

OUTCOMES OF THE 19th SESSION OF THE SCIENTIFIC COMMITTEE

PREPARED BY: IOTC SECRETARIAT, 26 JUNE 2017

PURPOSE

To inform participants at the 7th Working Party on Neritic Tunas (WPNT07) of the recommendations arising from the 19th Session of the IOTC Scientific Committee (SC) held from 1 – 5 December 2016, specifically relating to the work of the WPNT.

BACKGROUND

At the 19th Session of the SC, the SC noted and considered the recommendations made by the WPNT in 2016 that included requests for CPCs to improve data reporting and respond to the call for information, recommendation for more work to be conducted on assessment methods for data poor stocks and methods for presenting the results from these assessments to the Commission.

IOTC code	English name	Scientific name
LOT	Longtail tuna	<i>Thunnus tonggol</i>
FRI	Frigate tuna	<i>Auxis thazard</i>
BLT	Bullet tuna	<i>Auxis rochei</i>
KAW	Kawakawa	<i>Euthynnus affinis</i>
COM	Narrow-barred Spanish mackerel	<i>Scomberomorus commerson</i>
GUT	Indo-Pacific king mackerel	<i>Scomberomorus guttatus</i>

Based on the recommendations arising from the WPNT06, the SC19 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 21st Session held in May 2017. A separate paper, IOTC–2017–WPNT07–04 addresses the responses and actions of the Commission.

In addition, the SC19 reviewed and endorsed a Program of Work (2017–21) for the WPNT, including a revised stock assessment schedule, as detailed in [Appendix B](#) and [Appendix C](#). A separate paper (IOTC–2017–WPNT07–08) will outline the review and development process for a Program of Work for the WPNT for the next five years.

DISCUSSION

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

Report of the 6th Session of the Working Party on Neritic Tunas (WPNT06)

Working party attendance

The SC **NOTED** the low attendance at the WPNT in 2016 compared with previous years, possibly due to the lack of a host CPC and the end of the BOBLME project that has financed participation in previous years.

ACKNOWLEDGING that good attendance is important given that management advice is being put forward to the SC, the SC **REQUESTED** that CPCs with important fisheries for neritic species, including India, Oman and Pakistan, consider attendance at the WPNT a priority and provide better participation in future years. The SC further **NOTED** that the Maldives will be hosting the WPNT07 in 2017 and that there are plans for a workshop on meta-analysis and population parameters to be held back-to-back with the meeting which should encourage better attendance at the WPNT

CPUE standardisation

ACKNOWLEDGING the importance of indices of abundance for future stock assessments, the WPNT **RECOMMENDED** that the development of standardised CPUE series is explored, with priority given to fleets which

account for the largest catches of neritic tuna and tuna-like species (e.g., I.R. Iran, Indonesia, India, Pakistan, and Sri Lanka).

Given the need for the development of CPUE series to support the stock assessment of neritic tuna species, the SC **NOTED** the request for information on data availability that was sent by the Secretariat to priority fleets with important fisheries for neritic tuna species. The SC further **NOTED** that all responses received (Malaysia, Indonesia, Iran, Oman and Thailand) in response to this request indicated very limited data availability, as the majority of logbook and observer programmes which would collect information at the required level of detail for CPUE standardisation were only implemented in the last 1 or 2 years and so no suitable datasets have been identified yet. The SC **REQUESTED** CPCs that have not yet responded to the call for information to provide this to the IOTC Secretariat.

The SC **NOTED** the standardised CPUE series developed for Kawakawa by Maldives in collaboration with the IOTC Secretariat in 2015 and **ENCOURAGED** the Maldives to continue to develop this further.

Selection of Stock Status indicators

The SC **NOTED** the importance of exploring alternative data poor stock assessment methods and **RECOMMENDED** that the Commission allocates funding for work to explore methods based on different data sources, such as catch curve estimation of mortality from length-frequency data. A range of data sources should be explored, including data from observer programmes, the sport fisheries project, and non-state actor (e.g. WWF) projects for suitability.

