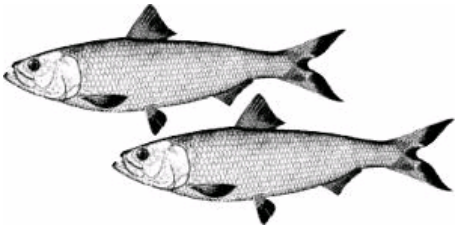

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River Herring

by

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Distribution, Biology and Management

"River herring" is a term applied collectively to alewife, *Alosa pseudoharengus*, and blueback herring, *Alosa aestivalis*. The range of the alewife extends from Labrador to South Carolina (Figure 38.1), while the range of the blueback herring is from Nova Scotia to Florida (Figure 38.2). In coastal rivers where the distributions of the two species overlap, the fisheries are typically mixed. Both species are anadromous, migrating upriver to spawn during spring. Alewives can live as long as 10 years and may reach a maximum length of 36 cm (14 in.). Blueback herring may live for about 7 or 8 years and can reach a maximum size of about 32 cm (13 in.).

Alewives spawn in spring when water temperatures are between 16^{o} C and 19^{o} C; blueback herring spawn later in spring, when water temperatures are about 5^{o} C warmer. Fecundity and age at maturity for both species are similar. Between 60,000 and 300,000 eggs are produced per female; most individuals are sexually mature at age 4.

River herring are managed by the Atlantic States Marine Fisheries Commission (ASMFC) under a Fisheries Managemement Plan for American shad and river herring implemented in 1985 to facilitate cooperative management and stock restoration among the states. Restoration efforts have involved habitat improvement, fish passage, stocking, and transfer programs. The Fishery Management Plan was amended in 1999 and mandated that regulations be maintained for river herring and that more conservative measures be considered.

The Fishery

The river herring fishery is one of the oldest fisheries in North America and was an exclusively U.S. inshore fishery until the late 1960s when distant-water fleets began fishing for river herring off the Mid-Atlantic coast. Commercial landings in this fishery peaked in the late 1950s at nearly 34,000 mt before declining to less than 4,000 mt in the late 1970s. During the last decade

(1996-2005), annual landings have varied between 300 and 900 mt (Table 38.1; Figure 38.3). The principal methods of harvesting river herring are fish weirs, pound nets, and gill nets. Recreational fishing is minimal. Maine, North Carolina and Virginia typically have accounted for more than 90 percent of total landings. The profound decline in landings since the mid-1960s reflects marked declines in resource abundance. In addition, a great deal of historic spawning habitat remains unavailable.

Assessment Results and Biological Reference Points

While there has been no recent range-wide stock assessment performed for river herring, North Carolina Division of Marine Fisheries completed a stock assessment in May 2005 on the river herring in the Albemarle Sound Area and reported that increased mortality rates, decreased recruitment and reduced spawning stock biomass are key indicators of continued decline in the area. The stock status for other areas of the state and the rest of the Atlantic coast is unknown; however, population declines have also been reported by Connecticut, Rhode Island, and Massachusetts. In response to declining trends, these states have instituted moratoria on taking and possessing river herring and the National Marine Fisheries Service has listed river herring as Species of Concern throughout their range. Although specific factors responsible for the decline have not been identified, contributing threats most likely include loss and degradation of habitat, overfishing, and increased predation due to recovering striped bass populations.

Summary

River herring populations are well below historic levels of the mid 20th century most likely as a result of overfishing, habitat destruction, and predation. The assessment of river herring populations has been listed as a high research priority by the ASMFC. With the recent listing of river herring as Species of Concern, research efforts into the biology, habitat requirements and stock status of river herring should increase; the results will help achieve the management goal of restoring river herring to sustainable levels of abundance.

Table 38.1 Recreational and commercial landings of river herring (thousand metric tons).

Category	1986-95 Average	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
U. S. Recreational	-	-	-	-	-	-	-	-	-	-	-
Commercial											
United States	1.6	0.5	0.5	0.6	0.6	0.5	0.7	0.9	0.7	0.6	0.3
Canada	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-
Total Nominal Catch	1.6	0.5	0.5	0.6	0.6	0.5	0.7	0.9	0.7	0.6	0.3

For further information

ASMFC. 1999. Amendment I to the Interstate Fishery Management Plan for Shad & River Herring. April, 1999. Washington, D.C. Fisheries Management Report #35.

ASMFC. 2000. Technical Addendum I to Amendment 1 of the Interstate Fishery Management Plan for Shad and River Herring. 2000. Washington, D. C. Fisheries Management Report #35a.

ASMFC, 2002. Addendum I to Amendment 1 of the Interstate Fishery management Plan for Shad and River Herring. 2002. Washington, D. C. Fisheries Management Report #35b.

Collette, B.B., and G. Klein-MacPhee (ed.). 2002. Bigelow and Schroeder's Fishes of the Gulf of Maine. 3rd edition. Smithsonian Inst. Press. Washington, D.C.

Crecco, V.A., and M. Gibson. 1990. Stock assessment of river herring from selected Atlantic coast rivers. Atlantic States Marine Fisheries Commission, Washington, D.C. *ASMFC Spec. Rpt.* No. 19.

