

OUTCOMES OF THE 16th SESSION OF THE SCIENTIFIC COMMITTEE

PREPARED BY: IOTC SECRETARIAT, 10 SEPTEMBER 2014

PURPOSE

To inform participants at the 12th Working Party on Billfish (WPB12) of the recommendations arising from the 16th Session of the Scientific Committee (SC16) held from 2–6 December 2013, specifically relating to the work of the WPB.

BACKGROUND

At the 16th Session of the SC, the SC noted and considered the recommendations made by the WPB in 2013 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

| Common name | Species | Code |
|-----------------------|--------------------------------|------|
| Swordfish | <i>Xiphias gladius</i> | SWO |
| Black marlin | <i>Makaira indica</i> | BLM |
| Blue marlin | <i>Makaira nigricans</i> | BUM |
| Striped marlin | <i>Tetrapturus audax</i> | MLS |
| Indo-Pacific sailfish | <i>Istiophorus platypterus</i> | SFA |

The recommendations on the deficiencies in data collection, monitoring and reporting by CPCs in relation to billfish will be discussed under agenda item 6 and in paper IOTC-2014-WPB12-07 and are therefore not presented in this paper.

Based on the recommendations arising from the WPB11, the SC17 adopted a set of recommendations, provide at [Appendix A](#) of this paper.

The recommendations contained in [Appendix A](#) were provided to the Commission for consideration at its 18th Session held in May 2014. A separate paper, IOTC-2014-WPB12-04 addresses the responses and actions of the Commission.

In addition, the SC16 reviewed and endorsed a work plan for the WPB (*Research recommendation and priorities for IOTC Working Parties*), including a revised assessment schedule, as detailed in [Appendix B](#) and [Appendix C](#). A separate paper (IOTC-2014-WPB12-08) will outline the review and development process for a *Program of Work* for the WPB for the next five years.

DISCUSSION

In addition to the recommendations outlined in [Appendix A](#), [Appendix B](#) and [Appendix C](#), the following extracts from the SC16 Report (2013) are provided here for the consideration and action of the WPB12:

Environmental conditions/functioning

NOTING the importance of the environmental conditions and their inter-annual variability on CPUE indices of IOTC species, and more generally, on recruitment and biomass, the SC **REQUESTED** that the working parties take into account more environment and ecosystem-related issues when undertaking stock assessment analyses. This could be achieved by encouraging a greater participation of oceanographers and ecosystem modellers in the work of the working parties. Additional funds may be needed to attract modellers to IOTC working parties. (para. 140 of the SC16 Report)

Executive summaries for billfish species

The SC also adopted revised Executive Summaries for billfish species that can be found as appendices to the SC16 report, and which can be downloaded from the IOTC website in English and French:

English: <http://iotc.org/science/scientific-committee>

French: <http://iotc.org/fr/science/comit%C3%A9-scientifique>

RECOMMENDATION

That the WPB:

- 1) **NOTE** paper IOTC–2014–WPB12–03 which outlined the main outcomes of the 16th Session of the Scientific Committee, 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 16th Session of the Scientific Committee (2–6 December 2013) to the Commission, relevant to the Working Party on Billfish.

Appendix B: Research recommendations and priorities for the IOTC Working Party on Billfish (WPB).

Appendix C: Assessment schedule for the WPB 2014–2018.

APPENDIX A

CONSOLIDATED SET OF RECOMMENDATIONS OF THE 16th SESSION OF THE SCIENTIFIC COMMITTEE (2-6 DECEMBER 2013) TO THE COMMISSION RELEVANT TO THE WORKING PARTY ON BILLFISH

Extract of the Report of the 16th Session of the Scientific Committee

(IOTC-2013-SC16-R; Appendix XXXVIII, PAGES 301-312)

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

Billfish

- SC16.02 ([para. 164](#)) The SC **RECOMMENDED** that the Commission note the management advice developed for each billfish species as provided in the Executive Summary for each species:
- Swordfish (*Xiphias gladius*) – [Appendix XII](#)
 - Black marlin (*Makaira indica*) – [Appendix XIII](#)
 - Blue marlin (*Makaira nigricans*) – [Appendix XIV](#)
 - Striped marlin (*Tetrapturus audax*) – [Appendix XV](#)
 - Indo-Pacific sailfish (*Istiophorus platypterus*) – [Appendix XVI](#)

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

Standardisation of IOTC Working Party and Scientific Committee report terminology

- SC16.07 ([para. 23](#)) The SC **ADOPTED** the reporting terminology contained in [Appendix IV](#) and **RECOMMENDED** that the Commission considers adopting the standardised IOTC Report terminology, to further improve the clarity of information sharing from, and among its subsidiary bodies.

