Mid-Atlantic Fishery Management Council
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MEMORANDUM

Date: November 29, 2021

To: Chris Moore, Executive Director

From: Kiley Dancy, Staff

Subject: East Coast Climate Change Scenario Planning Update

On Wednesday, December 15, the Council will receive an update on East Coast Climate Change Scenario Planning. The primary focus of this update will be a summary of the scoping process for the initiative, the main components of which were conducted between July and September 2021.

Materials for this discussion include a document that was provided to the Northeast Region Coordinating Council (NRCC) for their November 2021 meeting. This document provides a high level overview of the scoping process, including a summary of the scoping elements and highlights of the feedback received. A more detailed scoping summary document is in development and expected to be finalized by the end of 2021.

The next step for this initiative includes a series of webinars, currently planned for February 2022, to explore what is known and unknown about potential drivers of change in east coast fisheries, including physical and oceanographic changes; biological, ecological, and habitat changes; and socioeconomic changes. An in-person scenario creation workshop will follow these webinars, tentatively scheduled for April 2022.

Additional information, including scoping process documents and information about upcoming activities, will be posted to the scenario planning web page as it becomes available, at https://www.mafmc.org/climate-change-scenario-planning.

East Coast Climate Change Scenario Planning Update:
NRCC Meeting - November 2021

Background

In November 2020, the Northeast Regional Coordinating Committee (NRCC) agreed to move forward with an east coast scenario planning initiative as a way to explore jurisdictional and governance issues related to climate change and shifting fishery stocks. In May 2021, NRCC agreed on a proposed framework for this initiative, comprising six phases:

1. Orientation
2. Scoping
3. Exploration
4. Scenario Creation & Synthesis
5. Applications
6. Monitoring

This document provides an update on the overall initiative. It specifically provides a summary of the Scoping phase describing work undertaken between July and November 2021. The document concludes with proposed plans for next steps.

Scoping Phase: Purpose and Activities

Work in the Scoping phase of this initiative has three purposes. Firstly, to introduce and explain the scenario planning initiative to a range of stakeholders, encouraging them to engage throughout the process. Secondly, to receive feedback about the project objectives, focus and expected outcomes that we articulated at the beginning of the initiative. Thirdly, to invite ideas from a broad range of stakeholders about the factors and issues that might shape the future of East Coast fisheries, and hence should be included in the scenario analysis as the initiative continues.

To achieve these ends, the Scoping phase involved three main activities:

1. We created a set of materials and a redesign of the initiative website. We created a 4-page brochure that introduced scenario planning and the specifics behind the initiative, along with a series of videos that explained the main elements of the work. This material was posted to a redesigned website. Details can be found at: Mid-Atlantic Fishery Management Council — East Coast Climate Change Scenario Planning Initiative

2. We designed and conducted three 90-minute webinars (On August 30, September 1, September 2, 2021). These webinars covered the same content and were attended by a total of over 250 people. The sessions began with a 30-minute presentation to introduce scenario planning and the initiative. This was followed by a set of breakout group conversations where participants were able to share their experiences of climate change and their perspectives on how it has impacted east coast fisheries to date. Participants

also had the chance to provide feedback on the project objectives, focal questions, and expected outcomes.

3. We designed and distributed an online questionnaire. This was meant to capture stakeholder feedback on project objectives, ideas about the factors and issues that might shape East Coast fisheries in the next 20 years, and any other advice or guidance that might be helpful as the initiative moves forward. The online questionnaire was available for 32 days from August 30th through September 30th. We received 383 responses to the questionnaire, providing a wealth of information and ideas that will help shape the next phases of the work.

Findings from Webinars

The three online webinars were all well-attended. During the breakout conversations, participants welcomed the initiative, the webinar sessions, and the chance to interact with other stakeholders at this early stage of the process.

We heard from numerous fishermen, scientists, and fishery managers about their experiences of how climate change was already having an effect on many aspects of fishing, including stock distribution and range shifts, habitat changes, acidification, productivity, storm intensity/frequency, seasonality, as well as some changes in shorelines in preparation for sea level rise and other impacts. There was also general support for the initiative focus – i.e., exploring how climate change will have an impact on the management and governance of East Coast fisheries.

Overall, participants recognized this was an important, timely topic to address, and accepted that scenario planning is a useful tool to help structure the conversations around such a broad, complex, and uncertain set of issues.

