

ATLANTIC MENHADEN

Stock Status – *Viable* –Based on the 2010 Atlantic menhaden benchmark stock assessment, and based on the current reference points, the coast wide Atlantic menhaden stock is not overfished nor is it experiencing overfishing. The fishing mortality rate (F) is close to the threshold. Population fecundity is slightly below the target. However, the number of young fish in the population has been consistently low in recent decades, indicating that high egg production may not be translating into high survival of young menhaden. Commercial landings have decreased because there is no longer reduction fishery fishing in North Carolina.

Average Commercial Landings and Value - 2000-2009 – 29,925,061 lbs./\$2,337,897

2009 Commercial Landings and Value – 2,124,733 lbs./\$229,648

Average Recreational Landings - 2000-2009 – Unknown, **2009** – Unknown

Status of Fisheries Management Plan (FMP) - In North Carolina, menhaden are currently included in the Interjurisdictional FMP, which defers to Atlantic States Marine Fisheries Commission (ASMFC) FMP compliance requirements. The revised ASMFC FMP was approved in 1992. Addendum I of Amendment I was approved in August 2004 to modify the biological reference points, stock assessment schedule and revise the habitat section. The 2003 stock assessment uses a new model with a fecundity-based biological reference point to determine stock status. Addendum II was approved by the ASMFC Board and establishes a five-year annual cap on reduction fishery landings in Chesapeake Bay and was implemented in 2006. Addendum II also establishes a research program to determine menhaden populations in the Chesapeake Bay and whether localized depletion is occurring. Addendum III essentially mirrors the intent and provisions of Addendum II but incorporates 2005 landings data and allows for the transfer of under-harvest to the following year's harvest. Addendum III was passed in November of 2006. The Commission's Atlantic Menhaden Management Board approved Addendum IV in November of 2009 which extends the Chesapeake Bay reduction fishery harvest cap, established through Addendum III, for an additional three years (2011 to 2013).

Research and Data Needs - Develop coast-wide adult abundance index; evaluate environmental factors affecting recruitment to age 1; evaluate the ecological role of menhaden; data from bait fisheries (size, age, effort); conduct research for size/age at maturity

Current Regulations - None

Harvest Season - Open in ocean beyond one mile of beach (with specific time and area exceptions); not allowed within 3 miles, south of Cape Lookout with various closures in estuaries and ocean north of Cape Lookout (see N.C. Marine Fisheries Commission Rule Book).

Size and Age at Maturity – 7-9 inches fork length (FL)/3 + years

Historic and Current Maximum Age -10 years/8 years

Juvenile Abundance Index 2000-2009 - 13.5, **2009** – 6.7

Habits and Habitat - Atlantic menhaden are estuarine-dependent with a single stock along the Atlantic coast. They spawn during fall-winter in the ocean from the Virginia capes to south of Cape Lookout. Menhaden migrate north from unspecified south Atlantic wintering areas in the spring, with larger/older fish going farthest north. Menhaden are unique in their dependence as adults on phytoplankton for food that they strain from the water while swimming in schools near the surface. Recent research indicates that year-class strength is probably determined by environmental factors (currents, temperature, predation, others) acting on larvae as they approach and enter inlets and nursery areas.

Use of Menhaden - About 85–90% of the annual Atlantic coast catch is processed into fishmeal for animal feed, and oil as an industrial base and for food additives. The rest is used for bait in the crab and lobster pot fisheries, as well as for sport fishing bait.

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