OUTCOMES OF THE 23rd SESSION OF THE SCIENTIFIC COMMITTEE

PREPARED BY: IOTC SECRETARIAT, 13 AUGUST 2021

PURPOSE

To inform participants at the 19th Working Party on Billfish (WPB19) of the recommendations arising from the 23rd Session of the IOTC Scientific Committee (SC) held from 7– 11 December 2020, specifically relating to the work of the WPB.

BACKGROUND

At the 23rd Session of the SC, the SC noted and considered the recommendations made by the WPB in 2020 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	*Makaira indica*
BUM	Blue marlin	*Makaira nigricans*
MLS	Striped marlin	*Tetrapturus audax*
SFA	Indo-Pacific sailfish	*Istiophorus platypterus*
SWO	Swordfish	*Xiphias gladius*

Based on the recommendations arising from the WPB18, the SC23 adopted a set of recommendations, provided at Appendix A of this paper. The recommendations contained in Appendix A were provided to the Commission for consideration at its 25th Session held in June 2021.

In addition, the SC23 reviewed and endorsed a Program of Work (2021–25) for the WPB, including a revised stock assessment schedule, as detailed in Appendix B. A separate paper (IOTC–2021–WPB19–08) will outline the review and development process for a Program of Work for the WPB for the next five years (2022–26).

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

45. The SC **NOTED** the report of the 18th Session of the Working Party on Billfish (IOTC–2020–WPB18–R), including the consolidated list of recommendations provided as an appendix to the report. The meeting was attended by 55 participants (cf. 25 in 2019). No MPF funding was provided as the meeting was held online (cf. 9 in 2019).

7.2.1 Swordfish stock assessment

46. The SC **NOTED** the need to better evaluate the influence of low-quality catch data on billfish stock assessments and to develop CPUE time series for billfish species caught in large gillnet fisheries, as recently initiated for some neritic species in collaboration with I.R. Iran.

47. The SC **NOTED** that the assessment of stock status performed for swordfish in 2020, with fisheries data up to 2018, indicates that the stock is not overfished (SB2018/SBMSY=1.75) and not subject to overfishing (F2018/FMSY=0.6).

48. The SC **NOTED** that the good status of the stock may be surprising taking into account the fact that swordfish is targeted by many longline fisheries and that the status of the other billfish species under IOTC mandate are bad or uncertain in the case of black marlin.

49. The SC **NOTED** that the Taiwanese CPUE index was excluded from the assessment due to uncertainty in the data and for consistency reasons with previous assessments.

50. The SC **NOTED** the conflicting signal trends in swordfish CPUE between areas, with an apparent major depletion in the South West and increasing trend in the North East Indian Ocean.

51. The SC **ACKNOWLEDGED** the need for more accurate information on swordfish population structure to better define the stock units (e.g. two distinct stocks vs. metapopulation with seasonal mixing) to be assessed in 2023.

52. The SC **NOTED** that the preliminary results of genomic-based approaches applied to swordfish suggest a certain level of differentiation between the Northern and Southern parts of the Indian Ocean, and ENCOURAGED the continuation of the work with complementary approaches such as microchemistry and tagging experiments.

53. The SC **ACKNOWLEDGED** the interest of reducing the catch level intervals included in the Kobe II Strategy Matrix (K2SM) (2019-2028) around the MSY (i.e. close to the current catch levels) from 20% to 10% in order to better describe and assess the changes in spawning stock biomass (SB) and fishing mortality (F) expected under different catch scenarios.

7.2.2 Revision of catch levels of Marlins under Resolution 18/05

54. 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". The SC further **NOTED** that the MSY for several of these species was updated after the Resolution came into force based on the updated stock assessments for these species.

55. The SC **NOTED** that current catches for Black Marlin and Indo-Pacific Sailfish have exceeded the MSY as well as the catch limits set by Resolution 18/05, and that current catch trends for the two 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 the two species covered by Resolution 18/05 as per the management advice given in the Executive Summaries.

56. The SC further **NOTED** the major uncertainties associated with the catches of gillnet fisheries, which target in particular black marlin and Indo-Pacific sailfish, and **RECALLED** the need for all concerned CPCs to ensure that the catch, effort and size data for these fisheries are systematically reported to the Secretariat in accordance with Resolution 15/02.

