

International Whaling Commission activities relevant to the assessment of cetacean bycatch in the Indian Ocean

IWC Secretariat

The International Whaling Commission (IWC) continues to address several themes relevant to the assessment of cetacean bycatch in tuna fisheries of the Indian Ocean (IO) through its Scientific and Conservation Committees. The IWC Bycatch Mitigation Initiative ([BMI](#)) and the Sub-committee on Non-deliberate Human Induced Mortality of cetaceans (HIM) in particular concentrate on improving the monitoring and mitigation of cetacean bycatch in fisheries around the world, adopting numerous recommendations that include the IO. The BMI, the IWC's Global Whale Entanglement Response Network and Stranding Initiative share expertise and assist countries by providing capacity building programmes to monitor and assess cetacean bycatch, prevent entanglement of large cetaceans and develop entanglement/stranding response capability. The IWC engages with local, regional and international organisations, such as the Indian Ocean Tuna Commission (IOTC) and the Food and Agriculture Organization (FAO). In early 2023, the IWC agreed on a 4-year capsule project within the GEF/FAO Common Oceans ABNJ Tuna project Phase 2. This capsule aims to collaboratively advance efforts to assess and address cetacean bycatch in tuna fisheries across two ocean basins, notably the western central Pacific and the Indian Oceans. The capsule's activities fall within the following themes: assessing cetacean bycatch and data gaps to inform Regional Fisheries Management Organisations (RFMOs); building regional capacity and awareness on cetacean bycatch and available solutions; and collaboratively developing recommendations to address cetacean bycatch for consideration by multi-lateral environmental and fisheries agreements. This paper describes the activities planned for the IO as part of this capsule. The IOTC is a named partner in this capsule, and a Cooperation Agreement was signed by the two organisations. IWC seeks advice from the IOTC on how to continue to strengthen collaboration and ensure the workplans of IOTC and IWC are complementary while also meeting the objectives of the capsule project.

Introduction

The International Whaling Commission (IWC) is an inter-governmental organisation founded in 1946 under the International Convention for the Regulation of Whaling. The Commission now has a membership of 88 Contracting Governments and meets every two years. The focus at the time of its founding was on whaling management and whale conservation, however, many new conservation concerns have emerged. Although its mandate has not changed over the years, the IWC work programme currently includes bycatch and entanglement, ship strikes, ocean noise, pollution and marine debris, and sustainable whale watching. This report summarises the IWC's initiatives, prior work and planned activities related to the assessment of cetacean bycatch in Indian Ocean tuna fisheries.

IWC's initiatives

Over the past three decades, there has been widespread acknowledgement of the significance of bycatch as a major threat to cetaceans. In 2011, the IWC Global Whale Entanglement Response Network ([GWERN](#)) was launched aiming to build safe and effective entanglement response capability around the world and

with the long-term goal of preventing entanglements. The programme is a partnership with the Center for Coastal Studies (CCS), in the USA. A Technical Advisor leads the programme supported by an Expert Panel drawn from countries already operating national entanglement response teams. They developed global Best Practice Guidelines and devised a two-day entanglement response training package.

The need for IWC engagement and action in relation to cetacean bycatch has emerged more recently in several IWC Scientific Committee and Commission meetings. This led to an agreement at IWC66 (2016) by the Commission to establish the Bycatch Mitigation Initiative ([BMI](#)). The BMI is made up of three interrelated components: a Bycatch Coordinator in the IWC Secretariat; a Standing Working Group (SWG) on Bycatch under the Conservation Committee and an Expert Panel to advise the coordinator and the SWG. In collaboration with other organisations, national governments and fishing communities, the BMI aims to develop, assess and promote effective bycatch prevention and mitigation measures world-wide. The BMI concentrates on four main areas: improved assessment of bycatch to determine priorities and to measure success; innovation and testing of mitigation and management methods and approaches; capacity building and transfer of expertise, technology and management measures between countries and fishing communities; engagement and collaboration with other relevant international organisations focused on fisheries management and bycatch.

Since 2016, the IWC [Stranding Initiative](#) aims to share international strandings expertise and information, establish best practice guidelines, and provide emergency response training. The ultimate goal of this international programme is building global capability in strandings response, research and data collection.

