



White Paper on the Membership Review of the  
Mid-Atlantic Fishery Management Council's  
Scientific and Statistical Committee

December 2019

## Introduction

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The Magnuson-Stevens Act (MSA) requires each Council to establish, maintain, and appoint members of the Scientific and Statistical Committee (SSC), and membership shall be comprised of “Federal employees, State employees, academicians, or independent experts and shall have strong scientific or technical credentials and experience.” The Mid-Atlantic Fishery Management Council (Council) Statement of Organizational Practices and Procedures (SOPPs) generally follow the language contained in the MSA but also specifies membership credentials and experience in “biological, statistical, economical, social, and other relevant disciplines” while striving to achieve balance in the home base and expertise of the membership (see Appendix 1 for entire SOPPs pertaining to SSC membership).

The Council SOPPs indicate the SSC may have up to 20 members, with the ability for additional membership for an interim period or special appointment. In March 2019, the Council re-appointed 16 existing members of the SSC to another 3-year term, leaving four vacancies on the SSC. The Council agreed to delay adding new members to the SSC and tasked staff with developing a white paper to evaluate SSC membership, the future needs of the Council, and the expertise necessary to address those needs. This evaluation considers and seeks to align new SSC membership with the Council’s 2020-2024 Strategic Plan, the 5-year Research Priorities, and any other Council guidance documents or relevant issues. In addition, the evaluation includes a review of SSC membership affiliation and expertise across all eight council SSCs to compare approaches and help identify similarities and differences across the country. The SSC discussed this topic at their September 2019 meeting and their feedback and input has been incorporated into the white paper.

The Council will review the white paper and identify membership needs and areas of expertise at the December 2019 meeting. Nominations for new members that fit the needs and expertise identified by the Council will be solicited in early 2020. The Council will then review and approve new membership at the February 2020 meeting and new members would then join the SSC in March 2020.

## SSC Membership Across Regional Councils

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The composition, structure and expertise of the SSC can be quite varied across the eight regional Councils. This is not surprising, given SSC (and Council) membership is typically aligned with each region’s specific needs and goals of their managed fisheries, constituents, and ecosystem and habitat dynamics. Membership primarily falls into three affiliations – state government, federal government or academia (Table 1). Some SSCs also have members affiliated with not-for-profit or NGO’s, consulting companies, or fishing industry participants. In addition, some council SOPPs specify the number of state and federal members and their representation. For example, the Pacific Fishery Management Council SOPPs specify the SSC membership will be comprised of four state fishery management agency representatives (i.e., Idaho, California, Washington, and Oregon), four NMFS representatives (2 from the Northwest Science Center and 2 from the Southwest Science Center), one West Coast tribal agency, and the remaining seats filled by “at-large” representatives. Generally, government employees (federal and state) tend to comprise the majority of SSC membership across all the Councils, and the Mid-Atlantic and

Caribbean are the only SSCs without a state agency representative. The Mid-Atlantic SSC membership is primarily comprised of academicians (75% of membership), the highest proportion among all SSCs, but in line with the Gulf and New England Council membership.

SSC membership by specialty or expertise tends to be much broader in order to address the varied scientific issues and responsibilities the SSC is tasked with in assisting their respective Council (Table 2). Given the significant focus of the SSC in making acceptable biological catch (ABC) recommendations and their role in reviewing stock assessment information, there tends to be a concentration of membership expertise in stock assessment science and biostatistics. Most council SOPPs, including the Mid-Atlantic, are very general when identifying membership expertise provided the membership is multidisciplinary and includes biological and social science members who are knowledgeable about the managed fisheries. However, some councils specify the number of members by expertise. For example, the New England Fishery Management Council SOPPs requires that nine members have stock assessment expertise, four be experts in fisheries ecology, and four should be experts in social sciences related to fisheries management. Members with a specialized expertise are utilized on west coast SSCs but are currently not found on any Atlantic coast SSC. Mid-Atlantic SSC expertise is primarily concentrated in fisheries biology and ecology, a very diverse science field, and followed by stock assessment expertise. This is consistent with other SSC membership expertise where one of these two areas of expertise make up the highest concentration of members. The Mid-Atlantic SSC is tied with the Caribbean SSC with the fewest social science members (two) and has the lowest concentration of social science membership of any SSC, comprising 12.5% of total membership.

