

# Research Priorities and Recommendations to Support Interjurisdictional Fisheries Management

## BLUEFISH

(Full Citation: Northeast Fisheries Science Center. 2015. 60th Northeast Regional Stock Assessment Workshop (60th SAW) Assessment Report. US Dept Commer, Northeast Fish Sci Cent Ref Doc. 15-08; 870 p. doi: 10.7289/V5W37T9T

&

Northeast Fisheries Science Center. 2020. Operational assessment of the black sea bass, scup, bluefish, and monkfish stocks, updated through 2018. NEFSC Ref Doc 20-01; 160 p. Available from: <http://www.nefsc.noaa.gov/publications/>)

### Fishery-Dependent Priorities

#### *High*

- Evaluate magnitude and length frequency of discards from the commercial and recreational fisheries.
- Increase sampling of size and age composition of the fisheries by gear type and statistical area.<sup>1</sup>
- Target commercial (especially in the northeast region) and recreational landings for biological data collection and increase intensity of sampling when possible.
- Investigate species associations with recreational angler trips targeting bluefish (on a regional and seasonal basis) to accurately estimate effort for of the MRIP index (reduce risk of hyperstability)
- Determine whether NC scale data from 1985-1995 are available for age determination; if available, re-age based on protocols outlined in ASMFC (2011).

### Fishery-Independent Priorities

#### *High*

- Develop additional adult bluefish indices of abundance (e.g., broad spatial scale longline survey or gillnet survey) to adequately characterize dynamics of older fish that are currently not well sampled by fishery independent trawl surveys.
- Expand age structure of SEAMAP index; currently, the SEAMAP index used in the assessment indexes age 0 abundance only, but recent age data from SEAMAP suggests collection of age 1 and 2 fish that would help inform the south Atlantic bight age structure

---

<sup>1</sup> A biological sampling program has been implemented for states that accounted for >5% of the coast wide bluefish harvest between 1998 and 2008. See Addendum 1 to Amendment 1 of the ASMFC Bluefish FMP.

## **Modeling / Quantitative Priorities**

### ***Moderate***

- Continue to examine alternative models that take advantage of length-based assessment frameworks.
- Evaluate the source of bimodal length frequency in the catch (e.g., migration, differential growth rates).
- Modify thermal niche model to incorporate water temperature data more appropriate for bluefish in a timelier manner [e.g., sea surface temperature data & temperature data that cover the full range of bluefish habitat (SAB and estuaries)].

## **Life History, Biological, and Habitat Priorities**

### ***Moderate***

- Explore age- and time-varying natural mortality from, for example, predator prey relationships; quantify effects of age- and time-varying natural mortality in the assessment model.
- Continue to evaluate the spatial, temporal, and sector-specific trends in bluefish growth and quantify their effects in the assessment model to address the appropriateness of pooling age data spatially (and temporally) and to identify potential changes to improve the efficiency of the biological collection program

### ***Low***

- Continue work on catch and release mortality.<sup>2</sup>
- Further evaluate the relationship between environmental factors (temperature, salinity etc.) and coastwide bluefish distribution.

---

<sup>2</sup> Some work completed, see: Fabrizio, et al. 2008. Factors affecting catch-and-release mortality of bluefish. *North American Journal of Fisheries Management* 28:533-546.