



New England Fishery Management Council

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Rick Bellavance, *Chair* | Cate O'Keefe, PhD, *Executive Director*

MEETING SUMMARY

Climate and Ecosystem Steering Committee

Milford, MA and via webinar

May 6, 2025

The Climate and Ecosystem Steering Committee (CESC) met on May 6, 2025 to:

- Discuss the New England State of the Ecosystem (SOE) Report, including opportunities for applying the results, clarifying management objectives, and updating the report for next year,
- Continue to coordinate with NOAA's Changing Ecosystems and Fisheries Initiative,
- Receive updates on three Inflation Reduction Act-funded projects,
- Receive updates on Risk Policy implementation and discuss climate and ecosystem factors,
- Develop a work plan for its two subcommittees (communication and process mapping), and
- Discuss other business, as necessary.

MEETING ATTENDANCE: John Pappalardo (Chair); Geoff Smith (Vice Chair), Katie Almeida, Dr. Joe Caracappa, Jeremy Collie, Tony DiLernia, Travis Ford, Dr. Lisa Kerr, Gareth Lawson, Dr. Kathy Mills, Dr. Jocelyn Runnebaum, Dr. Michelle Staudinger, and Peter Whelan (all Committee members present); Michelle Bachman, Andrew Applegate, and Jonathon Peros (NEFMC staff participants), Emily Bodell, Dr. Jamie Cournane, Jennifer Couture, Dr. Rachel Feeney, Robin Frede, David McCarron, Angelia Miller, and Dr. Cate O'Keefe (additional NEFMC staff); Rick Bellavance, Melanie Griffin, and Melissa Smith (additional NEFMC members or designees); Mitch MacDonald (NOAA GC). In addition, about 14 other people attended.

KEY OUTCOMES

- The State of Ecosystem (SOE) report discussion highlighted the need for better integration with management decisions at both individual stock and ecosystem levels.
 - The Steering Committee discussed the relationship between the SOE and metrics to support Risk Policy factor scoring.
 - The Steering Committee recommended avoiding over-reliance on data that may not be consistently available. The Steering Committee suggested carefully considering the use of trends analyses from the SOE when implementing the Risk Policy.
 - The Steering Committee agreed the report is valuable for providing context to management decisions and suggested mapping out the uses of various metrics to help prioritize updates and ensure the continued relevance of the report. This process mapping should consider alignment with the Council's management objectives.
 - Various approaches for developing future updates to the report given changing resource and data availability were discussed.
- The Steering Committee remains committed to exploring the utility of Changing Ecosystem and Fisheries Initiative products in the context of Council work.

- The Steering Committee was interested in ocean forecast products, specifically in better understanding meaning and uncertainty, considering management applications, and sharing these products via the CEFI data portal.
- The Steering Committee provided recommendations about how to develop the Climate Vulnerability Assessment 2.0 project. Assessment results are included in Risk Policy factor scoring.
- Staff shared progress updates on Inflation Reduction Act (IRA)-funded projects including Risk Policy evaluation, holistic strategic plan development, and portfolio analysis. The Steering Committee will be asked to provide specific input on these projects as they proceed.
- The Steering Committee reiterated the need for clear communication of Risk Policy concepts as implementation proceeds and recommended maintaining flexibility around defining factors and the metrics used for factor scoring.
- The Steering Committee approved Standard Operating Practices and Procedures (SOPPs). The Steering Committee also refined workplans for the Process Mapping and Communications Subcommittees and confirmed membership of each. The first meetings of both groups will occur soon.

AGENDA ITEM #1: WELCOME AND INTRODUCTIONS

The Chair welcomed Steering Committee members to the meeting and led a round of introductions as this was the group's first in-person meeting. There were no changes to the agenda. He noted that the recommended tasks and workplan developed during the first Steering Committee meeting were presented to the Council during their April meeting and there were no objections to the Steering Committee's plans, so the group can continue working in directions that were discussed previously. The Statement of Organization Practices and Procedures (SOPPs) was approved via consensus.

1. MOTION (DELERNIA/SMITH):

To approve the draft SOPPs for the Climate and Ecosystem Steering Committee.

The draft SOPPs were previously distributed to the Committee via email and follow directly from discussion at the February meeting. There was no additional discussion by the Steering Committee on the motion.

MOTION #1 CARRIED BY UNANIMOUS CONSENT.