SSC composition and expertise are also influenced by the structure and responsibilities unique to each SSC<sup>1</sup>. For example, the Pacific and Gulf Councils have standing species or FMP specific SSC sub-committees where the majority of the SSC work is conducted and then reported to their full SSC. Members assigned to those species/FMP specific sub-committees tend to have relevant expertise for those species, including specialized areas such as avian or marine mammal science. In addition, many SSCs also have standing socioeconomic sub-committees that provide social and economic advice on council management actions. For example, the South Atlantic SSC has a nine-member Socio-Economic Panel, three of which also serve as full SSC members, that meets prior to an SSC meeting to review and provide socio-economic advice to the SSC on relevant agenda items. The Gulf Council's SSC is specifically charged with providing advice to the Council on the scientific information and analyses for management alternatives in FMPs and amendments and has one of the more diverse memberships with a range expertise to address this charge.

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<sup>1</sup> For more information on SSC responsibilities and utilization across the eight Councils, see the briefing materials for the joint Council-SSC meeting in August 2019 at: [http://www.mafmc.org/s/Tab03\\_Joint-Council-SSC-Meeting\\_2019-08.pdf](http://www.mafmc.org/s/Tab03_Joint-Council-SSC-Meeting_2019-08.pdf)

**Table 1.** SSC membership by affiliation categories across all 8 regional Councils (as of August 2019).

	<b>New England</b>	<b>Mid-Atlantic</b>	<b>South Atlantic</b>	<b>Gulf</b>	<b>Pacific</b>	<b>North Pacific</b>	<b>Western Pacific</b>	<b>Caribbean</b>
<b>State</b>	2	0	5	3	3	4	3	0
<b>Federal</b> (e.g., NMFS, USFWS, IPHC, Tribal, DFO)	4	4	6	3	11	6	7	5
<b>Academia</b>	9	12	7	10	3	7	6	5
<b>Other</b> (e.g., consultant, not-for-profit, industry)	3	0	0	3	1	2	2	0
<b>Total</b>	<b>18</b>	<b>16</b>	<b>18</b>	<b>19</b>	<b>18</b>	<b>19</b>	<b>18</b>	<b>10</b>

**Table 2.** SSC membership by specialty/expertise categories across all 8 regional Councils (as of August 2019).

	<b>New England</b>	<b>Mid-Atlantic</b>	<b>South Atlantic</b>	<b>Gulf</b>	<b>Pacific</b>	<b>North Pacific</b>	<b>Western Pacific</b>	<b>Caribbean</b>
<b>Stock Assessment/Biometrician</b>	9	5	8	3	7	5	4	1
<b>Fisheries Social Science</b>	4	2	3	3	3	4	3	2
<b>Fisheries Management</b>	0	0	0	1	0	2	0	0
<b>Fisheries Biology/Ecology</b>	4	9	7	8	7	6	10	2
<b>Other</b> (e.g., specialized biologist, climate science, oceanography, industry, law)	0	0	0	2	1	2	1	0
<b>Total</b>	<b>17</b>	<b>16</b>	<b>18</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>18</b>	<b>5</b>

### Future Council Needs and Areas for Potential SSC Expertise

A goal of the comprehensive review is to ensure SSC membership aligns with the future needs and priorities of the Council and the appropriate expertise is available in order to provide the Council with science advice necessary to address these issues. Below is a list of some relevant

guidance documents and issues that will help identify and set future Council priorities and management initiatives.

### *2020-2024 Strategic Plan*

The Council is finalizing its 2020-2024 Strategic Plan. This plan builds off the Council's existing, and first, strategic plan and will guide Council activities that help achieve the goals and objectives identified in the plan.

At their August 2019 meeting, the Council approved new Vision and Mission statements, new Communication, Science, Management and Governance goals and included a new Ecosystem goal<sup>2</sup>. The new goals are as follows:

- **Communication** - Engage stakeholders and the public through education and outreach that foster sustained participation in, and awareness of, the Council process.
- **Science** - Ensure that the Council's management decisions are based on timely and accurate scientific information and methods.
- **Management** - Develop effective management strategies that provide for sustainable fisheries and healthy marine ecosystems and consider the needs of fishing communities and other resource users.
- **Ecosystem** - Support the ecologically sustainable utilization of living marine resources in a manner that maintains ecosystem productivity, structure, and function.
- **Governance** - Ensure that the Council's practices accurately represent and consider fishery, community, and public interests through a transparent and inclusive decision-making process.

The Science and Ecosystem goals likely have the most relevance to the SSC and potential membership needs. The Science goal was modified to address public comments that “focused on data accuracy and credibility, followed by inclusion of on-the-water observations and use of collaborative research in the scientific and decision-making processes” The new goal addresses these comments by simplifying it to the core of the Council's mandated science-based decision-making process. The SSC is included in a number of science objectives and strategies and will play an integral role in helping the Council successfully achieve its Science goal.

