundance estimates to quantify bait fishery exploitation rates.

Additional tagging will be needed in subsequent years to increase sample sizes and characterize the full fishing season.

PROJECT 2: Evaluating Predator Consumption of Atlantic Menhaden Relative to Harvest and Stock Size

This project will require multiple years of field sampling (FY2027-FY2028) to quantify predator consumption of Atlantic menhaden across seasons and habitats within Chesapeake Bay. This project addresses priority (iii) of Item 145.Q of the 2026-2028 Biennium Budget (HB30).

Initial efforts to quantify Atlantic menhaden consumption by predators will rely on extant data on fish predator diet composition and abundance in the mainstem of the bay provided by the VIMS Chesapeake Bay Multispecies Monitoring & Assessment Program.

The VIMS Juvenile Fish & Blue Crab Program will expand sampling in FY27 to include fish diet collections in the tributaries. This sampling will need to continue into FY28 to capture predation across all seasons. Staff will collect additional fish diet samples from recreational fishers and partner with federal agencies to acquire seabird (inc. osprey) and marine mammal abundance and diet data.

Consumption will be estimated using multivariate statistical spatiotemporal models and compared with harvest and stock size, addressing Item 145.Q.1 priority (iii).

PROJECT 3: Characterizing Spatiotemporal Patterns of Atlantic Menhaden Reduction Fishery Effort and Relative Abundance Trends

This project will be initiated and can be completed in FY27. Data on the locations and timing of purse-seine sets by the reduction fishery in Chesapeake Bay will be acquired from Ocean Harvesters, NOAA Fisheries, and VMRC.

A statistical spatiotemporal modeling framework will be applied to these data to characterize annual and seasonal variability in the spatial distribution of reduction fishery effort in the bay. Results will yield insight on the availability of Atlantic menhaden to the fishery and address “intercept fishery” concerns, which aligns with Item 145.Q.1 priority (iv).

Atlantic menhaden catch data from fisheries-independent surveys operating in Chesapeake Bay will be modeled using generalized linear or additive models to characterize relative abundance trends.

CONCLUSION

During FY2027 (July 1, 2026 through September 30, 2026), VIMS initiated implementation of a multi-year research program designed to provide the scientific information necessary to inform development of a scientifically defensible and ecologically meaningful Atlantic menhaden harvest cap for Chesapeake Bay.

Initial activities focused on establishing personnel, partnerships, equipment, methodologies, scope of work and study design to support successful completion of the research.

VIMS will continue implementation during FY 2027 and FY2028 and will provide annual updates are required under Item 145.Q.

APPENDIX A. Legislative Mandate

Item 145.Q Legislative Mandate Item 145 (VIMS) Educational and General Programs. HB30 - Reenrolled

Q. 1. Out of this appropriation, \$1,000,000 the first year and \$1,000,000 the second year from the general fund is designated for Atlantic menhaden research and reporting. This funding shall be used for Atlantic menhaden research necessary to inform a scientifically defensible and ecologically meaningful Chesapeake Bay harvest cap. This report will be generated by the Virginia Institute of Marine Science (VIMS) in collaboration with the Virginia Marine Resources Commission, and with the cooperation of relevant stakeholders, including recreational anglers, the reduction and bait fishery sectors, and non-governmental organizations. VIMS will create an annual proposal to draw from this funding, until delivery of the final report that provides an approach to setting a scientifically-defensible Chesapeake Bay harvest cap. The development of this approach may be informed by research on (i) the seasonal abundance of Atlantic menhaden in the Chesapeake Bay; (ii) the movement rates of Atlantic menhaden between the Atlantic coast and the Chesapeake Bay; (iii) the impacts of predator (e.g. striped bass, osprey, and other species) demand and consumption of Atlantic menhaden on the Atlantic menhaden population; (iv) the spatial and temporal patterns of the Atlantic menhaden commercial fishing effort in the Chesapeake Bay; (v) and the possibility of localized depletion of Atlantic menhaden in the Chesapeake Bay. This work can utilize recommendations from the report delivered October 1, 2023, titled "Atlantic Menhaden Research Planning" and/or the expected December 2026 deliverables from the SCMFIS-funded project titled "Development of a Research Roadmap for Atlantic Menhaden in the Chesapeake Bay."

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APPENDIX B. Authorization

Attached.

