



## New England Fishery Management Council

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

John F. Quinn, J.D., Ph.D., *Chairman* | Thomas A. Nies, *Executive Director*

### MEETING SUMMARY

#### **Ecosystem Based Fishery Management (EBFM) Committee**

Boston Marriott Quincy, 1000 Marriott Drive, Quincy, MA 02169

May 28, 2019

The EBFM Committee met on May 28, 2019 in Quincy, MA to discuss issues and provide guidance to staff for writing sections into the example Fishery Ecosystem Plan (eFEP) for the Georges Bank Ecosystem Production Unit (EPU) that the Council is developing. The issues taken up during the meeting included catch monitoring, ecosystem data collection, and research to support ecosystem management and forage fish management. The Council intends to complete a draft of this document by the September Council meeting.

**MEETING ATTENDANCE:** John Pappalardo (Chairman), Dr. Matthew McKenzie (Vice-chair), Mr. Richard Bellavance, Mr. Eric Reid, Mr. Michael Ruccio (GARFO), Dr. Michael Armstrong, Mr. Peter Aarrestad, Dr. Michael Sissenwine; and Andrew Applegate (NEFMC staff, PDT chair). In addition, four members of the public attended, including George LaPointe (Fishery Survival Fund), Katie Almeida (Town Dock), Scott Large (NEFSC), and Emily Farr (GARFO).

Presentations and background documents are available on the Council's EBFM web page (<https://www.nefmc.org/calendar/may-28-2019-ebfm-committee-meeting>).

#### **KEY OUTCOMES:**

- The committee discussed issues related to catch monitoring, ecosystem data collection, and research to give staff guidance for a section to be written in the draft example Fishery Ecosystem Plan (eFEP). Although the PDT stated that existing data were sufficient to develop EBFM policies in a Fishery Ecosystem Plan (FEP), the committee thought that an FEP offered an opportunity to improve accurate data collection and participation by fishermen in collecting scientific data. The committee pointed to uncertainty in existing data, particularly regarding discard estimation and the ability of the surveys to estimate trends in stock abundance and biomass. The committee agreed that the document should state that accurate catch monitoring is important as is understanding of the signal about trends in stock abundance derived from the NEFSC survey data. The committee agreed that the use of catch and survey data in assessments and in management should be streamlined and transparent. The committee believed that maximum retention polices could improve catch estimation and should be discussed as such in the document. The committee also agreed that the above approaches are not novel and could be addressed in

existing management plans. The new EBFM issue is collection of more timely, new, or expanded types of environmental monitoring to allow management to be more adaptive and responsive. Developing ways of using the State of the Ecosystem (SOE) Report in management decision-making would be one important approach.

- The committee reviewed an initial draft of a forage fish management policy document that the EBFM PDT had developed in 2015, adapting and updating a similar white paper developed for the Mid-Atlantic Fishery Management Council (MAFMC) to New England waters. The committee decided that the MAFMC developed the white paper for a special purpose and that the eFEP will have a different focus than what the MAFMC had intended. The committee thought that the type of harvest control rules for forage fish in one or more stock complexes would develop out of management strategy evaluation, rather than as a specific forage fish management policy. The committee provided guidance to staff to write an eFEP section on forage fish management drawn from the Council's Risk Policy document, from the regulated mesh area policies, and from some sections of the draft forage fish management policy document.

**Motions:** The Committee made no motions during the meeting.

### Introduction

Mr. Pappalardo opened the meeting by reviewing the agenda and purpose of the meeting. For this meeting, there were no discussion documents from the EBFM Plan Development Team (PDT) other than a forage fish management policy drafted by Dr. Sarah Gaichas et al., which was presented to the PDT in 2015. Therefore, the committee focused its work on providing guidance and advice on policy issues that would become part of the eFEP document.

Mr. Applegate reported that the PDT had had a meeting and conference call to work on discussion documents focused on the two issues that the committee had tasked the PDT to develop. He reported that one document on catch monitoring, data collection, and research would be available for the June 10 committee meeting, but the other one on incentive-based measures would take longer than planned to finish. He said that working with the committee chair, the agenda for the June 10 meeting would be adjusted accordingly. The June 10 meeting was being scheduled to begin at 10:30 am to allow Council members and staff time to arrive, a day before the Council meeting on June 11. He also indicated that the committee would be polled at the meeting to schedule additional meetings during the summer to complete the eFEP document, scheduled for Council presentation in September.

### ***AGENDA ITEM 1– CATCH MONITORING, ECOSYSTEM DATA COLLECTION, AND RESEARCH***

#### Presentation

Mr. Applegate debriefed the committee about how the PDT work on this issue has progressed. The PDT felt that existing data sources and sampling are sufficient to support EBFM. The PDT recognizes however that improving precision, reducing bias, and improving timeliness would promote better estimation of stock condition and more adaptive management. The PDT also recognized that there is potential for a greater role for active participation by fishermen and other

marine activity participants. A greater range of diet information for marine mammals, birds, and turtles could also be very useful, potentially factored into operating models and assessments.

