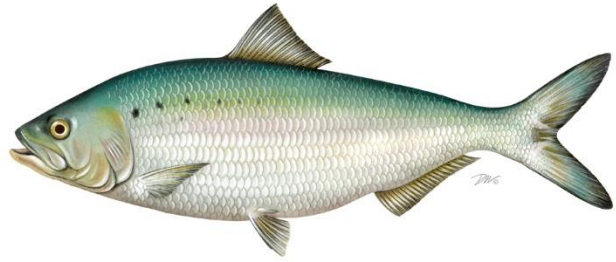


## INTERSTATE FISHERIES MANAGEMENT PROGRAM OVERVIEW

# *Shad and River Herring*



### **Management Unit**

Coastwide (Maine through Florida)

### **Stock Status**

The abundance of the American shad coastwide metapopulation is considered depleted, and adult mortality status for the American shad coastwide metapopulation is unknown ([2020 benchmark stock assessment](#)). The overall coastwide population of river herring (alewife and blueback herring) on the US Atlantic coast is depleted to near historic lows ([2017 stock assessment update](#)). The “depleted” determination was used instead of “overfished” and “overfishing” because many factors, not just directed and incidental fishing, are contributing to the declining abundance of alewife and blueback herring.

### ***American Shad***

A comprehensive assessment of American shad stocks was completed in 2020. Of the 104 river systems identified, 77% were data poor and could not be evaluated. Of the remaining 23 systems included, only 8 had sufficient data available to make a status determination for either total mortality or abundance. At the coastwide metapopulation level, adult mortality status is unknown. At the system level, adult mortality was determined to be unsustainable for 3 stocks (Connecticut, Delaware, and Potomac) and sustainable for 5 stocks (Hudson, Rappahannock, York, Albemarle Sound, and Neuse). Abundance was determined to be depleted for one system (Hudson) and not depleted for one system (Albemarle Sound). For all other systems total mortality and abundance status could not be determined. Abundance of the coastwide metapopulation was determined to be depleted based on the decline in coastwide landings since the 1950s by more than an order of magnitude and a continued lack of consistent response in coastwide abundance to the 2005 management change (ocean intercept fishery closure).

The assessment also provided trends in young-of-year (YOY) and adult abundance for information on abundance changes since the 2005 management change (closure of the ocean-intercept fishery). For YOY indices, two systems experienced increasing trends while one system experienced a decreasing trend since 2005. All other systems experienced either no trend (8 systems), conflicting trends among indices (1 system), or had no data (11 systems). For adult indices, four systems experienced increasing trends while no systems experienced decreasing trends since 2005. All other systems experienced either no trend (11 systems), conflicting trends among indices (7 systems), or had no data (1 system). Additionally, the assessment concluded that 40% of historic shad spawning habitat along the Atlantic coast (including Canada) is currently obstructed by passage barriers, which may equate to a loss of more than a third of spawning adults. The recovery of American shad will need to address multiple factors

including improved monitoring, anthropogenic habitat alterations, predation by non-native predators, and exploitation by fisheries. An overview of the benchmark assessment can be found at

[http://www.asafc.org/uploads/file/5f43cfa5AmShadAssessmentOverview\\_Aug2020.pdf](http://www.asafc.org/uploads/file/5f43cfa5AmShadAssessmentOverview_Aug2020.pdf).

### ***River Herring***

A benchmark stock assessment for blueback herring and alewife was completed in 2024. River herring were assessed on a river-by-river basis where the data were available. The assessment found that the coastwide populations of both alewife and blueback herring were depleted relative to historic levels, with the habitat model indicating that overall productivity of all stock-regions for both species is lower than an unfished population in an unaltered landscape. The “depleted” determination was used instead of “overfished” and “overfishing” because of the many factors that have contributed to the declining abundance of river herring, which include not just directed and incidental fishing, but also habitat loss, predation, and climate changes. In terms of recent trends, there is no clear signal for either species across the coast. Even within the genetic stock-regions, trends in abundance and mortality differed from river to river, with some rivers showing increasing trends and low mortality rates, and others showing flat or declining trends and total mortality rates above the  $Z_{40\%SPR}$  reference point. Although very few significant trends overall were detected since 2009, the majority of indices of abundance for both alewife and blueback herring had a greater than 50% probability of being higher than they were when Amendment 2 was adopted. However, half of the blueback populations and 65% of the alewife populations had a greater than 50% chance of being above the  $Z_{40\%SPR}$  reference point, indicating total mortality on adult fish was too high.

ASMFC has not assessed the status of hickory shad stocks.