IWC's capacity building programmes

The BMI, the GWERN and the Stranding Initiative, work worldwide sharing expertise and information, including assisting countries by providing capacity building programmes to assess cetacean bycatch, prevent entanglement of large cetaceans and develop entanglement/stranding response capability. Upon request, the IWC's initiatives have supported several capacity building actions including in the Indian Ocean region.

The IWC's BMI has supported Bycatch Risk Assessment (ByRA) training workshops. The ByRA toolkit is based on geographic information systems, and its objective is to assess and visualize spatio-temporal bycatch risk making best use of whatever amount or type of data are available, identifying critical areas of investigation and immediate management actions (Hines et al. 2020). ByRA workshops are held over 2-3 days, with the first day providing a general introduction to the toolkit, details of data and expert inputs required for risk assessment and examples on toolkit use; the second and third days are in-depth trainings in the use of the toolkit; and to close participants present the resulting maps obtained from the analysis and discuss recommendations for species management and protection. ByRA workshops have been held in at least eight countries including in the Indian Ocean region, namely in India, Malaysia, Vietnam and Thailand. In May 2023, Dr. Ellen Hines (Professor at San Francisco State University and member of the BMI's Expert Panel) provided virtual training on the use of ByRA for Thailand to 28 members of the Department of Marine and Coastal Resources (DMCR). The ByRA toolkit has now been used in 13 countries around the world.

The IWC's Global Whale Entanglement Response Network response training package provides information on data collection, relevant laws or regulations, and cetacean species present in the region. This is followed by on-water practical training covering the use of disentanglement tools and safe vessel handling when close to large whales. All training courses are conducted with the permission, and ideally

participation, of the relevant government authority in that country. Training has been delivered on five continents, reaching over 1300 scientists, conservationists, fishers and government representatives from more than 36 countries. Furthermore, a ‘train the trainer’ apprenticeship programme has also been developed. As well as equipping regions, countries and coastlines with the skills to build their own entanglement response capability, and creating a global network of professional response teams, every participant is taught the importance of accurate and consistent data gathering. In the Indian Ocean region, entanglement response training workshops were delivered in Thailand, Oman, Kenya and, more recently (June 2023), in Mayotte and La Réunion. The latter workshops were provided by Michael Myer (local expert in disentanglement), 40 people participated in the practical training and, in addition, several representatives from the governments attended the theoretical sessions. Besides, in June 2023, two representatives from Kenya participated in a two-weeks “entanglement response apprenticeship” at the Center for Coastal Studies located in Provincetown, USA; where they were trained by David Mattila and engaged in attempts to disentangle live whales.

Members of the IWC’s Stranding Expert Panel have also assisted on cetacean strandings in their respective areas, some of which are within the Indian Ocean region. Cetacean strandings interventions included unusual mortality events, mass strandings, epidemics, live strandings and out of habitat situations. Since a mass stranding event of melon-headed whales (*Peponocephala electra*) in 2020, there are ongoing discussions with Mauritius about stranding capacity building.

IWC collaboration with other organisations to address bycatch

As bycatch is an issue that needs to be tackled at several and different scales, from fishing communities to national governments and intergovernmental fishery bodies, the concepts of collaboration and co-ordination underpin the BMI. The work of the BMI has benefitted from the IWC’s engagement with local and international organisations, such as the Food and Agriculture Organization of the United Nations (FAO), Secretariat of the Pacific Regional Environment Programme (SPREP), the Indian Ocean Tuna Commission (IOTC), among others.

The BMI’s Expert Panel contributed to the preparation of the ‘Guidelines to prevent and reduce bycatch of marine mammals in capture fisheries (2021)’ ([FAO MM Guidelines](#)). These guidelines are currently available in English and French, and the Spanish version is being prepared by FAO. Furthermore, to promote and facilitate implementation of the FAO MM Guidelines, the IWC delivered content (text and illustrations) to produce twelve ‘Marine Mammal Bycatch Mitigation Factsheets’ in electronic format, contributing to the collection of FAO Fisheries and Aquaculture online factsheets and knowledge products. The content for the factsheets were prepared by the IWC Secretariat in collaboration with a contracted illustrator, and draft versions of the factsheets were reviewed by the BMI’s Expert Panel members and by FAO technical experts. FAO produced the online version of the factsheets, which can be accessed [here](#). The factsheets are aimed primarily at fishery managers, fishers and researchers, and can be downloaded, shared and printed by any interested party. Several of the mitigation measures described in the FAO MM Guidelines and illustrated in the factsheets may be relevant to reducing cetacean bycatch in tuna fisheries in the Indian Ocean. However, other mitigation measures that may also be relevant were not included in the guidelines because they were in the testing phase at the time of its development.

