Final Terms of Reference
Ecosystem Based Fishery Management Strategy Review

January 22-24, 2018
Meigs Conference Room
Woods Hole MA

Objective 1
Review a proposed implementation of Ecosystem Based Fishery Management for the New England Fishery Management Council (NEFMC).

The review is essentially a research-track review, the goal of which is to illustrate how the proposed EBFM strategy and conceptual framework would be applied to provide the information needed for fisheries management by the New England Fishery Management Council. The review will focus on the management procedure performance relative to a specified set of metrics related to NEFMC strawman management objectives as well as evaluate a worked example intended to simulate the performance of the EBFM procedure. (The strawman objectives were used to develop the EBFM strategy and framework; final objectives will be developed and approved by the NEFMC at a later date.)

 The reviewers will be asked to provide recommendations that could improve EBFM strategy performance, as well as potential data inputs, operating model structures, and performance metrics. The goal is not to evaluate output of the procedure for use in specification setting (e.g., this is not a SAW/SARC assessment review).

The review will encompass the EBFM procedure, the potential operating models used to test the procedure, and a worked example of the relative performance of the EBFM procedure for providing quota advice as they pertain to fisheries management of Georges Bank fisheries.

If the review is favorable, subsequent steps will be necessary before the procedure can be used in specification setting. These subsequent steps include: definition of management objectives by the NEFMC, potential changes in regulations and fishery management plans, clarification from NMFS on the application of functional group OFLs, potential changes in management units, etc. The identification of the management changes needed to use the model results are not part of the review.

Objective 2
Review the proposed strategy for implementing EBFM on Georges Bank

Terms of Reference
1) Evaluate the approach used to identify Ecological Production Units on the Northeast Shelf of the United States and the strengths and weaknesses of using these Ecological Production Units as the spatial footprint for Ecosystem Based Fisheries Management in the region.

2) Evaluate the methods for estimating ecosystem productivity for the Georges Bank Ecological Production Unit and advise on the suitability of the above methods for defining limits on ecosystem removals as part of a management procedure.

3) Evaluate the approach and rationale for specifying Fishery Functional Groups as proposed management units

4) Comment on the applicability and utility of the strawman management objectives and associated performance metrics which were used to guide the development of operating models.

5) Evaluate the utility of the proposed management reference points as part of a management control rule for ecosystem-based fishery management. These include: an overall catch cap at the Ecological Production Unit level conditioned on environmental conditions, ceilings on catch for each Fishery Functional Group (defining overfishing) conditioned on aggregate properties, and biomass floors at the single species level (defining overfished conditions).

6) Review harvest control rules embodying the proposed floors and ceilings approach using the ceiling reference points in ToR 5 to cap removals at the Ecological Production Unit and Functional Group levels, while ensuring that no species biomass falls below the single species floor reference points.

7) Review the structure and application of operating models for Georges Bank.

8) Review ecosystem assessment models and required data sources, as applied to the simulated data from the operating models in ToR 7.

9) Review simulation tests and performance of the proposed management procedure incorporating the floors and ceilings approach, given the set of EBFM goals and objectives.