

## PROGRESS MADE ON THE RECOMMENDATIONS AND REQUESTS OF WPB21 AND SC26

PREPARED BY: IOTC SECRETARIAT AND CHAIR  
LAST UPDATED: 3<sup>RD</sup> AUGUST 2024

### PURPOSE

To provide participants at the 22<sup>nd</sup> WPB with an update on the progress made in implementing those recommendations from the previous Working Party on Billfish (WPB) meeting which were endorsed by the Scientific Committee (SC), and to provide alternative recommendations for the consideration and potential endorsement by participants as appropriate given any progress.

### BACKGROUND

At the 21<sup>st</sup> Session of the WPB, participants agreed on a series of actions to be taken by participants, CPCs, and the IOTC Secretariat on a range of issues. The subsequent table developed and agreed to by the WPB was provided to the SC for its endorsement at its December 2022 meeting.

### DISCUSSION

The Rules of Procedure of the Scientific Committee include the following seven core tasks, which are to be supported by the various Working Parties.

- a) recommend policies and procedures for the collection, processing, dissemination and analysis of fishery data;
- b) facilitate the exchange and critical review among scientists of information on research and operation of fisheries of relevance to the Commission;
- c) develop and coordinate cooperative research programmes involving Members of the Commission in support of fisheries management;
- d) assess and report to the Commission on the status of stocks of relevance to the Commission and the likely effects of further fishing and of different fishing patterns and intensities;
- e) formulate and report to the sub-commission, as appropriate, on recommendations concerning conservation, fisheries management and research, including consensus, majority and minority views;
- f) consider any matter referred to by the Commission;
- g) carry out other technical activities of relevance to the Commission.

Recalling that the SC, at its 16<sup>th</sup> Session adopted a set of reporting terminology SC16.07 (para. 23), which was subsequently endorsed by the Commission at its 18<sup>th</sup> Session in 2014 (S18, para 10), to further improve the clarity of information sharing from, and among the science bodies, the following two term levels should be noted when interpreting the Reports and [Appendix I](#) to this paper:

**Level 1:** From a subsidiary body of the Commission to the next level in the structure of the Commission:

**RECOMMENDED, RECOMMENDATION:** Any conclusion or request for an action to be undertaken, from a subsidiary body of the Commission (Committee or Working Party), which is to be formally provided to the next level in the structure of the Commission for its consideration/endorsement (e.g. from a Working Party to the Scientific Committee; from a Committee to the Commission). The intention is that the higher body will consider the recommended action for endorsement under its own mandate, if the subsidiary body does not already have the required mandate. Ideally this should be task specific and contain a timeframe for completion.

**Level 2:** From a subsidiary body of the Commission to a CPC, the IOTC Secretariat, or other body (not the Commission) to carry out a specified task:

**REQUESTED:** This term should only be used by a subsidiary body of the Commission if it does not wish to have the request formally adopted/endorsed by the next level in the structure of the Commission. For example, if a Committee wishes to seek additional input from a CPC on a particular topic, but does not wish to formalise the request beyond the mandate of the Committee, it may request that a set action be undertaken. Ideally this should be task specific and contain a timeframe for the completion.

In addition to the Recommendations endorsed by the SC at its 26<sup>th</sup> Session, the SC also made several requests which, although are not passed to the Commission for its endorsement, are considered actions which the Scientific Committee has the mandate to issue. The revised recommendations are contained in [Appendix I](#) for the consideration and potential endorsement by the WPB22.

**RECOMMENDATION**

That the WPB **NOTE** the progress made in implementing the recommendations and requests of the 21<sup>st</sup> Session of the WPB and consider whether revised recommendations need to be sent to the SC for its consideration.

