

D1 SSC Discussion of SSC February Workshop Report

The SSC received a verbal summary on the February SSC workshop report from Dr. Franz Mueter (UAF; SSC Co-Chair). The SSC thanks Dr. Mueter and Dr. Bob Foy (NOAA-AFSC) for producing a comprehensive report in a short period of time. The overall takeaway from the document is that rapid changes in the northern Bering and southern Chukchi seas are having significant impacts on marine ecosystems, commercial fish stocks, and local communities that depend on marine resources for food and livelihoods. The report highlights the challenges faced by the Council as it balances potential trade-offs among interested parties that have had limited or no interactions in the past.

The report emphasizes the need for increased scientific understanding and monitoring to support future Council decision-making under increased uncertainty. The report also highlights the importance of proactive approaches for achieving management goals in a changing environment and assessing how existing frameworks may or may not be able to address ecosystem variability. Developing specific proactive approaches or tools that might lead to better outcomes in the face of climate change remains a key gap.

Overall, the document does a good job of capturing the discussion points and content of the workshop but would benefit from better organization as the gaps/findings/recommendations and next steps are scattered in multiple sections, then partly repeated in three different ways in the overall summary. For example, the section of bullets in Session 2 precede the topics and discussions in Session 2 and are a mixture from both sections. While the SSC appreciates the conciseness of bullets, many of these lack context to understand the role or importance in the discussion and recommends expanded description for clarity.

Rather than doing any substantial revisions to this document, **the SSC accepts the report and recommendations with any suggested revisions that can reasonably be incorporated in the version appended to the final April SSC report**, and supports the development of a shorter “plain language” summary that was requested during the open mic at the workshop, as a way to share the results of the workshop to a wider audience. The SSC envisions that the summary would distill the key findings and recommendations from the complete list of gaps, findings and recommendations included in the various sections of this report. **The SSC appreciates and accepts the offer from Council staff to assist the authors with producing this "plain language" summary of the workshop.** Several new requests could be added to this new document for clarity:

- The SSC noted that there was a substantial effort to define non-stationarity at the workshop, but a clear definition is not provided in the report and the main non-stationary process identified is spatial population changes. If non-stationarity is going to continue to be a commonly used term associated with climate change, the SSC recommends that the authors better define non-stationarity for a broad audience and provide examples of which processes are less stationary than the previously observed baseline. It also should be noted that statistical non-stationarity can mean either a change in the mean of the process, the variance of the process, or both, or it could refer to a change in the covariance among related processes.
- The SSC also suggests that a clearer definition of “dynamic reference point” should be established as most of the current reference points are dynamic to some extent, which is noted in the report but not clear in the recommendations. The goal may be to explore “more dynamic” reference points if the objective is to link to current environmental conditions and the question is how dynamic they should be.
- In the condensed plain language report, maps of where current sampling and fishing has occurred would be helpful. Additionally, maps of regional and overlapping jurisdictions could be helpful.

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One of the key recommendations is to “identify which stocks are likely to do better or worse in a changing environment to help fishers build the best fishing portfolio.” The SSC cautions that any such predictions should be well caveated by characterizing the associated uncertainty around such predictions if the intent is to provide industry and communities with information on which to base business decisions or other decisions.

The SSC discussed the recommendation for a February 2024 SSC workshop based on outcomes from this report. The authors responded that it would likely be more focused on specific issues relevant to all Council-managed areas rather than general issues or spatially limited to the NBS and southern Chukchi Sea. The SSC agreed that including the GOA and the AI LMEs along with considerations of movement out of the EEZ will be essential moving forward. The SSC highlighted the urgency of addressing issues identified in the February 2023 SSC workshop, such as the questions for the subgroup to consider under “Recommendations for next steps” in the workshop report, and stressed the importance of making progress as soon as possible. In addition to, or alongside, the potential 2024 SSC workshop, the SSC discussed prioritizing work on these topics over other SSC agenda items in the near future. While specific agenda items were not discussed, the SSC discussion highlighted a sense of urgency while recognizing the difficulty of finding time for all agenda items. The SSC also notes that some of this work can be accomplished through other ongoing efforts such as the workshop proposed by the CCTF.

The SSC supported the idea of forming a subgroup of Council and SSC members to develop a roadmap that builds a bridge from assessment and climate science to adaptive management under climate change (see also bullet 4 under D6 Joint Groundfish Plan Team Workgroup Discussion). The SSC discussed the composition of the subgroup and suggests that the subgroup could include Plan Team members as similar issues have been raised in previous Plan Team reports. The SSC recommended that the SSC chairs work with the Council to determine the best way forward in forming a subgroup to address the recommendations and plan for any 2024 workshop. It was noted that this would be a novel type of group because the SSC was not aware of any similar groups in the past composed of Council, SSC and possibly Plan Team members. In addition, the SSC noted that the open forum style used at the February 2023 workshop was valuable and well-received and recommended the style be considered when developing future SSC workshops that have similar goals. The SSC found that this less restricted open dialogue was very informative (e.g., dedicated open mic sessions, no individual time limit on speaking).

Specific SSC comments on the report included:

- Elaborate on whether the recommendation of further risk considerations should extend beyond the risk table.
- Ensure that the report notes that there are more data and ongoing data sampling programs than were highlighted at the workshop. For example, there are sampling programs for juvenile fish abundance and condition which have long time series, but were not identified in the report. Identifying existing data sources such as these can help fill data gaps noted in the “Key take-home messages, recommendations, and next steps” and will be necessary to achieve the “improved coordination of relevant science across agencies, universities, tribes, and local communities to meet Council objectives and local needs” noted in the report under “Session 3. What tools do we have or need to apply these data to management of Bering Sea fisheries.
- The report should note that identifying new metrics characterizing the cold pool and sea ice quality, which could be an avenue for including LT/TK, was identified as a key research need during the workshop.

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- The SSC recommends adding “securing additional funding for” into the key recommendation on expanded monitoring of the NBS/SCS areas.
- The subgroup should be aware of a proposed North Pacific Research Board NBS Integrated Ecosystem Research Program, which will be a source of new research in the area and is expected to release a request for proposed research in fall of 2023.
- The SSC suggests that the statement regarding flexibility on p. 12 be changed to “The Council may want to consider prioritizing increased flexibility in the management process but this may require updates to current management objectives and regulations”