Report of the Eleventh Session of the Working Party on Billfish (WPB11)**Length-age keys**

- SC16.34 ([para. 77](#)) The SC **RECOMMENDED** that as a matter of priority, CPCs that have important fisheries catching billfish (EU, Taiwan, China, Japan, Indonesia and Sri Lanka) to collect and provide basic or analysed data that would be used to establish length-age keys and non-standard measurements to standard measurements keys for billfish species, by sex and area.

Data support

- SC16.35 ([para. 79](#)) **NOTING** that the work carried out during the meeting requires an IOTC data expert to be in attendance at each meeting to answer the many and varied questions from participants, the SC **RECOMMENDED** that the Secretariat support team attending the WPB meeting each year, also contain a staff member from the IOTC Data Section, in addition to the Science Manager and Fishery Officer (Stock Assessment), and for the attendance of the third team member to be incorporated into the IOTC budget for 2014 and for all future years.

Mozambique Channel billfish fishery

- SC16.36 ([para. 81](#)) **NOTING** that at present few scientific observers are being placed on board vessels fishing in the Mozambique Channel (between parallels 10°–30° South). Further **NOTING** the importance of that area for billfish fishery statistics, the SC recalled its **RECOMMENDATION** that CPCs whose vessels fish in that area take the necessary measures to take on board scientific observers as adopted in Resolution 11/04 and to report the data collected as per IOTC requirements.

Recreational and sports fisheries for billfish

- SC16.37 ([para. 82](#)) **NOTING** that in 2011, the Chair of the WPB, in collaboration with the IOTC Secretariat, participating billfish foundations and other interested parties, commenced a process to facilitate the acquisition of catch-and-effort and size data from sport fisheries, by developing and disseminating reporting forms to Sport Fishing Centres in the region, the SC **RECOMMENDED** that the Chair and Vice-Chair work in collaboration with the IOTC Secretariat and the African Billfish Foundation to find a suitable funding source and lead investigator (university or consultant) to undertake the project outlined in Appendix VI of the WPB11 report (IOTC-2013-WPB11-R). The aim of the project will be to enhance data recovery from sports and other recreational fisheries in the western Indian Ocean region. The WPB

Chair should circulate the concept note to potential funding bodies on behalf of the WPB. A similar concept note could be developed for other regions in the IOTC area of competence at a later date.

Parameters for future analyses: stock assessments

- SC16.38 ([para. 83](#)) **NOTING** that the current time frames for data exchange do not allow enough time to conduct thorough stock assessment analyses, and this could have a detrimental effect on the quality of advice provided by the WPB, the SC **RECOMMENDED** that exchanges of data (CPUE indices and coefficient of variation) should be made as early as possible, but no later than 30 days prior to a working party meeting, so that stock assessment analysis can be provided to the IOTC Secretariat no later than 15 days before a working party meeting, as per the recommendations of the SC, which states: “*The SC also ENCOURAGED data to be used in stock assessments, including CPUE standardisations, be made available not less than three months before each meeting by CPCs and where possible, data summaries no later than two months prior to each meeting, from the IOTC Secretariat; and RECOMMENDED that data to be used in stock assessments, including CPUE standardisations be made available not less than 30 days before each meeting by CPCs.*” (IOTC-2011-SC14-R; p68)

Swordfish Nominal and standardised CPUE indices

- SC16.39 ([para. 84](#)) **NOTING** the request from the Commission in 2013 that the southwest region continue to be analysed as a special resource, in addition to the full Indian Ocean assessment, the SC **RECOMMENDED** that CPCs with longline fleets with important swordfish catches in the southwest Indian Ocean (EU, Taiwan, China and Japan) undertake revised CPUE analysis for their longline fleets in the southwest Indian Ocean, in addition to CPUE analysis for the entire Indian Ocean.

