



MEMORANDUM

DATE: May 24, 2022
TO: Scientific and Statistical Committee (SSC)
FROM: Tom Nies, Executive Director NEFMC
Chris Moore, Executive Director MAFMC
SUBJECT: **Terms of Reference – NEFMC MAFMC SSC sub-panel review of Northeast Regional Habitat Assessment (NRHA)**

Terms of Reference

1. Review the approved NRHA workplan and the related fish habitat science products under development, including decision support tools.
2. Consider the modeling goals, methods used, and inferences made from the single species and community level basis function models. Provide input on whether:
 - a) Species responses to predictor variables conform with what would be expected given a species' biology, physiology and/or ecology.
 - b) Species' predicted spatial distributions are consistent with expectations and other sources of data.
 - c) Estimated between-species relationships (i.e., spatiotemporal correlations in their presence/absence or abundance) make sense from an ecological perspective.
 - d) Identify additional work that would improve analysis or interpretation of results.
3. Consider and comment on the overall utility of NRHA, including the use of specific products in stock assessment, habitat management and conservation (including Essential Fish Habitat and Habitat Area of Particular Concern designations), and ecosystem approaches for the Councils. Is the work sufficient and appropriate to support the habitat and ecosystem needs of both Councils? Is there additional work, enhancements to NRHA that would improve its utility?
4. Are there alternative ways to present and communicate the data and analyses to various end-users (Councils, assessment scientists, stakeholders and public, etc.) more effectively?

Background

The Northeast Regional Marine Fish Habitat Assessment (NRHA) is a collaborative effort to describe and characterize estuarine, coastal, and offshore fish habitat distribution, abundance, and quality in the Northeast. The project aims to align habitat science goals and priorities with human and financial resources to develop habitat science products that support an assessment. The project is being led by a Steering Committee composed of leadership from the major habitat conservation, restoration, and science organizations in the region.

Work associated with NRHA will occur over three years from July 2019 through July 2022, although additional tasks including product dissemination will continue through the remainder of 2022 and

beyond. This SSC sub-panel process is intended as an initial, informal review of products that will provide input to NRHA contributors as they finalize products for broad dissemination later this year. The review is also intended to help the Councils begin to consider appropriate applications for these products. Additional review of NRHA products might occur in the future especially as the Councils begin to use these products, for example to revise Essential Fish Habitat designations. Given that the 3-year assessment period is nearly concluded, there is not time to consider major adjustments to the modeling methods and other analytical approaches. However, NRHA analysts are open to making limited adjustments to their approaches based on the panel's feedback.

NHRA contributors will present a review of all major products (Document 1). The NRHA Summary Report (Document 2) describes the assessment background, teams, products developed, and next steps. Document 3 provides additional background on the Community Based Function Modeling approach and Document 4 includes additional figures and diagnostics. Documents 5 and 6 describe a crosswalk between NRHA two NOAA Climate Vulnerability Assessments, and a species habitat dependence analysis conducted by the Atlantic Coastal Fish Habitat Partnership. Documents 6-8 present example species-specific products, including climate vulnerability narratives, species profiles, and EFH summaries. One mechanism for sharing the results of NHRA is an R-Shiny web application (Document 9). The NRHA Work Plan (Document 10) summarizes the planned outcomes of the assessment.

Information

1. Presentation
2. NHRA Summary Report
3. Summary of Community-level Basis Function Model (CBFM) methods
4. Additional figures and model diagnostics
5. Sample NHRA-HCVA climate vulnerability narrative: Atlantic cod
6. Sample species profiles: summer flounder, scup, and black sea bass
7. Sample EFH designation summary: bluefish
8. Link to R-Shiny application: <https://nrha.shinyapps.io/dataexplorer/>
9. Link to NRHA website including workplan: <http://www.mafmc.org/habitat>