

OUTCOMES OF THE 21st SESSION OF THE SCIENTIFIC COMMITTEE

PREPARED BY: IOTC SECRETARIAT, 10 JUNE 2019

PURPOSE

To inform participants at the 9th Working Party on Neritic Tunas (WPNT09) of the recommendations arising from the 21st Session of the IOTC Scientific Committee (SC) held from 3 – 7 December 2018, specifically relating to the work of the WPNT.

BACKGROUND

At the 21st Session of the SC, the SC noted and considered the recommendations made by the WPNT in 2018 that included requests for CPCs to improve data collection and reporting, recommendation for developing mechanisms to improve scientific advice and for funds made available to capacity building activities, or data compliance and support missions.

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 WPNT08, the SC21 adopted a set of recommendations, provided in [Appendix A](#) of this paper.

The recommendations contained in [Appendix A](#) were provided to the Commission for consideration at its 22nd Session held in June 2019. A separate paper, IOTC–2019–WPNT09–04 addresses the responses and actions of the Commission.

In addition, the SC21 reviewed and endorsed a Program of Work (2019–23) for the WPNT, including a revised stock assessment schedule, as detailed in [Appendix B](#) and [Appendix C](#). A separate paper (IOTC–2019–WPNT09–08) 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 8th Session of the Working Party on Neritic Tunas (WPNT08)

The SC noted the report of the 8th Session of the Working Party on Neritic Tunas (IOTC–2018–WPNT08–R[E]), including the consolidated list of recommendations provided as an appendix to the report. The meeting was attended by 18 participants (26 in 2017), including 6 recipients of the MPF (13 in 2017).

Data quality issues

The SC noted that compliance with data reporting obligations is particularly low for neritic tuna species, despite the importance of scientific data for stock assessment, and **REQUESTED** CPCs do their best to collect data and comply with data reporting requirements adopted by the IOTC. The SC further noted that these issues have been noted for several years with little progress made intersessionally. While there are ongoing initiatives to tackle many of these issues, very little progress has been made and therefore the SC strongly **REQUESTED** that the WPDCS take up these issues and address them in that forum.

The SC noted ongoing technical and financial constraints with data collection and reporting requirements for these fisheries and that data was a key issue slowing progress towards better assessment and the ability to provide robust management advice to the Commission. The SC also noted that there can be a trade-off between capacity building

exercises, which may be required to increase capacity to collect and provide data, and the urgency for assessment and appropriate management measures.

Assessment and status of neritic tunas

The SC noted ongoing concerns around the status of neritic tunas, in particular longtail tuna and narrow-barred Spanish mackerel, both of which are in the red zone of the Kobe plot (i.e. overfished and subject to overfishing). Furthermore, the SC noted that actions proposed to reduce catches have been rejected by some CPCs. In response to these concerns, the SC noted that these concerns would be captured in the Executive Summaries which could then be used by CPCs and the Commission in the formulation of management measures.

The SC noted that the stock structure for neritic species was likely to be more complex than that currently assumed and that this was a critical assumption that needs to be resolved to underpin reliable assessments and management. Consequently, it was suggested that stock structure studies should be given higher priority in the WPNT Program of Work. Genetics and other sampling to inform stock structure understanding is currently lacking or non-existent for most species.

The SC noted that all of the neritic tuna stock assessments that have been used for management advice are based on data limited catch-only methods, but there may be some more promising approaches such as CPUE or size-based methods that could use a smaller set of better quality data. The SC noted that these datasets are being explored and this exploration may also assist with understanding issues such as stock structuring or local depletion.

The SC **RECOMMENDED** that the Commission allocates funding for a consultancy to support the CPCs identified in Appendix VI of the report of the 8th session of the Working Party on Neritic Tunas (IOTC–2018–WPNT08–R[E]) with CPUE standardisation for the priority species identified.

Program and schedule of work

The SC **AGREED** that a cycle of assessments (e.g. every three years) and other intermediate meetings for data preparation and capacity building in non-assessment years would ensure momentum is maintained.

Working party attendance and the MPF

The SC noted that the technical nature of the 2018 WPNT meeting may have deterred some CPCs from attending. Furthermore, the SC noted that a number of interested CPCs could not attend the WPNT in 2018 due to overlaps with other meetings, as well as cultural and religious events, and urged the Secretariat to consider these meetings and events when planning future WPNT meetings in order to encourage higher participation.

