Shad & River Herring

Introduction

Species of shad and river herring once supported important commercial and recreational fisheries along the Atlantic coast. Today, these fisheries are just a fraction of what they were due to riverine habitat loss and fishing pressure. Through the actions of the 15 Atlantic coastal states, stocks have begun to come back slowly river by river. These actions include regulatory measures, stock monitoring programs, and stock enhancement through hatcheries.

Life History

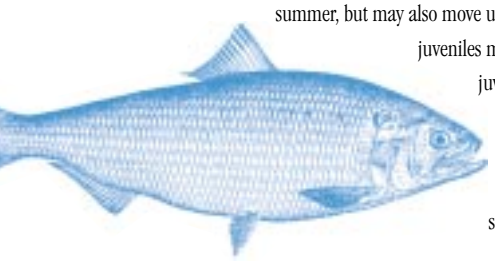
American Shad/Hickory Shad

American and hickory shad are anadromous fish that spend the majority of their adult life at sea, only entering freshwater in the spring to spawn. The percentage of shad that survive to spawn more than once decreases from north to south. Shad that spawn in more northerly rivers may survive to spawn again, while shad native to rivers south of Cape Fear, North Carolina die after spawning. Mature females (ages five & older) produce a large quantity of eggs that are released into the water column and are fertilized by mature males (ages four & older). American shad adults that exhibit repeat spawning return to the sea soon after spawning and migrate northward to summer feeding grounds in the Gulf of Maine.

Historically, American shad probably spawned in virtually every accessible river and tributary along the Atlantic coast. However, blockage of spawning rivers by dams and other impediments, and degradation of water quality has severely depleted suitable American shad spawning habitat. Hickory shad spawn in rivers and tributaries along the Atlantic coast from the Bay of Fundy, Canada, to the Tomoka River, Florida. After spawning, hickory shad return to the ocean, but their distribution and movements are essentially unknown. Fertilized eggs are carried by river currents, and eventually develop into larvae, which begin to feed four to seven days after hatching. Larvae drift downstream into tidal freshwater reaches of the spawning rivers, and gradually mature into juveniles. In early to late summer, juvenile shad migrate out of their nursery areas to the sea. Immature American shad will remain in the ocean for three to five years. With increasing water temperatures in the spring, mature American shad and hickory shad will migrate back to their native rivers to complete their life cycle.

Alewife/Blueback Herring

Alewife and blueback herring (collectively known as "river herring") are relatively small anadromous fish, spending most of their adult life at sea, but returning 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 Mid-Atlantic and the Northeast states. Blueback herring prefer to spawn in swift flowing rivers and tributaries from Nova Scotia to northern Florida, but are most numerous in warmer waters from Chesapeake Bay south. Mature alewife (ages three to eight) and blueback herring (ages three to six) migrate rapidly downstream after spawning. Larvae begin to feed three to five days after hatching, and transform gradually to the juvenile stage. 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 alewife and blueback herring after they emigrate to the sea as young-of-year or yearlings, and before they mature and return to freshwater to spawn.



These species are considered an important forage base for large nearshore predators, such as striped bass.

Commercial & Recreational Fisheries

Historically, American shad, hickory shad, and river herring supported important commercial and recreational fisheries throughout their range. Over the last 50 years, habitat loss and fishing pressure have resulted in historically low levels of abundance for all species. Concurrently, commercial landings for all species have also declined dramatically from historic highs. Limited commercial and recreational fisheries occur in rivers, estuaries, and oceans. Although recreational harvest data are scarce, most harvest is believed to come from the commercial industry.

Commercial landings of American and hickory shad combined peaked in the late 1950s at 11.7 million pounds, and have steadily declined since then to a low of one million pounds in 1999. For the last ten years (1990–2000), landings of both fisheries combined have averaged 1.5 million pounds. Likewise, commercial landings of Atlantic coast river herring reached historic highs in the late 1950s around 75 million pounds, and now total less than two million pounds a year.

