



New England Fishery Management Council

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MEETING SUMMARY

Ecosystem Based Fishery Management (EBFM) Committee

Hilton Garden Inn, 100 Boardman Street, Boston, MA 02128

June 21, 2018

The EBFM Committee met on June 21, 2018 in Boston, MA to discuss the recent CIE review of the worked examples and operating models, as well as discuss and recommend next steps in developing an example Fishery Ecosystem Plan (eFEP) development would proceed.

MEETING ATTENDANCE: John Pappalardo (Chairman), Dr. Matthew McKenzie (Vice-chair), Dr. Michael Sissenwine, Dr. Michael Armstrong (substituting for Dr. David Pierce), Douglas Grout, Michael Ruccio (GARFO), and Dr. Roger Mann (MAFMC); Andrew Applegate (NEFMC staff, PDT chair) and Dr. Michael Fogarty (NEFSC PDT). In addition, four members of the public attended, including George LaPointe (Fishery Survival Fund), Erica Fuller (Earth Justice), Katie Almeida (Town Dock) and Katherine Denel (Pew Charitable Trust).

Presentations and background documents are available on the Council's EBFM web page (<https://www.nefmc.org/calendar/jun-21-2018-ebfm-committee-meeting>).

KEY OUTCOMES:

- The committee received a report from the PDT about its work since the last EBFM committee meeting in September. Most issues had been deferred for the CIE review and for consideration during a management strategy evaluation. The PDT also met and discussed an initial draft Ecosystem Risk Assessment for Georges Bank document.
- The committee received an update on a summary of the CIE review of the EBFM worked examples and operating models. Since the final CIE report was not yet available, the committee would review it in more detail at a subsequent meeting. It was assumed that the final CIE report will be transmitted to the NEFSC, who would post it on the website. Questions were raised about how quickly the Northeast Fishery Science Center (NEFSC) could respond to the CIE recommendations and how it would fit into the Council's eFEP timeline. The committee will discuss the CIE recommendations when the report becomes final.
- The committee received a draft strawman eFEP framework, which included a problem statement, a vision statement, and key features of an eFEP. The framework was intended

to help focus development efforts on the “nuts and bolts” of how an FEP could work. Mr. Applegate also reviewed additional Council questions and responses from NMFS leadership about how proposed EBFM catch management could meet National Standard 1 requirements, using MSY reference points to define overfishing for stock complexes. He thought that the new guidance could allow the Council to develop a FEP using stock complexes to define overfishing limits, biomass thresholds for individual stocks and management measures to rebuild or prevent them from becoming overfished, and catch allocations (e.g. Annual Catch Limits, or ACLs) to fishery functional groups (FFGs, i.e. species caught together in a fishery).

The committee agreed to use the document going forward and made some modifications to it. Committee members were urged to review the document in detail and forward comments and suggestions for revisions to Mr. Applegate.

- The committee received a rough draft timeline for eFEP development. Following customary procedures, the expected completion date to complete the eFEP draft and begin the management strategy evaluation (MSE) phase was June 2018. Mr. Applegate was looking for ways to quicken the pace and will work with the PDT to complete identified milestones. The committee agreed that the next step should focus on Overfished stocks, status determinations, and rebuilding measures for overfished stocks managed in a stock complex.
- The committee received an overview presentation of a draft Northeast Regional Implementation Plan from Mr. Ruccio, GARFO. Staff saw the plan as a good step toward supporting the effort of the New England and Mid-Atlantic Council efforts to develop ecosystem management. The committee will focus on the details of the plan at its next meeting to prepare a draft letter commenting on the plan. In the meantime, committee members were urged to provide their thoughts to Mr. Applegate to develop a draft for the next committee meeting.
- An initial draft of a Georges Bank Ecosystem Risk Assessment, prepared by Dr. Sarah Gaichas, was presented to the committee by the PDT. There were two possible uses for the report and it would determine how it might develop. One use would be as a decision support tool for a MSE for the eFEP. This use would require modification to focus on managed and non-managed species on Georges Bank, regardless of who has management authority. The other use would be as a risk assessment for NEFMC-managed species, including stocks in the Gulf of Maine and Southern New England. The committee agreed that the former use would be preferable to develop in the context of supporting a MSE for ecosystem management. The committee agreed with the PDT that the latter use for the risk assessment would be more comprehensive, take longer to develop, and could sap resources from eFEP development.

