

Ecosystem Based Management Work Group Meeting #1 Summary

Portsmouth Public Library, Portsmouth NH

September 30, 2015; 1 - 4pm

Attendees

EBM Work Group: Mike Fogarty (NOAA NMFS), Mary Boatman (BOEM), Margherita Pryor (EPA), Bruce Carlisle (NE RPB Member – Massachusetts), Kathryn Ford (NE RPB Alternate – Massachusetts), Jeff Herter (New York); Bob Steneck (UMaine), Kathy Mills (Gulf of Maine Research Institute), John King (URI), Peter Auster (UConn)

Marine life Data and Analysis Team (MDAT): Pat Halpin, Jesse Cleary and Corrie Curtice (Duke University)

NROC: Nick Napoli and Emily Shumchenia

Northeast RPB: Betsy Nicholson (NOAA – RPB Federal Co-lead)

This meeting was open to the public, both in-person and via webinar/phone. Because time permitted, we were able to field questions and comments from the public to the Work Group.

Agenda overview

- Review EBM Work Group Terms of Reference
- Marine life data development (presentation slides 3-28 and discussion)
- Benthic and pelagic data development (slides 29-33 and discussion)
- Options for defining Ecologically Important Areas (slides 34-43 and discussion)

Outcomes

The EBM Work Group:

1. Will work with NROC staff to better understand and characterize MDAT model input variables (i.e., environmental covariates) that could help address important ecosystem processes in the region, and how these may play a role in mapping components of Important Ecological Areas (IEAs)
2. Defined a draft list of benthic, pelagic and living habitat variables that are important to ecosystem processes in the region
3. Recommends framing interactions between marine life/habitat and human uses by grouping species/habitats by sensitivity/vulnerability to specific impacts
4. Recommended the RPB develop a definition of IEAs in the Northeast region as a series of ecological components, using definitions from National Ocean Policy documents and similar efforts elsewhere, and that the RPB understand the potential to map these components in the short-term and long-term

(1) Better understanding and characterization of MDAT model input variables that could help address important ecosystem processes in the region and support the mapping of Important Ecological Areas

Pat Halpin described some of the environmental variables used in the MDAT marine mammals and birds modeling framework to predict marine life distribution and abundance including climatologies of sea surface temperature and salinity, distance to shelf and other topographical and oceanographic variables (see [MDAT Work Plans](#) for lists of these variables). The EBM Work Group discussed ways that subsets of

these variables are represented in the species model outputs, and how they may be considered in mapping Important Ecological Areas.

(2) Draft list of benthic, pelagic and living habitat variables that are important to ecosystem processes in the region

After hearing a brief overview of benthic, pelagic and living habitat variables that are available in the Northeast Ocean Data Portal or currently under development (Table 1), the EBM Work Group discussed several other variables that could support EBM and decision-making (Table 2). The EBM Work Group agreed with the grouping of variables by benthic, pelagic, and living categories at least until definitions of important ecological areas are further developed.

Table 1. Regional-scale habitat datasets and/or variables that are available in the Northeast Ocean Data Portal or are currently under development

Benthic	Pelagic	Living
<ul style="list-style-type: none"> • Substrate • Seabed forms • Slope • Rugosity • Canyons • Seamounts 	<ul style="list-style-type: none"> • Surface, bottom temperature • Max, mean surface/bottom current velocity • Stratification 	<ul style="list-style-type: none"> • Eelgrass • Corals • Shellfish habitat • Wetlands

Table 2. Suggested additions to the regional-scale habitat data and associated variables

Benthic	Pelagic	Living	Other
<ul style="list-style-type: none"> • Bathymetric position index • Slope of slope 	<ul style="list-style-type: none"> • Oxygen • Mean sea floor tidal stress and benthic interaction • Frontal zone locations • pH • Salinity • Phytoplankton, Chlorophyll a, Primary Productivity* 	<ul style="list-style-type: none"> • Kelp • Bivalve dominating communities and other structure forming fauna • Oyster reefs* • Harmful algal blooms • Invasive species 	<ul style="list-style-type: none"> • Nutrients • Depth* • Distance from shore • Distance from shelf • Food web connections

**variables that were recommended and already exist in the Data Portal*

(3) Framing interactions between marine life/habitat and human uses by grouping species/habitats by sensitivity/vulnerability to specific impacts

The EBM Work Group acknowledged potential broad categories of sensitivity/vulnerability including sound, benthic disturbance and vertical infrastructure. These categories could be linked with existing and emerging offshore activities that are a current focus of ocean planning (e.g., energy, aquaculture, sand and gravel). EBM Work Group members are encouraged to contribute to the formation of sensitivity/vulnerability groupings by identifying relevant studies that quantify the effects of various activities on marine life and habitat.

(4) Recommendation to define Important Ecological Areas (IEAs) by a series of components and to develop an understanding of data available to address these in the short-term and long-term

The EBM Work Group recognized and discussed existing definitions of IEAs from groups such as Oceana, and in reports such as *A Biological Valuation of the Belgian Part of the North Sea* and the *Final Recommendations of the Interagency Ocean Policy Task Force*. These definitions have several components in common, including elements of ecosystem structure, function and processes such as

areas of high productivity, high biodiversity and spawning, breeding and feeding areas. The EBM Work Group discussed distilling the list of components from multiple definitions and making a recommendation to the RPB for the definition of IEAs in the Northeast region. Ecologically Rich Areas, a term and metric under consideration by the Mid-Atlantic RPB, could be included as one of these components. The EBM Work Group also discussed the benthic, pelagic and living habitat variables that could be used to map these types of components in the context of short-term (data are existing, in-hand) and long-term (data would need to be developed in the future). An example of a data product that could be developed in the short-term is a map of marine mammal, bird, and fish biodiversity hotspots using products currently under development by MDAT.

Next Steps

1. NROC staff will coordinate with agencies and EBM Work Group members to better define and gather information related to sensitivity/vulnerability species groupings and groupings by specific impact
2. NROC staff will work with EBM Work Group to develop a definition (i.e., list of components) for Important Ecological Areas to recommend to the Northeast RPB
3. NROC staff will work with EBM Work Group, MDAT and the Northeast Ocean Data Portal team to identify datasets available in the short-term to map proposed IEA components, including data used as environmental covariates in the MDAT models where appropriate. Longer-term data needs for IEA components will also be identified.