

# New England Fishery Management Council

## Program Review Report

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An independent report prepared by the Program Review Panel

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Submitted to the New England Fishery Management Council by the  
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## List of Acronyms

AA	Assistant Administrator for Fisheries (NOAA)
ABC	Acceptable Biological Catch
ACCSP	Atlantic Coastal Cooperative Statistics Program
ACE	Annual Catch Entitlement
ACL	Annual Catch Limit
AKFIN	Alaska Fisheries Information Network
AM	Accountability Measure
AP	Advisory Panel
APA	Administrative Procedure Act
ASMFC	Atlantic States Marine Fisheries Commission
CCC	Council Coordination Committee
CIE	Center for Independent Experts
CL	Compass Lexicon
CZMA	Coastal Zone Management Act
EA	Environmental Assessment
EBFM	Ecosystem Based Fishery Management
EEZ	Exclusive Economic Zone
EIS	Environmental Impact Statement
EFH	Essential Fish Habitat
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEP	Fishery Ecosystem Plan
FMP	Fishery Management Plan
FR	Federal Register
FY	Fishing Year
GAP	Groundfish Advisory Panel
GARFO	Greater Atlantic Regional Fisheries Office (also referred to as the Region)
IQA	Information Quality Act ( <i>also known as the Data Quality Act or DQA</i> )
ITQ	Individual Transferable Quota
LAPP	Limited Access Privilege Program
MAFMC	Mid-Atlantic Fishery Management Council
MMPA	Marine Mammal Protection Act
MRIP	Marine Recreational Information Program
MSA	Magnuson-Stevens Act
MSE	Management Strategy Evaluation

MSY	Maximum Sustainable Yield
NE	Northeast
NEFMC	New England Fishery Management Council
NEFSC	Northeast Fisheries Science Center (also referred to as the Center)
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service (also referred to as NOAA Fisheries)
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NRCC	Northeast Regional Coordinating Council
OLE	NOAA Office of Law Enforcement
OY	Optimum Yield
PDT	Plan Development Team
PR	Proposed Rule
PSC	Potential Sector Contribution
RA	Regional Administrator
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
ROA	Regional Operating Agreement
RSA	Research Set-Aside
RSC	Research Steering Committee
SAFE	Stock Assessment and Fishery Evaluation
SAW/SARC	Stock Assessment Workshop/Stock Assessment Review Committee
SIR	Supplemental Information Report
SOPP	Statement of Organization, Practices, and Procedures
SSC	Scientific and Statistical Committee
SSB	Social Sciences Branch
TAC	Total Allowable Catch
TAL	Total Allowable Landings
TMGC	Transboundary Management Guidance Committee
TOR	Terms of Reference
U.S.	United States
USFWS	United States Fish and Wildlife Service

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## **I. Introduction**

### **Impetus for a Program Review**

The idea for a program review of the New England Fishery Management Council's (NEFMC) processes was first suggested by the Council's Executive Committee during an Executive Committee meeting on August 23, 2016. The Executive Committee discussed both the reasons for conducting such a review, as well as suggestions for how and when to conduct the review.

The primary driving force behind the suggestions for a review is twofold: 1) it is considered a best practice for institutional governance, and 2) it is becoming more of a standard practice for regional fishery management organizations throughout the world (with the U.S. leading the charge). The purpose would be to learn from mistakes and build on successes, recognizing some of the challenges around limitations of stock assessments; lack of clarity and flexibility of National Standard (NS) 1 guidance; and challenges with technical support on specific priorities. Throughout the process, there would be an undercurrent of learning from other regions and countries, improving understanding of the Council process, and leading the way for other Councils and the National Marine Fisheries Service (NMFS) to undertake similar reviews.

Following the August Executive Committee meeting, the Council discussed the program review during the NEFMC priority setting process at the September and November Council meetings. While Council members did not highly rank the program review, the Executive Committee recommended approval and the Council ultimately agreed in November 2016.

### **Methodology**

Following final Council approval of the program review in the 2017 priorities, a Steering Committee was formed to provide advice on how the review would be conducted and to draft the Terms of Reference (TORs). The TORs were approved at the April 2017 Council meeting. The final TORs are included in *Appendix A*. Following this approval, the Executive Director of the Council began preparations to identify two contractors to support this process and to identify reviewers for the panel. Two contractors were hired for two distinct roles and started work in fall 2017: the Fisheries Leadership and Sustainability Forum and Tidal Bay Consulting. Members of the review panel were discussed within the Executive Committee of the Council, and were identified in early winter 2017. Biographies of the review panel members are included in *Appendix B*.

The Fisheries Leadership and Sustainability Forum gathered input from fishery managers, scientists, and stakeholders throughout the greater New England region using several outreach methods. This information gathering was done prior to any activities of the review panel in order for results to be ready for the Program Review Meeting in March 2018. The Fisheries Leadership and Sustainability Forum conducted 14 port meetings from New Jersey to Maine between November 2017

and January 2018; one webinar meeting; an online survey (117 responses); 74 one-on-one interviews with individuals closely involved with the scientific and management processes that support the Council; and 16 one-on-one conversations with stakeholders who are actively and consistently engaged in the Council process. The resulting feedback was provided to the review panel in two summary reports, as well as several presentations during the Program Review Meeting. These presentations and reports are available on the Council's website: <https://www.nefmc.org/calendar/mar-13-16-2018-council-program-review>

Tidal Bay Consulting was hired to prepare the reviewers for the program review by providing reference documents supporting all the TORs; planning the meeting agenda; assisting the meeting Chair in facilitating the meeting; and preparing the final report in collaboration with the reviewers. The reference documents were made available to reviewers 5 weeks prior to the meeting and to the public 10 days prior to the meeting, on the Council's website: <https://www.nefmc.org/calendar/mar-13-16-2018-council-program-review>

During the development of the meeting agenda, several improvements to the TORs were identified that would streamline the facilitation of the meeting and offer clarification on scope. Therefore, the Council reviewed the proposed changes and made clarifications to several of the TORs at its meeting on January 31, 2018 (*Appendix A*).

The Council held the meeting from March 13 – 16, 2018 at the Hilton Garden Inn in Boston, Massachusetts. On days 1-3, the reviewers were presented with information relevant to each of the TORs through presentations and panel discussions. Following each presentation or panel, reviewers were given time for question and answer sessions with the presenters and panelists, and members of the public were provided with the opportunity to comment. After these sessions, the review panel deliberations commenced, where the reviewers still had access to the technical experts and stakeholders, though their focus was responding to the specific questions asked in the TORs. The reviewers had executive sessions each evening after the public meeting adjourned for an additional 1-2 hours. On day 4, the reviewers spent the morning of the public meeting and part of the afternoon in executive session finalizing deliberations on TOR 5 (Recommendations and Implementation), and discussing the outline and process for preparing the report and presentation to the Council. The entire meeting (except executive sessions) was broadcast via webinar using GoTo Meeting, and recordings from the meeting have been posted on the Council's website. The agenda is included as *Appendix C*.

While several opportunities for public involvement were offered each day (both in-person and online via the GoTo Meeting webinar), public comments during the Program Review Meeting were low. There was also a Nor'easter on day 1 of the review, which made road travel impossible and many towns were without power, providing an obstacle to participation. While in-person participation was low (i.e.,

less than five people/day on average), participation on the webinar averaged around 60 people/day, with approximately a quarter representing NEFMC staff.

Following the Program Review Meeting, Panel members were required to contribute to the final group report and prepare a shorter personal report. Individual reports are included in *Appendix D*. The final recommendations were presented by the meeting Chair (Mr. Dan Hull) at the April 2018 Council meeting, and the report was finalized on May 3, 2018. At the June 2018 meeting, the Council will discuss and take action on how to move forward with the recommendations.

*Appendix E* provides background information on the NEFMC organization and operations, including descriptions of the Fishery Management Plans (FMPs), subsidiary bodies and interagency coordination.

## **II. General Themes and Overall Recommendations**

The Panel identified a number of overarching themes and recommendations resulting from the program review questions in TORs 1 and 2, and used the case studies presented in TOR 3 as concrete illustrations of broader issues.

One primary theme is the importance of many different kinds of relationships to the efficient and effective operation of the NEFMC in fulfilling its conservation and management responsibilities under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act; MSA). This is especially true considering the Council's operating 'model' consisting of 10 FMPs and related subsidiary bodies (e.g., committees, plan development teams [PDTs], advisory panels [APs], etc.), and the number of member states, and other organizations with cross-jurisdictional roles and interests. The complexity of the structure and the number of players requires close working relationships to address the many issues that affect everyone in the Council process.

Maintaining and improving working relationships with key partner agencies at the Greater Atlantic Regional Fisheries Office (GARFO) and the Northeast Fisheries Science Center (NEFSC) is critical to the development of regulatory and FMP amendments, frameworks, effective collective science and management, and identifying research needs. Strong collaborative relationships with the Mid-Atlantic Fishery Management Council (MAFMC) and Atlantic States Marine Fisheries Commission (ASMFC) will also be important to address emerging shared issues. Developing stronger relationships across FMPs and subsidiary bodies to address cross cutting issues and improve consistency in process is important to create effective management actions and ensure common interests and understanding. Developing stronger relationships with the different stakeholder interests through public participation, process and dissemination of information will foster public trust and a better understanding of the Council's actions and challenges in meeting the goals of the MSA.



The Panel also identified the importance of forward thinking and visioning, which relies on reflection and strategic planning in the Council process in order for the Council members and staff to be proactive in addressing future challenges. This reflection time would serve to evaluate the performance of past actions and programs against objectives to determine what works and what needs improvement. In particular, the Panel identified the need to address management challenges posed by climate change in the near future, and the need to increase efforts to develop climate science strategies and the incorporation of climate science into decision making, as well as to expand ongoing activities on how Ecosystem-Based Fisheries Management (EBFM) can be implemented. Developing processes to assess performance of actions and management programs against objectives, whether they are biological, social or economic, is equally critical to guide future actions. Evaluation of the Council model or process, in a focused manner or more globally as with this program review, will also help guide future Council efforts.

With respect to the science, data collection, and research that underpins the work of the Council, the Panel notes that to some extent this is outside the scope of the review in that the Council cannot direct specific recommendations to GARFO, NEFSC, or the states and other organizations involved. However, the Panel highlighted the importance of fundamental and timely stock assessment science, research, and catch and monitoring data, as well as social and economic data that the Council depends on, including the limitations and uncertainties of that scientific information.

Finally, the Panel noted throughout the program review that comparing the operating models, practices, and procedures of other councils in the country could provide fresh insights into 'best practices' or potential changes to the way NEFMC operates. The Council Coordination Committee (CCC) is a forum in which comparisons across Councils for particular topics would be productive, and could focus on issues such as public processes, developing research priorities, or methods for evaluating the performance of management actions against original objectives.

### **III. Findings – Terms of Reference**

This section provides information and findings on all Terms of Reference (TORs), beginning with a brief overall background, followed by general observations, strengths, opportunities for improvement, recommendations, and ideas on how to implement each recommendation for each TOR sub-question. As there are approximately 50 recommendations, the Panel selected the top 25 recommendations they feel are important. These recommendations are marked with a **(High Priority)** after the text. While the Panel understands it is ultimately the Council that will prioritize the recommendations, they narrowed down the list for the Council presentation, and carried these priorities through to the report as well.

Term of Reference 1 - Evaluate the strengths and weaknesses of the foundations of fishery management used by the NEFMC.

The legal foundation of the Council is the Magnuson-Stevens Act (MSA), which created regional fishery management councils with the mandate to develop fishery management plans (FMPs) for fish and shellfish stocks found in federal waters (3- to 200-nautical miles from coastal baselines). The federal agency responsible is the National Marine Fisheries Service (NMFS; also known as NOAA Fisheries), National Oceanic and Atmospheric Administration (NOAA) under the Department of the Commerce. NMFS creates Operational Guidelines (most recently revised on 9/30/2015) and reviews regional operating agreements (ROAs) developed with each Council. The MSA sets out the form and function of the Councils as well as the principles to be used in their work. The Panel did not take on the task of evaluating the strengths and weaknesses of the MSA but is aware of major debates about MSA in the context of its reauthorization by the U.S. Congress. Particularly pertinent to this review of the NEFMC are concerns about requirements for rebuilding fish stocks deemed overfished and bycatch issues that contribute greatly to the Council’s workload and may demand more and better scientific data and analysis than what is available. This can impact the performance of the NEFMC.

The ten National Standards (NS) spelled out in the MSA are important criteria used in reviewing and approving the actions of the Councils. Table 1 provides abbreviated descriptions of the NS. Although NS 1 is understood to be the primary NS, the MSA signals the need for balance among them.

