



Australian Government
**Department of Agriculture,
Fisheries and Forestry**



A summary of key information pertaining to pelagic shark catches, status and management in the Indian Ocean Tuna Commission

Heather Patterson, Brooke D'Alberto and Don Bromhead

Report by the Australian Bureau of Agricultural and Resource Economics and Sciences

Technical Report 24.05

April 2024



A summary of key information pertaining to pelagic shark catches, status and management in the IOTC

© Commonwealth of Australia 2024

Ownership of intellectual property rights

Unless otherwise noted, copyright (and any other intellectual property rights) in this publication is owned by the Commonwealth of Australia (referred to as the Commonwealth).

Creative Commons licence

All material in this publication is licensed under a [Creative Commons Attribution 4.0 International Licence](https://creativecommons.org/licenses/by/4.0/) except content supplied by third parties, logos and the Commonwealth Coat of Arms.



Cataloguing data

This publication (and any material sourced from it) should be attributed as: Patterson, H, D'Alberto, B & Bromhead, D 2024, *A summary of key information pertaining to pelagic shark catches status and management in the Indian Ocean Tuna Commission*, ABARES technical report 24.05, Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra, April, DOI: [10.25814/fbbb-x480](https://doi.org/10.25814/fbbb-x480)

SSN 189-3128

Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES)

GPO Box 858 Canberra ACT 2601

Telephone 1800 900 090

Web agriculture.gov.au/abares

Disclaimer

The Australian Government acting through the Department of Agriculture, Fisheries and Forestry, represented by the Australian Bureau of Agricultural and Resource Economics and Sciences, has exercised due care and skill in preparing and compiling the information and data in this publication. Notwithstanding, the Department of Agriculture, Fisheries and Forestry, ABARES, its employees and advisers disclaim all liability, including liability for negligence and for any loss, damage, injury, expense or cost incurred by any person as a result of accessing, using or relying on any of the information or data in this publication to the maximum extent permitted by law.

Professional independence

The views and analysis presented in ABARES publications reflect ABARES professionally independent findings, based on scientific and economic concepts, principles, information and data. These views, analysis and findings may not reflect or be consistent with the views or positions of the Australian Government or of organisations or groups that have commissioned ABARES reports or analysis. Learn more about ABARES [professional independence](#).

Acknowledgements

The authors thank the IOTC Secretariat for providing assistance with data.

Acknowledgement of Country

We acknowledge the Traditional Custodians of Australia and their continuing connection to land and sea, waters, environment and community. We pay our respects to the Traditional Custodians of the lands we live and work on, their culture, and their Elders past and present.

A summary of key information pertaining to pelagic shark catches, status and management in the IOTC

Contents

Overview	4
References	15

Tables

Table 1 Shark species or species groups recorded by observers in IOTC longline and purse-seine fisheries	6
Table 2 Catch, gear and fleet information for the key pelagic shark species most commonly caught in IOTC fisheries.....	7
Table 3 A summary of stock status, ERA vulnerability rankings, conservation status (IUCN) and relevant IOTC shark resolutions for the key pelagic shark species caught in IOTC fisheries	8
Table 4 ERA based vulnerability rankings for shark species taken by IOTC fisheries, by gear type...	9
Table 5 Summary of shark life-history characteristics for key IOTC shark species	9
Table 6 IOTC Scientific Committee management advice for key shark species as documented in the shark species summaries of the SC26 meeting report	10
Table 7 Key provisions from IOTC shark Conservation and Management Measures	12
Table 8 Observed interaction information for the most common species	14

A summary of key information pertaining to pelagic shark catches, status and management in the IOTC

Overview

This paper provides a summary of information pertaining to the catches, status and management of pelagic shark species taken in Indian Ocean Tuna Commission (IOTC) fisheries to help facilitate discussions at the IOTC's 20th Working Party on Ecosystems and Bycatch Preparatory Meeting in April 2024. The information was compiled from existing IOTC meeting documents, resolutions and data provided by the IOTC Secretariat, and is compiled in a manner to facilitate quick comparisons across species.

This paper focusses mainly on the 7 pelagic shark species for which the IOTC Scientific Committee meeting reports contain species status summaries, being blue shark (*Prionace glauca*), oceanic whitetip (*Carcharhinus longimanus*), scalloped hammerhead (*Sphyrna lewini*), shortfin mako (*Isurus oxyrinchus*), silky shark (*Carcharhinus falciformis*), bigeye thresher (*Alopias superciliosus*) and pelagic thresher (*Alopias pelagicus*).

