REVISION OF THE WPEB PROGRAM OF WORK (2025–2029)

PREPARED BY: IOTC SECRETARIAT & CHAIR, AUGUST 2024

PURPOSE

To ensure that participants at the 20th Working Party on Ecosystems and Bycatch (WPEB20) revise the Program of Work for the WPEB by taking into consideration the specific requests of the Commission and Scientific Committee.

BACKGROUND

Scientific Committee

At the 25th Session of the SC:

(Para. 179) The SC **NOTED** IOTC–2022–SC25–08 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. 180) 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 35a-g and in accordance with the IOTC Strategic Science Plan 2020-2024. 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. 182) The SC AGREED on the consolidated table of priorities across all working parties, 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. 184) The SC **NOTED** that the consolidated table of priorities does not replace the full programme of work of each working party (Appendix 35a-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).

(Para. 185) The SC **ADOPTED** a revised assessment schedule, ecological risk assessment and other core projects for 2023–27, 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 36.

Commission

At Sessions of the Commission, Conservation and Management Measures adopted contained elements that call on the Scientific Committee, via the WPEB, to undertake specific tasks. These requests will need to be incorporated into a revised Program of Work for the WPEB:

Resolution 12/12 ***To prohibit the use of large-scale driftnets on the high seas in the IOTC area***

(para. 1) The use of large-scale driftnets[1] on the high seas within the IOTC area of competence shall be prohibited.

(para. 6) The IOTC shall periodically assess whether additional measures should be adopted and implemented to ensure that large-scale driftnets are not used on the high seas in the IOTC area of competence. The first such assessment shall take place in 2013.

Resolution 17/05 ***On the conservation of sharks caught in association with fisheries managed by IOTC***

(para. 9) The IOTC Scientific Committee shall request that the IOTC Working Party on Ecosystems and Bycatch continue its work on identifying and monitoring the status of sharks until such time as comprehensive assessments are possible for all relevant shark species/groups. In particular, the IOTC Working Party on Ecosystems and Bycatch will establish the Terms of Reference for the Commission to establish a long term-project on sharks in IOTC, with the aim to ensure the collection of data required for performing reliable stock assessments for key shark species. The project will include:

a) the identification of data gaps for key shark species in IOTC;

b) the collection of relevant data, including through direct contacts with CPC national administrations, research institutes and stakeholders;

c) any other activity that could contribute to improving the collection of data required for performing stock assessments of key shark species in IOTC.

Resolution 18/02 ***On Management Measures for the Conservation of Blue Shark Caught in Association with IOTC Fisheries***

(para 5) CPCs are encouraged to undertake scientific research on blue shark that would provide information on key biological/ecological/behavioural characteristics, life-history, migrations, post-release survival and guidelines for safe release and identification of nursery grounds, as well as improving fishing practices. Such information shall be made available to the Working Party on Ecosystem and Bycatch and Scientific Committee through working documents and the national Annual Reports

(para 6) In light of the results of the next stock assessment of blue shark in 2021, the Scientific Committee shall provide advice, if possible, on options for candidate limit, threshold and target reference points for the conservation and management of this species in the IOTC Convention area.

(para 7) The Scientific Committee shall also provide advice, at the latest by 2021, on potential management options for ensuring long-term sustainability of the stock, such as mitigation measures to reduce the mortality of blue shark, improving selectivity of fishing gears, spatial/temporal closures or minimum conservation sizes.

Resolution 19/02 ***On a FAD management plan***

(para 5) A CPC may adopt a lower limit than the one set out in paragraph 4 for vessels flying its flag. Further, any CPC may adopt a lower limit for DFADs deployed in its EEZ than that stated in paragraph 4. The CPC shall review the adopted limit to ensure that such limit is not more than the limit fixed by the Commission.

(para 19) CPCs are encouraged to conduct trials using biodegradable materials to facilitate the transition to the use of only biodegradable material for DFADS construction by their flagged vessels. The results of such trials shall be presented to the Scientific Committee who shall continue to review research results on the

[1] "Large-scale driftnets" are defined as gillnets or other nets or a combination of nets that are more than 2.5 kilometres in length whose purpose is to enmesh, entrap, or entangle fish by drifting on the surface of, or in, the water column.

use of biodegradable material on FADs and shall provide specific recommendations to the Commission as appropriate.