Munger, L., C. Patterson, R. St. Pierre, and S. Winslow. 2005. 2005 Review of the Atlantic States Marine Fisheries Commission Fishery Management Plan for Shad and River Herring (*Alosa* spp.). September, 2005. Washington, D. C.

North Carolina Division of Marine Fisheries. 2006. 2006 Draft North Carolina River Herring. June, 2006. Morehead City, NC.

Robbins, E., M. Hendricks, C. Patterson, and S. Winslow. 2006. Review of the Atlantic States Marine Fisheries Commission Fishery Management Plan for Shad and River Herring (Alosa spp.) 2006. October, 2006. Washington, D. C.

Street, M. and J. Davis. 1976. Notes on the river herring fishery of SA 6. ICNAF Res. Doc. 76/VI/61.

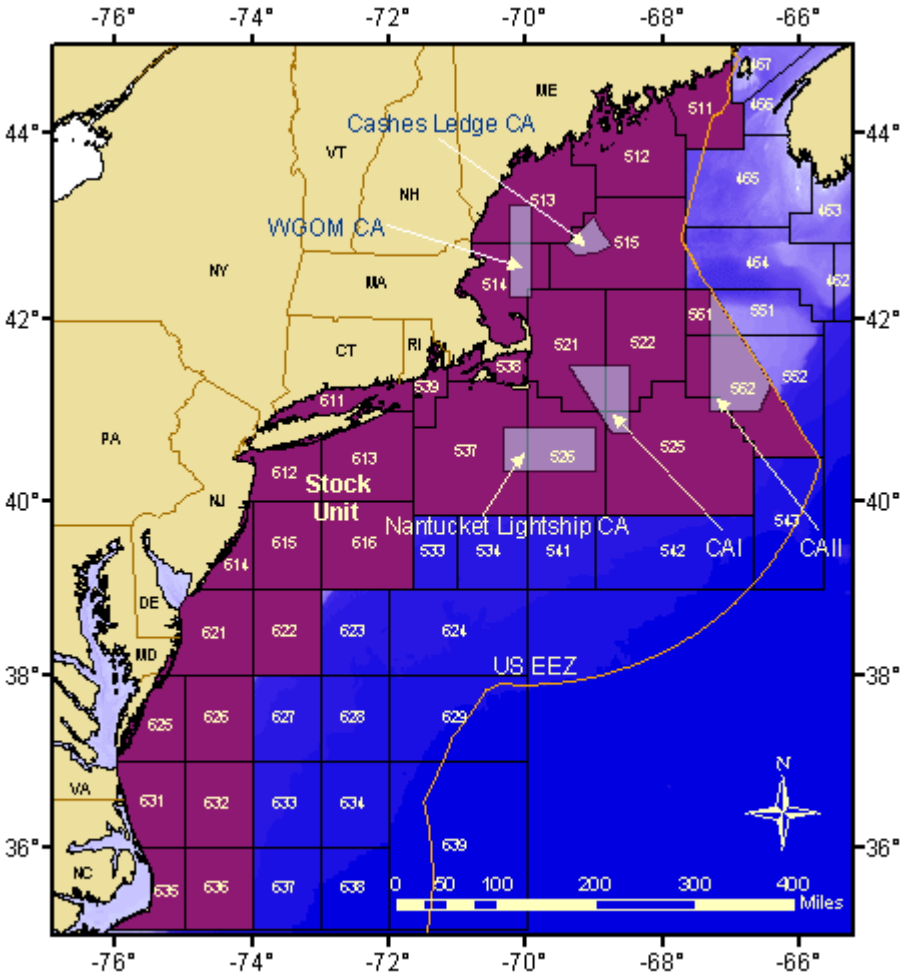

Figure 38.1. Statistical areas used to define the alewife stock.

