Draft 2026 Potential Action Menu

Introduction

The U.S. East Coast Fishery Management Councils (Councils, New England, Mid-Atlantic, and South Atlantic), the Atlantic States Marine Fisheries Commission (Commission), and the National Marine Fisheries Service (NMFS) conducted an East Coast Scenario Planning Initiative to explore jurisdictional, governance, and management issues related to climate change and fishery stock distributions. Representatives from these fishery management organizations have worked collaboratively and engaged diverse stakeholders to explore how changing ecosystems, socioeconomic conditions, and the regulatory environment will affect fishery management. This exploration was based on a multi-stage scenario planning process, where stakeholders generated several different possibilities for how changing conditions might affect east coast fisheries. This document builds on recommendations and actions developed at the February 2023 East Coast Scenario Planning Summit meeting. An overview of the scenario planning process and summit meeting can be found here.

Role and Structure of Potential Action Menu

This potential action menu describes the actions identified through the scenario planning process, as well as new recommendations based on fishery and ecosystem information evaluated annually. Most potential actions are relatively broad in scope, and each includes multiple specific next steps and possible relevant groups to take on the work.

The potential action menu is updated annually based on the recommendations of the East Coast Coordination Group (Coordination Group). The Coordination Group reviews all potential actions and prioritizations (high priority, medium priority, and parking lot) and recommends any modifications to the list of actions or their priority. A full list of potential actions by priority level can be found in the Appendix. The East Coast Core Team (Core Team) supports the Coordination Group by tracking progress of actions and associated next steps, highlighting actions that should be elevated in priority, or suggesting new actions based on changes in ecosystem conditions. This work is done annually.

The status of each of the actions and specific next steps for activities being addressed by the Coordination Group or its member organizations is tracked in a spreadsheet prior to the spring and fall Coordination Group meetings and is available at www.mafmc.org/east-coast-coordination-group. Brief status assessments for in progress actions are noted in the tables throughout this document, to the best of the Core Team's knowledge; there may be activities the Core Team is unaware of. Some actions are likely being addressed by other entities and the status of those activities may not be captured here or in the tracking spreadsheet. If the Core Team learns that an action or specific next step has been completed during the past year, it will be listed in the section of this menu "Completed Actions."

In 2023 NOAA announced Inflation Reduction Act (IRA) funding for the eight regional Fishery Management Councils to support Council efforts to develop and advance more resilient fisheries management and implementation. The NEFMC, MAFMC, and SAFMC used this opportunity to begin work on actions developed during the East Coast Scenario Planning Initiative and documented in this

Potential Action Menu. Actions being addressed through these projects are noted with the lead Council and project number. The Councils provide regular updates on these IRA projects that can be found on their respective project webpages (NEFMC, MAFMC, SAFMC).

Actions are classified as high priority, medium priority, or placed in the parking lot.

- High priority potential actions are those that could be quick wins and/or that the Coordination Group views as important issues to address in the near term. Some of these actions include next steps that are already underway.
- The medium priority potential actions (also referred to as the 'watch list') are also important but could take more time or resources to address. These issues are viewed as less immediately actionable or less of a priority for immediate allocation of resources compared to the high priority issues. Some high priority actions include next steps with a mix of priority levels.
- The parking lot highlights ideas that are a lower priority or infeasible to pursue at this time. The purpose of this section is to hold on to ideas for possible future reconsideration as conditions change and as our management systems and technology continue to evolve.

The action menu is intended to be an evolving document, and has been updated each year since the initial version in 2023. The action menu is used as a planning tool to guide development of collective and individual priorities, and a place to capture future issues and ideas. It is not the intent that individual management bodies would approve or endorse this document in full, and not all potential actions will be appropriate to apply universally. Some may be relevant for only certain areas, management bodies, or FMPs, while others would need to be applied consistently or developed cooperatively to be effective. Many of the ideas discussed below are explicitly about coordination between organizations and would require collective prioritization and the cooperation of multiple management entities.

Thematic Work Areas

The potential actions in this menu are grouped according to the three themes discussed at the Summit: 1) Cross-Jurisdictional Governance; 2) Managing Under Increased Uncertainty; and 3) Data Sources and Partnerships.

Theme 1: Cross-Jurisdictional Governance

Environmental changes are expected to continue to modify the distributions of many fish stocks due to range expansions, range contractions, or shifts in distribution. These changes will pose challenges for current governance structures and arrangements, which were mostly established under the assumption that stock locations would remain relatively stable over time. The scenario planning process considered the ways in which governance structures and processes may need to be modified to address changes in species distributions and other conditions.

Identify improvements to structure and representation for governance on the U.S. East Coast

Many regional and state representation concerns have been exacerbated by changing fish distributions. In addition, the complexity and sheer number of organizations participating in the management process on the East Coast can pose challenges for adapting to changing conditions. The scenario planning process provides an opportunity to re-evaluate the current governance structure to consider alternatives that may work better under changing conditions.

Identify guidelines for when and how management responsibility should change

Rather than addressing this on an ad hoc basis, consideration should be given to under what circumstances, and by what process, management responsibility may need to be shifted or merged.

Improve the efficiency and the efficacy of joint fishery management plans (FMPs)

Joint FMPs may become more common under changing conditions and fish distributions. Because joint FMPs can be more complex or less efficient than those managed only by one entity, it will be beneficial to explore ways in which joint management can be more efficient and effective.

Improve coordination and collaboration among management entities

Aside from joint FMPs, there is a spectrum of ways different groups coordinate with each other to develop FMPs and share information. Increased and improved coordination will likely be necessary in an era of climate change and changing species distributions, including improved processes for coordinating management, resources, and information among multiple entities.

Theme 2: Managing Under Increased Uncertainty

In some cases, environmental changes mean historical conditions can no longer be used to predict the future, increasing our uncertainty around appropriate catch limits and management responses. Are there actions that can be taken now to prepare for and respond to this increase in uncertainty?

Better accommodate uncertainty in the stock assessment process and address related management challenges

Changing ocean conditions are affecting the location of fish stocks, the productivity of fish stocks, and the fishing industry's interactions with bycatch, protected species, and other ocean users. Fish stocks could become less productive or move out of range of the fishermen who catch them. In addition, changing ocean conditions also impact the collection and analysis of data used in the stock assessment process. All of this means managers need to be prepared to make decisions with more uncertainty and less clarity.

There are two main approaches to addressing uncertainty in fisheries management: first, increase investment of time and funding into research and science to better understand the situation and potentially decrease uncertainty in predictions, and second, create management approaches with a good likelihood of success even under uncertainty. Ideally, implementation of both options is needed to ensure ecosystem, fishery, and community resilience.

Increasing flexibility, adaptability, and robustness in management

The U.S. fishery management process was not designed to be especially nimble as it prioritizes public input/collaborative management. While there are definite advantages to this process, it can be difficult for management to be nimble and responsive to challenges associated with a changing environment. Given that the impacts of climate change could result in surprises in environmental and fishery conditions, creating management that is flexible, adaptable and robust is necessary.

Improve the ability of fishermen and other stakeholders to adapt to evolving ecosystems

Fishermen and fishing related businesses need to be able to adapt their fishing practices to account for current or expected changes in fish stocks distribution or productivity. Are there management actions that can help fishermen adapt?

