

SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON
NATIONAL MARINE FISHERIES SERVICE REPORT

The next full assessment of the northern subpopulation (NSP) of Pacific sardine was delayed until 2024 so work could be conducted to better understand stock structure and other uncertainties. A workplan was developed that involved the Southwest Fisheries Science Center (SWFSC) conducting a stock structure workshop in November 2022, the outcomes of which were reviewed by the Coastal Pelagic Species (CPS) Subcommittee of the Scientific and Statistical Committee (SSC). The SSC was briefed on the report of the November 2022 Workshop on Pacific Sardine Stock Structure (Agenda Item H.1.a, Attachment 1), which summarized a conceptual model of Pacific sardine, including the characteristics of the NSP, and proposed methods for assigning landings and survey biomass to the NSP or southern subpopulation (SSP) of Pacific sardine, given the working hypothesis of two subpopulations of Pacific sardine off the west coast of North America. The SSC also discussed the [report of the SSC's Coastal Pelagic Species \(CPS\) Subcommittee \(CPSSC\)](#) related to how to estimate CPS biomass from the 2022 summer acoustic trawl survey.

Pacific sardine stock structure workshop

The SSC agreed with the definitions of the NSP and SSP for management purposes given the working hypothesis of two subpopulations. The workshop report includes a figure showing the typical seasonal distributions of the NSP given the current working hypothesis. The SSC endorsed the CPSSC long-term request that other stock structure archetypes be presented and considered in further work. The SSC is willing to work with the SWFSC to develop the details of these archetypes.

Revised methods for separating northern subpopulation of Pacific sardine

The catches of sardine off Ensenada, Mexico attributed during the last assessment to the NSP are large relative to the estimates of biomass for the NSP and were a part of the justification for the value of sigma used to calculate the acceptable biological catch (ABC) for the NSP in 2022. The CPSSC reviewed an updated habitat model to optimize sampling of NSP sardine and to allocate catches and survey biomass between the NSP and SSP. The modeling approach has not changed but is now based on a wider environmental footprint, especially at the transition sea surface temperature between the two subpopulations. The value of the threshold used when applying the model was selected so that the large 2021 and 2022 catches off Ensenada are assigned to the SSP rather than the NSP. Overall, the SSC agrees that the revised approach is reasonable and an improvement to the earlier model, and endorses use of the updated habitat model to apportion sardine catch and biomass estimates between subpopulations for use in assessments. The 2024 assessment should explore the sensitivity to the threshold value used to separate NSP and SSP catch and biomass.

The SSC notes that the stock structure assumption of the NSP and SSP is a working hypothesis, with supporting evidence. The algorithm for allocating catches and biomass to the NSP and SSP should be revisited as more information is gained or if there are large changes to the abundances of the two subpopulations.