



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 | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: November 22, 2019
To: Council
From: Brandon Muffley, Staff
Subject: EAFM Summer Flounder Conceptual Model – Meeting Materials

The Council will review and finalize the EAFM summer flounder conceptual model on Tuesday, December 10, 2019. Materials listed below are provided for Council consideration of this agenda item.

Note: please be sure to click on the link for item #2 below to find the interactive conceptual model and detailed information tables.

Materials behind the tab:

1. Staff briefing memo to Council
2. Summer flounder conceptual model website:
https://gdepiper.github.io/Summer_Flounder_Conceptual_Models/sfconsmod_riskfactors_subplots.html
3. September 19-20, 2019 EOP Committee meeting summary
4. November 13, 2019 EOP Committee meeting summary



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 | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: November 22, 2019
To: Council
From: Brandon Muffley, Staff
Subject: EAFM Summer Flounder Conceptual Model – Background Information and Meeting Goals

Background:

Approved in 2016, the Council's Ecosystem Approach to Fisheries Management (EAFM) guidance document seeks to enhance the Council's species-specific management programs with more ecosystem science and broader ecosystem considerations and management policies. The guidance document identified the Council's ecosystem policies, goals, and recommendations for forage species, habitat, climate change, and ecosystem interactions. The guidance document also provided a structured framework process to incorporate ecosystem considerations in order to evaluate policy choices and trade-offs as they affect FMP species and the broader ecosystem.

The first step in the structured framework process includes identifying and prioritizing ecosystem interactions and risks through a comprehensive risk assessment. The Council completed a risk assessment in 2017 to help the Council decide where to focus limited resources to address priority ecosystem considerations in its science and management programs. Utilizing the results of the risk assessment, the Council agreed to pilot the development of a conceptual model that will consider key risk factors affecting summer flounder and its fisheries. Conceptual model development is the second step in the EAFM structured framework process and are built to ensure key relationships throughout the system are accounted for and help identify specific management questions to address the highest priority ecosystem factors.

In addition to the development of the pilot conceptual model, potential outcomes requested by the Council included information on data availability and needs, relative importance of risk factors and elements and 10 management questions that could be answered using the model and the available data. A diverse multi-disciplinary workgroup comprised of NEFSC, NOAA Fisheries, GARFO, SSC, ASMFC, state agencies, and Council members and staff was formed to work on and address the tasks identified by the Council. The workgroup met on six separate occasions throughout 2019 to identify key high-risk factors, important ecosystem elements associated with each risk factor, document available data sources, develop a conceptual model

visualization tool, and draft management questions relevant to summer flounder and the associated fisheries. The draft conceptual model and supporting information and documentation were provided to the Ecosystem and Ocean Planning (EOP) Committee for feedback and direction during two separate EOP Committee meetings¹.

Building off the information developed during the conceptual model process, conducting a comprehensive management strategy evaluation (MSE) to address the Council's management questions and objectives would be the next, and third, step in the EAFM structured framework process. An MSE would evaluate different management approaches within an ecosystem context to determine if the outcomes associated with these different approaches achieve the management goals and objectives specified by the Council.

Conceptual Models:

Conceptual models are a good communication and engagement tool and are becoming an increasing common approach used in a variety of systems across a number of Councils to address ecosystem considerations. As mentioned above, conceptual models can help answer particular management questions to ensure that key ecological, climate, habitat, fleet, social, and economic interactions are addressed. They also help organize information, highlight key relationships throughout the system and allow for managers, stakeholders and scientists to have a common understanding of the system. They also allow for scientists to evaluate data availability and gaps and identify possible analytical tools and approaches that could be developed to answer a particular management question. It should be noted that conceptual models are not used to conduct a stock assessment, develop fishery reference points or other comprehensive analyses. They are used to scope out the priority management questions and objectives, identify the key ecosystem components, data sources and potential tools. This conceptual model scoping process provides a very specific and strategic approach to help inform a comprehensive management strategy evaluation.

The conceptual model(s) developed by the workgroup can be found at the following link:

https://gdepiper.github.io/Summer_Flounder_Conceptual_Models/sfconsmod_riskfactors_subplots.html. The website provides some background on conceptual models and a description on how to understand and interpret the different conceptual models. There are a series of conceptual models available for review to help simplify model complexity, identify ecosystem linkages and build up to full model. The workgroup built the model by starting with the 12 summer flounder high-risk factors identified by the risk assessment. The workgroup then identified the critical ecosystem elements that drive or impact the risk factor dynamics. Three additional risk factors not identified as high risk were also included by the workgroup given their overall importance (i.e., Offshore Habitat, Stock Biomass, and Stock Assessment) to summer flounder stock or fleet dynamics. The EOP Committee added Offshore Wind as another risk factor to be considered and included in the conceptual model.