American Shad
Alosa sapidissima

Hickory Shad
Alosa mediocris

Blueback Herring
Alosa aestivalis

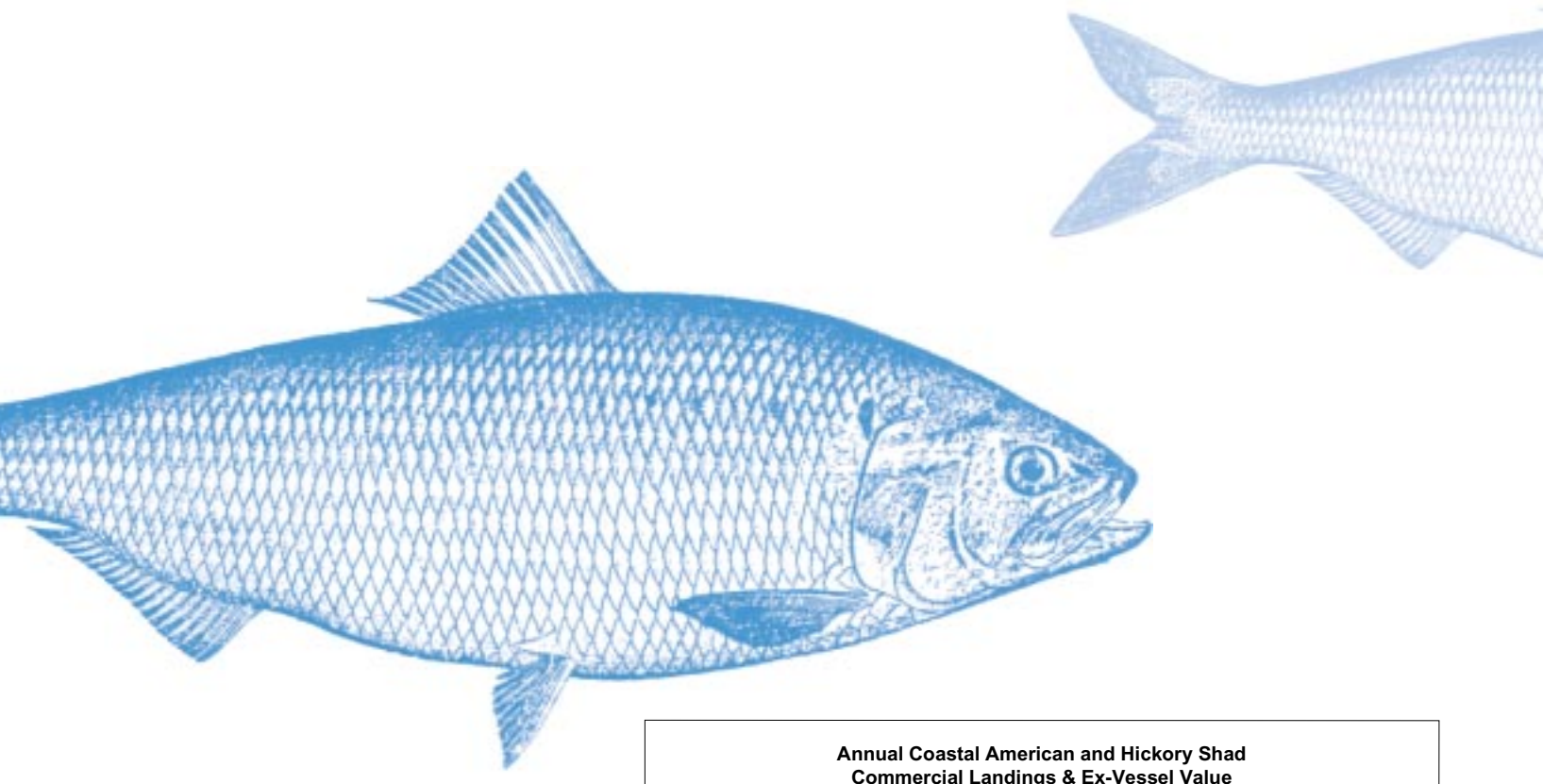
Alewife
Alosa pseudoharengus

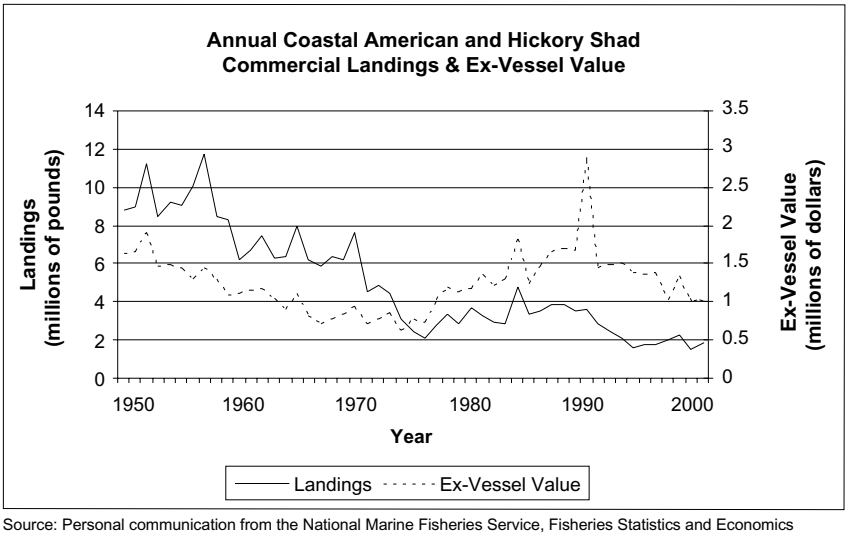
Family: Clupeidae
Common Names: white shad, herring, sawbelly; blueback herring and alewife are both known as river herring
Largest Recorded: American shad at 2 feet, 6 inches and 11 pounds, 4 ounces
Oldest Recorded: American shad at 13 years

Atlantic Coastal Management

All 15 Atlantic coastal states from Maine through Florida currently manage shad and river herring species under Amendment 1 to the Fishery Management Plan for American Shad and River Herring. Amendment 1 focuses primarily on American shad regulations and monitoring programs, but also requires states to initiate fishery-dependent monitoring programs for river herring and hickory shad, in addition to current fishery-independent programs. The goal of the monitoring programs is to improve data collection and stock assessment capabilities. Furthermore, Amendment 1 contains specific measures to control exploitation of American shad populations, while maintaining the status quo in other fisheries for hickory shad and river herring.

Amendment 1 contains three primary regulatory requirements. The first is a five-year phase out of the ocean intercept fishery, beginning January 1, 2000. States must achieve at least a 40 percent reduction in effort in the ocean intercept fishery by December 31, 2002 with total closure of fishery by December 31, 2004. The second requirement establishes a fishing mortality target for in-river fisheries, and calls for the maintenance of existing or more conservative regulations for river herring and hickory shad. Lastly, the Amendment implements an aggregate 10-fish daily creel limit in recreational fisheries for American shad and hickory shad, with all jurisdictions maintaining existing or more conservative recreational regulations for river herring.





Source: Personal communication from the National Marine Fisheries Service, Fisheries Statistics and Economics Division. Estimated ex-vessel value is reported in nominal terms and has not been corrected for inflation.