However, it is important to note that fisheries in the IOTC area of competence interact with a broader range of shark species whose conservation and management may be affected by both general and species-specific shark resolutions adopted by the Commission. For example, a summary of longline and purse-seine observer data (provided by the IOTC Secretariat) indicates that there are at least 22 species observed to interact with longline and 3 species observed to interact with purse seine (Table 1). Many of these species are known to interact with gillnet and other fishing gears used in IOTC fisheries, but less fishery-independent data are collected and reported in those fisheries.

With respect to the 7 key species covered by this paper, the summarised information highlights that:

- Catch level estimates for most species are highly uncertain (Table 2).
- Only blue shark stock status has been successfully assessed, with assessments for the other key species not undertaken or preliminary due to a lack of, or uncertainty in, the available information (Table 3).
- Aside from blue shark, the global conservation status for each of the 7 common species (above) is listed by IUCN as ranging from vulnerable to critically endangered (Table 3).
- The most recent ecological risk assessment highlighted those shark species with relatively higher vulnerability to longline, gillnet and/or purse seine fisheries in the IOTC Area (Table 3). Many of the 7 key species were found to be among the species at higher vulnerability to at least one of these fisheries. Additional species (outside these 7) were also found to have higher vulnerability to some gears (Table 4).
- The life-history characteristics summary (Table 5 – derived from Scientific Committee (SC) species summaries) indicates that many of these shark species are typically longer lived and later maturing than many tuna and other species taken in those fisheries, and some have particularly low fecundity (e.g. thresher species), increasing their vulnerability to fishing mortality.
- Management advice for these species provided by the SC to the Commission (Table 6) emphasises the need for a cautious approach to management of a range of these species. Common elements of the SC advice across species include the need to implement general and/or mitigation focussed measures to reduce fishing-based mortality, and the need for

A summary of key information pertaining to pelagic shark catches, status and management in the IOTC

better implementation of the requirements of existing resolutions relating to catch recording and reporting, as well as the non-retention of prohibited species.

- Table 7 provides a compilation of those provisions from current IOTC shark Conservation and Management Measures, that aim to reduce interactions/mortality, improve data and address key research gaps.

A summary of key information pertaining to pelagic shark catches, status and management in the IOTC

Table 1 Shark species or species groups recorded by observers in IOTC longline and purse-seine fisheries

Common name	Scientific name	Longline	Purse seine
Silvertip shark	<i>Carcharhinus albimarginatus</i>	Yes	No
Common Thresher shark	<i>Alopias vulpinus</i>	Yes	Yes
Grey reef shark	<i>Carcharhinus amblyrhynchos</i>	Yes	No
Blacktip reef shark	<i>Carcharhinus melanopterus</i>	Yes	No
Cooper shark	<i>Carcharhinus brachyurus</i>	Yes	No
Blue shark	<i>Prionace glauca</i>	Yes	No
Bigeye thresher	<i>Alopias superciliosus</i>	Yes	No
Blacktip shark	<i>Carcharhinus limbatus</i>	Yes	No
Sandbar shark	<i>Carcharhinus plumbeus</i>	Yes	No
Spot-tail shark	<i>Carcharhinus sorrah</i>	Yes	No
Carcharhinus NEI	<i>Carcharhinus spp.</i>	Yes	No
Dogfishes NEI	<i>Squalus spp.</i>	Yes	Yes
Silky shark	<i>Carcharhinus falciformis</i>	Yes	Yes
Longfin mako	<i>Isurus paucus</i>	Yes	No
Mako shark	<i>Isurus spp.</i>	Yes	No
Oceanic whitetip	<i>Carcharhinus longimanus</i>	Yes	Yes
Zebra shark	<i>Stegostoma tigrinum</i>	Yes	No
Porbeagles	<i>Lamna nasus</i>	Yes	No
Crocodile sharks	<i>Pseudocarcharias kamoharai</i>	Yes	No
Pelagic threshers	<i>Alopias pelagicus</i>	Yes	No
Requiem sharks	Carcharhinidae	Yes	Yes
Various sharks NEI	Selachimorpha (Pleurotremata)	Yes	No
Shortfin mako	<i>Isurus oxyrinchus</i>	Yes	Yes
Scalloped hammerhead	<i>Sphyrna lewini</i>	Yes	No
Hammerheads NEI	<i>Sphyrna spp.</i>	Yes	No
Smooth hammerhead	<i>Sphyrna zygaena</i>	Yes	No
Velvet dogfish	<i>Zameus squamulosus</i>	Yes	No
Thresher sharks NEI	<i>Alopias spp.</i>	Yes	No
Tiger shark	<i>Galeocerdo cuvier</i>	Yes	No
Hound sharks NEI	Triakidae	Yes	No