The SC **RECALLED** the recommendation of the WPNT05 for the SC to request the Working Party on Methods evaluate a proposed alternative methodology for presenting management advice for data poor methods in 2016. The SC **REQUESTED** that the WPM evaluate the possibility of using different colours to distinguish between stocks which have not been assessed (e.g., white) and stocks which have been assessed but the status is considered to be uncertain (e.g., grey).

Capacity building activities

The SC **THANKED** the IOTC-OFCF Project for its continued support to the enhancement of data collection and processing systems in Indonesia. **NOTING** the request of Indonesia for continuation of the sampling programme, the SC **ENCOURAGED** the OFCF to extend support into the future and also **ENCOURAGED** the Ministry of Marine Affairs and Fisheries of Indonesia to continue sampling activities in North and West Sumatra Provinces in 2017 and subsequent years to ensure that Indonesia has capacity to monitor artisanal fisheries and fulfil IOTC data reporting requirements. Indonesia has confirmed continuation of the sampling program with support and collaboration of OFCF especially in Western Sumatra.

(Extracts from SC19 Report, paras. 27 - 34).

Executive summaries for neritic tuna species

The SC also adopted revised Executive Summaries for each of the neritic tuna species that can be found as appendices to the SC19 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>

These Executive Summaries are also available via the IOTC **Stock Status dashboard**:

www.iotc.org/science/status-summary-species-tuna-and-tuna-species-under-iotc-mandate-well-other-species-impacted-iotc

RECOMMENDATION/S

That the WPNT:

- 1) **NOTE** paper IOTC–2017–WPNT07–03 which outlined the main outcomes of the 19th Session of the Scientific Committee (SC19), specifically related to the work of the WPNT.
- 2) **CONSIDER** how best to progress these issues at the present meeting.

APPENDICES

Appendix A: Consolidated set of recommendations of the 19th Session of the Scientific Committee to the Commission, relevant to the Working Party on Neritic Tunas.

Appendix B: Program of work (2017–2021) for the IOTC Working Party on Neritic Tunas (WPNT).

Appendix C: Schedule of stock assessments for the WPNT (2017–21).

APPENDIX A

CONSOLIDATED SET OF RECOMMENDATIONS OF THE 19th SESSION OF THE SCIENTIFIC COMMITTEE (1–5 December 2016) TO THE COMMISSION RELEVANT TO THE WORKING PARTY ON NERITIC TUNAS

Extract of the Report of the 19th Session of the Scientific Committee

(IOTC–2016–SC19–R; Appendix XXXVII, PAGES 207 - xxxxxx)

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

Tuna and seerfish – Neritic species

SC19.03 (para. 145) The SC **RECOMMENDED** that the Commission note the management advice developed for each neritic tuna (and mackerel) species under the IOTC mandate, as provided in the Executive Summary for each species, and the combined Kobe plot for the three species assigned a stock status in 2016 (Fig. 6):

- Bullet tuna (*Auxis rochei*) – [Appendix XVII](#)
- Frigate tuna (*Auxis thazard*) – [Appendix XVIII](#)
- Kawakawa (*Euthynnus affinis*) – [Appendix XIX](#)
- Longtail tuna (*Thunnus tonggol*) – [Appendix XX](#)
- Indo-Pacific king mackerel (*Scomberomorus guttatus*) – [Appendix XXI](#)
- Narrow-barred Spanish mackerel (*Scomberomorus commerson*) – [Appendix XXII](#)