Outcomes of the informal workshop on CPUE standardisation

- SC16.51 ([para. 127](#)) The SC **ENDORSED** all of the recommendations from the workshop, contained in paper IOTC-2013-SC16-12. In particular, the SC **RECOMMENDED** that in areas where CPUE’s diverged the CPC’s were encouraged to meet inter-sessionally to resolve the differences. In addition, the major CPC’s were encouraged to develop a combined CPUE from multiple fleets so it may capture the true abundance better. Approaches to possibly pursue are the following: i) Assess filtering approaches on data and whether they have an effect, ii) examine spatial resolution on fleets operating and whether this is the primary reason for differences, and iii) examine fleet efficiencies by area, iv) use operational data for the standardization, and v) have a meeting amongst all operational level data across all fleets to assess an approach where we may look at catch rates across the broad areas.
- SC16.52 ([para. 128](#)) **NOTING** the CPUE issues identified by the WPTT in 2010, 2011, 2012 and 2013 and the Scientific Committee in 2012, as well as the informal CPUE workshop in 2013, the SC **RECOMMENDED** that further inter-sessional work be carried out in conjunction with the IOTC Secretariat on the major longline CPC’s in the Indian Ocean in early 2014 using operational data to address issues identified in the CPUE Workshop Report.

Summary discussion of matters common to Working Parties

Meeting participation fund

- SC16.54 ([para. 133](#)) **NOTING** that the IOTC Meeting Participation Fund (MPF), adopted by the Commission in 2010 (Resolution 10/05 *On the establishment of a Meeting Participation Fund for developing IOTC Members and non-Contracting Cooperating Parties*), was used to fund the participation of 58 national scientists to the Working Party meetings and SC in 2013 (42 in 2012), all of which were required to submit and present a working paper at the meeting, the SC strongly **RECOMMENDED** that this fund be maintained into the future. The MPF is currently funded through accumulated IOTC budgetary funds and voluntary contributions by CPCs. The Commission may need to develop and implement a procedure for supplying funds to the MPF in the future, as specified in Resolution 10/05.
- SC16.55 ([para. 134](#)) **NOTING** that the Commission had directed the Secretariat (via Resolution 10/05) to ensure that the MPF be utilised, as a first priority, to support the participation of scientists from developing CPCs in scientific meetings of the IOTC, including Working Parties, rather than non-science meetings, the SC **RECOMMENDED** that the Secretariat strictly adhere to the directives of the Commission contained in Resolution 10/05, including paragraph 8 which states that ‘*The Fund will be allocated in such a way that no more than 25% of the expenditures of the Fund in one year is used to fund attendance to non-scientific meetings.*’ Thus, 75% of the annual MPF shall be allocated to facilitating the attendance of developing CPC scientists to the Scientific Committee and its Working Parties.

Capacity building activities

SC16.56 ([para. 136](#)) The SC **RECOMMENDED** that the Commission increase the IOTC Capacity Building budget line so that capacity building workshops/training can be carried out in 2014 and 2015 on the collection, reporting and analyses of catch and effort data for neritic tuna and tuna-like species. Where appropriate this training session shall include information that explains the entire IOTC process from data collection to analysis and how the information collected is used by the Commission to develop Conservation and Management Measures.

IOTC species identification cards**Billfish**

SC16.57 ([para. 141](#)) The SC **EXPRESSED** its thanks to the IOTC Secretariat and other experts involved in the development of the identification cards for billfish and **RECOMMENDED** that the cards be translated into the following languages, in priority order: Farsi, Arabic, Indonesian, Swahili, Spanish, Portuguese, Thai and Sri Lankan, and that the Commission allocate funds for this purpose. The Secretariat should utilise any remaining funds in the IOTC Capacity Building budget line for 2013 to translate the cards.

SC16.58 ([para. 142](#)) The SC **RECOMMENDED** that the Commission allocate additional funds in 2014-15 to further translate and print sets of the billfish identification cards (budget estimate: [Table 13](#)).

APPENDIX B

RESEARCH RECOMMENDATIONS AND PRIORITIES FOR IOTC WORKING PARTIES IN 2014 AND 2015

Extract of the Report of the 16th Session of the Scientific Committee

(IOTC-2013-SC16-R; Appendix XXXIV, PAGES 286-289)

The SC **NOTED** the proposed work plans and priorities of each of the Working Parties and **AGREED** to the revised work plans as outlined in [Appendix XXXIV](#). The Chairs and Vice-Chairs of each working party shall ensure that the efforts of their working party is focused on the core areas contained within the appendix, taking into account any new research priorities identified by the Commission at its next Session. (IOTC-2014-SC16-R, Para. 193)

Working Party on Billfish (WPB)

(Extracts from IOTC-2013-WPB11-R)

Requests from the Commission

At Sessions of the Commission, Conservation and Management Measures adopted contained elements which call on the Scientific Committee, via the WPB, to undertake specific tasks.