RECOMMENDATION/S

That the WPB:

1) **NOTE** paper IOTC–2021–WPB19-03 which outlined the main outcomes of the 23rd Session of the Scientific Committee (SC23), 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 23rd Session of the Scientific Committee to the Commission, relevant to the Working Party on Billfish.
Appendix B**:** Schedule of stock assessments for the WPB (2021–25).

APPENDIX A

CONSOLIDATED SET OF RECOMMENDATIONS OF THE 23rd SESSION OF THE SCIENTIFIC COMMITTEE (7– 11 December 2020) TO THE COMMISSION RELEVANT TO THE WORKING PARTY ON BILLFISH

Extract of the Report of the 23rd Session of the Scientific Committee

(IOTC–2020–SC23–R; Appendix 38, Page 207)

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

Billfish

SC23.02 (para. 133) 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 2020 (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

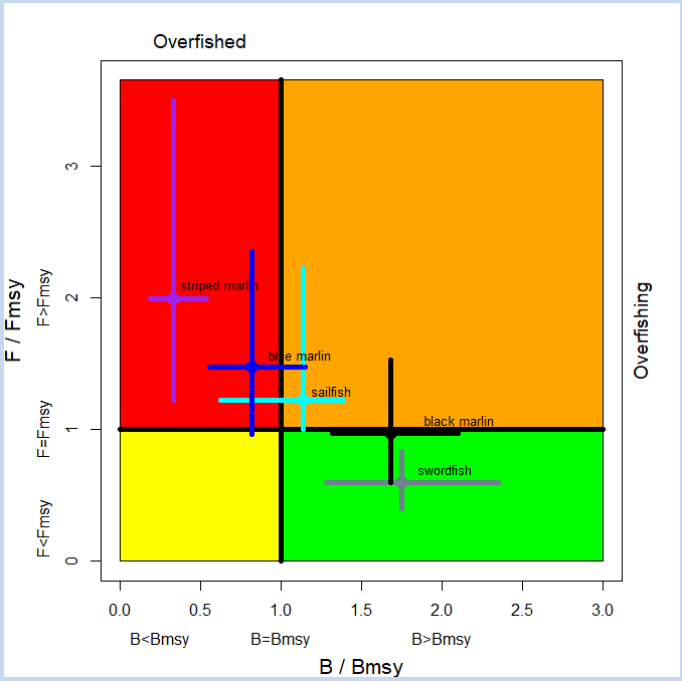

Fig. 3. Combined Kobe plot for swordfish (2018 with assessment conducted in 2020, grey), Indo-Pacific sailfish (2017 with assessment conducted in 2019, cyan), black marlin (2017 with assessment conducted in 2018, black), blue marlin (2017 with assessment conducted in 2019, blue) and striped marlin (2017 with assessment conducted in 2018, purple) showing the estimates of current stock size (SB or B, species assessment dependent) and current fishing mortality (F) in relation to optimal biomass 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

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

SC23.15 (para. 114) 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

SC23.16 (para. 116) 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

SC23.17 (para. 117) 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

SC23.18 (para. 118) 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.

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

Consultants

SC23.19 (para. 163) 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 23RD SESSION OF THE SCIENTIFIC COMMITTEE

SC23.20 (para. 168) The SC **RECOMMENDED** that the Commission consider the consolidated set of recommendations arising from SC23, provided at Appendix 38.

APPENDIX B

ASSESSMENT SCHEDULE FOR IOTC SPECIES AND SPECIES OF INTEREST FROM 2021–2025

Extract of the Report of the 23rd Session of the Scientific Committee

(IOTC–2020–SC23–R; Appendix 36, Page 203)

The SC **ADOPTED** a revised assessment schedule, ecological risk assessment and other core projects for 2021–25, for the tuna and tuna-like species under the IOTC mandate, as well as the current list of key billfish species of interest.

Working Party on Billfish					
Species	**2021**	**2022**	**2023**	**2024**	**2025**
Black marlin	**Full assessment**			**Full assessment**	
Blue marlin		**Full assessment**			**Full assessment**
Striped marlin	**Full assessment**			**Full assessment**	
Swordfish		**Indicators****	**Full assessment**		**Indicators****
Indo-Pacific sailfish		**Full assessment***			**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