Atlantic States Marine Fisheries Commission

ADDENDUM I TO AMENDMENT 1 TO THE BLUEFISH FISHERY MANAGEMENT PLAN

Biological Monitoring Program

ASMFC Vision Statement:
Healthy, self-sustaining populations for all Atlantic coast fish species or successful restoration well in progress by the year 2015

Approved February 2012

Introduction

The Bluefish Fishery Management Plan (FMP) was adopted by the Atlantic States Marine Fisheries Commission (ASMFC) and the Mid-Atlantic Fishery Management Council (MAFMC) in October 1989. It is a joint management plan and is the first FMP developed jointly by an interstate commission and a regional fishery management council. Bluefish is currently managed under Amendment 1 to the FMP, approved in October 1998. Management authority in the exclusive economic zone (EEZ, 3-200 miles from shore) lies with NOAA Fisheries, while the states have management authority for inshore waters (0 – 3 miles from shore). As defined by Amendment 1, the management unit is bluefish in U.S. waters of the western Atlantic Ocean.

In 2005, the Stock Assessment Review Committee (SARC) approved the use of an age-structured assessment program (ASAP) for bluefish, replacing the previously used surplus production model. The bluefish stock successfully rebuilt under the management program in Amendment 1, but the Council and Commission are exploring ways to address uncertainties involved in the stock assessment. More specifically, the most recent benchmark assessment revealed gaps in age length keys used in the ASAP model, and therefore, the assessment results should be used with caution (NEFSC 2005). This draft addendum proposes to address the biological sampling protocols for bluefish relative to data needs for the stock assessment.

1.0 Management Program

2.1 Statement of the Problem

A large part of the uncertainty in the stock assessment came from the age data used in the model (NEFSC 2005). The assessment used scale ages for the early part of the time series (1982 – 1997) and otolith ages for the later part (1998 – 2004). The SARC was concerned about discrepancies between scale and otolith ages and the general difficulties of ageing bluefish. The assessment was further hampered by gaps in the age-length keys resulting from a lack of samples for certain age and size classes (e.g., Figure 1); these gaps were filled by pooling samples across years, which increased uncertainty. Age samples were also geographically limited, coming only from Virginia and North Carolina. The panel recommended that ageing practices be standardized and sampling expanded to overcome these deficiencies in the assessment.

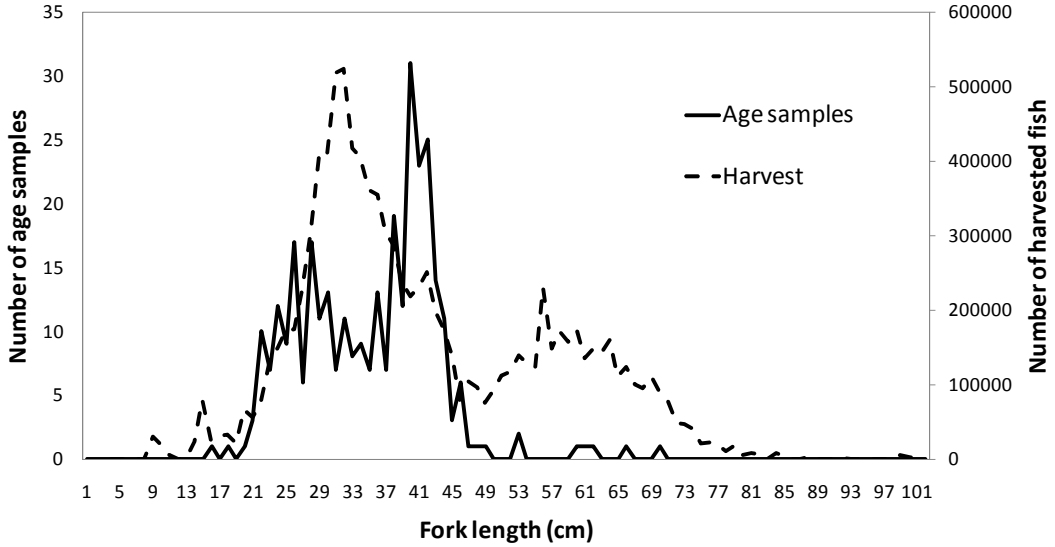

Figure 1. Length frequencies of bluefish harvest and age samples for 2004.

