
REVISION OF THE WPEB PROGRAM OF WORK (2024–2028)

PREPARED BY: IOTC SECRETARIAT & CHAIR, AUGUST 2023

PURPOSE

To ensure that participants at the 19th Working Party on Ecosystems and Bycatch (WPEB19) 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 driftnets¹ 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 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 18/04 On BioFAD Experimental Project

(para 5) The Project Consortium will make available to the IOTC Scientific Committee the results of the project at the latest two months in advance of its 2020 meeting. The Scientific Committee will analyse the outcomes of the project and provide scientific advice on possible additional FAD management options for consideration by the Commission in 2021.

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.

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.

(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 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 22/01 *On climate change as it relates to the Indian Ocean Tuna Commission*

(para 3) The IOTC Scientific Committee, when requested by the Commission, shall consider and where possible, advise on the potential impacts of climate change on highly migratory fish stocks and any related impacts on the economies, food security and livelihood of CPCs in

particular developing States among them Least Developing States and Small Island Developing States.

(para 4) The IOTC Scientific Committee shall consider how climate change and fishing activities may be related and provide advice to the Commission on the potential implications for these relationships for the conservation and management of tuna and associated stocks.

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.

DISCUSSION

Participants at the WPEB19 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–2023–WPEB19–10, which encouraged the WPEB to further develop and refine its Program of Work for 2023–2027 to align with the requests and directives from the Commission and Scientific Committee.
- 2) **RECOMMEND** a revised Program of Work for 2024–2028 to the Scientific Committee for its consideration and potential endorsement.

WORKING PARTY ON ECOSYSTEMS AND BYCATCH PROGRAM OF WORK (2023–2027)

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				
		2023	2024	2025	2026	2027
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 Historical data mining for the key species and IOTC fleets (e.g., as artisanal gillnet and longline coastal fisheries) including workshops:					
	1.1.2 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					
	1.1.3 Catch composition reconstruction (initial focus Pakistan and Indonesia)					
	1.2 Implementation of the Pilot Project (Resolution 16/04) for the Regional Observer Scheme					

Commented [NL(1): Suggestion to move this to the first point under section 1

	1.2.1 Development of a Regional Observer database and population with historic observer data					
	1.2.2 Development, piloting and implementation of an electronic reporting tool to facilitate data reporting					
	1.2.3 Development and trial of Electronic Monitoring Systems for gillnet fleets					
	1.2.4 Port sampling protocols for artisanal fisheries					
2. Shark research plans	<p>Consultancy to develop shark research plans</p> <p>Priority species: scalloped hammerhead sharks</p>					
3. Ecoregions development	<p>Support for the development and refinement of ecoregions in the Indian Ocean:</p> <ul style="list-style-type: none"> 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	2022	2023	2024	2025	2026
1. Fisheries data collection	1.1 Historical data mining for the key species and IOTC fleets (e.g., as artisanal gillnet and longline coastal fisheries) including (Workshops – leader?);					

Commented [SEC2]: This is already included above. No need to duplicate

	1.1.1 Capacity building of fisheries observers (including the provision of ID guides, training, etc. Fishing gear guides from SPC)				
	1.1.2 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				
	1.2 Implementation of the Pilot Project (Resolution 16/04) for the Regional Observer Scheme				
	1.2.1 Definition of minimum standards and development of a training package for the ROS to be reviewed and rolled out in voluntary CPCs (Sri Lanka, I.R. Iran, Tanzania)				
	1.2.2 Development of a Regional Observer database and population with historic observer data				
	1.2.3 Development, piloting and implementation of an electronic reporting tool to facilitate data reporting				
	1.2.4 Development and trial of Electronic Monitoring Systems for gillnet fleets				
	1.2.5 Port sampling protocols for artisanal fisheries				
1.3 Review and improve data collection for mobulid rays					
Review the status of manta and mobula rays and their interaction with IOTC fisheries. Evaluation of data availability and data gaps					
	1.3.1 Mobulid ID guide revision and translation. ID guides to be updated with help of CPC scientists				

Commented [NL(3)]: This was undertaken by Sarah (paper IOTC-2020-WPEB16-19). The ID guide activities that were previously listed together with this have not yet been undertaken so I've divided these out into subsections under the main heading which I've changed to be more appropriate

