OUTCOMES OF THE 25th, 26th and 27th SESSIONS OF THE SCIENTIFIC COMMITTEE

PREPARED BY: IOTC SECRETARIAT, 1 FEBRUARY 2025

PURPOSE

To inform participants at the 9th Working Party on Temperate Tunas (WPTmT09(DP)) of the recommendations arising from the 25th, 26th and 27th Sessions of the IOTC Scientific Committee (SC), with the latter held from 2–6 December 2024, specifically relating to the work of the WPTmT.

BACKGROUND

At the past 3 Sessions of the SC, the SC noted and considered the recommendations made by the WPTmT in 2022 (no WPTmT meetings in 2023 or 2024) that included requests to address the deficiencies in data collection, monitoring and reporting by CPCs, as well as to carry out targeted research on understanding stock structure of the albacore in the Indian Ocean.

The recommendations on the deficiencies in data collection, monitoring and reporting by CPCs in relation to temperate tunas will be discussed in paper IOTC–2025–WPTmT09(DP)–07 and are therefore not presented in this paper.

Based on the recommendations arising from the WPTmT08, the SC25 – SC27 adopted a set of recommendations, provided in Appendix A of this paper. These are all taken from SC27 as the advice has been the same since SC25 due to the lack of any additional WPTmT meetings in the interim.

The recommendations contained in Appendix A will be provided to the Commission for consideration at its 29th Session to be held in April 2025. A separate paper, IOTC–2025–WPTmT09(DP)–04 addresses the responses and actions of the Commission to the previous recommendations presented to the S28.

In addition, the SC25 (reiterated in SC26 and SC27) reviewed and endorsed a work plan for the WPTmT (*Research recommendation and priorities for IOTC Working Parties*), including a revised assessment schedule, as detailed in Appendix B and Appendix C. The *Program of Work* for the WPTmT for the next five years will be reviewed at the WPTmT Assessment meeting scheduled in July 2025.

DISCUSSION

In addition to the recommendations outlined in Appendix A, Appendix B and Appendix C, and noting that the last WPTmT meeting report was considered in detail by the SC in 2022, the following extracts **from the SC25, SC26 and SC27 Reports (2022, 2023 and 2024 respectively)** are provided here for the consideration and action of the WPTmT09(DP):

From the SC25 report (2022):

Albacore Tuna stock assessment

(*Para 104*) The SC **NOTED** that a new stock assessment was carried out for albacore in 2022 to update the assessment undertaken in 2019. The stock assessment was carried out using Stock Synthesis III (SS3). The model used in 2022 is based on the model developed in 2019 with a series of revisions that were noted during the WPTmT data preparatory meeting held in April 2022. There are some noticeable changes compared to the previous assessment data set, mainly related to how the fisheries are structured, and how the CPUE indices and length composition data are treated within the assessment model.

(*Para 105*) The SC **NOTED** that the final assessment is based on two models, one of which incorporates the southwest CPUE and the other incorporates the northwest CPUE. The two models are integrated to provide the

estimations of the stock status. The SC **NOTED** that the revised model indicated that the status of the stock has been revised from not overfished but subject to overfishing to not overfished and not subject to overfishing.

(*Para 106*) The SC **NOTED** the following potential causes for the change in stock status: some differences between the new joint CPUE series and the previous indices, including a decline in longline catches over the past four years, a significant downweighting of size data, and changes to the fleet structure in the model where each regional LL fishery are divided into four quarterly fisheries.

(*Para 107*) The SC **NOTED** that the main factor influencing estimations of the stock state is the LL CPUE indices. Due to the restricted access to operational data, there have been some changes to the standardization method. Therefore, uncertainty exists on whether these modifications lead to more representative indices. It was noted that the CPUE index in the North-western fishery (LL 1) has much higher variability than the CPUE index in the South-western fishery (LL 3), which has a somewhat flatter trend than the previous index.

From the SC26 report (2023):

Albacore MSE

(*Para 122*) The SC **NOTED** that the challenges encountered when conditioning OMs based on the albacore stock assessment have been resolved when using Approximate Bayesian Computation (ABC) to condition the albacore OMs. ABC can offer a variety of solutions to potential problems that may arise during conditioning (e.g., cannot account for recent observed catches). The SC endorsed this OM procedure and agreed that a final set of OMs be constructed for the MP evaluation.