¹ The September 19-20, 2019 and November 13, 2019 EOP Committee meeting summaries are included as background material behind Tab 7 in the December 2019 Council meeting briefing book.

The “full model” includes all critical summer flounder ecosystem elements identified by the workgroup and EOP Committee and the associated linkages between these elements. These ecosystem elements are grouped by functional categories (e.g., management, summer flounder, habitat etc. See color code key for the model). There are also sub-models for each of the 16 high-risk factors with the associated ecosystem elements, including a sub-model that evaluates the linkages between the 16 different high-risk factors (see Figure 1 for a static version of the “Risk Elements Only” conceptual model). This is the first time the relationships and linkages between the elements developed in the risk assessment were considered. This is one of the benefits of the conceptual model process and can help advance the risk assessment in moving beyond evaluating individual risk factors but also their relationships and connectivity with other factors. In addition, all of the models are interactive (hover over an element with the pointer) and allows for a user to visualize and highlight the linkages associated with a specific ecosystem element.

Below the conceptual model visualizations are documentation tables for each of the 16 high-risk factors considered. These documentation tables provide details on each of the ecosystem elements included for each high-risk factor. A justification for inclusion of each element, any associated data or information source(s) and any spatial considerations associated with the element are included. These tables help document the decisions made by the workgroup, highlight data availability and science gaps and will be used to help build the analytical tools associated with a possible management strategy evaluation process. In addition, at the request of the EOP Committee, definitions for each of the 16 high-risk factors in terms of risk to the Council meeting its management objectives are included.

Summer Flounder Management Questions:

Typically, conceptual models are developed and built to address a particular management question of interest to help ensure the appropriate management objectives and ecosystem factors are addressed. In this case, the Council did not specify a management question and instead tasked the workgroup to develop a comprehensive conceptual model first and then identify 10 management questions that could be addressed with the model and the available data. The EOP Committee reviewed the initial 10 draft management questions developed by the workgroup and identified seven potential topics of interest and tasked the workgroup to further develop and refine the questions focused on these topics. The EOP Committee then reviewed the revised questions and developed a final list of draft management questions for Council consideration².

Below are the three draft management questions, in priority order, as recommended by the EOP Committee. Below each question is additional information on the Committee justification, the types of issues/outcomes that could be evaluated through an MSE, how the question ties into the broader ecosystem context and other Council priorities and initiatives.

- 1. How does utilizing recreational data sources at scales that may be inappropriate for the data source (e.g., MRIP data at the state/wave/mode level) affect management variability, uncertainty, and fishery performance? Evaluate the**

² Please see the November 13, 2019 EOP Committee meeting summary to see all seven management questions considered by the Committee and for additional detail, discussion and rationale for prioritizing each question.

impact of that variability and uncertainty and its use in the current conservation equivalency process on recreational fishery outcomes.

The EOP Committee selected this question as its top priority given the importance of the recreational summer flounder fishery, concerns about MRIP data and its use in management, and the potential application to other Council-managed fisheries. This question is not intended to conduct a review and evaluation of the MRIP program but to understand the management implications of the current approaches and utilization of MRIP data within the recreational management process. Evaluating this question can help the Council understand the potential biological and management implications associated with the limitations in the current utilization the MRIP data within the management system and offer alternative strategies to help achieve recreational management objectives.

While this question focuses on recreational data and management, there are also ecosystem aspects and considerations that can be evaluated. The Data Quality high-risk factor is linked to four other risk factors contained in the conceptual model including: Allocation, Regulatory Complexity, Management Control, and the Stock Assessment. Conducting a full evaluation of this question can provide insight and guidance on a number of biological, environmental, social, economic, and management objectives. A future analysis of this question can also pull together, and be informed by, other Council funded projects (i.e., F-based management for the recreational summer flounder fishery) and Monitoring Committee activities evaluating MRIP uncertainty.

2. What are the mechanisms driving summer flounder distribution shift and/or population range expansion? What are the biological, management, and socioeconomic implications of these changes? Identify potential management and science strategies to help account for the impacts of these changes.

The EOP Committee noted the number of challenges the Council is already facing because of the significant biological and management implications of shifting species distributions. Evaluating this question has the potential to provide the Council with an increased understanding of what's driving these population shifts, what those implications might be, and offer different tools and strategies to address these issues and meet its management objectives.

Summer flounder distribution shift was identified as a high-risk factor through the EAFM risk assessment and is the most linked ecosystem element within the conceptual model. Eleven other high-risk factors, across all aspects of the summer flounder fishery conceptual model ecosystem, are affected by summer flounder distribution shifts that have implications for not only summer flounder management but other managed fisheries and protected species as well.

3. 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.

