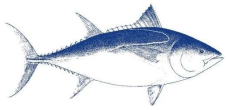
REPORT OF THE 26th MEETING OF THE EXTENDED SCIENTIFIC COMMITTEE

Video Conference, 23-31 August 2022



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Introduction

- No stock assessment or TAC calculation in 2020
- Despite meeting virtually, the ESC was therefore able to focus on agenda items 5, 11 and 12:
  - 5) Development of new cpue index
  - 11) Development of the Scientific Research Plan
  - 12) Improving communication between the ESC and EC
- A brief Chair's Report has been provided and the main report has been available since 31 August
- Here, will provide a little more detail on some key items

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Main topics

- Review of SBT fisheries and fisheries indicators
- Non-member catches
- Meta Rules, Exceptional Circumstances, & TAC
- SBT stock status and management advice
- Progress on cpue modelling
- Results of Scientific Research Plan
- Update of Scientific Research Plan
- Communication between the ESC and EC
- Other issues

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Review of SBT Fisheries and Fisheries Indicators

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Indicators 1

Juvenile indices in the GAB:

- Gene tagging indicates age 2 in 2019 has increased compared to 2017 and 2018
- 2017 trolling survey indices (age 1) show a generally decreasing trend from 2011-2021 with zero values in 2017 and 2018

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CPUE Indicators

Longline CPUE:

- LL CPUE indices for the Japanese fleet for the 4-7 and 8-11 age groups are well above the historically lowest levels in the late 1980s or mid-2000s and have fluctuated without clear trend over the last decade
- The Index for age 12+ declined gradually from 2011 but has appears to have stabilized in recent years
- Taiwanese eastern CPUE has increased from 2015 with little trend since 2016
- Korean CPUE shows an increasing trend since 2005 though is variable in recent years

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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 assessment that indicated a resource that is expected to continue increasing

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Non-member catches

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Non-member catches

- Revised non-member UAM estimates were developed in 2020 for use in the stock assessment
- The estimates are still uncertain, with multiple potential biases, and the ESC in 2021 agreed there is need for further work on estimation prior to the stock assessment in 2023
- The estimates affect the stock assessment but do not impact on use of the CTP to calculate a recommended TAC

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Meta Rules, Exceptional Circumstances Testing , & TAC

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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

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Exceptional Circumstances Testing 2

- Considerations included:
  - Gene tagging and close-kin data: no issues were identified
  - UAM: No updates
  - Population Dynamics: No updates
  - CPUE: No new issues - The ESC noted the previously identified issue of an estimate of high cpue in 2018 is following the Process for Action to develop a new standardised cpue series (more below)

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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

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SBT Stock Status and Management Advice

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Stock status 1

- There is no new stock assessment in 2021
- Stock status estimates are available from a stock assessment completed in 2020
  - ➢ The stock is estimated in 2020 to be 20% of the initial TRO, and below the level estimated to produce maximum sustainable yield (MSY)
  - ➢ Fishing mortality is about half that associated with MSY
  - ➢ There has been steady rebuilding of the stock since 2009, when the stock is estimated to have been at 10% of the initial TRO

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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
- The ESC concluded there is no reason to modify the 2021-2023 TAC recommendation on the basis of Exceptional Circumstances
- The ESC noted in 2020 that the recommended TAC already accounts for the latest non-member UAM estimates and no deduction is therefore required
- The ESC recommends that an allocation of 6.0 t in 2022 be made to cover mortality associated with approved research projects

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Progress on cpue modelling

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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 CPT
- In 2019, the 2018 estimate of cpue was very high and triggered a Process for Action under Exceptional Circumstances Testing
- Does not impact on current TAC but work in 2020 and 2021 has investigated reasons and is developing new statistical methods for use in 2022
- In 2022 will recondition the Operating Model and refine CTP if necessary, then new assessment in 2023

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The problem

- The problem in estimating an index from cpue data has been identified:
  - 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

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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:
  - The approach has been developed collaboratively with involvement of Members, the Advisory Panel and a consultant
  - The ESC is very close to final agreement on the methodology though has some inter-sessional work still planned
  - Once the method is agreed, final cpue calculations will be done by Japanese scientists

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Use of the new cpue

- The new cpue indices will then be used with other updated data to recondition the Operating Model at the OMMP meeting in June 2022
- That will allow final refinements, if any, to the CTP before it is run to calculate the TAC for 2024-2026
- It will also allow advice on potential future (2027-2029) TAC to be developed in 2022 (see section below on Communication)

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Scientific Research programme

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Scientific Research Programme

- There is no specific update this year:

➢ All CCSBT-funded activities (gene tagging, close-kin mark recapture, aging of Indonesian otoliths) are progressing well, providing inputs to the stock assessment and used for 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

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Update of Scientific Research Plan

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Updating the Scientific Research Plan 1

- Updating of the SRP has been delayed due to new MP development, stock assessments and Covid-19 restrictions.
- ESC25 made good progress, identifying key areas in addition to essential data collection programs to support stock assessment and CTP running: development of new cpue index, UAM estimation improvements, and an E-tagging design project.
- The EC funded all projects except that on E-tagging
- At ESC26, both projects for 2022 and a process for improving planning from 2023 onwards were considered

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Updating the Scientific Research Plan 2