(para 23) The IOTC Scientific Committee will analyse the information, when available, and provide scientific advice on additional FAD management options for consideration by the Commission, including recommendations on the number of FADs to be operated, the use of biodegradable materials in new and improved FADs design. When assessing the impact of FADs on the dynamic and distribution of targeted fish stocks and associated species and on the ecosystem, the IOTC Scientific Committee will, where relevant, use all available data on abandoned FADs (i.e., FADs without a beacon or which have drifted outside the fishing zone).

Resolution 19/03 ***On the conservation of mobulid species caught in association with fisheries in the IOTC Area of Competence***

(para 11) CPCs, unless clearly demonstrate that intentional and/or incidental catches of mobulids do not occur in their fisheries, shall develop, with the assistance from the IOTC Secretariat where required, sampling plans for the monitoring of the mobulid rays catches by the subsistence and artisanal fisheries. The sampling plans, including their scientific and operational rationale, shall be reported in the national scientific reports to the Scientific Committee, starting in 2020, which will provide its advice on their soundness by 2021 at the latest. The sampling plans, where required, will be implemented by the CPCs from 2022 onward taking into account the Scientific Committee advice.

(para 13) The IOTC Scientific Committee shall review the status of Mobula spp. in the IOTC Area of Competence and provide management advice to the Commission in 2023 also to identify possible hot-spots for conservation and management of mobulids within and beyond EEZs. Moreover, the IOTC Scientific Committee is requested to provide, whenever considered adequate on the basis of evolving knowledge and scientific advice, further improvements to the handling procedures detailed in Annex 1.

Resolution 19/05 ***On a ban on discards of bigeye tuna, skipjack tuna, yellowfin tuna, and non-targeted species caught by purse seine vessels in the IOTC Area of Competence***

(para 6) The IOTC Scientific Committee, the IOTC Working Party on Tropical Tunas, and the IOTC Working Party on Ecosystems and Bycatch shall as a matter of priority:

a) act on its recommendation in the Report of the 18th Session of the IOTC Scientific Committee and undertake work to examine the benefits of retaining non-targeted species catches, other than those prohibited via IOTC Resolution, and present its recommendations to the 22nd Annual Session of the Commission. The work should take into account all species that are usually discarded on all major gears (i.e., purse-seines, longlines and gillnets), and should look at fisheries that take place both on the high seas and in coastal countries and the feasibility of both retraining on-board and processing of the associated landings.

Resolution 23/06 ***On the conservation of cetaceans***

(para 7) The Commission requests that the IOTC Scientific Committee develop best practice guidelines for the safe release and handling of encircled cetaceans, taking into account those developed in other Regional Fisheries Management Organisations, including the Western and Central Pacific Fisheries Commission, and that these guidelines be submitted to the Commission meeting for endorsement by 2025 at the latest.

(para 12) The IOTC Scientific Committee shall review information on the status of cetaceans in the IOTC area of competence and provide recommendation or advice to the Commission no later than 2025 to identify appropriate measures that Commission shall take to mitigate negative effects of the interactions with cetaceans by the IOTC fisheries.

Resolution 23/07 ***On reducing the incidental bycatch of seabirds in longline fisheries***

(para 8) The Scientific Committee will continue to review and make recommendations to the Commission on advancements and best practice in seabird bycatch mitigation as they become available. This will include, by 2024 at the latest, developing advice to the Commission on best practice branch line weighting.

(para 9) CPCs who elect to use hook-shielding devices as a mitigation method are encouraged to share their experience with other CPCs, as appropriate, through the Working Party on Ecosystems and Bycatch.

Resolution 24/01 ***On climate change as it relates to the Indian Ocean Tuna Commission***

(para 5) To support and accelerate consideration of climate change issues in the Commission:

a) The Working Party on Ecosystems and Bycatch (WPEB) shall include climate change as a standing agenda item of its regular meeting, to include an assessment of the impacts (actual and potential) of climate change on IOTC fisheries. On that basis, the WPEB shall provide information or advice to the IOTC Scientific Committee on an annual basis in line with its current reporting processes.

