Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: September 24, 2020

To: Council

From: Brandon Muffley, staff

Subject: Update on EAFM Activities

Summer Flounder Management Strategy Evaluation:

The Mid-Atlantic Fishery Management Council's (Council) Ecosystem Approach to Fisheries Management (EAFM) Guidance Document established a structured framework process to incorporate ecosystem considerations into the evaluation of policy choices and trade-offs as they affect Council-managed species and the broader ecosystem (Figure 1). The Council has taken significant advances in implementing the EAFM structured framework process and has already completed a risk assessment (Step 1: Prioritize) and conceptual model development (Step 2: Refine). In December 2019, the Council selected the following question for further development and analysis through a management strategy evaluation (MSE), the third step (Analyze) in the EAFM structured process:

> *Evaluate the biological and economic benefits of minimizing discards and converting discards into landings in the recreational sector. Identify management strategies to effectively realize these benefits.*

In selecting this question, the Council noted the potential to align the EAFM process and the Council's typical recreational review and management process. The Council felt this question provided the most tangible benefits to addressing a Council and stakeholder priority and was best fit for an MSE by evaluating the performance of different management options. This question can also be evaluated and considered within an ecosystem context given the various risk elements (e.g., management, stock dynamics, science and data, fishing fleets, and economic benefits) identified by the summer flounder conceptual model.

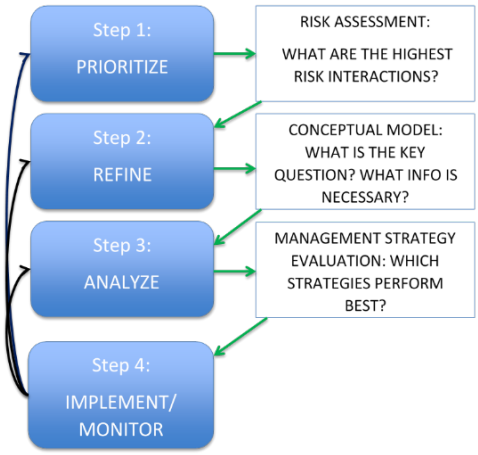

Figure 1. The Mid-Atlantic Fishery Management Council's EAFM structured decision framework to incorporate ecosystem considerations into management (from Gaichas et al. 2016).

Building off the information developed during the conceptual model process, the Council will conduct an MSE to address the recreational summer flounder discards question and management objectives. An MSE will use a simulation model(s) to evaluate different management approaches within an ecosystem context to determine if the outcomes associated

with the different approaches achieve management goals and objectives. Clearly identified and defined objectives, performance metrics, and management strategies will be specified by the Council with input and guidance from an extensive stakeholder process. Since summer flounder is jointly managed with the Atlantic States Marine Fisheries Commission (ASMFC), any management outcomes and alternatives developed as a result of this project will require a joint decision. Therefore, the MSE process will also require extensive involvement and engagement of the ASMFC Summer Flounder, Scup, and Black Sea Bass Board, staff, and stakeholders (see sub-topics below for information on how/where the ASMFC is engaged).

Technical Work Group

In May, the membership to the MSE technical work group was finalized (Table 1). The general make-up of the work group was modeled after the summer flounder conceptual model technical work group and many of those members are part of MSE work group. This interdisciplinary and inter-agency group represents science and management expertise in economics, population dynamics, ecosystem dynamics, MSE development, and ecology with representation across state, federal, and academic institutions. In addition to the technical work group members, the chair of the Council's Ecosystem and Ocean Planning (EOP) Committee and Summer Flounder, Scup and Black Sea Bass Committee and the chair of the ASMFC's Summer Flounder, Scup, and Black Sea Bass Board are copied on all work group correspondence and invited to attend and participate in all work group calls to ensure management is informed and engaged in the work group products and decisions.

Table 1. Members of the Mid-Atlantic Council's EAFM management strategy evaluation technical work group.

Name	Affiliation	Name	Affiliation
Lou Carr-Harris	NEFSC	Emily Keiley	GARFO
Kiley Dancy	MAFMC staff	Jeff Kipp	ASMFC
Geret DePiper	SSC/NEFSC	Doug Lipton	NOAA Fisheries
Jon Deroba	NEFSC	Brandon Muffley	MAFMC staff
Gavin Fay	SSC/UMass Dartmouth	Mark Terceiro	NEFSC
Sarah Gaichas	SSC/NEFSC	Mike Wilberg	SSC/Univ. of Maryland
Jorge Holzer	SSC/Univ. of Maryland	Greg Wojcik	CT DEEP/ASMFC TC chair

This work group will: 1) develop MSE materials and products, including simulation model(s), 2) identify stakeholders and conduct outreach opportunities, 3) work closely with and support the contract analyst and independent facilitator, and 4) work with the Council and stakeholders in communicating the goals and outcomes of the MSE.

