REVISION OF THE PROGRAM OF WORK (2027–2031) FOR THE IOTC SCIENCE PROCESS

PREPARED BY: IOTC SECRETARIAT, SC CHAIR AND WP CHAIRS, 01 NOVEMBER 2026

PURPOSE

To provide the Scientific Committee (SC) with a proposed Program of Work for each of its Working Parties (WP), including preliminary prioritisation of the elements requested by each WP. The aim is to develop an overall Program of Work for 2027–2031 which will deliver the information the Commission has requested to meet the objectives of the IOTC.

BACKGROUND

Scientific Committee

At the 28th Session of the SC:

(Para. 286) The SC **NOTED** IOTC–2025–SC28–08 which provided the SC with a proposed Program of Work for each of its working parties, including prioritisation of the elements requested by each working party.

(Para. 287) The SC **NOTED** the proposed Program of Work and priorities for the SC and each of the working parties and **AGREED** to a consolidated Program of Work as outlined in Appendix 36a-g. The Chairpersons and Vice-Chairpersons of each working party will ensure that the efforts of their respective working parties 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.

(Para. 289) The SC **AGREED** on the consolidated table of priorities across all working parties (Table 3), as developed by each working party Chairperson, and **REQUESTED** that the IOTC Secretariat, in consultation with the Chairpersons and vice-Chairpersons of the SC and relevant working parties, develop ToRs for the specific projects to be carried out.

(Para. 290) The SC **NOTED** that the consolidated table of priorities does not replace the full programme of work of each Working Party (Appendix 37a-g) and that adequate attention and focus should still be allocated to those activities where possible. The SC further **NOTED** that Table 3 has been developed by the SC and Working Party Chairs to provide more specific direction to the IOTC Secretariat and the SC Chair as to the priorities of the SC so that, if and when external funding becomes available intersessionally, it is possible to clearly prioritise across all working parties based on the objectives of the SC (as agreed in IOTC–2014–SC17–R, para. 179).

.

DISCUSSION

The SC is requested to consider the priorities set by the Commission, via Conservation and Management Measures, and consider and revise as necessary, its Program of Work to match those priorities.

The draft schedule of stock assessments for IOTC species and species of interest from 2027–2031, and for other working party priorities is provided in Appendix I. The highest three (3) priority projects by each Working Party are presented in Appendix II and all the priority projects agreed to by each WP meeting in 2025 are referenced in Appendix III.

RECOMMENDATION

That the Scientific Committee:

1) **NOTE** paper IOTC–2026–SC29–08, which encouraged the SC to further develop and refine its Program of Work for 2027–2031, which is based on those of its Working Parties, to ensure it is aligned with the requests and directives from the Commission.
2) **ADOPT** a revised Program of Work for 2027–2031.

APPENDIX I

DRAFT: SCHEDULE OF STOCK ASSESSMENTS FOR IOTC SPECIES AND SPECIES OF INTEREST FROM 2027–2031, AND FOR OTHER WORKING PARTY PRIORITIES

Working Party on Neritic Tunas					
Species	2027*	2028**	2029*	2030*	2031**
Bullet tuna	**Assessment**	Data preparation	Data preparation	**Assessment**	Data preparation
Frigate tuna	**Assessment**	Data preparation	Data preparation	**Assessment**	Data preparation
Indo-Pacific king mackerel	**Assessment**	Data preparation	Data preparation	**Assessment**	Data preparation
Kawakawa	Data preparation	Data preparation	**Assessment**	Data preparation	Data preparation
Longtail tuna	Data preparation	Data preparation	**Assessment**	Data preparation	Data preparation
Narrow-barred Spanish mackerel	Data preparation	Data preparation	**Assessment**	Data preparation	Data preparation

* Including data-limited stock assessment methods.
** Including species-specific catches, CPUE, biological information and size distribution as well as identification of data gaps and discussion of improvements to the assessments (stock structure); one day may be reserved for capacity building activities.