**APPENDICES**

**Appendix I:** [Progress made on the Recommendations and Requests of WPB21](#)

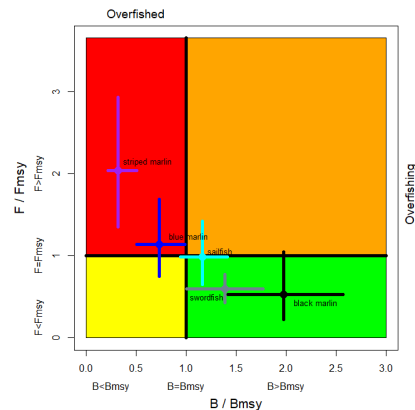
## APPENDIX I

## Progress made on the recommendations and requests of WPB21 and SC26

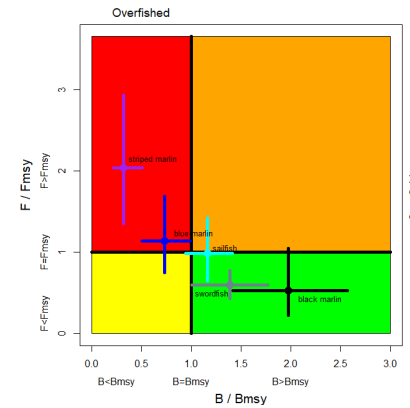
WPB21 Rec. No.	Recommendation from WPB20	SC26 Rec. No.	Recommendation adopted by the SC25	Progress/Comments
WPB21.01	<p><b><i>Review of new information on other billfishes biology, stock structure, fisheries and associated environmental data</i></b></p> <p>(para 132): Based on this presentation the WPB <b>AGREED</b> that there is evidence that the species is being caught in IOTC fisheries and that the species population size may be declining. As such the WPB reiterated its previous <b>RECOMMENDATION</b> that shortbill spearfish be included as an IOTC species.</p>	SC26.09	<p>(para. 49) The SC <b>NOTED</b> that the WPB had reviewed evidence that shortbill spearfish (<i>Tetrapturus angustirostris</i>) is being caught in IOTC fisheries and that the species population size may be declining. The SC <b>ACKNOWLEDGED</b> that the addition of shortbill spearfish in the official list of IOTC species may require a review of the IOTC Agreement, which would be a complex administrative process and unlikely to occur in the near future. The SC <b>AGREED</b> that a way to move forward may be for the Commission to adopt the same approach as for the main pelagic sharks caught in tuna and tuna-like fisheries (e.g., blue shark) and mandate the SC with collating information on this species and providing scientific advice for its management. As such the SC <b>RECOMMENDED</b> that the Commission endorse the SC's approach to address the captures of shortbill spearfish in IOTC fisheries.</p>	<p><b>Update:</b> Ongoing.</p> <p>To date no management measure has been adopted by the Commission.</p>
WPB 21.02	<p><b><i>Revision of the WPB Program of work (2024–2028)</i></b></p> <p>(para 142): The WPB <b>RECOMMENDED</b> that the SC consider and endorse the WPB Program of Work (2024–2028), as provided in Appendix IX.</p>		<p><b><i>Program of Work (2023–2027) and assessment schedule</i></b></p> <p>(para. 182) 182. The SC <b>NOTED</b> the proposed Program of Work and <b>priorities</b> for the SC and each of the working parties and <b>AGREED</b> to a consolidated Program of Work as outlined in Appendix 35a-g and in accordance with the IOTC Strategic Science Plan 2020-2024. The Chairpersons and Vice-Chairpersons of each working party will ensure that the efforts of their respective working parties are focused on the core areas contained within the appendix, taking into account any new research priorities identified by the Commission at its next Session.</p>	<p><b>Update:</b> Completed</p>