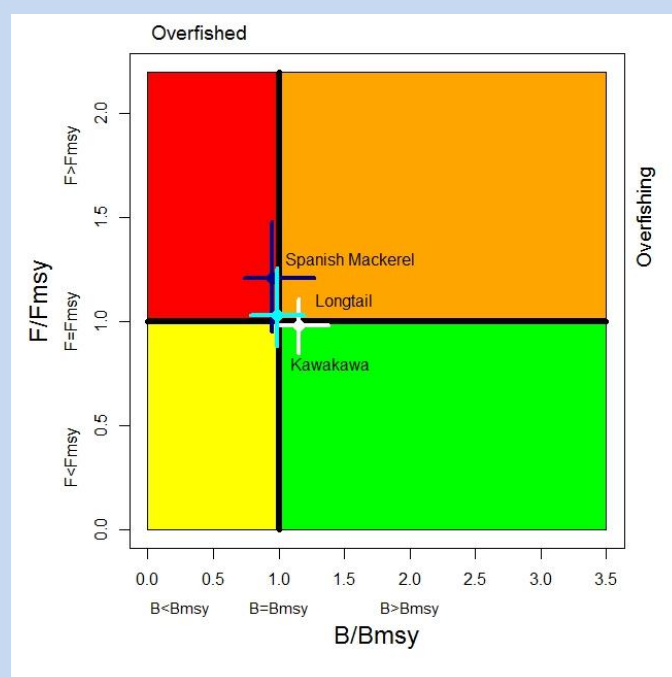


FIG. 6. Combined Kobe plot for longtail tuna (cyan: 2016), narrow-barred Spanish mackerel (dark blue: 2016), and kawakawa (white: 2015) showing the estimates of stock size (B) and current fishing mortality (F) in relation to optimal spawning stock size and optimal fishing mortality using the OCOM modelling approach. 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 6th Session of the Working Party on Neritic Tunas (WPNT06)

CPUE standardisation

SC19.09 ([para. 29](#)) **ACKNOWLEDGING** the importance of indices of abundance for future stock assessments, the WPNT **RECOMMENDED** that the development of standardised CPUE series is explored, with priority given to fleets which account for the largest catches of neritic tuna and tuna-like species (e.g., I.R. Iran, Indonesia, India, Pakistan, and Sri Lanka).

Selection of Stock Status indicators

SC19.10 ([para. 32](#)) The SC **NOTED** the importance of exploring alternative data poor stock assessment methods and **RECOMMENDED** that the Commission allocates funding for work to explore methods based on different data sources, such as catch curve estimation of mortality from length-frequency data. A range of data sources should be explored, including data from observer programmes, the sport fisheries project, and non-state actor (e.g. WWF) projects for suitability.

SC19.11 ([para. 33](#)) The SC **RECALLED** the recommendation of the WPNT05 for the SC to request the Working Party on Methods evaluate a proposed alternative methodology for presenting management advice for data poor methods in 2016. The SC **REQUESTED** that the WPM evaluate the possibility of using different colours to distinguish between stocks which have not been assessed (e.g., white) and stocks which have been assessed but the status is considered to be uncertain (e.g., grey).

Summary discussion of matters common to Working Parties

Regional observer scheme

SC19.17 ([para. 56](#)) **RECALLING** the SC18 (IOTC–2015–SC18–R, para. 134):

“NOTING that many CPCs report Regional Observer data in .pdf format, or as data embedded within documents, and also in hard-copy format, the SC ENCOURAGED CPCs to report Regional Observer data in any non-proprietary electronic format (e.g. csv, xml, txt, etc.) or in an electronic format that can be easily exported and processed into standard spreadsheet, database or statistical software (e.g. xls, dbase, mdb, etc.). This may be in any electronically readable format as long as all of the agreed minimum data reporting requirements have been fulfilled”.

the SC **RECOMMENDED** all CPCs to submit observer data in an electronic format that can be automatically exported and processed into a standard spreadsheet-like format (e.g. csv, xml, txt, xls, dbase, mdb etc.), avoiding formats whose processing could be time consuming and unnecessarily complex (e.g. pdf, Microsoft Word documents etc.), at the same time ensuring that all of the agreed minimum data reporting requirements have been fulfilled.