DISCUSSION

Participants at the WPEB20 are requested to consider the priorities set by the Commission via its Conservation and Management Measures, and the Scientific Committee, and revise its Program of Work to match those priorities.

RECOMMENDATION/S

That the WPEB:

1) **NOTE** paper IOTC–2024–WPEB20(AS)–10, which encouraged the WPEB to further develop and refine its Program of Work for 2025–2029 to align with the requests and directives from the Commission and Scientific Committee.
2) **RECOMMEND** a revised Program of Work for 2025–2029 to the Scientific Committee for its consideration and potential endorsement.

WORKING PARTY ON ECOSYSTEMS AND BYCATCH PROGRAM OF WORK (2024–2028)

The Program of Work consists of the following, noting that a timeline for implementation would be developed by the SC once it has agreed to the priority projects across all of its Working Parties:

- **Table 1**: Priority topics for obtaining the information necessary to develop stock status indicators for bycatch in the Indian Ocean; and
- **Table 2**: Stock assessment schedule.

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

Topic in order of priority	**Sub-topic and project**	Timing				
		2024	2025	2026	2027	2028
Connectivity, movements, habitat use and post release mortality*	Electronic tags (PSATs, SPOT, Splash MiniPAT) to assess the efficiency of management resolutions on non-retention species (BSH in LL, marine turtles and rays in GIL and PS, whale sharks) and to determine connectivity, movement rates and mortality estimates.					
1. Fisheries data collection	1.1 Catch composition reconstruction (initial focus Sri Lanka, Pakistan and Indonesia)					
	1.1.2 Historical data mining for the key species and IOTC fleets (e.g., as artisanal gillnet and longline coastal fisheries) including workshops:					
	1.1.3 Historical data mining for the key species, including the collection of information about catch, effort and spatial distribution of those species and fleets catching them					
	1.1.4 CPUE standardisation and review of additional abundance indicators series for each key shark species and fishery in the Indian Ocean					

2. Shark research and management strategy	2.1 Implementation of work suggested by shark work plan consultancy					
	2.2 Prioritising shark research based on previous work and including analysing gaps in knowledge					
3. Ecoregions development	Support for the development and refinement of ecoregions in the Indian Ocean: • Development of a pilot study (focused on two ecoregions: one coastal, the Somali Current ecoregion and one oceanic, the Indian Ocean Gyre ecoregion)					

Other Future Research Requirements (not in order of priority)

Topic	Sub-topic and project	2024	2025	2026	2027	2028
1. Review and improve data collection for mobulid rays	1.1 Mobulid ID guide revision and translation. ID guides to be updated with help of CPC scientists					
2. Bycatch mitigation measures	2.1 Gears 2.1.1 Undertake a series of gear specific workshops focusing on multi-taxa bycatch issues					
	2.1.2 Develop studies on bycatch mitigation measures for the main gears using in the IOTC area (operational, technological aspects and best practices)					
	2.2 Sharks a) Harmonise and finalise guidelines and protocols for safe handling and release of sharks and rays caught in IOTC fisheries					

2.3 Sea turtles 2.3.1 Res. 12/04 (para. 11) Part I. The IOTC Scientific Committee shall request the IOTC Working Party on Ecosystems and Bycatch to:					
a) Develop recommendations on appropriate mitigation measures for gillnet, longline and purse seine fisheries in the IOTC area; [mostly completed for LL and PS]					
b) Develop regional standards covering data collection, data exchange and training					
2.3.2 Res. 12/04 (para. 17) The IOTC Scientific Committee shall annually review the information reported by CPCs pursuant to this measure and, as necessary, provide recommendations to the Commission on ways to strengthen efforts to reduce marine turtle interactions with IOTC fisheries.					
2.3.3 Regional workshop to review the effectiveness of marine turtle mitigation measures					
2.3.4 Harmonise and finalise guidelines and protocols for safe handling and release of sea turtles caught in IOTC fisheries					
2.3 Seabirds 2.3.1 Bycatch assessment for seabirds taking into account the information from the various ongoing initiatives in the IO and adjacent oceans					
2.3.2 Study on cryptic mortality of seabirds in tuna LL fisheries.					
2.3.3 Study post release survival rates for seabirds and harmonise and finalise guidelines and protocols for safe handling and release of seabirds caught in IOTC fisheries					