Source: IOTC observer data, IOTC Secretariat, 2024

A summary of key information pertaining to pelagic shark catches, status and management in the IOTC

Table 2 Catch, gear and fleet information for the key pelagic shark species most commonly caught in IOTC fisheries

		Blue shark	Oceanic whitetip	Scalloped hammerhead	Shortfin mako	Silky shark	Bigeye thresher	Pelagic thresher
Catch (t)	Reported (2022)	24,424	41	670	666	1,426	<1	156
	Estimated (2019)	43,240	N/A	N/A	N/A	N/A	N/A	N/A
	Average reported (2018–22)	25,275	35	198	1,013	1,755	<1	217
	Average estimated (2015–19)	48,781	N/A	N/A	N/A	N/A	N/A	N/A
	NEI catch 2022	32,558	32,558	33,949	34,248	32,558	35,865	35,865
	MSY	36,000	N/A	N/A	N/A	N/A	N/A	N/A
	FMSY	0.31	N/A	N/A	N/A	N/A	N/A	N/A
Gears and fleets	Main gear (2018–22)	Coastal LL, LL (deep freezing), LL targeting swordfish, GN	GN, line, LL	Handline, ringnet, GN, coastal LL, offshore GN	LL targeting swordfish, GN, line	GN, offshore GN, LL, LL (fresh), trolling	No report after 2012, previously reported as discard from GN and LL	GN, exploratory LL [reported as discard/released from GN and LL]
	Main fleets (2018–22) [reported as discarded/released alive]	Indonesia; Taiwan, China; EU-Spain; Seychelles; EU-Portugal	I.R. Iran; Comoros; China; Indonesia; Seychelles [China; EU-France; Mauritius; Tanzania; Sri Lanka; EU-Spain]	Sri Lanka; Kenya; Malaysia; Tanzania [UK; EU-France; South Africa]	EU-Spain; Pakistan; South Africa; EU-Portugal; Japan; UK; Indonesia; China; Sri Lanka [EU-Spain; Australia; EU-France; Indonesia; Korea; South Africa]	Sri Lanka; I.R. Iran; Pakistan; Taiwan, China; [China; EU-France; Mauritius; EU-Spain; Korea; Tanzania]	India [UK; South Africa; Indonesia; Korea; EU-France]	Pakistan [Korea; South Africa; Indonesia]

GN Gillnet; **IO** Indian Ocean; **LL** Longline; **N/A** Not available; **NEI** Not elsewhere included. Sources: IOTC (2023a,b)

A summary of key information pertaining to pelagic shark catches, status and management in the IOTC

Table 3 A summary of stock status, ERA vulnerability rankings, conservation status (IUCN) and relevant IOTC shark resolutions for the key pelagic shark species caught in IOTC fisheries

		Blue shark	Oceanic whitetip	Scalloped hammerhead	Shortfin mako	Silky shark	Bigeye thresher	Pelagic thresher
Stock assessment	Stock status	Not overfished	N/A	N/A	N/A	N/A	N/A	N/A
	Fishing mortality	Increasing	N/A	N/A	N/A	N/A	N/A	N/A
	Abundance trend	Declining	N/A	N/A	N/A	N/A	N/A	N/A
	MSY	36,000	N/A	N/A	N/A	N/A	N/A	N/A
	FMSY	0.31	N/A	N/A	N/A	N/A	N/A	N/A
ERA-overall vulnerability ranking	Longline	6	9	17	1	2	4/5	12/13
	Gillnet	17	8	6	12	5	9/10	3/4
	Purse seine	19	11	12	9	5	14/15	2/3
IUCN status	Global	Near threatened	Critically endangered	Critically endangered	Endangered	Vulnerable	Vulnerable	Endangered
	Eastern IO	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Western IO	N/A	N/A	Critically endangered	N/A	N/A	N/A	N/A
CITES		Appendix II	Appendix II	Appendix II	Appendix II	Appendix II	Appendix II	Appendix II
Current shark CMMs		18/02, 17/05	13/06	17/05	17/05	17/05	12/09	12/09

CITES Convention on International Trade in Endangered Species of Wild Fauna and Flora; **CMMs** Conservation and management measures; **ERA** Ecological risk assessment; **FMSY** Fishing mortality rate that corresponds to maximum sustainable yield; **IO** Indian Ocean; **IUCN** International Union for Conservation of Nature; **MSY** Maximum sustainable yield; **N/A** Not available.