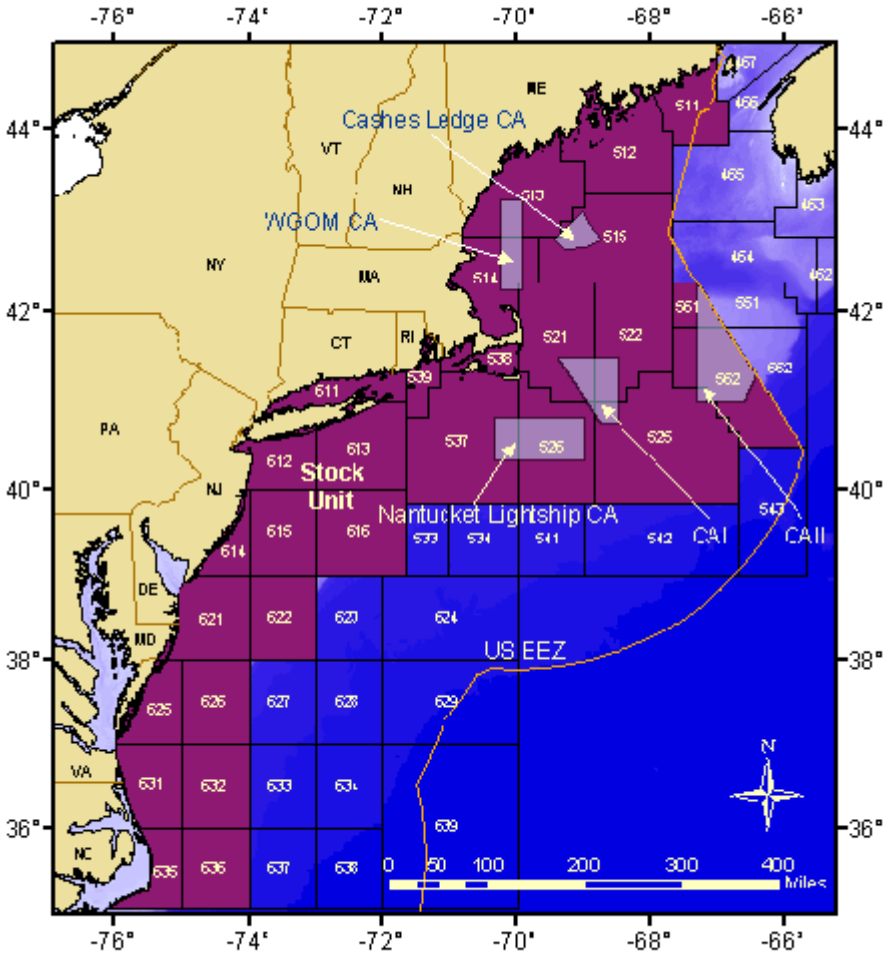

Figure 38.2. Statistical areas used to define the blueback herring stock.

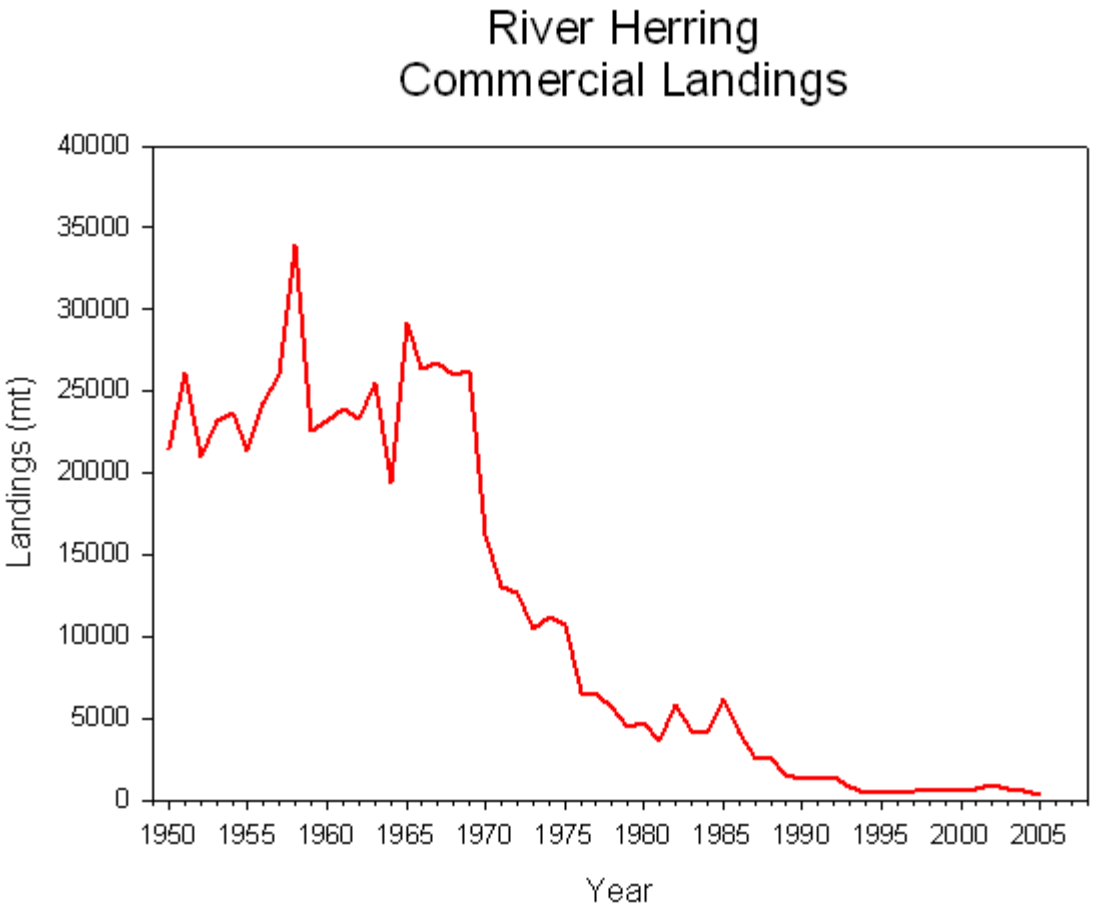

Figure 38.3. Commercial landings of River Herring, 1950-2005.