Mr. Applegate showed a summary of fishery-dependent data types that were collected by six different, but linked programs. Management initiatives such as Groundfish Amendment 23 were being pursued to improve the accuracy and precision for estimating removals (i.e. catch). He also showed an example of ecosystem data from the Ecomon survey, trends in larval diversity and species richness which was included in the SOE report, but there has been no direct link to provide management advice based on these types of data.

As far as research needs, the PDT was focusing on consumption estimation to improve food web models and assessments, habitat role and function related to productivity, and continued improvement in and use of socio-economic indicators.

### Discussion

Dr. Sissenwine commented that we need to carefully explain to the public what is and is not technically feasible, so that we don't set up unreasonable expectations. He also cautioned that we need to be upfront about what is unknown, simplifying the information and not accepting biased viewpoints so that people cannot 'game' the system.

Mr. Pappalardo suggested that we should have an idea about what opportunities can we create with this plan, for transparent science which people can understand it and how they can contribute to information and data. He agreed with Dr. Sissenwine that we need to be clear about what is known and unknown, vs. anecdotal beliefs, e.g. what people think about the effect of sandlance and grey seals on the ecosystem. Mr. Pappalardo said that there is a large need for good data at the moment and felt that using the fishery to collect data at a much higher and continuous level would have benefits. "Fishing" for data may be more valuable than the catch itself.

Dr. Large pointed out that we currently know quite a lot about the ecosystem, but that this information is not used often by current management (due to the focus on single species stock conditions, i.e. not seeing the big picture). Mr. Reid replied that someone needs to take the data and digest it into a product that we can use. Dr. Large commented that eDNA data (determining the identity of digested stomach contents that are otherwise unidentifiable) would be a new area of research and data collection that would benefit EBFM.

Dr. McKenzie commented that we need to understand how to link economic benefits to energy flow, in a transparent and simple way. He thought that a FEP could open an opportunity to build something from ground zero and the development of offshore wind activities could help collect and model information. He suggested that the more detailed data can lead to larger uncertainties that have a cost, i.e. larger buffers to account for scientific uncertainty. More aggregate data (such as the approach used for skates) could give a better view of the big picture.

Dr. Armstrong disagreed with the PDT's belief that the current information was adequate. He felt that more effort was needed to reliably estimate removals, both past, current, and in the future.

He felt that both harvest and bycatch data were not captured well, leading to a biased time series and inaccurate management advice. Dr. McKenzie thought that an FEP could offer opportunities to improve data streams, reconceptualize how we monitor and understand fishing behavior. Mr. Reid agreed that we need good data and pointed to the NTAP program as an example that helps us explain how survey gear works and how to interpret that data we get from it. He thought that this effort could be expanded, promoting the use of standardized fishing gears so that the catch data can be used to index stock trends.

Dr. Sissenwine commented that we have a very complex data collection program. It is hard to collect complex, detailed data. Often the way it is used creates incentives to cheat or game the system. However, he felt that these problems should not be solved on the back of the EBFM process, because they can be addressed under current management and not drag down the EBFM process. Dr. Armstrong agreed that the problems with accurate catch monitoring should not derail other parts of the EBFM initiative.

Dr. Sissenwine felt that there was a need to pay more attention to the trophic base of the ecosystem. Energy transferred from early life stage fish (e.g., eggs, larvae, small juveniles) to larger fish (generally around and more than one year old and 6" long) via predation is an important energy flow that might have more influence on interactions between species than predator-prey relationships among larger fish. Models needed to take account of energy flows through lower trophic level early life history stage fish to fish of the size and age considered by assessment and management.

The committee felt there could be a role for maximum retention policies to understand trends in catch better, because imprecise discard estimates create a large amount of uncertainty about fishing effects. Better marketing of our catch could incentivize retention to address the costs of maximum retention of otherwise unmarketable fish.

Mr. Applegate felt that the committee discussion would be helpful for him to draft this eFEP section, combining the committee and PDT viewpoints. He recapped the committee discussion and asked the committee for any additional or corrections. He thought that although the committee and PDT had different viewpoints on whether catch monitoring and survey data were adequate for EBFM, he thought that there were several points that would be agreeable to both groups.

1. Accurate catch monitoring is important, regardless of whether stocks are managed singly or as an ecosystem, but there are no novel issues to be addressed in the eFEP. Although catch accounting may occur for aggregate groups of species (i.e. by 'fishery functional group'), removals by stock will still be needed to assess stock condition and evaluate the biological/energetic relationships among them.
2. Unbiased and accurate landing reports and discard estimates for commercial and recreational fishing will be needed and should be improved.
3. Maximum retention policies could improve catch estimation, but could come at a cost which may be mitigated through developing markets.

