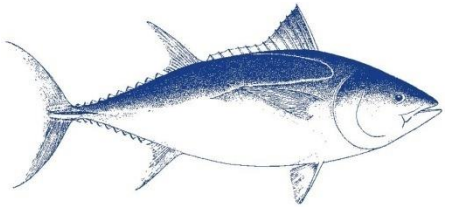
CCSBT-EC/2210/23
(EC Agenda item 6)

REPORT OF THE 27th MEETING OF THE EXTENDED SCIENTIFIC COMMITTEE

Video Conference, 29 August – 5 September 2023



All Main Headings

- Review of SBT fisheries and fisheries indicators
- Progress on cpue modelling for use in stock assessments and TAC
- Meta Rules, Exceptional Circumstances, & TAC
- SBT stock status and management advice
- Results of Scientific Research Program
- Update of Scientific Research Program
- Consideration of Performance Review recommendations
- Communication between the ESC and EC
- Other issues – Draft changes to the SOPS to allow use of EMS
- Proposed Workplan and budget

Review of SBT Fisheries and Fisheries Indicators

Indicators 1

- A summary of all recent indicator values and trends is included as Attachment 6 of the ESC report
- A summary of each index and overall conclusions is at section 9 of the ESC Report
- The ESC considered:
  - Juvenile indices in the GAB (Gene Tagging and Troll survey)
  - LL CPUE for the JP, TW and KR fleets, including detailed examination of the JP CPUE

Summary of indicators 2020

- No major change in conclusions from recent years
- the longer-term trends in the indicators are consistent with the most recent stock assessment that indicated a resource that is expected to continue increasing

Progress on cpue modelling

The need to revise cpue models

- The Japanese LL cpue standardised index is used in the Operating Model (OM) for stock assessment and as an input to the CTP
- In 2019, the 2018 estimate of cpue was very high and triggered a Process for Action under the Meta Rules Process adopted as part of the CTP
- Work started in 2020 and new statistical methods have been thoroughly investigated and agreed for use in 2022 (TAC calculation) and 2023 (stock assessment)

The problem - a reminder

- As fishing operations have contracted, the data from which the index is estimated have become increasingly patchy and the statistical approach used has struggled to make estimates

The solution

- The solution to the problem is to use alternative statistical approaches that are better able to predict cpue across areas for which there are no data
- An approach using General Additive Models (GAM) has been developed collaboratively with involvement of Members, the Advisory Panel and a consultant – excellent collaboration
- OMMP 2022 reconditioned the Operating Model and checked the performance of the CTP using the new CPUE series. OMMP recommended and ESC agreed to adopt the new CPUE and that the CTP did not need to be modified (under meta rules section)

Meta Rules, Exceptional Circumstances Testing , & TAC

Exceptional Circumstances Testing 1

- In 2020 the CCSBT adopted the meta-rule process for the CTP as the method for dealing with exceptional circumstances in the SBT fishery
- The meta-rule process describes:
  - The process to determine whether exceptional circumstances exist
  - The process for action
  - The principles for action

Exceptional Circumstances Testing 2

- Considerations in 2022 included:

➢ Gene tagging and close-kin data: no issues were identified and ESC reiterated that the missing 2020 GT estimate does not impact use of the CTP

➢ UAM: No updated estimates but ESC noted an “uptick” in SBT-related effort in WPCFC and IOTC regions in 2020 which will need to be considered when estimating UAM for the 2023 stock assessment

➢ Population Dynamics: No updates

Exceptional Circumstances Testing 3

- CPUE: The newly developed GAM for Japanese 4+ CPUE was thoroughly tested by the OMMP
- The new GAM estimates are within the CPUE values projected in 2019 when the CTP was adopted

Exceptional Circumstances Testing 3

Overall assessment of Exceptional Circumstances

- The ESC concluded that there was no reason to take action to modify the **2021-2023** TAC recommendations in relation to possible Exceptional Circumstances
- Further, the ESC concluded that there was no reason to take action to modify the **2024-2026** TAC recommendations in relation to possible Exceptional Circumstances

Exceptional Circumstances Testing 4
Catch Monitoring in Benoa, Indonesia

- ESC 27 noted concerns with the potential to trigger Exceptional Circumstances in the future. It encouraged continued efforts to resolve these issues:
  - Previously identified uncertainty as to the location of catches as well as operational changes in fishing warrant investigation
  - Previously identified differences between the CDS and catch sampling programs have implications for the length and age compositions used in the stock assessment
  - Interruptions to otolith and tissue sampling may impact the close kin data used in CKMR analyses which are critical in the stock assessment and CTP

SBT Stock Status and Management Advice

Stock status 1

- There is no new stock assessment in 2022, the next assessment will be in 2023
- Stock status estimates are available from a stock assessment completed in 2020
  - The stock was estimated in 2020 to be 20% of the initial TRO, and below the level estimated to produce maximum sustainable yield (MSY)
  - Fishing mortality was about half that associated with MSY
  - There has been steady rebuilding of the stock since 2009, when the stock was estimated to have been at 10% of the initial TRO