AGENDA ITEM #2: STATE OF THE ECOSYSTEM REPORT (SOE)

Staff noted that a detailed presentation of the 2025 report would not be provided at this meeting as the report has already been presented to the SSC and Council, but invited members to ask questions about the report of Dr. Caracappa.

A Steering Committee member noted the climate vulnerability assessment outputs are an element of the climate factor to be scored and weighted in the Council's Risk Policy. They asked whether other elements of the SOE might be included in this factor. Dr. Caracappa noted that that would depend on the species or stock-level indicators available. Mr. Applegate noted that staff have been working with Dr. Caracappa and Brandon Belz at NEFSC about how to convey species information to the Plan Development Teams (PDTs) for scoring. A Steering Committee member emphasized that it would be useful to maintain flexibility going forward as we establish specific Risk Policy factors.

The group discussed that many of the SOE indicators describe trends, but that the risk policy is not trend-based and we want to avoid scoring around unstable elements to the various factors. The group discussed the distinction between information explicitly used in factor scoring and information that would be used more generally to provide context for the weighting exercise at the Council. Annual updates to the SOE should continue to provide context for factor weighting. A Steering Committee member suggested we consider which materials should be provided to the Council during the weighting exercises, vs. the

materials used by the PDTs for factor scoring. Mr. Peros noted that this issue is already being discussed amongst the Risk Policy Working Group (RPWG).

The group discussed a desire to solicit and include industry observations on changes they are observing in the ecosystem, and potential mechanisms for gathering such input. Staff noted that the NEFSC is seeking feedback for review and inclusion in future SOE reports via an email address that will be monitored on an ongoing basis. The Steering Committee also discussed MAFMC's Fishery Performance Reports, as well as data gathered via the study fleet program (although the program could change with restructuring at NOAA) and other forms of cooperative research as mechanisms to generate industry observations about ecosystem changes. The Steering Committee wondered if the Council's advisory panels could be used in a structured way to gather information on ecosystem changes.

The Steering Committee discussed how ecosystem information could be provided to the Council in a digestible, streamlined fashion. MAFMC's Ecosystem Risk Assessment is one example of how to provide stock-specific information to Council members and others involved in the Council process. At NEFMC we have used a Risk Policy matrix and there are plans to rework and potentially streamline those tables during implementation of the updated Risk Policy. In addition, the structure of annual monitoring reports prepared by the Council is currently being reviewed. These reports can be more directly aligned with the Risk Policy. Elements of the SOE could be tagged to match Risk Policy factors, for ease of understanding how those elements might be applied. The discussion emphasized that overall, a next step for Risk Policy implementation is to determine more specifically how to score various factors, and we want to centralize that work to avoid each of the PDTs going in different directions.

The group discussed the meaning of stability in the context of the SOE. Dr. Caracappa noted that this topic received a lot of discussion during SOE preparation. There were also diverse opinions during the SSC's discussion of the SOE. No specific conclusions were reached by the Steering Committee, although a point that resonated was that you could have either fisheries or resources in a stable low state, which is not desired. More clearly articulating the stability objective appears to require further work.

The Steering Committee discussed priorities and approaches for SOE updates if the full report cannot be updated annually as it has been in recent years. Options could include updating the summary tables annually, and the full text less often; updating the full report every other year and providing some data updates annually; or a hybrid approach where some sections are updated annually and others are updated less often. If there are sections that do not need to be updated as frequently, that would be useful for NEFSC to understand. The goal is to automate data processing, but the synthesis of results will remain time consuming as it involves multiple analysts and experts weighing in on the analyses. The Steering Committee did not provide a specific recommendation but discussed that information used in Risk Policy factor scoring should be a priority, while information used contextually could be updated less often. Another idea raised was to be sure that notable events / red flag issues should be communicated annually, at minimum. A related issue is how and when ESPs are updated; this work is done during the assessment process but there does not seem to be a sustainability model or plan for the ESPs that have been developed. Via term of reference 1 of the research track process a great deal of valuable information on abiotic and biotic influences on individual stocks is gathered and memorialized in the ESPs; ensuring the sustainability and updating of these products could be valuable to management.

The lag between when data are gathered and when they are provided via the SOE was also noted; the time lag varies by data source. There was also some discussion of ecosystem indices that are used to inform assessments, and a member noted that physical oceanographic indices are more developed and more often considered for use in stock assessments than biotic indices.

