

## Species Profile: Bluefish

### Joint Plan Rebuilds Premier Fighting Fish

#### Introduction

Bluefish are one of the most popular sport fish along the Atlantic coast. It is a highly mobile species, renowned for its predatory instinct, razor sharp teeth, and aggressive behavior. In the late 1970s, anglers petitioned the Mid-Atlantic Fishery Management Council to develop a Fishery Management Plan (FMP) for Bluefish to address concerns over population declines. The Bluefish FMP, developed in 1989, was the first management plan developed jointly by an interstate commission and regional fishery management council.

Roughly a decade later, concern about the continued decline in bluefish abundance once again necessitated joint management action. Additionally, a coastwide, collaborative research group began studying the dynamics of the coastal bluefish population to help aid management of this important species. Amendment 1 (1998) developed a long-term plan to restore bluefish through progressive harvest restrictions. Since then, the bluefish population slowly rebounded. In 2009, stock biomass exceeded its target level and was announced a rebuilt stock a year earlier than planned. The 2010 stock assessment update supported the rebuilt status with estimates of stock biomass at 344 million pounds, above the target biomass of 324 million pounds. Today, the Council and the Commission continue to cooperatively manage bluefish to maintain its rebuilt status.

#### Life History

Bluefish are a migratory, pelagic species found throughout the world in most temperate, coastal regions, except the eastern Pacific. Bluefish migrate seasonally, moving north in spring and summer as water temperatures rise and moving south in autumn and winter to waters in the South Atlantic Bight. During the summer, concentrations of bluefish are found in waters from Maine to Cape Hatteras, North Carolina. In winter they tend to be found offshore between Cape Hatteras and Florida. Bluefish generally school by size, with schools that can cover tens of square miles of ocean, equivalent to around 10,000 football fields.

Bluefish are fast growers and opportunistic predators, feeding voraciously on almost any prey they can capture. Over 70 species of fish have been found in their stomach contents, including butterfish, mackerel, and lobster. Razor sharp teeth and a shearing jaw movement allow bluefish to ingest large parts, which increases the maximum prey size bluefish catch. Bluefish live up to 12 years and may exceed lengths of 39" and weights of 31 pounds.

Bluefish reach sexual matu-



Photo courtesy of Rick Ricozzi, [www.rickricozzi.com](http://www.rickricozzi.com)

#### Bluefish

##### *Pomatomus saltatrix*

**Common Names:** snapper, baby blues, choppers, elfs, tailors

#### Interesting Facts:

- \* **Distributed globally**
- \* **Voracious predators, known to be cannibalistic**
- \* **Exhibit feeding behavior called the "bluefish blitz," where large schools of big fish attack bait fish near the surface, churning the water like a washing machine.**
- \* **As in all extremely active predators, the digestive enzymes of bluefish are powerful and their meat will spoil quickly, so they need to be cooked quickly.**

**Largest & Oldest Recorded:** 31 lb., 12 oz. and 12 years

**Age/Length at Maturity:** 2 years/14.9 - 20.1"

**Age/Length at Recruitment:** 1 year/9.3 - 11.1"

**Stock Status:** Rebuilt; not overfished and not experiencing overfishing

rity at age two and spawn offshore from Massachusetts through Florida. Discrete groups spawn at different times and are referred to by the season in which they spawn: the spring-spawned cohort and the summer-spawned cohort. Recent research has also identified a fall-spawned cohort, demonstrating an expanded and prolonged spawning season. The cohorts mix extensively on the fishing grounds and probably comprise a single genetic stock.