2. Bycatch mitigation measures	Undertake a series of gear specific workshops focusing on multi-taxa bycatch issues					
	Develop studies on bycatch mitigation measures for the main gears using in the IOTC area (operational, technological aspects and best practices)					
	2.1 Sharks					
	a) Harmonise and finalise guidelines and protocols for safe handling and release of sharks and rays caught in IOTC fisheries					
	2.2 Sea turtles					
	2.2.1 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					
2.2.2 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.						
2.2.3 Regional workshop to review the effectiveness of marine turtle mitigation measures						

<p>2.2.4 Harmonise and finalise guidelines and protocols for safe handling and release of sea turtles caught in IOTC fisheries</p>				
<p>2.3 Seabirds</p> <p>2.3.1 Res. 23/07 (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.</p> <p>2.3.2 Bycatch assessment for seabirds taking into account the information from the various ongoing initiatives in the IO and adjacent oceans</p> <p>2.3.3 Study on cryptic mortality of seabirds in tuna LL fisheries.</p> <p>2.3.4 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</p>				
<p>2.4 Cetaceans</p> <p>2.4.1 Collate all data available on bycatch of key species interacting with all tuna fisheries in the IOTC area (tuna drift gillnets, longlines, purse seines)</p>				

Commented [SEC4]: Note that Res 12/06 has been superseded by Res 23/07. Check new provisions, as some of these may have fallen away.

Commented [NL(5)]: In 2015 the WPEB noted that there was insufficient data to conduct such analyses and so recommended that CPCs bring data to the WPEB in 2016. In 2016, information on seabird bycatch was brought by several CPCs along with a summary of data submitted by CPCs in response to a IOTC circular requesting data. Certain mitigation measures were discussed during this meeting. 12/06 management measure effectiveness were discussed and varied between fleets. It was agreed that intersessional work would be done to develop analyses further. The Commission agreed to extend the due date until such a time that more information is available. Since then there has been no significant mention of seabirds at the SC so I think this is still outstanding

Commented [NL(6)]: We have just contracted a consultant to conduct an ERA for cetaceans which will be presented at the WPEB this year and will cover the first couple of these activities

Commented [SEC7]: Check requirements in 23/06

	<p>2.4.2 Collaborate with other organisations on the assessment of marine mammal abundance and collect data on marine mammal bycatch interactions with gillnets across the IOTC region</p>				
	<p>2.4.3 Testing mitigation methods for cetacean bycatch in tuna drift gillnet fisheries</p>				
	<p>2.4.4 Harmonise and finalise guidelines and protocols for safe handling and release of cetaceans caught in IOTC fisheries</p>				
	<p>2.4.5. Intersessional meeting to discuss cetacean guidelines, ERA, Data gaps.</p>				
<p>3. CPUE standardisation / Stock Assessment / Other indicators</p>	<p>3.1 Develop standardised CPUE series for each key shark species and fishery in the Indian Ocean</p>				
	<p>3.1.1 Development of CPUE guidelines for standardisation of CPC data.</p>				
	<p>3.1.2 Blue shark: Priority fleets: TWN,CHN LL, EU,Spain LL, Japan LL; Indonesia LL; EU,Portugal LL</p>				
	<p>3.1.3 Shortfin mako shark: Priority fleets: Longline and Gillnet fleets</p>				
	<p>3.1.4 Oceanic whitetip shark: Priority fleets: Longline fleets; purse seine fleets</p>				
	<p>3.1.5 Silky shark: Priority fleets: Purse seine fleets</p>				

Commented [NL(8): Resolution 23/06 (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.