Introduction

Mr. Pappalardo opened the meeting by reviewing the agenda, explaining that the topics were re-arranged before the meeting to accommodate the schedules of committee members. He

explained that the CIE report was not yet available, but Mr. Applegate would brief the committee from a preliminary, unreviewed summary that he had received from Dr. Kerr. He felt it was important for the committee to discuss the draft eFEP strawman and provide guidance to the PDT for how to complete the eFEP and the timeline, leading up to Phase III and a formal management strategy evaluation that would use the eFEP to focus further debate. He also told the committee that the agenda included a briefing from GARFO on a proposed EBFM Regional Implementation Plan, which comments would be developed at a later committee meeting for approval at the September Council meeting.

AGENDA ITEM 1–EBFM PDT REPORT

Presentation

Mr. Applegate reported that the PDT had several conference calls since the last committee meeting, but time was needed by CIE presenters to prepare for that meeting, originally scheduled in late January, but postponed by the pending government shutdown. Much of the tasking from the last committee meeting was thought to be taken up during the CIE review or would be good issues to include in an MSE. For example, hindcasting and comparison of operating model results using an ecosystem vs. status quo approach, as well as consideration of the role of pre-recruit consumption was thought to be addressed during the CIE review. The PDT thought that maximum retention policies and using fishery dependent data for improving performance of ecosystem management policies should be considered and evaluated during an MSE, but it should be included and discussed in the eFEP framework. Work on identification of and response to an overfished condition (applying to stocks) was deferred due to time to prepare for the CIE review.

Discussion

Looking at the list of tasks from the last committee meeting and focusing on the PDT's efforts, Dr. McKenzie thought it would be helpful to differentiate between biological issues and management details which might only require populating a list of management measures. Dr. Sissenwine agreed that the Council should focus its efforts on new things that distinguish ecosystem management from the outcome of any form of single species management.

AGENDA ITEM 2 – EBFM STRATEGY INDEPENDENT PEER REVIEW REPORT

Presentation

Mr. Applegate gave a preliminary summary report to the committee based on information provided to him by Dr. Lisa Kerr, the CIE review panel chair. The summary presentation is located at <http://s3.amazonaws.com/nefmc.org/Document-2b-CIE-review-summary.pdf>. Mr. Applegate gave a summary of the chairs report with respect to seven of the nine terms of reference. The summary of the strengths, concerns, and recommendations were at the time draft and subject to revision and review by the panelists. It was thought that the full, final report would become available through the NEFSC in a few weeks.

Generally, the panelists thought that the science and modelling presented for each term of reference was scientifically sound, a reasonable approach, and useful to support ecosystem management, but concerns were recognized and recommendations were made for improvement before the worked example should be implemented.

The CIE review meeting summary and Terms of Reference documents were available at: <http://s3.amazonaws.com/nefmc.org/Document-3b-Ecosystem-Based-Fishery-Management-Strategy-Review.pdf> and <http://s3.amazonaws.com/nefmc.org/Document-3c-Ecosystem-Based-Fishery-Management-Strategy-Review-Terms-of-Reference.pdf>.

Discussion

Mr. Ruccio thought it would be useful to separate and respond to critical recommendations from the panel as opposed to aspirational recommendations.

Mr. Pappalardo and Dr. Sissenwine asked questions about how the ecosystem MSY was estimated and presented, whether it was based on primary production and energetic principles or based on a derivation of MSY from the stock components. Dr. Sissenwine said that there have been many estimates of this value based on primary productivity, such as 3% of primary productivity estimated by Dr. John Steele.

Mr. Applegate explained that in the operating model results, an exploitation rate of 20% was applied to most stock complexes to potentially derive an overall MSY value, since there was considerable uncertainty in and assumptions made to derive an MSY value for harvested or managed species directly from primary productivity estimates. Ms. Fuller asked how the value of a biomass threshold value of 20% of B_0 compared with current reference points, i.e. 50% of B_{msy} . Mr. Applegate replied that the example threshold that was used, except for elasmobranchs (sharks and skates) was about at the same limit, but that a range of biomass thresholds and exploitation levels (ranging from 0.15 to 0.30) had been applied to test example harvest control rules.

Dr. Sissenwine added that the existing approach of using individual species MSY is a different context and the difficulty faced is fitting an ecosystem approach into a regulatory apparatus that has been developed in the last 20 years.

Responding to a comment about the amount of removals by marine mammals, equivalent to removals due to fishing, Dr. McKenzie said that in the 1870s, there were concerns about the high amount of removals from predation by bluefish. He thought that it is important for an FEP to accommodate and respond to the dynamic nature of the ecosystem.

