

Species Profile: River Herring

The States and Federal Government Seek to Reduce Mortality through Sustainable Fishery Management Plans and Bycatch Reduction Measures

Introduction

The Fishery Management Plan (FMP) for Shad and River Herring, approved in 1985, was among the first FMPs to be developed by the Commission. Since that time, the Commission has undertaken three major amendments to the 1985 Plan. Amendment 2, approved in 2009, shepherded in a new management regime for these important prey species; one which required Atlantic coastal states and jurisdictions to document the sustainability of their fisheries or prohibit recreational and commercial fishing for river herring.

A migratory species that traverses both state and federal waters, the Commission has also worked closely with the New England and Mid-Atlantic Fishery Management Councils (MAFMC and NEFMC, respectively) to reduce the bycatch of river herring in small mesh fisheries. The Councils are moving forward with developing and establishing catch caps to reduce incidental harvest of river herring.

Life History

River herring, which is the collective term for alewife and blueback herring, are an anadromous fish that spend the

majority of their adult lives at sea, but return to freshwater areas to spawn in the spring. Alewife spawn in rivers, lakes, and tributaries from northeastern Newfoundland to South Carolina, but are most abundant in the Northeast and Mid-Atlantic. Blueback herring prefer to spawn in swift flowing rivers and tributaries from Nova Scotia to northern Florida, but are most numerous in waters from Chesapeake Bay south.

Mature alewife (ages three to eight) and blueback herring (ages three to six) migrate rapidly downstream after spawning. Juveniles remain in tidal freshwater nursery areas in spring and early summer, but may also move upstream with the encroachment of saline water. As water temperatures decline in the fall, juveniles move downstream to more saline waters. Little information is available on the life history of juvenile and adult river herring after they emigrate to the sea and before they mature and return to freshwater to spawn.

Commercial and Recreational Fisheries

River herring formerly supported significant commercial and recreational fisheries throughout their range. Fisheries were traditionally executed in rivers, estuaries, and coastal waters using weirs, traps, dip nets, and gill nets. Although recreational harvest data are scarce, most harvest is believed to come from the commercial industry.

Species Snapshot

ALEWIFE

Alosa pseudoharengus



General Characteristics:

- Adults average 10-11" in length; 8-9 oz. in weight
- Range from Nova Scotia to South Carolina
- Primarily feed on plankton
- Congregate in large schools, numbering in the thousands
- Excellent food fish, marketed both fresh and salted

Interesting Facts:

- In the US, alewife are known as sawbelly, grayback, bigeye, and freshwater and spring herring. In Canada they are known as gaspereau or kiack.
- The origin of the name alewife is a reference to the large belly of the fish, which reminded New England fishermen of alehouse wives.
- The Latin name *pseudoharengus* means "false herring."



BLUEBACK HERRING

Alosa aestivalis

General Characteristics:

- Adults average 11" in length; 7 oz. in weight
- Range from Nova Scotia to Northern Florida
- Primarily feed on plankton
- Name derived from dark blue/bluish gray coloring on back

Interesting Facts:

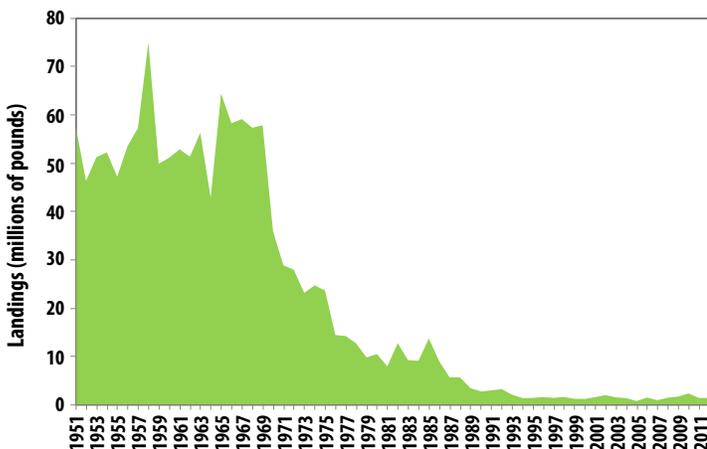
- Blueback herring are also known as a summer herring or blackbelly.
- Blueback herring have teeth on the roof of their mouths, while alewife do not. The teeth disappear with age.

Stock Status:

- Varies by river system for both species, refer to Table 1.
- Both species are classified as a *Species of Concern* by NOAA Fisheries.
- Both species are currently being considered for listing under the Endangered Species Act.

Atlantic Coast River Herring Landings

Source: personal communication from NOAA Fisheries Statistics Division, Silver Spring, MD 2013



Timeline of Management Actions: FMP ('85); Amendment 1 ('99); Addendum I ('00); Amendment 2 - River Herring ('09)

Commercial landings for both species have declined dramatically from historic highs. Landings by domestic and foreign fleets peaked at 140 million pounds in 1969. Since 2000, domestic landings totaled less than two million pounds in any given year, with a historic low of 736,000 pounds occurring in 2005. Landings in 2011 were estimated at 1.5 million pounds, a 27% decrease from 2010 levels. The majority of these landings occurred in Maine.

