



Total Allowable Catch and its Allocation

PURPOSE

To provide relevant background information to support the Extended Commission's (EC) deliberations on:

1. Attributable SBT Catch;
2. TAC Determination;
3. Research Mortality Allowance for 2018; and
4. Allocation of the TAC.

(1) Attributable SBT Catch

The Attributable SBT Catch is that part of a Member's or Cooperating Non-Members' (CNM) catch that is counted against its allocation. CCSBT 21 agreed on a common definition for the Attributable SBT Catch as follows:

"A Member or CNM's attributable catch against its national allocation is the total Southern Bluefin Tuna mortality resulting from fishing activities within its jurisdiction or control¹ including, inter alia, mortality resulting from:

- *commercial fishing operations whether primarily targeting SBT or not;*
- *releases and/or discards;*
- *recreational fishing;*
- *customary and/or traditional fishing; and*
- *artisanal fishing.*"

At CCSBT 21, the EC agreed to act in good faith to implement this definition of the Attributable SBT Catch as soon as practicable but not later than the 2018 quota year. At CCSBT 24, Members provided the following summaries of their progress with regard to implementing the Attributable SBT catch and counting all sources of mortality against their allocations:

Australia	<p><i>"Its government considers an amount of 250t is appropriate to begin to account for recreational catch. The annual decision on allocation for the commercial sector is a matter for the regulator (AFMA) who have been advised of the government's position. Australia will also settle agreement with relevant states on resource sharing and management, implement a program to educate recreational fishers on SBT and fish handling practices, and commence a national survey of recreational catch in 2018."</i></p>
European Union	<p><i>"The European Union advised that it is declaring all SBT catches to the CCSBT, which in recent years have been 0t with no discards."</i></p>
Fishing Entity of Taiwan	<p><i>"Taiwan reported that it has allocated 10t for releases and discards since the 2016 fishing season. This amount was estimated using discard information from scientific observers and fishing effort by SBT vessels."</i></p>

¹ Except where a vessel is chartered to a person or entity of another Member or CNM, and if a catch is attributable to that Member or CNM.

Indonesia	<i>"Indonesia stated that its all attributable catch data is derived from artisanal fisheries (i.e. small scale fisheries with vessel under 30 GT). The data was recorded and reported in CDS document. However, it is noted that there is a delay in the process to validate the CDS data and Indonesia is taking steps to improve the accuracy of its mentioned CDS data by integrating them with logbook data, landing data at port and including to place observer in small scale fisheries to avoid unrecorded mortality due to discard and artisanal fishing activities."</i>
Japan	<i>"Japan reported that it has reserved 20t of its allocation for releases and discards since its 2016 fishing season, and will review this for the 2018 fishing season in respect of its increased allocation."</i>
New Zealand	<i>"New Zealand advised that it has accounted for all sources of mortality since 2004 under its quota management system. This is currently 20t for discards and predation, and 9t for a combination or recreational and customary catch. New Zealand noted that it may have to reconsider the recreational fishing catch allocation amount due to increased recreational fishing activity for SBT during 2017."</i>
Republic of Korea	<i>"Korea stated that it has allocated 5t of its total allocation to account for discard/release mortality to implement its SBT attributable catch, based on the best available scientific information. Since 2015 it has encouraged its fleet not to discard or release SBT."</i>
South Africa	<i>"South Africa reported that in its commercial fishery, discarding is strictly prohibited and its recreational fishery is not permitted to fish for SBT. It will set aside a portion of its allocation for attributable catch but has not yet finalised the amount."</i>

Members are expected to report on their progress with implementing the Attributable SBT Catch in their annual report to the Compliance Committee and EC. The EC will consider the progress made and provide any necessary recommendations.

(2) TAC Determination

At CCSBT 23, the EC agreed that the global TAC for 2018-2020 would be 17,647 t as recommended by the Management Procedure. Within the global TAC, Members agreed that:

- 306 t would be set aside to account for IUU catch by Non-Members; and
- 6 t would be set aside for research mortality allowance (RMA).

At CCSBT 24, the EC confirmed there were no exceptional circumstances that required the 2018 TAC to be revised, and the TAC for 2018 was confirmed to remain at 17,647t. The TAC for 2019 - 2020 was also confirmed to remain at 17,647t.