(S17 para. 28) The Commission **NOTED** that most of the evidence provided to date has indicated that the resource in the southwest Indian Ocean has been overfished in the past decade and that biomass remains below the level that would produce the maximum sustainable yield (B_{MSY}), however recent declines in catch and effort have brought fishing mortality rates to levels below the level that would produce the maximum sustainable yield (F_{MSY}). A risk of reversing the rebuilding trend remains if there is any increase in catch in this region. Thus, catches of swordfish in the southwest Indian Ocean should be maintained at levels at or below those observed in 2009 (6,600 t), until there is clear evidence of recovery and biomass exceeds B_{MSY} .

(S17 para. 29) The Commission **REQUESTED** that the southwest region continue to be analysed as a special resource, as it appears to be highly depleted compared to the Indian Ocean as a whole.

Core topics for research agreed at WPB11

The following are the core topic areas considered as priorities for research over the coming years, taking into account data gaps, capacity among CPCs, and areas for implementation (taken from the Report of the 11th Session of the WPB).

Data

The WPB **NOTED** the main billfish data issues that are considered to negatively affect the quality of the statistics available at the IOTC Secretariat, by type of dataset and fishery, which are provided in [Appendix V](#), and **REQUESTED** that the CPCs listed in the Appendix, make efforts to remedy the data issues identified and to report back to the WPB at its next meeting.

Alternative management measures for swordfish

The WPB **NOTED** that at its 17th Session, the Commission **REQUESTED** that the southwest region continue to be analysed as a special resource [*for swordfish*], as it appears to be highly depleted compared to the Indian Ocean as a whole.

Historical data series

The WPB **REQUESTED** that both Japan and Taiwan,China undertake an historical review of their longline fleets and to document the changes in fleet dynamics for presentation at the next WPB meeting. The historical review should include as much explanatory information as possible regarding changes in fishing areas, species targeting, gear changes and other fleet characteristics to assist the WPB understand the current fluctuations observed in the data.

Length-age keys

The WPB **RECOMMENDED** that as a matter of priority, CPCs that have important fisheries catching billfish (EU, Taiwan,China, Japan, Indonesia and Sri Lanka) to collect and provide basic or analysed data that would be used to establish length-age keys and non-standard measurements to standard measurements keys for billfish species, by sex and area.

Catch, Catch-and-effort, Size data

The WPB **RECOMMENDED** that all CPCs assess and improve the status of catch-and-effort data for marlins and sailfish, noting that improvements to the data for the EU fleets and its provision to the IOTC Secretariat, would be most beneficial to the work of the WPB.

The WPB **REQUESTED** that all CPCs provide the IOTC Secretariat with longline catch-and-effort and size data of marlins and sailfish by time and area strata, noting that this is already a mandatory reporting requirement.

The WPB **REQUESTED** that Japan resume size sampling on its commercial longline fleet, and that Taiwan,China provide size data for its fresh longline fleet to attain the minimum recommended by the Commission (1 fish by metric ton of catch by type of gear and species).

The WPB **REQUESTED** that Indonesia and India continue to improve their data collection programs and provide catch-and-effort and size frequency data for their longline fleets, to the IOTC Secretariat.

The WPB **REQUESTED** that all CPCs having artisanal and semi-industrial fleets, in particular I.R. Iran, Pakistan and Sri Lanka, provide catch and effort as well as size data as per IOTC requirements for billfish caught by their fleets. Some developing coastal states indicated that they have difficulties meeting these requirements.

Data inconsistencies

Noting the progress made to date, the WPB **REQUESTED** that the IOTC Secretariat finalise the study aimed at assessing the consistency of average weights derived from the available catch and effort data, as derived from logbooks, and size data provided by Japan, Taiwan,China, Seychelles and EU,Spain and to report final results at the next WPB meeting.