The IWC Executive Secretary and the Bycatch Coordinator have attended FAO Committee on Fisheries (COFI) meetings since 2018. IWC interventions acknowledged the need to address cetacean bycatch, to welcome the recently published FAO MM Guidelines, and to promote collaborative opportunities

between the FAO, fisheries management organisations and the IWC to advance science and finding workable solutions.

The IWC Secretariat also participates in the Regional Secretariats' Network (RSN), which is a group of Executive Secretaries/Directors of Regional Fishery Management Organizations (RFMOs) and other Regional Fishery Bodies (RFBs). This is an excellent opportunity for the IWC to exchange information on Secretariat-level issues and for collaboration on bycatch with RFMOs. The IWC Secretariat attended workshops organized by the RSN given the interest in addressing bycatch of cetaceans. The 'Regional Consultation on the Development of a Coordination Framework between Regional Fishery Bodies in the Indian Ocean' was held 22-24 June 2022 in Maputo, Mozambique. This workshop aimed to ensure lines of communication and collaboration across the various RFMOs/RFBs and other Inter-governmental Organisations in the Indian Ocean, discussions were mostly focused around Illegal, Unreported and Unregulated (IUU) fishing, along with other shared interests such as ecosystem approaches to fishery management, including bycatch measures to address protected species. The second workshop attended was focused on RFMOs/RFBs of the Eastern Central Atlantic Ocean and was held 30 November 2022 – 2 December 2023 in Accra, Ghana.

Other meetings attended by IWC Secretariat include:

- Meetings of the IOTC's Working Party on Ecosystems and Bycatch (WPEB) since 2019.
- Scientific Committee meetings of the Western and Central Pacific Fisheries Committee (WCPFC) in 2022 and 2023.
- Intersessional meeting of the Coordinating Working Party on Fishery Statistics (CWP) held 28-30 June 2023. Under discussions on "future activities and directions for the future" the need to consider fisheries effects on biodiversity was proposed including recording vulnerable species in discards. As part of this the IWC raised the issue of cetacean bycatch and the need for data reporting to allow statistical analysis of this critical issue.
- 13th Fisheries and Resources Monitoring System (FIRMS) Steering Committee meeting held 26-30 June 2023.

Collaboration between the IOTC and the IWC

In recent years, the IWC has been working to engage with t-RFMOs and partners of the Indian Ocean to assist on assessing cetacean bycatch risk posed by the various gears used, as well as to raise awareness of effective and practical solutions available to manage and mitigate cetacean bycatch. The IWC held a technical workshop on Bycatch Mitigation Opportunities in the Western Indian Ocean and Arabian Sea from 8-9 May 2019 in Nairobi, Kenya. The workshop was attended by 50 participants, with half of them coming from the Indian Ocean region, including national government officials, cetacean and fisheries researchers, fisheries technologists, socio-economists and representatives from RFMOs, inter- and non-governmental organisations. The report of this workshop was presented at the IOTC's 15th Working Party on Ecosystem and Bycatch (IOTC-2019-WPEB15-43). The WPEB noted that the workshop represented the beginning of a process to work collaboratively to better understand and address bycatch of cetaceans in the Western Indian Ocean, and encouraged active collaboration and data sharing between the IWC, IOTC and other stakeholders to achieve this goal (IOTC-2019-WPEB15-RE_Rev1).