Sources: IOTC (2023a,b); Murua et al. (2018); Rice (2021)

A summary of key information pertaining to pelagic shark catches, status and management in the IOTC

Table 4 ERA based vulnerability rankings for shark species taken by IOTC fisheries, by gear type

	Longline	Purse seine	Gillnet
Shortfin mako	1	9	1
Silky shark	2	5	5
Porbeagle	3	16	18
Bigeye thresher (2 years)	4	14	9
Bigeye thresher (1 year)	5	15	10
Blue shark	6	19	17
Longfin mako	7	4	7
Great hammerhead	8	7	13
Oceanic whitetip	9	11	8
Common thresher (1 year)	10	8	15
Common thresher (2 years)	11	6	14
Pelagic thresher (1 year)	12	2	3
Pelagic thresher (2 years)	13	3	4
Smooth hammerhead	14	18	2
Tiger shark	15	13	11
Crocodile shark	16	1	1
Scalloped hammerhead	17	12	6
Great white shark	18	17	19
Pelagic stingray	19	10	16

Source: Murua et al. (2018)

Table 5 Summary of shark life-history characteristics for key IOTC shark species

	Blue shark	Oceanic whitetip	Scalloped hammerhead	Shortfin mako	Silky shark	Bigeye thresher	Pelagic thresher
Maximum age (years)	25	~20	30+	30+	20+	20+	20+
Age at maturity (years)	4–6	4–5	6–9	18–21	6–12	3–9	8–9
Fecundity (number of pups)	25–50	<20	<31	<25	<20	2–4	2
Reproductive cycle	Annual	Biennial	Annual	Bi- or triennial	Biennial	Annual	Annual

Source: Species summaries IOTC (2023a,b)

A summary of key information pertaining to pelagic shark catches, status and management in the IOTC

Table 6 IOTC Scientific Committee management advice for key shark species as documented in the shark species summaries of the SC26 meeting report

Management advice	
Blue shark	<p>Target and limit reference points have not yet been specified for pelagic sharks in the Indian Ocean. The 2021 assessment indicates that Indian Ocean blue shark are not overfished nor subject to overfishing (Table 3). If the catches are increased by over 20%, the probability of maintaining spawning biomass above MSY reference levels (SB>SBMSY) over the next 10 years will be decreased.</p> <p>The stock should be closely monitored. While mechanisms exist for encouraging CPCs to comply with their recording and reporting requirements (Resolution 16/06), these need to be further implemented by the Commission, so as to better inform scientific advice in the future.</p>
Oceanic whitetip	<p>A cautious approach to the management of oceanic whitetip shark should be considered by the Commission, noting that recent studies suggest that longline mortality at haulback is high (50%) in the Indian Ocean (IOTC-2016-WPEB12-26), while mortality rates for interactions with other gear types such as purse seines and gillnets may be higher.</p> <p>Mitigation measures should be taken to reduce at-vessel and post release mortality, including consideration of potential gear modifications in longline fleets targeting tuna and swordfish. Noting that a recent study (Bigelow et al. 2021) concluded in WCPFC that banning both shark lines and wire leaders has the potential to reduce fishing mortality by 40.5% for oceanic whitetip shark.</p> <p>While mechanisms exist for encouraging CPCs to comply with their recording and reporting requirements (Resolution 18/07), these need to be further implemented by the Commission, so as to better inform scientific advice. IOTC Resolution 13/06 on a scientific and management framework on the conservation of shark species caught in association with IOTC managed fisheries, prohibits retention onboard, transshipping, landing or storing any part or whole carcass of oceanic whitetip sharks. Given that some CPCs are still reporting oceanic whitetip shark as landed catch, there is a need to strengthen mechanisms to ensure CPCs comply with Resolution 13/06.</p>
Scalloped hammerhead	<p>Despite the absence of stock assessment information, the Commission should consider taking a cautious approach by implementing some management actions for scalloped hammerhead sharks. While mechanisms exist for encouraging CPCs to comply with their recording and reporting requirements (Resolution 18/07), these need to be further implemented by the Commission so as to better inform scientific advice.</p>
Shortfin mako	<p>In the absence of a stock assessment and noting conflicting information, the Commission should take a cautious approach by implementing management actions that reduce fishing mortality on shortfin mako sharks. While mechanisms exist for encouraging CPCs to comply with their recording and reporting requirements (Resolution 18/07), these need to be further implemented by the Commission so as to better inform scientific advice.</p>
Silky shark	<p>Despite the absence of stock assessment information, the Commission should consider taking a cautious approach by implementing some management actions for silky sharks. While mechanisms exist for encouraging CPCs to comply with their recording and reporting requirements (Resolution 18/07), these need to be further implemented by the Commission so as to better inform scientific advice.</p> <p>Mitigation measures should be taken to reduce at-vessel and post release mortality, including consideration of potential gear modifications in longline fleets targeting tuna and swordfish. Noting that a recent study (Bigelow et al. 2021) concluded in WCPFC that banning both shark lines and wire leaders has the potential to reduce fishing mortality by 30.8% for silky shark.</p>
Bigeye thresher	<p>The prohibition on retention of bigeye thresher shark should be maintained. While mechanisms exist for encouraging CPCs to comply with their recording and reporting requirements (Resolution 18/07), these need to be further implemented by the Commission, so as to better inform scientific advice. IOTC Resolution 12/09 On the conservation of thresher sharks (family Alopiidae) caught in association with fisheries in the IOTC area of competence, prohibits retention onboard, transshipping, landing, storing, selling or offering for sale any part or whole carcass of thresher sharks of all the species of the family Alopiidae.</p>
Pelagic thresher	<p>The prohibition on the retention of pelagic thresher shark should be maintained. While mechanisms exist for encouraging CPCs to comply with their recording and reporting</p>