Findings from Online Questionnaire

We received 383 responses to an online questionnaire comprising12 questions. These questions asked about participants' reactions to the draft project objectives and outcomes, and to identify the factors that they felt would shape the future of east coast fisheries over the next 20 years. The questionnaire also provided the opportunity for participants to add any other comments or guidance regarding the process. asic demographic information (e.g., home state and role) was also collected from all respondents.

The following provides a brief summary of findings. A more detailed report from the entire scoping phase is being developed and will be posted online in December 2021.

Demographics

Of the 383 responses, around half (186) were received from recreational fishermen, with a very large response (128) from the mid-Atlantic region. 71 responses were received from scientists / researchers, 29 from commercial fishermen, 27 from fishery managers and 27 from coastal

community members. 18 participants from environmental / conservation NGOs also responded to the survey. In terms of regional breakdown, 181 responses were from the mid-Atlantic region, 144 from the Northeast and 48 from the Southeast.

Project Objectives and Outcomes

Participants were asked to comment on the draft project objectives. All responses were then qualitatively analyzed by a NMFS Office of Science and TechnologyKnauss fellow the using a thematic coding approach into one of six different response categories: 100 comments involved some recommendation for a change to the wording of the existing objectives; 80 comments supported the objectives with no other changes needed; 32 comments referred to the need for additional objectives; and 34 comments offered other considerations to note and take account of. Seven comments disapproved of the objectives.

The core team has reviewed the analysis of the comments and has accordingly recommended some slight changes to the project objectives. The recommended revised objectives are now as follows:

1. Explore how East Coast fishery governance and management issues will be affected by climate driven change in fisheries, particularly shifting stock availability and distributions, including changes in habitat and overall productivity.
2. Advance a set of tools and processes that provide flexible and robust fishery management strategies, which continue to promote fishery conservation and resilient fishing communities, and address uncertainty in an era of climate change.

The recommended changes are highlighted in red. For objective 1, the main change is that large numbers of participants wanted to call out changes in habitat and productivity as additional elements of importance. The recommended changes retain the priority focus of the initiative on shifting stock availability and distributions, but recognizes these other critical components that may also influence stock availability and distribution. For objective 2, participants saw value in using "advance" rather than "develop" to reflect the fact that there are already many tools and processes in existence that management and other stakeholders should look to use. In addition, many respondents felt it was important to reassert that fishery management strategies are designed to promote fishery conservation and resilient fishing communities.

Several respondents made suggestions for additional project objectives. These included requests the initiative included goals related specifically to (i) improving fisheries science, (ii) identification of Ecosystem Based Fisheries Management strategies, (iii) education of stakeholders regarding climate change implications, and (iv) re-evaluation of landings in regards to states' allocations. While all of these are important issues that require consideration, and will likely come up during future conversations regardless, the Core Team decided there are other venues and processes that are more suitable for those discussions. Accordingly, the Core Team recommends not adding any further objectives to the initiative. The Core Team plans to track any and all relevant recommendations that surface during the scenario planning initiative and forward them to staff working on other climate change-related efforts in the region.

Overall, the findings on objectives reinforced our belief that we have an appropriate focus for this scenario investigation. There will be many ways in which climate change will affect fisheries. We will no doubt touch on several of these in the scenario work, but the focus of the scenarios will primarily be on describing how climate change might affect stock distribution, availability, habitat, and overall productivity. These scenarios will then be used to explore the future implications for fishery management and governance across multiple jurisdictions.

Last, respondents were asked for their view on a list of six expected project outcomes. All the outcomes were deemed important or highly important. The highest ranked outcome was "*a better understanding of the challenges and opportunities facing fishery management in future*". This feedback suggests that no changes are needed to the list of draft expected outcomes.

Factors for scenario analysis

Several of the questions asked participants for their views on the factors that are likely to shape East Coast fisheries over the next 20 years. This question was asked in many different forms. What climate-related factors are predictable? What climate-related factors are important but unpredictable? What climate-related factors might be very surprising? And what other factors might shape fisheries?

Responses were analyzed across regions and stakeholder roles, and found no discernible differences in how respondents answered these questions. Each region/group, while having unique experiences, has a similar overall perspective when considering how climate change might shape the future of fisheries.

