SCIENTIFIC AND STATISTICAL COMMITTEE
REPORT ON FISHERY MANAGEMENT PLAN AMENDMENT: REVISED SARDINE STOCK AND MANAGEMENT PROVISIONS – FINAL ACTION

The Scientific and Statistical Committee (SSC) reviewed Agenda Item J.3, Attachment 1, which summarizes the information the Council was provided to support decisions regarding a stock definition and management framework for Pacific sardine. The SSC also reviewed Agenda Item J.3, Attachment 2 and Attachment 3, which respectively provide an impact assessment for the actions and draft text for a revised Coastal Pelagic Species (CPS) Fishery Management Plan. Katrina Bernaus (Council Staff) gave an overview of the action being considered and the tasks for the SSC and was available to answer questions. Annie Yau (SWFSC) provided the SSC a short technical summary related to the action (Agenda Item J.3.a, NMFS Report 1).

Stock definition

The designation of Pacific Sardine as a single coastwide stock off the USA West Coast reflects best scientific information available (BSIA). This is supported by information provided to the SSC at previous meetings (e.g. summaries of Craig et al., 2025; Erisman et al., 2025 and Longo et al., 2025), along with the summary in the NMFS report on Pacific Sardine Stock Revision (Agenda Item J.3.a, NMFS Report 1). The information available does not exclude the possibility of some spatial structure within the designated stock.

Management provisions

The SSC reviewed the proposed changes to the management framework, noting that there is no plan to change the general structure of the Overfishing Level (OFL) and Acceptable Biological Catch (ABC) control rules under the PPA. The SSC agrees that these control rules remain BSIA. The SSC notes that application of these control rules requires specifications for E_{MSY}, BIOMASS, and DISTRIBUTION as well as the basis for specifying an ABC-OFL buffer. E_{MSY} and the most recent estimate of biomass will be available following the stock assessment and prior to harvest specifications. The process for setting the ABC-OFL buffer will be unchanged. Given that the revised stock structure is restricted to the US, it is appropriate to set the DISTRIBUTION parameter of the OFL, ABC and harvest Guideline (HG) control rules to 1.

The SSC recommended adopting a formulaic approach where MSST is set to a value between $B_{10\%}$ and $B_{30\%}$ (i.e., between 10% and 30% of B_0) in September 2026 (Agenda Item J.1.a Supplemental SSC Report 1) and B_0 is an estimate of unfished biomass that still needs to be derived. This range accommodates uncertainty around $B_{20\%}$, which was identified as an appropriate MSST value in a 2016 NMFS SWFSC Report. The proposed FMP language includes the use of a "reasonable proxy" for MSST, and the SSC recommends maintaining the option to consider a fraction of unfished biomass or other proxy as the SSC deems appropriate based on available information.
There are concerns related to the use of the static and B_0-based approaches for setting MSST. For example, the basis for the static value depends on the stock structure assumption at the time it was defined and how the value should be adjusted given information on the abundance of the southern and northern subpopulations as previously defined. Calculating B_0 is challenging because the estimate from the assessments will be uncertain given the relatively short time period considered

in assessments of Pacific sardine. Thus, estimates of B_0 (and hence MSST) within assessments may change substantially over time. In principle, B_0 should be defined over a longer period of time but a method to do this has yet to be proposed.
Although there are concerns with each approach for defining MSST, the SSC continues to support the approach based on a proportion of B_0 or a reasonable proxy. The SSC will identify a process for calculating MSST in conjunction with the Southwest Fisheries Science Center. Given that the scientific basis for MSST of Pacific sardine is not resolved and the best approach may change once additional analyses have been conducted, the SSC advises that the Council plan for an agenda item on this topic following the 2028 assessment of Pacific sardine.

The SSC notes that the 2008 sardine stock assessment (which modeled the 1981-2007 time period) estimated B_0 to be 928,000 mts, 20% of which would be 185,600 mts. By contrast, the most recent (2024) benchmark stock assessment (which modeled the 2005-2024 time period) estimated B_0 to be 128,700 mts; for which 20% would be 25,700 mts. The SSC therefore recommends evaluating alternative ways to calculate B_0, including approaches that use information beyond the period considered by the most recent stock assessment for Pacific sardine.
Management strategy evaluation
A management strategy evaluation (MSE) uses computer simulation to quantify trade-offs among management objectives achieved by alternative management options given the knowledge and uncertainties for a particular fishery. The Council has used MSE for this purpose for various groundfish, CPS, and salmon stocks.

In September 2026, the SSC recommended (Agenda Item J.1.a Supplemental SSC Report 1) that an MSE be conducted to support specification of appropriate control rule parameters when the 2028 benchmark assessment is complete. The types of questions that could be addressed using an MSE for Pacific sardine include evaluating the following topics:

- The impact of incomplete mixing of Pacific sardine, including between the US and Mexican waters. This would begin to address the SSC recommendation from its April 2026 statement (Agenda Item F.5.a Supplemental SSC Report 1 April 2026), which identified the need to account for transboundary connectivity when assessing the stock and applying harvest control rules. The availability of data from Mexico would greatly increase the utility of MSE analyses that explore the consequences of transboundary movement.
- The consequences of static vs B_0-based definitions for MSST given the boom-and-bust nature of the Pacific sardine stock.
- The consequences of different ways to set E_{MSY} and CUTOFF.
- The benefits of basing management recommendations on an empirical approach where the OFL, ABC, and HG are calculated directly from the most reliable source of information, namely the survey estimate of biomass. Such an approach could reduce the frequency of benchmark and update assessments. Using the survey biomass in control rules would have the benefit of not needing to age fish to calculate the age-1+ component of the survey biomass estimate.

PFMC
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