From: [Kotula, Adrienne \(GOV\)](#)
To: [D. Derek Aday](#); [Bulova, David \(GOV\)](#); [Grist, Joseph \(MRC\)](#)
Cc: [Megan La Peyre](#); [David Rudders](#); [Mason, Monty](#); [Jeff Palmore](#); [Sally A. Brooks](#)
Subject: Re: menhaden and oyster docs
Date: Tuesday, September 8, 2026 2:44:52 PM
Attachments: [Menhaden_VIMS_SNHR_Reviewed_Scope_of_Work_September_2026_Amended.pdf](#)

[EXTERNAL to VIMS received message]

Thanks, Derek. Attached is the "approved" FY27 Scope of Work. The only substantive change is referencing the final state budget line item, versus the introduced amendment.



Adrienne F. Kotula

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FY2027 Scope of Work: Virginia Institute of Marine Science
Developing a Scientifically Defensible & Ecologically Meaningful Harvest Cap for
Atlantic Menhaden in Chesapeake Bay

William & Mary's VIMS & Batten School – July 2026

Background

This scope of work responds to Item 145.Q of the 2026-2028 Biennium Budget (HB30), which became law on July 1, 2026. The research projects outlined below are rooted in the “Atlantic Menhaden Research Planning” document submitted to the Virginia General Assembly in 2023 and forthcoming SCMFIS-funded “Atlantic Menhaden Research Roadmap”. Projects 1 and 2 require multiple years of field sampling, while Project 3 can be completed in FY27.

Project 1 – Quantify the exploitation rate and abundance of Atlantic menhaden in Chesapeake Bay, along with bay-ocean exchange rates, using mark-recapture methods

VIMS will initiate a large-scale mark-recapture program for Atlantic menhaden in FY27, addressing **Item 145.Q.1 priorities (i) and (ii)**. Staff will collaborate with the commercial bait and reduction fisheries operating in the Chesapeake Bay and coastal ocean to capture, tag, and release at least 50,000 Atlantic menhaden prior to July 2027. Fish will be marked with Passive Integrated Transponder (PIT) tags, and staff will work with Ocean Harvesters and Omega Protein to install equipment on their vessels and in their plant to record recaptures. Data on the number and locations of all fish tagged and those recaptured by the reduction fishery, along with reduction catch, will yield reduction exploitation rates, bay abundance, and bay-ocean exchange. Data on commercial bait catch will be coupled with these bay abundance estimates to quantify bait fishery exploitation rates. Additional tagging will be needed in subsequent years to increase sample sizes and characterize the full fishing season.

Project 2 – Evaluate predator consumption of Atlantic menhaden in Chesapeake Bay relative to harvest and stock size

Initial efforts to quantify Atlantic menhaden consumption by predators will rely on extant data on fish predator diet composition and abundance in the mainstem of the bay provided by the VIMS Chesapeake Bay Multispecies Monitoring & Assessment Program. The VIMS Juvenile Fish & Blue Crab Program will expand sampling in FY27 to include fish diet collections in the tributaries. This sampling will need to continue into FY28 to capture predation across all seasons. Staff will collect additional fish diet samples from recreational fishers and partner with federal agencies to acquire seabird (inc. osprey) and marine mammal abundance and diet data. Consumption will be estimated using multivariate statistical spatiotemporal models and compared with harvest and stock size, addressing **Item 145.Q.1 priority (iii)**.

Project 3 - Characterize spatiotemporal patterns of Atlantic menhaden reduction fishery effort in Chesapeake Bay, and evaluate relative abundance trends derived from fisheries-independent surveys

Data on the locations and timing of purse-seine sets by the reduction fishery in Chesapeake Bay will be acquired from Ocean Harvesters, NOAA Fisheries, and VMRC. A statistical spatiotemporal modeling framework will be applied to these data to characterize annual and seasonal variability in the spatial distribution of reduction fishery effort in the bay. Results will yield insight on the availability of Atlantic menhaden to the fishery and address “intercept fishery” concerns, which aligns with **Item 145.Q.1**

priority (iv). Atlantic menhaden catch data from fisheries-independent surveys operating in Chesapeake Bay will be modeled using generalized linear or additive models to characterize relative abundance trends.

Approved by the Office of the Secretary of Natural and Historic Resources – September 8, 2026 - AFK