Finally, the Steering Committee discussed management objectives and whether they could be more clearly articulated, as requested by NEFSC. The relationship between overarching ecosystem level objectives implicit in MSA and put forward in the SOE and objectives in individual FMPs was questioned. Do FMP objectives conflict with one another? Where are they documented and have they

been evaluated in combination with each other? Although a specific plan for evaluating one or more of the SOE objectives was not developed, the group discussed that it could be helpful to refine these objectives to better align with the desired state (which would need to be determined). The Steering Committee considered the idea of having a straw man for the desired states to circulate for feedback. The group also discussed the importance of linking environmental indicators to specific management objectives or risks to those meeting those objectives. The team also discussed the need for a conceptual mapping exercise to better understand the connections between different data sources and processes (see Process Mapping Subcommittee discussion below).

AGENDA ITEM #3: NOAA'S CHANGING ECOSYSTEMS AND FISHERIES INITIATIVE (CEFI)

Relative to the Steering Committee's February meeting, capacity at the northeast CEFI program has decreased, and the demonstration project list is currently under review. Dr. Caracappa emphasized that none of the demonstration projects are off the list, but all are being evaluated carefully. Climate-informed stock assessments remain a priority. Dr. Caracappa discussed the status of ocean forecast products (surface temperature, bottom temperature, and salinity) and their potential applications. He mentioned that the models are being continuously refined and validated with real-time data (e.g., eMOLT, buoy data, and satellite data). He also highlighted the possibility of incorporating these forecast products into the State of the Ecosystem (SoE) report but noted that this would require careful consideration of the scale and uncertainty associated with the forecasts. The Steering Committee discussed the potential benefits of having a 1-year outlook for water temperature, particularly for stock-specific environmental drivers. However, they acknowledged that incorporating forecasts into the risk framework would require further development. The conversation about forecasts concluded with a discussion on the potential for adaptation and foresight in response to the changing ocean conditions. The group discussed the specific recent finding that there is a cooler near term forecast, noting that this is still occurring within an overall warming regime and advising caution around the notion that this could represent a 'return to normal'. A pause in warming could allow opportunities for species to adapt, however, and possibly offer opportunities to promote rebuilding of species with colder temperature optima.

Ms. Bachman summarized the Climate Vulnerability Assessment (CVA) 2.0 project, which will update prior work (Hare et al. 2016) and aims to focus on species of the greatest interest. A spatial element to the CVA 2.0 will highlight locations where vulnerability or exposure might be different / greater. The project is expected to be completed by September 2026, with potential interim products. Staff are recommending groundfish species for the assessment to align with the Risk Policy contract. Other species recommended for consideration by the Steering Committee included scallops and herring (note that the Mid-Atlantic Council is recommending updates for some of the species they manage, such as squid, which are important to New England states). The frequency of updates to the CVA is uncertain but may not align with the frequency of Risk Policy factor scoring and weighting.

In the context of CVA 2.0, the Steering Committee also discussed the importance of considering adaptive capacity in the assessment and separating it out from sensitivity. The group raised the idea that species that can shift their distribution may be exhibiting greater adaptivity, where species that remain in place might be more sensitive to changes. More broadly, Steering Committee members expressed concerns about the management and governance structure of the East Coast and the need for management recommendations to recognize and accommodate climate change impacts and the realities of shifting stocks.

Dr. Caracappa provided a brief overview of the CEFI data portal, which provides model output for various products derived from MOM6. He explained that users can visualize variables in a specific area or download data as an Excel file or a big array file. The portal currently includes historical simulation, retrospective forecasts, and annual forecasts. However, only salinity and temperature are available for forecasts, with other biogeochemical models still under development. A member suggested showing forecasts and differences side-by-side on the portal. The group discussion that forecasts could be used in

real time to update management track assessments or make other management decisions such as scallop rotational management choices where knowing something about projected temperatures and conditions experienced in specific locations would inform the level of precaution. Dr. Caracappa noted that there may be some additional analyses and summaries of model outputs that could be loaded onto the portal if the code can be shared.

AGENDA ITEM #4: INFLATION REDUCTION ACT (IRA) PROJECTS

Ms. Bachman summarized the status of ongoing projects under the IRA portfolio, including a Risk Policy evaluation through a simulation testing approach, a holistic strategic plan development, and a portfolio analysis. She emphasized the importance of strategic planning and input from various groups to ensure the projects' success.