The EOP Committee noted the various management challenges to address and reduce regulatory discards, particularly within the recreational sector summer flounder fishery where 90% of the recreational catch is released. This issue is also raised frequently by stakeholders and Advisory Panel members. The Committee noted the potential utility in linking this question and the EAFM process to the Councils typical recreational review and management process. For example, the November 2019 staff memo³ regarding 2020 summer flounder recreational management measures recommends considering management strategies that depart from the current management approaches used under the conservation equivalency process in an effort to reduce recreational discards. Given the Councils potential interest in addressing recreational summer flounder discards in both the EAFM and traditional management process, this could present a unique opportunity to align these efforts.

Summer Flounder Discards was identified as a high-risk factor through the EAFM risk assessment and is linked to seven additional high-risk factors across issues of Management, Summer Flounder Stock, Science, Fishing Fleets, and Benefits derived from the resource.

The question below was identified as a priority for some members but the Committee did not reach consensus that this question should be considered within the group of high priority questions due to the limited scope of the question and its focus on the commercial sector only.

- **Are there alternative allocation schemes that would provide more flexibility in the commercial allocation strategy and allow fishermen to adapt to changing biological, economic, and social dynamics more effectively? Although this would apply for allocations across sectors as well, data limitations, modeling challenges, and mechanism complexities make this larger inter-sector question intractable, at this time. Identify and evaluate potential fleet efficiencies, economic and biological trade-offs and potential adjustments to baseline access to the summer flounder resource by the commercial sector through these alternate allocation schemes.**

Meeting Goals:

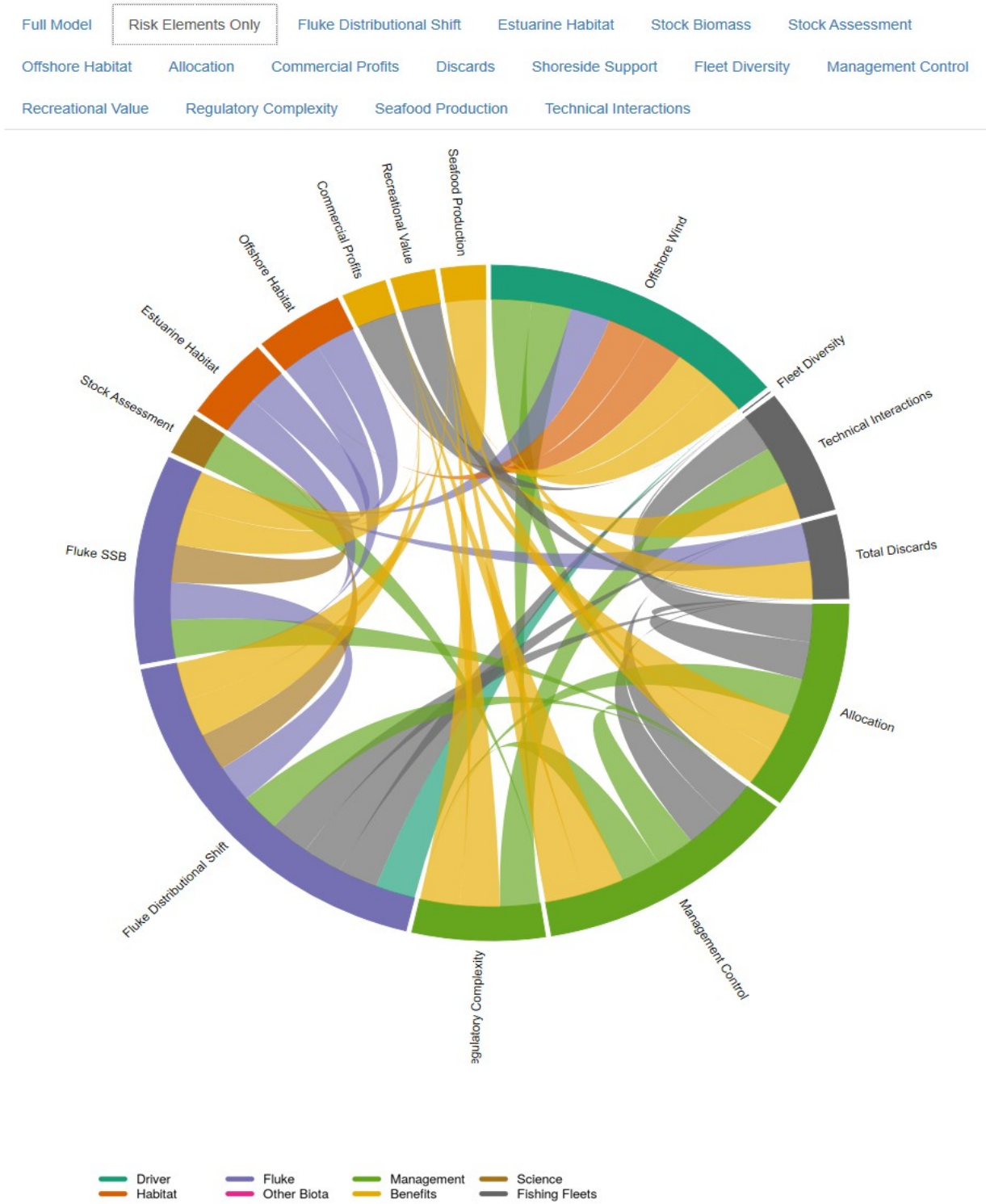
At the December 2019 meeting, Council and NEFSC staff will provide an overview of the conceptual model development and step through the configuration and interpretation of the conceptual model (**note:** Council and NEFSC staff will be available Monday evening to demonstrate and discuss the conceptual model if Council members are interested). The Council will review and finalize all of the draft conceptual model products developed by the workgroup