AGENDA ITEM 3 – DRAFT STRAWMAN eFEP FRAMEWORK

Presentation

Mr. Applegate briefed the committee on a series of questions that the Council posed to and responses received by NOAA Fisheries leadership. The Council's questions included background that gave a general concept of our EBFM approach and asked:

1. How can the MSE and existing National Standard 1 guidelines be interpreted and applied to biological reference points for interrelated species managed together by fishery?
2. Are there existing provisions that would require the FEP to specify reference points for individual stocks rather than for a stock complex.
3. If there is a basis for determining an aggregate MSY, doesn't it only make sense to base management on individual species MSYs if they are continuously updated to take account of other species (sic status)?

The response stated that NOAA Fisheries leadership was open to discussing management strategies and frameworks that deviate from the status quo to manage at the stock complex level and still meet requirements. The response also identified a list of questions/issues/design elements that would need to be addressed.

Mr. Applegate thought that the proposed harvest control rule and catch limit structure would address the concerns and meet the requirements if we can establish MSY for stock complexes, rather than define MSY and overfishing for individual stocks.

Mr. Applegate gave a summary of Document 4a that he had worked on with Mr. Pappalardo's help and input. The document described an eFEP framework strawman that could form the basis for the example FEP and help to focus further development on the "nuts and bolts" of an ecosystem management system. These additional components would need additional work by the PDT to flesh out the details and highlight the issues that the Council would likely encounter. Important additions to the eFEP framework document were a problem statement, a vision statement, and a description of the key components of an ecosystem plan, or eFEP. It included a list of the strategic and tactical objectives that the committee had reviewed on several occasions and modified. Also, new to this document was a fuller description of an Ecosystem MSY (or cap on total removals), and an improved description of biological reference points and harvest control rules, applying maximum catch limits to stock complexes to define overfishing, minimum biomass levels for individual stocks potentially considering vulnerability to fishing, resilience (recovery potential), and a species role in the ecosystem. Catch allocations would be made to Georges Bank fisheries as a fishery functional group, similar to the sub-ACLs that the Council currently uses, but grouped as species caught together in a fishery defined by gear and possibly area or vessel size. Many of the components described have draft discussion documents that the PDT developed before focusing on the worked example control rules and operating models during the last year.

Discussion

Mr. Pappalardo indicated that the vision statement was meant to be aspirational, a target to be achieved over a long time frame. Dr. Mann thought that the 1st objective is to get the biology right and thought that the vision statement should focus on the long-term. He felt that a vision statement should have a single focus and be as short as possible, getting the relationship between fishery yield and primary productivity right.

Dr. McKenzie thought that it would be important to emphasize balance and stability as opportunities for fishing communities, instead of what we do now that leads to a series of boom and bust, flooding markets with the abundant species catch. We should focus on what can be produced if we managed the system differently, he suggested. He was concerned that the worked example might lock in fisheries to the status quo, stifling innovation. He also thought it was important that we study what it would mean to fishing communities, more than just economic effects. Dr. McKenzie thought it would be useful to integrate historic data sets of catch, effort, and landings to flesh out what amount of yield might be possible through ecosystem management.

Mr. Grout agreed that healthy fishing communities need to be part of the vision. Dr. Sissenwine said that the greater stability in catch through ecosystem management could provide for new opportunities and that the unique aspects of ecosystem management should be the focus rather than technical issues and bycatch management.

Dr. McKenzie and Dr. Sissenwine suggested some additional phrases to be included in the vision statement, forwarding them to Mr. Applegate for the next iteration of the draft FEP framework. Dr. McKenzie suggested revising the text to say that "Catches on Georges Bank would be managed by fishery and with consideration of a broader range of ecosystem objectives and considerations, including trophic interactions between fished and un-fished species, and impacts on non-fishery elements including habitats and regional communities." Dr. Sissenwine suggested a one-sentence vision as follows:

"The NEFMC's vision is ecosystem based fishery management that harmonizes what is known, unknown, and unknowable about fishery resources and ecosystems with realities of fishing operations, and the law.

As a result, that by taking into account of interactions between fishery resource species the NEFMC expects to achieve,

- healthy ecosystems, including exploited and non- exploited species,
- greater stability in fishery management and fishing opportunities,
- more flexibility in fishing operations,
- less complex fishery management,
- reduced discarding
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- .

Mr. Ruccio pointed out that there is always going to be implementation costs; but he acknowledged that there is a potential to reduce them through coordinated ecosystem management.