In response to the SARC recommendations for the bluefish stock assessment, the 2011 ASMFC's Action Plan included *Task 2.4.4* to work with states on developing a cooperative program to collect otoliths to improve age data for assessments of several species including bluefish. Additionally, under this task, a bluefish ageing workshop was conducted in May 2011 to assess the need for bluefish biological monitoring and ensure that optimal and consistent sampling methods be established coast wide (ASMFC 2011). The recommendations from the SARC, and the bluefish ageing workshop, are the premise for the development of draft Addendum I to review the biological sampling protocols.

2.1.2 Background

The most recent stock assessment of bluefish used age data from two states: North Carolina for the early part of the time series (1982 – 1997) and Virginia for the later part of the time series (1998 – 2004) (NEFSC 2005). Virginia accounted for approximately 4% of the total coastwide harvest of bluefish from 1998 – 2008 and yet supplied all of the age data for those years in the assessment.

Additionally, the age-length keys used in the assessment had gaps due to a lack of samples in certain size classes. Fishery dependent length sampling of bluefish shows a bimodal pattern, with few samples in the 50-60cm size range, and the age samples used to develop age-length keys do not adequately cover the entire size range of the fisheries (e.g., Figure 1). These gaps had to be filled by pooling data across years.

The 2005 peer review of the stock assessment highlighted both of these issues as sources of uncertainty. In 2010, the Bluefish Technical Committee (TC) recommended that a coastwide sampling program be developed to expand the geographical range of sampling and to fill in gaps in the age-length key. The TC identified the states that had accounted for more than 5% of the total bluefish harvest (commercial and recreational) from 1998 – 2008 (Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and North Carolina) and recommended that they be responsible for providing a number of samples based on their contribution to the total landings.

Bluefish ageing workshop participants revisited this issue, and recommended that a pilot program be developed to determine the optimum sample size for a coastwide age-length key and test the feasibility of state-level sampling combined with regional level ageing. Sampling allocation was reduced and simplified so that each of the key states plus Virginia would be responsible for providing 100 bluefish ages per year (50 from the spring and 50 from the fall). The importance of sampling from as wide a range of sizes as possible was stressed.

Not all states have resources to age bluefish, but member states with ageing capabilities could cooperate to process and age the samples collected. This pilot study would also allow the states to determine the cost and feasibility of sharing ageing responsibilities, as well as explore options for funding mechanisms.

2.1.3 Biological Monitoring Program

States that account for more than 5% of total coastwide bluefish harvest (recreational and commercial combined) for the 1998 – 2008 period are required to collect a minimum of 100 bluefish ages (50 from January through June, 50 from July through December). These states are: Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and North Carolina. Virginia must continue its current sampling regime for bluefish and provide that same minimum 100 samples as the other states.

Every effort should be made to cover the full range of bluefish sizes with these samples.
States are encouraged to process and age their own otolith samples, but may send their whole otolith to another state with ageing capacity.

At the end of the first year of the sampling program, the TC will review the effectiveness of the sampling design and evaluate the optimal geographic range and sample size for bluefish age data. The TC may also recommend sampling in specific size bins to fully account for the length frequency observed in bluefish landings data. If changes are necessary to the sampling program, as recommended by the TC, then sampling protocols may be modified through Board action.

2.0 Compliance

States must implement Addendum V to the following schedule:

March 1, 2012:	States must implement Addendum I. States may begin implementing management programs prior to this deadline if approved by the Bluefish Management Board.

References

Atlantic States Marine Fisheries Commission (ASMFC). 2011. Bluefish Ageing Workshop Final Report. 30 pp.

Northeast Fisheries Science Center. 2005. 41st Northeast Regional Stock Assessment Workshop (41st SAW): 41st SAW Assessment Report. Northeast Fisheries Science Center Reference Document 05-14.