<p>WPB21.03</p> <p>WPB21.04</p>	<p><b>Date and place of the 22<sup>nd</sup> and 23<sup>rd</sup> Sessions of the Working Party on Billfish</b></p> <p>(para 149): The WPB <b>NOTED</b> that in 2022, a two-day workshop to discuss the standard of billfish maturity staging inter-sessionally prior to the WPB was requested. As the funding for this workshop was approved by the Commission in 2023, the WPB <b>RECOMMENDED</b> that this workshop should take place immediately place prior to the next session of the WPB in 2024.</p> <p>(para 151): The WPB <b>RECOMMENDED</b> the SC consider early September as a preferred time period to hold the WPB22 in 2024. As usual it was also <b>AGREED</b> that this meeting should continue to be held back-to-back with the WPEB. As the WPB are planning to hold a workshop immediately prior to the next WPB meeting, it was <b>REQUESTED</b> that the WPB once again take place before the WPEB in 2024.</p>		<p><b>Final Meeting schedule</b></p> <p>(para 190) The SC <b>REQUESTED</b> that the schedule of Working Party and Scientific Committee meetings for 2024 and 2025 provided at Appendix 37 be communicated by the IOTC SC Chairperson to the Commission for its endorsement.</p>	<p><b>Update:</b> Completed</p> <p>The meeting schedule was adopted with the meeting to be held in September, back-to-back with the WPEB.</p>
<p>WPB21.04</p>	<p><b>Review of the draft, and adoption of the Report of the 21<sup>st</sup> Session of the Working Party on Billfish</b></p> <p>(para 152): The WPB <b>RECOMMENDED</b> that the Scientific Committee consider the consolidated set of recommendations arising from WPB21, provided at Appendix X, as well as the management advice provided in the draft resource stock status summary for each of the five billfish species under the IOTC mandate, and the combined Kobe plot for the five species assigned a stock status in 2023 (Fig. 3):</p> <ul style="list-style-type: none"> <li>○ Swordfish (<i>Xiphias gladius</i>)– <a href="#">Appendix IV</a></li> <li>○ Black marlin (<i>Makaira indica</i>) – <a href="#">Appendix V</a></li> <li>○ Blue marlin (<i>Makaira nigricans</i>) – <a href="#">Appendix VI</a></li> <li>○ Striped marlin (<i>Tetrapturus audax</i>) – <a href="#">Appendix VII</a></li> </ul>	<p>SC25.03 (para. 162)</p>	<p><b>Billfish</b></p> <p>The SC <b>RECOMMENDED</b> that the Commission note the management advice developed for each billfish species under the IOTC mandate, as provided in the Executive Summary for each species, and the combined Kobe plot for the five species assigned a stock status in 2023 (Fig. 3):</p> <ul style="list-style-type: none"> <li>○ Black marlin (<i>Istiompax indica</i>) – Appendix 18</li> <li>○ Blue marlin (<i>Makaira nigricans</i>) – Appendix 19</li> <li>○ Striped marlin (<i>Kajikia audax</i>) – Appendix 20</li> <li>○ Indo-Pacific sailfish (<i>Istiophorus platypterus</i>) – Appendix 21</li> <li>○ Swordfish (<i>Xiphias gladius</i>) – Appendix 22</li> </ul>	<p><b>Update:</b> Completed</p>

- Indo-Pacific sailfish (*Istiophorus platypterus*) – [Appendix VIII](#)



**Fig. 4.** Combined Kobe plot for swordfish (grey), indo-pacific sailfish (cyan), black marlin (black), blue marlin (blue) and striped marlin (purple) showing the 2018, 2019, 2020, 2021 and 2022 estimates of current stock size (SB or B, species assessment dependent) and current fishing mortality (F) in relation to optimal spawning stock size and optimal fishing mortality. Cross bars illustrate the range of uncertainty from the model runs.



**Fig. 3.** Combined Kobe plot for swordfish (2021 with assessment conducted in 2023, grey), Indo-Pacific sailfish (2019 with assessment conducted in 2022, cyan), black marlin (2019 with assessment conducted in 2021, black), blue marlin (2020 with assessment conducted in 2022, blue) and striped marlin (2019 with assessment conducted in 2021, purple) showing the estimates of current stock size (SB or B, species assessment dependent) and current fishing mortality (F) in relation to optimal stock size and optimal fishing mortality. Cross bars illustrate the range of uncertainty from the model runs. Given unresolved uncertainty in the assessment, status for black marlin is uncertain.

WPB21 Report	WPB20 REQUESTS	Update/Progress
Para. 12	The WPB <b>REQUESTED</b> that the IOTC Secretariat continue to annually prepare a paper on the progress of the recommendations arising from the previous WPB, incorporating the final recommendations adopted by the Scientific Committee and endorsed by the Commission.	<b>Update:</b> Completed (IOTC-2024-WPB22-06).
Para. 31	Finally, the WPB <b>NOTED</b> the main billfish data issues, by type of dataset and fishery, that are considered to negatively affect the quality of the statistics available at the IOTC Secretariat and <b>REQUESTED</b> that concerned CPCs make efforts to remedy the identified data issues – with support from the IOTC Secretariat, when required – and report back to the WPB at its next meeting.	<b>Update:</b> Ongoing. Scientists to note this request