- For 2022, the ESC prioritised projects taking account of their importance to continuing stock assessment (SA) and CTP work
- In addition to ongoing essential projects, the ESC prioritised

i. continuing cpue work for both CTP and SA purposes

ii. updating UAM estimates to allow Exceptional Circumstances testing in 2022

iii. An E-tagging design study as a basis for clear impact testing and prioritisation of any future Etagging projects

- The EC ranked these further projects in the order given above

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Updating the Scientific Research Plan 3

- For 2023 onwards, the ESC agreed a process for improved planning and prioritisation
- The process includes use of a template for all research proposals that will clearly justify projects in terms of how they will address issues that impact on the SA and CTP, feasibility, and cost
- This will allow the ESC to prioritise and rank research and hence provide robust and justified advice to the FAC and EC
- The template will be finalised inter-sessionally and all Members have been requested to supply proposals in good time for inter-sessional consideration and analysis prior to the 2022 meeting.

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Improving Communication between the ESC and EC

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Improving Communication between the ESC and EC 1

- The ESC 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.

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Improving Communication between the ESC and EC 2

- How to advise on potential future TACs:
  - Median catch trajectories included in the 2019 ESC report when advising on candidate Management Procedures (CMP) led some Members to expect a TAC increase in 2021-2023
  - The ESC considered some graphical and tabular options for advising on potential future TAC and agreed these could be developed further inter-sessionally at the OMMP Meeting
  - There is a need to be clear about the nature of what is presented and how it can be interpreted
  - For example, complex graphics are generally hard to explain and easy to misinterpret whereas words and simple tables can be much more user-friendly

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Improving Communication between the ESC and EC 3

- When advice on potential future TACs can be provided is in general limited to stock assessment years and not to years in which the next TAC is calculated
- In 2022, unusually, because the Operating Model will be conditioned to use the new cpue, advice can also be provided

Year	Stock status advice	MP TAC advice	Advice on range and likely next TAC
2022		Run the MP. TAC 2024-2026. Reconditioning with new CPUE.	Could provide advice on range and likely TAC in 2027
2023	Reconditioning OM for stock status advice		Could provide advice on range and likely TAC in 2027
2024			
2025		Run MP for TAC 2027-2029	
2026	Reconditioning OM for stock status advice		Could provide advice on likely next TAC 2030
2027		MP review? – or wait until 2030?	
2028		Run MP for TAC 2030-2032	

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Improving Communication between the ESC and EC 4

- The ESC 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 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

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Improving Communication between the ESC and EC 5

- Feedback is sought from the EC on:
  - ➢ Preferred means to improve communication generally
  - ➢ What forms of advice on potential future catches are preferred

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Proposed 2022 Work Schedule

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ESC Workplan for 2022

The proposed workplan has the following key elements:

- Continuation of: gene tagging project; collection and processing of close-kin samples; aging of Indonesian otoliths; and maturity study (analysis to be completed)
- Update UAM estimates
- Development of new CPUE for use in stock assessment and MP
- Recondition the Operating Model
- Calculate the TAC for 2024-2026 and provide advice on potential future TAC
- Undertake e-tagging design study
- Finalise the process for updating the Scientific Research Plan and agree a new SRP

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2022 Proposed Workplan

Activity	Approximate Period	Resources or approximate budgetary implications
1. Continuation of tag recovery efforts 2. Provide SBT Stock Status Report to the other tuna RFMOs 3. Update length/weight for wild SBT 4. Standard Scientific Data Exchange	Tag recovery is continuous Aug – Nov 2022 By mid June	$1,000; few tags expected No additional cost No additional cost No additional cost
Proposed SRP activities for 2021: 1. Gene tagging project 2. Continued collection and processing of close-kin samples 3. Close-kin identification and exchange 4. Continued aging of Indonesian otoliths 5. Maturity Study/analysis 6. UAM Update	Jan – Dec 2022 To be completed Jan-May 2022	 Contracted Contracted Contracted Contracted 55k ($50k funding carried over from 2020) 10 Consultant days
E-tagging design phase	Jan-Dec 2021	$80,000

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2022 Proposed Workplan (continued)

Activity	Approximate Period	Resources or approximate budgetary implications
Stock Assessment and OMMP code maintenance	Jan – Dec 2022	Panel member/Consultant: 13 days; Shiny App: 6 months
Inter-sessional CPUE development for 2022 Operating Model reconditioning and 2023 stock assessment	Jan – Jun 2022	Panel members: 2 days Consultant: 28 days 4 cpue webinars (with associated resources)
Inter-sessional OMMP Meeting. The meeting will finalise the new cpue and other inputs for reconditioning the OM; it will run the CTP to calculate the 2024-2026 TAC and advise on potential 2027 TAC	June 2022, Seattle	ESC Chair, 3 panel members, 2 consultants
ESC for the 27th meeting of the Scientific Committee. The meeting will focus on the following: Regular review of indicators; Recondition the Operating Model and run CTP to provide TAC advice for 2024-2027; Consideration on advice on future TACs (2027-2029); Evaluation of meta-rules and exceptional circumstances; Review results of SRP activities; Update the SRP	Sept 2022, New Zealand	ESC Chair, 3 panel members, 1 consultant, full interpretation and 3 Secretariat staff.

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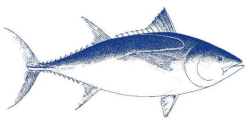

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