A summary of key information pertaining to pelagic shark catches, status and management in the IOTC

Management advice

requirements (Resolution 18/07), these need to be further implemented by the Commission, so as to better inform scientific advice. IOTC Resolution 12/09 On the conservation of thresher sharks (family Alopiidae) caught in association with fisheries in the IOTC area of competence, prohibits retention onboard, transshipping, landing, storing, selling or offering for sale any part or whole carcass of thresher sharks of all the species of the family Alopiidae.

Note: Information from Management Advice section of available species summaries. Source: IOTC (2023a,b)

A summary of key information pertaining to pelagic shark catches, status and management in the IOTC

Table 7 Key provisions from IOTC shark Conservation and Management Measures

Shark CMMs [relevant species]	Key provisions
Res 12/09 - On the conservation of thresher sharks (Family Alopiidae) caught in association with fisheries in the IOTC [Bigeye thresher and pelagic thresher]	<p>(2) Fishing Vessels flying the flag of an IOTC Member or (CPCs are prohibited from retaining on board, transshipping, landing, storing, selling or offering for sale any part or whole carcass of thresher sharks of all the species of the family Alopiidae, with the exception of paragraph 7.</p> <p>(3) CPCs shall require vessels flying their flag to promptly release unharmed, to the extent practicable, thresher sharks when brought along side for taking on board the vessel.</p> <p>(4) CPCs shall encourage their fishers to record and report incidental catches as well as live releases. These data will be then kept at the IOTC Secretariat.</p> <p>(5) Recreational and sport fishing shall release alive all caught animals of thresher sharks of all the species of the family Alopiidae. In no circumstances specimen shall be retained on board, transhipped, landed, stored, sold or offered for sale. The CPCs shall ensure that both recreational and sport fishermen carrying out fishing with high risk of catching thresher sharks are equipped with instruments suitable to release alive the animals.</p> <p>(6) CPCs shall, where possible, implement research on sharks of the species <i>Alopias</i> spp., in the Convention area in order to identify potential nursery areas. Based on this research, CPCs shall consider additional management measures, as appropriate.</p> <p>(7) Scientific observers shall be allowed to collect biological samples (vertebrae, tissues, reproductive tracts, stomachs, skin samples, spiral valves, jaws, whole and skeletonised specimens for taxonomic works and museum collections) from thresher sharks that are dead at haulback, provided that the samples are part of the research project approved by the IOTC Scientific Committee (or IOTC WPEB).</p>
Res 13/06 - On a scientific and management framework on the conservation of shark species caught in association with IOTC managed fisheries [Oceanic whitetip]	<p>(1) The Commission shall determine the shark species that are subjected to IOTC CMMs including prohibition to retain on board, tranship, land or store any part or whole carcass according to the IOTC SC's recommendation or advice.</p> <p>(2) The SC recommendation or advice shall be conducted taking account of: a) full stock assessments on sharks, stock assessment and ERAs by fishing gears, using available best scientific data/information; b) trend of fishing effort by fishing gear on each species; c) effective IOTC CMMs for certain fishing gears with high risk by shark species; d) priority in shark species with high risk; e) review of practical implementation of prohibition on board of shark species; f) feasibility of implementation of prohibition on board including identification of shark species; g) impact and bias of IOTC CMMs of sharks on fishing operations and shark data/information collected by CPCs; h) further improvement of level for sharks data/information submitted by CPCs, particularly developing CPCs.</p> <p>(3) Notwithstanding paragraphs 1 and 2, CPCs shall prohibit, as an interim pilot measure, all fishing vessels flying their flag and on the IOTC Record of Authorised Vessels, or authorised to fish for tuna or tuna-like species managed by the IOTC on the high seas to retain onboard, tranship, land or store any part or whole carcass of oceanic whitetip sharks with the exception of paragraph 7. The provisions of this measure do not apply to artisanal fisheries operating exclusively in their respective EEZ for the purpose of local consumption.</p> <p>(4) CPCs shall require fishing vessels flying their flag and on the IOTC Record of Authorised Vessels or authorised to fish for tuna and tuna-like species managed by the IOTC on the high seas to promptly release unharmed, to the extent practicable, of oceanic whitetip sharks when brought alongside for taking onboard the vessel. However, CPCs should encourage their fishers to release this species if recognised on the line before bringing them onboard the vessels.</p> <p>(5) CPCs shall encourage their fishers to record incidental catches as well as live releases of oceanic whitetip sharks. These data shall be kept at the IOTC Secretariat.</p> <p>(7) Scientific observers shall be allowed to collect biological samples (vertebrae, tissues, reproductive tracts, stomachs, skin samples, spiral valves, jaws, whole and skeletonised specimens for taxonomic works and museum collections) from oceanic whitetip sharks taken in the IOTC area of competence that are dead at haulback, provided that the samples are a part of a research project approved by the IOTC SC/the IOTC WPEB.</p>