Para. 63	The authors were <b>REQUESTED</b> to compare their current index with the one presented in the previous assessment, which used a different methodology. The WPB <b>NOTED</b> that the model using the Inverse Gaussian distribution provided better results in all four areas (NW, NE, SW, SE).	<b>Update:</b> Ongoing. CPCs to provide feedback at the WPB22
Para. 82	The WPB <b>NOTED</b> that the South African index has not been updated this year so the same index from the last assessment was used. The WPB also <b>NOTED</b> that the index from the Spanish fleet, although submitted on time before the deadline for submission of papers, was made available later than other indices therefore it was not included in the assessment. The WPB requested a sensitivity analysis including the Spanish index during the meeting. The model estimated a slightly higher depletion in the SW region but the effect on the overall stock estimates was small	<b>Update:</b> Completed
Para. 88	The WPB <b>NOTED</b> that the Swordfish MSE operational model had selected a larger range (0.6-0.9) of steepness values, and requested a sensitivity run on the steepness value of 0.6. The WPB <b>NOTED</b> that although estimations of biomass are higher for low steepness values (since the stock is less productive), levels of stock depletion are very similar. The WPB further <b>NOTED</b> that the extreme insensitivity of depletion estimates to steepness values was probably caused by the fact that the depletion estimates are heavily influenced by CPUE trends, which the assessment model well fits	<b>Update:</b> Completed
Para. 94	The WPB <b>ADOPTED</b> the management advice developed for swordfish, as provided in the draft status summary, and <b>REQUESTED</b> that the IOTC Secretariat update the draft stock status summary with the latest 2020 interaction data to be provided to the SC as part of the draft Executive Summary, for its consideration: <ul style="list-style-type: none"> <li>• Swordfish (<i>Xiphias gladius</i>) – <a href="#">Appendix IV</a></li> </ul>	<b>Update:</b> Completed
Para. 96	The WPB <b>NOTED</b> that the OM was developed based on the 2020 swordfish assessment, and <b>REQUESTED</b> a verification be carried out that the OM is still appropriate considering the outcome of the assessment performed in 2023.	<b>Update:</b> Completed
Para. 97	Noting that the robustness of the data-based MP to a recruitment failure was tested by the authors on the current data-based MP, the WPB <b>REQUESTED</b>	<b>Update:</b> Completed.

	that the same robustness test was conducted on the model-based MP as well.	
Para. 98	The WPB also <b>REQUESTED</b> that a test of the robustness of the MPs to an overshoot of the TAC by 20% was conducted, to account for possible discarding practices that may start to occur in the future if the implementation of a MP leads to reductions in the TAC.	<b>Update:</b> Completed. These additional trials requested (Para. 96–98) have been investigated in the last few iterations of swordfish MSE in 2023 – 2024. The Swordfish MP was adopted at the 28 session of the Commission
Para. 107	From a general point of view, the WPB <b>ACKNOWLEDGED</b> the necessity of sharing raw morphometric data to increase sample size and identify the main factors explaining the variability in relationships and conversion factors and <b>REQUESTED</b> the Secretariat to present the progress made on developing an electronic exchange format, a biological database, and a summary of the status of all biological data available at the Secretariat at the next session of the Working Party on Data Collection and Statistics (WPDCS).	<b>Update:</b> Ongoing. The WPDCS NOTED that the Secretariat has designed a database structure and defined a draft of exchange format for biological data but that the work is behind schedule and will be a priority in 2024.
Para. 126	The WPB <b>AGREED</b> on the need to improve the sampling protocols for some specific measurements (e.g., pectoral fork length, cleithrum keel length) as the reference measuring locations require accurate description for consistency and repeatability and <b>REQUESTED</b> the Secretariat to include such protocols in the new IOTC reporting guidelines.	<b>Update:</b> Ongoing. The protocols has not been included in data reporting guidelines ( <a href="https://data.iotc.org/reference/latest/guidelines/">https://data.iotc.org/reference/latest/guidelines/</a> ). IOTC Secretariat is currently planning on a species identification workshop which will further discuss sampling protocols related to morphometrics.
Para. 127	The WPB <b>REQUESTED</b> that the R Shiny application developed by IFREMER and exploiting the authors' tagging data be shared with the Secretariat for further discussions and development.	<b>Update:</b> Ongoing. CPCs to provide feedback at the WPB22
Para. 141	The WPB <b>NOTED</b> that several Working Parties had identified CPUE standardisation as a priority and therefore <b>REQUESTED</b> that the WPM consider facilitating a cross-cutting CPUE standardisation workshop.	<b>Update:</b> Ongoing. the WPM in 2023 made a recommendation to have a cross-cutting workshop on the CPUE standardisation of billfish in response to this request. The Secretariat has subsequently liaised with concerned CPCs to enquire about the feasibility of such a workshop. There has been some but limited interest to have a such a workshop so far.