SC19.18 ([para. 57](#)) **RECALLING** the objectives of Resolution 11/04 on a regional observer scheme as follows: *“Para 1: The objective of the IOTC Observer Scheme shall be to collect verified catch data and other scientific data related to the fisheries for tuna and tuna-like species in the IOTC area of competence”*, and **NOTING** that the objective of the ROS contained in Resolution 11/04, and the rules contained in Resolution 12/02 *“On data confidentiality policy and procedures”* make no reference to the data collected not being used for compliance purposes, the SC reiterated its **RECOMMENDATION** that at the next revision of Resolution 11/04, it be clearly stated that the data collected shall only be used for scientific purposes.

Development of a proposal for a Pilot Project to be presented to the Commission 2017

SC19.40 ([para. 160](#)) The SC **NOTED** the substantial resourcing that the proposed framework will require and **RECOMMENDED** that the Commission provide adequate resources to enable implementation of the project.

Data collection and capacity building

SC19.34 ([para. 121](#)) The SC **AGREED** that, while external funding is helping the work of the Commission, funds allocated by the Commission to capacity building are still too low, considering the range of issues identified by the SC and its Working Parties, particularly in relation to the implementation of the Regional Observer Scheme and data collection and reporting for artisanal fisheries and **RECOMMENDED** that the Commission further increases the IOTC Capacity Building budget to fund these activities in the future.

Meeting participation fund

SC19.35 ([para. 123](#)) 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

- SC19.36 (para. 124) The SC **RECOMMENDED** 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.

IOTC Secretariat staffing

- SC19.37 (para. 126) **NOTING** the very heavy workload at the IOTC Secretariat and the ever increasing demands by the Commission and the Scientific Committee, and also the capacity to respond to requests for assistance by countries, the SC **RECOMMENDED** that the recommendation from the Performance Review PRIOTC02.07(g) is implemented, and that permanent staff of the IOTC Data and Science Section be increased by two (2) (1 x P4 and 1 x P3 level positions), supplemented by additional short-term consultants, to commence work by 1 January 2018 or earlier, and that funding for these new positions should come from both the IOTC regular budget and from external sources to reduce the financial burden on the IOTC membership.

Progress on the Implementation of the Recommendations of the Second Performance Review Panel

- SC19.41 (para. 168) The SC **RECOMMENDED** that the Commission note the updates on progress regarding Resolution 16/03, as provided at [Appendix XXXIII](#).

Program of work and schedule of Working Party and Scientific Committee meetings

Consultants

- SC19.42 (para. 179) **NOTING** the highly beneficial and relevant work done by IOTC stock assessment consultants in 2016 and 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. The draft budget provided in [Table 5](#), shall be incorporated into the overall IOTC Science budget for the consideration of the Commission.

Consideration of Resolution 15/09 On a fish aggregating devices (FADs) working group

- SC19.43 (para. 185) The SC further **NOTED** that the intention of this is to hold a dialogue meeting between Commissioners as well as scientists and **RECOMMENDED** that the Commission consider holding an internal IOTC meeting in early 2017 in advance of the global meeting.

APPENDIX B**RESEARCH RECOMMENDATIONS AND PRIORITIES**

Extract of the Report of the 19th Session of the Scientific Committee

(IOTC–2016–SC19–R; Appendix XXXIVA, PAGE 177)

The SC **NOTED** the proposed Program of Work and priorities for the Scientific Committee and each of the Working Parties and **AGREED** to a consolidated Program of Work as outlined in [Appendix XXXIVa-g](#). The Chairpersons and Vice-Chairpersons of each working party shall ensure that the efforts of their working party 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.

Table 1. Priority topics for obtaining the information necessary to develop stock status indicators for neritic tunas in the Indian Ocean;