The WPB **REQUESTED** from 2011 that as a matter of priority, India, I.R. Iran (provided by I.R. in August 2013) and Pakistan provide catch-and-effort data and size data for billfish, in particular gillnet fisheries, by the reporting deadline of 30th June each year, noting that this is already a mandatory reporting requirement. As part of this process, these CPCs shall use the billfish identification cards to improve the identification of marlin species caught by their fisheries.

Review of data available at the Secretariat for marlins

The WPB **NOTED** that the quality of the data available at the IOTC Secretariat on marlins (by species) is likely to be compromised by species miss-identification and **REQUESTED** that CPCs review their historical data in order to identify and correct potential identification problems that are detrimental to any analysis of the status of the stocks.

I.R. Iran billfish fishery

The WPB **REQUESTED** that I.R. Iran revisit individual logbook archives to try and obtain more details of historical species composition for its industrial fisheries.

Thailand billfish fishery

NOTING that data from the research vessels of Thailand are not presented by species, the WPB **REQUESTED** that the species level data be presented at the next WPB meeting. The translation of the IOTC species identification guides into Thai would assist in ensuring higher resolution for species identification.

The WPB **REQUESTED** the authors undertake a more detailed analysis of trends in billfish landings between the 2008 and 2012, a period identified in the current study of high variability in total landings.

Indonesia billfish fishery

The WPB **REQUESTED** that Indonesia develop and present a detailed paper on its fleets fishing effort and CPUE, by species, at the next WPB meeting.

The WPB **NOTED** that the current observer coverage for the Indonesian longline fleet is approximately 2% of total fishing effort. In 2013 Indonesia plans to deploy additional scientific observers on its longline, purse seine and gillnet vessels in order to reach the minimum required coverage level of 5%, as specified in Resolution 11/04 *on a regional observer scheme*. At present observers are only being deployed on its longline fleet. The WPB **REQUESTED** that the result of these additional scientific observer deployments be reported at the next WPB meeting.

Sri Lanka billfish fishery

The WPB **REQUESTED** that as a matter of priority, Sri Lanka increase sampling coverage to attain at least the coverage levels recommended by the Commission (1 fish by metric ton of catch by type of gear and species), including:

- catches sampled or observed for at least 5% of the vessel activities for coastal fisheries, including collection of catch, effort and size data for IOTC species and main bycatch species;

- implementation of logbook systems for offshore fisheries that incorporate species level information requirements for billfish, as per IOTC Resolution 12/03.

The information collected through the above activities should allow Sri Lanka to estimate species level catches by gear for billfish and other important IOTC or bycatch species.

Recreational and sports fisheries for billfish

The WPB **REQUESTED** that the African Billfish Foundation continue its important work, particularly in the areas of collaborative research aimed at obtaining more information on movements of billfishes, via both conventional and archival tagging programs that will allow the collection of information on both horizontal and vertical movements as well as on population dynamics.

Indian billfish research: Environment influences on abundance

NOTING that all billfish species were combined for analysis, which may produce a biased result due to differences in species biology, the WPB **REQUESTED** that the authors undertake a similar analysis by species, for the consideration at the next WPB meeting.

Maldives billfish landings

The WPB **RECALLED** that the level of capture of marlins from the Maldivian artisanal fishery appears to be very high compared to the total catches reported for the Indian Ocean and **REQUESTED** that the Maldives provide a review of its landings of each marlin species at the next WPB meeting.

The WPB **REQUESTED** that the Maldives implement data collection systems, through logbooks and sampling for its fisheries that incorporate species level information requirements for billfish, as per IOTC standards. The information collected should allow the Maldives to estimate species level catches by gear for billfish and other important IOTC or bycatch species.

CPUE discussion summary – Marlins

The WPB **REQUESTED** that both Japan and Taiwan,China undertake a historical review of their longline data and to document the changes in fleet dynamics for presentation and the next WPB meeting. The historical review should include as much explanatory information as possible regarding changes in fishing areas, species targeting, gear changes and other fleet characteristics to assist the WPB understand the current fluctuations observed in the data.

Parameters for future analyses: stock assessments

The WPB **REQUESTED** that a sensitivity analysis be performed using Stock Reduction Analysis methodology, using different series of catch data to assess how robust the estimation of reference points for management are, and how the stock status determination performs.