The Ecosystem goal will facilitate more effective implementation of the EAFM Guidance Document (discussed more in the section below) by consolidating the Council's ecosystem objectives under a single goal area that serves as an umbrella for activities that overlap Management, Science, and Governance. “This goal addresses a wide range of issues, including climate change, forage stocks, fish habitat, species interactions, and other matters that impact the health of the marine ecosystem.” The Strategic Plan outlines a significant number of Ecosystem objectives and strategies that could substantially advance ecosystem science, tools, strategies and management approaches available for Council consideration and implementation. SSC expertise

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<sup>2</sup> For more information on the 2020-2024 Strategic Plan and Council action at their August 2019 meeting, please see the Briefing Book material at: [http://www.mafmc.org/s/Tab04\\_2020-2024-Strategic-Plan-Framework\\_2019-08.pdf](http://www.mafmc.org/s/Tab04_2020-2024-Strategic-Plan-Framework_2019-08.pdf).

in these rapidly developing areas of science will be needed to help guide the Council as it implements and transitions to an ecosystem approach to management.

### *Ecosystem Approach to Fisheries Management (EAFM), Climate Change, and Distribution Shifts*

The Mid-Atlantic region is experiencing significant biological and physical changes due to climate change. These changing, and increasingly variable, conditions have resulted in shifting stock distributions and species productivity with social and economic consequences to fishing communities and effective fisheries management. In addition, these ecosystem considerations and climate-driven implications increase the scientific complexity and uncertainty the SSC considers during its ABC deliberations.

Approved in 2016, the Council's EAFM guidance document seeks to enhance the Council's species-specific management programs with more ecosystem science, broader ecosystem considerations and management policies with a framework that considers policy choices and trade-offs as they affect FMP species and the broader ecosystems. The Council's EAFM framework also seeks to work with its regional science and management partners to create an adaptive and responsive management process to address climate induced changes. Advancing ecosystem and climate science initiatives, such as the EAFM guidance document are high priorities for the Council and are highlighted in the 2020 – 2024 Strategic Plan and Research Priorities document.

In order to continue to account for and incorporate ecosystem considerations into its science and management programs, the Council will rely on new and additional ecosystem data and the increased refinement and utilization of analytical tools and management strategy evaluations. In addition, anticipating continued implementation of ecosystem management and the continued changes in stock distributions and availability, the need for setting ABCs for data limited species, such as blueline tilefish and chub mackerel, are likely to increase in the future. The SSC noted additional expertise in fisheries ecology, life history, and/or data limited approaches should be considered to help support these areas of increasing Council interest.

Other ecosystem considerations that may be addressed by the Council and require new or additional SSC resources and expertise include changes in habitat suitability, quantity and productivity, forage fish management, and potential changes in stock structure and increased utilization of genetic information. In addition to these biological factors, socioeconomic priorities and implications in an ecosystem context also need to be considered. SSC membership could support the Council in the development and evaluation of social and economic targets, thresholds, and the trade-offs associated with ecosystem management objectives and changing stock dynamics.

In order to fully evaluate and successfully implement these ecosystem initiatives and goals, the Council will continue to rely on and utilize the expertise of the SSC, collectively and/or individually. Increased capacity and ecosystem science expertise on the SSC in biological, socioeconomic, ecosystem modeling, and management strategy and optimization will be necessary to support this Council priority.

## *New Northeast Region Coordinating Council (NRCC) Stock Assessment Process*

A significant focus of SSC time and resources are spent on a variety of activities associated with ABC recommendations for Council-managed species. These activities include reviewing stock assessment reports, scientific literature, data updates and fishery performance reports, assisting in the development of science advice for Council policies, and providing guidance on research and science priorities to improve overfishing limit (OFL) and ABC recommendations. In addition, the Council and Northeast Fisheries Science Center use the SSC to chair and/or serve as independent peer reviewers for benchmark stock assessments, as necessary.

The NRCC recently approved a new stock assessment process that makes assessments more flexible, increases research opportunities and establishes a long-term assessment schedule to increase the regions' assessment capabilities and capacity. This new process created two types of assessments: management and research, and both require an independent peer review. The long-term schedule for management track assessments provides a predictable schedule that allows for more frequent assessments for many Mid-Atlantic species. The research track process will allow for increased opportunities to develop quantitative assessments for all Council-managed species or, through the research topic reviews, apply alternative approaches to existing assessments. These enhancements to the assessment process will result in increased ABC review and recommendations from the SSC. Additional SSC resources and increased SSC stock assessment expertise will be needed to accommodate the increased frequency of stock assessments, peer review requirements, and ABC recommendations. Increased stock assessment expertise was also recommended by the SSC for Council consideration.