³ For more information and details, the November 6, 2019 Staff Memo on 2020 Recreational Summer Flounder Management Measures can be found at: http://www.mafmc.org/s/bsb_rec_memo2020.pdf

and EOP Committee, including: the draft conceptual models, detailed ecosystem element information and data, and management questions.

The Council will need to determine if continuing the EAFM structured framework process through the development of an MSE is appropriate. If so, the Council should select the summer flounder management question (from the list above) to be addressed through the MSE process. The MSE would then begin in 2020 with an iterative and stakeholder driven process. The MSE will provide the Council with strategies and alternatives that could be useful in achieving the goals and objectives outlined in the summer flounder management question selected.

Figure 1. EAFM summer flounder conceptual sub-model showing the linkages between the 16 different ecosystem high-risk factors identified by the Council’s Ecosystem and Ocean Planning Committee.





Ecosystem and Ocean Planning Committee

Meeting Summary

September 19 – 20, 2019

Baltimore, Maryland

EOP Committee Member Attendees: S. Michels, S. Lenox, W. Townsend, S. Gwin, S. Winslow (Committee Vice-Chair), G.W. Elliott (Committee Chair), M. Ruccio, P. deFur (Day 1), A. Nowalsky, M. Luisi (Council Chair)

Additional Attendees: S. Gaichas, G. DePiper (Day 1), B. Muffley, K. Dancy, E. Gilbert, J. Deem, G. DiDomenico, A. Applegate (webinar), M. Lapp (webinar)

The purpose of the meeting was for the Ecosystem and Ocean Planning (EOP) Committee to review and provide feedback on a draft summer flounder conceptual model, data availability and draft management questions that could be explored with the conceptual model. As part of the Council’s Ecosystem Approach to Fisheries Management (EAFM) decision framework, the Council agreed to pilot the development of a summer flounder conceptual model that will consider the high priority risk factors affecting summer flounder and its fisheries. A technical workgroup has been working throughout 2019 to develop a draft conceptual model and document the presence/absence of all supporting data and pertinent information. Specific feedback and recommendations offered by the Committee to the workgroup for further consideration and development are noted in **bold**.

Overview of EAFM Structured Framework and Conceptual Model Utilization and Development

The Committee chairman began with a review of meeting goals and a brief reminder as to the Council’s commitment to the EAFM guidance document and how related to the development of a conceptual model. The Committee’s focus for the meeting is to “groundtruth” the information provided by the technical workgroup and ensure these tools, products and process provide something meaningful to the Council.

A number of short presentations were provided by Council and NEFSC staff that gave an overview of the Council's EAFM structured framework process¹, how that process was used in the development of a summer flounder conceptual model, example conceptual models and their potential uses and applicability, and the process undertaken by the technical workgroup to develop the summer flounder conceptual model and associated products.

The Committee discussed the utility of conceptual models generally and then how this conceptual model and associated information might be used in the future to conduct a management strategy evaluation (MSE), the next step in the EAFM structured framework process. A conceptual model can be utilized in a number of different ways including: a visual communication tool, provide for a common understanding of ecosystem and linkages, identify research needs and priorities, generate management and/or science questions, and can be organized in a way to begin building a more comprehensive and quantitative model for use in a MSE. As specified by the Council when they agreed to pilot the development of the model, the draft summer flounder conceptual model was constructed in a way to inform all of these potential applications.

As it pertains to informing the MSE, the summer flounder conceptual model could be used as a comprehensive checklist to scope out the key ecosystem factors when specifying what an analysis could address through an MSE. The MSE process gives the Council the ability to consider management strategies (e.g., alternative summer flounder allocation scenarios) outside the typical process and evaluate impacts across the ecosystem in order to achieve specified ecosystem, biological and/or management objectives. An MSE allows the Council to evaluate consequences and trade-offs to the summer flounder fishery as continued changes in the ecosystem occur (e.g., climate change, distribution shifts, changes in habitat and stock productivity). The Committee questioned whether, given the commitment of time and resources, an MSE was necessary or were other approaches appropriate. Given the scope of the conceptual model and the larger issues the management questions are likely to consider, the Committee agreed that an MSE is likely the best approach to appropriately address these challenges. The Committee discussion highlighted the importance of appropriately specifying the right management question(s) with clear objectives and uncertainty to help ensure an MSE is addressing different perspectives appropriately.