Since then, the IWC has continuously participated in the WPEB meetings and related workshops. At WPEB-17, a request for joint collaboration on organizing multi-taxa bycatch mitigation workshops with relevant organisations including the IWC was noted (IOTC-2021-WPEB17AS-RE_rev1 (para 123)). The virtual workshop “First Driftnet/gillnet Multi-taxa Bycatch Mitigation Workshop” was held in August 2022 and attended by more than 86 people including independent experts, national country scientists, NGOs, IGOs, and civil society organisations. The workshop was organized by the Worldwide Fund for Nature (WWF) under the leadership of Umair Shashid, a member of the BMI’s Expert Panel, and in collaboration with the IOTC. The IWC Secretariat assisted in the organisation of the workshop and presented a paper on IWC Focus on cetacean bycatch in the Indian Ocean. The report of the multi-taxa workshop (IOTC-2022-WPEB18-INF11) was presented at the WPEB-18 and several recommendations from the workshop were noted (IOTC-2022-WPEB18-RE_rev1).

Since 2020, the IOTC and IWC Secretariats have been discussing potential collaborative activities on cetacean bycatch (e.g., IOTC-2020-WPEB16- INF04, IOTC-2020-WPEB16- INF06, IOTC-2021-WPEB17(AS)-29). To formalize the collaborative work on joint activities, a Letter of Intent between IOTC and IWC was proposed (IOTC-2022-S26-09) and reviewed (IOTC-2022-S26-09_Rev1E). In March 2023, a Cooperation Agreement (CA) was signed between the IOTC and the IWC (IOTC-2023-S27-06_Rev1). This CA aims to strengthen the expertise within the Scientific Committee on cetacean bycatch issues as well improve the data available on cetaceans at the IOTC Secretariat. In August 2023, observer status was granted for the IWC to attend IOTC meetings (IOTC CIRCULAR 2023-43).

FAO Common Oceans ABNJ

In 2023, the IWC agreed on a 4-year capsule project with the FAO for the provision of “Assessing and addressing cetacean bycatch in tuna fisheries”. The IWC’s capsule is part of the Phase 2 of the Project “Sustainable Management of Tuna Fisheries and Biodiversity Conservation in the Areas Beyond National Jurisdiction (ABNJ)” (Tuna II-GEF ID 10622) (herein after the Tuna II project) funded by the Global Environment Facility (GEF) (GCP/GLO/1000/GFF). The overall objective of the Tuna II project is to achieve responsible, efficient, and sustainable tuna production and biodiversity conservation in the ABNJ in face of a changing environment. The Tuna II project is a continuation of the earlier Phase 1 Tuna Project (Tuna I – GEF ID 4581) and a critical part of the “GEF Common Oceans - Sustainable utilization and conservation of biodiversity in areas beyond national jurisdiction Program” (GEF ID 10548).

Through this capsule project, the IWC will be working to collaboratively advance efforts to assess and address cetacean bycatch in tuna fisheries across two ocean basins, notably the western central Pacific Ocean and the Indian Ocean. The IWC’s capsule will contribute to the reduction of environmental impacts of tuna fisheries (Component 3 of Tuna II Project) by addressing cetacean bycatch. The capsule project’s activities fall across three themes:

- 1) Assessing cetacean bycatch and data gaps in tuna fisheries across each of both Ocean Basins;
- 2) Building regional capacity and awareness on cetacean bycatch and available solutions; and
- 3) Collaboratively developing recommendations to address cetacean bycatch for consideration by multi-lateral environmental and fisheries agreements.

In particular, for the Indian Ocean, the IOTC is a named partner in this capsule and the activities proposed for this region were previously discussed during meetings between the IWC and IOTC (IOTC-2021-WPEB17(AS)-29).

The activities funded under this capsule project (Table 1) in the Indian Ocean include:

- 1.1 Consultancy to conduct spatial bycatch rapid-risk assessment by gear type;
- 1.2 Workshop on Cetacean bycatch gap analysis to feed into rapid-risk assessment and population status reviews;
- 2.1 Contracts/consultancy to establish multidisciplinary bycatch reduction teams (in 2-3 countries) integrated by participants with the appropriate expertise (identified by the IWC, tRFMOs and the fishing community) and the capacities to promote the reduction of bycatch locally with the fishing community and broadly with national and multilateral fisheries organizations;
- 2.2 Training workshop for fishers or fisheries managers on mitigation, monitoring, safe handling and release (topic to be defined according to regional needs);
- 3.1 Support for national coordination meetings (fisheries and environment departments, IWC);
- 3.2 Support for cetacean experts' attendance at IOTC meetings.

