



NOAA FISHERIES

Northwest Fisheries Science Center

D. Peer Review Process

Objective and scope of peer review

The goals and objectives of the peer review process include:

- Meet the mandates of the MSA;
- Provide for an independent external review of stock assessments; with explicit responsibilities and calendar for all participants including stock assessment scientists, STAR chair and members, Council staff, and representatives of Pacific Fishery Management Council (PFMC) committees;
- Ensure that stock assessments represent the best available scientific information;
- Ensure that the information in stock assessments is clear and appropriately concise to facilitate PFMC adoption of OFLs, ABCs, ACLs, HGs and ACTs and other appropriate management measures indicated by the stock assessment;
- Provide a measure of assessment uncertainty (a value of σ) for use in determining the size of the scientific buffer between the OFL and ABC
- Increase understanding and acceptance of stock assessments and peer reviews by all members of the PMFC family;
- Identify research needed to improve future assessments, reviews and fishery management;
- Provide for efficient use of assessment and review resources.

The scientific peer review process is generally a two-step process for stock assessments. For benchmark and data-moderate assessments (to date), the first step is the stock assessment review (STAR) panel process, while for update assessments, rebuilding analyses and data-poor assessments, the first step is review by the groundfish subcommittee of the PFMC's Scientific and Statistical Committee (SSC). The full SSC body then reviews the STAR panel or groundfish subcommittee review report as well as the resultant assessment.

Stock assessment review (STAR) panel assessment review

The STAR panel is a key element of the overall process to review the technical merits of stock assessments and related scientific information. It is a transparent, rigorous and independent scientific peer-review process and complies with the National Standard 2 guidelines for conducting peer reviews of scientific information used in fishery management.

The role of the STAR panel is to conduct a detailed technical evaluation of full stock assessments to advance the best available scientific information to the PFMC. Terms of Reference (TORs) for the peer review are developed in advance of the STAR panels by the SSC in collaboration with NMFS, and include an overview of the stock assessment prioritization process, STAR Panel goals and objectives, roles and responsibilities of STAR participants, as well as a calendar of events with a list of deliverables for final approval by the Council. The STAR panel chair ensures that STAR panel participants follow the TORs, guides the STAR panel and stock assessment scientists to find mutually agreed upon solutions to issues that arise during the review, and coordinate the review of the revised stock assessment documents before they are forwarded to the SSC. A STAR panel usually meets for 4-5 days during the review of two benchmark assessments (alternatively, multiple data-moderate assessments).

Peer reviewer selection

A STAR panel is composed of four or more members: a chair from the SSC, one or two reviewers appointed from the Center for Independent Experts (CIE), and at least one reviewer who is familiar with west coast groundfish fisheries and stock assessments. During recent stock assessment cycles, there has been an effort to identify one CIE reviewer who can attend all STAR panel meetings to provide both consistency across panels and feedback on the

overall process during that year. Representatives from the PFMC's Groundfish Management Team (GMT) and Groundfish Advisory Subpanel (GAP) attend and advise the STAR panel, along with a member of the PFMC staff.

SSC groundfish subcommittee review

Update assessments, data-poor assessments and data reports are reviewed by the SSC groundfish subcommittee followed by the full SSC. For all three, data inputs may be reviewed. For data-poor assessments, the rationale for choosing a particular data-poor method and Bayesian priors used (if any) are reviewed. Update assessments are compared to the previous assessment on which the update is based, to ensure consistency in data treatment and modeling as well as results in terms of model fit and status and trends. Substantial changes in any of these can result in updates being rejected and additional work being requested to be reviewed end-of-year panel. This may result in new benchmark assessment or a "hybrid" assessment with some changes being allowed that would not meet the terms of reference for a strict update.

Rebuilding analyses and any assessments requiring additional analyses and subsequent review are reviewed at the end-of-year panel which is generally conducted by the SSC groundfish subcommittee and one CIE reviewer, with GMT and GAP advisors and PFMC staff attendance. For assessments, the process is the same as a STAR panel review. Rebuilding analyses are usually conducted using rebuilding software which allows for uncertainty in forward projections as well as in the assessment model outputs (including sensitivity analyses, profiles over parameters, decision tables, and sampling from the Bayesian posterior). The choice of approach to uncertainty in input values along with the outputs and documentation are reviewed.