Theme 3: Data Sources and Partnerships

One of the key considerations used to develop the scenarios was the predictability of ocean conditions, which includes how well science is able to assess and predict changes in stock production and distributions. Providing stock information and locations hinges on the ability to evaluate accurate and timely data. Coordination between management bodies, federal agencies, academic partners, fisheries stakeholders, and other ocean users will also play a large role as we adapt to changing conditions.

Prioritizing data and information needed to manage in a changing environment

The next generation of stock assessments and the ability to establish adaptable management will hinge on the ability to have the right mix of data/information available to scientists and managers. As we plan for the future, we will need to determine what data and information to prioritize. We will also need to consider what can be accomplished at the national or regional level and what needs to be addressed on a council-by-council basis. Some of the data and information needed will be readily available while others will need a plan for how to collect and synthesize them.

Using funding more efficiently

Strategies need to be developed on how to efficiently allocate funds spent on data collection to maximize the data/information that are needed especially in a changing ecosystem.

Utilize the fishing industry for data collection

A common theme that arose during the development and application phases of the initiative was the need to collect more fishery dependent data and to better utilize those data in assessments and management in a timely manner. Integrating science with what industry is seeing on the water would also help develop trust between science and industry partners.

Foster partnerships for data sharing

Many entities collect data about the ocean, including academic institutions, non–governmental organizations (NGOs), and other ocean industries such as offshore energy and aquaculture developers. Fostering partnerships with these users may prove to be beneficial for all parties.

Actions Completed During 2025-2026

Here we highlight actions completed between spring 2025 and spring 2026. See prior annual updates to this Potential Action Menu for actions completed during earlier years.

Under Theme 2: Managing Under Increased Uncertainty; M1. Identify ecosystem-level contextual information that can be considered within the management process to help incorporate ecosystem information into decisions:

NEFMC and SAFMC have completed steps to develop risk assessments that, like the MAFMC's risk assessment, are intended to help managers better understand ecosystem information during decision-making. Both efforts are ongoing and are supported under IRA-funded Council projects.

In 2023, NEFMC prepared a compilation of risk policies from across all Councils. This report was not presented to the NRCC as indicated in the action menu but could be presented to the Coordination Group and/or NRCC if desired. The NEFMC approved a revised risk policy statement and concept in September 2024 and anticipates adopting refinements to the concept in June 2026. An initial project to conduct simulation testing of risk policy-integrated groundfish ABC control rules will be completed by the end of 2026, using IRA funds.

High Priority Potential Actions

Theme 1: Cross-Jurisdictional Governance

G1. Re-evaluate Council committee structure, use, and decision making

Description: Several potential actions were identified at the Summit related to committee structure, use, and decision making. These actions have been grouped together here as they are interrelated and should be addressed simultaneously for them to have meaningful impact. As discussed in the Summit Report, these actions primarily address representation concerns related to changing species distributions; specifically, stakeholders who may have increased access to shifting species but may not have "official" representation in the Council process. Further discussion will be needed regarding whether the potential actions below should occur for all Council-managed species, or whether modifications are only needed for certain species or FMPs that may be experiencing or are projected to experience notable distribution changes.

1. The Councils should re-evaluate committee representation, with a focus on FMPs where managed species have shifted or are highly vulnerable to climate change.
2. Councils could enhance the role of committees in decision making.
    - The goal of this change is to give more weight to the opinions of committee members who are not members of the Council managing the species.
    - One approach would be to modify Council SOPPs or other procedures to allow increased decision-making authority at the committee level. For example, committee motions that do not pass the full Council could be sent back to the committee to be reworked. Under such a scenario, the Council could not simply override the committee and make a different decision; the measure would need to be sent back to the committee.
    - Other approaches to enhance committee roles in decision making that are not currently possible under MSA are noted in the parking lot section.
3. The Councils should evaluate how to move toward more alignment in the use of committees across Councils.
    - Again, the goal of these changes is to give more weight to the opinions of Committee members that are not from the Council with responsibility for managing the species.
    - Currently, each Council and FMP uses committees differently in the decision-making process. Some Councils rely heavily on their committees to craft and guide analysis of management actions, while other Councils rely more on staff, other technical teams, and discussions at the full Council level. Addressing regional/stakeholder group representation concerns by modifying committee structures may be more effective if Councils use committees in a more similar manner. This would not mean that every committee must be used in exactly the same way or that each Council would have exactly the same rules for its committees; but the Councils would aim for some degree of increased consistency.

Potential Next Steps	Group/Status

• Document current structure, representation, and use of Council committees and other advisory bodies	In progress via Council IRA projects (NEFMC IRA 4, MAFMC IRA 3, and SAFMC IRA 1).
• Convene a workshop and/or other meetings to seek stakeholder/manager input on potential revisions to committee-based decision-making, committee structure, and committee use, building on ideas discussed at the Summit	In progress via Council IRA governance projects.
• Conduct a leadership planning exercise to review results of relevant Council IRA efforts and determine next steps	In progress via Coordination Group with potential support from Council IRA funds. Planned for late 2027/early 2028 upon conclusion of Council IRA projects.

Potential Barriers and Considerations:

- As noted above, the range of possibilities for modifying committee roles in the Council process is currently limited by what is possible under the MSA.
- There are multiple aspects of committee structure, use, and representation that will need to be considered together under this potential action. As mentioned above, these issues are interrelated. For more consistent use of committees to have the intended effects, committee representation will need to be reconsidered. Without more consistent use of committees, restructuring committee representation may have limited impact on management outcomes.
- Increased reliance on committees may have drawbacks in terms of further entrenching management "silos," given that more deliberation would occur in smaller groups, with more limited discussion occurring at the full Council. Depending on the extent of the Committee composition, this may lead to more differences in approaches between plans.
- If committee roles in decision making are enhanced, management could become less nimble if a Council and Committee become deadlocked, or if a committee cannot reach agreement. Both of these scenarios have occurred in the past.

G2. Re-evaluate and potentially revise Advisory Panel representation

Description: Changes in species distributions are leading to increased concern about appropriate representation by geographic area in various parts of the management process. In addition to considering committee and other governance structures, the Councils and Commission should ensure that advisory panel (AP) representation remains appropriate and effective, including that it reflects the geographical distribution of the resource. A review of AP membership should also consider how other ecological and socioeconomic changes may drive changing needs for AP representation (e.g., changes in participation in a particular sector; trends in the use of certain fishing techniques or gears, etc.).

Potential Next Step	Group/Status
• Individual management bodies conduct evaluation of AP representation and appointment process, including how AP members are recruited and identified, with consideration of underrepresented and underserved groups. This could be conducted for selected or all FMPs and should consider how representation needs (by geographic area, stakeholder group, or other factors) may be evolving with changing conditions. • Based on results of these evaluations, groups could consider changes to processes and representation targets. • Consider recreational fleet changes from NE/MA State of the Ecosystem Reports when populating APs	Individual management bodies with staff level coordination between bodies. In progress via Council IRA projects with expected implementation work to follow.
• Conduct a review of the recreational fleet trends (e.g. fleet composition) in the SE to evaluate trend and update APs accordingly based on results	SEFSC, SAFMC, ASMFC; In progress via SAFMC IRA project

Potential Barriers and Considerations:

- Some management bodies have experienced recent struggles to recruit potential AP members, particularly when seeking broader representation. In addition, AP engagement can be challenging for some FMPs, which could limit the effectiveness of revised AP membership.
- The Councils and Commission should examine how AP input is currently used, and how it can better serve the process.
- Modifying AP representation does not necessarily mean expanding membership, but at a minimum considering whether representation is adequate given changing circumstances.
- If APs are expanded in terms of total members, increased costs may be incurred for meetings.
- AP members new to the management process will likely require training on fishery management and science concepts, e.g., through MREP or like programs.
- There could be other barriers to full AP participation, such as limited internet availability or access to a computer, for web-based meetings, limited English language skills, or inability to take time away from work uncompensated. Such issues would need to be addressed to ensure equity of access to the process.