### **Involved States and Jurisdictions**

ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, DC, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS

### **Active Boards/Committees**

Shad & River Herring Management Board, Shad & River Herring Technical Committee, Shad & River Herring Plan Review Team, Shad & River Herring Advisory Panel

### **Chairs**

Board, Chair – Lynn Fegley (2/2023); Vice-Chair – Phil Edwards

Technical Committee, Chair – Wes Eakin (2/2023); Vice-Chair – Matthew Jargowsky

Advisory Panel, Chair – Pam Lyons Gromen (8/2011)

### **Staff Lead**

James Boyle, [jboyle@asmfc.org](mailto:jboyle@asmfc.org)

### **Management Plan History**

[Fishery Management Plan for American Shad and River Herrings \(October 1985\)](#)

Historically, shad and river herring (collectively, *alosesines*) were extremely important resources and supported very large commercial fisheries. Coastwide landings of American shad decreased

dramatically up through the 1970s. These large declines in commercial landings were perceived as an indication that management action would be required to restore alosine stocks. Therefore, members of ASMFC recommended the preparation of a FMP. ASMFC adopted this recommendation in 1981 and the FMP was completed in 1985. The FMP specifies recommended management measures, focusing primarily on regulating exploitation and enhancing stock restoration efforts. At the time of the FMP, implementation of its recommendations were at the discretion of the individual states and ASMFC did not have direct regulatory authority over individual state fisheries. ASMFC approved a supplement to the FMP in 1988 ([1988 Supplement to American Shad and River Herrings Fishery Management Plan](#)); it documents changes to management recommendations and research priorities based on new research findings.

#### [Amendment 1 to the Interstate Fishery Management Plan for Shad & River Herring \(April 1999\)](#)

The Management Board determined that the original FMP was no longer adequate for protecting or restoring the remaining shad and river herring stocks and so they developed Amendment 1. The goal of Amendment 1 is to protect, enhance, and restore East Coast migratory spawning stocks of American shad, hickory shad, and river herring in order to achieve stock restoration and maintain sustainable levels of spawning stock biomass. The major objectives of Amendment 1 are: (1) prevent overfishing of American shad stocks by constraining fishing mortality below  $F_{30}$ ; (2) develop definitions of stock restoration, determine appropriate target mortality rates and specify rebuilding schedules for American shad populations within the management unit; (3) maintain existing or more conservative regulations for hickory shad and river herring fisheries until new stock assessments suggest changes are necessary; (4) promote improvements in degraded or historic alosine habitat throughout the species range; and (5) establish criteria, standards, and procedures for plan implementation as well as determination of state compliance with management plan provisions.

#### [Technical Addendum #1 \(February 2000\)](#)

Technical Addendum #1 was adopted to correct and clarify the monitoring requirements in Amendment 1, Tables 2 and 3.

#### [Addendum I \(August 2002\)](#)

Addendum I changes the conditions for marking hatchery-reared alosines. It also clarifies the definition and intent of *de minimis* status for the American shad fishery. It further modifies and clarifies the monitoring requirements in Tables 2 and 3 of Technical Addendum #1.

#### [Amendment 2 to the Interstate Fishery Management Plan for Shad and River Herring \(River Herring\) \(May 2009\)](#)

The Management Board chose to develop Amendment 2 because, while there was no current assessment of river herring, there was concern that the species were in decline coastwide. In response to declining river herring stocks within their own waters, four states—Massachusetts, Rhode Island, Connecticut, and North Carolina—closed their river herring fisheries. River herring stocks are a multi-jurisdictional resource both while in-river (e.g., Connecticut River, Roanoke River) and in the ocean. Amendment 2 prohibits commercial and recreational fisheries in state

waters beginning January 1, 2012, unless a state or jurisdiction develops and submits for approval a sustainable management plan by January 1, 2010. The plans are subject to Technical Committee review and Board approval prior to the fishing year beginning January 1, 2012. Amendment 2 also requires fishery-independent and -dependent monitoring for certain systems and contains recommendations to member states and jurisdictions to conserve, restore, and protect critical river herring habitat. The Board has approved sustainable fishing plans from Maine, New Hampshire, Massachusetts, New York, and South Carolina. Alternative Management Plans have been approved for South Carolina, Georgia, and Florida. The plans are available on the Commission website at <http://www.asmfc.org/species/shad-river-herring>.

### [Amendment 3 to the Interstate Fishery Management Plan for Shad and River Herring \(American Shad Management\) \(February 2010\)](#)

The Amendment establishes a coastwide commercial and recreational moratorium, with exceptions for sustainable systems. Sustainability is determined through state-specific management plans, and applies to systems that demonstrate their commercial and/or recreational fishery will not diminish the potential future stock reproduction and recruitment. The Amendment allows for any state or jurisdiction to keep their waters open to a catch and release recreational fishery. States or jurisdictions without an approved sustainability management plan in place by January 1, 2013 will be closed (with the exception of catch and release recreational fisheries). The Board has approved sustainable fishing plans for Maine, Massachusetts, Connecticut, the Delaware River Basin, the Potomac River Fisheries Commission, North Carolina, South Carolina, Georgia and Florida. An Alternative Management Plan has been approved for Florida. The plans are available on the Commission website at <http://www.asmfc.org/species/shad-river-herring>.