<b>National Standard</b>	<b>Description</b>
1 - Optimum Yield	Conservation and management measures shall prevent overfishing while achieving on a continuing basis, the optimum yield from each fishery for the United States fishing industry.
2 - Scientific Information	Conservation and management measures shall be based upon the best scientific information available.
3 - Management Units	To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.
4 - Allocations	Conservation and management measures shall not discriminate between residents of different states. Allocations of fishing privileges shall be fair and equitable, with no one acquiring an excessive share.
5 - Efficiency	Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources; except that no such measure shall have economic allocation as its sole purpose.
6 - Variations and Contingencies	Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.
7 - Costs and Benefits	Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

8 - Communities	Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data.
9 - Bycatch	Conservation and management measures shall, to the extent practicable, (a) minimize bycatch and (b) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.
10 - Safety of Life at Sea	Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea.

Section 303(a)(1)(C) of the MSA requires that the federal FMPs are consistent with other applicable laws, and the Council’s work is reviewed by NMFS to ensure this is so. The list of other applicable laws is very long; important examples are the National Environmental Protection Act (NEPA), the Administrative Procedures Act (APA), the Regulatory Flexibility Act (RFA), the Coastal Zone Management Act (CZMA), the Marine Mammal Protection Act (MMPA), and the Endangered Species Act (ESA). It also includes a large set of Executive Orders. NEPA is particularly important as a foundation for the Council’s work, establishing a broad mandate for environmental review, including the human environment and cumulative effects, and a strong requirement for public comment and review.

**TOR 1a. Does the NEFMC process take into account all applicable federal legislation and Executive Orders?**

General Observations

The Council’s work is strongly shaped by the requirements to comply with the MSA, the many guidelines that follow from that Act, NEPA, and numerous other applicable laws, policies, and Executive Orders. Those laws and guidelines play major roles in approval of FMPs, plan amendments, and other measures by NMFS. Over the years the Council has become experienced at integrating them into its standard procedures.

Strengths

Insofar as the Council’s approved FMP measures have passed NMFS scrutiny, it may be judged to take into account the foundational laws and guidelines pertaining to the MSA and other applicable laws. The Council publishes a Statement of its Organization, Practices, and Procedures (SOPPs), which lays out its compliance with regulations and other requirements. The Council’s actions and processes have also been mostly upheld through numerous lawsuits. The threat and administrative burden of lawsuits is a strong motivator for efforts to comply. Great care is taken by the Council staff, often in cooperation with staff at the Northeast Fisheries Science Center (NEFSC, or Center) and the Greater Atlantic Regional Fisheries Office

(GARFO, or Region) to meet legal requirements and agency guidelines in the preparation of documents and processes for deliberation and review.

### Opportunities for Improvement

Council presentations to the Panel indicate it has fallen short with regard to NS 8, on Communities. NS 8 reads, *Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirement of paragraph (2) [i.e., National Standard 2], in order to (a) provide for the sustained participation of such communities, and (b) to the extent practicable, minimize adverse economic impacts on such communities.*

As NS 8 indicates, deliberations about how to provide for the sustained participation of fishing communities and minimize adverse economic impacts of regulations on communities are not allowed to compromise the biological conservation requirements and goals of an FMP (especially NS 1). To date, as the Council struggles to meet the objectives and demanding requirements of biological conservation, NS 8 is sometimes treated as a low priority in the Council's FMP work. NS 8 is met in part by the Fishery Impact Statements required by section 303(a)(9) of the MSA, but NS 8 more clearly focuses on communities. Through public testimony and personal experience, Council members are aware of the importance of Council decisions to the fishing industry and communities that depend on it. FMP amendments (particularly the recent Amendment 18 for the Northeast (NE) Multispecies 'groundfish' FMP) and other actions often reflect this, but resources and time for fully implementing NS 8 have been scarce.

Council staff are aware of the requirements of Executive Orders (EOs) 12898 and 13175. EO 12898 covers "Environmental Justice", which calls for monitoring the participation of fishery-dependent services and industries, Native Americans, and minority and low-income populations. EO 13175 requires consultation with Native American tribal officials. The Council depends on the Social Sciences Branch of the Center for data and analyses pertinent to NS 8, the EOs noted, and other social and economic analyses (including what is required for NEPA, RFA, and the "limited access" sections of the MSA). However, the Council staff expressed that they have only limited access to the information and resources needed to meet these EOs.

In conclusion, MSA NS 8 and EOs 12898 and 13175 require monitoring the participation of fishery-dependent services and industries, Native Americans, and minority and low-income populations. The Council staff in its presentation to the Panel acknowledged that it has not been able to fully meet the requirements and guidelines of these measures. Nonetheless, the Social Sciences Branch of the Center has collaborated with social scientists at other Centers to come up with well-designed data on indicators for the impacts of fisheries management measures on

human communities (Colburn et al. 2017).<sup>1</sup> Center and Council staff recently incorporated those and other “social indicators” directly in the Groundfish Framework (FW) 52 and referenced them in FW 53. They were used in the Omnibus Habitat Amendment 2. A social impact assessment for the Monkfish FMP also included these social indicators. These indicate a significant move toward full compliance with NS 8 as well as relevant Executive Orders.

#### TOR1a Recommendations:

1. The Panel recommends the Council increase its ability to meet NS 8, on the participation of fishery-dependent communities and minimization of economic impacts of its measures, and the requirements of Executive Orders that pertain to minority, low-income, and Native American populations (**High Priority**).
  - How to implement: With the help of the Social Sciences Branch of the Center, the Council economists and others with social science training should prepare a white paper that addresses opportunities for, and barriers to meeting the requirements of NS 8 and EOs 12898 and EO 13175, with regard to the participation of fishery-dependent services, industries and communities, minority and low-income populations, and Native Americans. This white paper can be used by the Council in reviewing and adjusting priorities and may help identify ways to improve Council staff and PDT member access to data and expertise at the Center.

#### **TOR 1b. Does the Council comply with and incorporate NMFS policy directives, strategies, and Implementation Plans (e.g., MSA National Standard Guidelines, Policy for Ecosystem Based Fishery Management Roadmap, National Saltwater Recreational Fisheries Policy, etc.).**

#### General Observations

Numerous NMFS policy directives, strategies, and implementation plans that incorporate and go beyond the MSA NS guidelines have potential influence on Council processes and actions. A large and critical set of policies pertain directly to fishery management actions, spelling out all requirements at each stage in the process. The Council’s ROA is the cornerstone of Council operations and derives from the agency’s revised Operational Guidelines. There are policies for emergency rulemaking, public comments, determining stock status and rebuilding progress, research activities and exempted fishing permits for cooperative research, and so forth. The Council also follows a requirement to publish a SOPP, which reflects its compliance with regulations and other requirements. There are also numerous policies that pertain to protected resources, habitat, monitoring, enforcement, data collection and quality for fish stocks and fishing effort, etc. Another major category of policies address administration and operations.

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<sup>1</sup><https://www.sciencedirect.com/science/article/pii/S0308597X16302123>

The Panel focused on only a few agency policies that set out goals and guiding principles for new and strengthened policy directions. One is the *National Saltwater Recreational Fisheries Policy* (02/12/2015), which has the goals of supporting and maintaining healthy marine and estuarine fisheries resources for recreational fisheries and promoting saltwater recreational fishing. Another discussed during the review is the *Ecosystem-Based Fisheries Management Policy* (05/23/2016) and attendant “Road Map” for operationalizing that policy (11/17/2016). Important other recent policies we became aware of are the *NOAA Catch Share Policy* (1/4/2017) and the *Fisheries Allocation Review Policy* (2/23/2017). In addition, NMFS has a *National Climate Science Strategy*; its *Northeast Regional Action Plan* (NERAP, 12/2016) identifies numerous plans to engage the Council in coordination with NMFS to address the challenges of climate change.

### Strengths

The Council has an active standing Committee on Ecosystem-Based Fishery Management (EBFM), and it has followed one of the policy guiding principles by beginning to develop a Fishery Ecosystem Plan (FEP) for Georges Bank. If this approach proves to be a viable option, it would replace all individual FMPs for fisheries operating in Georges Bank. This is seen as a way to engage the public and consider EBFM through such plans rather than through policies and initiatives that would apply within individual FMPs. A review of the assessment models and science behind the strategy of developing this FEP occurred on April 30-May 4, 2018. Moreover, the Council, with the Region and the Center, has begun to focus on climate change, including meetings with the MAFMC and ASMFC, ongoing discussions through the Northeast Region Coordinating Council (NRCC), and making changes to membership on committees that reflect changes in species distribution. Discussions are underway between NMFS and the NEFMC to include climate, ecosystem, and habitat terms of reference in stock assessments. The Council appears to be on the path of preparing for major issues like climate change, and perhaps ocean acidification and competing ocean uses, such as offshore energy development that are coming down the pike.

### Opportunities for Improvement

The large and growing list of NMFS policies, strategies, and implementation plans over and above the MSA is challenging to the Council, given the high demands on its resources that come from the requirement to restore overfished stocks. Some of these policies, like the recreational fishing policy, the catch share policy, and the EBFM policy, are more aspirational than binding. Recognizing these policies rarely have the force of law even though they touch upon important current and future issues, the Council has less incentive to fully develop initiatives for these policies. More generally, the Council does not appear to have been able to fully identify which policy directives or management roadmaps it intends to follow, and to prioritize them.

Saltwater recreational fishing has been of considerably smaller importance in the New England region as compared with the Mid-Atlantic and the South Atlantic regions, but these fisheries are economically and socially important for those who participate. These significant recreational fishing interests deserve greater support from the Council. There is no mention of the specific roles and responsibilities of NMFS, the Councils, and other agencies in the *National Saltwater Recreational Fisheries Policy*, leaving this up to the leadership of the Council. Further, the for-hire sector of New England's recreational fisheries claims that it was not given timely information on pending changes of reporting requirements that emanate from the MAFMC, suggesting communication of recreational matters needs improvement.

The *NOAA Catch Share Policy* requires periodic reviews of catch share programs, and the Council has completed a review of its Individual Transferable Quota/Limited Access Privilege Program (ITQ/LAPP), part of the Atlantic Sea Scallop FMP. It has yet to complete its review of the sector program for multispecies groundfish, which does not meet the definition of LAPP. Aspects of the sector program are problematic and controversial, as evident in the Council's long and troubled effort to complete an amendment creating a cap on permits and ownership (Groundfish Amendment 18). Other catch share programs are in place as well, posing a significant challenge for the Council staff, working with the Center and GARFO to develop reviews.

The Panel did not have time to explore how the Council has responded to the *Fisheries Allocation Review Policy*, although we were assured that there is an ongoing plan. Ensuring the sustainability of fishing communities and fisheries, a major goal of the nation's federal fisheries policy and underscored in NS 8, was highlighted in relation to the *Fisheries Allocation Review Policy* in NMFS' "priorities and annual guidance for 2017." Like NS 8, the social and economic dimensions of allocation are seen as secondary to NS 1 guidelines to end and prevent overfishing and rebuild fisheries. Nonetheless, allocation issues are major challenges for the Council that deserve its continued work in implementing the policy.

#### TOR 1b Recommendations:

1. The Panel recommends continued efforts to ensure adequate recreational representation across its committees and advisory panels and to ensure appropriate attention to recreational fisheries in its FMPs (**High Priority**).
  - How to implement: Council staff should review recreational representation on advisory panels and committees of the Council. Consider an ad-hoc working group with liaisons and staff from the MAFMC and ASMFC to review lessons learned in other fishery management bodies to represent and support saltwater recreational fishing and to ensure improved communication among these bodies concerning recreational fisheries issues that cross jurisdictional boundaries.

2. The Panel recommends the Council accelerate its work on EBFM and continue to strategically plan for integrating EBFM into their operations. This planning will need to consider how other issues and policies, such as climate change and the National Climate Science Strategy, affect NEFMC fish stocks and management. Preparation now, while not in crisis mode, will allow for thoughtful consideration and interaction with the Center and Regional offices (**High Priority**).
  - How to implement: Expand and accelerate the activities of the staff and EBFM Committee, including assessing relevant national and regional policies, initiatives, and plans; scientific evidence to assess anticipated changes in NEFMC fish stocks (e.g., latitudinal and longitudinal movements); and implementing the Council's chosen approach for incorporating EBFM into management.
3. The Panel recommends that the Council continue working with the Center and Region to ensure that data are available as needed for adjustments to the sector catch share program, and for catch share and fisheries allocation reviews.
  - How to implement: Council staff economists work with Social Sciences Branch staff at the Center to identify gaps and opportunities for future assessments of the Council's catch share programs and consider how these reviews can inform the development of alternative approaches to fisheries allocations.

**TOR 1c. The clarity, logical consistency, and completeness of NEFMC policies (e.g., Risk, Habitat, Sector, and Research Review policies).**

General Observations

The review Panel did not thoroughly examine each of the Council's own policies for clarity, logical consistency, and completeness, a task which would seem to require legal expertise. Instead, the presentations and review deliberations focused on two of the Council policy areas, research review and risk policy.