### *Social and economic considerations*

The continued collection and the increased utilization of socioeconomic information in the Council process has been highlighted by the Council, the SSC, and stakeholders and has been included in the 2020-2024 Strategic Plan and Comprehensive Research Priorities. The need for additional socioeconomic information applies across all Council-managed species and fisheries and could be evaluated and utilized across the different Council activities and actions. The SSC serves a critical role in assisting the Council in identifying relevant social and economic data elements and then evaluating the social and economic impacts of management measures and actions.

As part of the recent joint Council-SSC meeting held in August 2019, current social science members of the SSC developed a discussion document on the potential to expand SSC engagement in providing relevant social and economic science information to the Council<sup>3</sup>. The document provided specific management and science examples covering a range of issues where social and economic issues could be undertaken by the SSC. Management issues the Council will likely undertake in the future where social science input and engagement from the SSC include,

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<sup>3</sup> The detailed agenda for the joint Council-SSC meeting, including the entire socio-economic discussion document, can be found at: [http://www.mafmc.org/s/Tab03\\_Joint-Council-SSC-Meeting\\_2019-08.pdf](http://www.mafmc.org/s/Tab03_Joint-Council-SSC-Meeting_2019-08.pdf).

but not limited to sector and state-specific allocations, modifications to limited access permit programs, offshore wind, recreational management, and ecosystem management.

Given the potential range and magnitude of issues, an increased and diverse social science membership on the SSC is needed. Based on the range of potential issues, the SSC offered guidance on the types of social science expertise that could be utilized. For example, an economist with experience in demand modeling for commercial and recreational sectors could help evaluate trade-offs associated with alternative allocation scenarios. Economists with experience in finance, processing, marketing, trade, and seafood markets could provide policy advice associated with changes to an FMP management program. Also, given the diversity of Mid-Atlantic fisheries and communities, a cultural anthropologist with experience in fishing community structure and function could provide valuable insight and should be considered.

The SSC strongly supported increased capacity and diversity of its social science membership; however, they also noted that the Council should define the role and identify needs for the existing and potentially new social science membership. Currently, the majority of SSC time and resources are spent on a variety of activities associated with ABC recommendations, with limited socioeconomic focused tasks and input. A major focus of the joint Council-SSC meeting was to discuss opportunities and avenues to increase the engagement and use of the existing, and future, social science membership. For example, there was discussion about potentially adding a socioeconomic Term of Reference (ToR) to the existing suite of ABC ToRs the SSC considers. The group also discussed the possibility of having the SSC provide advice on certain Council actions (i.e., frameworks and/or amendments). However, no specific recommendations were developed. If additional social science membership is supported, identifying the needs and capacity for work will help provide meaningful and productive benefits for the Council and SSC.

## Conclusions

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After reviewing SSC membership across the country and considering Council priorities and needs over the next several years, staff have identified three major areas where new and additional SSC membership should be focused to help support these Council priorities. Within each area, staff then identified specific types of SSC expertise needed to address these priorities.

- **Stock Assessment** – an additional member with quantitative assessment expertise is recommended. A significant focus of the SSC will continue to be various activities associated with setting ABCs for Council-managed species, in which a large component is interpreting stock assessment reports and information. Gaining an additional member with a strong stock assessment background can help in SSC deliberations regarding scientific uncertainty associated with various assessment modeling approaches and outcomes. A stock assessment expert that also has experience in data-limited tools and approaches could also provide additional benefits related to climate change and species distribution shifts (area of focus highlighted below).



In addition, the new NRCC process will provide for more frequent management and research track assessments. This will result in more frequent ABC recommendations and increased SSC support and participation in various assessment process activities such as stock assessment workgroups, the Assessment Oversight Panel, and serving as peer review panelists. When comparing to other SSC's stock assessment membership, an additional stock assessment expert added to the Mid-Atlantic SSC membership would bring the total to six members which be right in the middle in terms of absolute number, and as a proportion of total membership.