A summary of key information pertaining to pelagic shark catches, status and management in the IOTC

Shark CMMs [relevant species]	Key provisions
Res 17/05 On the conservation of sharks caught in association with fisheries managed by the IOTC [Blue shark, scalloped hammerhead, shortfin mako and silky shark]	(2) CPCs shall take the necessary measures to require that their fishermen fully utilise their entire catches of sharks, with the exception of species prohibited by the IOTC. Full utilisation is defined as retention by the fishing vessel of all parts of the shark excepting head, guts and skins, to the point of first landing.
	(3a) Sharks landed fresh: CPCs shall prohibit the removal of shark fins on board vessels. CPCs shall prohibit the landing, retention on-board, transshipment and carrying to shark fins which are not naturally attached to the shark carcass until the first point of landing.
	(3b) Sharks landed frozen: CPCs that do not apply sub-paragraph 3a for all sharks shall require their vessels to not have on board fins that total more than 5% of the weight of sharks on board, up to the first point of landing. CPCs that currently do not require fins and carcasses to be offloaded together at the point of first landing shall take the necessary measures to ensure compliance with the 5% ratio through certification, monitoring by an observer or other appropriate means.
	(4) In fisheries in which sharks are unwanted species, CPCs shall, to the extent possible, encourage the release of live sharks, especially juveniles and pregnant sharks that are caught incidentally and are not used for food and/or subsistence. CPCs shall require that fishers are aware of and use identification guides and handling practices.
	(5) Without prejudice to paragraph 3, in order to facilitate on-board storage, shark fins may be partially sliced through and folded against the shark carcass, but shall not be removed from the carcass until the first point of landing.
	(7) CPCs shall prohibit the purchase, offer for sale and sale of shark fins which have been removed on-board, retained on-board, transhipped or landed, in contravention to this Resolution.
	(8) The Commission shall develop and consider for adoption at its regular annual session in 2017 mechanisms to encourage CPCs to comply with their reporting requirement on sharks, notably on the most vulnerable shark species identified by the IOTC SC.
	(11) CPCs shall undertake research to: a) identify ways to make fishing gears more selective, where appropriate, including research into the effectiveness of prohibiting wire leaders; b) improve knowledge on key biological/ecological parameters, life-history and behavioural traits, migration patterns of key shark species; c) identify key shark mating, pupping and nursery areas; and d) improve handling practices for live sharks to maximise post-release survival.
Res 18/02 On management measures for the conservation of blue shark caught in association with IOTC fisheries [Blue shark]	(1) To ensure the conservation of the blue shark (<i>Prionace glauca</i>) stock in the Indian Ocean, CPCs whose vessels catch blue shark in the IOTC Convention Area shall ensure that effective management measures are in place to support the sustainable exploitation of this stock in line with the IOTC's Convention objective by undertaking the following management measures:
	(2) In order to curb the level of unreported catches, each CPC shall ensure that its vessels catching blue shark in association with IOTC fisheries in the Agreement area record their catch in accordance with the requirements set out in the Resolution 15/01 on the recording of catch and effort data by fishing vessels in the IOTC area of competence or any Resolution superseding it.
	(3) CPCs shall implement data collection programmes that ensure improved reporting of accurate blue shark catch, effort, size and discard data to IOTC in full accordance with the Resolution 15/02 on the Mandatory statistical reporting requirements for CPCs or any Resolution superseding it.
	(4) CPCs shall include in their national Annual Reports to the SC information on the actions they have taken domestically to monitor catches.
	(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 WPEB and SC through working documents and the national Annual Reports.