The Council's Research Steering Committee (RSC) developed the *Research Review Policy*. That policy mainly has been to review final reports of projects funded through various cooperative research programs, ensuring there has been adequate technical review before the results are used in management. There is a separate Scallop Research Set-Aside (RSA) Program Policy, whereby the Scallop PDT and AP submit research priorities through the NEFMC Scallop Committee, and a separate review process for proposals. Other RSA programs are similarly handled through their respective FMP committees. The Scientific and Statistical Committee (SSC) may also come up with research priorities that are communicated in other ways, mainly to the NEFSC.



The Council has a *Risk Policy* (2014) and *Risk Policy Roadmap* (June 2016). Developing a risk policy began in 2013 initially in relation to the need to account for risk and uncertainty in establishing Allowable Biological Catch (ABC) control rules under the revised MSA. The Council approved the *Risk Policy* in November 2014. It is based on a high-level, broad statement concerning how risk tolerant or risk averse the Council's management approach should be given certain criteria. It is informed by scientific advice from the SSC but is ultimately a policy decision intended to be applied for setting ABCs, Annual Catch Limits (ACLs), and other management measures in each FMP. The Roadmap operationalizes the policy and outlines next steps for implementing it.

The Roadmap is very thorough and logical, addressing net benefits to the Nation, the goal of stability within the management system, the notion that risk comes from cumulative effects of many decisions and factors, and the potential of using formal methods, such as Management Strategy Evaluation (MSE), to deal with uncertainty and extracting signal from noise. The approach is long term and incremental, much of the task falling on the Center.

The Risk Policy Working Group created a template for a Risk Policy Matrix, and the PDTs are expected to update the Matrix for a specific fishery management unit, with the goal of creating a standardized format for communicating conditions with respect to risk, uncertainty, and management procedures to the SSC and to the Council. In practice, the Matrix is used by Council staff and committees as background information rather than as a tool for decision-making.

### Strengths

The Panel focused mainly on the *Risk Policy* and *Research Review Policy* of the NEFMC but accepted that all policies were fairly clear, logical, and complete. The RSC gets high marks for bringing scientists, fishermen, and managers together in positive ways, historically to review cooperative/collaborative research plans and results. Cooperative research results have been used by the Council in management, and in some cases have helped inform stock assessments. However, the context has changed and the goals of the RSC are changing. Efforts around the *Risk Policy* have been extensive and all encompassing, seeking a more holistic approach than that used in some other councils, where it focuses more on particular FMPs or ABC-setting. The Risk Policy Matrix appears to be used by Council staff and committees as a source of valuable background information.

### Opportunities for Improvement

The effectiveness of both the *Research Review Policy* and *Risk Policy* in guiding Council actions is not clear. The Council must develop research priorities every five years, as required by the MSA. It appears to the Panel that every entity (NEFSC, GARFO, the Council and staff, academics and the Northeast Cooperative Research

Program) develops their own ideas about research priorities. The RSC is supposed to synthesize these but it is not clear that their recommendations are fully taken into account when other groups determine their research programs for the following year. The effectiveness and application of the RSC recommendations are not visible enough to guide Council action. Council research priorities may be helpful for individual researchers applying for funds. However, the Center, the Saltonstall-Kennedy program, other councils, and the ASMFC also set priorities.

With a decline in collaborative research funding, the charge of the RSC may be shifting toward more work on Council research priorities, and it could become the center for that task. In that case, membership composition that is currently appropriate to the task of reviewing research project results may have to be reassessed and changed for the purpose of determining research priorities. There is concern about adding Council RSA programs to the review and prioritization tasks of the RSC, as a major extra strain.

Staff are using the Risk Policy Matrix as background information rather than as a tool for decision making. It has potential as a tool for decision-making that has not yet fully materialized.

#### TOR 1c Recommendations:

1. The Panel recommends that the Council re-evaluate the composition and objectives of the *Research Steering Committee (RSC) Policy* and guidance in light of changes in kinds and nature of research and the possibility that it can become the Council's central committee for establishing research priorities.
  - How to implement: Council staff to review current guidance for RSC (in the Operations Handbook) and the RSC policy and update if necessary. Clarify purpose, roles, and tasks of the RSC.
  - Review the research priority setting processes of other Councils, and then collaborate or interact with partner agencies, such as NEFSC. (Note: this is a May 2018 CCC agenda item.)
2. The Panel recommends that the Council apply the *Risk Policy* consistently and in a forward-looking manner as a tool for decision-making.
  - How to implement: The Risk Policy Working Group or a newly constituted working group should identify obstacles and opportunities for improved use of the *Risk Policy* and Risk Policy Matrix in PDT and Council decision-making. Provide training to Council staff and members, PDT members, and the SSC to improve its use as a tool for decision-making.
3. The Panel recommends that the Council continue to seek opportunities to better integrate and leverage research needs that cross the Center, Region, and Council.

- How to implement: The RSC should map out the research planning/prioritization and roles of each agency and subsidiary body to identify and assess any potential redundancies/duplication of effort in order to provide opportunities to increase efficiency and uptake.

**TOR 1d. The impact scientific information (stock assessments, economic and social impacts, ecosystem dynamics) has on the performance of the Council (e.g. is it good enough or do limitations of scientific information impede performance)?**

*General Observations*

The demands on biological, ecological, economic, and social science are considerable and it is difficult if not impossible to meet all such demands in a timely manner. The management system has become more complex than the data and analyses allow. The Panel explored ways in which science requirements and processes could be simplified but ultimately concluded that while some improvements are possible, it is primarily the requirements of the MSA, NS Guidelines, NEPA, Executive Orders and various other policy directives. Combined, these have resulted in the current complex situation, and are difficult to rectify without a high level revision of the system as a whole. Fully exploring ways of simplifying and streamlining the legal and policy requirements was considered well beyond the scope of this review.

It also appeared to the Panel that the level of satisfaction with the science information was directly correlated with the status of the stocks. For example, the credibility of the science associated with scallops and haddock seems to be high, whereas the credibility of the science for most groundfish and small-mesh species is generally low.

*Strengths*

The Panel has no doubt about the quality of the personnel involved in providing data, analyses and other information to the Council to inform their management decisions.

Within the constraints of overly burdensome requirements, the Panel believes that the stock assessment and socio-economic methods employed by the Center, and the continual development of such methodologies has generally resulted in state of the art stock assessment and socio-economic assessments and analyses. Subsidiary analyses by Council staff use widely accepted methods that have also contributed to the quality of the science. The quality and quantity of input data appears to be more of a limitation than the models and methodologies themselves.

While it is extremely difficult to interweave approaches for dealing with the impacts of climate change, shifts in productivity, ecosystem approaches and other important

factors into the current system, the Panel commends recent efforts by the Council and Center to develop an MSE for herring, and an FEP for Georges Bank, and believes that these efforts should continue and be further strengthened.

### *Opportunities for Improvement*

The requirements of the current fisheries management system (MSA, NS Guidelines, NEPA, Executive Orders, etc.) have grown in complexity and expectation to a level beyond the ability of the science to fully support them. Efforts need to be made to better align information requests with what is feasible, and with what is truly essential to develop management actions. The level of uncertainty in information and how to deal with that uncertainty needs to be better appreciated and understood. Further training in this area for Council members and staff will help, but attempts to simplify the requirements of the system, within the confines of what is legally permissible, should also be attempted.

The complexity of current requirements also means that it is difficult to respond in a quick and meaningful way to unexpected, but relatively common, events such as sudden changes in assessments of stock status. These need to be anticipated and planned for in advance, with contingency plans developed for a range of such events.

There is considerable distrust of stock assessments and other science information from the NEFSC by stakeholders, particularly for stocks that are underperforming. The Panel heard from several attendees at the review that what fishermen see on the water does not match with trawl survey or stock assessment results, mostly for groundfish. Another strongly-held belief is that the recorded commercial and recreational catch information is inaccurate, which therefore results in assessments being inaccurate. The use of observer data to estimate discards is also believed to be problematic due to the perceived observer effect. Retrospective patterns also impair stakeholder confidence in stock assessment results. More needs to be done to improve both the science and the level of trust that stakeholders have in it, including better communicating the science.

Stocks of unknown status or those evaluated using low information methods such as survey indices that may or may not have been calibrated between survey vessels are also problematic, particularly if such stocks are, or have the potential to be, choke species for other stocks. Examples of actual or potential low information choke species include windowpane flounder, which has the potential to limit scallop catches, and southern red hake, which has recently been declared to be overfished with overfishing occurring. Red hake may also be affected by climate change, as there is some evidence that its distribution has shifted northwards. It would be beneficial to evaluate the costs and benefits of affording priority to collecting data on such low information, index-assessed species, which are also actual or potential choke species. For example, could new methods for optimizing data collection across species be developed? Should as much time and effort be spent on data rich

species, such as scallops and haddock, which are doing well, rather than tackling the more difficult and potentially limiting species? These issues are probably more within the purview of the Center rather than the Council; however, the Panel believes it's important for the Council to understand them as part of its overall conservation and management responsibilities.

The Panel also questioned whether science requirements are shared appropriately between the Council, the Center, the SSC, and others; and whether analyses conducted by one group could more efficiently and effectively be performed by another?

The Panel noted that the time lag between the end of the fishing year and the availability of final landings data for use in stock assessments and other analyses, including socio-economic analyses, seems to be unusually long, especially where data are reported electronically. A review of mechanisms to reduce this lag (and any other relevant lags) needs to be undertaken. The Center reported that they already conduct preliminary assessments with preliminary landings and other data to build and test their models, and update their analyses when final data become available.

Current uncertainties about stock structure, as well as potential modifications to these that may result from the effects of climate change on stock distributions also need to be further investigated, particularly for cod stocks. The Panel understands a Cod Stock Structure Working Group has formed and has started work.

The Panel was informed of the difficulty of specifying long-term rebuilding targets, especially for stocks where there is evidence of northerly or longitudinal changes in distribution that may result in rebuilding targets relying on past data not being reflective of present or anticipated conditions. The use of interim targets as steps along the way should be explored. It would also be useful if alternative rebuilding scenarios under various assumptions about movement and productivity could be developed as sensitivities to inform the Council and industry of the need for, and extent of, future potential modifications to rebuilding plans.

#### TOR 1d Recommendations:

1. The Panel recommends that the Council be fully informed about the limitations of biological, ecological, economic and social data and how uncertainty affects the ability for Council staff and others to answer specific questions. In general, further explanation and training about sources, treatment, and communication of uncertainty would benefit Council members and staff. Sometimes the correct answer to a question is that it's not answerable with the available information and attempts to do so can result in loss of credibility (**High Priority**).

- How to implement: Offer short (1-2 hour) courses for the Council and longer-term (1-2 day) courses for staff training in quantifying, interpreting, and communicating uncertainty.

2. The Panel recommends that, to the extent allowable under the law and relevant policy guidelines, attempts should be made to simplify the science and other requirements of the management system.

- How to implement: The Council and NMFS should work together to examine potential mechanisms for reducing the information required and aligning demands on Council staff with the available level of scientific information. A fuller investigation of procedures adopted by other Councils may help in this regard.

3. The Panel notes that even management successes are fragile and that the Council and Council staff should be proactive and develop management responses to sudden drops in stock size, corrections when there is uncertainty in catches (e.g., action associated with the discovery of under-reporting that leads to reductions in allowable catches), changes in bycatch rules in other fisheries, new Endangered Species Act (ESA) issuances, and other events that may cause unforeseen changes in stock status or required management actions (**High Priority**).

- How to implement: Select a few species with differing characteristics (e.g., life history, stock status and management options) and use available data and models to explore possible stock changes and potential management responses in a future scenarios mode. These results will also provide information on the adequacy of the data by using a formal, quantitative definition of adequacy, rather than relying solely on expert opinion. This may be a useful task for the SSC to undertake.

4. The Panel recommends that Council staff perform, contract out, or request the SSC or Center staff to undertake selected analyses to determine if they would be beneficial to the scientific input for the Council's decision making. A few examples would be selected to evaluate the sensitivity and robustness of stock assessment results to the adequacy of the input data, particularly misreported or under-reported commercial and recreational catch data, and inaccurate discard information from both of these fisheries components. From these analyses, the adequacy of input data may be able to be formally defined and quantified using statistical and simulation methods applied to evaluate the robustness of stock assessment outputs. Results of such analyses should be clearly communicated to stakeholders (**High Priority**).

- How to implement: Conduct sensitivity analyses to determine how misreported or under-reported commercial and recreational catch, discard rates and possibly other data anomalies affect stock assessments. The Center reported that it has already undertaken some sensitivity analyses for the anticipated higher recreational catch estimates from the new Marine Recreational Information Program (MRIP) due to be released this summer, and has found that for the examples investigated, it makes

relatively little difference to assessment outputs. Published studies have also shown that using misreported catch information tends to have relatively little effect on assessments of stock status and appropriate management responses unless there is a strong positive or negative time trend in levels of misreporting or discarding, and management actions associated with these.