Management Recommendations 1

Recommendations for 2021-2023

- The Cape Town Procedure adopted in 2019 was run in 2020 to recommend TACs for 2021-2023
- The EC-adopted TAC for 2021-2023 is 17,647 t
- ESC 27 concluded there is no reason to modify the 2021-2023 TAC recommendation on the basis of Exceptional Circumstances
- ESC 25 noted in 2020 that the recommended TAC already accounts for the latest non-member UAM estimates and no deduction is therefore required
- ESC 27 recommends that an allocation of 6.0 t in 2023 be made to cover mortality associated with agreed research projects

Management Recommendations 2

Recommendations for 2024-2026

- The Cape Town Procedure adopted in 2019 was run in 2022 to recommend TACs for 2024-2026
- The ECS 27 recommended TAC for 2024-2026 is 20,647 t
- ESC 27 concluded there is no reason to modify the 2024-2026 TAC recommendation on the basis of Exceptional Circumstances
- The ESC 25 noted in 2020 that the recommended TAC already accounts for the latest non-member UAM estimates and no deduction is therefore required

Management Recommendations 3

Recommendations for 2027-2029

- In response to discussions in EC 28 on communication between the EC and ESC, ESC 27 has provided indicative advice on the potential TAC for 2027-2029
- The advice will be revised when a new stock assessment is carried out in 2023 and as new data become available
- In projections conducted at OMMPP for evaluating CTP performance with the new CPUE series:
  - the probability of the 2027-2029 TAC decreasing below 20,457.6 t was very small
  - the probability of remaining at this level, or increasing by 100-399 t is about 40%
  - the probability of the TAC increasing by 400-2,999 t is about 40%, with a more or less even probability for each 100 t TAC increment within this range
  - the probability of the TAC increasing by the maximum amount of 3,000 t is about 20%.

Scientific Research Program

Scientific Research Program

- As last year, there is no specific update this year:
  - All CCSBT-funded activities (gene tagging, close-kin mark recapture, aging of Indonesian otoliths) continue to provide inputs to the stock assessment and TAC calculation in the CTP
  - Member-funded surveys and analyses of catch per unit effort data are all providing useful indicators and/or data used in the stock assessment
  - Collaborative approaches to CPUE and UAM estimation have provided improved estimates for use in stock assessment and have led to specific items in the Workplan

Update of Scientific Research Program

Updating the Scientific Research Program 1

- Updating of the SRP has been delayed due to new MP development, stock assessments and Covid-19 restrictions.
- ESC 26 made good progress, identifying key areas in addition to essential data collection programs to support stock assessment and the CTP: development of new cpue index, UAM effort updating, and an E-tagging design project.
- The EC funded all projects except that on E-tagging

- **<u>At ESC 26, both projects for 2022 and a process for improving planning from 2023 onwards were considered</u>**

Updating the Scientific Research Program 2

- For 2023 onwards, ESC 26 agreed a process for improved planning and prioritisation
- The process includes use of a standardised template for all research proposals that justifies projects in terms of how they will address issues that impact on the SA and CTP, feasibility, and cost
- The template was finalised inter-sessionally and all Members supplied proposals in good time for inter-sessional consideration and analysis during ESC 27
- This has allowed the ESC to prioritise and rank research and hence provide robust and justified advice to the FAC and EC

Updating the Scientific Research Program 3

- ESC 27 finalised a Scientific Research Program (SRP) – Attachment 8 of ESC 27 Report
- The SRP identifies categories of work and follows the process to prioritise and rank research proposals
- It does not include ongoing CCSBT-funded research in the ranking, but it does include relevant proposals which do not seek CCSBT funding because ESC endorsement might impact other funding applications
- Following the new process, the ESC supported nine proposals which it ranked in order of priority (next slide) for potential FAC and EC consideration (see workplan and budget)
- The ESC noted that new SRP proposals should be discussed and evaluated each year at the ESC

Updating the Scientific Research Program 4

Priority	Proposal Title
1	Operating model recoding and improvements
1	Simple update of NCNM UAM estimates
2	Improving the robustness of SBT CPUE indices to changes in spatio-temporal concentration of fishing fleets
3	Trolling survey
3	Advancement of the trolling survey
4	Pop-up Satellite tagging in the Great Australian Bight
5	Develop methods for estimating UAM
5	Second workshop on otolith-based ageing of SBT
6	Age-0 distribution survey

Indicates not seeking CCSBT funding

Consideration of Performance Review recommendations

Consideration of Performance Review recommendations 1

- ESC 27 was asked to provide guidance on the recommendations made by the Performance Review
- No papers were submitted by Members on the topic
- The Secretariat circulated a paper and table seeking simple Member rankings against criteria and comments on each recommendation
- Few comments were received
- The ESC followed the approach taken by the ERSWG and sorted the recommendations based on Member responses

