



## New England Fishery Management Council

50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116

Eric Reid, *Chair* | Thomas A. Nies, *Executive Director*

**DATE:** March 10, 2023

**TO:** Tom Nies, Executive Director

**FROM:** Scientific and Statistical Committee (SSC)

**SUBJECT: Terms of Reference – Prototype Management Strategy Evaluation (pMSE) for Ecosystem-Based Fisheries Management**

The SSC met on February 8, 2023, via webinar to address the following terms of reference (TORs):

### Terms of Reference

- A. Provide comments and guidance on a proposed MSE model framework and on stakeholder input (management goals and objectives, performance metrics, and the range of management alternatives/procedures) about whether the framework is sufficient to meet the core project objectives and whether any improvements are necessary or desirable. At a minimum the SSC should discuss:
  - a. Whether the proposed operating model(s) scenarios are adequate to explore different states of nature considering:
    - i. Georges Bank stocks in ecosystem management
    - ii. Representations of past, present, and potential future conditions
    - iii. Food habits data and other information, trophic relationships among stocks including consumption of juvenile fish
    - iv. Different levels of primary productivity;
  - b. Whether the proposed objectives and performance metrics should be narrowed or expanded;
  - c. The decision rules for defining the ceilings and floors; and
  - d. Proposed parameters that will be used for defining overfishing and overfished status.

To address these TORs, the SSC considered the following information:

1. Presentation: pMSE objectives and EBFM development background (Staff)
2. Presentations (pMSE project team)
  - a. pMSE goals
  - b. Stakeholder workshop overview
  - c. Management goals, objectives, and performance metrics
  - d. Overview of proposed management alternatives/procedures.
3. Objectives and performance metrics table
4. Management alternatives table
5. Description of Hydra EBFM Operating Model with example management scenarios

6. pMSE scope of work
7. Stakeholder meeting summaries
  - a. Oct 13, 2022
  - b. Oct 28, 2022
  - c. Dec 20, 2022
  - d. Jan 6, 2023

**SSC members in attendance:**

Lisa Kerr, Cate O’Keefe, Anna Birkenbach, Yong Chen, Jeremy Collie, Kevin Friedland, Adrian Jordaan, J.-J. Maguire, Conor McManus, Jason McNamee, Richard Merrick, Fred Serchuk, Kevin St. Martin, Terry Stockwell, Sam Truesdell, Hiro Uchida, John Weidenmann, Lindsey Williams

**Prototype Management Strategy Evaluation for Ecosystem-Based Fisheries Management**

The SSC received a presentation from Council staff member Andy Applegate describing the Council’s approach to EBFM, including developing a policy for taking account of ecosystem processes in fishery management and providing an example of a fishery ecosystem plan that is based on fundamental properties of an ecosystem, specifically the Example Fishery Ecosystem Plan (eFEP) for Georges Bank. The presentation provided an overview of steps the Council has taken to advance development of EBFM, including contractual work to develop a Prototype Management Strategy Evaluation (pMSE).

The SSC received a second presentation from the EBFM pMSE project team, including Dr. Gavin Fay and Madeleine Guyant from the University of Massachusetts Dartmouth School for Marine Science and Technology (SMAST), and Dr. Lisa Kerr from the University of Maine. The team provided an overview of the pMSE goal and approach, stakeholder engagement efforts, model framework, management objectives and performance metrics, management alternatives, and next steps for project completion.

The SSC raised general questions about NOAA's input to the EBFM approach and the timeline for the pMSE project. Council staff informed the SSC that NOAA will be providing a letter to the Council to help inform the EBFM approach, and that the pMSE project is expected to be completed by summer 2023. SSC members posed questions about how biological stock units are considered in the Georges Bank Ecological Production Unit (EPU) and how oceanographic processes are included in the EBFM approach. Staff commented that the Georges Bank EPU, including Nantucket Shoals, provides some consistency with current definitions for Georges Bank stocks and the approach allows for consideration of stock portions or straddling stocks. Staff also commented that measurements of primary production are explained in the EBFM approach but not explicitly included in the Hydra model.

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The SSC considered the TORs and offered comments and guidance for consideration during the discussion held at the meeting and through correspondence:

- The SSC suggested consideration of using consistent modeling approaches (i.e., either length-based or age-based), such as has been applied in other regions and countries (e.g., North Sea). The project team explained that there is an advantage to using inconsistent models as this mixing approach is more representative of how we currently assess stocks in the region.
- The SSC suggested considering predation in the operating model and questioned management performance if predation is ignored. The project team explained that including predation in the operating model is an important consideration if the Council decides to develop a full MSE as a next step after reviewing results from the pMSE.
- The SSC suggested consideration of alternative control rules beyond biomass based options. The project team explained that the initial scope for the pMSE included other types of indicator based control rules, but stakeholders advised against those alternatives at this stage.
- The SSC recommended that the assumption of Georges Bank as a closed ecosystem needs additional consideration and suggested other ways of addressing recruitment deviations that are driven by the environment, such as forage dependence and scaling carrying capacity to productivity.
- The SSC noted that the Hydra model does not account for the possibility of extreme ecosystem scenarios and does not have the ability to consider “surprise” scenarios, such as depensation in early life history stages (e.g., haddock feeding on herring eggs).
- The SSC recommended reducing the number of performance metrics in the pMSE.

Through correspondence, SSC members suggested that shorter, more focused presentations on each element of the pMSE project may be easier to digest and provide greater opportunity to ask questions and discuss alternative approaches.

## **SSC 2023 Planning and Priorities**

The SSC received a presentation on 2023 work priorities and SSC responsibilities from Council staff member Dr. Rachel Feeney. The SSC commented that the “stock lead” approach employed in 2022 worked well to complete SSC tasking and ensure timely reports to the Council. The SSC expressed continued interest in organizing a socioeconomic sub-panel, which will be led by Dr. Kevin St. Martin.

**Other Business**

The SSC received a presentation on the Council’s updated policy for Preventing Harassment in the Council Process from Council Executive Director Tom Nies. The SSC was reminded that each member must complete the “Preventing Harassment and Discrimination” training by February 20, 2023.