Review of data available at the secretariat for Indo-Pacific sailfish

The WPB **NOTED** the main sailfish data issues that are considered to negatively affect the quality of the statistics available at the IOTC Secretariat, by type of dataset and fishery, which are provided in [Appendix V](#), and **REQUESTED** that the CPCs listed in the Appendix, make efforts to remedy the data issues identified and to report back to the WPB at its next meeting.

Kenyan sailfish sports fishery

The WPB **NOTED** that catch and effort data for the sports fishery in Kenya from 1987–2010 should be submitted to the IOTC Secretariat to assist in future assessments for these species. The WPB **REQUESTED** that Kenya undertake a comprehensive analysis based on their long-term sport fisheries for consideration at the next WPB meeting.

Indo-Pacific sailfish - other

NOTING that limited new information on I.P. sailfish were presented at the WPB11, the WPB **REQUESTED** that the IOTC Secretariat contact scientists from the U.A.E. to obtain the latest information from the sailfish fishery in the Gulf, as the most recent information submitted to the WPB some time ago suggested that the fishery may be collapsing. Any new information received should be submitted to the next WPB meeting as part of a general review of sailfish fisheries in the Indian Ocean.

The WPB **REQUESTED** that all CPCs improve data collection and reporting for sailfish given the importance of this species to many sports fisheries operating in the Indian Ocean. In particular for Kenya who indicated that they have a long catch history series available for potential analysis.

Review of data available at the secretariat for swordfish

NOTING the potential underreporting of swordfish catches from Indonesian fresh-tuna longline fisheries and the way in which the IOTC Secretariat had estimated swordfish catches, the WPB **REQUESTED** that catch extrapolation must be undertaken, taking into consideration species-specific targeting (day-deep vs. night-shallow sets) for fleets taking SWO as a bycatch. The WPB was informed that major research and commercial operations targeting tuna in day deep sets produce very low levels of swordfish bycatch even in the areas where swordfish is a dominant species in shallow-night sets.

*Priority species for 2014: Swordfish**High priority projects*

- **Stock status analyses (development of abundance indices)**
 - i. Develop/improve accurate standardised CPUE indices for Indo-Pacific sailfish for the Indian Ocean as a whole or by sub-region as appropriate.
 - ii. Develop methods to estimate historical catch series by gear.
 - iii. Develop life history and biological patterns for the species (namely migration patterns and distribution patterns).
- **Capacity building**
 - i. Scientific assistance to CPCs and specific fleets considered to have the highest risk to billfish species (e.g. gillnet fleets and longline fleets).
- **Stock assessment**
 - i. Swordfish: There is a clear request from the Commission to carry out stock status determinations for swordfish in the southwest Indian Ocean, in addition to the Indian Ocean as a whole.

Medium priority project:

- **Stock structure**
 - i. genetic research to determine the connectivity of species throughout their distributions: such studies should be developed at the sub-regional level.
 - ii. tagging research to better understand and estimate exploitation rates, the movement dynamics, possible spawning locations, natural mortality, fishing mortality and post-release mortality of stocks from various fisheries in the Indian Ocean.
- **Biological information**
 - i. Quantitative biological studies are necessary throughout the species range to determine key biological parameters including age-at-maturity and fecundity-at-age/length relationships, age-length keys, age and growth, which will be fed into future stock assessments.

APPENDIX C
ASSESSMENT SCHEDULE FOR IOTC WORKING PARTIES

Extract of the Report of the 16th Session of the Scientific Committee
(IOTC-2013-SC16-R; Appendix XXXV, PAGE 297)

The SC **ADOPTED** a revised assessment schedule, ecological risk assessment and other core projects for 2014–18, for the tuna and tuna-like species under the IOTC mandate, as well as the current list of key shark species of interest, as outlined in [Appendix XXXV](#). (IOTC-2014-SC16-R, Para. 195)

| <i>Working Party on Billfish</i> | | | | | |
|----------------------------------|------------------------|------------------------|------------------------|------------------------|--|
| Black marlin | Indicators | Indicators | Full assessment | Indicators | |
| Blue marlin | Indicators | Indicators | Full assessment | Indicators | |
| Striped marlin | Indicators | Full assessment | Indicators | Indicators | |
| Swordfish (IO, SWIO) | Full assessment | Indicators | Indicators | Full assessment | |
| Indo-Pacific sailfish | Indicators | Full assessment | Indicators | Full assessment | |