G3. Develop joint management agreements with aim of clarifying roles and increasing efficiency

Description: Summit participants noted the importance of clarifying roles and increasing efficiency in jointly or cooperatively managed plans. There is currently a spectrum of approaches to joint or collaborative management, and while not all joint management needs to operate the same way, clearly defining and recognizing the pros and cons of different approaches would be helpful. Joint management has benefits for representation, but at times can hinder efficiency and efficacy when groups disagree, particularly if decision making is sequential. More explicit agreements between joint management participants could help to increase transparency and help groups work toward streamlining joint management processes. This issue may be particularly important to address if there is a desire or need for more joint management approaches in the future in response to changing species distributions. In addition, for species that are currently jointly managed, it would be beneficial

to review whether the existing procedures and agreements are expected to continue working under different potential future conditions.

Potential next steps	Group/Status
High Priority ● Review joint FMPs and agreements between the MAFMC and Commission (summer flounder/scup/black sea bass/bluefish) to identify areas for improved efficacy and efficiency	Commission and MAFMC staff. In progress via MAFMC IRA3; additional coordination with Commission expected.
● Document a broad range of existing joint/coordinated management agreements or processes	In progress via Council IRA projects.
Medium Priority ● Evaluate need for additional review and/or agreements on cooperative or jointly managed plans (Council-Council or Council-Commission plans)	Councils via IRA funded projects; Coordination Group

Potential Barriers and Considerations:

- While considering joint/cooperative management relationships or FMPs on a case-by-case basis may be the most efficient and appropriate approach to this type of review, looking at other examples (within or across regions/management entities) could provide insight into potential ways of improving a particular joint management process.
- This topic will be impacted by, and will impact, the consideration of committee structure of G1.

G4. Improve coordination across NOAA offices and regions

Description: Changing species distribution changes have begun to engage the Councils, and at times the Commission, with additional NOAA offices and regions. Processes and guidance can vary by office and region for similar issues or management problems. Improved coordination, particularly on process, will be important for efficiency in responding to management issues and the efficacy of the management response. It is also worth considering where there might be redundancies or duplicated efforts that could be coordinated to use resources more efficiently.

The idea of improved coordination is identified under each of the themes. The potential actions under M5 (evaluation of permit structures) and D4 (evaluation of data collection process) are linked to this issue.

Potential next steps	Group/Status
● GARFO and SERO review respective management action procedures and processing to highlight opportunities each employs which may benefit or expedite implementation of actions approved by the Councils.	GARFO, SERO

Potential Barriers and Considerations:

- This is a potential action that seemed to have some support but lacked specifics in how it should be approached, other than some specific actions considered under the other two themes (M5 and D4).
- The potential action above pertains to the regional offices, but future consideration could be given to whether a similar process for the science centers, or between the regional offices and science centers, or with other offices within NOAA, may be worthwhile.
- As noted above, this potential action intersects in important ways with the other two themes and many of the potential actions within them. Effective coordination between NOAA offices will be critical to making progress on this potential action menu.

Theme 2: Managing Under Increased Uncertainty

M1. Identify ecosystem-level contextual information that can be considered within the management process to help incorporate ecosystem information into decisions

Description: Changing environmental conditions can impact fish stocks, fish habitats, and interactions between species and fisheries, sometimes in surprising ways. It is important to proactively consider ecosystem level impacts when making management decisions. This can be via quantitative or qualitative information, including the use of ecological risk assessments[1], such as the risk assessment MAFMC uses as part of its ecosystem approach to fisheries management framework, which results in a more holistic consideration of issues. NMFS has written a technical memo that provides examples of how ecosystem risk assessments have been used in fisheries management. In addition to their use in risk assessments, ecosystem indicators that track ecological, environmental, socioeconomic, and management trends can be incorporated into the management process in other ways to help guide management priorities and decision-making.

Potential next steps	Group/Status
• NMFS presents findings of 2023 Tech Memo[2] looking at example ecosystem risk assessments to Councils and Commission	NMFS staff coordinating with Councils/Commission
• Consider adding major state-only-managed fisheries to these ecosystem risk assessments for a more complete perspective; consider assessment of state-only water bodies (e.g. Long Island Sound, Narragansett Bay, Indian River Lagoon)	NMFS

[1] Ecological risk assessments are management decision tools that integrate information on individual and cumulative pressures to estimate the relative probability and magnitude of an undesirable ecological response. They provide a framework that can analyze relative risk broadly or in response to a small number of drivers. A climate vulnerability assessment is a more limited and targeted form of risk assessment.

[2] https://spo.nmfs.noaa.gov/sites/default/files/TMOHC11.pdf

• Improve the use of ecosystem information and indicators in the management process.
  • Identify opportunities to use specific types of quantitative and qualitative ecosystem information to identify and avoid risks.
  • Assess existing ecosystem and habitat indicators and develop new indicators as needed to support management objectives
  • Identify specific pathways for improved incorporation into management processes, documents, or actions.
	In progress by Councils via IRA funded projects (MAFMC IRA5, SAFMC IRA1) and by NEFMC Climate and Ecosystem Steering Committee.

• Consider periodic coastwide meeting / workshop to review ecosystem information (ESR, SOE),identify coordinated actions in response to trends • Share lessons learned across regions and organizations	Coordination Group Cross-Regional Indicators report In progress via SAFMC IRA1 and ecosystem data workshop

Potential Barriers and Considerations:

- Need here is likely to be Council/Commission and FMP specific
- Lack of funding and staff resources are a barrier to consideration of state-only fisheries and water bodies in ecosystem updates and risk assessments

Long-Term Objectives:

- Create a fishery management system aware of and able to respond to significant ecosystem changes.
- Increase transparency around management bodies' understanding and assumption of risks.

M2. Streamlining FMP documentation and rulemaking

Description: Councils spend substantial staff time writing NEPA and other federal compliance documents, so processes that introduce efficiency should allow Councils to reduce administrative work, resulting in time savings that could be used to address new ecosystem -oriented initiatives. Streamlining the FMP and regulatory processes is also a key way to make management more nimble and efficient, so that management responses to changing conditions can be completed in a more timely manner.