The EC needs to confirm whether there are any exceptional circumstances that should cause the TAC for 2019 to be revised. The “meta-rule” process² agreed for the Management Procedure (MP) specifies that *“The need for invoking a metarule should only be evaluated at the ESC based on information presented and reviewed at the ESC”*.

The evaluation of meta-rules by the Extended Scientific Committee (ESC) is shown at paragraphs 123 to 138 of the Report of the Twenty-Third Meeting of the Scientific Committee (SC 23). These paragraphs are reproduced at **Attachment A** for convenience.

² Whether any exceptional circumstances exist and a recommended process to follow to deal with any exceptional circumstances.

The overall conclusion of the ESC in relation to exceptional circumstances is provided in paragraph 145 of the Report of SC 23, which states that:

145. In 2018 the ESC has evaluated whether there are events, or observations, that are outside the range for which the management procedure was tested and the implications of this for TAC setting. The scope of this evaluation covered input data to the MP (CPUE and absence of the 2018 aerial survey data), the question of unaccounted mortality, reported catch and length and age of Indonesian catches on the spawning ground, the higher productivity of the stock noted in 2017, and the update to historical CPUE data in 2018. Following the meta-rule review of exceptional circumstances, the ESC concluded there was no reason to take action to modify the 2019 TAC recommendation.

In relation to confirming the TAC for 2019 and 2020, paragraph 147 of the SC 23 report states that:

147. Based on the annual review of the exceptional circumstances and fishery indicators, the ESC recommended that there is no need to revise the EC's 2016 decision regarding the TAC for 2018-20. Therefore, the recommended TAC for 2019 and the 2018-20 quota block remains 17,647t.

(3) Research Mortality Allowance

CCSBT 23 agreed that an allocation of 6 t per year would be made for Research Mortality Allowance (RMA) within the TAC for 2018 to 2020 recommended by the MP.

The following requests have been made for RMA to cover research projects in 2019:

- 3 tonnes for the CCSBT Gene Tagging Project; and
- 1 tonne by Japan for trolling surveys of juvenile SBT in Western Australia.

The ESC has endorsed the provision of RMA for these projects.

The EC should confirm whether it approves these requests for Research Mortality Allowance, totalling 4.0 t, which is within the 6 t of RMA set aside in the allocation of the TAC for 2019.

(4) Allocation of the TAC

The allocations and effective catch limits to Members and Cooperating Non-Members (CNMs) for 2018-2020 were agreed at CCSBT 23 as specified below³:

Member	(1) Adjusted Allocation	(2) Nominal Catch Proportion	(3) Effective Catch Limit
Japan	6165	0.355643	6117 ⁴
Australia	6165	0.355643	6165
New Zealand	1088	0.062779	1088
Korea	1240.5	0.071568	1240.5
Taiwan	1240.5	0.071568	1240.5
Indonesia	1002	0.057785	1023 ⁴
European Union	11	0.000628	11
South Africa	423	0.024387	450 ⁴

³ This assumes that there are no exceptional circumstances that cause the TAC to be revised.

⁴ These figures reflect the voluntary transfers of 21t that Japan is providing to Indonesia and 27t that Japan is providing to South Africa for the 2018 to 2020 quota block. The starting point for Japan, Indonesia and South Africa in considering the allocation from 2021 will be 6165t, 1002t, and 423t respectively.

At CCSBT 23, the allocation to the only Cooperating Non-Member at that time (the Philippines) was set to zero, noting the Philippines' lack of catches of SBT and that it had not been reporting to or attending meetings of the CCSBT. CCSBT 23 noted that if a later allocation is made to the Philippines, it would be sourced from Members on a pro-rata basis.

Discussion of allocation is not anticipated at CCSBT 25 unless unexpected circumstances arise (e.g. new Members, new Cooperating Non-Members, or increased estimates of unaccounted non-Member IUU catch).