SSC review

The full SSC conducts a final review of each stock assessment, rebuilding analysis and data report. The SSC review is not intended to repeat the detailed technical review of the STAR panel, but rather to provide a final check of the model and document, a review of the STAR panel report, and resolution to any disagreement between the STAR panel and stock assessment team. The SSC and PFMC make the final decision on whether to send an assessment to the end-of-year panel. The SSC is composed of 17 members, 5 obligatory NMFS seats from the Northwest (2), Southwest (2) and Alaska (1) fisheries Science Centers, 4 members from state agencies of Idaho, Washington, Oregon and California, 1 member representing the tribes, and 7 at-large seats, which are currently held by 3 academics (1 emeritus), 3 NMFS scientists and 1 independent consultant.

Characteristics of the review process

Avoidance of conflict of Interest

NMFS and the PFMC both ensure that there are no conflicts of interest in the peer review process. STAR panel members who are federal employees are required to comply with all applicable federal ethics requirements, while reviewers who are not federal employees are screened for conflicts of interest either through existing financial disclosure processes used by the SSC and CIE, or under the NOAA Policy on Conflicts of Interest for Peer Review Subjects.

The CIE was created in 1998 to provide independent reviewers for NOAA fisheries reviews. The CIE ensures that its reviewers, along with being experts, are free of conflict of interest with NOAA fisheries, the fishing industry, or any other interest group.

PFMC SSC members complete a financial disclosure form, but may be employed by NOAA, other federal, state or tribal agencies, or may engage in fishery consulting.

Independence

SSC members who work in the same division within a science center/state agency/etc. as an author of a stock assessment cannot serve on a STAR panel where that stock assessment is reviewed. SSC members who serve on a STAR panel (and thus lead or contribute to its report) or who supervise authors of stock assessments must recuse themselves from SSC deliberations and limit themselves to providing information about the stock assessment and STAR panel report and deliberations.

Transparency

STAR panels, SSC groundfish subcommittee meetings, and SSC meetings (within PFMC meetings) are announced in the federal register and open to the public. Draft stock assessment documents are made available to the STAR

reviewers and the public two weeks prior to the STAR panel, and include an executive summary, text that includes all essential components called for in the Stock Assessment Terms of Reference, tables and figures representing data inputs and results, including model fits to data, and the input model files. Public comment is accepted during all public meetings in accordance with the Council Statements of Organization Practices and Procedures (SOPP).

Thoroughness

STAR panels and the SSC review the entirety of the draft documents. GMT and GAP representatives help ensure that the fishery data are correct and assumptions about constancy or changes in the fishery are realistic within the bounds of the data available for modeling. During the course of the STAR panel review, the panel may ask for a number of sensitivity runs and request clarifications or further diagnostics on the proposed base and alternative runs. Often, the result of the review is a change to the initial base model. However, the STAR panel is instructed to conduct a review, not a workshop, and is not authorized to impose an alternative assessment or methodologies to those preferred by the stock assessment team. Disagreements, though rare, are documented in the STAR panel report to be reviewed by the SSC. If the STAR panel finds that there are issues which cannot be resolved during its review, they may recommend the stock assessment be sent to the end-of-year panel during which rebuilding analyses are also reviewed.

Efficiency

The STAR panel review is limited to a single week. This is followed up by an SSC review and, in rare cases by a follow-up review at the end-of-year panel, if necessary. While, generally, two benchmark assessments are reviewed in any one STAR panel, considerably more data-moderate assessments may be accommodated in a single STAR panel, while the SSC groundfish subcommittee reviews other assessment work and may eventually conduct data moderate reviews as well. This mix of review bodies and approaches ensures efficiency and adequate throughput while providing thorough, transparent and independent technical peer review of assessments.