5. The Panel recommends that Council staff should work with the Center to list stocks where status is unknown, or poorly known, to understand more about them and to better characterize their status. This particularly applies to low information stocks that are or might act as choke species. Council and Center staff should work together to consider raising the priority of the resources applied to low information choke species. This recommendation highlights the importance of the partnership between the Council and the Center, and recognizes the limits of the Council's authority.

- How to implement: In cooperation with the Center and GARFO, undertake a gap analysis to determine the way that resources are allocated across species/stocks, and whether such resources are optimally aligned or applied, with a view to potentially reallocating some resources from high information stocks to those most in need of improved assessments. The newly revised Stock Assessment Improvement Plan should be used as a tool to assist in the optimization of resources for stock assessments.

6. The Panel recommends that Council and Center staff should continue to work together to better align the need for scientific (biological, ecological, economic and social) information with Center and Council staff resources, with the outcome of streamlining the processes for acquiring the science and increasing efficiency (e.g., is it more effective or efficient for Center or Council staff to perform certain analyses?).

- How to implement: For each management action, outline what is required and who is best placed to respond, taking account of both staff availability and the skills required. Include the responsibilities of each and the means of interaction and communication among all parties. The current use of Action Plans already provides a platform for this and can be easily expanded. Agreed upon requirements and responsibilities should only be modified if there is a good reason to do so. The Council and committees need to give more thought to the cost-benefit of adding new requests for data and analyses, as well as whether these new requests mean that previous requirements are now redundant or of lower priority.

7. The Panel recommends that PDTs should be more proactive in requesting biological, ecological, social and economic data and analyses from the Population

Dynamics and Social Sciences Branches of the Center as early as possible in the process so that the information is available in time and in formats appropriate to decision-making (**High Priority**).

- How to implement: Essential science requirements should be identified up front as early as possible in the process of developing management actions and be included in Action Plans that are agreed with the relevant players. The Regional Operating Agreement between the Council, Region and Center is relevant in this regard.

8. The Panel recommends that efforts to undertake Management Strategy Evaluations, such as that recently developed for herring, and to investigate the potential impacts of climate change and shifts in productivity, as well as the utility of Ecosystem-Based Fisheries Management as is underway for Georges Bank, should be continued and expanded. Current and future uncertainties about stock structure also need to be investigated, particularly for cod stocks.

- How to implement: Council staff should work with Center staff, the SSC and/or academics or contractors to facilitate the development of models and simulations that fully evaluate alternative operational models (including alternative stock structure assumptions) and the incorporation of uncertainty into assessments, and evaluate the implications of emerging issues such as climate change, shifts in productivity and distribution, and ecosystem impacts.

9. The Panel recommends that the Council and the Center should together explore mechanisms for specifying long-term rebuilding targets appropriately in situations where changes in species distributions, or productivity, or other substantive impacts are likely.

- How to implement: Alternative rebuilding scenarios under various assumptions about movement and productivity over the time span of rebuilding plans should be developed as sensitivities to the base case. Even if these are not able to be formally incorporated into accepted rebuilding plans, they are likely to be useful for informing the Council and industry of the need for and extent of future potential modifications to rebuilding plans. It may also be useful to identify interim steps along the way that are achievable in the shorter term.

**TOR 1e. Professional support from Council staff, agency staff, and participants in the process (e.g., academics, advisors from various fishing interest groups).**

#### General Observations

As with other councils across the country, there is a complex series of relationships between the various entities involved in the fisheries science and management



processes. These entities include the Council members and staff, the Region, the Center, academics, and fisheries interests including numerous commercial sectors, as well as recreational fishers. Considerable effort has been put into improving these relationships over the years and ensuring there is as much input as possible from all groups. However, not all interactions are as smooth or productive as they could be, and further work in several areas is still required. Poor relationships can strain support, coordination, and trust.

### Strengths

On the basis of the information provided and our own observations from the meeting, the Panel believes that Council staff, NMFS staff, and other participants in the process are overall dedicated, passionate, and professional in the jobs they do, and provide a high level of support to the Council. The relationship between the Council and GARFO staff seems to have improved substantially in recent years, and GARFO now apparently takes the least amount of time of any of the regions to implement actions once they have received final approval. The relationship between the Council and the Center also seems to have recently improved, although some contributors noted that there is scope for further progress.

### Opportunities for Improvement

The Panel believes that there are several activities and relationships that could be improved in ways that ought to benefit all participants.

Several comments were made by review participants about the need to further improve the relationship with the Center and, in particular, their involvement in PDTs and in providing science and socio-economic data and analyses.

The Panel is concerned about the complexity, and the potential for inefficient or ineffective, non-value-added duplication of some of the processes and interactions between the various players in NEFMC activities. One example concerns the research planning and prioritization process (see TOR 1c). Another pertains to stock assessment and peer review processes. The NEFSC Stock Assessment Workshop (SAW)/Stock Assessment Review Committee (SARC) process has become very intensive, with the potential for a Center for Independent Experts (CIE) review to be overlaid, along with SSC review, and Council staff interpretations of results and peer review comments that are provided to the Council and Committees. The Panel questions whether this is the most efficient use of science resources. The Panel heard that participants in NEFMC activities lament the fact that the NEFSC is unable to undertake assessments with the desired frequency. We suggest considering whether it might be possible to reduce the layers of peer review with minimal loss of rigor, in order to free up NEFSC staff to undertake more frequent assessments, or assessments on a greater number of species.

There are also few opportunities for professional advancement in a small group such as the NEFMC staff. With a small organization, losing a key analyst is a high risk. For this reason, succession planning and some level of redundancy of staff is essential. Training opportunities should continue to be provided, and extended, to NEFMC staff. This is essential to both the retention and recruitment of qualified staff.

The Executive Director of the NEFMC also needs to continue efforts to effectively communicate Council, staff and other activities through, for example, expanding the activities of communications staff, including encouraging them to be proactive. Other staff should also be trained in effective means of communication.

More time also needs to be devoted to stop and think about how to more efficiently run processes, rather than just succumbing to the day-to-day requirements resulting from high demands on stretched time and resources. Council staff (and other groups as well) need to have scheduled reflection activities once or twice a year for least a couple of days at a time, away from their places of work, to take an overall look at the bigger picture.

Participation in Advisory Panels (APs) was also identified as an area where issues have recently arisen, with a noticeable drop off in the number of people who wish to participate, as well as decreased public attendance. There is a high cost to involvement and participants often feel that the benefits they receive do not outweigh the costs.

#### TOR 1e Recommendations

1. The Panel recommends that ways to redress issues concerning the level of support from the Center to the PDTs of the Council need to be developed. The Council should determine how it can better align the needs and tasks of the PDTs with the expertise, interests and reward structure of the Center.
  - How to implement: Council staff leadership should meet with Center leadership to scope out the issue and explore how Center staff can become more involved in ways that are rewarding, effective, and efficient.
  
2. The Panel recommends that Council staff should, with assistance from the Center, Region and SSC as appropriate, examine the stock assessment/peer review processes that are followed, with a view to eliminating potential duplication, or better coordinating or streamlining processes (**High Priority**).
  - How to implement: Council staff should map out the processes followed and convene a joint meeting including Center and Regional staff, and possibly others to identify possible ways of increasing efficiency and uptake. (The Panel is aware that an NRCC working group will present a report regarding the stock assessment process at the May NRCC meeting;

however, it is unknown how that report will address whether the process is cost-efficient and timely.) It is also possible that the national level Stock Assessment Improvement Plan may intersect with this issue.

3. The Panel recommends that staff from the Council and Center continue to develop mechanisms for increasing the level of trust of stakeholders in stock assessment inputs, processes, and results.

- How to implement: Continue and expand current practices, such as empowering the New England Trawl Advisory Panel and increasing involvement in cooperative research programs. The Council and Center should demonstrate how this research has been utilized, including inviting stakeholders to stock assessment meetings, holding port meetings, and strengthening avenues for communication with stakeholders.

4. The Panel recommends that NEFMC staff leadership prepare a plan to achieve as seamless as possible transitions as NEFMC staff leave and are replaced by other staff (**High Priority**).

- How to implement: NEFMC leadership should review how staff conduct major steps during action development and enact guidance to standardize these activities to ensure the steps are consistent as possible across FMPs. The Panel acknowledges that each FMP and action has its own unique features and thus FMPs cannot use identical procedures, but there are many aspects that could be made more consistent across staff and species. A needs assessment for existing staff and those foreseen in the future (i.e. longer term needs for the types of staff to hire) would also be useful.

5. The Panel recommends continued development of the skills of the staff, including technical skills and training in effective ways to work in groups (teamwork) as well as how to communicate effectively with the public, particularly in terms of science communication.

- How to implement: Offer training classes and seminars targeted at specific technical skills and on teamwork and communication. Proper selection of the courses is critical to ensuring good use of staff time and to add skills and practices to the staff of high relevance to their day-to-day activities.

6. The Panel recommends that the Council consider options to partner with local and regional universities in terms of internships, graduate students, and faculty involvement to work on specific issues and species with staff. This can be a “win-win”, as staff obtain in-depth information on issues and species, and outside participants gain experience in real-world fisheries management.

- How to implement: The Council staff leadership should identify and approach academics (faculty and Directors/Deans of relevant graduate programs) individually to explore options. The focus should be on a menu of issues that need more in-depth review (e.g. EBFM, spatial allocation algorithms and economic and social data), with the recognition that Council staff time needs to be used efficiently and may need to be balanced against the time commitment required. Such activities should result in a product that is both useful to the NEFMC going forward and benefits outside participants (e.g. publishing and conference presentation for faculty; credits or thesis for students).

7. The Panel recommends that Council staff periodically spend a day or two away from the office to reflect on the big picture and whether there are opportunities for improvements in the efficiency of processes.

- How to implement: Council staff should use out-of-office days to map out the activities and pathways to the support (both from themselves and other entities) being provided on various issues with a view to determining whether there is unnecessary duplication or whether there are efficiencies that could be gained, or if some processes could be streamlined. Lessons learned, both positive and negative, from recent activities and interactions should also be discussed and procedures modified accordingly, or discussions subsequently initiated with relevant other entities.

8. The Panel recommends that the Council review different options for populating the Advisory Panels to ensure that all interest groups are represented.

- How to implement: Consult with other Councils and other similar organizations on how to more effectively generate interest in participation on Advisory Panels and identify why people are not participating. Given the decline in participation using the existing methods of advertising, new methods are needed, as well as exploration of how to reduce the time investment involved and other ways to make it easier to participate. Identifying the reasons why people do not participate or have stopped participating will help guide the development of new strategies for advertising and making participation more attractive.

**TOR 1f. Are the data collected that are necessary to inform timely management decisions? Do the Council and its supporting staff have ready access to the data? Are there limitations that inhibit timely use of data for management purposes?**

*General Observations*

The Panel notes the biological and economic data used for management decisions are generally available and utilized by the Council staff. As with fisheries management in general, more biological and economic data would be helpful in some situations and there is an overall lack of social data. A general observation is that sometimes the questions being asked of the data push the limits, and even exceed, the information available in the data, but this is not a situation specific to the NEFMC; it is common to many fisheries management situations under the MSA. The NEFMC has a process in place for prioritizing research needs that, if effectively implemented, should reflect the critical limitations of the existing data and thereby provide a long-term way to address some of the data limitations.

The Panel was informed that “informal” mechanisms for obtaining data are often used and can speed up analyses that rely on them. While the Panel understands why informal requests would be used, we question whether this is the best approach. It risks data not being in final form, and not being able to be re-extracted reliably, and as a result it may compromise the reproducibility of the analyses. The development of fully standardized data extraction processes should also speed up data availability.

Given the policy priority of NS1 over NS 4, 5, and 8, there is less of a legal mandate for investing in a system for collecting and analyzing social and economic data required for assessing impacts and outcomes of regulatory decisions. However, the Council seeks to take into account economic and social information, much of which is anecdotal and comes from public input. Moreover, the Social Sciences Branch of the NEFSC has programs for economic and social science data, and provides such data as needed to the Council's PDTs. The Panel was unsure whether the lack of social and economic data impeded the management decision-making of the NEFMC. It was not clear to the Panel how and to what extent social and economic scientific information provided to the PDTs filters into Council deliberations.

Despite these constraints, the Council typically requires about 18 months for a management action (outside of the more controversial actions) to be initiated and completed. There are some steps for which increased efficiency or changes in timing of availability of certain data types (e.g., catch data) would speed up the management decision process.

### Strengths

The Council staff appears to be well aware of the available data and have developed ways to obtain the data from the various sources, with most coming from the Center and Regional offices. The Panel did not hear or note examples where critical data had been missed by Council staff. The Council staff also make a good attempt to include economic and, when possible, social data. Overall, the Council and Council staff have developed a way of working to define questions and obtain the needed data and analyze it in a reasonably timely manner for management decisions.