Potential next steps	Group/Status
• Review the use of programmatic Environmental Impact Statements (EISs) for Council actions and encourage their use where appropriate	GARFO, SERO, NMFS HQ, Councils, In progress via SAFMC IRA1

• Identify areas where NEPA documents can be streamlined, including when incorporation by reference to recent related documents would be appropriate	GARFO, SERO, NMFS HQ, Councils; In progress via SAFMC IRA1
• Develop more clear and consistent guidelines for use of Categorical Exclusions (CEs) and Supplemental Information Reports (SIRs) under NEPA, including MSA document templates; identifying NMFS vs. Council responsibilities	GARFO, SERO, NMFS HQ, Councils; In progress via SAFMC IRA1; Ongoing as part of a CCC NEPA working group
• Work with NOAA General Counsel (GC) to establish consistent GC guidance with regards to the use of CEs and Supplemental Information Reports (SIRs), rulemaking, public comment etc.	GARFO, SERO, NMFS HQ (Lead is NOAA GC; update expected at May 2026 CCC meeting)
• Identify process steps Council and NMFS staff can take to use MSA documents to satisfy NEPA requirements	GARFO, SERO, NMFS HQ, Councils
• Consider alternative rulemaking approaches or action development approaches	GARFO, SERO, NMFS HQ; In progress Councils/ SAFMC IRA1

Potential Barriers and Considerations:

- Programmatic EISs involve a large investment of time and resources up front; should consider whether the efficiency gained on the back end is worth it.
- Might inadvertently limit opportunities for public participation in the process, in certain cases
- During 2025, Councils and ROs actively worked on some of these next steps to align with updated NEPA requirements and guidance. This work continues in 2026 with an increase in the use of CEs and SIRs based on the pending revisions to NEPA guidance.

Long-Term Objectives:

- Identify options for reducing burdens associated with NEPA and other documentation, without sacrificing the public process and opportunities for meaningful input

Theme 3: Data Sources and Partnerships

D1. Expand study fleet, include recreational fisheries, and ensure data are used

Description: The vision of a study fleet is a partnership between the science centers, management bodies, and fishermen where the science centers define data needs for assessments and management. There is currently a small commercial fisheries study fleet in the Greater Atlantic region; however, expanding the study fleet along the coast, particularly to include recreational fisheries, would greatly benefit the assessment/management process under a changing environment. This would require cooperation by all parties to better utilize fishery dependent data in the assessment/ management process.

Potential next steps	Group/Status
High Priority ● Identify places where study fleet and associated projects' data can be utilized in Council and Commission work plans and actions. Develop a mechanism for Councils and Commission to access study fleet data. Develop a plan to track and communicate use of study fleet data. Find ways to incentivize industry to participate. Within this plan include using industry to collect more environmental data via instrumentation and data loggers.	Councils, Commission, and Centers
● Include Recreational Study Fleet Pilots in GARFO's Recreational Saltwater Fishing draft policy implementation plan (NEFSC has been conducting a pilot (RecBio) focused on the New England for-hire groundfish fleet)	GARFO, NEFSC; In progress RecBio project
Medium Priority ● Develop shovel-ready cooperative research projects that can be quickly initiated if funding becomes available. ● Beyond pilot work, develop broader strategy for expanding the study fleet to include recreational fisheries	Centers
Parking Lot ● Develop plan to incorporate the recreational study fleet data to improve recreational estimates from Marine Recreational Information Program (MRIP) and the Recreational Angler Partnership Improvement Directive (RAPID).	Centers

Potential Barriers and Considerations:

- NMFS is currently implementing the RecBio Fleet to collect recreational fishery-dependent information for two of the four newly designated Atlantic cod stocks. If future additional or expanded recreational study fleets are pursued based on the results of this pilot, managers should consider the implications of changes to recreational fleet (e.g. fleet composition(at least in the mid-Atlantic). In particular, data needs and unique characteristics of different recreational fishery components should be considered. It will be important to consider social connections/structures when identifying study fleet participants.
- Future efforts to develop a recreational study fleet should consider lessons learned from other study fleet and recreational data collection projects.

D3. Improve the use of existing data

Description: While there is definitely a need for new and novel data sources, there is a wealth of data already available in the region that could be better utilized. This includes being more transparent on how current data is used but also thinking of ways to take advantage of existing behaviors (e.g., generating or validating recreational catch data from social media posts). Making use of this kind of selective/anecdotal data as opposed to relying solely on census or survey data is more important when traditional data is scarce. In addition, as data collection activities expand, plans for how it will be used should be made. Some potential actions are listed below, but this priority should be ongoing. New ideas to use existing data should be supported moving forward.

Potential next steps	Group/Status
• Hold meetings to discuss what existing data streams and historical datasets could be better utilized to inform decision making, assessments, and monitoring. Do this across regions and management bodies.	Councils, Commission, Regional Offices, and Centers
• Have similar meetings at the PDT/FMAT level for more immediate FMP needs.	Councils and Commission
• Identify existing, readily available information that could be compiled and provided as an interim step to generating regularly updated Ecosystem Status Reports in SE.	SEFSC
• Explore sharing of raw data, data analysis methodologies, and code across regions to help facilitate development and consistency of ecosystem status reports/state of the ecosystem reports across regional boundaries.	Centers

Medium Priority Potential Actions (Watch List)

The potential actions in this category are important but not as suitable for near-term action as those on the high priority list. This is referred to as a watch list because the Coordination Group and Core Team will routinely track whether environmental or fishery conditions, and/or resources and support available for these actions, have changed in a manner that would increase the priority level of these actions.

Theme 1: Cross-Jurisdictional Governance

G5. Evaluate mechanisms for cross-pollination of SSCs

Description: As with G1 above, there are a range of possibilities for actions that could enhance cross-pollination between the different Council SSCs as well as the Commission's science groups, particularly for species that a) are jointly managed, and/or b) are experiencing changes in distribution across jurisdictional boundaries.

Mechanisms for increased coordination and information sharing between SSCs could include (but are not limited to) formation of cross-SSC subgroups, holding more joint SSC meetings, holding joint subgroup meetings, or assigning liaisons between different SSCs. Further discussion is needed to explore where it might be helpful to have multiple groups involved in decision making/recommendations, vs. simply more coordination and exchange of information/ideas.

Potential next steps	Group/Status
• Hold a workshop inviting a subset of all three East Coast SSCs and representation from the Commission Science Community to identify potential ways of improving coordination and knowledge sharing between East Coast SSCs, particularly for species spanning multiple jurisdictions and jointly managed species	Councils and their SSCs and invited participants from the Commission
• Consider adding to topics for discussion at future Scientific Coordination Subcommittee (SCS) meeting(s)	SCS steering committee; CCCcor
• Consider inviting members from other SSCs to certain meetings where appropriate, or holding joint sub-groups meetings on specific topics to encourage cross-pollination	Councils; some ongoing examples

Potential Barriers and Considerations:

- Although the next steps and approach talk about sharing ideas, not developing shared management advice, if the latter is considered, this must be approached with caution as individual Councils are bound by the ABC recommendations of its appointed SSC.
- Higher costs of larger combined meetings could be an issue, given travel expenses for larger groups would be greater, and because SSC members are compensated for their time.
- Ongoing Council IRA projects related to governance issues may result in recommendations for increased cross-SSC coordination that could be considered for future actions.

Theme 2: Managing Under Increased Uncertainty

M3. Improve the use of risk policies to better account for current and future impacts on managed species (both negative and positive impacts)

Description: Many fishery management bodies have existing risk policies. Risk relates to both the probability of an event occurring, and the severity of expected outcomes. Risk policies identify the bounds of how risk tolerant a management body should be given certain criteria. These policies inform and work in conjunction with harvest control rules.