### Recreational & Commercial Fisheries

Bluefish support recreational and commercial fisheries along the entire Atlantic coast. The recreational sector is most popular, accounting for 70% of the total catch by weight from 1981 to 2009. Anglers target bluefish near inlets, shoals, and rips that often hold large schools of bait attracting bluefish into a feeding frenzy. The excitement involved in angling these aggressive fighters makes them the second most harvested species behind striped bass. According to the Marine Recreational Information Program (previously known as the Marine Recreational Fishing Statistics Survey), recreational harvest averaged 11 million fish annually from 1981 to 2009 and total catch (harvest plus releases) averaged 18.5 million fish for the same time period. Since Amendment 1 implementation in 1999, recreational catch has generally increased. However,

in 2009, anglers caught approximately 13 million bluefish, a 37% decrease from 2008. The proportion of the catch that is released alive has increased from an average of 33% prior to the implementation of Amendment 1, to an average of 64% after the Amendment came into effect.

Commercial fishermen target bluefish using a variety of gears including trawls, gillnets, haul seines, and pound nets. Commercial harvest peaked in the 1980s, with the highest recorded harvest totaling almost 16.5 million pounds (1981). Currently, the commercial fishery is managed under a state quota system and landings since 2005 have ranged between 6.6 and 7.1 million pounds. In 2009, commercial landings reported totaled 6.9 million pounds. Over the past decade, North Carolina, New York, and New Jersey have landed the largest percentage of bluefish.

### Stock Status

In 2010, the bluefish stock assessment was updated by the Technical Committee to incorporate 2009 landings and survey indices. The assessment indicates that the stock is not overfished and not experiencing overfishing. The assessment update projected a 2009 stock biomass of 344 million pounds, approximately 106% of its rebuilding target, despite a slight decline from 2008. The stock was declared rebuilt in 2009, a year ahead of

the original stock rebuilding deadline. Fishing mortality is estimated to be 0.10, well below the  $F_{MSY}$  target of 0.19.

Based on the uncertainty in the assessment update, the Commission slightly decreased bluefish total allowable landings

## Bluefish Aging Workshop

On May 4 & 5, 2011, the Commission will be hosting a workshop to address aging techniques for bluefish.

Fish are aged by counting annuli (annual growth rings) on hard bony structures (e.g., scales, otoliths, spines, vertebrae). Age information is an important component of stock assessments because it is the basis for determining growth rates, the lifespan of a species, and size-at-age to evaluate stock structure.

Bluefish are currently aged using scales and otoliths, but the morphology of these aging structures specific to bluefish makes it difficult to obtain accurate age data. The workshop will establish consistent aging techniques, explore opportunities to make aging efforts more cost-effective, and seek to identify potential funding sources for a coordinated coastwide aging program.

**Figure 1. Bluefish Commercial Landings and Recreational Catch**  
Source: Personal communication from NMFS Fisheries Statistics Division, Silver Spring, MD, 2010