	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. Bycatch and discards	<p>4.1 Review proposal on retention of non-targeted species</p> <p>4.1.1 The Commission requested that the Scientific Committee review proposal IOTC-2014-S18-PropL Rev 1, and to make recommendations on the benefits of retaining non-targeted species catches, other than those prohibited via IOTC Resolutions, for consideration at the 19th Session of the Commission. (S18 Report, para. 143). Noting the lack of expertise and resources at the WPEB and the short timeframe to fulfil this task, the SC RECOMMENDED that a consultant be hired to conduct this work and present the results at the next WPEB meeting. The following tasks, necessary to address this issue, should be considered for the terms of reference, taking into account all species that are usually discarded on all major gears (i.e., purse seines, longlines and gillnets), and fisheries that take place on the high seas and in coastal countries EEZs:</p> <p>i) Estimate species-specific quantities of discards to assess the importance and potential of this new product supply, integrating data available at the Secretariat from the regional observer programs,</p>				

Commented [NL(9)]: This proposal related to FAD management plans so I think this was a mistake and this should actually be IOTC-2014-S18-PropF which relates to banning discards

Commented [NL(10R9)]: The SC in 2014 recommended that a consultancy carry out this work and report back to the WPEB in 2015. I see no mention of this work being reported to the WPEB in the 2015 report. However, before the WPEB in 2015, Res 15/06 was adopted (ban on discards of BET, SKJ and YFT) and this has since been superseded twice (current version is 19/05). So I assume this can be removed ?

	<p>ii) Assess the species-specific percentage of discards that is captured dead versus alive, as well as the post-release mortality of species that are discarded alive, in order to estimate what will be the added fishing mortality to the populations, based on the best current information;</p> <p>iii) Assess the feasibility of full retention, taking into account the specificities of the fleets that operate with different gears and their fishing practices (e.g., transshipment, onboard storage capacity);</p> <p>iv) Assess the capacity of the landing port facilities to handle and process this catch;</p> <p>v) Assess the socio-economic impacts of retaining non-target species, including the feasibility to market those species that are usually not retained by those gears;</p> <p>vi) Assess the benefits in terms of improving the catch statistics through port sampling programmes;</p> <p>vii) Evaluate the impacts of full retention on the conditions of work and data quality collected by onboard scientific observers, making sure that there is a strict distinction between scientific observer tasks and compliance issues.</p>				
<p>5. Ecosystems</p>	<p>5.1 Develop a plan for Ecosystem Approach to Fisheries (EAF) approaches in the IOTC, in conjunction with the Common Oceans Tuna Project.</p> <p>5.1.2 Workshop for CPCs on continuing efforts to the development of an EAF including delineation of candidate eco regions within IOTC.</p>				

<p>5.1.3 Practical Implementation of EBFM with the development and testing of ecosystem report cards.</p>	<p style="background-color: #cccccc;"></p>	<p style="background-color: #cccccc;"></p>	<p></p>	<p></p>	<p></p>
<p>5.1.4 Evaluation of EBFM plan in IOTC area of competence by the WPEB to review its elements components and make any corrective measures.</p>	<p></p>	<p></p>	<p style="background-color: #cccccc;"></p>	<p></p>	<p></p>
<p>5.2 Assessing the impacts of climate change and socio- economic factors on IOTC fisheries</p>	<p style="background-color: #cccccc;"></p>	<p style="background-color: #cccccc;"></p>	<p style="background-color: #cccccc;"></p>	<p style="background-color: #cccccc;"></p>	<p style="background-color: #cccccc;"></p>
<p>5.3 Evaluate alternative approaches to ERAs to assess ecological risk</p>	<p style="background-color: #cccccc;"></p>	<p style="background-color: #cccccc;"></p>	<p style="background-color: #cccccc;"></p>	<p style="background-color: #cccccc;"></p>	<p style="background-color: #cccccc;"></p>
<p>5.4 Progress on Climate webpage on IOTC website and liaise with WPDCS for technical implementation</p>	<p style="background-color: #cccccc;"></p>	<p></p>	<p></p>	<p></p>	<p></p>

Table 2. Draft: Assessment schedule for the IOTC Working Party on Ecosystems and Bycatch 2023–2027 (adapted from IOTC–2021–SC24–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.

<i>Working Party on Ecosystems and Bycatch</i>					
Species	2023	2024	2025	2026	2027
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	–	–	-	–
Seabirds	–	Development of draft workplan–	–	Review of mitigation measures in Res. 12/06	–
Marine Mammals	–	–	Review of mitigation measures	-	–
Ecosystem Based Fisheries Management (EBFM) approaches		ecoregions pilot study			

Series of multi-taxa bycatch mitigation workshops	Focus: gillnets	Focus: gillnets	Focus: tbc	Focus: tbc	Focus: tbc
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