Discussion and Feedback on Conceptual Model Elements, Data Sources, and Visualization Tool

The bulleted list below provides details on the various topics in which the Committee provided general comments, feedback and/or offered recommendations for workgroup consideration or development.

¹ For more details, see the Council's EAFM Guidance Document at: <http://www.mafmc.org/s/EAFM-Doc-Revised-2019-02-08-palr.pdf>

- The Committee supported the workgroup approach of building the conceptual model by starting with the high risk factors identified from the risk assessment and then identifying the key ecosystem elements that drive/affect each risk factor. This includes additional risk factors included in the conceptual model (offshore habitat, stock biomass and stock assessment) but not identified as high risk because of that factor’s overall importance and/or linkages throughout the system.
- Consider (in future) ways to textualize how the different elements are aligned – what it impacts and what impacts it – particularly since some elements were combined and include a variety of topics and considerations.
- **Consider including competition/other species interactions with summer flounder** – ex. dogfish and competition for space – as a potential ecosystem element under appropriate risk factor.
- **Review conceptual model visualization and detailed tables for consistency in terminology.** Some elements such distribution shift and change are used interchangeably between figure and tables and within the tables; while some other terminology issues may arise because elements may have been combined in the conceptual model to help “simplify” the visualization but may not be reflective of information in tables.
 - **Map out to ensure 1-to-1 relationships exist for all included elements in tables and conceptual model**
- The Committee discussed the need and/or ability to quantify relationships between elements (i.e., what relationships or linkages are more/less important or have more/less of an impact). Evaluating the importance or weight of any relationship will depend, and likely change, depending on the management question being considered. Therefore, this process would likely happen during the MSE process and the weighting/importance would be done based on the context of the questions/objectives being addressed with input from stakeholders, Council, staff etc. The current model assumes all relationships are equally important. Similarly, the MSE process would also be the appropriate time
- **The Committee discussed whether or not the Water diversion/flow (under estuarine habitat) should be included as an element and asked the workgroup to consider if appropriate.**
- **The Committee noted a separate glossary of definitions for the different elements and to how used by workgroup would be helpful (e.g. community vulnerability)**
- **Consider adding “regulations from other management entities” as an element under the Regulatory Complexity risk factor.** This element is captured under the Technical Interactions risk factor, but the Committee believes this element is also appropriate under Regulatory Complexity.
- **Consider the feasibility and utility of creating a conceptual model visualization that categorizes the current model elements by those that are identified as “within the Councils authority and management control” and those that are not – potentially**

using a simplified color scheme (e.g., black/white/grey). Categorizing and visualizing the elements this way might be informative to highlight how much/little is within the Councils control and maybe focus on those areas for future evaluation.

- **Add offshore wind/other ocean uses as an additional risk factor and build out the sub-model (i.e., identify ecosystem elements and associated data availability).** The Committee felt this risk factor (already included within the Risk Assessment) was a very important issue and should be included in the conceptual model given the likely differential impacts to commercial and recreational fisheries, habitat, science etc. While offshore wind/energy is likely to impact many Mid-Atlantic fisheries, the scope of this issue will be specific to the impacts and implications for summer flounder only. **The Committee also requested the workgroup develop a draft management question pertaining to this topic for consideration at their next meeting** (see additional information in section below). An advisor noted the website/email system “Tethys Blast” as a resource for wind and marine renewable energy information.
- **Consider pollution (e.g., pharmaceuticals and plastics) for inclusion as an element under estuarine habitat**
 - For additional information on this topic, a Committee member provided the following link: https://www.usgs.gov/mission-areas/water-resources/science/emerging-contaminants?qt-science_center_objects=0#qt-science_center_objects

After reviewing the details of the conceptual model and all of the supporting documents, the Committee discussed the benefits of the EAFM process and approach and the rationale for continued Council support and prioritization in future implementation plans (i.e., continuing with an MSE as the next step). The Committee noted the significant advancement and progress the Council has made to date to collect, consider and account for ecosystem considerations into the management process. Since this approach is not specifically constrained by the typical management process and requirements, it allows for a more comprehensive approach to address a complex issue that can't be answered through a more straightforward analysis. For example, an MSE could consider allocation alternatives that move away from simply taking allocation from one sector/state and give to another but evaluate system-wide alternatives that increase fleet efficiencies, minimize waste and increase management control. While the EAFM approach requires a lot of work with limited immediate tangible benefits, the Committee strongly believes the Council needs to see this process through to fully realize the return in its investment of time and resources.