The technical work group met on two occasions since finalizing membership, on Friday, May 29, 2020 and on Tuesday, September 1, 2020. A number of smaller sub-group meetings took place in between the full work group meetings to address topics discussed by the full work group and develop products for full work group consideration. The focus of the first meeting was on lessons learned from other regions and past experiences, setting clear goals and expectations for the MSE, and identifying opportunities and approaches for meaningful stakeholder engagement. During the call, the work group discussed a strategy to help ensure success, outlined a process for engaging the appropriate stakeholders throughout the MSE project, and developed the initial

concepts for an introductory stakeholder webinar and mock workshop (more details on the introductory webinar provided later).

During the second call, the work group finalized the agenda and details of the kick-off webinar with Council and ASMFC advisors. The group focused on ensuring there were clear goals and objectives for the webinar and that participants would be well informed prior to the meeting about their role and expectations.

The next work group meeting will be in mid-October to discuss feedback from the kick-off webinar and mock workshop, stakeholder and management participants, upcoming workshop(s), and next steps.

Stakeholder Engagement Facilitator

In preparation for this project, staff solicited input from other Council's and from various MSE experts throughout the country regarding their MSE experiences and insights. One common recommendation, and supported by the technical work group, was the need to bring on a facilitator with experience and expertise in MSE to help with the stakeholder workshops. In addition, it was recommended the facilitator be independent and from outside the mid-Atlantic region to help minimize any real or perceived conflicts or biases. The contracted facilitator would help engage on the stakeholder initiatives to make sure the project maximizes those efforts and ensure the appropriate input and feedback from stakeholders and managers is achieved.

In early September, the Council contracted with Dr. Jonathan Cummings from the UMass Dartmouth to serve as facilitator for stakeholder engagement and workshop development. Dr. Cummings has over 10 years of experience in facilitation, structured decision making analysis, and management strategy evaluation covering a variety of species and issues, including a current MSE project on New England groundfish. Dr. Cummings will work with the technical work group and help develop stakeholder workshop agendas and materials, facilitate the workshops to ensure objectives are achieved, and collaborate on the simulation model(s) development and trade-off analysis.

Stakeholder Outreach and Workshops

On Tuesday, September 22, a kick-off webinar was held jointly with the Council's EOP and Summer Flounder, Scup, and Black Sea Bass Advisory Panels (AP) and the ASMFC's Summer Flounder, Scup, and Black Sea Bass Advisory Panel[1]. The kick-off webinar introduced AP members to the MSE process and simulated a condensed mock MSE workshop using an example fishery. The goal of the workshop was to give participants a greater understanding of MSE use and utility, see how the MSE approach is integrated in the EAFM process, and provide expectations for the Council's summer flounder MSE. While MSE's are a widely used and have been conducted by other councils, the MSE process is relatively new to the Mid-Atlantic Council, its managers, and stakeholders. This webinar provided an opportunity for participants to be better informed about the benefits and use of MSE and will help provide for more productive stakeholder workshops in the future. There were 55 participants on the webinar with representation from a diverse group of stakeholders, management, and science partners.

After the webinar, all AP members and webinar participants were sent a follow-up survey (found at: **Follow-up survey link**) regarding their experiences and value of the webinar and mock

[1] The agenda, all meeting materials, and presentations for the September 22nd AP meeting can be found at: https://www.mafmc.org/council-events/2020/eop-sfsbsb-ap-meeting-sept22

workshop. Results from the survey will be used by the technical work group and facilitator to understand what worked well, identify areas for improvement, and help plan future stakeholder workshops. A number of participants have already completed the survey and the response has been very positive and informative. In addition, the survey includes a solicitation of interest to serve on a core stakeholder work group that would participate in future workshops specific to the summer flounder recreational discards MSE project. The technical workgroup will review all interested stakeholders and for diversity (sector, affiliation, geographic range, management entity etc.) and identify any missing areas and needs for additional solicitation.

