

SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON ASSESSMENT METHODOLOGY REVIEW – FINAL ACTION

The Scientific and Statistical Committee (SSC) discussed reports and recommendations from a review of nearshore remotely operated vehicle (ROV) surveys to inform future groundfish stock assessments (held February 4-6 in Santa Cruz, CA; [Agenda Item D.4, Attachment 1](#)) and a review of data-moderate length-based assessment methods (conducted online from May 12-14, [Agenda Item D.4, Attachment 2](#)). The review of length-based assessment methods was followed by a workshop to more generally review data limited assessment methods and the potential to use the Data Limited Method Tool ([DLM Tool](#)) developed by researchers at the University of British Columbia in Pacific Fishery Management Council (PFMC) stock assessments. A report from that workshop will be provided at a later meeting.

Review of ROV Survey Designs and Methodologies

The purpose of the ROV methodology review meeting was to evaluate and review fishery-independent visual survey methodologies developed by state agencies in Oregon and California and recommend whether the results are sufficiently robust to inform stock assessments of nearshore groundfish, which are generally data-limited. The review panel made numerous requests of the analysts during the meeting, to better understand issues relating to the temporal and spatial coverage, potential bias in length measurements, the species and life history types best surveyed by these methods, the means for the determination of uncertainty in the indices, and other constraints related to the development of absolute or relative biomass indices and length compositions. Neither state is currently able to conduct coastwide surveys within a single year, and some habitats, particularly very nearshore (<20 meters) and soft-bottom habitats, or deeper habitats for shelf species, have very little data.

The SSC endorses the use of the ROV surveys to inform stock assessments for the species explicitly listed in the panel report. The SSC also notes that stock assessment reports for assessments that use data from ROV surveys, particularly as absolute abundance indices, should provide detailed information on how that assessment addresses the key concerns raised in the report. Additional areas for improvement in the ROV survey and analytical methods are documented in the report, and the SSC recommends that additional workshops be held to promote further development and harmonize both field and analytical methods. Finally, the SSC commends the survey and analytical teams for their work in conducting and analyzing survey data, preparing for the review, and addressing reviewer concerns. The SSC also thanks the reviewers for their contributions.

Review of Length-Based Assessment Methods

The SSC reviewed the report of the Length-based Assessment Methods Methodology Review Panel (Panel), which was held by webinar between May 12th - 14th, 2020. The review focused on two newly developed assessment methods that rely primarily on length-composition data: Stock Synthesis with Catches and Length (SS-CL) and the Length-based Integrated Mixed Effects (LIME) assessment platform. The SS-CL method uses both length and catch data, while the LIME method uses a state-space approach and does not require catch information. The proponents of

LIME determined that their approach would require considerable additional work to become operational. Consequently, the proponents and the Panel agreed that the LIME method should not be adopted at this time, although it could be further developed for future consideration.

The Panel report documents rigorous testing and evaluation conducted by the analysts on SS-CL, including evaluation of model performance using both simulated data as well as previously adopted stock assessments from which other data sources were removed. Both approaches were highly informative of the strengths and shortcomings of SS-CL. Detailed descriptions of some of the more counterintuitive outcomes were presented by the analysts and considered by the Panel. The SSC concurs with the Panel recommendation that several short-term tasks, detailed in section 6 of the Panel report, should be completed prior to formal adoption of SS-CL.

The SSC notes that if SS-CL is adopted, it would also recommend formal approval of the “SS-CL-Index” approach (where “SS-CL-Index” would include indices from well-designed and commonly used fishery-independent surveys); that the Council has already adopted several data-moderate assessment methods that include relative abundance indices (see Table 1 of the Panel report). There will also be a need to provide clear guidance regarding when biological parameters (growth, natural mortality) in addition to “conventional” parameters (e.g., R_0 , selectivity) should be estimated. Such issues will need to be addressed in revisions to the Terms of Reference for data-moderate assessments. This follow up review of the short-term research that needs to be conducted before SS-CL can be adopted can be conducted by the SSC Groundfish Subcommittee and the SSC will make a recommendation with respect to timing under future meeting planning at this Council meeting. The SSC commends the data-moderate methods development team for their progress in addressing these challenging analyses, and for their responsiveness to the requests of the Panel.

PFMC
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