Noting the low number of participants from CPCs at the 2018 WPNT meeting (six excluding the Chair and Vice-Chair), the SC **RECOMMENDED** that future capacity building actions and specialised workshops are conducted back-to-back with the regular Working Party meetings so that each CPC can send their most appropriate scientists to the meetings and workshops.

Program of work

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 35a-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.

(Extracts from SC21 Report, paras. 33 – 42 and 218).

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 SC21 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–2019–WPNT09–03 which outlined the main outcomes of the 21st Session of the Scientific Committee (SC21), 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 21st Session of the Scientific Committee to the Commission, relevant to the Working Party on Neritic Tunas.

Appendix B: Program of work (2019–2023) for the IOTC Working Party on Neritic Tunas (WPNT).

Appendix C: Schedule of stock assessments for the WPNT (2019–23).

APPENDIX A

CONSOLIDATED SET OF RECOMMENDATIONS OF THE 21th SESSION OF THE SCIENTIFIC COMMITTEE (3–7 December 2018) TO THE COMMISSION RELEVANT TO THE WORKING PARTY ON NERITIC TUNAS

Extract of the Report of the 21th Session of the Scientific Committee

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

Tuna and seerfish – Neritic species

SC21.03 (para. 199) 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 2018 (Fig. 5):

- Bullet tuna (*Auxis rochei*) – [Appendix 17](#)
- Frigate tuna (*Auxis thazard*) – [Appendix 18](#)
- Kawakawa (*Euthynnus affinis*) – [Appendix 19](#)
- Longtail tuna (*Thunnus tonggol*) – [Appendix 20](#)
- Indo-Pacific king mackerel (*Scomberomorus guttatus*) – [Appendix 21](#)
- Narrow-barred Spanish mackerel (*Scomberomorus commerson*) – [Appendix 22](#)

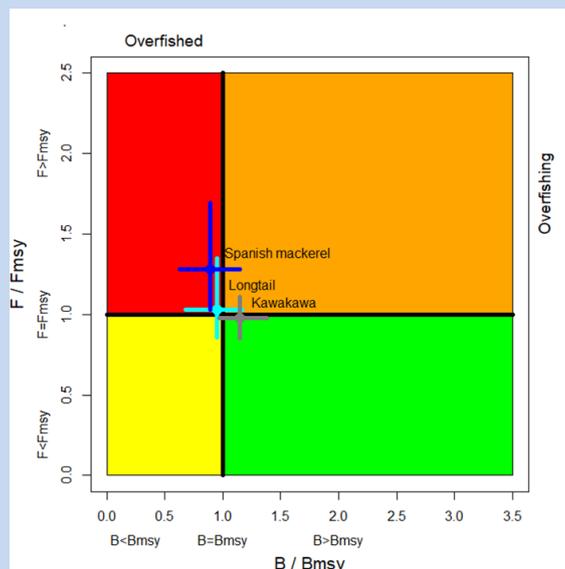


Fig. 3. Combined Kobe plot for longtail tuna (cyan: 2015), narrow-barred Spanish mackerel (dark blue: 2016), and kawakawa (white: 2013) showing the estimates of stock size (B) and current fishing mortality (F) in relation to MSY-based reference points. Numbers in brackets indicate the last year of data available at the time of the assessment. 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 8TH SESSION OF THE WORKING PARTY ON NERITIC TUNAS (WPNT08)

Assessment and status of neritic tunas

SC21.10 (para. 39) The SC **RECOMMENDED** that the Commission allocates funding for a consultancy to support the CPCs identified in Appendix VI of the report of the 8th session of the Working Party on Neritic Tunas (IOTC–2018–WPNT08–R[E]) with CPUE standardisation for the priority species identified.

Working party attendance and the MPF

SC21.11 (para. 42) Noting the low number of participants from CPCs at the 2018 WPNT meeting (six excluding

the Chair and Vice-Chair), the SC **RECOMMENDED** that future capacity building actions and specialised workshops are conducted back-to-back with the regular Working Party meetings so that each CPC can send their most appropriate scientists to the meetings and workshops.

Summary discussion of matters common to Working Parties

Invited Expert(s) at the WP meetings

SC21.29 (para. 177) Given the importance of external peer review for working party meetings, the SC **RECOMMENDED** that the Commission continues to allocate sufficient budget for an invited expert to be regularly invited to all scientific WP meetings.

