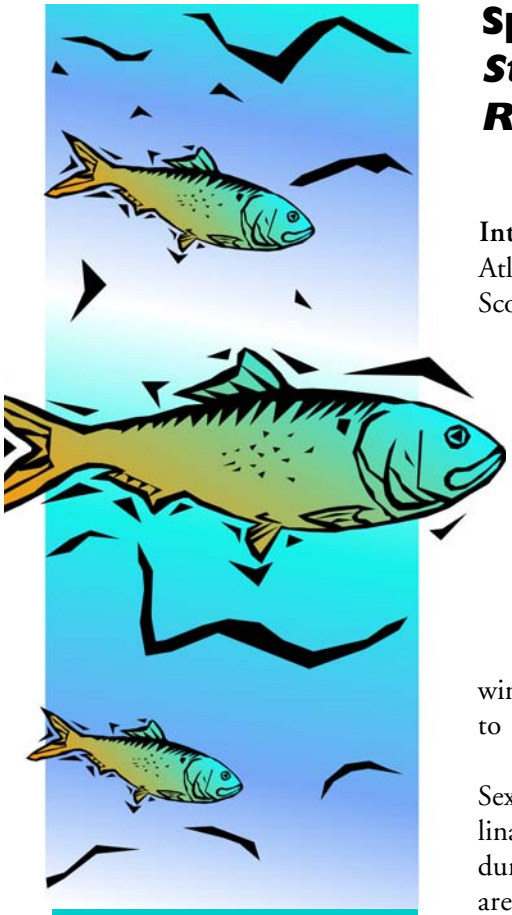


Species Profile: Atlantic Menhaden
Stock Healthy Coastwide, But Questions Remain Regarding Localized Stock Conditions

Atlantic Menhaden
Brevoortia tyrannus

Common Names: menhaden, bunker, mossbunker, pogy, fatback, bugfish, skipjack

Family: Clupeidae (includes herring, sardine and shad species)

Interesting Fact: Menhaden travel in large schools, which may number in the millions.

Special Uses: Fish meal, fish oil (high in omega-3 type fatty acids), fish solubles

Age at Recruitment: Fully recruited at age 2 (9 - 10", 1/2 lb.); 50% recruited at age 1 (6", 2 -3 oz.)

Life Span: 10 - 12 years, with maximum length/ weight of 20"/3 lbs.

Stock Status: Not overfished & overfishing is not occurring

Introduction

Atlantic menhaden are small, oily, schooling fish found from northern Florida to Nova Scotia. They serve a major ecological role as both a forage fish to larger predators and as a filter feeder. Atlantic menhaden have supported one of the United States' largest fisheries since colonial times.

Life History

Atlantic menhaden (*Brevoortia tyrannus*) are found in estuarine and coastal waters from northern Florida to Nova Scotia and serve as prey (food) for many fish, sea birds and marine mammals. Adult and juvenile menhaden form large, near-surface schools, primarily in estuaries and nearshore ocean waters from early spring through early winter. By summer, menhaden schools stratify by size and age along the coast, with older and larger menhaden found farther north. During fall-early winter, menhaden of all sizes and ages migrate south around the North Carolina capes to spawn.

Sexual maturity begins just before age three, with major spawning areas from the Carolinas to New Jersey. The majority of spawning occurs primarily offshore (20-30 miles) during winter. Buoyant eggs hatch at sea and larvae are carried into estuarine nursery areas by ocean currents. Juveniles spend most of their first year of life in estuaries, migrating to the ocean in late fall. Adult and juvenile menhaden migrate south in fall-winter, and adult menhaden migrate north in spring.

Menhaden feed by straining plankton from the water, their gill rakers forming a specialized basket to efficiently capture tiny food. Menhaden provide a link between primary production and higher organisms by consuming plankton and providing forage (food) for species such as striped bass, bluefish and weakfish, to name just a few.