- **Ecosystem, Climate, and Distribution Shifts** – in order to support and address the various ecosystem and climate change issues and priorities, staff recommend one additional fisheries biologist/ecologist and one economist/social scientist that each have experience and expertise in ecosystem related issues. Advancing the Council's EAFM guidance document and understanding and addressing climate related science and management issues are a focus of the 2020-2024 Strategic Plan and Research Priorities. The Council and regional partners are also interested in the continued development and inclusion of ecosystem factors within the stock assessment process. As this area advances, additional expertise on the SSC to evaluate these results and the implications for ABC recommendations will be very beneficial. Areas of expertise to consider for the fisheries biologist/ecologist member include genetics, stock structure, ecosystem dynamics and modeling, or management strategies and optimization.

Ecosystem considerations and climate induced changes such as distribution shifts and stock productivity have significant implications to Atlantic coast fishing communities. Understanding and evaluating these science and management implications from a social and economic perspective will be critical for the Council to understand the potential trade-offs associated with different management actions that try to address these issues. Areas of expertise to consider for the economist or social science member include ecosystem modeling, demand modeling to evaluate trade-off scenarios, community structure and function, recreational fishing, and changes to fleet dynamics and profitability.

- **Social and Economic Science** – an additional economist or social science member, in addition to the one recommended above, to help support the different Council priorities and actions that will have socioeconomic implications is recommended. The Mid-Atlantic SSC has one of the smallest social science contingents, in absolute number and proportion of total members, of any of the eight regional council SSCs. However, the Council, the SSC, and stakeholders support increased utilization of social science information in the management process and increased engagement of the SSC to help provide the Council with social science advice. The SSC has previously noted current and future issues the Council is pursuing where the SSC can provide needed socioeconomic advice and guidance to help provide for more informed management decisions. An additional economist or social science member with the necessary expertise could help

increase the SSCs capacity to help evaluate upcoming Council actions addressing allocation, limited access privileges, offshore wind, recreational management, and management/regulatory implications.

In addition, the Council might also want to consider the use of SSC liaisons, when appropriate, with other SSCs to help provide topic-specific expertise and also increase cross-communication between SSCs. Bringing in a member from another SSC with specific expertise or experience to provide input and guidance on a relevant topic being considered by the Mid-Atlantic SSC could help address a specific need without taking away from existing SSC resources. A liaison approach, particularly across the Atlantic coast SSCs, could also provide for a cross-communication process in which SSC members share different scientific approaches and perspectives to common issues and challenges across the SSCs and Councils. A liaison approach would not be necessary for all SSC meetings, but considered on meeting and/or agenda specific basis.

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## Appendix 1.

### Mid-Atlantic Council SOPPs Pertinent to SSC Membership

#### 2.6.1 Scientific and Statistical Committee

##### 2.6.1.3 *Members and Chair*

- (a) The Committee shall have up to 20 members, all of whom shall be nominated for membership on the Committee by Council members, and shall be appointed to the Committee by a majority vote of the Council. The Committee may be composed of Federal employees, State employees, academicians, or independent experts, and each shall have strong scientific and/or technical credentials and experience in the biological, statistical, economical, social, and other relevant disciplines. The goal will be to structure the committee such that there is a balance in both home bases and expertise of its members. Each member of this committee shall be treated as an affected individual for purposes of paragraphs (2), (3)(B), (4), and (5)(A) of subsection (j) of Section 302 of the Act. The Secretary shall keep disclosures made pursuant to this subparagraph on file.
- (b) Members of the Committee will be appointed by the Council for a period of three years, and may be reappointed at the discretion of the Council. Appointments to the Committee will be staggered to allow overlap of membership. Vacancy appointments shall be for the remainder of the unexpired term of the vacancy. When vacancies arise the Committee shall provide the Council with a list of recommended candidates for consideration; the Council is not bound by the Committee's list of recommended nominees.
- (c) In addition to the 20 members identified in (a) above, interim or special appointments to the Committee of limited duration (not to exceed one year) may also be made to add expertise in special topic areas being addressed by the Committee. These interim appointments have all the rights and privileges of regular Committee members.
- (d) Committee members shall be notified of meetings at least 30 days in advance of each meeting. Committee members who cannot attend a scheduled meeting shall so advise the Executive Director. The terms of members who are absent for three consecutive SSC meetings without notifying the Executive Director in advance of the absence and without a reasonable excuse may be revoked. In addition, Committee members shall attend at least half of the meetings each year in person. Failure to do so may also lead to loss of membership on the Committee.
- (e) From within the membership of the Committee, the Council Chair shall appoint a Chair of the SSC.
- (f) From among their membership, the Committee may elect a Vice-Chair. The Committee Vice-Chair assists the Committee Chair in running meetings, and may represent the Committee to the Council if requested.