4. Understanding the relationship between the survey abundance indices and stock trends is important and should be improved.
5. The use of catch and survey data in assessments and in management should be streamlined and transparent. Operating models should account for a range of time lags between data collection, assessment, and management response.
6. New or expanded types of environmental monitoring could improve our understanding and management of the ecosystem in a more adaptive and responsive way, but collecting these data have costs (which may be offset in other ways, such as less frequent sea sampling).

## ***AGENDA ITEM 2 – STRATEGIES FOR FORAGE FISH MANAGEMENT***

### Presentation

Mr. Applegate gave a brief summary of the draft forage fish management discussion document that members of the PDT and others developed in 2015, focusing on New England waters. He explained that it was an initial draft that, if used as an appendix to the eFEP document, would need additional work to update the tables and make some of the parts focus on forage fish found in New England, rather than the Mid-Atlantic.

Mr. Applegate also explained that the regulated mesh areas for the Gulf of Maine, Georges Bank, and Southern New England formed a de facto policy with respect to targeting small forage fish. These regulated mesh areas prohibited the use of small mesh unless such fishing were specifically allowed via an exempted area. These exemptions define what type of fishing may take place, open seasons, and amounts that may be retained by species. If the species was not listed for the exemption, retention is prohibited.

In addition to the regulated mesh areas, the Council's Risk Policy includes a related goal as follows:

*“(C) The benefits of protection afforded to marine ecosystems are those resulting from maintaining viable populations (including those of unexploited species), maintaining adequate forage for all components of the ecosystem, maintaining evolutionary and ecological processes (e.g., disturbance regimes, hydrological processes, nutrient cycles), maintaining the evolutionary potential of species and ecosystems, and accommodating human use.”*

Part of the forage fish management discussion document leaves open ended a statement about the Councils management policy for forage fish. It also lists the criteria that the MAFMC used to defined what they considered to be forage, some or all that may be applicable to New England waters. Section 7 on page 20-22 also discusses potential management measures or approaches that could be applied to targeted and managed forage fish (e.g. Atlantic herring, river herring and

shad, menhaden, small whiting, and squids), as well as unfished and unmanaged forage species (e.g. anchovy, Atlantic silverside, sandlace, round herring).

Mr. Applegate pointed out that the document suggests a more conservative harvest control rule than is typical based on MSY. However, in an FEP that adopts harvest control rules considering interactions between species, the type of strategy applied to forage fish would depend on goals and objectives set by the Council and evaluated in tandem with harvest strategies applied to predators of the forage fish and the dependence they have on them.

### Discussion

Dr. Sissenwine agreed that with proper EBFM approaches, forage fish management should take care of itself if all the energetic considerations are accounted for, including herring and juvenile fish. He pointed out that the Georges Bank system is unlike many upwelling driven systems, where a dominant forage species was a key factor in supporting upper trophic level fish. Predators on Georges Bank tend to switch prey species more often, depending on availability of prey, although there are some obligate feeders such as certain species of birds. He suggested that it would be appropriate to limit the amount of total removals from the forage base and Mr. Pappalardo pointed to an aggregate forage base indicator, like that shown on page 15 of the discussion document. Mr. Pappalardo commented that eggs and larva should be included in the definition of forage. For example, herring eggs have been an important food source for supporting cod populations. Dr. Sissenwine added that the effects of a large forage fish biomass on other species should also be taken into account by operating models.

Dr. Armstrong also supported an integrated overall approach to forage fish management in an FEP. He said that the MAFMC forage fish white paper was developed for a different purpose, creating a separate management policy for unmanaged forage fish. The committee thought that a more focused definition of what is a forage fish would be useful for the eFEP document. Many of the criteria were overlapping, but the definition should also include species that would be considered as forage fish as juveniles, but not so when they were adults – such as whiting. The committee also thought that forage fish could be defined in terms that they support and provide energy to species that are the target of commercial and recreational pursuits.

Mr. LaPointe recommended that it would be better to develop a discussion of forage fish management as a short section of the FEP, rather than as a larger appendix

The committee agreed that a short section of the eFEP should discuss forage fish management policy integrated into overall management, focusing on the Council's existing de facto and default policies, as well as aggregate indicators of forage. Some parts of the eFEP could also be included in this short section.

### ***AGENDA ITEM 3 – OTHER BUSINESS***

The committee briefly discussed the agenda for the summer, leading to the September Council meeting where an eFEP draft document was to be presented to the Council. The committee

responded to a polling to determine the most viable dates to continue work on eFEP development and review.