	2.4 Cetaceans 2.4.1 Testing mitigation methods for cetacean bycatch in tuna drift gillnet fisheries					
	2.4.2 Harmonise and finalise guidelines and protocols for safe handling and release of cetaceans caught in IOTC fisheries					
	2.4.3. Intersessional meeting to discuss cetacean guidelines, ERA, Data gaps.					
3. CPUE standardisation / Stock Assessment / Other indicators	3.1 Develop standardised CPUE series for each key shark species and fishery in the Indian Ocean:					
	3.1.1 Development of CPUE guidelines for standardisation of CPC data.					
	3.1.2 Blue shark: Priority fleets: TWN,CHN LL, EU,Spain LL, Japan LL; Indonesia LL; EU,Portugal LL					
	3.1.3 Shortfin mako shark: Priority fleets: Longline and Gillnet fleets					
	3.1.4 Oceanic whitetip shark: Priority fleets: Longline fleets; purse seine fleets					
	3.1.5 Silky shark: Priority fleets: Purse seine fleets					
	3.2 Joint CPUE standardization across the main LL fleets for silky shark, using detailed operational data					
	3.3 Stock assessment and other indicators					
4. Ecosystems	4.1 Develop a plan for Ecosystem Approach to Fisheries (EAF) approaches in the IOTC, in conjunction with the Common Oceans Tuna Project.					

	4.1.2 Workshop for CPCs on continuing efforts to the development of an EAF including delineation of candidate eco regions within IOTC.					
	4.1.3 Practical Implementation of EBFM with the development and testing of ecosystem report cards.					
	4.1.4 Evaluation of EBFM plan in IOTC area of competence by the WPEB to review its elements components and make any corrective measures.					
	4.2 Assessing the impacts of climate change and socio- economic factors on IOTC fisheries					
	4.3 Evaluate alternative approaches to ERAs to assess ecological risk					
	4.4 Progress on Climate webpage on IOTC website and liaise with WPDCS for technical implementation					

Table 2. Draft: Assessment schedule for the IOTC Working Party on Ecosystems and Bycatch 2025–2029 (adapted from IOTC–2023–SC26–R).

*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.

Working Party on Ecosystems and Bycatch					
Species	**2024**	**2025**	**2026**	**2027**	**2028**
Blue shark	–	Data preparatory meeting Full assessment	-	–	–
Oceanic whitetip shark	Data preparation	Indicator analysis	-	Data preparation	–
Scalloped hammerhead shark	–	–	Data preparatory meeting Full assessment	–	–
Shortfin mako shark	Data preparatory meeting Full assessment	–	-	Data preparatory meeting Full assessment	
Silky shark	-	–	Assessment*	-	Assessment*
Bigeye thresher shark	–	–	Assessment*	–	-
Pelagic thresher shark	–	–	Assessment*	–	-
Porbeagle shark	–	–	-	–	Assessment*
Mobulid Rays	Interactions/ Indicators	–	-	Interactions/ Indicators	-
Marine turtles	–	Indicators	-	–	Indicators
Seabirds	Development of draft workplan	–	Review of mitigation measures in Res. 23/06	–	–
Marine Mammals	Review of mitigation measures Review of handling guidelines		-	–	–

Data preparatory meeting	• Methods for using available data for assessments • Considering the shark research plan • Consider effectiveness of mitigation measures for a range of taxa				
Ecosystem Based Fisheries Management (EBFM) approaches	Ecoregions pilot study	ongoing			
Series of multi-taxa bycatch mitigation workshops	Focus: gillnets	Focus: tbd	Focus: tbd	Focus: tbd	Focus: tbd