Table 1. Timeline and type of activities funded under IWC's capsule project for the Indian Ocean.

#	Proposed activities	2023				2024				2025				2026				Type of activity	Funds (USD)
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
1	Assess cetacean bycatch, and data gaps across an Ocean Basin - Indian Ocean																		
1.1	<i>Spatial bycatch rapid-risk assessment by gear type</i>	x	x	x	x	x	x											Contract/consultancy	40.000
1.2	<i>Cetacean bycatch gap analysis - workshop IO - to feed into rapid-risk assessment and population status reviews</i>					x	x	x	x									Workshop	10.000
2	Build regional capacity and awareness on cetacean bycatch and available solutions - Indian Ocean																		
2.1	<i>Establish multidisciplinary bycatch reduction teams in two or three countries, integrated by participants with the appropriate expertise (identified by the IWC, tRFMOs and the fishing community) and the capacities to promote the reduction of bycatch locally with the fishing community and broadly with national and multilateral fisheries organizations</i>					x	x	x	x	x	x	x	x	x	x	x	x	Contract/consultancy	30.000
2.2	<i>National training workshops (mitigation, monitoring, safe handling and release) for fishers, fisheries managers)</i>																x	Workshop	45.000
3	Collaboratively develop recommendations to address cetacean bycatch across multi-lateral environmental and fisheries agreements - Indian Ocean																		
3.1	<i>National coordination meetings (Fisheries and environment departments, IWC)</i>	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	Travel	15000
3.2	<i>Cetacean expert attendance at IOTC meetings</i>	x	x	x		x	x	x		x	x	x		x	x	x		Travel	15000

It is important to note that the IWC seeks to discuss and agree the terms of reference for the above-mentioned activities with regional stakeholders including the IOTC, so the development of these activities is in line and/or complementary to the workplan of both organisations and their progress. The successful completion of the planned activities would depend on the advice, commitment and participation of local experts including the IOTC-SC and contracting members of the IOTC.

In support of the above-mentioned activities, the IWC aims to conduct several in-kind activities. For the western central Pacific Ocean, these include:

- Collate existing data held within the IWC on cetacean distribution and abundance.
- Create and maintain a spatial database on cetacean distribution (abundance data also) to better assess and understand the level of risk of interactions between fisheries and cetaceans and to support the identification of highest priority fisheries/gears for cetacean bycatch.
- Collate bycatch data (longline, purse seine, etc) available through national or multilateral

- organisations (such as t-RFMOs), including mapping of effort (if available).
- Review of the population status of the three species of cetaceans with the highest rates of bycatch in Indian Ocean tuna fisheries.
 - Engage with partners in the western central Pacific region to develop and possibly adopt a data sharing agreement for use of observer cetacean bycatch data in analyses.
 - Conduct scientific review, dissemination and promotion of best practices to reduce and mitigate cetacean bycatch (e.g. FAO MM Guidelines and factsheets, existing online mitigation material such as Bycatch Management Information System – BMIS, and experiences in similar fisheries around the world) to IWC member governments through the Bycatch Mitigation Initiative, IWC Scientific Committee and Commission and including, through the IWC Conservation Management Plans, Database of Recommendations and Conservation database.
 - Compile information on the distribution of known cetacean entanglements with fish aggregation devices (FADs).
 - Provide technical advice into FAD design for lower entanglement risk to cetaceans based on scientific studies as well as experiments underway by fishery industry organisations, RFMOs, and national governments where requested.
 - Technical advice on best practices for monitoring, assessing and mitigating of cetacean bycatch to WCPFC, SPC, SPREP and IWC member countries where requested.
 - Development of IWC recommendations on cetacean conservation.
 - Development of draft Conservation and Management Measures (CMMs) for cetacean bycatch for the Indian and Pacific Ocean as possible.
 - Provide data on cetacean bycatch to Bycatch Data Exchange Protocol (BDEP).
 - Review cetacean and cetacean bycatch mitigation information on BMIS.
 - Cetacean expert attendance at planned Joint tuna RFMOs Bycatch Working Group (meetings and/or workshops) as this is a platform for all five t-RFMOs to communicate on shared challenges such as bycatch and would be an excellent forum for sharing outcomes of Tuna II Project.