From the SC27 Report (2024):

Management Strategy Evaluation Progress

The SC **NOTED** that the work of albacore is not mature enough that would require a TCMP in February and, therefore, **RECOMMENDED** that an extra TCMP meeting in February 2025 is not organized.

Executive summaries for albacore

The SC also adopted a revised Executive Summary for albacore that can be found as appendices to the SC24 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 WPTmT:

1) **NOTE** paper IOTC–2025–WPTmT09(DP)–03 which outlined the main outcomes of the 25th, 26th and 27th Sessions of the Scientific Committee, specifically related to the work of the WPTmT.
2) **CONSIDER** how best to progress these issues at the present meeting.

APPENDICES

Appendix A: Consolidated set of recommendations of the 27th Session of the Scientific Committee (2–6 December 2024) to the Commission, relevant to the Working Party on Temperate Tunas.
Appendix B: Research recommendations and priorities for the IOTC Working Party on Temperate Tunas (WPTmT).
Appendix C: Assessment schedule for the WPTmT 2025–2029.

APPENDIX A

CONSOLIDATED SET OF RECOMMENDATIONS OF THE 27th SESSION OF THE SCIENTIFIC COMMITTEE (2-6 December 2024) TO THE COMMISSION RELEVANT TO THE WORKING PARTY ON TEMPERATE TUNAS

Extract of the Report of the 27th Session of the Scientific Committee

(IOTC–2024–SC27–R)

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

Tuna – Highly migratory species

SC27.01 (para. 175) The SC **RECOMMENDED** that the Commission note the management advice developed for each tropical and temperate tuna species as provided in the Executive Summary for each species, and the combined Kobe plot for the four species assigned a stock status in 2024 (Fig. 2):

