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Guidelines on Formation, Participation, and Function of Stock Assessment Workshop Working Groups

**A Report prepared for and reviewed by the Northeast Region Coordinating
Council (NRCC)**

NRCC reviewed early drafts in 2009, 2013, 2014, and 2015. Report prepared by staff members of the NEFMC, MAFMC, ASMFC, and NEFSC.

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1. Background/Rationale

Stock Assessment Workshop (SAW) Working Groups (WGs) prepare benchmark stock assessments which are peer reviewed by the Stock Assessment Review Committee (SARC) and are then published. In the future SAW WGs may also take part in developing new assessments and methods as part of the planned "Research Track". These stock assessments form the scientific basis for managing fish and invertebrate marine resources in the northeastern and Mid-Atlantic regions of the U.S. WGs play a key role in the stock assessment process, but to date there are few written guidelines which describe how WGs are formed, their composition, and how they function. This report was developed by the NRCC to provide guidelines on SAW WG formation, participation, and function.

2. Guidance about SAW Working Groups (WG)

2.1. SAW Working Group (WG) eligibility and WG formation

The SAW WG is responsible for carrying out and making decisions about stock assessment and addressing the assessment terms of reference (TORs). Development of stock assessments by the SAW WG requires a high level of expertise and commitment. Effective assessment workgroups should be composed of individuals from several disciplines, and have a broad range of skills and expertise. SAW WG members must be objective, constructive, efficient, and productive. SAW WGs are not intended, or required, to include every expert or researcher involved in every assessment issue. A certain amount of debate and disagreement is normal among members of a SAW WG, but the group must decide, generally by consensus, how to move forward with assessment development using the best available science.

2.1.1. Eligibility

- SAW WG members should not actively participate on another committee or panel whose purpose is to peer review the assessment products from the same SAW WG. This will maintain **independence** between those who produce the stock assessment and the subsequent peer review. In 2015 the NRCC decided that SSC members can serve on SAW WGs provided 1.)the SSC member makes this dual membership status well known to both the SAW WG and the SSC, and 2.)the SSC is not specifically peer reviewing that stock assessment.
- SAW WG members must have **expertise** and **education** directly aligned with the expertise needed to address the specific assessment TORs for the stock assessment. Generally this includes experts in the following core assessment areas: Biology, Ecology/Ecosystem Science, Data and Survey Design (Fishery-Independent, Fishery-Dependent Data), Mathematics/Statistics and Modeling Methods, and Fishery Management. This includes experts involved with state, federal, or international fisheries, academics, or fisheries management entities. Persons familiar with the fishery may also have the necessary expertise.
- As part of the selection process, all candidates for SAW WGs, other than the SAW WG chair and lead stock assessment scientist, will be required to fill out a questionnaire which will be reviewed by the SAW WG chair and a higher level selection committee (described in section 2.1.2). Criteria that will be considered by the selection committee will include independence, expertise, and education of candidates, as well as SAW WG size, composition, and balance. The SAW WG chair and lead stock assessment scientist are automatic members of the SAW WG and are not required to go through the selection process. In addition, a guaranteed position is available on the WG to a Fishery Management Council staff representative with primary responsibility for management of that stock. In keeping with the general process, this representative is encouraged to fill out and submit the short questionnaire so the SAW chair and SAW WG chair are aware of the request.

2.1.2. Working Group Selection and Approval by Selection Committee

When a stock is scheduled for an upcoming SARC peer review, the SAW WG Chair, with assistance from the lead assessment scientist and NEFSC SAW chair, should make a general public announcement that the SAW WG is seeking candidates for membership. The SAW WG Chair, with assistance from the SAW chair, will then identify the initial recommended workgroup membership list, after having ensured that each member on the list is willing to participate. Each candidate wanting to serve on a SAW WG will be required to fill out a questionnaire that will be used to determine whether the candidate satisfies the qualification criteria for independence, expertise and education. The information submitted on questionnaires is public and part of the administrative record. Other criteria that may be considered in establishing the SAW WG include WG size, composition, and balance.

The list of all applicants and the recommendations from the SAW WG chair and SAW chair, along with the questionnaires, will be provided to the selection committee comprised of Deputies from each of the NRCC organizations (NMFS-NEFSC, NMFS-GARFO, MAFMC, NEFMC, ASMFC) for review. This selection committee will make a final decision regarding approval of each candidate. Approval would not require an in-person meeting, and approval could be obtained via email or conference call. The NRCC Deputies selection committee will notify the Chair of the NEFSC SAW process and the SAW WG Chair of the committee's WG membership decisions in a timely manner, with the time schedule based on a recommendation from the NEFSC SAW Chair and the SAW WG Chair. To fill any vacancies, the SAW WG Chair could make an alternative member recommendation (based on input from the NRCC approval body) to be considered for approval. The SAW WG Chair has the option to proceed without finding a replacement for a disapproved member.