There was broad agreement on climate-related factors that are predictable and expected: ocean temperature change; ocean acidification; and sea level rise. Factors that are important but unpredictable included a range of biological uncertainties (e.g., shifting spatial distributions, health of stocks, habitat loss, rate of ecosystem change), physical uncertainties (e.g., rate and magnitude of seal level rise, ocean temperature changes), social and economic uncertainties (e.g., competing ocean uses, impacts on fishing communities) and management uncertainties (e.g., effective management approaches for a changing climate). Climate-related surprises included the impacts of severe storms, changes in ocean currents, pollution, and significant fishery loss. Other, broader factors that will shape the future of east coast fisheries included stakeholder cooperation, degree of public interest, population growth and coastal development, and competition for ocean uses.

All of these factors (and probably others) will be included in the next phases of the scenario process, as we look towards a deeper exploration of how climate change will affect East Coast fisheries in the next 20 years.

Insights from the Scoping Phase

Taking the webinars and responses to the online questionnaires together, the following provides some high level insights from the Scoping Phase of this work:

1. There is a lot of interest in this subject. Most people realize climate change will affect fisheries and are supportive of efforts that help all stakeholders prepare for changes.
2. Stakeholders are already seeing the effects of climate change on many different aspects of fisheries and coastal life, and they expect to see more impacts in the future.
3. There is general support for the project objectives, focal questions, and expected outcomes. We received several comments concerning recommended changes to the objectives and have made some minor adjustments accordingly.
4. Over 70% of questionnaire respondents (~280 people) would like to continue to be informed and stay involved in this initiative.
5. Participants recognize the wide-ranging scope of this exercise. They see the importance of gathering and engaging wide-ranging input / perspectives in the process.
6. The broad scope of this work requires us to carefully consider how to keep the large number of stakeholders engaged and participating throughout the process.

Proposed Timeline and Next Steps

In May 2021, the NRCC agreed on a proposed framework involving six phases. We have now revised the timing of when we expect to complete each of the phases.

	Original Timing	**Revised Timing**
Orientation	Late 2020 – Early Summer 2021	Summer 2021
Scoping	Summer / Fall 2021	Fall 2021
Exploration	Fall 2021	Jan – Feb 2022
Scenario Creation & Synthesis	Late 2021 / Early 2022	March 2022
Applications	Spring/ Summer 2022	Spring - Fall 2022
Monitoring	Summer / Fall 2022	Late 2022 / Early 2023

The schedule for the phases is slightly later than originally planned. This is partly due to accommodation of other strategy work, and partly to ensure that as much of the process as possible is conducted using in-person events.

There are three main proposed next steps.

1. **Scoping Phase: Creation and publication of a full Scoping summary document**. Hundreds of participants provided their input in the Scoping Phase. It will be valuable to create a summary of the main insights from the webinars and online questionnaire. We expect to complete an in-depth Scoping Summary document by December 2021. We will share the document with all webinar attendees and questionnaire respondents who requested that we keep them informed of the initiative. We will also post it on the website.
2. **Exploration phase: Factors and Forces webinars**. Participants have identified many of the relevant factors that will be included in the scenario analysis and creation. To ensure we provide specific information about these drivers, we plan to hold a series of online

webinars to share and discuss research available on these core topics. Speakers will present latest research on driving forces, focusing on issues around stock distribution, availability, habitat, and productivity. We plan to hold a number of these education focused webinars in January 2022. The core team recommends these webinars be online only to provide an opportunity for hundreds of participants to remain engaged in the process given the realities of COVID-19 issues.

3. **Scenario Creation and Synthesis phase: Scenario Creation workshop**. The core team is planning to hold this in March/April 2022, aiming for it to be an in-person event. If conditions do not allow for this, we need to decide whether to delay until later or replace with an online workshop. There will be a limited number of participants at this event to ensure that the conversations are focused and effective.

Once the scenarios are created, they will be used as a platform to consider how fishery management and governance might need to adjust to cope with changes in stock distribution, habitat, and other consequences of climate change.

Specific input from the NRCC

1. Support minor adjustments to the project objectives based on input from the scoping phase?
2. Support initial plans for next steps: Factors and Forces webinars (online in January 2022) and Scenario Creation workshop (in-person in March/April 2022). If an in-person workshop in March/April 2022 is infeasible, should we (i) delay the process until we can safely conduct an in-person workshop, or (ii) redesign for a virtual workshop to be held in March?
3. Are there any other considerations we should bear in mind as the initiative continues?