Prepared by the Secretariat

Extract of Agenda Item 10.1 from the Report of SC 23***10.1. Evaluation of meta-rules and exceptional circumstances***

123. In 2011, the CCSBT adopted the meta-rule process as the method for dealing with exceptional circumstances in the SBT fishery (ESC 18). The meta-rule process describes: (1) The process to determine whether exceptional circumstances exist; (2) The process for action; and (3) The principles for action. Exceptional circumstances are events, or observations, that are outside the range for which the management procedure was tested and, therefore, indicate that application of the total allowable catch (TAC) generated by the MP may be inappropriate.
124. Australia presented CCSBT-ESC/1809/18. The annual review of the MP input series, stock and fishery indicators is intended to identify conditions and/or circumstances that may represent a substantial departure from which the MP was tested, termed “exceptional circumstances”, and where appropriate recommend the required action. The 2018 ESC review of meta-rules is to provide advice on the TAC set for 2019 which was recommended at the 2016 meeting of the ESC. The issues of potential concern in 2018 are: (1) Changes in estimates of the population dynamics and productivity of the stock identified in 2017; (2) The unresolved shift in selectivity in the Indonesian fishery since 2013; (3) Potential for total catches (Members and Non-Members) to be greater than the TAC (either annually or over the quota block), and (4) The planned absence of the aerial survey in 2018. The paper suggests that no change is required in the TAC for 2019. The meta-rules provide a safety-net around the MP TAC recommendations and will continue to be an essential component of the new MP being developed.
125. Japan presented paper CCSBT-ESC/1809/33. In this paper, values of the core vessels’ longline CPUE index (one of the series required for input to the Bali management procedure [MP]) are compared to projection results obtained from the operating model (OM). Recent observations for this index fall well within the 95% probability envelope predicted by the Base case OM in 2011. As regards the aerial survey (AS) index (the other required input to the procedure) this is not available after 2017. Therefore, to evaluate this year’s recruitment level and consider the possible occurrence of Exceptional Circumstances in the absence of the 2018 AS index, information from the estimate from the gene-tagging project in 2018, the result of the 2017 stock assessment, and the past AS index values are examined in combination. A hypothetical 2018 AS index inferred from this examination (as if the AS had been conducted in 2018) would fall within the 95% probability envelope predicted by the projections. Accordingly, in regard to a decision on implementation of the recommended TAC (calculated by the Bali MP in 2016 for the 2018-2020 fishing seasons) for the 2019 season, it is considered that no modification of the value of this TAC is required because: 1) there is no evidence to support a declaration of Exceptional Circumstances from the viewpoints of a check of the OM predictions and other potential reasons (the Indonesian small/young fish catch, the extent by which the total reported global catch exceeds the TAC (the overcatch of the TAC) and the scale of unaccounted mortality (UAM)); 2) no unexpected change has been detected in the fisheries’ indicators examined; and 3) there are no indications of any appreciable decline in the recruitment indices available in 2018.
126. The ESC noted that the revision of historical catch and effort data by Japan and impact on CPUE advised in 2018 (CCSBT-ESC/1809/24) should also be considered in the meta-rules process.

127. The ESC reviewed the following four issues in the context of the meta-rules for the TAC recommendation for 2019, noting that the first 3 were reviewed in 2017 (at ESC 22):
- Changes in population dynamics as indicated by the 2017 stock assessment;
 - The small/young fish in the Indonesian size/age data since 2013;
 - The potential impacts from unaccounted mortalities; and
 - Changes to input data to the current MP (aerial survey and CPUE).

Updated estimates of population dynamics

128. The 2017 stock assessment indicated that there were substantial differences in the rebuilding timeframe and estimates of stock productivity from the 2011 operating model results used to test and tune the current MP. The most recent years showed an improvement in stock status (relative depletion) and potential for much earlier rebuilding to the interim target (70% probability of rebuilding to 20% B_0 by 2035) than anticipated when the MP was tested. Sensitivity tests identified that recent high aerial survey results (2014 and 2016) were the most influential factors in the change in population dynamics.
129. The ESC 22 noted that with respect to the impact on the MP TAC advice, the changes to the operating model do not affect the operation of the MP and that the operating model changes are positive and lead to earlier rebuilding, even when the 2016 Aerial Survey data are excluded from sensitivity tests. The ESC 21 had noted that TAC recommended by the MP for the 2018-20 quota block was not driven by the high aerial survey index but by trend in CPUE (Anon, 2016).
130. There is no change in the advice from the ESC 22; given that the updated estimates of rebuilding probability are positive and do not impact on the operation of the current MP. The ESC concluded there was no reason to modify the 2019 TAC in relation to this exceptional circumstance.