Albacore (*Thunnus alalunga*) – Appendix 8

Bigeye tuna (*Thunnus obesus*) – Appendix 9

Skipjack tuna (*Katsuwonus pelamis*) – Appendix 10

Yellowfin tuna (*Thunnus albacares*) – Appendix 11

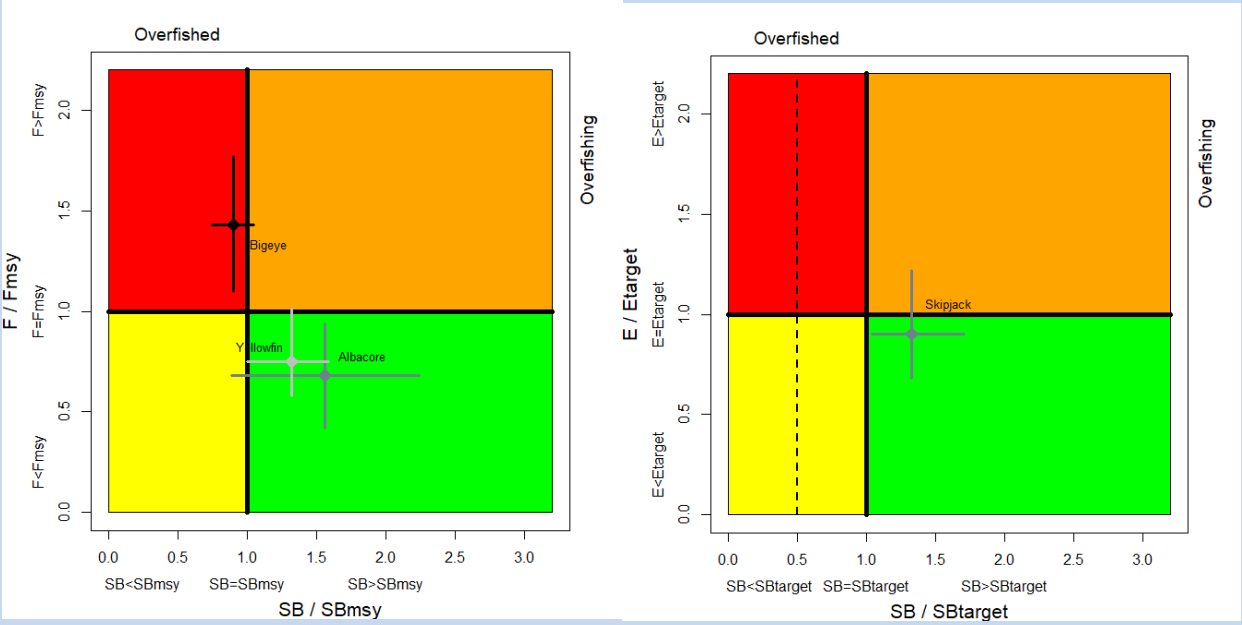

Fig. 2. (Left) Combined Kobe plot for bigeye tuna (black: status in 2021, with assessment conducted in 2022), and yellowfin tuna (light grey: 2023, with assessment conducted in 2024) and albacore (dark grey: 2020 with assessment conducted in 2022) showing the estimates of current spawning biomass (SB) and current fishing mortality (F) in relation to optimal spawning stock size and optimal fishing mortality. (Right) Kobe plot for skipjack tuna (2022 with assessment conducted in 2023) showing the estimates of the current stock status (the dashed line indicates the limit reference point at 20%SB0 while SBtarget=0.4 SB0). Cross bars illustrate the range of uncertainty from the model runs with an 80% CI (95% CI for albacore).

APPENDIX B

RESEARCH RECOMMENDATIONS AND PRIORITIES

Extract of the Report of the 27th Session of the Scientific Committee

(IOTC–2024–SC27–R)

WORKING PARTY ON TEMPERATE TUNAS PROGRAM OF WORK (2023–2027)

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

Topic		Sub-topic and project	Priority	Timing				
				2023	2024	2025	2026	2027
1	Stock structure (connectivity and diversity)	1.1 Genetic research to determine the connectivity of albacore throughout its distribution and the effective population size.	Low (5)					
2	Biological information (parameters for stock assessment)	2.1 Biological research (collaborative research to improve understanding of spatio-temporal patterns in age and growth and reproductive parameters)	High (1)					
		2.1.1 Age and growth studies: Uncertainty about the growth curve is a primary source of uncertainty in the stock assessment. A preliminary growth curve was developed in 2019, but there is substantial work to be done to ensure that growth curves include data from smaller size classes, and that spatio-temporal patterns in growth are quantified for use in the stock assessment. Collaborative sampling programs, involving a combination of observer- and port-based sampling, are required to ensure that adequate samples are collected.						

		2..1.2 Quantitative biological studies are necessary for albacore throughout its range to determine spatio-temporal patterns in key reproductive parameters including sex ratio; female length- and age-at-maturity; spawning location, periodicity and frequency; batch fecundity at length and age; spawning fraction and overall reproductive potential, to inform future stock assessments.						
3	CPUE standardisation	3.1 Continue the development of standardized CPUE series for each albacore fishery for the Indian Ocean, with the aim of developing appropriate CPUE series for stock assessment purposes.	High (3)					
		3.1.1 Spatio-temporal structure and target changes need to be considered carefully, as fish density and targeting practices can vary in ways that affect CPUE indices. Developments may include changes to fishery spatial structure, new approaches for area weighting, time-area interactions in the model, and/or indices using VAST.						
4	Size frequency data	4.1 Further investigate the size information provided by CPCs in order to better understand the stock dynamics and inputs into the assessment models. This is particularly necessary for the purse seine data.	High (2)					
5	Management strategy evaluation	5.1 Continue to collaborate with the WPM on input to the Management Strategy Evaluation (MSE) process.	High (4)					

APPENDIX C
ASSESSMENT SCHEDULE FOR IOTC WORKING PARTIES

Extract of the Report of the 27th Session of the Scientific Committee

(IOTC–2024–SC27–R)

The SC **ADOPTED** a revised assessment schedule, ecological risk assessment and other core projects for 2025–29, 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 37 (IOTC–2024–SC74–R).

Working Party on Temperate Tunas					
Species	**2025**	**2026**	**2027**	**2028**	**2029**
Albacore	Data preparatory Meeting (4 days) Stock assessment meeting (5 days) (July/August)	–	–	**TBC**	–