### Opportunities for Improvement

While the acquisition of available data by Council staff has evolved into the current operating system, there is a considerable variation among staff members and PDTs (i.e., case-by-case) in how the data are requested, transferred, and maintained (once obtained) by Council staff. There is not a single access point (e.g., Atlantic Coastal Cooperative Statistics Program [ACCSP], Alaska Fisheries Information Network [AKFIN]) for some of the data that are used repeatedly and there is not a single, formal approach to request, transfer, and maintain data. Such variation increases the risk of errors and misinterpretation of data, reduces the ability for QA/QC of data, decreases the consistency across PDTs, can create problems when staff change, and lowers the ability of Council staff to repeat analyses at a later date.

The Panel also notes that additional social and economic data may be available from other sources to supplement the national surveys that are done every 5 years or so. Given the limited availability and importance of social data, all possible sources should be considered to increase the use of social data in management decision-making.

Finally, any steps to reduce the lag time from data generation (e.g., catch data) to when Council (and Center) staff receive the data would speed up the management decision process. In particular, better syncing of the timing for when catch data get to both Council and Center staff with the start of the fishing year would allow the necessary analyses to be done in time for actions to be analyzed and implemented quickly. The Council staff do not control the access and timing of availability of the needed data. There may be ways to achieve some reduction in lag time by even more closely working with the Center and Regional offices to enable Council staff to perform preliminary analyses as chunks of data become available. This would provide a coarse idea of the results to be expected with the final data and analyses and would help guide (but not provide definitive) evaluation of alternatives.

#### TOR 1f Recommendations:

1. The Panel recommends that standard protocols and formats for how Council staff requests, transfers, and maintains data be developed and implemented. This will reduce the potential for errors, which results in credibility issues, and allow for easier replication of analyses and interchanging of staff (**High Priority**).
  - How to implement: The Council staff leadership could identify two data-savvy staff members to develop several options for standard data transfer protocols (how data are requested, transferred, and stored) from NMFS (GARFO and NEFSC) to Council. The sub-field of data exchange is progressing rapidly and offers easy-to-use options that ensure consistency and allow for rapid QA/QC and other checks.

2. The Panel recommends that the Council engage with GARFO and NEFSC to improve the utility of centralized data collection and warehousing programs (i.e. ACCSP) to improve the speed and ease of obtaining data, as well as its consistency (**High Priority**).
  - How to implement: Continue discussion at NRCC meetings where ACCSP staff are engaging Council staff in discussions around centralized data collection.
  
3. The Panel recommends that Council PDTs should explore the use of Fishery Performance Reports and/or Stock Assessment and Fishery Evaluation (SAFE) reports in providing updated social and economic information, including anecdotal and other information from user groups such as the Advisory Panels, to complement social and economic impact-related data that necessarily lag in time (**High Priority**).
  - How to implement: The Council should look to other Councils for approaches and best practices in obtaining and using timely social and economic information.
  
4. The Panel recommends that Council staff work collaboratively with the Region and the Center, as appropriate, to reduce the time lags between the availability of landings and other data needed for stock assessments, ACL specifications, and socio-economic analyses.
  - How to implement: Council staff should work with the Region and possibly the Center to identify whether improved mechanisms can be developed to reduce time lags in the availability of data, particularly between the end of the fishing year and the availability of catch data for assessments and other purposes. This is also recommended for electronic data. This will necessarily involve broad cooperation because the same data sources are used by multiple councils and the ASFMC. The Panel understands that there is an ongoing Fishery Dependent Data Visioning Project that may provide, at least, an initial entry into discussions. Continued and possible expanded use of projections (stock, recruitment, catch) should also be considered as a way of shortening the time between the final year of a stock assessment and ACL specification or other determinations.

Term of Reference 2 – Evaluate the strengths and weaknesses of the general process used by the Council to design and adjust fisheries management.

The NEFMC operating model and processes are structured around the ten FMPs and the subsidiary bodies associated with each one (Committee, Plan Development Team [PDT], Advisory Panel [AP]) plus the Scientific and Statistical Committee (SSC).

Like other Councils, the NEFMC works in partnership primarily with the NOAA/NMFS regional offices: Greater Atlantic Regional Fisheries Office (GARFO), Office of Law Enforcement (OLE), and the Northeast Fisheries Science Center (NEFSC). In addition, other agencies such as U.S. Coast Guard, U.S. Dept. of State, U.S. Fish and Wildlife Service, Atlantic States Marine Fisheries Commission (ASMFC) and agencies of member States also play important roles in specific areas. The Regional Operating Agreement (ROA) described in *Appendix E* (Background) defines the roles, responsibilities and commitments of the Council, GARFO, NEFSC, and OLE in the development and implementation of FMPs, amendments and setting catch specifications.

The Council's conduct and process is defined by a Statement of Organization, Practices and Procedures (SOPPs) and an Operations Handbook. The SOPPs, which are required under Magnuson-Stevens Act (MSA), describes Council functions, responsibilities, internal organizational structure and practices. The Operations Handbook provides further detail and elaboration on organization and operations related to the Council and subsidiary bodies, policies associated with FMP development, and other policies important to the responsibilities of the Council. The Operations Handbook is a public document that may evolve with the demands on Council operations.

There are two other noteworthy features critical to the NEFMC process that are not in the SOPPs or the Operations Handbook. One is the annual priority setting process to determine what actions and issues the Council will work on in the following year. This occurs over the course of several Council meetings and involves subsidiary bodies and the public; it's a process that has evolved over many years. In addition, the Council's process for developing FMP actions is guided by a 2014 New England Fisheries 'Tiger Team' report, an outcome of the 2011 program review of the NEFMC by the consulting group Touchstone. The report generally describes recommendations for the Council, GARFO, and NEFSC to improve the functioning and efficiency of PDTs through the use of formal Action Plans, establishing greater consistency and the use of 'best practices' across all PDTs, and increasing collaboration and working relationships.

**TOR 2a. Is the overall model appropriate in terms of number and scope of FMPs?**

General Observations



The Panel notes that the ten FMPs have evolved over time for a variety of reasons related to life history and biology of the species, characteristics of the fisheries and stakeholders involved, management authorities and responsibilities that may be shared among the NEFMC, Mid-Atlantic Fishery Management Council (MAFMC), ASMFC and various states, and other factors. This is no different than the evolution of FMPs in other councils across the country.

Based on the background materials, presentations and case studies, it appears that the number and scope of the FMPs are appropriate for present circumstances; all important species under the jurisdiction of the NEFMC are covered. However, some level of mergers of or creation of new FMPs or committees may be appropriate in the future to standardize the implementation of EBFM, and if climate change causes fish distributions to continue to change.

### Strengths

The Panel notes that the species-specific structure of the FMPs promotes focused involvement in the Council process by the affected stakeholders, scientists and managers. Committee, PDT, AP and other subsidiary bodies have the opportunity to concentrate on the science and management issues most important to their FMP species.

### Opportunities for Improvement

The Panel recognizes that time and resources committed to each FMP are generally functions of social and economic importance, and critical science and management issues the Council must address, in addition to the annual regulatory requirements for setting ACLs. However, there appears to be some inconsistency or inequality in the functioning of each FMP, given the variance in importance between FMPs and their species-specific structure. This may be due to differences in staffing and relationships among the subsidiary bodies for each FMP, or it could be the result of differences in annual priority setting for actions under each FMP. The Panel did not have a chance to explore this in detail.

The Panel also notes the species-specific nature of the FMPs and the focused attention the subsidiary bodies give to each FMP's species makes it more difficult to address cross-cutting and overarching issues that affect multiple FMPs. This was a common theme in the materials and presentations. For example, the annual priority setting process noted the multiple and disjointed efforts across FMPs to address fisheries-dependent monitoring issues. Setting ACLs and sub-ACLs for a species in one FMP may subsequently affect prosecution of fisheries in another FMP. In general, the NEFMC may find itself taking action in one FMP that requires a separate action in another FMP. Given that each FMP has its own Committee, PDT and AP, this creates additional logistical and administrative complexity for the NEFMC.

Finally, the Panel notes there are overarching issues and policies, such as climate change and the development of EBFM, which affect all FMPs. The Panel is encouraged by the Council's recognition of the need to develop EBFM across multiple FMPs.

TOR 2a Recommendations:

1. The Panel recommends that the Council develop ways to address issues that cut across all FMPs (e.g. monitoring, incidental catch, climate change, shifts in system productivity and EBFM) more efficiently and consistently (**High Priority**).

- How to implement: Beginning with a few of the primary FMPs and the most critical and problematic issues that are common to all, map out a process for working across FMPs effectively. Other FMPs can then engage as time and resources allow.

2. The Panel recommends that Council staff develop guidance on PDT activities to ensure consistency across species and staff. This includes how data are analyzed how the results are interpreted, and the way the process interacts with the public during meetings. While each FMP has unique characteristics, there are also similarities that, if treated consistently, would add to transparency and reinforce that results are science-driven rather than dependent on the people involved (**High Priority**).

- How to implement: PDT and Committee Chairs of several primary FMPs or all FMPs could meet to review the operations and process for issues most critical to consistent performance.

**TOR 2b. Annual priority setting process (i.e. horizon for priorities, ability to maintain the same priorities all year, balance between required and discretionary tasks, etc.).**

General Observations

The Council has a well-structured annual priority setting process that begins in the fall with input from staff, committees, and the public to develop a list of possible actions, and over the course of several Council meetings, through multiple steps, reduces that through a ranking process by the Council and Committees. Ultimately, the Executive Director and Executive Committee propose a priority setting plan for approval by the Council at the end of the calendar year. The process is open and transparent, with multiple steps for vetting by subsidiary bodies, and incorporates input from GARFO and NEFSC. It distinguishes between regulatory actions required to be completed each year, such as setting ACLs for each stock, versus discretionary actions that may adjust conservation and management measures under an FMP.

As is likely the case with other Councils, there always seem to be more projects to complete than there are time and resources. After priorities are set, over the course of the year some priorities may be changed or altered in scope, and new ones are likely to be added as a result of unforeseen external or internal challenges.

Adding priorities and revising them through the year affects timelines in Action Plans and work by PDTs and other bodies. Plans for staffing and scheduling by the Council, GARFO, and NEFSC are likely to recognize the need for some flexibility in light of within-year changes.

The Panel notes the ROA signed by the NEFMC, GARFO, NEFSC, and OLE places significant importance on the use of Action Plans prepared by the PDTs and Committees to formalize development of management actions. The Panel understands these Actions Plans are readily available to the public and serve as a record of the Council's priorities for the year. In addition, the ROA also notes the procedures and best practices recommended by the Tiger Team are to be followed in the development of management actions. The connection between priority setting and implementation through Action Plans is clearly an important Council process to follow.

### Strengths

The priority setting process is well structured and established, and it provides the Council, GARFO, and NEFSC an opportunity to plan together for completing actions required by regulation such as setting ACLs, and other discretionary actions to revise FMPs. The public has an opportunity to submit ideas directly to the Council, as well as provide comment over the course of several meetings as the Council establishes priorities for the coming year. The actions or projects identified in the annual priorities are implemented through formal Action Plans, which are publicly available.

It appears the Council, with a few exceptions, is able to complete actions required by regulation in a timely manner, although the Panel heard that Council and agency staff feel pressed for time to fulfill their responsibilities in general.

### Opportunities for Improvement

While the annual priority setting process is successful and there are bound to be changes over the course of the year, the Panel learned there is a tendency for the Council to make too many changes during the year. These changes may result from adding new alternatives to actions, undertaking new actions, and responding to unforeseen circumstances. If the Council begins the year with a full schedule, it is not likely to have the capacity to respond adequately to all unanticipated events, and the demands of active and engaged stakeholders and other interest groups. This can erode public faith in the process if Action Plans and timelines change or languish, and tasking of staff, Council and other members of subsidiary bodies are altered too

frequently or stressed. In these circumstances, actions may be completed but if time and resources are stretched thin the quality of the outcome may be less than what is expected or desired. The Panel heard that from October 1, 2016 – September 30 2017, out of 260 possible meeting days, a total of 213 days had Committee, PDT, AP or SSC meetings of unknown length. The Panel also learned through the review materials and presentations that while coordination between the Council, NEFSC, GARFO, and others is good overall and continues to improve, most everyone feels overloaded with work.

#### TOR 2b Recommendations:

1. The Panel recommends the Council develop a more strategic approach to adjusting annual priorities during the year, in order to align time and resources more efficiently among annual regulatory requirements, ongoing and discretionary projects and new projects the Council is considering adding. This strategic approach should include adopting thresholds or criteria for adding new actions, and removing or setting aside lower priority actions to make room for new or revised actions that will take more time and resources (**High Priority**).

- How to implement: The Council or Executive Committee, with staff help, should review the annual priority setting process and assess from the previous 2-3 years what kinds of changes the Council has made to priorities during the year, whether from stakeholder pressure, unforeseen circumstances or the inability to say ‘no’ to additional work, to understand why those changes occurred. With this information, develop criteria or rules for accepting additional new or revised priorities, as well as moving lesser priorities off the list for reconsideration the following year.