The technical work group and facilitator are currently proposing three stakeholder workshops will be needed for the project. These workshops would be spread out over the next 12-15 months. The first workshop would solicit input and feedback on management objectives, performance metrics, and identifying uncertainties and unknowns. The second workshop would review initial model development and any preliminary results. The final workshop would review updated model development and preliminary "final" results. After each stakeholder workshop, the Council's EOP and Summer Flounder, Scup, and Black Sea Bass Committees, along with a sub-set of members from the ASMFC Summer Flounder, Scup, and Black Sea Bass Board will meet to review the feedback and input provided during the stakeholder meetings. This group of managers will also provide further direction and refinement for the technical workgroup to consider. Regular check-ins with the full Council and ASMFC Summer Flounder, Scup, and Black Sea Bass Board will also take place. This iterative process and regular check-ins will ensure the technical work group is receiving input from stakeholders and managers to make sure project goals, objectives, and expectations are being met (Figure 2).

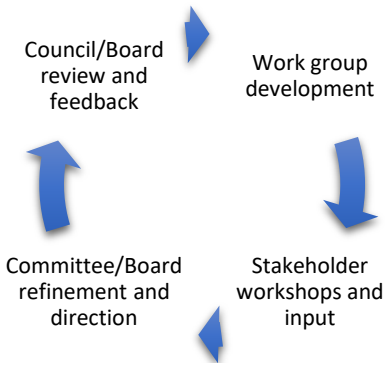

Figure 2. Proposed process for stakeholder and management input for EAFM summer flounder MSE project.

Anticipated Timeline

It is anticipated the MSE process will take approximately 1.5-2 years to complete and provide final results and management alternatives to the Council for consideration. Table 2 below provides a general overview of MSE tasks/activities and the associated draft timelines.

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Table 2. Timeline of anticipated activities associated with completion of the EAFM summer flounder management strategy evaluation project.

Task/Activity	**Timeframe** (subject to change)
Finalize technical work group membership and initial meeting	May 2020
Kick-off webinar and mock workshop with Council and ASMFC advisory panels	September 2020
Initial stakeholder meeting(s) and surveys to elicit objectives/performance metrics/uncertainties; data synthesis, initial model development and linking existing models; interim stakeholder and Committee meetings	November 2020 – May 2021
Simulation testing of management strategies; model refinement as necessary; deliver interim results at stakeholder and Committee meetings	June 2021 – December 2021
Continue with MSE analysis and stakeholder meetings, as needed	January 2022 – March 2022
Review final results; Council and ASMFC Board considers potential management alternatives and action to address recreational summer flounder discards	April 2022

Short-Term Projections Project:

Council staff continue to collaborate with Dr. Malin Pinsky and Dr. Alexa Fredston from Rutgers University on a research project funded by the Lenfest Ocean Program that will test new methods and models to predict short-term (the next one to ten years) climate-induced movements of diverse species that better align with management timescales[2].

There have been a number of advancements and activities associated with this project since the last update to the Council back in April. The four focal species for the project have been finalized – spiny dogfish, *Illex* squid, gray triggerfish, and summer flounder. The EOP Committee and AP, and South Atlantic Council staff provided input on other potential candidate species (e.g., Spanish mackerel, cobia, HMS, menhaden). However, after an extensive review of available data and the desire to consider different life history characteristics and a species potential for distribution shifts, the research team felt the four focal species identified were the best candidates for the project. An inventory of data availability and life history information for these species by collating records from major Atlantic ecosystem survey datasets and stock assessments has been completed.

The model has been fitted to spiny dogfish data from the Northeast Fisheries Science Center trawl survey. The spiny dogfish model is now being fine-tuned, which includes checking that the spatial scale is appropriate, quantifying forecasting skill, and considering additional data sources. Once the group is satisfied with the spiny dogfish model, they will proceed to forecasting another of the focal species, likely in the next month or two. A manuscript describing the methods,

[2] Additional background information on this project can be found at: https://www.lenfestocean.org/en/research-projects/predicting-near-term-fisheries-shifts-under-climate-change

model structure, testing on simulated data, and application to a small test case will be submitted to a peer-reviewed publication for consideration by the end of 2020.

The research team and Council staff presented this project to an audience of several hundred scientists, managers, and stakeholders on July 1, 2020 via a Lenfest Ocean Program webinar. The project received a great deal of positive feedback and interest, including many people interested in applying this model to their own regions and fisheries. If interested, the webinar can be viewed at: **Webinar on Predicting Near-Term Fisheries Shifts Under Climate Change.**

It is anticipated that model development will continue through the rest of 2020. In 2021, the research team will evaluate the forecast skills of the model for the different focal species. Then in 2022, the team plans to incorporate fishing pressure into the model structure to evaluate if forecasts of species distribution improve. The project is scheduled to be completed sometime in 2022.