

Chairman's Report of the Twenty-Ninth Meeting of the Extended Scientific Committee

This is a short report to describe and summarise the key activities and advice from the Twenty-Ninth Meeting of the Extended Scientific Committee (ESC29) of the Commission for the Conservation of Southern Bluefin Tuna (CCSBT). The full report of ESC29 is at CCSBT-EC/2410/Rep02.

Stock Status and Management advice

The most recent stock assessment of Southern Bluefin Tuna (SBT) was carried out in 2023. There was no update to the assessment in 2024. Since 2017, the ESC has reported stock status based on a measure of total reproductive output or TRO. TRO is similar in concept to the commonly used measure of spawning stock biomass (SSB) but assumes a greater level of reproductive success for older fish. The ESC also reports B10+, which is the biomass of all fish aged ten years or older. Again, for SBT this is a measure similar to SSB. The last full stock assessment conducted in 2023 indicated that the TRO was 23 % the initial TRO and that the stock had grown steadily from its low point in 2009 of 10% TRO. B10+ was estimated at 22% of its initial value. TRO is estimated to be 0.85 of the TRO associated with producing MSY and the fishing mortality rate is estimated to be at 0.46 of that associated with catching MSY (F/FMSY).

Overall, the picture is of a stock that is recovering steadily towards the CCSBT target of 30%TRO by 2035, with fishing mortality rate at an appropriate level. The stock is expected to continue increasing under current management arrangements.

In 2019, the ESC recommended, and the Extended Commission (EC) adopted, a new management procedure as the basis for TAC setting. That procedure was developed to meet agreed strategic sustainability objectives set by the EC and will be reviewed in 2027. The procedure is known as the Cape Town Procedure (CTP). The CTP uses gene-tagging estimates of two-year-old fish, Close Kin Mark-Recapture (CKMR) estimates of adult spawning population, and Japanese Longline catch per unit effort (CPUE) estimates as inputs when calculating future Total Allowable Catch (TAC). In 2022, ESC27 ran the CTP to calculate a recommended TAC for the period 2024 to 2026. The calculation included use of a revised CPUE series. Further work on that CPUE series was conducted during 2023 and 2024 and is ongoing. This year, ESC29 followed the meta rules process agreed in 2020 to check if there is any scientific or technical reason to recommend any adjustment to the recommended TAC. None was noted and the ESC therefore confirms its recommendation that the global TAC for the years 2024 to 2026 should be 20,647 tonnes.

Stock assessment and Management Procedure software development

In 2022, the EC provided funding for a project to update the stock assessment model software to make it more efficient and easily adaptable to future needs. The software has not been updated for many years and has been developed incrementally by various users. There is a need to service it and make it suitable for future users to implement changes that might be required as the stock develops or advisory needs change.

In 2023 and 2024, development has gone well with excellent progress made in dedicated meetings held in Tokyo in November 2023 and Seattle in June 2024. The project will be advanced further in June 2025 during the scheduled Operating Model and Management Procedures (OMMP) WG which will also be implementing the CTP to provide advice on the annual TAC for the years 2027-2029.

The new software should be ready, and members trained in its use, prior to the 2026 stock assessment and scheduled review of the Management Procedure in 2027.

Progress on CPUE modelling and implications

Southern bluefin tuna CPUE data need to be statistically analysed to develop indices that relate to stock abundance. These CPUE indices may then be used alongside other datasets which are used to inform stock assessments as well as the management procedure. A key CPUE dataset for SBT assessment and the CTP is from Japanese longline fleets. In 2020, following extensive analysis, it was realised that one unusually high index point was caused by the way the statistical models treat missing cells of data, where a cell is a point in time and space. As fishing has changed over time, there has been an increasing number of missing cells and the importance of the way this is modeled has grown.

In essence, as fishing has contracted to fewer places and time periods, the statistical methods have had to interpolate for cells with no data from fewer and fewer cells with data, and with increasingly large gaps.

During 2021 and 2022, extensive inter-sessional work was carried out on understanding the problem and developing new statistical modelling approaches to deal with it. The collaborative work focused on improved methods of interpolating. That work continued through 2023 and 2024 and has led to a more detailed understanding of the problem and statistical approaches. Further work to improve interpolation, including the use of other fleet data, is ongoing with data from Australia, New Zealand and Korea being added to the Japanese LL data set. The work is scheduled to finish in December 2024 and will focus on integrating these data into the wider interpolation. Taiwanese data were also considered for inclusion but were not included at this time because the catches are of smaller fish and targeting is more diverse. An updated CPUE analysis will be available for consideration at ESC30, with updated CPUE then available by the next stock assessment in 2026 at ESC31 and for informing the CTP.