2.1.3. Notification of Workgroup and Meeting Participants

Identification of the approved SAW WG should be completed soon after the assessment TORs have been developed and set. SAW WG membership should be established well in advance of the first WG meeting (e.g., generally 3-8 months on advance), and the SAW WG Chair or SAW Chair should notify all interested parties by email and by posting the names of the SAW WG members on the SAW website or on a share drive set up for the WG, along with any meeting agendas and materials. Candidates who have or have not been approved by the approval body will be notified by the SAW WG Chair or NEFSC SAW Chair. The notification should point out that the final decision regarding membership was made by the official NRCC approval body in consultation with the SAW WG Chair and SAW Chair. If a candidate has not been selected by the NRCC approval body, there is no process for reconsideration. However, candidates may apply to be on other SAW WGs, even after not being selected for membership on a particular SAW WG. SAW WG candidates who are not selected may still attend SAW WG meetings and the SARC peer review, and may contribute their views during public comment sessions or as decided by the SAW WG chair and SARC chair during assessment development and peer review, respectively.

2.1.4. Working Group Meeting Participants List

A more enhanced section on the SAW webpage will be developed, which not only lists the schedule for data and modeling meetings (as is done presently), but details who is the SAW WG Chair, how to be added to a email list for the workgroup (who to contact), and SAW WG membership.

2.2 . Size of a SAW WG and selection of the WG chair

Background / Rationale

It is advantageous to keep WGs reasonably small to allow for consensus building and efficient development of stock assessments. WG size will vary by stock assessment, and is dependent on the specific expertise needed to inform and develop analyses/models to complete the assessment. Typically, the following types of information and their analytical components are combined to build an assessment product: Biology, Ecology/Ecosystem Science, Data and Survey Design (Fishery-Independent, Fishery-Dependent Data), Mathematics/Statistics and Modeling Methods, and understanding of the fishery and its management. The chair facilitates and guides assessment development discussions and strives for consensus decisions. When consensus cannot be reached, the SAW WG chair is responsible for deciding whether one or multiple primary surveys, models, etc. are brought forward for review and who will present the assessment information to the SARC (see Sections 2.2.2 and 3.4).

2.2.1. Working Group Size

SAW WGs may consist of 4-8 members, comprised of the WG chair and individuals with expertise and balanced representation in the core assessment areas required to address the assessment terms of reference. The specific number of members within this range depends on the overall workload of the assessment and range of expertise required to complete the assessment. It is the responsibility of the SAW WG chair, in consultation with the SAW Chair and SAW WG selection committee, to determine how many members are needed to complete the work, while also taking into account WG expertise and balance of opinions.

2.2.2. Working Group Chair Selection

In most cases, NEFSC Population Dynamics Branch Task Leaders (e.g., Southern demersal) and assessment scientists chair SAW WGs. For contentious stocks, the Center may recommend appointing an external chair from Council staff, academia, or other appropriate external institutions, and the NRCC selection committee may be consulted on the selection decision.

3. Guidance on how SAW WGs function

3.1. WG formation, composition, and participation

WG formation is described in section 2.1.2. Criteria for WG membership are based on independence, expertise, and education. Size of the WG, and balance and diversity of WG composition may also be considered in establishing the WG (see Sections 2.1.1, 2.1.2, and 2.2.1). WG membership requires a high level of commitment. WG's should achieve a balance of opinions and expertise in the main areas relevant to the stock being assessed. An imbalance of membership may lead to over-emphasis on one area of the assessment or excessive advocacy for a certain position. Members are strongly encouraged to participate in all of the SAW WG meetings used to develop the assessment. To ensure efficient progress and timely delivery of the assessment, in general WGs should not revisit decisions that they made at an earlier WG meeting. Likewise, unless an error needs to be corrected, a subset of WG members should not engage after a WG meeting to overturn decisions made earlier by the full WG (e.g., about data set inclusion/exclusion, or model specification and selection decisions).

3.2. Invited collaborators

As noted earlier (Section 2.1) the SAW WG is not intended to include every expert or researcher involved in every assessment issue. However, the WG process may benefit from including some invited collaborators who can contribute particular information. The WG Chair may invite individuals to attend all or part of WG meetings to contribute research papers, or who have particular expertise and present information to the WG as appropriate. These invited collaborators are not WG members, and while they may engage in a full discussion with the WG at appropriate times during WG meetings, they may not participate in WG consensus decisions. It is the responsibility of the SAW WG chair to run the meeting in this manner. All WG meetings are to be public, and the SAW WG may take comments from the public. Like members of the public, invited collaborators may participate during public comment or when addressed by the SAW WG, but they are not directly involved with the WG when the WG makes its decisions.

3.3. Wide net for sources of data

When a SAW WG is formed, the lead assessment scientist, with support from the WG chair, should seek to acquire all data relevant to the TORs for that stock assessment. This may include new sources of information, as well as data not collected by the NEFSC. Acquiring such data sets can be done in various ways (e.g., sending email requests, phone calls, or holding a public meeting with industry/academia to discuss the strategy for conducting the stock assessment, and any major issues related to the assessment). If relevant peer-reviewed publications exist, the WG chair and lead scientist may want to contact the author(s) to indicate that this published information is being considered for use in the assessment.