The IWC will focus on developing recommendations for cetacean conservation through its own Committees and Commission processes and build a coordinated and collaborative approach with IWC member governments as well as with relevant RFMOs, such as the Indian Ocean Tuna Commission (IOTC).

IWC's Scientific and Conservation Committees

The Scientific and Conservation Committees of the IWC have focused on a number of species and themes that are relevant to the assessment of cetacean bycatch in tuna fisheries in the Indian Ocean. The IWC Bycatch Mitigation Initiative and the Sub-committee on Non-deliberate Human Induced Mortality (HIM) in particular concentrate on the need to improve the monitoring and mitigation of cetacean bycatch worldwide, adopting numerous recommendations including for species in the Indian Ocean (see IWC Database of Recommendations – [DoR](#)).

In 2023, the IWC held its Scientific Committee meeting (SC69A) from 24 April – 7 May in Bled, Slovenia. The meeting had 254 participants with 31 member countries represented. The full meeting report is available [online](#). Cetaceans in the Indian Ocean were considered at a number of sub-committee meetings, some of the relevant items discussed are mentioned below:

- The IWC's capsule project of the FAO-GEF Project 'Sustainable Management of Tuna Fisheries and Biodiversity Conservation in the Areas Beyond National Jurisdiction' (GCP/GLO/1000/GFF) was presented at the HIM sub-committee and at the Joint meeting of the Conservation and Scientific Committees. An overview of the project and its expected results were presented, and feedback from committee members was requested as well as the sharing of any potential contacts that could aid in the development of the project.
- At meetings of the sub-committee on cetacean stocks that are, or might be, subject to Conservation Management Plans, presentations on the work of the Arabian Sea Whale Network (ASWN). These included an overview of the most recent research, including updates on regional-level activities and projects, sightings and stranding reports, and capacity building conducted locally, nationally, and regionally throughout the region. Significant and commendable progress has been made on the development of a Conservation Management Plan (CMP) for Arabian Sea humpback whales (ASHWs) in the northwestern Indian Ocean. Despite complex issues with establishing a formal CMP, there is a clear commitment to the conservation of ASHWs from stakeholders and government agencies in Oman. The Committee strongly recommended that the crew-based observer programme in Pakistan be continued throughout the ASHW range and replicated wherever possible throughout the region, particularly in areas where systematic cetacean surveys are not feasible.
- The Indian Ocean was also discussed in the Ad hoc working Group on Sanctuaries meetings. Based on several IWC resolutions, the State of the Cetacean Environment Report (SOCER) was initiated to provide regular updates on environmental matters that affect cetaceans. The 2023 Report focuses on the Indian Ocean and its marginal seas. The Indian Ocean Cetacean Network (IndoCet) Consortium provided an update regarding the conservation and research of all cetacean species in the southwestern Indian Ocean (SWIO). An online portal, on the IWC website, will be used to gather information on research relevant to the IWC Indian Ocean Sanctuary. Information submitted could be used for any review of the Sanctuary if and when the Commission requests one.
- An intersessional group, the Indian Ocean Sanctuary Cetacean Monitoring Initiative, has been established to coincide with the potential 2026 review of the Indian Ocean Sanctuary. The group aims to synthesize information on the abundance and distribution of cetaceans in the Indian Ocean with the magnitude and distribution of known threats to assess risk and identify areas where mitigation needs to be implemented; as well as to support existing 'local' lines of research on the abundance and distribution of cetaceans. A circular call for participants to join the group was sent in early 2023 to IWC's contracting governments, Scientific and Conservation Committee members, and observers.

The IWC welcomes and invites the IOTC-WPEB19 to:

- Provide advice on how to continue to strengthen collaboration between IWC and IOTC.
- Provide advice on what should be considered to define the terms of reference for planned activities under IWC's capsule project (within the Tuna II project) to ensure they are in line and complementary to the IOTC's workplan and its progress, avoiding duplication while also meeting the objectives of the capsule project.