On the key features and key components of the eFEP framework, the committee discussion focused on jurisdictional cooperation and collaboration. Mr. Pappalardo said that this would focus on how to interact with other management entities to achieve ecosystem goals, given levels of primary productivity.

Mr. Pappalardo felt it would be important to flesh out how to treat recreational sectors, how they would be managed differently than commercial sectors. He asked how does management of highly migratory species (HMS) fit into the FEP. Dr. Sissenwine felt that HMS will ultimately be an important consideration and he pointed out that we already have an existing portioning by species (MAFMC, ASMFC) and by place (Canada).

Ms. Almeida asked whether permitting and catch allocation would require a new limited access program. She asked what would happen to existing programs. She felt it would be important for these and related issues to be fleshed out and considered by the PDT and the Council. Ms. Fuller suggested that effective monitoring should be added to the list of key components of an eFEP.

AGENDA ITEM 4 – EFEP TASKS AND TIMELINE

Presentation

Mr. Applegate presented a table of tasks and a proposed timeline for the PDT to flesh out the issues in the remaining eFEP framework, now that the CIE review of the worked example has been completed. Several components have already been addressed, including strawman goals, strategic objectives, and tactical objectives; the harvest control framework, the worked example, and the CIE review of the worked example and supporting operating models. The next task on the list was one addressing overfished stocks, status determination, and rebuilding measures that the committee had identified at the last committee meeting. The other components were presented in a hierarchical order with completion of all components by June 2019. Mr. Applegate said that this timeline had been developed using the customary order and procedures for the PDT to meet and report out to the committee in between Council meetings. No allowance in the timeline had been made for feedback and revision from the committee and Council, in case the PDT had to revisit a discussion document. Mr. Applegate suggested that the timeline might be shortened by delegating discussion document development to PDT groups with a multiday plenary PDT meeting to complete the documents.

Discussion

The committee thought that the timeline was acceptable and agreed that the PDT should next focus on how to define when a stock is overfished, methods for determination of stock status, and potential rebuilding measures.

Focusing on additional elements of a timeline, Mr. Pappalardo thought it would be useful for the PDT to develop a discussion document about how reactive and/or proactive accountability measures (AMs) would apply to stock complexes or fishery functional groups (FFGs, i.e. stock complex allocations to specific fisheries), i.e. how they would be applied if a stock complex was not experiencing overfishing. Mr. Ruccio agreed that focusing on how annual catch limits (ACLs) and AMs would be applied to FFGs would be useful.

Mr. Grout added that having some concrete examples of species in a stock complex and how catch would be allocated to FFGs would be very helpful to the eFEP. He felt that a discussion of how to deal with overfished stocks would require information about catch management of stock complexes and FFGs.

Dr. Sissenwine said that an example of a response to an overfished condition is needed, i.e. what is a measurable management response to an overfished condition of a stock within the context of stock complex and FFG management. He suggested that an approach using “softer” measures to rebuild, but not necessarily rebuild within a proscribed period would be a better approach (sic than the current one). Dr. Sissenwine asked about how triggers using “B0” were or would be calculated and determined and how the stock biomass level would be determined against that metric.

Dr. McKenzie thought that additional work on and thoughts about habitat or spatial management would be factored into a more dynamic and responsive management program is needed. He thought that habitat protection should be developed and discussed, focusing on increasing productivity and improving fishing opportunities. He also thought that some consideration of inshore/offshore fishery allocations is needed and that examination of the historical catch and landings records would be helpful.

Dr. McKenzie also thought that input controls (e.g. effort limits, limited access, closed areas and seasons, mesh restrictions, and size limits) should be considered, pointing out that these measures have been successful for managing sea scallops and other species. Mr. Ruccio agreed that all measures should be on the table, but discussed in the context of ecosystem management. He thought that some additional discussion is needed about incentive-based measures.

Dr. Fogarty recognized that distinct inshore and offshore areas was important and had been identified in previous analyses and research. He added that some operating models account for the spatial distribution of fishing effort, allowing consideration of spatial and habitat impacts by fleet. Dr. Fogarty spoke about the committee comments on metrics that could define ecosystem health, including size composition of stocks and the trophic level mix of catch and stock abundance. Triggers could be developed as flags of overall system health or vulnerability.

Dr. Sissenwine thought that estimates of B0 (biomass in an unfished state) would be influenced by being derived from a base state, when a lower level of fishing prevailed, but that might be inaccurate (too high or low) and uncertain. Ms. Fuller felt it would be important to identify what could potentially be achieved by ecosystem management and Dr. McKenzie suggested using historic data to push our concept of potential yield back in time using curated data.