**TOR 2c. Adjustments and changes to FMPs through amendments, frameworks, or other formal actions? Please comment on whether preparation of management actions follow best practices or use lessons learned from other regions.**

#### General Observations

The Council staff has explored alternative ways to make changes to FMPs, such as the development of a programmatic Environmental Impact Statement (EIS), with mixed success. The idea that many alternatives (perhaps some that are not even feasible to implement) were being examined in some analyses is a strength (inclusiveness) but can also have negative effects on the process by complicating comparisons of alternatives and delaying action. That National Environmental Policy Act (NEPA) and other required documents have only increased in length over time, mostly due to the requirements from NMFS to have every document 100% compliant. The Panel also heard there were differences in the length of many required documents between NEFMC and the MAFMC, who work with the same

regional NMFS office (GARFO). Council staff described several committees (e.g., CCC) that were designed to increase exchange of information across regions.

### Strengths

The Council staff appears open to trying options to reduce the paperwork involved in management actions. This would benefit the staff in terms of allowing them to spend more time on analyses and simply “thinking” and would also increase the transparency of management actions to the stakeholders and public. The current NEFMC process allows for multiple points of input that should result in stakeholders feeling like they are being heard.

### Opportunities for Improvement

Trying to accommodate as many options and alternatives as possible can lead to some actions losing their focus, increased confusion among stakeholders, and extended time delays. This often results in some stakeholders being disappointed or disgruntled because the final action seems ineffective and focused on a different issue than the initial intent. One way to reduce the likelihood of this situation occurring is by having clearly stated goals and purposes of actions agreed upon at the beginning of the process and then not deviating very far from these as development and consideration of the action proceeds. The longer the development of an action takes, the more likely the focus can be lost from its original intent and so a clear understanding of the goals and purpose from the beginning and regular reminders over time will help keep actions on track.

Another way to reduce the risk of actions dragging on and getting diverted is to have a mechanism for intervening in actions that show early signs of problems developing. While there appear to be opportunities for learning about best practices from other regions, the Panel thinks the Council staff would also benefit from much more use of lessons learned about successes and failures from other regions (as well from NEFMC experiences).

The Panel also heard that the Council itself often over-commits to management actions. The Council and Committees should exercise due care and diligence in preventing the overloading of amendments and frameworks with additional requirements or requests, as well as exploring alternatives that go beyond the range required under NEPA or may not be workable. Modifications to original specifications need to be thoughtful, and the resources required to undertake additional analyses and reporting need to be considered in a cost-benefit framework.

### TOR 2c Recommendations:

1. The Panel recommends that clear goals, objectives, purpose, and rationale be stated and agreed upon at the start of management actions and be repeated

periodically as a reminder. There also should be stronger resistance to modifications that are not directly related to the original purpose as the action proceeds. Shared understanding of terms will enable actions to stay focused on their original purpose (**High Priority**).

- How to implement: Provide guidance to staff on how to develop consensus using a standard process for formulating goals, objectives, purpose, and rationale for actions that uses a “glossary” that defines commonly used terms and phrases.
2. The Panel recommends that a process be put in place that is triggered by early warning signs of a troubled action and that there be an intervention mechanism, likely from Council staff leadership, to try to correct the issues early on in the development of the action (**High Priority**).
    - How to implement: Conduct post-mortem analyses on past actions that have gone wrong in order to guard against similar occurrences in the future. Use output from these analyses to develop new guidelines or modify SOPPs or policies in the NEFMC Operations Handbook, as appropriate. Consider setting target end dates for plan amendments that refer to actions that are not mandated.
  3. The Panel recommends the Council and Council staff to look outward to other Councils, and to make use of inter-organizational coordinating committees, in order to further develop best practices.
    - How to implement: Expand the use of the Council Coordination Committee (CCC) and Northeast Region Coordinating Council (NRCC) as forums for identifying and exchanging best practices. For example, conduct a strategy session when NEFMC, MAFMC, and GARFO get together to talk about streamlining documents, especially related to NEPA. Look for opportunities for information exchange between NEFMC and other regions, perhaps as add-ons to other meetings.
  4. The Panel recommends the Council expand the use of discussion papers or similar approaches to scope out a problem or concern before initiating formal analysis on FMP or regulatory changes.
    - How to implement: The Council could review a series of past actions within one or more FMPs to assess whether there are clear examples of when a discussion paper would have been preferable before initiating analysis. From this exercise, some general criteria or categories of Council actions could be developed for when a discussion paper would be

beneficial. Alternatively, the Council could simply recommend or direct that Committees explore the use of discussion papers for issues for which information is lacking or for which there isn't a common understanding of the problem.

## **TOR 2d. Roles of subsidiary bodies of the Council (Plan Development Teams, Committees, Advisory Panels, Scientific and Statistical Committee)**

### *General Observations*

The NEFMC has approximately 30 Committees, PDTs, and APs combined that are associated with the ten FMPs; nine additional ad hoc committees; and one SSC. There is overlapping membership among the subsidiary bodies, except perhaps for the SSC. The roles and responsibilities for the subsidiary bodies are described in the Council's SOPPs and further guidance to these bodies with respect to FMP development, structure, and operations is provided in the Council's Operations Handbook. In addition, the ROA guides overall FMP development by the PDTs through the use of Action Plans.

In 2014, the New England Fisheries "Tiger Team" made a number of recommendations on improving processes for developing FMP actions, which the Council has since been implementing and should continue.

The large number of formal bodies has the potential for inefficiencies and for analyses or actions taken by one body to impact the workings of other bodies. For example, many of the actions of the Groundfish Committee affect the operation of other FMPs. Having overlap in membership between Committees helps, but may not be adequate.

### *Strengths*

This is a complex organizational structure. However, the Council has clearly made a thorough effort (on its own and in concert with partner agencies and organizations where appropriate) to define the roles and responsibilities of subsidiary bodies so that they function efficiently and effectively. The Panel learned through presentations and materials that the subsidiary bodies generally work very well together, and that prior problems and challenges have been corrected or are continuing to improve. Both stakeholders and representatives from GARFO, NEFSC and ASMFC commended the current effectiveness and collaboration among the subsidiary bodies. The subsidiary bodies in the Scallop FMP were highlighted as the best example of a high functioning and productive group for all participants in the Council process.

### *Opportunities for Improvement*

While the roles and responsibilities of the Council's subsidiary bodies are well defined and appear to be functioning well overall, the Panel believes there are specific areas for improvement. First, there appear to be some inconsistencies in how the subsidiary bodies interact with each other and in their operations or processes across the FMPs for which the Panel had more detailed information. This may be a function of the leadership of those bodies, historical practices within the FMP organizational environment, or lack of oversight. For example, catch data may be analyzed differently among the PDTs, and there may not be a consistent approach for taking public comment at PDT meetings when the work of the PDT is technical and focused on analyses for an FMP amendment.

The Panel also notes the lines of authority and accountability among the subsidiary bodies may not be as clearly spelled out as necessary. For example, the Panel learned that in Groundfish Amendment 18 there were multiple instances where the Council voted to consider certain elements or proposals in the analyses, and the Groundfish Committee and AP subsequently modified or even rejected the Council's directions and vice versa. The Panel also heard that Committees and APs have some liberty to add to or provide recommendations to revise FMP actions under development. While the freedom to explore and recommend different approaches to solving management problems is a critical role for the advisory bodies to play, it must not undermine the guidance or direction initially provided by the Council.

Based on the materials and presentations, the Panel also believes that the SSC may be underutilized and that its current focus on stock assessments and setting Overfishing Limits (OFLs) and Acceptable Biological Catch (ABC) limits the peer review expertise that is available to the Council for all of its FMP and regulatory actions on a regular basis. For example, the Panel heard the SSC does not regularly review the social and economic dimensions of FMP actions, nor provide scientific and technical advice on the development of fisheries management policy, or review FMP amendments with regard to Council objectives. However, it is also important to ensure that the roles of the SSC add value, rather than duplication. The Panel did not have the time to explore the role of the SSC relative to the PDT in as much detail as was desired.

#### TOR 2d Recommendations:

1. The Panel recommends that steps be taken to ensure that there is consistency in how the subsidiary bodies interact with each other, and in their internal operations and processes. This should not limit the independence of Committees, PDTs, and APs to function in ways that best reflect their tasking and composition, but should instead formalize or strengthen the most critical aspects of their operations for the benefit of a consistent and reliable public process (**High Priority**).

- How to implement: The Council and/or the Executive Committee should determine whether the first step is to review the SOPPs and Handbook, or to gather a small group of Chairs from these subsidiary bodies in several



primary FMPs to assess where there are inconsistencies in how subsidiary bodies interact with each other in their operations or processes, and where potential overlap occurs. Also, the Council should continue to implement the recommendations of the “Tiger Team” where appropriate.

2. The Panel recommends the Council assess the extent to which the actions taken by one body impact the work of other bodies, and develop a process to mitigate or address those impacts.

- How to implement: The Council and/or the Executive Committee should determine whether the first step is to review the SOPPs and Handbook or to gather a small group of Chairs from these subsidiary bodies in several primary FMPs to assess this issue.

3. The Panel recommends that the Council develop clearer lines of authority and accountability between the Council, Committees, PDTs, and APs to ensure that roles and responsibilities are better understood, that workflow between the subsidiary bodies is better defined and that issues that cut across Committees are adequately addressed (**High Priority**).

- How to implement: The Council and/or the Executive Committee should determine whether the first step is to review the SOPPs and Handbook or to gather a small group of Chairs from these subsidiary bodies in several primary FMPs to assess where problems with lines of authority and accountability occur.

4. The Panel recommends the Council review the role of the SSC relative to that of the PDT, and to consider broadening the scope of SSC activities to include the review of social and economic dimensions of FMP amendments and regulatory changes. The Council should also consider other scientific and technical roles for the SSC to assist the Council in developing and assessing the effectiveness of Council actions to fulfill FMP objectives.

- How to Implement: Review the roles and responsibilities of the SSC and PDTs in other Councils across the country, and compare and contrast them with those of the NEFMC.

**TOR 2e. Mechanisms for coordination between NEFMC, NMFS, and other fishery management authorities (e.g., ASMFC, MAFMC, Canadian DFO, NAFO).**

*General Observations*

The Panel notes the Council operates in a setting that requires detailed and regular coordination with other management entities at the state, interstate, federal, international level. This process currently relies heavily on Council staff and shared

membership (e.g. liaisons, state representatives) across the various management bodies. The activities of these management entities have significant and increasing overlap. Given the diverse portfolio of the Council, detailed communication with other management entities becomes one of the many tasks that competes for limited resources.

Along the U.S. Atlantic coast, there are multiple emerging issues that require effective coordination between all of the fishery management authorities. These emerging issues include offshore wind energy, oil and gas exploration, and climate change issues, as well as fiscal and scientific resource limitations. Fisheries interests will be best served by addressing these issues with shared objectives and a shared voice.

### Strengths

The Panel notes there are multiple formal and informal mechanisms for coordination between other fishery management authorities and overall these mechanisms provide an opportunity for significant coordination. These opportunities for coordination include the NRCC and CCC; GARFO and NEFSC participation in Council and Committee process; and membership overlap between NEFMC and ASMFC. The current liaisons appointed by the Council and the MAFMC are effective and engaged in many levels of the process. Also, there are several examples of strong staff-to-staff relationships between the authorities to coordinate various activities. The Council primarily relies on the NEFSC Population Dynamics Branch for stock assessments and other biological data and analyses, and the NEFSC Social Sciences Branch for social and economic data and analyses. There is consistent staff-to-staff coordination, including annual planning for PDT needs, and the Population Dynamics and Social Sciences Branch provide expertise to the PDTs as well.

### Opportunities for Improvement

The Panel notes the Council, MAFMC, ASMFC, and NMFS are resource-limited, and coordination between the bodies can be improved to reduce inefficiencies and redundancy as well as occasional tension between the bodies to achieve overlapping or competing goals. This improved coordination is also needed to collectively address shared issues such as climate change, offshore energy, marine mammals, etc.

The Panel also noted cross membership and attendance at meetings is effective; however, simply “reporting out” may fall short of the necessary coordination. Additional tools and structures need to be developed and utilized to more effectively tackle the growing list of overlapping issues. Ensuring all relevant information obtained from outside activities is effectively communicated to Council staff is critical. The Council and other relevant organizations should strive to develop true partnerships.

The NRCC was recognized as an effective tool for bringing the five primary entities together to coordinate on shared issues. However, the Panel noted this group has grown in size and appears to have become too large for serve its original purpose. Many NRCC decisions are postponed to allow time for working groups to explore the issue further. The Council should encourage a review of the function, membership, and purpose of the NRCC.