Electronic Monitoring

Following discussion at ESC27, this item has been added to the ESC agenda as a standing item. At ESC28 it was agreed that inter-sessionally, the Secretariat would coordinate feedback from all Members using a questionnaire to assess the potential impacts of electronic monitoring (EM) on the data collection required under the existing Scientific Observer Program Standards (SOPS).

At ESC 29, Members responses were reviewed. Some Members supported removing items from the SOPS, but the ESC recommends no changes to the SOPS be made at this time. The ESC also recognised the differing views put forward by Members as to whether EM was suitable to capture the information currently required under the SOPS and determined that there are no immediate concerns in this respect. Members with operational EM programs agreed to work intersessionally to present additional information to ESC30 to demonstrate how information is being collected by EM and how this meets the requirements laid out in the SOPS. The ESC highlighted the need to harmonise EM work with other RFMOs, noting that the WCPFC has an initiative in this area.

Recommendations from the Performance Review Panel

The CCSBT Strategic Plan adopted by the Extended Commission in 2023 requires subsidiary bodies to report back on the progress of those activities and particular action items for which they have responsibility. ESC29 provided an assessment of progress against those activities for which it has responsibility using the reporting template developed by the Secretariat .

ESC28 provided reasons why the item in the Action Plan related to protecting spawning fish and improving recruitment was not relevant or needed and agreed that Members should provide input for a fuller discussion at ESC29. ESC29 did draw attention to the potential impacts of climate change and recommends that the EC consider updating the Strategic Plan to include actions relating to climate change. This would be in line with Recommendation PR2021-06 from the Report of the Independent Performance Review.

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The Terms of Reference of the ERSWG include that the ESC may provide comments to the Extended Commission (EC) on the ERSWG report. The ERSWG report was included in papers for ESC29, but no other papers were received on specific issues for consideration by ESC29. During ESC29, some further information was provided on the Spatially Explicit Fisheries Assessment (SEFRA) for Seabirds, but no detailed discussion took place.

At ESC29, it was suggested that the ERSWG and the ESC should make efforts to align their activities.

Scientific Research Plan

A process was adopted at ESC 26 for considering research proposals and prioritising scientific and technical projects. No new proposals were made at ESC29.

No proposals to update Unaccounted Mortality estimates were received. The ESC recognizes the importance of reliable estimation methods and encouraged proposals to ESC30 to ensure the best possible estimates be available for the stock assessment in 2026 (ESC31).

ESC28 identified as essential a new proposal for a bridging project to support continuation of the SBT spawning ground monitoring and sampling program in Indonesia. That program is progressing well and meeting objectives and is due to be finalised during 2024. Ongoing work on CPUE and software development funded by the EC as part of the SRP is described above in separate items.

ESC28 also identified as essential, the ongoing gene-tagging (GT) and Close Kin Mark recapture (CKMR)-related projects. These are essential inputs to the stock assessment and to the CTP which is due to be implemented in 2025. At ESC29, proposals were considered for continuation of these programs through 2025-2027.

The ESC workplan and budget (below) includes continued, annual work on GT and CKMR projects. This is fully in line with the ESC supporting the EC to make decisions based on sound science, with stock assessments and the CTP based on high quality and up to date data.

The ESC does, however, recognise that the CCSBT is under financial constraints and that the science budget is a major part of the overall budget. With that in mind, ESC29 discussed at length the implications of missing GT or CKMR data or of reduced precision targets in the programs. The ESC was reminded that when the CTP was recommended to the EC, advice was included about how the CTP would cope with missing data. At that time, of course, the robustness of the CTP to missing data was in anticipation of events such as Covid-19 which did lead to missing and delayed GT and CKMR data.

ESC29 discussions considered technical matters related to missing or reduced data but also logistic and other operational program issues between suppliers and contractors. On the technical side, how GT and CKMR affect the stock assessment and CTP depends on the state of the stock and other matters. Missing years or reducing sampling for GT and CKMR are also quite different operationally and in terms of data flows to the assessment and management processes. ESC29 emphasised the

need for analyses to determine the impact of potential GT and CKMR program changes. These could be conducted by ESC30 using the operating model (OM) used to test the CTP as updated following the 2023 stock assessment. However, clear guidance is needed from the EC on modifications, if any, to the agreed sustainability objectives. If the current objective (achieving a 50% probability of 30%TRO by 2035) is maintained, then any decrease in GT or CKMR frequency or precision could lead to a reduction in the average TACs and increasing variability in TAC when retuning the MP.

Budgetary implications

The budgetary implications of the ESC's three-year workplan has been included in paper CCSBT-EC/2410/06 on the Draft 2025 and Indicative 2026-2027 Budgets.