

OUTCOMES OF THE 22nd SESSION OF THE SCIENTIFIC COMMITTEE

PREPARED BY: IOTC SECRETARIAT, 03 AUGUST 2020

PURPOSE

To inform participants at the 18th Working Party on Billfish (WPB18) of the recommendations arising from the 22nd Session of the IOTC Scientific Committee (SC) held from 2– 6 December 2019, specifically relating to the work of the WPB.

BACKGROUND

At the 22nd Session of the SC, the SC noted and considered the recommendations made by the WPB in 2019 that included requests to address the deficiencies in data collection, monitoring and reporting by CPCs, as well as to carry out targeted research and analysis on billfish species.

Billfish caught in the IOTC area of competence

IOTC code	English name	Scientific name
BLM	Black marlin	<i>Makaira indica</i>
BUM	Blue marlin	<i>Makaira nigricans</i>
MLS	Striped marlin	<i>Tetrapturus audax</i>
SFA	Indo-Pacific sailfish	<i>Istiophorus platypterus</i>
SWO	Swordfish	<i>Xiphias gladius</i>

Based on the recommendations arising from the WPB17, the SC22 adopted a set of recommendations, provided at [Appendix A](#) of this paper. The recommendations contained in [Appendix A](#) will be provided to the Commission for consideration at its 24th Session to be held in November 2020.

In addition, the SC22 reviewed and endorsed a Program of Work (2020–24) for the WPB, including a revised stock assessment schedule, as detailed in [Appendix B](#). A separate paper (IOTC–2020–WPB18–08) will outline the review and development process for a Program of Work for the WPB for the next five years (2021–25).

DISCUSSION

In addition to the recommendations outlined in [Appendix A](#), [Appendix B](#) and the SC made several other comments relevant to the WPB, which participants are asked to consider:

Report of the 17th Session of the Working Party on Billfish

41. The SC **NOTED** the report of the 17th Session of the Working Party on Billfish (IOTC–2019–WPB17–R), including the consolidated list of recommendations provided as an appendix to the report. The meeting was attended by 25 participants (cf. 20 in 2018) including 9 recipients of the MPF (cf. 5 in 2018).
42. The SC reiterated its previous **RECOMMENDATION** that on the next revision of the IOTC Agreement, that short bill spearfish (*Tetrapturus angustirostris*) be included as an IOTC species.

Indo Pacific Sailfish stock assessment

43. The SC **NOTED** the data poor stock assessment techniques indicated that F was above F_{MSY} ($F/F_{MSY}=1.22$) and B above B_{MSY} ($B/B_{MSY}=1.14$). Another alternative model using the Stock Reduction Analysis (SRA) techniques produced similar results. The stock appears to show a continued increase in catches which is a cause of concern indicating that fishing mortality levels may be becoming too high
44. The SC **NOTED** that both assessment models rely on catch data; however, the catch series is highly uncertain. In addition, aspects of the biology, productivity and fisheries for this species combined with the data poor status on which to base a more formal assessment are also a cause for concern.

Blue marlin stock assessment

45. The SC **NOTED** that stock status based on the Bayesian State-Space Surplus Production model JABBA suggests that there is an 87% probability that the Indian Ocean blue marlin stock in 2017 is in the red zone of the Kobe plot, indicating the stock is overfished and subject to overfishing (B2017/BMSY=0.82 and F2017/FMSY=1.47). The SC further **NOTED** that the current catches of blue marlin (average of 11,761 t in the last 5 years, 2013-2017) are higher than MSY (9,984 t).

Revision of catch levels of Marlins under Resolution 18/05

46. The SC **RECALLED** that Resolution 18/05 *On management measures for the conservation of billfish, striped marlin, black marlin, blue marlin and Indo-Pacific sailfish* encourages CPCs to “...ensure that the overall catches, of the Indian Ocean Striped Marlin, Black Marlin, Blue Marlin and Indo Pacific Sailfish in any given year do not exceed either the MSY level or, in its absence, the lower limit of the MSY range of central values as estimated by the Scientific Committee...”. Moreover, Resolution 18/05 also requires the SC to “...annually review the information provided and assess the effectiveness of the fisheries management measures reported by CPCs on striped marlin, black marlin, blue marlin and Indo-Pacific sailfish and, as appropriate, provide advice to the Commission”.
47. The SC **NOTED** that catches in recent years for Black Marlin, Blue Marlin, Striped Marlin and Indo-Pacific Sailfish have all exceeded the catch limits set by Resolution 18/05, and that current catch trends for all four species show no signs of decline in line with meeting the catch limits by 2020. As such, the SC urgently reiterates its **RECOMMENDATION** that measures are agreed to reduce current catches to the limits set for all four species covered by Resolution 18/05 as per the management advice given in the Executive Summaries.