Discussion and Feedback on Draft Management Questions

The Committee then discussed the 10 draft management questions provided by the workgroup. The Committee decided, at this point, to further explore seven managements questions – five from the existing draft list and two new questions. The bullets below summarize the Committee

feedback on the existing questions and recommendations for new/additional questions to be developed by the workgroup for consideration at the next Committee meeting.

- Current draft question #1 regarding biological and management implications of summer flounder distribution shifts/expansion was supported by the Committee to keep with no specific recommendations for modification.
- Current draft question #4 regarding estuarine habitat and summer flounder stock productivity was supported by the Committee to keep. However, the Committee offered feedback on the scope and focus of the question for the workgroup to consider. **The Committee recommended making the question broader, allow for consideration of water quality parameters and rephrase the question to make more management focused or clearer as to how this question would be addressed through an MSE.**
- Current draft question #6 regarding approaches to minimize and convert discards into harvest within the recreational sector was supported by the Committee with no specific recommendations for modification.
- Current draft question #8 regarding the most influential elements impacting stock dynamics and management decisions was supported by the Committee with no specific recommendations for modification.
- Current draft question #9 (last question in list) regarding data limitations and the associated variability and uncertainty in utilizing the data was supported by the Committee. While this question would have considered all data and information, **the Committee is interested in focusing this question specifically on recreational data (i.e., MRIP) and implications and how it will aide in Council decisions. Specifically, evaluate the variability and uncertainty in the MRIP data to provide for a more optimized recreational fishery, evaluate the use of the data in the current conservation equivalency process, and simulations evaluating fishery performance and data appropriateness at the state, region and coastwide level.** The workgroup should review the existing question and modify as needed to address these recommendations.
- **The Committee requested the workgroup develop of a new management question focused on allocation.** While allocation is implicitly included or a component of the distribution shift question (question #1), the Committee felt a specific and focused question on allocation is needed. The current process and alternatives considered to date generally take at very binary approach (give/take quota from sector or state) but this process provides an opportunity to look at this issue more holistically. **The Committee supported the development of an allocation question that considers efficiencies to be gained that allows for increased opportunities without necessarily taking fish away from one sector/state etc. Additionally, the Committee was interested in understanding the potential bounds (i.e., min/max) of access to the resource by both sectors and what management strategies might include under either scenario.**

- As mentioned in the section above, **the Committee requested the workgroup also develop a management question focused on offshore wind/other ocean use implications for summer flounder. The Committee noted the following areas for consideration – affects of sound/noise on distribution, science/trawl survey impacts, habitat and productivity implications, and commercial and recreational fishery impacts.**
- The Committee commented that all of the draft questions developed by the workgroup were very relevant and interesting even though not all were recommended for further consideration and noted that certain aspects of some of these questions (i.e., stock recruitment and productivity) may still be addressed as part of the questions still being considered.

Next Steps

The Committee then discussed the next steps. The workgroup will meet in mid-October to address the feedback and recommendations made by the Committee. The updated conceptual model, detailed data tables and draft management questions will then be presented to the Committee (and Advisory Panel) again in early/mid-November. At that meeting, the Committee will recommend if continued advancement of the EAFM process through development of an MSE should occur in 2020. If so, the Committee will recommend or prioritize the specific management question(s) to be addressed through an MSE. The full Council will review and finalize the conceptual model and all supporting documents, including the Committee recommendations, at the December 2019 meeting. The Committee noted the value of walking through and explaining the development and building of the different conceptual models and the relationship to the detailed tables. This will be important to do for the full Council and consideration on how to do efficiently at the Council meeting and opportunities to provide information ahead of the meeting will be important so members can all be prepared and understand the model and its utility.



Ecosystem and Ocean Planning Committee

Meeting Summary

November 13, 2019

EOP Committee Member Attendees: S. Michels, W. Townsend, G.W. Elliott (Committee Chair), M. Ruccio, P. deFur, A. Nowalsky, T. DiLernia, K. Wilke, S. Lenox

Additional Attendees: S. Gaichas, G. DePiper, B. Muffley, E. Keiley

The purpose of the webinar was for the Ecosystem and Ocean Planning (EOP) Committee to review and provide feedback on an updated draft summer flounder conceptual model, supporting data availability and draft management questions. The development of the summer flounder conceptual model is part of the Council's Ecosystem Approach to Fisheries Management (EAFM) decision framework and considers the high priority risk factors affecting summer flounder and its fisheries. The EOP Committee reviewed an earlier draft model in September 2019 and provided a number of recommendations for the technical workgroup to consider and address in a revised model. The EOP Committee reviewed these updates and developed recommendations for full Council consideration at the December 2019 Council meeting.