When new data sets are obtained, the WG should review the quality of those data and determine whether the data meet scientific standards for inclusion in the assessment. If the data do not meet these standards, the WG should not include the data in the assessment, but should document that the data were considered and explain why the data were not included.

Ideally, research to support a stock assessment should begin after the previous benchmark assessment is completed, based on the research recommendations.

3.4. How the WG makes decisions

-- "Consensus decision-making" defined: "Consensus decision-making" is a group decision-making process that seeks the consent of all participants. Consensus may be defined professionally as an acceptable resolution, one that can be supported by the WG members, even if not the "favorite" of each individual.

--On Consensus: SAW WGs should strive to achieve consensus. This is because SARC reviewers are generally very adept at evaluating whether an analysis presented to them is technically appropriate, but they struggle with resolving complex issues that a SAW WG was unable to resolve. The SARC generally respects the expertise and time devoted to these issues by the SAW WG, but the SARC has limited time to resolve or delve deeply into contentious issues that may have caused dissension within a WG.

--On Minority opinions: During SAW WG meetings the WG chair should seek out, but not force, a consensus of the WG on major assessment issues. If a SAW WG is unable to reach consensus on an assessment topic, a minority opinion can go forward to the SARC only if more than one WG member has the minority opinion. During the SARC peer review the SAW WG Chair, rather than a WG member, will be responsible for explaining the minority opinion and describing how it differs from the majority report.

--On Documentation of WG decisions: The WG chair should keep a log of the decisions made during each day of a WG meeting. The WG Chair's daily log should describe the decision, the logic and reasons behind the decision, the number of WG members who supported the decision, and the names and number of WG members in attendance at each meeting.

3.5. Dealing with single best model or with multiple models

For any TOR in which one or more models are explored by the WG, the WG report should provide a detailed account of the "best" model, including inputs, outputs, diagnostics of model adequacy, and sensitivity analyses that evaluate the robustness of model results to assumptions. In less detail, all other models and sensitivity analyses evaluated by the WG should be described and the strengths, weaknesses and results of the other models and analyses explained in relation to the "best" model.

Ideally the WG will be able to decide on and select a "best" model. However, when this is not possible, the alternative model(s) should also be described in detail, and the relative utility of each model summarized, including a comparison of results. It should be highlighted whether any of the models represents a "minority" opinion (see Section 3.4) of the SAW WG.

For the "best model", include one or more tables that describe the model structure (for example: model type or name (including version and date of compilation), age- or length-based, sex-based, types of landings and discard data, length-weight parameters, maturity parameters, size bins, time bins, M assumptions, surveys used, model years for surveys and catch, etc.).

3.6. Number of WG meetings to have before the SARC Review

There is flexibility in the number of SAW WG meetings to hold. It depends on the complexity and importance of the benchmark stock assessment. Most SAW WGs schedule 1-3 WG meetings to evaluate data, models, BRPs, stock status, and projections. Earlier meetings tend to focus on data and recent research, while later meetings focus on model selection, etc. Having a special meeting with the public, early in the process, to discuss major issues involved with the benchmark assessment may be useful, if adequate time and resources are available. Public comment can also be taken during the normal 1-3 WG meetings.

3.7. SAW WG Chair's Responsibilities

The WG Chair is responsible for working with the selection committee to form the SAW WG, chairing SAW WG Meetings, assuring that assessment reports are prepared on time, and attending the SAW/SARC review as a WG representative along with the lead assessment scientist. The WG Chair is responsible for determining who makes presentations to the SARC, although such presentations are normally made by the lead assessment scientist. The WG Chair is responsible for ensuring a constructive WG meeting environment for all participants and seeing that notes or suitable records of decisions are kept. The WG Chair facilitates consensus building and is responsible for ensuring consensus decisions are made regarding assessment inputs, model selection, and final workgroup products/SARC presentations. The chair does not make decisions unilaterally with regard to assessment products, but guides decisions made by the full WG. In cases where consensus cannot be reached, the WG Chair makes final determinations on WG products to be presented to the SARC. For instances where a minority opinion or multiple 'best models' (See Section 3.5) are brought to the SARC, the SAW WG chair will present the minority opinion and alternative models associated with it and describe how this differs from the majority opinion. (Additional responsibilities are described in sections 2.2.2 and other parts of Section 3.).

3.8. Conduct during SAW WG Meetings

Anyone participating in SAW assessment working group meetings who will be running or presenting results from an assessment model is expected to supply the source code, a compiled executable, an input file with the proposed configuration, and a detailed model description in advance of the model meeting. Source code for NOAA Toolbox programs is available on request. These measures allow transparency and a fair evaluation of differences that emerge between models. In general, all of these materials will be placed on a SAW website and remain freely available to interested parties.