RECOMMENDATION/S

That the WPB:

- 1) **NOTE** paper IOTC–2020–WPB18-03 which outlined the main outcomes of the 22nd Session of the Scientific Committee (SC22), specifically related to the work of the WPB.
- 2) **CONSIDER** how best to progress these issues at the present meeting.

APPENDICES

[Appendix A](#): Consolidated set of recommendations of the 22nd Session of the Scientific Committee to the Commission, relevant to the Working Party on Billfish.

[Appendix B](#): Schedule of stock assessments for the WPB (2020–24).

APPENDIX A

CONSOLIDATED SET OF RECOMMENDATIONS OF THE 22nd SESSION OF THE SCIENTIFIC COMMITTEE (2– 6 December 2019) TO THE COMMISSION RELEVANT TO THE WORKING PARTY ON BILLFISH

Extract of the Report of the 22nd Session of the Scientific Committee

(IOTC–2019–SC22–R; Appendix 38, Page 200)

STATUS OF TUNA AND TUNA-LIKE RESOURCES IN THE INDIAN OCEAN AND ASSOCIATED SPECIES

Billfish

SC22.02 (para. 120) The SC **RECOMMENDED** 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 2019 (Fig. 3):

- Swordfish (*Xiphias gladius*) – [Appendix 12](#)
- Black marlin (*Makaira indica*) – [Appendix 13](#)
- Blue marlin (*Makaira nigricans*) – [Appendix 14](#)
- Striped marlin (*Tetrapturus audax*) – [Appendix 15](#)
- Indo-Pacific sailfish (*Istiophorus platypterus*) – [Appendix 16](#)

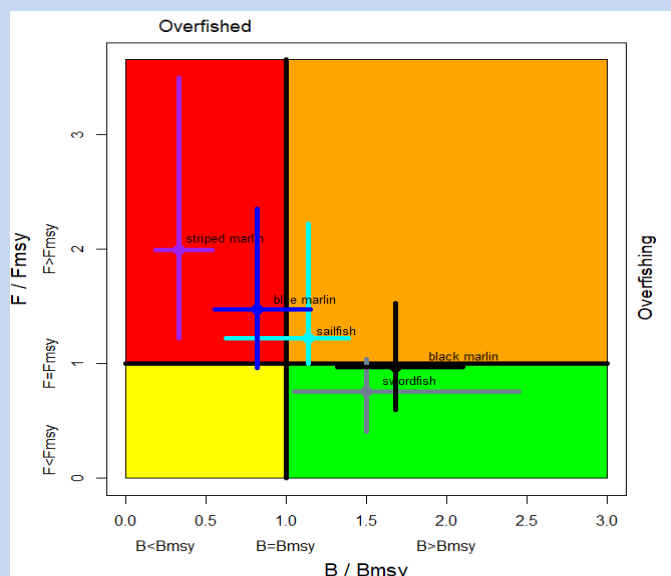


Fig. 3. Combined Kobe plot for swordfish (grey), indo-pacific sailfish (cyan), black marlin (black), blue marlin (blue) and striped marlin (purple) showing the 2017, 2018, and 2019 estimates of current stock size (SB or B, species assessment dependent) and current fishing mortality (F) in relation to optimal spawning stock size and optimal fishing mortality. Cross bars illustrate the range of uncertainty from the model runs.

GENERAL RECOMMENDATIONS TO THE COMMISSION, TO SPECIFIC CPCs AND/OR OTHER BODIES

REPORT OF THE 17TH SESSION OF THE WORKING PARTY ON BILLFISH (WPB17)

SC22.11 (para. 42) The SC reiterated its previous **RECOMMENDATION** that on the next revision of the IOTC Agreement, that short bill spearfish (*Tetrapturus angustirostris*) be included as an IOTC species

Revision of catch levels of Marlins under Resolution 18/05

SC22.12 (para. 47) The SC **NOTED** that catches in recent years for Black Marlin, Blue Marlin, Striped Marlin and Indo-Pacific Sailfish have all exceeded the catch limits set by Resolution 18/05, and that current catch trends for all four species show no signs of decline in line with meeting the catch limits by 2020. As

such, the SC urgently reiterates its **RECOMMENDATION** that measures are agreed to reduce current catches to the limits set for all four species covered by Resolution 18/05 as per the management advice given in the Executive Summaries

SUMMARY DISCUSSION OF MATTERS COMMON TO WORKING PARTIES (CAPACITY BUILDING ACTIVITIES – STOCK ASSESSMENT COURSE; CONNECTING SCIENCE AND MANAGEMENT, ETC.)

