

SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON NATIONAL STANDARDS 4, 8, 9 CONSIDERATIONS AND NATIONAL STANDARD 1 TECHNICAL GUIDANCE

Advance Notice of Proposed Rulemaking on National Standards 4, 8, and 9

The Scientific and Statistical Committee (SSC) does not take a position on the need to revise National Standards 4, 8, and/or 9, as this is primarily a policy decision. If National Standard 8 is revised, care is needed with the definitions of engagement versus dependence. Dependence is typically calculated as a per capita metric, and so can be very sensitive to population flux in small communities even if engagement remains stable. If National Standard 9 is revised, there should be consideration of bycatch definitions that do not revolve around species. For example, a single species might be bycatch in some fisheries but not others, and something akin to bycatch might occur for a subset of a species such as unmarked fish in mark-selective fisheries, fish outside legal size limits, or one sex in a fishery with sex-specific retention.

National Standard 1 Technical Guidance

At its June 2023 meeting, the Scientific and Statistical Committee (SSC) received a presentation from Richard Methot (NOAA Fisheries Directorate) and reviewed a [draft NOAA Technical Memorandum](#) entitled “Technical Guidance for Estimating Status Determination Reference Points and their Proxies in Accordance with the National Standard 1 Guidelines”, now available in the September 2023 briefing book as [Agenda Item H.6, Attachment 5](#). The Technical Guidance summarizes a substantial body of ongoing work, and contains suggested approaches rather than binding requirements. The SSC identified numerous potential additions or modifications for the document, which are appended to the end of this report.

The SSC also identified cases where current PFMC practices are not entirely consistent with the technical guidance. Given the non-binding nature of the guidance, these inconsistencies are not necessarily problematic, but divergences from the general guidance should be recognized and confirmed to be scientifically defensible. These differences include:

- Groundfish and coastal pelagic species assessments generally parameterize the Beverton-Holt stock-recruit relationship using steepness and R_0 , not alpha and beta (p. 9). The SSC recognizes that switching parameterizations would be a major change with associated costs and benefits.
- Steepness is pre-specified in many groundfish and coastal pelagic species assessments (p. 10).
- F_{SPR} proxies less than 40-45 percent are used in some cases (p. 12).
- Fishing mortality rate in groundfish assessments is often reported as 1-SPR, but not fishing intensity F as well (p. 25).
- Salmon management uses multi-year overfished status determinations, but the guidance only discusses multi-year overfishing status determinations (p. 28).

Recommended additions or modifications to the technical guidance document:

- Consider grouping sections into well-established approaches (e.g., age- or length-structured assessments, biomass dynamics approaches) and emerging issues or ongoing work (e.g., some data-limited approaches, updating reference points for changing environmental conditions).
- For well-established approaches, cite applied work products (e.g., accepted stock assessments) that are good examples of the approach in addition to the academic references already cited. For emerging issues, there may need to be greater reliance on academic citations.
- Consider adding guidance on determining status when combining assessments from multiple areas, especially when assessment categories differ among areas. This is an important issue for the PFMC and potentially other regions, and there is value in a consistent national approach.
- Discuss multi-year approaches to overfished status determinations, not just overfishing status determinations. The PFMC already does this for salmon.
- Discuss the issue of “retrospective overexploitation” where harvest is less than the overfishing limit established at the time, but a future analysis reveals that the fishing mortality rate exceeded the maximum fishing mortality threshold. Consider identifying appropriate responses (if any) when this is detected.
- Provide guidance on identifying conditions that indicate a sufficient degree of quasi-stability to support applying data-limited, SPR-based, biological composition methods to status determination (pp. 19-21).
- Consider identifying data-limited approaches that are clearly not suitable and should be excluded from consideration, while recognizing that any list of suitable approaches could quickly become out of date.
- Consider adding some specific approaches to the Biomass Dynamics Models section, for example delay-difference models and Depletion-Based Stock Reduction Analysis. Some of these methods are discussed in the “catch only” methods section, yet they do have an underlying biomass dynamic estimation that includes life history information and can provide status determination criteria in certain situations.
- Add discussion of fishery-induced evolution to the consideration of fishery impacts.
- Discuss the potential of close-kin mark-recapture to provide estimates of demographic rates such as natural mortality and potentially fecundity in addition to estimates of absolute abundance.
- The section on “Fishery Technological Characteristics” is very dense and contains concepts that could be explained in more detail.
- Consider softening the language that fixed parameters are “ill-advised” (p. v).
- Discuss approaches suited to short-lived species, including semelparous species such as salmon.