Consideration of Performance Review recommendations 2

- The ESC fond the approach useful but noted a high degree of variability amongst Members on a range of criteria
- A revised sorting approach was applied to the pre-meeting input from Members which identified some clear priorities from all Members – Attachment 10 of ESC 27 report
- There was discomfort with the process as there was little or no justification for ranking from members and many Members saw high priority in recommendations that did not rank highly
- In addition, it was noted that all recommendations had merit and that ranking could mask important recommendations

Consideration of Performance Review recommendations 3

- Priorities identified using the sorting approach were:
  - ➢ Ongoing activities (gene tagging, CKMR, and otolith ageing), consistent with the PR recommendations
  - ➢ Capacity building though the ESC saw responsibility as primarily lying with the EC and Members. The ESC, however, is in a strong position to participate practically.
  - ➢ Forecasting the impacts of climate change on SBT and other fisheries. The ESC did not discuss how it could be involved in collaborative programs
- Other recommendations considered high priority by some Members included the development of EMS and cross tuna RFMO coordination

Improving Communication between the ESC and EC

Improving Communication between the ESC and EC 1

- In 2021, ESC 26 considered:
  - What can the ESC do to assist all Members to communicate with their Commissioners?
  - What can the ESC do to assist communication between the ESC and EC, and possibly more widely?
  - What results should be presented to improve clarity of communication on the range of future TACs

Improving Communication between the ESC and EC 2

- In 2021, ESC 26 made suggestions for improving communication, including:
  - Producing factsheets on key issues and non-technical summaries of key issues for the CCSBT website
  - Providing plain language summary paragraphs throughout the ESC report which might be collated into a non-technical summary
  - Production of a simple Chair's Report to cover main issues
  - Enhanced use of informal meetings between the Advisory Panel and Members' scientists during the ESC meetings
  - Offering in-country seminars/webinars with the Panel and/or ESC Chair after the ESC
  - Establishing regular ESC-EC dialogue/briefing sessions before and/or after the ESC

Improving Communication between the ESC and EC 3

- ESC 26 sought feedback from EC 28 on:
  - Preferred means to improve communication generally
  - What forms of advice on potential future catches are preferred
- At EC 28, para 58: *It was agreed that Members would provide suggestions on how the ESC can improve communication with the EC intersessionally. The Secretariat will compile responses for the next ESC meeting*
  - No feedback was received from members

Improving Communication between the ESC and EC 4

- Given no feedback from members, ESC 27 noted what progress had been made against the suggestions from ESC 26:
  - The CCSBT website has been updated to include links to a non-technical summary of the MP
  - The ESC Chair produced a non-technical summary of his report on outcomes from ESC 26 and ESC 27
  - Preliminary advice on potential future TACs (2027-2029) has been provided

Improving Communication between the ESC and EC 5

- ESC 27 agreed that for many purposes, in-person dialogue was often more effective, and has fewer associated costs, than providing more documentation to Commissioners. The ESC will discuss any feedback that it receives from the EC or Members at its next meeting.

Other Matters – Draft changes to the SOPS to allow EMS

Draft changes to the SOPS to allow use of EMS 1

- New Zealand (NZ) submitted a paper seeking guidance from the ESC on a draft proposal to amend the Scientific Observer Program Standards (SOPS) to allow the use of EMS
- The ESC recommended some changes to the draft. These clarified the need for equivalence of EMS and human observers and that the SOPS should include the potential for the use of human observers, EMS, or a combination of human and EMS
- The ESC noted that Members already using EMS needed recognition of its use as an alternative to human observers and that more work was needed on calculating coverage using EMS

Draft changes to the SOPS to allow use of EMS 2

- In addition to recommending changes to the draft, the ESC agreed that EMS activities should be reported to the ESC in National reports, including details on:
  - How EMS has been implemented, especially in the CCSBT SOP
  - How coverage has been calculated
  - What information previously collected by humas has been collected using EMS
  - What information cannot be collected by EMS
- The ESC agreed that papers on technical EMS issues should be submitted to the ESC and recommended an EMS agenda item to added to future meetings

Proposed 2022 Work Schedule

ESC Workplan for 2023

The proposed workplan has the following key elements:

- Continuation of gene tagging project; collection and processing of close-kin samples; and aging of Indonesian otoliths
- Update UAM estimates for stock assessment in 2023
- Recondition the Operating Model and carry out a stock assessment in 2023
- Recode the Operating Model to improve flexibility, utility and understanding for all participants
- Development of CPUE that uses all members' data for use in future stock assessments and management procedures

- Resource requirements are detailed in Attachment 12 of the ESC 27 Report and in Attachment A of the Secretariat's budget paper 06 to the EC

END