Meeting participation fund

SC21.30 (para. 178) 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

SC21.31 (para. 179) 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.

IOTC Secretariat staffing

SC21.32 (para. 180) 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. 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.

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

SC21.33 (para. 181) 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](#).

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

SC21.34 (para. 214) 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

SC21.35 (para. 234) 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.

IOTC SCIENTIFIC STRATEGIC PLAN

SC21.36 (para. 247) The SC **AGREED** that the draft IOTC Strategic Science Plan 2020–2024 will be distributed to Heads of Delegation from each CPC for comment during early 2019, following which time comments will be collated and consolidated and another version sent to CPCs for final review. Pending agreement of CPCs, and noting that the IOTC Strategic Science Plan would be a dynamic document that would change over time, the SC **RECOMMENDED** that the revised draft of the IOTC Strategic Science Plan 2020–2024 be tabled at the Commission meeting in 2019.

APPENDIX B**RESEARCH RECOMMENDATIONS AND PRIORITIES**

*Extract of the Report of the 21st Session of the Scientific Committee
(IOTC–2018–SC21–R; Appendix 35a, PAGE 205)*

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 35a-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				
				2019	2020	2021	2022	2023
1. Data mining and collation	<p>Collate and characterise operational level data for the main neritic tuna fisheries in the Indian Ocean to investigate their suitability to be used for developing standardised CPUE indices.</p> <p>The following data should be collated and made available for collaborative analysis:</p> <ol 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 (1)	CPCs directly					
2. 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.	High (2)						
	➤ <input checked="" type="checkbox"/> Sri Lanka (priority species: Frigate tuna, Kawakawa, bullet tuna)		Consultant with CPCs					
	<input checked="" type="checkbox"/> I.R. Iran (priority species: Longtail tuna, Kawakawa, narrow-barred Spanish mackerel, Frigate tuna)		Consultant with CPCs					

	☑ Indonesia (priority species: narrow-barred Spanish mackerel, Kawakawa, longtail tuna, Frigate tuna)		Consultant with CPCs					
	☑ Pakistan (priority species: Longtail tuna, Kawakawa, narrow-barred Spanish mackerel)		Consultant with CPCs					
3. Stock assessment / Stock indicators	<p>Explore alternative assessment approaches and develop improvements where necessary based on the data available to determine stock status for longtail tuna, kawakawa and Spanish mackerel</p> <p>☑ 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.</p> <p>Improve the presentation of management advice from different assessment approaches to better represent the uncertainty and improve communication between scientists and managers in the IOTC.</p>	High (3)	IOTC Regular Budget/ EU grant 305					
4. Biological information (parameters for stock assessment)	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, longevity which will be fed into future stock assessments.	High (4)	CPCs directly					
5. Stock structure (connectivity)	Genetic research to determine the connectivity of neritic tunas throughout their distributions (LOT, KAW, COM)	High (5)	1.3 m Euro: European Union					
	➤ 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.		TBD					

- Genetic research to determine the connectivity of neritic tunas throughout their distributions

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APPENDIX C

ASSESSMENT SCHEDULE FOR IOTC SPECIES AND SPECIES OF INTEREST FROM 2019–2023

Extract of the Report of the 21st Session of the Scientific Committee

(IOTC–2018–SC21–R; Appendix 36, PAGE 237)

The SC **ADOPTED** a revised assessment schedule, ecological risk assessment and other core projects for 2018–22, 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 XXXVII (IOTC–2017–SC20–R, Para. 221).

<i>Working Party on Neritic Tunas</i>					
Species	2019**	2020*	2021***	2022	2023*
Bullet tuna	Data preparation	Assessment	Data preparation	Data preparation	Assessment
Frigate tuna	Data preparation	Assessment	Data preparation	Data preparation	Assessment
Indo-Pacific king mackerel	Data preparation	Assessment	Data preparation	Data preparation	Assessment
Kawakawa	Data preparation	Assessment	Data preparation	Data preparation	Assessment
Longtail tuna	Data preparation	Assessment	Data preparation	Data preparation	Assessment
Narrow-barred Spanish mackerel	Data preparation	Assessment	Data preparation	Data preparation	Assessment

* Including data-limited stock assessment methods;

** Including species-specific catches, CPUE, biological information and size distribution;

*** Identification of data gaps and discussion of improvements to the assessments (stock structure);

Note: the assessment schedule may be changed dependent on the annual review of fishery indicators, or SC and Commission requests.