Dr. Fogarty explained that catch limits and yield are expected to be more stable at higher levels of organization, e.g. for stock complexes, than for individual stocks or species. He thought that multiple sources of information or estimates could help bracket potential yield, including ecosystem production potential, sum of MSY for stock complexes, and historic catch estimates. He also explained that the simulations using a ramped exploitation strategy appeared to increase total yield, by acting as a brake on fishing effort when biomass declined. Answering a question from Mr. Pappalardo if other metrics beside survey data could be used, Dr. Fogarty suggested that a broad range of data could be used to evaluate stock status and trends for making management decisions. Dr. Mann thought than an approach using gradual instead of abrupt changes or triggers would be a better approach. He expressed some doubt about using historic data for this purpose because conditions have changed considerably and we may not be able to reproduce that potential, no matter what management does.

AGENDA ITEM 5 –NORTHEAST REGIONAL IMPLEMENTATION PLAN FOR EBFM

At this point, Mr. Pappalardo had to leave early and Dr. McKenzie took over as committee chair for the meeting.

Presentation

Mr. Ruccio gave an overview of the background and proposed implementation plan (Document 3) to the committee for discussion. This plan would build on the scientific strengths in this region and the progress that the Councils have so far made. It is expected to increase EBFM coordination and collaboration between the NEFSC, GARFO, the two management Councils and the ASMFC, as well as Highly Migratory Species management. It included hiring of an ecosystem policy analyst, providing support for ecosystem-related working groups and establish a transboundary EBFM working group with Canada, with coordination across the NOAA offices (habitat, Chesapeake Bay, Sea Grant, etc.). The plan has six main actions: support for ecosystem level planning, advance the understanding of ecosystem processes, prioritize vulnerabilities and risk to ecosystems, explore and address ecosystem trade-offs in support of MSE, incorporate ecosystem considerations into management advice, and support and expand related ecosystem reports. GARFO is seeking input and comments from the Councils on the implementation plan, a draft which became available to the public as part of a nationwide roll out. The period for comments is open until the end of September, which would allow the Council to develop comments and submit them after the September Council meeting.

Discussion

The committee accepted the summary report and agreed to develop an draft comment letter for the next EBFM Committee meeting, being scheduled for late August or early September. The committee member and Council staff would forward their thoughts to Mr. Applegate to include in a draft letter. The intention is for the letter to be approved at the September Council meeting and submitted before the September 30 deadline.

***AGENDA ITEM 6 – EXAMPLE ECOSYSTEM RISK ASSESSMENT FOR THE GEORGES BANK EPU,
INITIAL DRAFT***

Presentation

On behalf of the PDT, Mr. Applegate gave a summary of an initial draft document for an Ecosystem Risk Assessment for the Georges Bank EPU. He said that the document was developed by Dr. Gaichas using the Mid-Atlantic Council's risk assessment document as a template. It was adapted to focus on New England species, applying the categories of risk and risk levels that had been developed by the MAFMC. He pointed out that the objectives could be different in New England and the categories of risk might be different, with some additional work by the NEFMC.

The PDT met on June 8 and thought that the draft was a good initial start, but that the risk elements and definition of risk levels would need refinement, tailored to the Georges Bank EPU. The PDT thought it would be a useful tool for supporting MSE, guiding discussion and evaluation of management strategies and operating model development. Used in this way, Mr. Applegate thought that the risk assessment would need to focus on all Georges Bank species and their interactions and that a risk assessment document could be integrated into and developed during a MSE. He said that a risk assessment procedure could also be part of a formal risk policy for existing FMPs, focusing on all NEFMC managed species but that it would require a comprehensive effort and take considerable time and effort to develop.

Discussion

Dr. Sissenwine found that the document pulls a lot of information together, but the document was not clear about what type of action would be needed, i.e. how should management respond and what would be the anticipated outcomes. Dr. Fogarty pointed out that the document was useful for identifying coherent trends over many species, indicating that greater or less levels of precautions to standard reference points for setting catch limits. The value, he thought, was looking at the issues collectively rather than for individual species. Dr. Fogarty suggested that the document could be improved by focusing on risk factors related to climate change, i.e. shifts in species distribution and changes in productivity.

Dr. McKenzie thought that the document would be better used as a support tool for MSE, but given a lower priority than for other parts of eFEP development.

The EBFM Committee meeting began at 9:10 am and adjourned at approximately 4:15 p.m.