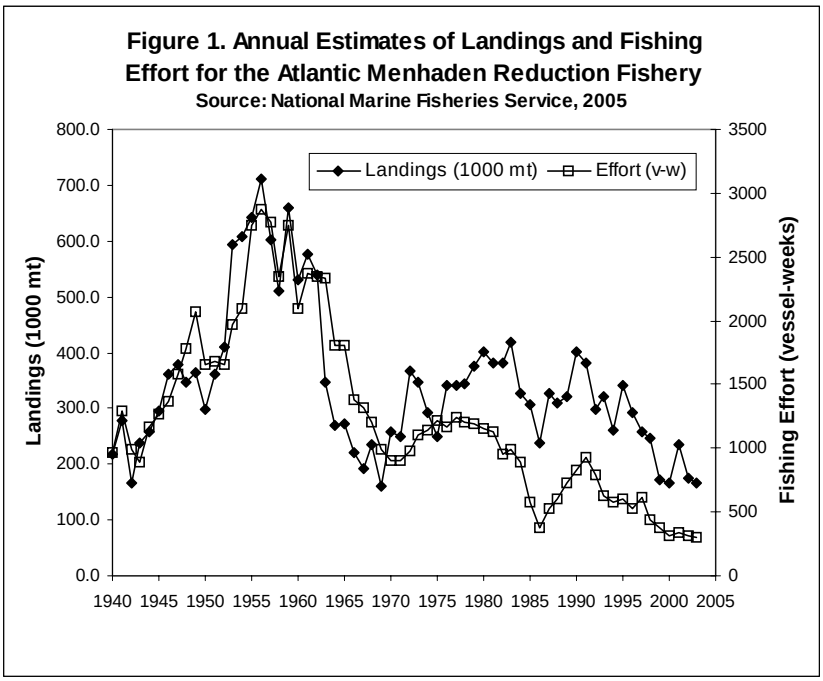
Commercial Fishery

The Atlantic menhaden commercial fishery consists of both a reduction fishery and a bait fishery. The reduction fishery first began in New England during the early 1800s and spread south after the Civil War. The purse seine was introduced after the Civil War allowing the fishery to expand. Major technological innovations led to further expansion of the fishery coastwide. As a result, landings and fishing effort increased from 1940 through the late 1950s, declined precipitously during the 1960s when the population was overfished, and then increased significantly during the late 1970s

Photo courtesy of National Oceanic and Atmospheric Administration, Dept. of Commerce

and early 1980s. Currently, there are two reduction plants on the Atlantic coast processing menhaden into fish meal and oil. The fish meal is used as fertilizer and animal feed. The fish oil is used in many commercial products and in omega-3 supplements for human health. The coastwide bait fishery supplies fishermen with bait for popular commercial and sport fish.

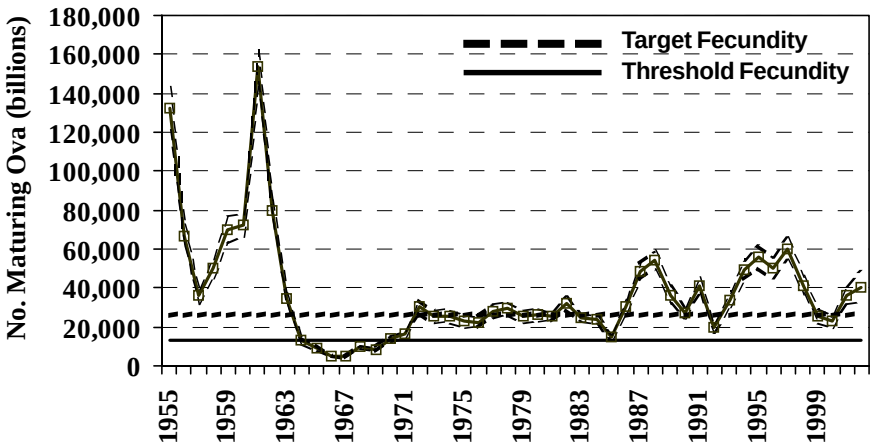
Figure 1. Annual Estimates of Landings and Fishing Effort for the Atlantic Menhaden Reduction Fishery
Source: National Marine Fisheries Service, 2005



The 2004 harvest of Atlantic menhaden for reduction was 184,450 metric tons, which was an increase from the 2003 season (166,097 mt), and 1.1 percent above average landings for the previous five years (182,475 mt).