Existing risk policies might be based on assumptions of stationarity. At the Summit, participants discussed how these policies could be reassessed to include the challenges related to non-stationarity in marine populations and ecosystems. Discussions noted a need to address species responding poorly to, and those benefiting from, changing ocean conditions. Summit participants also discussed North Pacific Fishery Management Council (NPFMC) use of risk tables as a quantitative way to assess and communicate multiple uncertainties, including those related to climate. During implementation of the risk policies, it will be important to clearly communicate uncertainty.

Potential next steps	Group/Status
• Develop a staff-level working group to discuss pros and cons of different approaches for accounting for climate-related uncertainties within the risk policies, including how to respond to species doing well in a changing ecosystem. Bring forward to the Coordination Group for discussion.	Core Team Working Group
• Evaluate the need for all Councils/Commission to consider climate and ecosystem factors in their risk policies and explore potential benefits of aligning risk policies where practicable. Offer time to discuss alignment at future Coordination Group meetings.	Coordination Group; element of Council IRA work
• Identify steps individual Councils/Commission can take to make risk policies more reflective of ecosystem challenges	All east coast Councils and Commission
• Ensure the risk policies consider and clearly communicate intricacies of uncertainty (including the shape of the uncertainties) when making policy/ changing management	All east coast Councils and Commission; element of NEFMC risk policy work
• Evaluate the performance of alternative management risk policies and harvest control rules and the associated tradeoffs under different data and climate projection scenarios	In progress by MAFMC via IRA6
• Simulation test a risk policy concept that includes climate and ecosystem factors to understand risk policy performance and implementation issues	In progress by NEFMC via IRA1 and MAFMC via IRA 5
• Identify risk policies that could be incorporated or adjusted to make fisheries more resilient to changing ecosystems (e.g., ABC Control Rule).	In progress via SAFMC IRA1

Potential Barriers and Considerations:

- Need to consider benefits and challenges of aligning policies
- The Councils seem to want the ability to retain separate risk policies

Long-Term Objectives:

- Councils implement risk policies that account for changing ecosystems and facilitate climate resilient fisheries. Provide pathways within risk policies for considering stocks that are responding well to changing ecosystem conditions
- Where practicable and needed (i.e. for fisheries under joint management), align risk policies between management bodies so that management is consistent up and down the coast
- If there is interest, expand this discussion to include other Councils/regions via the CCC

M4. Identify and establish best practices for increasing nimbleness and/or responsiveness in management

Description: In situations where plausible future conditions can be predicted either quantitatively or qualitatively, it may be useful to create management frameworks that are nimble, adaptable, and robust to expected changes. For example, if/then triggers could be applied in certain limited management circumstances where a range of responses could be considered in advance. Resulting actions could then be implemented through an expedited process. This potential action was identified as a medium priority for a coordinated initiative because it can be addressed individually by each management body. Examples are available in existing FMPs.

Potential next steps	Group/Status

• Identify good examples of if/then triggers being used in management. Examine examples for best practices. Brainstorm other areas where if/then triggers might be useful such as ecosystem-based triggers or governance triggers.
  ○ Southeast Shrimp example: close federal waters when states request and have provided environmental info to the SE Regional Administrator
  ○ SAFMC example: dolphinfish management strategy evaluation to develop flexible management procedure responsive to changing abundance
  ○ Commission example: striped bass immediate action if the assessment indicates specific outcomes, considering dropping fine scale monitoring northern shrimp unless a trigger condition is reached
  ○ New England skate example: if a skate total allowable landings limit (TAL) is exceeded for wing or bait by >5%, this triggers the Regional Administrator to reduce possession limits for the following fishing year
  ○ Mid-Atlantic surfclam example: minimum size waiver where discard, catch, and survey data indicate 30% of clams below 4.75 inches (50 CFR 648.75(b)(3))
	Core Team; Councils, Commission, and NMFS

• Develop guidance and Best Management Practices to consider ecological and socioeconomic impacts associated with non-stationarity and dynamic reference points. Potential applications include appropriate use of phased harvest control rules, evaluation of scientific and management uncertainty buffers, and performance review of projection methods.	In progress via NEFMC IRA funded project
• Conduct a review of SAFMC management processes to identify inefficiencies, review outcomes of other U.S. Regional Fisheries Council program reviews, and identify opportunities to increase responsiveness and streamline management.	In progress via SAFMC IRA1

Potential Barriers and Considerations:

- Councils may be hesitant to use if/then triggers because unforeseen circumstances may make a certain trigger response less appropriate or effective. Changing the trigger response would be possible but could require a longer process.
- Given uncertainties in the stability of surveys, especially given changing ocean uses, it may be challenging to develop and implement triggers based on survey indices.
- Doing sufficient NEPA analysis in the action where triggers are developed could be challenging and require assumptions about future conditions.

Long-Term Objectives:

- Identify options for increasing nimbleness and robustness of the fishery management process.

M5. Create a more adaptable structure for fishing permits

Description: Lack of access to fishing permits, allocation, or quota can limit a fisherman's ability to adapt to changes in fish stocks. Fishing permits are not consistent between fishery management bodies or fisheries. Can managers revise the permit system to make it more flexible and adaptable to impacts from a changing ecosystem?

Potential next steps	Group/Status

• Improve data systems (two interrelated actions)
  ○ Create a shared vessel registry to streamline data accessibility
  ○ Advance One Stop Reporting
	NMFS electronic reporting/monitoring group; One Stop Reporting being advanced via East Coast Logbook project

• Review permit systems on the East Coast to identify areas where the regulations can be modified to allow for flexibility and adaptability by the fishermen.
  ○ Are there permits in place that can be split?
  ○ Can emerging species be added to existing permits?
  ○ Do some permits need to be bundled?
	NMFS, Councils, and Commission working with fishing industry; NEFMC IRA funded project (industry meetings/workshops),

○ Engage industry through advisory panels or other means to identify issues. Multiple engagement approaches are likely needed.	SAFMC IRA funded project
● Evaluate existing harvest portfolios in the northeast region considering ecological relationships between species to help identify opportunities for new or revised permit structure, to create opportunities for access to permits by new participants	In progress via NEFMC IRA funded project
● Present findings and recommendations to modify programs to allow for adaptability to Councils and Commission.	Council Staff/NMFS
● Reevaluate and potentially revise vessel baseline requirements (length and horsepower) within permits	GARFO, NEFMC, MAFMC (SERO, if needed); joint analysis / evaluation in progress

Potential Barriers and Considerations:

- Fishing businesses have invested heavily in permits and thus may be hesitant to embrace change.
- U.S. East Coast permitting structure is extremely complex - state vs. federal differences, regional differences, species/FMP differences.
- There are concerns that splitting previously bundled permits across two or more fishing vessels could increase fishing effort and therefore impact conservation.
- Efforts to address this action should consider how the SOE reports and their underlying data sources can inform consideration of socioeconomic risks. The Centers would benefit from some discussion of how social science indicators might be used; this discussion would support adjustment to indicators or development of new indicators.

Long-Term Objectives:

- Create a flexible and adaptive permit system. For example, create a system that allows fishermen to adjust fishing to match the species present in their historical fishing area, or allows them to follow the fish and land the fish in a new location.

M7. Consider alternative management options instead of, or in addition to, using stock assessments that directly incorporate environmental or ecosystem parameters within the assessment

Description: Changing ecosystem conditions mean that underlying assumptions common to stock assessment models (i.e., environmental stationarity and ecosystem equilibrium conditions) are no longer valid. This will make identifying appropriate catch limits more challenging than it is now.