The Amendment was developed in response to the findings of the 2007 benchmark stock assessment for American shad, which indicate that American shad stocks are currently at all-time lows and do not appear to be recovering. It identified the primary causes for the continued stock declines as a combination of excessive total mortality, habitat loss and degradation, and migration and habitat access impediments. Although improvement has been seen in a few stocks, many remain severely depressed compared to historic levels.

To improve data collection, the Amendment implements additional required fisheries-independent and dependent monitoring for some states or jurisdictions. This includes monitoring of juvenile and adult American shad stocks; hatchery production; and commercial, recreational, and bycatch fisheries. Additionally, the Amendment increases coordination of monitoring activities for river systems under shared jurisdictions, as well as between freshwater and marine agencies.

Amendment 3 also requires states and jurisdictions to submit a habitat plan regardless of whether their commercial fishery would remain open. The habitat plans outline current and historical spawning and nursery habitat, threats to those habitats, and habitat restoration programs in each of the river systems. The purpose of the habitat plans is to characterize threats to shad in each river system to aid in future management efforts and collaboration with

other state and federal agencies (e.g., state inland fish and wildlife agencies, water quality agencies, U.S. Army Corps of Engineers).

The two largest threats identified in the habitat plans were barriers to migration and a lack of information on the consequences of climate change. The habitat plans have been filed with the Federal Energy Regulatory Commission to ensure that shad habitat is considered when hydropower dams are licensed. They have also been shared with inland fisheries divisions to aid in habitat monitoring and restoration efforts. In February 2014, the Board approved habitat plans for Maine, New Hampshire, Massachusetts, Connecticut River, Rhode Island, Connecticut, Delaware River Basin, Maryland, District of Columbia, Pennsylvania, Virginia, North Carolina, South Carolina, Savannah River, Georgia, and Florida. It is anticipated that habitat plans will be updated every five years. The plans are available on the Commission website at <http://www.asmfc.org/species/shad-river-herring>.

### **Council Management Actions**

- The New England Fisheries Management Council (NEFMC) and the Mid-Atlantic Fisheries Management Council (MAFMC) have implemented bycatch caps in the Atlantic Herring fishery and the Atlantic Mackerel fishery, respectively, since 2014. Starting in 2016 the river herring/shad catch cap in the Atlantic Herring fishery was set at 361 metric tons. For 2019-2020, the initial river herring and shad catch cap for the Atlantic mackerel fishery was set at 89 metric tons. The cap could increase to the overall yearly catch cap if the fishery can land 10,000 metric tons of Atlantic mackerel before reaching the initial 89-mt catch cap in each year. The overall yearly river herring and shad catch cap was set at 129 mt in 2022 and maintained for the 2023 and 2024 fishing season.
- The NEFMC is currently developing Amendment 10 to the Atlantic Herring FMP and will consider management options to reduce shad and river herring bycatch. Final action is expected in late 2025 or early 2026.

### **Atlantic Coast River Herring Collaborative Forum (Previously the Technical Expert Working Group)**

In 2014, ASMFC and NOAA partnered to form the Technical Expert Working Group (TEWG), which included members with expertise in the fields of biology, ecology, fisheries, genetics, habitat, and climate change. In 2015 the TEWG completed and published a dynamic conservation plan to help restore river herring throughout its Atlantic coastal range, including important conservation efforts, critical data gaps, and monitoring and evaluating progress in achieving the goals. The effort built upon the many previous and ongoing efforts to further river herring conservation, including fisheries work by the [Mid-Atlantic Fishery Management Council](#) and the [New England Fishery Management Council](#), and habitat restoration by the [Atlantic Coastal Fish Habitat Partnership](#) and [The Nature Conservancy](#).

In 2020, TEWG leadership opened participation in the group to non-TEWG members, and changed the name of the group to the Atlantic Coast River Herring Collaborative Forum to reflect a new purpose: fostering information exchange and collaboration among river herring experts. In 2021, NOAA Fisheries received funding to update the 2015 Conservation Plan with

new information and a focus on river herring habitat. The [River Herring Habitat Conservation Plan](#) was published in May 2023.

### **Annual Events**

- Compliance reports are due July 1. The PRT reviews the compliance reports and prepares the FMP Review and PRT Report in July. The Coordinator presents the annual reports to the Management Board at their next meeting.
- The TC usually meets in the fall to review state compliance reports and monitoring.

### **Other Items of Interest**

- In 2013, river herring was petitioned to be considered under Endangered Species Act. NOAA Fisheries found listing river herring under the [Endangered Species Act](#) (ESA) as either threatened or endangered was not warranted. In June 2019, NOAA Fisheries completed a 5-year status review of river herring, and again found that listing neither alewife nor blueback herring under the ESA as either threatened or endangered was warranted at this time.