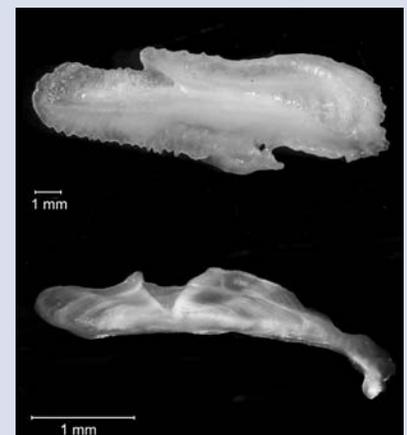
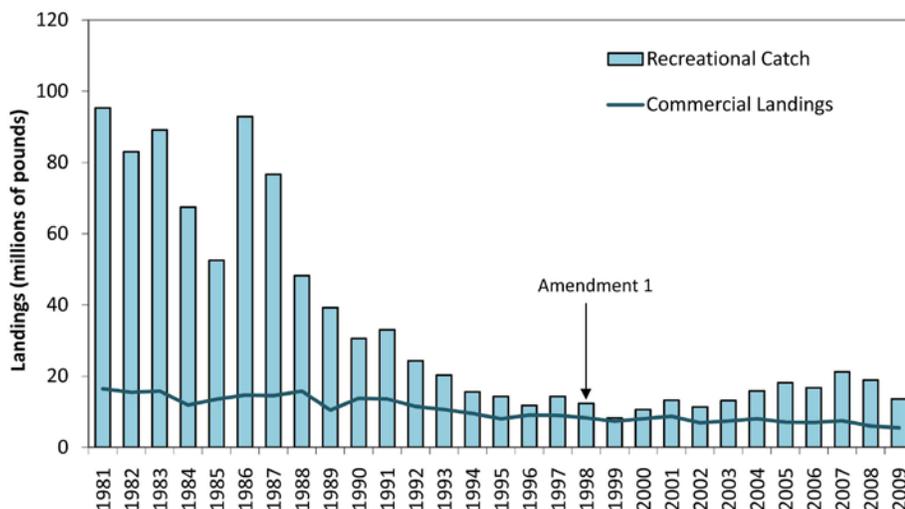
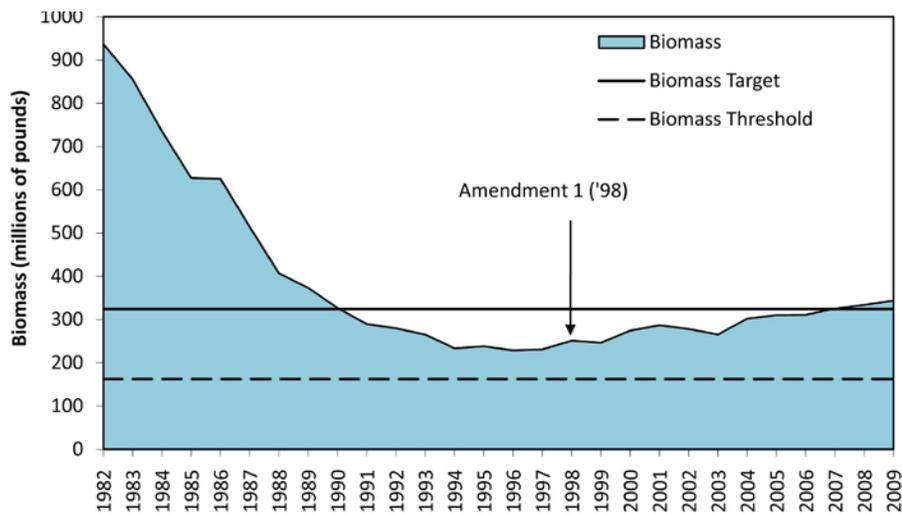


Photo courtesy of Florida Fish and Wildlife Conservation Commission



to 27.29 million pounds for 2011, about a two million pound reduction from 2010.

### Atlantic Coastal Management

The Commission and Council approved Amendment 1 to the FMP in 1998. Amendment 1 allocates 83% of the resource to recreational fisheries and 17% to commercial fisheries. However, the commercial quota can be increased up to 10.5 million pounds if the recreational fishery is projected to not land its entire allocation for the upcoming year. The commercial fishery is controlled through state-by-state quotas based on historic landings from 1981-1989. The recreational fishery is managed using a 15 fish bag limit.

In 2005, the Stock Assessment Review Committee approved the use of an age-structured assessment program (ASAP), replacing the previously used surplus production model. New biological reference points were implemented based on the updated assessment. The updated reference points for biomass and fishing mortality rate were 162.1 million pounds, and 0.19, respectively. Although the bluefish stock currently exceeds these reference points and is no longer under a formal rebuilding plan, the Council and Commission are exploring uncertainties involved in the ASAP approach. Currently, aging techniques are being developed to obtain a coastwide age structure analysis of the bluefish stock, in an effort to increase the validity of stock assessment results. Managing bluefish using the best available science continues to be a priority for this important fish species. For more information, please contact Michael Waine, FMP Coordinator, at [mwaine@asmfc.org](mailto:mwaine@asmfc.org) or 703/842-0740.