#### TOR 2e Recommendations

1. The Panel recommends that Council members and staff take steps as necessary to ensure the accurate flow of relevant information between Council members and staff and external organizations including ASMFC and MAFMC.
  - How to implement: Develop standard ways to communicate to NEFMC staff and members key issues and decisions heard by individual staff that have cross-membership and act as liaisons on other councils and external committees. These can include short briefing memos and staff-wide debriefings for broad dissemination of information. This will reduce the chance of missed information and ensure all Council staff receive the same accurate information.
2. The Panel recommends the NEFMC, ASMFC and MAFMC should follow through on the commitment to have leadership meet to develop more effective ways to collaborate on shared issues (e.g. Atlantic herring, winter flounder, and habitat issues) (**High Priority**).
  - How to implement: A meeting of the Council leadership and ASMFC leadership should be scheduled (possibly using the NRCC meetings as opportunities) to clearly define effective and efficient collaboration norms. This should include shared participation and voting opportunities.
3. The Panel recommends the Council engage with the MAFMC and ASMFC to develop a strategy to express a unified voice and coordinated action on shared issues including climate change, offshore energy, and marine mammals (i.e., right whales) (**High Priority**).
  - How to implement: The leadership from the three management entities should meet to determine what issues of common interest could benefit from a unified voice and establish an approach for developing and approving the shared message.

**TOR 2f. Does the overall model support an inclusive, transparent, and participatory public decision making process? Do decisions consider this input and comply with promulgated policies?**

### General Observations

The Council staff, through the various committees (e.g., PDT and APs), attempts to be transparent and inclusive. The Panel heard less about full Council meetings, and opportunities there for public input. There is tradeoff between the degree of inclusion and the timeliness of decision-making; under MSA and NEPA, inclusiveness is emphasized, resulting in longer timelines. The overall model of initiation and development of management actions at NEFMC has multiple opportunities for stakeholder and public input, ranging from statements at meetings to membership on committees such as APs. The model, as described to the Panel by Council staff, appears to have ample opportunities for input; however, what happens to all comments was not always clear (i.e., was it considered and then not used and why?). The commitment of time required for participation can become limiting for some stakeholders and members of the public. The way the process works, has the effect of filtering out some interested participants, such as smaller operators, because of large time commitments and travel expenses needed for effective participation. The high number and long length of the documents made available (in the effort to be transparent), plus multiple meetings, can actually reduce transparency. When there is lag time between stakeholder input at port meetings, and subsequent AP, PDT, and Council meetings where decisions are made, stakeholders are likely to have difficulty following how their views are considered in Council actions. Stakeholders informed the Panel that there has been a general decreasing trend in participation.

### Strengths

Many opportunities for stakeholder and public participation are available and can be offered at multiple steps in the development of management actions. This is a positive aspect of the overall model being used by the NEFMC. The membership of the PDTs, SSC, and APs, in concept, provides an excellent mechanism for public input into the management process. The Council's website is friendly, Council meetings are broadcast on the web, and most all documents are made available to the public.

### Opportunities for Improvement

There are ways within the current overall model to improve stakeholder and public participation and to further increase the transparency of the process. Making documents available is a necessary step towards transparency but is not always sufficient. The more complicated actions, either because they involve extensive analyses, are controversial, or have a long history, result in so much paperwork and so many documents that simply providing them all hinders transparency. Making the information available in a digest or other ways to allow for easier communication can help the transparency in these complicated situations. However, it is important to keep in mind that summarizing complicated analyses and discussions results in a loss of information, and must be done carefully (i.e., not just as a summary prepared quickly as the end step in the process).

A measure as simple as ensuring that Council members and staff are attentive during public input can increase the level of participation and ensure all feel they have been heard. At meetings outside of Council meetings (e.g., PDT), there should be clearly stated “rules of engagement” about public input and the input should be constrained to the topic and purpose of the meeting. For example, the approach to public input during PDT meetings varies across PDTs. When public input is allowed, comments may be offered that are irrelevant to the team’s deliberations or are more policy oriented than scientifically oriented. Finally, without participation from stakeholders and the public, these mechanisms become moot. Identifying the reasons for the decline in interest from stakeholders and the public is important to ensuring adequate participation into the future.

### TOR 2f Recommendations

1. The Panel recommends that steps be taken to increase transparency by not just making documents available but providing information in a more public-friendly manner. The Panel notes that availability of 100’s to 1000’s page of multiple documents does not automatically translate into transparency.
  - How to implement: Council staff should work with GARFO to reduce the size of NEPA and other documents, and explore ways (e.g., expanded executive summaries, graphics, condensed versions of decision documents) to provide simple explanations of complex issues without loss of critical information. The efforts of the Council staff in preparing simplified public hearing documents and decision documents is an excellent start; more can be done. Staff should be further trained in science communication.
2. The Panel recommends that the new Council member orientation should include best practices on appropriate and attentive behavior during presentations and the public comment periods of Council meetings and public hearings.
  - How to implement: The Council should recommend to NMFS that such best practices be included in new Council member orientation materials. The Council should also add best practices on appropriate and attentive behavior to the NEFMC Operations Handbook.
3. The Panel recommends that for all meetings, the scope of public input should be reviewed to ensure that it is appropriate to the scope and goals of the meeting. Participants should be informed that input would be restricted to the defined scope for that meeting.
  - How to implement: The Council could also have a rules of participation document that applies across all bodies that involve public participation. This document could include a commitment to protocols including the

following examples: following up on agreements and tasks so the public knows how previous discussions were resolved (enacted or why not), adopting a constructive approach, listening and respecting the views of others, and avoiding repetition of earlier deliberations.

- Outline the approach to public comment at the top of the agenda in regular font size (rather than in fine print in a footnote), and clarify whether the meetings are open to technical input only, or to views or opinions on management policies and alternatives. Clarify which other forums are available for providing individual input on issues not covered in a particular meeting.
4. The Panel recommends that the Council investigates the extent and causes of declines and other changes in public participation in the Council process, and how these could affect Council management actions.
- How to implement: The Council should conduct surveys or other activities in order to assess the causes of any declines in public participation.
5. The Panel recommends the Council experiment with holding meetings of subsidiary bodies (e.g., AP, PDT, Committee, SSC) concurrent with a Council meeting and Council action on a specific agenda item. The purpose is to determine whether there is an improvement in common understanding among participants in the discussion and deliberation of Council actions, when the exchange of information among subsidiary bodies and the public occurs over a 2-3 day period. This model is used successfully in other Councils.
- How to implement: The Council should choose a discrete agenda item and schedule meetings of the subsidiary bodies and Council in a 2-3 day period.

**TOR 2g. Does the Council have an adequate system in place to measure performance of [biological, social and economic] goals and objectives in FMPs?**

*General Observations*

The Panel noted the Council has had many successes and that development of a system to measure performance will provide an opportunity to highlight the progress that has been made.

The Panel noted the difficulty in coming to a consensus on measurable FMP objectives and the associated difficulty in measuring progress without qualitative objectives. The biological goals of fishery management are generally defined through fishing mortality and rebuilding targets. The stock assessment process is

effective in measuring the stock status relative to these biological targets. However, the Panel noted the established targets often change with each iteration of the assessment cycle. The achievement of the rebuilding targets, at times, is beyond the control of the Council. If the Council and NMFS reduce fishing mortality to below the prescribed levels, the stock may not respond as projected due to a myriad of causes.

The Panel noted that social and economic objectives are often hard to define and are often obscured by the priority of meeting the biological goals. Various stakeholder groups view the measurement and interpretation of the social and economic objectives differently.

The NEFSC has worked toward development of indicators such as community engagement and vulnerability that could be used not only for social impact analysis but also for assessment of performance. The data-based national program was used recently in the Council's Monkfish FMP and will be continually available in the future.

The "affected environment" sections of the NEPA documents go into so much detail that people rarely read them. One possible option is to narrow the focus of this information to support the development of an annual report for each FMP. While most of this information is required by the regulatory agencies, at times the Council provides too much information, and it is not presented in a user-friendly package.

### Strengths

The Panel noted the NEFSC provides robust stock assessment advice as well as metrics (targets and thresholds) to evaluate progress towards the biological FMP goals and objectives. The SSC works closely with the NEFSC and considers the most recent assessment advice to provide informed and scientifically based guidance to the Council on fishery specifications. Stakeholders have access to this information and are able to review the detailed assessment materials throughout the process.

Basic social and economic information (e.g., total landings, ex-vessel value, landings by port, number of participants, etc.) are generally available for fisheries managed by the Council for interested stakeholders. This information may not be easily accessible for all stakeholders, but those willing to explore multiple sources can usually obtain basic social and economic information. The Council has moved forward significantly in bringing indicators such as community engagement and vulnerability into the FMP process.

### Opportunities for Improvement

Other than stock rebuilding objectives, the Council does not systematically evaluate its progress to determine the effectiveness of measures in FMPs. The Panel noted

the social and economic objectives are poorly defined. Clear objectives are needed to measure performance. The development of management objectives should be the first step in any management action considered by the Council. Poorly defined objectives at the beginning of a management action create difficulties throughout the development and selection of management measures, as well as subsequent evaluation.

The Council's current pace does not allow time to reflect on the impact of current measures and gain improvements from lessons learned. The Council should make it a priority to follow up on the recommendations of the 2012 FMP Performance Evaluation White Paper. A systematic approach to measure performance and communicate results to stakeholders is necessary to help the Council prioritize resources for future management actions.

### TOR 2g Recommendations

1. The Panel recommends an evaluation of past performance of management actions to show successes and problems using specific examples and to identify what factors in the process relate to success (so they can be repeated) and to problems (to avoid repeating them). More reflection on lessons learned by Council staff and leadership, including revisiting the two earlier reports (Touchstone, Tiger Team), would identify further best practices. It is important to present an overall evaluation showing successes and problems, and to learn from them for use into the future (**High Priority**).
  - How to implement: The Council should develop a small working group (Council members and staff, PDT members) to select one or two FMPs and conduct case studies to evaluate past performance. The case studies can be evaluated within the context of recommendations from earlier reviews, to guide the process. These case studies can later be expanded to a review of all Council FMPs.
2. The Panel recommends that the Council use the metrics developed in the 2012 FMP Performance Evaluation White Paper to develop a formal performance evaluation process.
  - How to implement: Council staff should review the White Paper and develop a formal performance evaluation process for the NEFMC FMPs.
3. The Panel recommends further cooperation with the Social Sciences Branch of the NEFSC to explore use of economic and social indicators for performance evaluation.
  - How to implement: The Council should select priority social and economic metrics and seek assistance from the Social Sciences Branch to evaluate these metrics as resources allow.



4. The Panel recommends the Council considers developing a summary document (report card) to highlight successes, stock status, and areas that still need attention.
  - > How to implement: Staff should develop this report card and place it in a highly visible spot on the Council's website.

Term of Reference 3 – Using a representative subset of recent management actions, evaluate the strengths and weaknesses of how the NEFMC has performed in terms of:

- a. Responsiveness to scientific advice
- b. Transparency, public participation, and documentation
- c. Consideration of potential impacts when making decisions (i.e., habitat, economic and social impacts, cumulative effects, etc.)
- d. Timeliness of decisions and subsequent management implementation by the NMFS.
- e. Overall outcomes of actions taken on the environment (cumulative biological and social impacts)

This section takes a different approach (from TORs 1 and 2) to summarizing the Panel's discussions and deliberations on these management actions. The Panel felt that these case studies were integral in helping them understand how the foundations of fisheries management and the Council's operations function within the context of various actions (specifications, framework adjustment, and amendments), and in light of various inputs and outputs with respect to the TORs. While some recommendations were formulated during these discussions, they are described above in the relevant TORs 1 & 2. This is primarily because the Panel did not believe it was particularly useful to make fishery-specific recommendations for actions that took place in the past, and that it was more fruitful to generalize the lessons learned for future application across the Council's FMPs.

The tables in each of the four management actions described in this section list general observations notes by the Panel in response to sub-questions #3a-e above.

### **TOR 3 – Atlantic Sea Scallop Framework 27**

The Council selected Framework (FW) 27 to the Atlantic Sea Scallop FMP as an example for the program review as this fishery utilizes recent scientific information that is developed in cooperation with the industry through an industry-funded Research Set Aside (RSA) program, and has a Plan Development Team (PDT), Committee, and Advisory Panel (AP) that work closely together. In addition, there is an annual specifications process and accelerated rulemaking process in place for the Sea Scallop FMP. While FW 27 was less complicated than most specifications, it was more controversial due to Limited Access General Category access to the Nantucket

Lightship Access Area, and other management issues considered. More information on FW 27 is available on the Council’s website: [www.nefmc.org](http://www.nefmc.org).

Table 2 lists the general observations as identified by the Panel in the process of deliberations on this action. There was only one specific recommendation for the Sea Scallop FMP that was raised during these deliberations, which was that a Management Strategy Evaluation (MSE) process might help prepare for a sudden decline in the stock. This is to address concerns that scallops are susceptible to ocean acidification and while the effects of climate change are unknown at this time, this has been elevated as a research priority.