Topic	Sub-topic and project	Priority	Est. budget and/or potential source	Timing				
				2017	2018	2019	2020	2021
1. Stock structure (connectivity)	Genetic research to determine the connectivity of neritic tunas throughout their distributions <ul style="list-style-type: none"> ➤ Determine the degree of shared stocks for all neritic tunas under the IOTC mandate in the Indian Ocean, so as to better equip the SC in providing management advice based on unit stocks delineated by geographic distribution and connectivity. ➤ Genetic research to determine the connectivity of neritic tunas throughout their distributions: Table 2b should be used as a starting point for research project development to delineate potential stock structure for neritic tunas in the Indian Ocean. ➤ The IOTC Secretariat to coordinate a review of the available literature on neritic tuna stock structure across the Indian Ocean to assess the data already available such as the location of spawning grounds to identify potential sub-stocks. 	High (1)	1.3 m Euro: European Union					
			TBD					
2. Biological information (parameters for stock assessment)	Age and growth research; Age-at-Maturity <ul style="list-style-type: none"> ➤ Quantitative biological studies are necessary for all neritic tunas throughout their 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. 	High (2)	CPCs directly					
3. CPUE standardisation	Develop standardised CPUE series for the main fisheries for longtail, kawakawa, Indo-Pacific King mackerel and Spanish mackerel in the Indian Ocean, with the aim of developing CPUE series for stock assessment purposes. <ul style="list-style-type: none"> ➤ Longtail tuna. Priority fleets: Iran (gillnet), Indonesia (line and 	High (4)	CPUE Workshop (TBD)					
			CPCs					

	<p>gillnet), Malaysia (coastal purse seine), Pakistan, Oman, Thailand (coastal purse seine) and India (all gillnet).</p> <ul style="list-style-type: none"> ➤ Spanish mackerel. Priority fleets: Gillnet fisheries of Indonesia, India, Iran, Pakistan and Oman. ➤ Kawakawa. Priority fleets: Indonesia (purse seine/ line), Malaysia (coastal purse seine), Thailand (coastal purse seine), India (gillnet), Iran (gillnet) and Pakistan (gillnet). ➤ Indo-Pacific king mackerel. Priority fleets: Gillnet fisheries of India, Indonesia, Pakistan (gillnet/troll) and Iran. 		directly					
			CPCs directly					
			CPCs directly					
			CPCs directly					
4. Stock assessment / Stock indicators	<p>Develop and compare multiple assessment approaches to determine stock status for longtail tuna, kawakawa and Spanish mackerel (SS3, ASPIC etc).</p> <ul style="list-style-type: none"> ➤ The Weight-of-Evidence approach should be used to determine stock status, by building layers of partial evidence, such as CPUE indices combined with catch data, life-history parameters and yield-per recruit metrics, as well as the use of data poor assessment approaches. ➤ The following data should be collated and made available for collaborative analysis: <ul style="list-style-type: none"> 1) catch and effort by species and gear by landing site; 2) operational data: stratify this by vessel, month, and year for the development as an indicator of CPUE over time; and 3) operational data: collate other information on fishing techniques (i.e. area fished, gear specifics, depth, environmental condition (near shore, open ocean, etc.) and vessel size (length/horsepower)). 	High (3)	IOTC Regular Budget					

APPENDIX C

ASSESSMENT SCHEDULE FOR IOTC SPECIES AND SPECIES OF INTEREST FROM 2017–2021

Extract of the Report of the 19th Session of the Scientific Committee

(IOTC–2016–SC19–R; Appendix XXXV, PAGE 204)

The SC **ADOPTED** a revised assessment schedule, ecological risk assessment and other core projects for 2017–21, 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–2016–SC19–R, Para. 177).

Species	2017	2018	2019	2020	2021
<i>Working Party on Neritic Tunas</i>					
Bullet tuna	Indicators	Indicators	Data-poor assessment	Indicators	Data-poor assessment
Frigate tuna	Indicators	Indicators	Data-poor assessment	Indicators	Data-poor assessment
Indo-Pacific king mackerel	Indicators	Indicators	Full assessment*	Indicators	Data-poor assessment
Kawakawa	Indicators	Data-poor assessment	Full assessment*	Data-poor assessment	Indicators
Longtail tuna	Full assessment*	Data-poor assessment	Indicators	Full assessment*	Indicators
Narrow-barred Spanish mackerel	Data-poor assessment	Full assessment*	Indicators	Data-poor assessment	Full assessment*

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