Given that changing ecosystem conditions can impact many aspects of a fish stock (direct impacts on productivity and distribution of the stock, changes to habitat, changes to predator/prey relationships, etc.) it may be impossible to incorporate all important sources of uncertainty into stock assessment models and results. Therefore, in addition to incorporating climate indicators directly into traditional stock assessments, it may be important to consider alternative approaches to incorporating ecosystem uncertainties into the management process, including other methods for accounting for uncertainty in the stock assessment and other methods for setting catch limits that are robust to multiple uncertainties. Alternative approaches may not be useful for all fisheries, and thus there will be a need to evaluate and identify which species could most benefit from alternative approaches.

Potential next steps	Group/Status

• Look for case studies on robust management options, including:
  ○ Indicator based management (Bluefin tuna)
  ○ Robust Harvest Control Rules (UCSB peer reviewed paper)
  ○ Dynamic reference points
	Core Team; ongoing via NEFMC IRA3 (DRPs)

• Look for case studies on when MSE was useful in supporting decisions	Core Team
• Using the CVA results, identify east coast managed species that are particularly vulnerable to ecosystem changes and consider developing new approaches for those species ○ For example, through the recently completed 5-year EFH review, MAFMC and NEFMC considered how a combination of species and habitat CVAs can be used to identify focal Habitat Areas of Particular Concern to prioritize consideration for conservation recommendations	All east coast Councils and Commission

Potential Barriers and Considerations:

- Communication across science and management spaces may be challenging
- MSE is costly with lots of upfront investment, but intended to save time/resources long term
- Robust HCRs should not be the only approach, especially in situations where the data or assumptions feeding into the HCR are incorrect.

Long-Term Objectives:

- Explore options for creating management frameworks, harvest control rules, etc. that are robust to the uncertainties associated with a changing ecosystem.

Theme 3: Data Sources and Partnerships

D2. Use survey mitigation around marine development to transition to industry-based surveys or other survey platforms

Description: Marine development will present challenges for accessing survey areas using traditional methods/gear. This is an opportunity to redesign surveys and transition to industry-based or other platforms that could be more effective in marine development areas.

Potential next steps	Group/Status
• Implement the NOAA Fisheries and BOEM Federal Survey Mitigation Implementation Strategy - Northeast U.S. Region	Ongoing by NEFSC, adapting strategy to other regions in the future.
• Explore opportunities to utilize smaller platforms such as commercial vessels for conducting surveys	Centers/Northeast Trawl Advisory Panel; ongoing development of Regional Industry-Based Trawl Survey (RIBTS).
• Develop plan for integrating multiple survey data streams into the assessment process	Centers; ongoing at NEFSC via multiple assessments using VAST model

D4. Standardize data collection to breakdown geographic barriers along the East Coast (both state and federal)

Description: Having standardized surveys and other data collection/storage methods across the various regions would allow data to be more easily transferable and usable. This is particularly important when considering survey changes/limitations arising from external factors like climate change and offshore energy development. This is the foundation of the fisheries management process. Securing funding and starting this process is important.

Potential next steps	Group/Status
• Develop a National Survey Program	NOAA
• Northeast and Southeast Fisheries Science Centers develop a strategy for combining survey methodology (This could include standardizing survey gear where appropriate or a modeling framework to merge different survey technologies)	Centers/ State-Federal Programs
• Prioritize and develop data standards so data can be readily used in various modeling frameworks that combine data across regions (Including SEAMAP and NEAMAP)	Centers/State-Federal Programs
• Standardize data management and storage so the data is readily accessible by researchers	Centers/State-Federal Programs

• Review outcomes of MAFMC's IRA Project 6 (evaluating data needs and management strategies to support climate-ready fisheries management) and determine next steps and implications for overall survey enterprise	Science Centers

Potential Barriers and Considerations:

- Confidentiality of state/Fed data.
- Offshore energy reluctance to share data has been a consideration in the past, but the Responsible Offshore Science Alliance Data Governance Initiative is working towards standardized data schemes.
- Consider economic data as well as environmental and biological.
- Need to evaluate regional and coastwide fishery dependent and independent data systems to facilitate assessment of shifting populations.
- Consider reviewing and standardizing east coast permits because data collection is so tightly linked to the permits. See M8 above.
- SEAMAP and NEAMAP are useful models for standardized data collection across various surveys within regions (however SEAMAP and NEAMAP themselves are not compatible).

D5. Focus on Artificial Intelligence and other technology development to get data into assessments more rapidly

Description: Under a changing ecosystem there will be greater reliance on multiple data sources. Quickly synthesizing data to keep pace with change will require reliance on technology to automate much of the processing.

Potential next steps	Group/Status
• Start developing AI to better integrate video and camera surveys as well as other large data integration needs	Centers; area of research in both Northeast and Southeast
• Develop methods to directly funnel fishery-dependent data (VTRs, observer data, study fleet, etc.) into assessments and for use in monitoring.	Centers and Regions

D8. Develop a process between management and science organization to prioritize data needs in evolving agency structure and evolving ecosystems.

Description: The need for data will continue to increase under evolving ecosystems. Changes in federal agency structure and staffing may require shifting data collection priorities. It is unlikely that we will be able to expand on existing data collection without sacrificing data that is currently collected. It will be imperative for the agency and the regions to prioritize data needs to focus on what will be most important moving forward.

Potential next steps	Group/Status
• Enhance human dimensions data and identify training opportunities for managers to help them better consider human dimensions in decision making. (lower priority)	Councils, Commission, Regional Offices, and Centers; in progress at NEFMC SSC Social Sciences Subcommittee
• Catalog and document the challenges and associated changes in East Coast federal survey and fishery-dependent data collection, and quantify the implications of changing data availability under different climate change scenarios. Identify management strategies and processes that account for these uncertainties, and develop recommendations to improve and/or modify survey and fishery-dependent data sources along the East Coast.	In progress via MAFMC IRA Project 6
• Identify and prioritize management's information needs and consider tradeoffs - e.g., smaller scope annual reporting vs. current SOE; consider observations/data collection to ensure continuity vs. analysis - links to IRA projects (high priority)	Councils, Commission, Regional Offices, and Centers
• As cuts occur in data collection and staff resources for data collection/analysis, identify mitigation resources	Councils, Commission, Regional Offices, and Centers
• Have a contingency plan for major changes in resources (e.g. data collection (surveys, observer data) and data analysis	Councils, Commission, Regional Offices, and Centers

Potential Barriers and Considerations:

- Consider the relevance of findings from the 2021 NOAA Fisheries Atlantic Coast Science Coordination Workshop, the NMFS Next Generation Data Acquisition Plan, and other relevant workshops and reports.

Parking Lot (Lower Priority) Potential Actions

As noted in the Introduction, this section is intended to hold ideas that are low in priority, infeasible to meaningfully address under current conditions, or are in conflict with other approaches with higher levels of support. All potential actions will be regularly reviewed by the Core Team and the Coordination Group. The Coordination Group will shift priorities as needed based on what is or is not working and based on how conditions may be changing. The intent of this section is to maintain a record of these Summit ideas for possible future reconsideration as conditions change, but to take no near-term action on them.