A slight increase from recent years, 13 reduction purse-seine vessels landed Atlantic menhaden during the 2004 season. Two reduction plants operated in 2004 -- one in Reedville, Virginia with ten vessels, and one in Beaufort, North Carolina with three vessels. The bait fishery for menhaden has become increasingly more important from North Carolina to New England. The major portion of bait landings in recent years has been harvested from New Jersey and Virginia waters, followed by Maryland, North Carolina, Florida and the Potomac River.

Figure 2. Atlantic Menhaden Population Fecundity (no. of maturing ova)
Source: ASMFC Atlantic Menhaden Technical Committee, 2003



Status of the Stock

The 2003 peer-reviewed stock assessment found that on a coastwide basis Atlantic menhaden are not overfished and overfishing is not occurring.

In 2004, The Technical Committee reviewed Addendum 1 triggers (i.e., catch-per-unit-effort index and ratio of ages 2-4 to the total catch of all ages) to evaluate whether a stock assessment needed to be conducted before 2006. It concluded that neither trigger had been met. The Technical Committee will meet again in 2005 to reexamine the triggers and other relevant indices and make an assessment recommendation based on the available data.

Currently, the stock assessment can only evaluate the status of menhaden on a coastwide basis. The Technical Committee has developed a list of research priorities to examine the possibility of localized depletion in the Chesapeake Bay.

Atlantic Coastal Management Considerations

The Commission approved Amendment 1 to the Interstate Fishery Management Plan (FMP) for Atlantic Menhaden in 200. Management authority is vested in the states because the vast majority of landings come from state waters. The goal of Amendment 1 is "to manage the Atlantic menhaden fishery in a manner that is biologically, economically, socially and ecologically sound while protecting the resource and those who benefit from it." Amendment 1 established new overfishing/ overfished definitions based on fishing mortality and spawning stock biomass.

Addendum 1 to Amendment 1, approved in August 2004, revised the biological reference points, changed the frequency of stock assessments, and updated the habitat section. The new biomass target and threshold are based on fecundity (or the number of mature or ripe eggs/ova) instead of spawning stock biomass. A new fishing mortality target and threshold were

also adopted. Stock assessments will now take place every third year instead of annually. However, the Technical Committee is required to meet annually to review the previous year's landings and indices.

Recent Activities

In October 2004, the Commission held a workshop to examine the status of Atlantic menhaden with respect to its ecological role. This workshop was convened in response to a motion made by the Atlantic Menhaden Management Board in May 2004. Representatives from the environmental, recreational fishery, and the commercial fishery communities helped plan the details of the workshop. State, federal, and university scientists were invited to participate in the workshop. A summary of the workshop presentations, discussions, and findings is available on the Commission website at http://www.asmfc.org/atlanticMenhaden.htm.

In February 2005, the Atlantic Menhaden Management Board initiated the preparation of Addendum II to Amendment 1 to the Atlantic Menhaden FMP. The Draft Addendum will propose options to limit the catch of menhaden, including restricting the Chesapeake Bay purse seine harvest to no more than 110,400 mt annually in 2006 and 2007. The Board directed staff to identify a suite of management options for consideration by the public, including various cap limits and timeframes, and gears to be addressed. The Draft Addendum will also propose initiating a research program immediately to determine the status of menhaden populations in the Chesapeake Bay and assess whether localized depletion is occurring in the Bay. In addition, the Addendum will include a review of current state rules and regulations for Atlantic menhaden and the roles these measures have played in localizing menhaden harvest to the Chesapeake Bay, and coastal waters of Virginia and North Carolina. The Board will meet in May to review the Draft Addendum. Upon its approval, the Addendum will be released for public review and comment. It is anticipated that many states will be conducting public hearings on the Addendum.

Please check the ASMFC website (www.asmfc.org) and future issues of *Fisheries Focus* to stay abreast of upcoming menhaden activities. For more information, please contact Nancy Wallace, Fisheries Management Plan Coordinator, at (202)289-6400 or <nwallace@asmfc.org>.