Dr. Kerr provided some additional details on the Risk Policy simulation testing project. This will include exploring, through a management strategy evaluation (MSE), the interplay of different factors that update on various timescales, as well different ways that the Z scores calculated from the factor scoring and weighting might be translated into ABC control rules. Focal species will be selected for testing via the MSE that account for different stock conditions, biology, assessment types, etc. Overall, this project will allow the Council to both explore some of the questions, challenges, and opportunities associated with Risk Policy implementation and will provide a starting point for the development of revised control rules for groundfish stocks. A Council action to develop and implement new control rules will be developed following completion of the IRA project. The Steering Committee asked what performance metrics will be used to evaluate various control rules during simulation testing. This has not been precisely determined, but standard metrics include reviewing estimated changes through time in spawning stock biomass, catch, and probability of overfishing. Generally, these are biological metrics, used as a proxy for economic outcomes, since a full bioeconomic model is not available for this work.

AGENDA ITEM #5: RISK POLICY

Following a break for lunch, Jonathon Peros, the staff lead on Risk Policy development, provided an update on the implementation and other issues. He emphasized the importance of communication and feedback from the Steering Committee on the Risk Policy, and that implementation would be an iterative process. He noted that the implementation process has been fluid and that the Risk Policy Working Group is still testing out different ideas. He concluded by discussing the factors that the Council has identified.

Mr. Peros discussed the economic and community importance factors, the commercial fishery characterization, and the recreational fishery characterization. He pointed out that there is still the opportunity to think about data sources and what metrics to use (e.g., considering some of the ideas from the morning's discussion about the SOE report concerning possible climate and ecosystem indicators) and noted that any recommendations will go through the Risk Policy Working Group. He explained the scoring and weighting process, which is intended to be objective. He also discussed the Council's mock weightings exercise, done in April 2025, which involved assigning importance to each factor. Mr. Applegate then discussed the fish condition analysis and the assembly of data to be used for factor scoring. He pointed out the importance of interpretation of fish condition, which for example could be low either because the stock is abundant and there's competition or because of scarce food. He also mentioned the need for further work on the fish condition factor. The presentation concluded with a discussion on the application of the Risk Policy to setting ABC control rules, and the plan for simulation testing through the contract with University of Maine, which was presented before the break by Dr. Kerr.

Steering Committee members asked several questions about the approach:

- How is the Z score calculated using a combination of factor scores and weights?
- How is the Z score used, for example in the context of a control rule?
- How significant are weightings in determining the Z score and thus in influencing management outcomes?

- How might conditions be put on the weighting system (e.g., allocating a total number of points to be assigned across all factors)? Would this be preferable to the more ‘freeform’ approach used in the pilot weighting exercise? How do we understand what is happening when the weights or scores are at the high or low extremes? How do we clearly explain how negative or positive scores or weights lead to greater or lesser risk aversion?
- What information sources are Council members using to determine weights? Should we recommend considering specific information, e.g., the State of the Ecosystem Report?
- How might fish condition be assessed and scored, and what does fish condition tell us about ecosystem conditions and the level of risk to take? Also, how does this factor scoring and consideration in a risk policy context relate to and potentially duplicate work done in the context of the stock assessment?
- How might fishery characterization factor be scored?
 - Elements to consider include price trends, port concentration, active vessels, number of trips, age of vessels, number of crew, discards by stock, discard rate. This information could be broken out by stock, port gear, for a group of species, by FMP, etc.
 - The Steering Committee suggested that there might be something to glean by way of example from the [Alaska Fishery Science Center’s snapshots of fisheries](#), acknowledging differences in data availability between regions. Also see this [presentation](#).
 - The Council should consider what different data metrics are indicating, e.g., what does the number of trips tell us about the condition of the fishery?
- How does the timing of data updates, which may vary by metric, or product, influence Risk Policy implementation (i.e., frequency of factor scoring, weighting updates)?
 - How does the timing of data updates relate to the timing of Council management actions?

The Steering Committee noted ongoing reviews of considerations of risk in other advice processes, such as at ICES, may help inform this discussion.¹ Mr. Peros noted that additional work is planned to evaluate the scoring and weighting approaches and how together scoring and weighting influences the Z scores. The simulation testing will help us to better understand how the approach will work in practice. Overall, both the scoring and weighting are important elements of the Risk Policy; the weighting process gives the Council the opportunity to influence management outcomes in addition to the data-driven factor scoring.

AGENDA ITEM #6: SUBCOMMITTEE WORKPLANS

Next the Steering Committee discussed workplans for two subcommittees on process mapping and communications. Draft workplans were provided before the meeting. Process mapping will involve (1) refining specific diagrams outlining components of the Council process and (2) identifying where and how climate and ecosystem information could be incorporated. No changes to the draft workplan were suggested. Subcommittee membership was updated during the meeting. Dr. Runnebaum shared a table that identifies information inputs and opportunities for use; the Steering Committee agreed that this approach in addition to the process diagrams seems like a useful way to understand potential applications for specific products.