Theme 1: Cross-Jurisdictional Governance

G1 (Parking lot). Additional ideas for reevaluating Council committee structure, use, and decision making

These items were raised during the Summit but would require changes to MSA and are therefore included in this section rather than with the other G1 actions. Potential actions for reevaluating Council committee structure, use, and decision making that could be considered in the short-term are discussed under G1 in the High Priority Potential Actions section above.

- Give committees final votes on FMP actions. The action would not need approval by the full Council.
- Allow for committees to take final action on some types of management tools or approaches without full Council approval, while other actions would require going back to the Council. E.g., committees could develop specifications without Council approval but amendments and frameworks would require Council approval.

Potential Barriers and Considerations:

- This would require legislative action.

G6. Coastwide Council with varying voting representation by FMP

Description: Some Summit attendees suggested the idea of having one East Coast Management Council with opt-in participation by states. This was primarily supported to increase levels of coordination, efficiency, and for increased ease of ensuring adequate representation as species distributions and other conditions change.

Under such an approach, the Council could be organized such that the full Council would not need to vote on each management plan; the opt-in participation could be at the level of Boards or committees designed to provide appropriate representation based on interest/fishery occurrence. Expanded committees may be needed under this approach, where there are multiple representatives from each state (like the Commission's Boards). This governance structure is not currently provided for under the MSA.

This potential action is included in the list of possible actions for potential longer-term consideration due to the legislative barriers to implementation, as well as the desire to first explore other, smaller

scale changes within our current system. Some considered this to be a long-term idea to consider if more modest adjustments to our governance structure don't accomplish our objectives. In the coming decades, if there is increasing overlap in representation needs, it may be more efficient to manage species and stocks through a single East Coast Council.

Potential Barriers and Considerations:

- This would require legislative action.
- Concerns were expressed about this structure leading to the loss of more local representation by Council members and to stakeholders feeling less connected to and invested in the process.
- It may be difficult to populate a large East Coast Council if members would need to be responsible for keeping track of more management plans than they do currently.

G7. Change state representation on councils

Description: To address representation concerns caused by changing stock distributions, some Summit participants suggested evaluating which states would most appropriately have voting representation on each East Coast Council. This included the suggestion of evaluating whether there should be more states that sit on multiple Councils (like North Carolina and Florida currently do).

Giving states votes on Councils could be a more meaningful change in representation compared to giving liaisons voting rights, as it could allow access to at-large seats.

Potential Barriers and Considerations:

- This would require legislative action.
- Compared to some of the other governance potential actions in this document, this would be a less flexible or nimble way to modify governance structure. If additional changes are needed in the future, the likely need for further legislative action to do so could limit how quickly changes could be made.

G8. Clarify and potentially expand the roles of liaisons between Councils

Description: As species distributions change and effective communication and coordination between different management entities becomes increasingly important, the role of the liaisons between Councils may become more important. In addition, as representation concerns become more pronounced, it is important to clearly define the ways in which liaisons are expected to represent the views of their Council and what degree of influence they should have on another Council's deliberations. Summit participants discussed that the Council liaison role may be used somewhat differently between Councils, and between different people who have held that role at the same Council. The question of whether liaisons should be given some level of voting rights led to a discussion of the intended role of the liaisons, e.g., whether liaisons are intended to be representing the views and positions of their full Council (which is not always possible), and/or to serve in a general communication/coordination role. Additional clarity around the role of Council liaisons, and potentially increased consistency in their use, may be beneficial. In addition, consideration could be given to

potential changes to the role of the liaison, particularly in light of the representation concerns described above under G1 (high priority actions).

Potential next steps	Group/Status
• Develop report on the roles and use of liaisons between Councils and between the Councils and Commission, potentially building on 2007 Mid-Atlantic Fishery Management Council's Report to Congress on Council Management Coordination, but with recommendations for improving clarity and effectiveness of the liaison role	May be partially addressed via Council governance-related IRA projects
• Conduct an evaluation of the feasibility and pros and cons of liaison voting rights (at full Council)	CCC

Potential Barriers and Considerations:

- If there is a desire to give liaisons voting rights at the full Council level, this would require legislative action.
- The role of liaisons may need to be considered in conjunction with, or following, reconsideration of committee structure and use as described above. These potential actions are motivated by similar representation concerns, and any potential changes to committee representation and use may influence the future desired role of Council liaisons.
- The Councils may wish to consider adding definitions/clarification of the liaison role into their SOPPs, operations handbook, or other written policies.

G9. Consider allowing proxies for Council members

Description: Currently, appointed Council members cannot use proxies or designees to fill in for them at meetings because the MSA only provides for the principal state officials, the Regional Administrator, and the nonvoting members to designate individuals to attend Council meetings in their absence. Allowing for proxies could help alleviate increased workload issues for Council members, particularly if future governance changes lead to increased committee meeting frequency, more joint management meetings, or other changes that increase workload for Council members. Currently, equity and representation issues may arise from the workload and time commitments required for Council membership and how they would limit many people from participating.

Potential next steps	Group/Status
• Consult with General Counsel on what would be required to allow proxies for appointed Council members.	NMFS Headquarters
• Raise at a future CCC meeting to gauge interest and explore feasibility.	Councils

Potential Barriers and Considerations:

- If pursued, additional thought would need to be given to the distinction (if applicable) between and definitions of proxy, designee, or alternate. With these definitions, the role and abilities of a proxy/designee/alternate would need to be clearly defined. For example, what would be the expectations and rules for attendance, voting, chairing committees, compensation, etc.?

- Additional clarity is needed on whether legislative changes would be required, and whether proxies would also need to be appointed by the Secretary of Commerce, potentially in conjunction with the appointment of regular Council members.
- In the Commission's structure, Commissioners are allowed to appoint proxies (ongoing, board specific or meeting specific). This has advantages for spreading the workload across multiple people, but also creates a cost barrier of sending multiple people to meetings. This could create similar issues in the Council system for Council proxies if both the appointed member and proxy need to attend a meeting, particularly when considering Council member stipends.
- The role of proxies may need to be considered in conjunction with, or following, reconsideration of committee structure and use as described in G1 (high priority). Some workload issues could be addressed under a review of committee representation and process (e.g., if there is explicit consideration of ensuring workload balance across committees for individual Council members; and if most committee meetings are held in conjunction with Council meetings or by webinar).

Theme 2: Managing Under Increased Uncertainty

M6: Include spatial considerations in management; specifically in relation to leading and trailing edges of shifting stocks

Description: Climate change is influencing the distribution of some fish stocks, including expansions, contractions, shifts northward, and shifts offshore. As stocks shift their distribution, there may be advantages to managing the leading and trailing edge of a stock differently. For example, more conservative management may make sense at the edge of a species range to preserve rare genotypes. Similarly, if an ecological niche has been recently vacated in an ecosystem, then management may want to minimize fishing on a replacement species to ensure the replacement species is able to form a viable population in the new area. Some stock assessments (e.g., work of the Transboundary Management Guidance Committee, which allocates quota to countries based on stock distribution) are already beginning to account for such shifts.