Working Party on Billfish					
Species	2027	2028	2029	2030	2031
Black marlin	Full assessment			Full assessment	
Blue marlin		Full assessment			Full assessment
Striped marlin	Full assessment			Full assessment	
Swordfish	Run MP		Full assessment	Run MP	
Indo-Pacific sailfish		Full assessment			Full assessment

Working Party on Tropical Tunas					
Species	**2027**	**2028**	**2029**	**2030**	**2031**
Bigeye tuna	**Data Prep and MP to be run**	**Data preparatory meeting** **Full assessment**	Indicators	**Data Prep and MP to be run**	**Data preparatory meeting** **Full assessment**
Skipjack tuna	Indicators	**Data Prep for MP and MP to be run**	**Data preparatory meeting** **Full assessment**	Indicators	**Data Prep and MP to be run**
Yellowfin tuna	**[Data preparatory meeting]** **[Full assessment]**	Indicators	Indicators	**Data preparatory meeting** **Full assessment**	Indicators

Working Party on Methods					
Species	**2027**	**2028**	**2029**	**2030**	**2031**
Bigeye tuna	Review of Exceptional Circumstances **Run the MP**	Review of Exceptional Circumstances	Review of Exceptional Circumstances	Review of Exceptional Circumstances **Run the MP**	Review of Exceptional Circumstances
Skipjack tuna	Review of Exceptional Circumstances	Review of Exceptional Circumstances **Run the MP**	Review of Exceptional Circumstances	Review of Exceptional Circumstances	Review of Exceptional Circumstances
Swordfish	Review of Exceptional Circumstances **Run the MP**	Review of Exceptional Circumstances	Review of Exceptional Circumstances	Review of Exceptional Circumstances **Run the MP**	Review of Exceptional Circumstances

Working Party on Temperate Tunas					
Species	**2027**	**2028**	**2029**	**2030**	**2031**
Albacore	–	Stock assessment meeting		–	Stock assessment meeting

Working Party on Ecosystems and Bycatch					
Species	**2027**	**2028**	**2029**	**2030**	**2031**
-	-	-	Data preparatory meeting	Data preparatory meeting	Data preparatory meeting
Blue shark	–	–	–	Full assessment	-
Oceanic whitetip shark	-	–		Indicator analysis*	Indicator analysis*
Scalloped hammerhead shark*	–	–	–	–	Indicator analysis*
Shortfin mako shark			Full assessment		-
Silky shark	-	Indicator analysis*	-	–	Indicator analysis*
Bigeye thresher shark	Indicator analysis*	-	–	–	-
Pelagic thresher shark	Indicator analysis*	-	–	–	-
Porbeagle shark	Indicator analysis*		–	–	-
Mobulid Rays	Interactions / indicator analysis*	-	Interactions/ Indicators	–	-
Marine turtles	–	Indicators	–	Indicators	-
Seabirds	Presentation of the draft Seabird workplan. Review of mitigation measures in Res. 23/07	–	Development of draft workplan		Review branch line weighting protocols
Marine Mammals	–	–	Review of effective mitigation measures Review of handling guidelines		-
Ecosystem Approach to Fisheries Management (EAFM) approaches					Pilot ecosystem fisheries overviews for selected ecoregions
Series of multi-taxa bycatch mitigation workshops	Focus: tbd	Focus: tbd	Focus: gillnets	Focus: tbd	Focus: tbd

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

APPENDIX II

TOP THREE PRIORITY PROJECTS FOR EACH IOTC WORKING PARTY

All priorities come from the 2026 reports of each WP except for the WPDCS which comes from the 2025 report and will be updated for the SC report.

Priority	1	2	3
WPTT	**Fisheries Dependent Abundance indices** Continue to address the recommendations made by the WPTT in 2024 regarding the CPUE indices for yellowfin. In view of the coming assessments of yellowfin, bigeye, and skipjack develop abundance time series for each tropical tuna stock for the Indian Ocean • Continue to develop CPUE indices from Longline, purse seine, Pole and line Gillnet fisheries (e.g., Indonesia, Iran, Pakistan and Oman), and Evaluate effect of changes of spatial coverage on the longline CPUE through the Joint CPUE workshop and estimate spatial temporal abundance distribution through Spatial Temporal modelling approach	**Fisheries Independent Abundance indices** Fishery independent indices of abundance such as those derived from echosounder buoys. Investigate the potential to use the Indian longline survey as a fishery-independent index of abundance for tropical tunas. Use of Close Kin Mark Recapture (CKMR) methods which can provide estimates of absolute spawning biomass, mortality, stock structure, and connectivity based on genotyping individuals to a level that can identify close relatives (e.g. parent-offspring or half-siblings). Progress the staged approach for implementation of a YFT CKMR project	**Biological and ecological information (incl. parameters for stock assessment)** Support the biological sampling program (funded by the EU grant) to support research on tropical tuna biology. The plan would consider the need for the sampling program to provide representative coverage of the distribution of the different tropical tuna species within the Indian Ocean and make use of samples and data collected through observer programs, port sampling and/or other research programs. The plan would also consider the types of biological samples that could be collected (e.g. otoliths, spines, gonads, stomachs, muscle and liver tissue, fin clips, etc.), the sample sizes required for estimating biological parameters, and the logistics involved in collecting, transporting and processing biological samples. The specific biological parameters that could be estimated include, but are not limited to, estimates of growth, age at maturity, fecundity, sex ratio, spawning season, spawning fraction and stock structure **Analysis of environmental factors** Evaluate the impact of environmental factors on the dynamics of tropical tuna stocks and the possible role of climate change on changes to selectivity, recruitment deviates and fishing productivity.
WPEB	**1. Data improvement** 1.1. Consultant to work with key GN fleets to assess their data collection systems and help fill gaps (Table A 7 action 2).	**2. Shark assessment improvement** 2.1 Apply CKMR to feasible species as outlined in the shark research plan (Table A 8 action 3). 2.2 Implement adaptive management for data-poor species with stakeholder engagement (**Error! Reference source not found.Error! Reference source not found.** action 4).	**3. Biological information and parameters** 3.1 Investigate age and growth parameters (Table A 7 actions 20 & 21). 3.1.1 Investigate all biological parameters (lack of information for all species in the Eastern Indian Ocean) (Table A 7 actions 24

