



# Atlantic States Marine Fisheries Commission

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## MEMORANDUM

September 30, 2013

**TO:** Bluefish Management Board

**FROM:** Kirby Rootes-Murdy, FMP Coordinator

**RE:** Terms of Reference for 2014 Benchmark Stock Assessment

Please find the enclosed draft Terms of References (TORs) for the 2014 Bluefish Stock Benchmark Stock Assessment for your review and approval. These TORs were developed by the Bluefish Technical Committee and Stock Assessment Committee. If approved by the Board, the TORs will be submitted to the Northeast Regional Coordinating Council for their review at the October 16-17<sup>th</sup> meeting. Also included for reference is the draft schedule for completion of the assessment.

If you have any questions, please contact me at [krootes-murdy@asmfc.org](mailto:krootes-murdy@asmfc.org) or by phone at (703)-842-0740. Thank you in advance for your attention to this matter.

Enclosures: Bluefish 2014 Stock Assessment Terms of Reference  
Tentative Schedule for Bluefish Stock Assessment

cc: Bluefish Technical Committee  
Bluefish Stock Assessment Subcommittee

M13-88

## Stock Assessment Terms of Reference for Bluefish Assessment 2014

1. Estimate catch from all sources including landings and discards. Evaluate and if necessary update the discard mortality estimate. Describe the spatial and temporal distribution of landings, discards, and fishing effort. Characterize the uncertainty in these sources of data.
2. Present and evaluate data on life history information including, age, growth, natural mortality, and maturity.
3. Present the survey data available for use in the assessment (e.g., indices of relative or absolute abundance, recruitment, state surveys, age-length data, etc.), and explore standardization of fishery-independent indices. Investigate the utility of commercial or recreational LPUE as a measure of relative abundance. Characterize the uncertainty and any bias in these sources of data. Describe the spatial distribution of the stock over time.
4. Estimate relative fishing mortality, annual fishing mortality, recruitment, total abundance, and stock biomass (both total and spawning stock) for the time series, and estimate their uncertainty. Explore inclusion of multiple fleets in the model. Include both internal and historical retrospective analyses to allow a comparison with previous assessment results and previous projections. Explore alternative modeling approaches if feasible.
5. State the existing stock status definitions for “overfished” and “overfishing”. Then update or redefine biological reference points (BRPs; point estimates or proxies for  $B_{MSY}$ ,  $B_{THRESHOLD}$ ,  $F_{MSY}$  and  $MSY$ ) and provide estimates of their uncertainty. If analytic model-based estimates are unavailable, consider recommending alternative measurable proxies for BRPs. Comment on the scientific adequacy of existing BRPs and the “new” (i.e., updated, redefined, or alternative) BRPs.
6. Evaluate stock status with respect to the existing model (from previous peer reviewed accepted assessment) and with respect to a new model developed for this peer review.
  - a. When working with the existing model, update it with new data and evaluate stock status (overfished and overfishing) with respect to the existing BRP estimates.
  - b. Then use the newly proposed model and evaluate stock status with respect to “new” BRPs and their estimates (from TOR-5).
7. Develop approaches and apply them to conduct stock projections and to compute the statistical distribution (e.g., probability density function) of the OFL (overfishing level) and candidate ABCs (Acceptable Biological Catch; see Appendix to the SAW TORs).
  - a. Provide annual projections (3 years). For given catches, each projection should estimate and report annual probabilities of exceeding threshold BRPs for  $F$ , and probabilities of falling below threshold BRPs for biomass. Use a sensitivity analysis approach in which a range of assumptions about the most important uncertainties in the assessment are considered (e.g., terminal year abundance, variability in recruitment).
  - b. Comment on which projections seem most realistic. Consider the major uncertainties in the assessment as well as sensitivity of the projections to various assumptions.
  - c. Describe this stock’s vulnerability (see “Appendix to the SAW TORs”) to becoming overfished, and how this could affect the choice of ABC.
8. Review, evaluate and report on the status of the SARC and Working Group research recommendations listed in most recent SARC reviewed assessment and review panel reports, as well as MAFMC SSC model recommendations from 2005. Identify new research recommendations.

## **Tentative Schedule for Bluefish Stock Assessment**

<b>Meeting Description</b>	<b>Meeting Dates</b>	<b>Meeting Time</b>	<b>Meeting Location</b>
*Pre-Assessment Webinar	September 2013		Virtual
Bluefish Pre-Assessment Technical Committee Meeting	January 2014	TBA	TBA
Bluefish Data Workshop	April 2014	TBA	NEFSC, Woods Hole, MA
Bluefish Models/BRP Meeting	April 2014	TBA	NEFSC, Woods Hole, MA
SAW/SARC Review	June 2014	TBA	NEFSC, Woods Hole, MA

\*Already completed