Review of EOP Committee Recommendations and Conceptual Model Workgroup Activities

The summer flounder conceptual model workgroup met on October 21, 2019 to discuss and address the various recommendations the Committee provided on the initial draft conceptual model and the associated supporting information and documents¹. Staff provided an overview of the workgroup response and work conducted to incorporate and answer all of the Committee tasks and recommendations. These tasks and recommendations covered topics such as adding/dropping various ecosystem elements included in the model, standardizing terminology in model and tables, developing a definitions page, and ensuring 1:1 relationships exist between the model and tables for all ecosystem elements. Overall, the Committee thought the workgroup did a great job and supported the approach, justification, and work completed by the workgroup. Two areas the Committee, with support from the workgroup, was interested in continuing to further develop and evaluate in the future were pollution

¹ See the September 19-20, 2019 EOP Committee meeting summary, found behind Tab 7 of the December 2019 Briefing Book for all of the Committee recommendations provided to the workgroup on the initial draft conceptual model.

impacts (e.g., microplastics and emerging contaminants) to summer flounder stock dynamics and the development of an alternative conceptual model visualization tool that categorizes ecosystem elements by those elements that are within and those that are outside Council authority and management control.

Review and Discussion on Updates to Conceptual Model and Data Element Tables

Staff then presented updates to the conceptual model and supporting data tables as requested by the Committee. Specifically, the Committee tasked the workgroup with adding Offshore Wind as an additional risk factor in the model and identify the key ecosystem elements and supporting information. It should be noted, the scope of offshore wind is specific to the impacts and implications to summer flounder and its fisheries only. The workgroup identified 10 different ecosystem elements covering biological, socioeconomic, and management factors that could be impacted by offshore wind development. These elements and the associated relationships and linkages were then incorporated into the conceptual model. The Committee reviewed the these Offshore Wind products developed by the workgroup and had no suggested edits or modifications and agreed to their inclusion in the model and supporting documentation.

Review, Discussion, and Prioritization of Updated Draft Management Questions

At the September meeting, the Committee reviewed the initial 10 draft management questions developed by the summer flounder conceptual model workgroup that could be explored with the conceptual model. The Committee tasked the workgroup with either re-scoping individual questions or developing new questions to address seven different topics of interest. Three original questions were retained without change by the Committee and four modified and/or new questions were developed by the workgroup. Staff provided an overview of the workgroup's justification, rationale, and intent of the re-scoped and new questions. After a lengthy discussion on all seven questions, the Committee ultimately agreed to prioritize three management questions for Council consideration. Of the remaining four questions, one was identified by some members of the Committee as a priority and the other three questions were not recommended by the Committee as a priority. Below is the prioritized list of the top three management questions, followed by Committee rationale for prioritizing and potential products and ecosystem considerations for each question.

- 1. How does utilizing recreational data sources at scales that may be inappropriate for the data source (e.g., MRIP data at the state/wave/mode level) affect management variability, uncertainty, and fishery performance? Evaluate the impact of that variability and uncertainty and its use in the current conservation equivalency process on recreational fishery outcomes.**

- Rationale: the Committee was split between this question and question #2 below as the top priority, but ultimately reached consensus to make this the top priority. Given the importance of the recreational summer flounder fishery, concerns about MRIP data and its use in management, and the potential

application to other Council-managed fisheries were some of the reasons the Committee decided to make this question the top priority. However, it's important to note the focus of this question is not to conduct a review and evaluation of the MRIP program but to understand the management implications of the current approaches and utilization of MRIP data within the recreational management process.

While this question focuses on recreational data and management, there are also a number of ecosystem aspects and considerations that can be evaluated, a value of the conceptual model and goal of the EAFM approach. Data quality is linked to four high risk factors contained in the conceptual model including Allocation, Regulatory Complexity, Management Control, and the Stock Assessment. Conducting a full evaluation of this question can provide insight and guidance on a number of biological, environmental, social, economic, and management objectives.

2. What are the mechanisms driving summer flounder distribution shift and/or population range expansion? What are the biological, management, and socioeconomic implications of these changes? Identify potential management and science strategies to help account for the impacts of these changes.

- Rationale: this question very closely followed the top priority question above. The Committee noted the number of challenges the Council is already facing because of the significant biological and management implications of shifting species distributions. Evaluating this question has the potential to provide the Council with an increased understanding of what's driving these population shifts, what those implications might be, and offer different tools and strategies to address these issues and meet its management objectives.

Summer flounder distribution shift was identified as a high-risk factor through the EAFM risk assessment and is the most linked ecosystem element within the conceptual model. Eleven of the 16 other high-risk factors, across all aspects of the summer flounder fishery conceptual model ecosystem, are affected by summer flounder distribution shifts that have implications for not only summer flounder management but other managed fisheries and protected species as well (see the conceptual model and associated tables for a complete list of all high-risk factors affected by distribution shifts).

3. 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.