	1.2 Define and implement routine sampling (every year) starting with priority countries, as outlined in the shark research plan (Table A 7 actions 1, 3 & 4). 1.2.1 Implement routine detailed sampling (every 2-3 years) focusing on catch composition and size (Table A 7 action 5). 1.3 Compile existing and create further capacity building materials (where needed) and carry out periodic workshops as outlined in the shark research plan (including ID guides for all taxa as required) (Table A 7 action 8 & 9).		3.2 Study at vessel and post release mortality on a regular basis for sharks (Table A 7 action 22) and other taxa
WPNT	**Stock structure (connectivity)** Genetic research to determine the connectivity of neritic tunas throughout their distributions (This should build on the stock structure work conducted in other previous studies); Review of stock structure methodologies in order to determine the best approach to regional stock structure studies. Based on discussions develop and implement regional genetic sampling collection programme: • Sampling of tissue samples • DNA extraction and storage for preservation • Carry out genetic sequencing on extracted DNA to understand their phylogenetic relationships.	**Stock assessment / Stock indicators** Explore alternative assessment approaches and develop improvements where necessary based on the data available to determine stock status for neritic and seerfish species • Review and improve the current data limited methods for determining stock status and provide management advice. • Review size data and their suitability for monitoring stock status • Explore inclusion of research and alternative data sources from CPCs in assessments (in particular length-frequency data). • 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.	**Data mining and collation** Improved collation and characterization of 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. Improved characterisation of fisheries when CPCs present information to WPNT. The following data should be collated and made available for collaborative analysis: • Collaborate with CPCs to analyse their catch and effort and length frequency data and develop CPUE indices (Iran, Sri Lanka, India, Pakistan, Thailand) • Re-estimation of historic catches by CPCs using recovered or captured information (with consultation and consent of concerned CPCs including India, Pakistan, Bangladesh, Mozambique, Tanzania, Madagascar, Kenya) for assessment purposes (taking into account updated identification of uncertainties and knowledge of the history of the fisheries. • Improvements to species identification
WPTmT	**Stock structure (connectivity and diversity)** 1.1 Genetic research to determine the connectivity of albacore throughout its	**Biological information (parameters for stock assessment)**	**CPUE standardisation** 3.1 Continue the development of standardized CPUE series for each albacore fishery for the Indian Ocean, with the aim of