Note: "Key" provisions were defined as those aimed at reducing interactions/mortality, improving data and addressing key research gaps.

Source: IOTC website, Compendium of Active CMMS.

A summary of key information pertaining to pelagic shark catches, status and management in the IOTC

Table 8 Observed interaction information for the most common species

	Blue shark	Oceanic whitetip	Scalloped hammer-head	Shortfin mako	Silky shark	Bigeye thresher	Pelagic thresher
Number observed	21,820	1,949	70	871	35,466	210	87
Gear type	LL	LL, PS	LL	LL, PS	LL, PS	LL	LL
Fleets	EU-France; Japan; Sri Lanka	EU-France; Japan; Korea; Sri Lanka; Mauritius; Seychelles	EU-France; Japan	EU-Spain; EU-France; Japan	EU-France; EU-Spain; Japan; Korea; Sri Lanka; Mauritius; Seychelles	EU-France; Japan	EU-France; Japan

LL Longline; **PS** Purse seine.

Source: IOTC Regional Observer Scheme data (IOTC Secretariat, 2024); all gears and years combined. Note that the information provided above uses data only from the main species code for each species and does not include data from general categories such as 'not elsewhere included' categories.

A summary of key information pertaining to pelagic shark catches, status and management in the IOTC

References

IOTC 2023a, [Report of the 26th session of the IOTC Scientific Committee](#), IOTC-2023-SC26-R[E], Indian Ocean Tuna Commission Scientific Committee meeting, Mumbai, India, 4–8 December, accessed 12 March 2024.

IOTC 2023b, [Report of the 19th session of the IOTC Working Party on Ecosystems and Bycatch](#), IOTC-2023-WPEB-R[E]_Rev2, La Saline-les Bains and La Réunion, 11–15 September, accessed 21 March 2024.

Murua, H, Santiago, J, Coelho, R, Zudaire, I, Neves, C, Rosa, D, Zudaire, I, Semba, Y, Geng, Z, Bach, P, Arrizabalaga, H, Bach, P, Baez, JC, Ramos, ML, Zhu, JF& Ruiz, J 2018, [Updated ecological risk assessment \(ERA\) for shark species caught in fisheries managed by the Indian Ocean Tuna Commission \(IOTC\)](#), IOTC-2018-SC21-14_Rev1, Indian Ocean Tuna Commission Scientific Committee meeting, Mahe, Seychelles, 3–7 December, accessed 12 March 2024.

Rice, J 2021, [Stock assessment of blue shark \(*Prionace glauca*\) in the Indian Ocean using Stock Synthesis, IOTC-2021-WPEB17-15 Rev2](#), Indian Ocean Tuna Commission 10th Working Party on Ecosystem and Bycatch, online meeting, 6–10 September, accessed 15 March 2024.