The second plan was for the communications subcommittee, which will involve both outreach and language clarification. Generally, the Steering Committee discussed the importance of clear communication and the need for stakeholder engagement. They also discussed the potential for hosting listening sessions to gather feedback from stakeholders; overall the need for two-way communication was emphasized. The Steering Committee suggested taking advantage of existing meetings and opportunities to gather feedback and share information about the Council’s work. The Steering Committee refined the draft communications workplan provided prior to the meeting to add the following elements:

¹ Two initiatives to consider include the Strategic Initiative on Climate Change Impacts on Marine Ecosystems (SICCME) and the Workshop on Pathways to Climate-Aware Advice (WKCLIMAD).

- Consider lessons learned from past ecosystem-based fishery management work;
- Create a short informational document to describe the Council's climate and ecosystem work;
- Collaborate with IRA project oversight teams to identify timing of outreach for IRA projects; and
- In addition to other elements of stakeholder outreach meetings, identify objectives for these sections.

The Steering Committee discussed focusing on some of the messaging/language clarification work before conducting outreach activities. Additional Communications Subcommittee members were identified.

AGENDA ITEM #7: WRAP UP AND FOLLOW-UP ITEMS

Mr. Pappalardo briefly summarized the outcomes of the meeting. Next steps include the following:

- State of the Ecosystem Report / integration of climate and ecosystem information into management processes:
 - Advance a discussion about whether fishery performance reports or a similar means of communicating observations from advisory panel members could be added to the Council's process. Observations could include whether stock or ecosystem conditions are changing. This could include exploring ways to gather more real-time information from advisory panels, potentially through periodic email solicitations or surveys.
 - Dr. Caracappa will organize a prioritization meeting for the State of the Ecosystem report with Council SSCs and interested Steering Committee members.
- Changing Ecosystems and Fisheries Initiative:
 - Ms. Bachman will communicate feedback on the Climate Vulnerability Assessment 2.0 to Katherine Gallagher. She will also attend their methods meetings in June. Feedback included the timing of scoring exposure vs. sensitivity factors, recommended priority species (Atlantic herring and scallops as well as selected groundfish), and a question as to whether the assessment can consider adaptive capacity and harvester perceptions of climate impacts.
- ABC Control Rule / Risk Policy Simulation Testing Project and Risk Policy implementation:
 - The Risk Policy Working Group should consider which materials to provide to Council members as background materials for the Risk Policy weighting process. The Steering Committee recommends including the State of the Ecosystem report among the materials reviewed prior to weighting factors.
 - Dr. Kerr and the ABC Control Rule/Risk Policy project team will ideally present initial findings to the Steering Committee in late summer. Timing and content of a presentation will be coordinated through the Project Oversight Team working with the CESC Chair.
 - Mr. Peros to bring feedback from the Steering Committee to the Risk Policy Working Group for further refinement.
 - Staff, CESC Chair, RPWG Chair, to continue to explore opportunities for Steering Committee engagement in Risk Policy implementation.
- Holistic Strategic Plan Project:
 - The Parnin Group to conduct interviews and focus groups with selected council process participants for the Holistic Strategic Plan. Steering Committee members will be contacted directly and individually if they are being asked to participate in this stage of the process.
 - The Steering Committee as a whole will be asked to provide input on the assessment and recommendations phases of the Holistic Strategic Plan in late summer/early fall.
- Subcommittees
 - Process Mapping Subcommittee to refine process diagrams and develop tables identifying climate and ecosystem information integration points.

- Communications Subcommittee to review lessons learned from previous EBFM outreach efforts and develop a communication strategy; Mr. Applegate to share his white paper on the EBFM experience with the Communications Subcommittee.
- Communications subcommittee to create a one-pager and 3-4 slides summarizing the Steering Committee's work and future directions.
- Additional Steering Committee members are invited to consider joining the Communications Subcommittee; inform Ms. Bachman if interested.
- Ms. Bachman will send out polls to schedule initial meetings for both subcommittees.
- Administrative items:
 - Distribute / post approved SOPPs document and add to Council records.
 - Schedule the next Steering Committee meeting (tentatively for late summer).

The Climate and Ecosystem Steering Committee meeting adjourned at 4:00 p.m.