- Rationale: assessing the various management challenges to address and reduce regulatory discards, particularly within the recreational sector summer flounder

fishery where 90% of the recreational catch is released, is a high priority for the Council. This issue is also raised frequently by stakeholders and Advisory Panel members. The Committee noted the potential utility in linking this question and the EAFM process to the Councils typical recreational review and management process. The November 2019 staff memo² regarding 2020 summer flounder recreational management measures recommends considering management strategies that depart from the current management approaches used under the conservation equivalency process in an effort to reduce recreational discards (Note: the staff memo also highlights the challenges and potential management implications of utilizing the MRIP data at fine scales (management question #1 above) and potential implications for increasing discards). Given the Councils consideration of addressing recreational summer flounder discards in the EAFM and traditional management process, this could present a unique opportunity to align these efforts. However, addressing this question through the EAFM and management strategy process would not provide management options and considerations for the 2020 fishing season.

Summer Flounder Discards was identified as a high-risk factor through the EAFM risk assessment and is linked to 7 additional high-risk factors across issues of Management, Summer Flounder Stock, Science, Fishing Fleets, and Benefits derived from the resource.

The question below was identified as a priority for some Committee members but the Committee did not reach consensus that this question should be considered within the group of high priority questions.

- **Are there alternative allocation schemes that would provide more flexibility in the commercial allocation strategy and allow fishermen to adapt to changing biological, economic, and social dynamics more effectively? Although this would apply for allocations across sectors as well, data limitations, modeling challenges, and mechanism complexities make this larger inter-sector question intractable, at this time. Identify and evaluate potential fleet efficiencies, economic and biological trade-offs and potential adjustments to baseline access to the summer flounder resource by the commercial sector through these alternate allocation schemes.**
 - Rationale: the Committee was interested in developing a question that considered allocation strategies for both the recreational and commercial sectors and evaluated minimum access scenarios for each sector as well. However, the conceptual model workgroup felt that minimum access scenarios for each fleet would be too variable and uncertain to define and, at this time, there was only enough information on the commercial sector to fully investigate

² For more information and details, the November 6, 2019 Staff Memo on 2020 Recreational Summer Flounder Management Measures can be found at: http://www.mafmc.org/s/bsb_rec_memo2020.pdf

allocation strategies. Since the question developed by the workgroup could not address all areas of interest to the Committee, the question was not considered as high a priority. However, some members of the Committee felt there was still value in considering this question and the potential outcomes due to recent Council actions to consider allocations changes to four Council-managed species.

Allocation was identified a high-risk factor through the EAFM risk assessment and is linked to 9 additional high-risk factors across issues of Management, Summer Flounder Stock, Fishing Fleets, Offshore Wind, and Benefits derived from the resource.

The questions below were considered by the Committee but were not identified as a priority and not listed in priority order. While these issues are important to the Council, the Committee felt these were a lower priority, might not be as well suited for a management strategy process, or might be addressed through other on-going activities and/or technical groups.

- **Is the availability and quality of habitat a limiting factor for summer flounder stock productivity? Evaluate changes in critical habitat (i.e., quality, quantity, spatial extent and overlap) across summer flounder life stages, identify habitat thresholds and the implications for stock productivity. Develop potential management goals and strategies to address summer flounder habitat change and identify actionable outcomes for Council consideration.**
- **What are the most influential elements that impact stock dynamics (i.e., recruitment, distribution, SSB, growth etc.) and management decisions? Identify data gaps for those elements and develop a research planning process to address these gaps.**
- **Offshore wind construction and operation is likely to impact the ecological and socioeconomic environment for summer flounder and its fisheries. What are the key drivers of recreational and commercial fleet dynamics under different scenarios of opportunity and access level to offshore wind lease areas? Evaluate the changes to and potential trade-offs between sector fleet dynamics and evaluate the biological implications (e.g., spawning stock biomass, recruitment) of these fleet dynamic scenarios. Determine and evaluate fishery management options to address these sector specific implications and trade-offs.**

The Committee also noted, while there was significant public interest in prior EAFM products (i.e., risk assessment), there was minimal public input and participation in the conceptual model development process and in attendance at the two EOP Committee meetings. Therefore, the conclusions and recommendations offered reflect Committee decisions with minimal stakeholder input. However, it should be noted that the management strategy evaluation (MSE) development, the next step in the EAFM process, is expected to provide for explicit stakeholder engagement with the exact specifications to be defined by the Council.

As discussed at length during the September meeting, the Committee reiterated its support for the continued implementation and advancement of the EAFM structured framework process through the development of an MSE that would begin in 2020.

Next Steps

The final draft conceptual model, supporting data availability tables, management questions, and Committee meeting summaries and recommendations will be provided to the full Council prior to the December 2019 Council meeting. The Council will review and finalize the full conceptual model and determine if continuing the EAFM process through the development of an MSE is appropriate. If so, the Council will select the management question to be addressed through the MSE process. The MSE would then begin in 2020 as an iterative and stakeholder driven process. The MSE will provide the Council with strategies that could be useful in achieving the goals and objectives outlined in the management question selected.