Invited Expert(s) at the WP meetings

SC22.18 (para. 104) Given the importance of external independent review for working party meetings, the SC **RECOMMENDED** the Commission continues to allocate sufficient budget for invited scientific experts to be regularly invited to scientific working party meetings.

Meeting participation fund

SC22.19 (para. 105) The SC reiterated its **RECOMMENDATION** that the IOTC Rules of Procedure (2014), for the administration of the Meeting Participation Fund be modified so that applications are due not later than 60 days, and that the full Draft paper be submitted no later than 45 days before the start of the relevant meeting. The aim is to allow the Selection Panel to review the full paper rather than just the abstract, and provide guidance on areas for improvement, as well as the suitability of the application to receive funding using the IOTC MPF. The earlier submission dates would also assist with visa application procedures for candidates.

IOTC species identification guides: Tuna and tuna-like species

SC22.20 (para. 106) The SC reiterated its **RECOMMENDATION** that the Commission allocates budget towards continuing the translation and printing of the IOTC species ID guides so that hard copies of the identification cards can continue to be printed as many CPCs scientific observers, both on board and port, still do not have smart phone technology/hardware access and need to have hard copies on board.

Chairpersons and Vice-Chairpersons of the SC and its subsidiary bodies

SC22.21 (para. 107) The SC **RECOMMENDED** that the Commission note and endorse the Chairpersons and Vice-Chairpersons for the SC and its subsidiary bodies for the coming years, as provided in [Appendix 7](#).

IMPLEMENTATION OF THE REGIONAL OBSERVER SCHEME

SC22.22 (para. 127) The SC **ACKNOWLEDGED** that estimation of ROS coverage for the purse seine fleets is adversely impacted by the lack of uniformity in reporting effort data to the IOTC Secretariat, and **AGREED** that this information, which is particularly useful to assess the performance of Resolution 11/04, should be further standardized. As such, the SC **RECOMMENDED** that all purse seine fleets reporting effort as fishing hours or fishing days begin to submit this information as ‘number of sets’ instead, in particular when fulfilling the reporting requirements of Resolution 15/02.

PROGRESS ON THE IMPLEMENTATION OF THE RECOMMENDATIONS OF THE PERFORMANCE REVIEW PANEL

SC22.23 (para. 133) The SC **RECOMMENDED** that the Commission note the updates on progress regarding Resolution 16/03, as provided at [Appendix 33](#).

PROGRAM OF WORK AND SCHEDULE OF WORKING PARTY AND SCIENTIFIC COMMITTEE MEETINGS

Consultants

SC22.24 (para. 150) Noting the highly beneficial and relevant work done by IOTC stock assessment consultants in previous years, the SC **RECOMMENDED** that the engagement of consultants be continued for each coming year based on the Program of Work. Consultants will be hired to supplement the skill set available within the IOTC Secretariat and CPCs.

REVIEW OF THE DRAFT, AND ADOPTION OF THE REPORT OF THE 22ND SESSION OF THE SCIENTIFIC COMMITTEE

SC22.25 (para. 160) The SC **RECOMMENDED** that the Commission consider the consolidated set of recommendations arising from SC22, provided at [Appendix 38](#).

APPENDIX B

ASSESSMENT SCHEDULE FOR IOTC SPECIES AND SPECIES OF INTEREST FROM 2020–2024

Extract of the Report of the 22nd Session of the Scientific Committee

(IOTC–2019–SC22–R; Appendix 36, Page 196)

The SC **ADOPTED** a revised assessment schedule, ecological risk assessment and other core projects for 2020–24, for the tuna and tuna-like species under the IOTC mandate, as well as the current list of key billfish species of interest.

<i>Working Party on Billfish</i>					
Species	2020	2021	2022	2023	2024
Black marlin		Full assessment			Full assessment
Blue marlin			Full assessment		
Striped marlin		Full assessment			Full assessment
Swordfish	Full assessment		Indicators**	Full assessment	
Indo-Pacific sailfish			Full assessment*		

* Including data poor stock assessment methods; Note: the assessment schedule may be changed depending on the annual review of fishery indicators, or SC and Commission requests.

** Including biological parameters, standardized CPUE, and other fishery trends