The small/young fish in the Indonesian size/age data since 2013

131. The ESC has discussed the increase in the frequency of smaller and younger size and age classes in the spawning ground catch monitoring, since it was first noted in 2015.
132. The ESC considers that this remains a priority issue to resolve for the monitoring of the spawning stock historically and in the future, and in conditioning the OMs. The previously recommended need for action to resolve this uncertainty should be urgently pursued so that the shift may be addressed in the next reconditioning of the operating models in 2019 for management strategy evaluation of candidate MPs. Indonesia will try to provide more information on whether the small fish are caught on or off the spawning ground and, in the future, the degree to which these fish contribute to the catches monitored (length frequency, otoliths, tissue samples) in Benoa. This is, however, not an issue for the operation of the current MP because the MP does not use these data directly. Hence, the ESC concluded there was no reason to take action to modify the 2019 TAC recommendation in relation to this exception circumstance.

The potential impacts from unaccounted mortalities

133. The design and simulation testing of the current MP assumed that all removals from the stock were accounted for, i.e. the implementation of the TAC was exact. Additional unaccounted mortality by Members and Non-Members has the potential to undermine the MP-based rebuilding strategy of the Extended Commission. The ESC 22 noted that the “Added Catch” scenario developed in 2014 could not be ruled

out as a plausible scenario for consideration of unaccounted mortalities. Impacts of unaccounted mortality on rebuilding of the stock were severe in 2014, but results from sensitivity tests in 2017 using the reconditioned models for the 2017 stock assessment indicated that additional catches would impact rebuilding of the stock but the target would still be met (given the optimistic population dynamics in the 2017 reconditioning). No new information on potential levels of unaccounted mortality were provided to the 2018 ESC. The agreements at previous ESC meetings were that if these unaccounted catches are occurring they would trigger exceptional circumstances. The 2018 ESC reaffirmed the 2017 ESC agreement that the scenario was still considered plausible (Anon, 2017). The ESC concluded there was no reason to take action to modify the 2019 TAC recommendation in relation to this potential exceptional circumstance.

134. The ESC noted the actions by the EC to address unaccounted mortality, through the definition of attributable catches. In addition, the Extended Commission has set a reduction of 306t in the annual TAC available for allocation to Members for the 2018-2020 TAC block. This ‘direct approach’ aims to mitigate impact of unaccounted fishing mortality on performance of the MP while a new MP is being developed that will be more robust to these uncertainties. The ESC has agreed that unaccounted mortality estimates will be included in the base set of operating models used for testing and tuning candidate MPs. This mechanism is intended to ensure that the new MP will be robust to uncertainty in total mortality and, therefore, avoid the triggering of exceptional circumstances from this uncertainty in the future.

Changes to input data in the current MP (aerial survey and CPUE)

135. The aerial survey was discontinued after completion of the final survey in 2017. This was a planned cessation, agreed by the Extended Commission in 2016. Members recognised the risks involved in foregoing future aerial survey results (Anon, 2016), and that this cessation would mean that a new recruitment monitoring program and management procedure would need to be developed.
136. In the context of the 2019 recommended TAC and exceptional circumstance advice, the absence of the aerial survey index in 2018 means that there is no information on whether the aerial survey index would have been inside or outside the bounds of the trajectories from the operating models used when testing and tuning the MP adopted in 2011. The ESC examined the potential impact of this exceptional circumstance on the rebuilding plan, and whether there will be replacement recruitment data in the near future from the gene-tagging recruitment monitoring program. The key points on recent recruitment are: (1) The recent 3 points in the aerial survey index (2014, 2016-17) are substantially higher than the long term average of the series; (2) There has been an increasing trend in stock assessment recruitment estimates since 2002, and a hypothetical 2018 AS index inferred from this would have been within the bounds tested in 2011; (3) The gene-tagging program has been established and the pilot project has delivered an estimate of abundance; and (4) The first abundance estimate from the pilot gene-tagging program is similar to recruitment estimates in the 2017 stock assessment. These 4 positive outcomes suggest that no action is needed on the recommended 2019 TAC in light of the absence of the 2018 aerial survey data.
137. An update of historical Japanese longline catch and effort data were reported to the ESC (CCSBT-ESC/1809/24). This change to MP input data has also been reviewed through the meta-rules process. It was reported that the data change had very little impact on the CPUE series used in the MP, and therefore no modification of TAC 2019 is recommended.

Summary

138. In summary, the ESC concluded there was no reason to take action to modify the 2019 TAC recommendation in relation to its review of exceptional circumstances.