Stock Status

In 2012, an independent panel of scientists endorsed the findings of the benchmark stock assessment for river herring, concluding the overall coastwide population of river herring (alewife and blueback herring) stocks on the US Atlantic coast is depleted to near historic lows. 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 change.

The stock assessment used both fishery-dependent and -independent data as well as information about river herring biology and life history. The assessment included historical landings back to 1887, although the fisheries that target river herring date back to colonial times. The quality of the data has improved as reporting requirements have been implemented. The assessment examined run size indices from five states, young-of-year indices from 10 states, adult net and electrofishing indices from three states, and 19 fishery-independent trawl surveys conducted in coastal waters. The fishery-independent data sets represent a relatively short time series, compared to the long history of the fishery, and all of them were initiated after the peak and sharp decline in landings.

River herring were assessed on a river-by-river basis where the data were available. For the vast majority of rivers, the data were not available to conduct a model-based stock assessment. Instead, trend analysis was used to identify patterns in the available fishery-dependent and -independent data sets. Of the 52 stocks of alewife and blueback herring for which data were available, 23 were depleted relative to historic levels, one stock was increasing, and the status of 28 stocks could not be determined because the time-series of available data was too short.

Atlantic Coastal Management

In 2009, in response to concerns regarding declining river herring populations, the Commission’s Shad and River Herring Management Board approved Amendment 2 to the Interstate FMP. The Amendment has prohibited state waters commercial

State	River	Status Relative to Historic Levels/Recent Trends
ME	Damariscotta Union	Depleted ^A , Stable ^A Increasing ^A , Stable ^A
NH	Cocheco	Unknown ^{A,B} , Stable ^{A,B}
	Exeter	Depleted ^A , Increasing ^A
	Lamprey	Depleted ^A , Unknown ^A
	Oyster Taylor Winnicut	Depleted ^B , Stable ^B Depleted ^B , Decreasing ^B Depleted ^{A,B} , Unknown ^{A,B}
MA	Mattapoisett Monument	Depleted ^A , Unknown ^A
	Parker	Depleted ^A , Unknown ^A
	Stony Brook	Depleted ^A , Unknown ^A
RI	Buckeye	Depleted ^A , Unknown ^A
	Gilbert Nonquit	Depleted ^A , Decreasing ^A Depleted ^A , Decreasing ^A
CT	Connecticut	Depleted ^B , Decreasing ^B
NY	Hudson	Depleted ^{A,B} , Stable ^{A,B}
MD, DE	Nanticoke	Depleted ^{A,B} , Decreasing ^{A,B}
VA, MD, DC	Potomac	Depleted ^{A,B} , Unknown ^{A,B}
NC	Chowan	Depleted ^{A,B} , Stable ^{A,B}
SC	Santee-Cooper	Depleted ^B , Increasing ^B

Table 1. Status of select alewife and blueback herring stocks along the Atlantic coast. Status relative to historic levels is pre-1970. Recent trends reflect last ten years of data. A=Alewife only; B=Blueback herring only; A,B=Alewife and blueback herring by species

and recreational fisheries since January 1, 2012, unless a state or jurisdiction had a Board approved sustainable management plan. A sustainable fishery is defined as “a commercial and/or recreational fishery that will not diminish the potential future stock reproduction and recruitment.” The plans must describe sustainability targets that are achieved to prevent closure of the fishery. Plans have currently been approved for Maine, New Hampshire, New York, North Carolina, and South Carolina. Amendment 2 also requires states to implement fishery-dependent and independent monitoring programs and contains recommendations to member states and jurisdictions to conserve, restore, and protect critical river herring habitat.

Federal Action

In support of the sustainable management actions taken by the Commission, both the MAFMC and NEFMC have recently taken actions regarding the incidental catch of river herring and American shad in federal waters fisheries (3-200 miles from shore). In May, MAFMC approved a 236 metric ton (520,380 pound) cap on incidental catch of river herring and shad in the U.S. Atlantic

mackerel fishery for 2014. This catch cap is one of several protective measures being implemented as part of Amendment 14 to the Atlantic Mackerel, Squid, and Butterfish FMP. The Amendment also calls for increased reporting and monitoring requirements for fishermen and dealers. At its June meeting, NEFMC moved forward with the development of river herring and shad catch caps through Draft Framework 3 to Amendment 5 to the Atlantic Herring FMP. The goal of the proposed catch cap is to provide strong incentives for the industry to continue to avoid and reduce the catch of these species to the extent practicable. If approved, the catch cap would apply to all trips landing more than the open access possession limit of 6,600 pounds of Atlantic herring.

Endangered Species Petition

In August 2011, the National Resources Defense Council petitioned NOAA Fisheries to list alewife and blueback herring as threatened under the Endangered Species Act. NOAA Fisheries reviewed the petition and found that listing may be warranted. In 2012, NOAA Fisheries conducted a series of workshops to gather more information on the status of and threats to river herring. The workshops focused on stock structure, extinction risk, and the potential impact of climate change. A proposed rule on the potential listing is expected this year.

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