	distribution and the effective population size 1.2 Tagging study to understand the migration pattern of albacore in the Indian Ocean	2.1 Biological research (collaborative research to improve understanding of spatio-temporal patterns in age and growth and reproductive parameters by sex) 2.11 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	developing appropriate CPUE series for stock assessment purposes 3.2 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 spatial temporal model
WPB	**CPUE standardization** Develop and/or revise standardized CPUE series for each billfish species and major fisheries/fleets in the Indian Ocean and develop Joint CPUE series where feasible Swordfish: Priority LL fleets: Taiwan,China, EU(Spain, Portugal, France), Japan, Indonesia, South African • Swordfish: Priority LL fleets: Taiwan,China, EU(Spain, Portugal, France), Japan, Indonesia, South African • Striped marlin: Priority fleets: Japan, Taiwan,China • Black marlin: Priority fleets: Longline: Taiwan,China; Potential fleets (Gillnet: I.R. Iran, Sri Lanka, Indonesia) • Blue marlin: Priority fleets: Japan, Taiwan,China, Indonesia • I.P. Sailfish: Potential longline fleets: EU(Japan, Indonesia);	**Biological and ecological information** Biological research • CPCs to provide further research on billfish biology, namely age and growth studies including through the use of fish otolith or other hard parts, either from data collected through observer programs, port sampling or other research programs. (Priority: all billfishes: swordfish, marlins and sailfish) • Tissues samples to support genetic studies such as epigenetic and CKMR • Spawning time and locations: collect gonad samples from billfish or utilise any other scientific means to confirm the spawning time and location of the spawning areas that are presently hypothesized for each billfish species. This will also provide advice to the Commission on the request for alternative management measures (Res. 18-05, paragraph 6). Partially supported by EU, on-going support and collaboration from CPCs are required. Stock structure (connectivity and diversity) • Continue work on determining stock structure of Billfish species, using complimentary data sources, including genetic and microchemistry information as well as other relevant sources/studies. • Tagging research (e.g., PSAT tags & genetic tags) to determine connectivity, movement rates and mortality estimates of billfish (Priority species: swordfish). Similar	**Historical data review** Changes in fleet dynamics • Continue the work with coastal countries to address recent changes and/or increases of marlins catches especially in some coastal fleets. 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 and very high increases in some species (e.g., black marlin mainly due to very high catches reported by India in recent years). The possibility of producing alternative catch histories should also be explored. Priority countries: India, Pakistan, Iran, I.R., Indonesia, Somalia, Oman. Species identification • The quality of the data available at the IOTC Secretariat on marlins (by species) is likely to be compromised

	Data on gillnet fisheries are available in several CPCs (Pakistan, I.R. Iran, and) and the recovery of this information and the development of gillnet CPUE indices will improve species assessments, particularly for: • Black marlin • Sailfish Investigate environmental variables and habitat covariates in CPUE standardisation, and improve the understanding of how they could potential influence fish distribution and changes in abundance	projects have been partially funded by EU, with a focus on epipelagic species. More tags are needed for swordfish	by species miss-identification. Thus, CPCs should review their historical data in order to identify, report and correct (if possible) potential identification problems that are detrimental to any analysis of the status of the stocks. Consider the application of DNA-Barcoding technology for billfish species identification. Tagging data • Tagging data recovery from alternate sources (e.g. Billfish foundation) to supplement IOTC tagging database information and potentially develop Shiny APP for data dissemination
WPDCS	**1. Coastal fisheries data collection** 1.1 Data support missions to assist the implementation of data collection and sampling activities for fisheries insufficiently sampled. Recommended actions include designing sampling guidelines for IOTC fisheries. Priority to be given to the following countries / fisheries: • Indonesia • Pakistan • I.R. Iran • Tanzania • Comoros 1.2 Biological sampling workshop, including species identification and genetics sampling	**2. Data access and dissemination** 2.1 Ocean-climate information: develop an online digital ocean atlas for the IOTC area of competence, linked by the IOTC website; develop indicators on ocean-climate status to be linked to the atlas portal, along with educational resources. 2.2 Biological information: collaborate with CPCs to collect, Review, analyse, and manage of biological data and information 2.3 Improve accessibility of IOTC scientific products and digital assets through standard metadata and DOI (e.g., remote workshops) 2.4 Secretariat to establish a photo and imagery tool library and archive and develop associated reporting guidelines.	**3. Monitoring and improving data reporting requirement and performance** 3.1 Drafting of indicators to assess performance of IOTC CPCs against IOTC Data Requirements; evaluation of performance of IOTC CPCs with those Requirements; development of plans of action to address the issues identified, including timeframe of implementation and follow-up activities required. Priority given to CPCs with low data compliance assessment scores and/or upon requests by the CPCs 3.2 Workshops to clarify data reporting requirements and support preparation of annual submissions including ROS data 3.3 Support the documentation of sampling protocols and processing
WPM	**MSE** Continuation of Management Strategy Evaluation for Albacore Yellowfin tunas as well as Blue shark		

APPENDIX III
REFERENCES TO THE INDIVIDUAL IOTC WORKING PARTY PROGRAMS OF WORK

Report number	Report title
IOTC-2026-WPNT16-R	Report of the 16th Session of the Working Party on Neritic Tunas
IOTC-2026-WPB24-R	Report of the 24nd Session of the Working Party on Billfish
IOTC-2026-WPEB22-R	Report of the 22th Session of the Working Party on Ecosystems and Bycatch
IOTC-2026-WPM17-R	Report of the 17th Session of the Working Party on Methods
IOTC-2025-WPDCS21-R	Report of the 21st Session of the Working Party on Data collection and Statistics
IOTC-2026-WPTT28-R	Report of the 28th Session of the Working Party on Tropical Tunas