Potential next steps	Group/Status

• Create a working group to explore this issue.
  ○ Compile examples of where spatial considerations across a fishery or stock have been used in management decisions.
  ○ Explore ways to measure stock shifts (scientifically) and how to identify what should be considered leading and trailing edges
	Core Team Working Group; stock shift evaluations in progress via MAFMC IRA 7, NEFMC IRA 4, SAFMC IRA 3

• Recommend East Coast Councils/Commission consider if spatial management is appropriate for any of their managed stocks.
  ○ Figure out which stocks this is an issue for using LEK and ecological information
  o Consider spatial distribution when making management decisions (Review King and Spanish mackerel and cobia management and consider these approaches for other stocks with a focus on leading and trailing edges being managed differently than the core).
	Councils/Commission

Potential Barriers and Considerations:

- National Standard 3 requires that stocks are to be managed as a unit throughout their range, to the extent practicable.
- National Standard 4 does not require the same management across the entire range of a stock, just management that does not discriminate between states.
- Enforcement could be more complex if regulations differ between areas.

Long-Term Objectives:

- Plan for shifting stocks; ensure management has considered the potential needs of stocks leaving or moving into an area (it would be detrimental to fishermen if important stocks leave an area and no replacement stocks move in), and ensure the ecosystem remains healthy.

M8. Better incorporate qualitative information including local ecological knowledge (LEK) and community vulnerability assessments to improve management in a changing ecosystem

Description: Implementing quantitative analyses of climate and ecosystem impacts on all species is not feasible. Therefore, identifying options for incorporating qualitative information on how the ecosystem is changing and fisheries are reacting may be both necessary and useful. There are existing examples to build on: MAFMC has a risk assessment that combines quantitative and qualitative information to better understand the risk a fishery will not meet its management goals, and NPFMC uses semi-quantitative risk tables to understand risks not included within a stock assessment. Participants at the Summit expressed interest in ways to incorporate local or traditional ecological knowledge into the fisheries management process. These types of information are relevant across multiple actions identified here, including M1, use of ecosystem level context, M3, use of risk policies, and M6, spatial considerations.

Potential next steps	Group

• Inventory where and how qualitative information, including LEK is currently being used in management and identify ways into management process, including:
  ○ Examine proposed and implemented ideas from the NPFMC climate taskforce
  ○ Consider examples from Southeast where participatory modeling incorporated LEK into stock assessments
	Core Team

• Improve the use of Community Vulnerability Assessments
• Conduct a meeting with identified persons to discuss use of social vulnerability indicators and key questions they can or should be answering for managers.
  ○ Identify NMFS' plans to characterize community vulnerability in the past and near future. Identify options for filling any gap
  ○ Discuss options for using knowledge of community vulnerabilities to plan for the future.
	Core Team

• Consider expanding State of Ecosystem (SOE, used in New England and Mid-Atlantic) and Ecosystem Status Reports (ESR, used in the South	NEFSC/ SEFSC

Atlantic) to include qualitative indicators, for example qualitative network models. ○ NEFMC discussed this during the 2023 SOE briefing ○ Work on South Atlantic ESRs will be updated starting in 2027	

Potential Barriers and Considerations:

- Need to establish trust of qualitative data and indicators as compared to quantitative indices
- Those who hold LEK will need to agree to provide it

Long-Term Objectives:

- Create a robust fishery management process responsive to quantitative and qualitative information.

Theme 3: Data Sources and Partnerships

D6. Develop incentives for better reporting to help reduce uncertainty

Description: The best way to improve the assessment/management process under changing ecosystem conditions and shifting species distributions is to ensure the most accurate data is available. Fisheries dependent data is particularly useful as it is collected year-round and at a finer spatial scale than is possible with fisheries independent data. Therefore, it is important to incentivize accurate and timely reporting.

Potential next steps	Group
• Develop tools to better utilize citizen science	Centers, Councils and Commission
• Develop a report that identifies weaknesses in fishery dependent reporting requirements	Centers
• Develop plan to monitor and enforce compliance to reporting requirements	Councils, Commission, Law Enforcement, Permit Offices
• Better coordinate with State and Federal recreational data collection to utilize state volunteer survey data	Centers and Commission

Potential Barriers and Considerations:

- More consistently apply and enforce reporting requirements

D7. Modernize data management to facilitate better sharing of data and prepare for an influx of new data streams and foster new partnerships

Description: Other uses of the ocean are rapidly expanding. While dealing with various sectors can be challenging, it also creates an opportunity for us to foster new partnerships. As such, we can and should anticipate an influx of new data streams.

Potential next steps	Group
• Hire staff dedicated to fostering partnerships and coordinating data collection/sharing between other ocean users, management bodies, and within Federal agencies	Centers
• Explore new partners that would mutually benefit from serving as a platform for data collection (USCG, DOD, IOOS/Regional Associations, merchant marines, transit, National Marine Sanctuaries, etc.)	Centers
• Approach NGOs and Universities to develop mutually beneficial projects and funding.	Centers, Regional IOOS Associations
• Host a forum of known partners to discuss available funding sources, potential collaborations, and data gaps.	Centers, Regional IOOS Associations
• Use offshore energy as platforms for data collection.	Centers, Regional IOOS Associations, State/Federal Programs

Potential Barriers and Considerations:

- Relationships with other ocean users can be contentious.
- As fish species distributions change (especially where movement is occurring between southeast and northeast) the ability to share data consistently amongst state and federal partners will improve data management and make producing analytical outputs (i.e. SOE and stock assessments) more efficient

Appendix: List of Actions by Priority

G=Cross-Jurisdictional Governance
M=Managing Under Increased Uncertainty
D= Data Sources and Partnerships

High Priority

- G1. Reevaluate Council committee structure, use, and decision making
- G2. Re-evaluate and potentially revise Advisory Panel representation
- G3. Develop joint management agreements with aim of clarifying roles and increasing efficiency
- G4. Improve coordination across NOAA offices and regions
- M1. Identify ecosystem-level contextual information that can be considered within the management process to help incorporate ecosystem information into decisions
- M2. Streamline FMP documentation and rulemaking
- D1. Expand study fleet, include recreational fisheries, and ensure data are used
- D3. Improve the use of existing data
- D8. Develop a process between management and science organization to prioritize data needs for evolving agency structure and evolving ecosystems

Medium Priority (Watch List)

- G5. Evaluate mechanisms for cross-pollination of SSCs
- M3. Improve the use of risk policies to better account for current and future ecosystem impacts on species (both negative and positive impacts)
- M4. Identify and establish best practices for increasing nimbleness/ responsiveness in management
- M5. Create a more adaptable structure for fishing permits
- M7. Consider alternative management options instead of, or in addition to, using stock assessments that directly incorporate environmental or ecosystem parameters within the assessment
- D2. Use survey mitigation around marine development to transition to industry-based surveys or other survey platforms
- D4. Standardize data collection to breakdown geographic barriers along the East Coast (both state and federal)
- D5. Focus on AI/technology development to more rapidly get data into assessments

Parking Lot

- G1. Additional ideas for reevaluating Council committee structure, use, and decision making
- G6. Coastwide Council with varying voting representation by FMP
- G7. Change state representation on councils
- G8. Clarify and potentially expand the roles of liaisons between Councils
- G9. Consider allowing proxies for Council members
- M6: Include spatial considerations in management; specifically in relation to leading and trailing edges of shifting stocks
- M8. Better incorporate qualitative information including local ecological knowledge (LEK) and community vulnerability assessments to improve management in a changing ecosystems
- D6. Develop incentives for better reporting to help reduce uncertainty
- D7. Modernize data management to facilitate better sharing of data and prepare for an influx of new data streams and foster new partnerships