<b>Table 2 - Atlantic Sea Scallop FW 27</b>	
<b>ToR #3</b>	<b>General Observations</b>
a	<ul style="list-style-type: none"> <li>- Scallop management is responsive to solid scientific advice with surveys and reactive coverage (i.e. area management).</li> <li>- The survey is the assessment for this fishery.</li> <li>- RSA funding contributes to data collection/scientific information.</li> <li>- It is time- and cost intensive performing annual surveys and specifications.</li> <li>- There is concern about the effects of the potential for several bad recruitment years.</li> <li>- The management model is not transferable to other fisheries managed by the NEFMC.</li> </ul>
b	<ul style="list-style-type: none"> <li>- Holding back-to-back AP and Committee meetings worked well.</li> <li>- Documentation for scientific information was easy to find, and decisions were well documented.</li> <li>- There are some marginalized fishing groups because the fishery is dominated by specific sectors.</li> <li>- The availability of 100s of pages of discussion documents does not mean transparency.</li> </ul>
c	<ul style="list-style-type: none"> <li>- Video surveys help identify impacts on habitat.</li> <li>- The fishery has a seasonal closure on Georges Bank to avoid yellowtail flounder, as well as model projections for bycatch, and has adapted gear modifications.</li> <li>- There was recognition of participation of different size vessels to assess economic impacts.</li> <li>- The subsidiary bodies are discussing climate change.</li> <li>- The yellowtail flounder fishery (which is overfished) impacts the sea scallop fishery, even though the bycatch of yellowtail flounder has generally remained under the scallop sub-ACL.</li> <li>- There is back and forth trading of the yellowtail flounder sub-ACL between the scallop and groundfish fisheries to remain under the overall sub-ACL.</li> </ul>
d	<ul style="list-style-type: none"> <li>- The number of days in scallop actions from Council vote to effective date has consistently declined.</li> <li>- While the process seemed to fully utilize available [staff] resources, there was uncertainty about the capacity to address emerging issues when needed.</li> <li>- Adding on issues to the annual specifications process can affect the timing of actions, and is difficult to address in a FW process (e.g., Northern GOM).</li> </ul>

e	<ul style="list-style-type: none"> <li>- Outcomes are assessed annually with specifications; all metrics are analyzed: fleet size, crew, size of scallops, harvest rates, OFL, and ex-vessel price.</li> <li>- There was a change in gear that was adapted to lessen impacts/interactions with turtles.</li> <li>- With staff time spent on updates every year; they might lose sight of longer terms issues and impacts.</li> </ul>
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### TOR 3 – Atlantic Herring Amendment 5

The Council selected Amendment 5 to the Atlantic Herring FMP for the program review to illustrate the need for close cooperation between GARFO and the Council throughout the development of an action. This action was initiated to: improve the collection of real-time, accurate catch information; enhance the monitoring and sampling of catch at-sea; and address bycatch issues through responsible management. After extensive Council efforts GARFO disapproved key elements of the amendment. More information on Herring Amendment 5 is available on the Council’s website: [www.nefmc.org](http://www.nefmc.org).

Table 3 lists general observations as identified by the reviewers in the process of deliberations on this action. The primary recommendations that arose from this discussion are mentioned in the relevant TORs above and focus on the need to improve communication and encourage proactive collaboration between NMFS, the Council, and its subsidiary bodies. There were discussions around how this collaboration has improved since Amendment 5; however it appears as though some of the same process issues with ‘piling on’ alternatives and a lack of information to analyze certain alternatives remain with Amendment 8.

<b>Table 3 – Herring Amendment 5</b>	
<b>ToR #3</b>	<b>General Observations</b>
a	<ul style="list-style-type: none"> <li>- There was no biological or conservation need for A5.</li> <li>- A lack of common objectives and understanding between stakeholders, NMFS, and the Council was identified.</li> <li>- Proposed observer coverage requirements were higher than those supported by the available science.</li> <li>- Communication issues between the PDT and Committee arose because there were not clear questions/charges.</li> <li>- The PDT struggled to provide technical support and justifications. It's difficult to know what analyses to provide when you don't have a clear purpose &amp; need.</li> <li>- Multiple proxy issues arose; for example, who should pay and gear issues between trawl vs. purse seine.</li> </ul>
b	<ul style="list-style-type: none"> <li>- A5 was developed by the Council primarily to address stakeholder concerns.</li> <li>- There was an extremely high level of public participation and significant public and political pressure to move forward.</li> <li>- The request for proposals (RFP) for stakeholder proposals to address catch</li> </ul>

	monitoring increased the range of alternatives and impact analysis.
c	<ul style="list-style-type: none"> <li>- The PDT and Committees spent significant amounts of time analyzing impacts of alternatives that were disapproved in the end.</li> <li>- Many impacts were challenging for the PDT to quantify.</li> <li>- One alternative that was analyzed would have been an unfunded mandate.</li> <li>- Alternatives developed were highly complex.</li> </ul>
d	<ul style="list-style-type: none"> <li>- Major management issues were added during the development of A5 (e.g. river herring, caps, etc.).</li> <li>- There were persistent and divergent views on what should be done and this slowed the process.</li> <li>- Council failure/inability to stop “piling up” of issues and alternatives can delay and derail plan adjustments.</li> </ul>
e	<ul style="list-style-type: none"> <li>- Council weighed overall outcomes carefully during the selection of final measures.</li> <li>- Final preferred alternatives attempted to balance responding to stakeholder concerns while mitigating significant social and economic impacts (detailed rationale was provided).</li> <li>- A comprehensive cumulative effects section was prepared for the FEIS.</li> </ul>

**TOR 3 – Northeast Multispecies (Groundfish) Amendment 18**

The Council selected Groundfish Amendment 18 for the program review because this action to develop accumulation limits and promote fleet diversity is a good example of the Council developing an action primarily to address socioeconomic issues, which engender strong opinions and do not have easy solutions. It also illustrates how there can be differences of opinion between a committee and the full Council. More information on Groundfish Amendment 18 is available on the Council’s website: [www.nefmc.org](http://www.nefmc.org).

Table 4 lists the general observations as identified by the Panel in the process of deliberations on this action. There were a few recommendations that arose from the deliberations on herring, which have been included under the relevant TORs above. These recommendations were addressing the need to take some time out when an action is not going as planned to assess what needs to change or to stop the action, as well as determining the specific roles and flow of tasking and information between the PDT, Committee, AP, and Council.

<b>Table 4 – Groundfish Amendment 18</b>	
<b>ToR #3</b>	<b>General Observations</b>
a	<ul style="list-style-type: none"> <li>- Scientific information was provided in the form of economic analysis (and some social) but some didn't want to hear it.</li> <li>- The Council did respond to the economic advice; they added a cap for Potential Sector Contribution (PSC), which came out of the Compass Lexicon (CL) report.</li> </ul>

	<ul style="list-style-type: none"> <li>- In some ways, the Council was over-responsive (analysis by process) trying to address everyone's opinions within the existing system.</li> <li>- Many decisions were based on the wants and needs of industry, and not science. It was not a biological science-driven amendment (though it was never intended to be).</li> <li>- Insufficient social and economic data were available to support this amendment</li> <li>- Social objectives were divergent and were founded in values and feelings rather than data and analysis.</li> <li>- Council decisions were not necessarily consistent with CL recommendations.</li> <li>- This represented a Council failure in their inability to stop “piling up” of issues and alternatives that can delay and derail plan adjustments.</li> </ul>
b	<ul style="list-style-type: none"> <li>- Many different groups were involved, and the process was transparent.</li> <li>- Public input was welcomed and taken seriously (even if the perception was that it was not considered in a way that was expected).</li> <li>- Public participation was not always viewed as being taken into consideration.</li> <li>- There was a lack of common definition of the problem statement (goals) and inconsistent use of terms (e.g. consolidation) amongst scientists, managers, and stakeholders.</li> <li>- Goals and objectives for the amendments changed throughout the process, and were unclear.</li> <li>- Given the number of meetings, it was difficult for stakeholders to fully participate.</li> <li>- The long time span made it difficult for stakeholders and the public to follow and understand the issues.</li> <li>- Participation tended to depend more on paid representatives who have time and motive to keep up with the process and its documents.</li> <li>- In addition to availability of information, there needed to be more understandable documents and roadmaps to find and interpret them for true transparency.</li> </ul>
c	<ul style="list-style-type: none"> <li>- Impacts were mostly social and economic, though the PSC cap was not low enough to restrict current owners.</li> </ul>
d	<ul style="list-style-type: none"> <li>- It took 7 years (partly because there were other crises being addressed at the same time).</li> <li>- This was a case of fixing a problem that appears after you already made a decision (A16).</li> <li>- Turnover of staff on Council, NMFS staff (and leadership) and Council members contributed to delays and complexity.</li> <li>- There was no end date on action, which was open ended and allowed more elements to be added.</li> <li>- The Amendment was not federally mandated.</li> </ul>
e	<ul style="list-style-type: none"> <li>- The final outcome did not reflect the initial goals developed when the process was initiated.</li> <li>- There was no effect on consolidation (status quo) as a result of final alternatives, despite the original intention.</li> <li>- There was a negative impact on the Council's reputation and its processes resulting from this action.</li> </ul>

### TOR 3 – Small-mesh Multispecies ‘whiting’ Specifications (2015-2017)

The Council selected this action for the program review because it is an example of the Council’s most streamlined action: catch specifications (setting Annual Catch Limits, ACLs). It is also an example of how this process worked with a data limited stock. More information on this action is available on the Council’s website: [www.nefmc.org](http://www.nefmc.org).

Table 5 lists the general observations as identified by the Panel in the process of deliberations on this action. The recommendations that arose from this discussion are mentioned in the relevant TORs above and primarily focused on managing for choke species and how to improve industry representation on advisory panels.

<b>Table 5 – Small-mesh Multispecies Specifications (2015-2017)</b>	
<b>ToR #3</b>	<b>General Observations</b>
a	<ul style="list-style-type: none"> <li>- The specification package was based on scientific advice understood by fishermen (reaction to new information in 2015 and specification package was adjusted to account for that).</li> <li>- There was confidence between biomass and catch levels (responsiveness).</li> <li>- There was not as much scientific or economic (cost) data and information as the Council would have liked.</li> </ul>
b	<ul style="list-style-type: none"> <li>- Good coordination among different subsidiary bodies moved this action through the process.</li> <li>- The AP, Committee and PDT met together.</li> <li>- There was good transparency, public participation, and documentation.</li> <li>- It was difficult to recruit AP members, especially active fishermen.</li> </ul>
c	<ul style="list-style-type: none"> <li>- The biological impacts were considered.</li> <li>- Fishermen were able to function within the limitations of choke species to keep the fishery going (using gear modifications to fish for whiting while avoiding red hake).</li> <li>- The social and economic aspects of the fishery were satisfactory.</li> <li>- One potential issue with open access is if new vessels come with various gear types, they could catch quota pretty quickly.</li> <li>- Southern red hake has recently been declared as overfished with overfishing occurring which triggers a 2-year timeframe to develop a rebuilding plan, but the distribution of this stocks appears to be shifting in response to climate change; there is therefore an urgent need to conduct more research on the effects of climate change, and to gather more information on this stock to prevent it becoming a low information choke species.</li> </ul>
d	<ul style="list-style-type: none"> <li>- The timing of action was satisfactory.</li> </ul>
e	<ul style="list-style-type: none"> <li>- The SAFE document provided a lot of recent information of outcomes (revenue, participation from different ports, etc.).</li> <li>- Hake is recognized as an important Ecosystem Component species, which is part of the overall outcome of the action on the environment.</li> </ul>

#### TOR 4 – Understanding the Issues and TOR 5 - Recommendations and Preliminary Implementation Ideas

During the review meeting, the Panel did not have sufficient time to address each of the sub-questions within TOR 4; however, many of these sub-questions were addressed during question and answer sessions between the reviewers and presenters. As such, the general observations paragraphs above, as well as the opportunities for improvement address sub-questions #4a-c (*a. What is the problem, b. Why does the problem exist, c. Who is affected by it*) to the extent possible, and the recommendations address question #4d (*What is the desired state relevant to your problem*). It is assumed that Council members will consider the desired outcomes (#4d) and obstacles to achieving these outcomes (#4e) when reviewing and prioritizing the recommendations.

During the Program Review Meeting, the Panel addressed TOR 5 sub-questions #1 & 2a (*1. What action/initiative is recommended, 2a. How would you implement this action or initiative*). Rather than list these recommendations and initial implementation ideas in a separate section of the report, these are all included in Section III in each of the relevant TORs 1 & 2. Each section includes general observations, the strengths and opportunities for improvement prompted by TORs 1 & 2, as well as the recommendations and how to implement prompted by TORs 4 & 5.

#### **IV. Next Steps: Council Review and Implementation Plan**

The Council will discuss a process for addressing these recommendations following their receipt of this report and the presentation by the Program Review meeting Chair, Dan Hull, at the April 2018 Council meeting. Part of this process entails prioritizing recommendations and developing an implementation plan for recommendations. Specifically, part of TOR 5 has follow-on questions for the Council subcommittee for the Program Review.