APPENDIX XVIV
EXECUTIVE SUMMARY: MOBULIDS (2025)

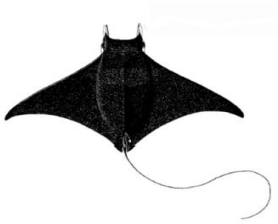

Table A 1. Mobulids: IUCN Red List status for mobulid ray species that occur within the IOTC area of competence.

Family	Common name	Species	IUCN Red List status*	Interactions by Gear Type**
Mobulidae	Oceanic Manta Ray	*Mobula birostris*	EN	GN, PS, LL
	Reef Manta Ray	*Mobula alfredi*	VU	GN, LL***
	Sicklefin Devilray	*Mobula tarapacana*	CR	GN, PS, LL
	Spinetail Devil Ray	*Mobula mobular*	CR	GN, PS, LL
	Bentfin Devil Ray	*Mobula thurstoni*	CR	GN, PS, LL
	Longhorned Pygmy Devil Ray	*Mobula eregoodoo*	EN	GN, LL**
	Shorthorned Pygmy Devil Ray	*Mobula kuhlii*	EN	GN, LL**

* The assessment of the status level in IUCN is independent of IOTC processes
** Gear types: Gill nets (GN), Purse seines (PS), Longlines (LL)
The IUCN Red List of Threatened species. <www.iucnredlist.org>.
Downloaded on 14 July 2025:
Marshall et al., 2022a, b.
Jabado et al., 2025a, b, c.
Rigby et al., 2022a, b.

INDIAN OCEAN STOCK – MANAGEMENT ADVICE

Stock status. The current International Union for Conservation of Nature (IUCN) Red List status for each of the mobulid ray species reported in the IOTC Area of Competence is provided in Table **A** 1. All mobulid species have been listed on Appendix I of CITES. Information on their known interactions with IOTC fisheries is also provided. It is important to note that a number of international global environmental accords (e.g., Convention on Migratory Species (CMS), Convention on Biological Diversity (CBD)), as well as numerous fisheries agreements obligate States to provide protection for these species.

The status of mobulids is affected by a range of factors such as direct harvesting, bycatch, and habitat degradation. The level of mobulid mortality due to capture in tuna fisheries is likely to be substantial and

is a major cause for concern. Mobulids are primarily caught as bycatch in gillnet fisheries and, to a lesser extent, purse seine and longline fisheries (Croll et al., 2016, Shahid et al., 2018, White et al., 2006, Ardill et al., 2011, Moazamm, 2018; Ruiz et al., 2017; Murua et al., 2021; Acevedo-Iglesias et al., 2025; Laglbauer et al. 2025). Information on catches of these species is poor and often aggregated rather than reported to species level. It is also uncertain as there are difficulties in classifying them at species level, even by scientific observers (Cronin et al., 2024). A recent study comparing mobulid catch across ocean basins shows that globally, an estimated 39,473 mobulids are caught annually in large vessel fisheries (>15 m) (Laglbauer et al. 2025 [In review]). Purse seines accounted for 18.6% of catch and 19.7% of mortality, and together with drift gillnets had the highest rates of dead discards (57.3% and 50% respectively), while longlines had lower at-vessel mortality (6.7%). Gear reporting is often incomplete, but retention and mortality rates vary widely by fleet and country.

The Indian Ocean dominates reported mobulid global catches (72%, n = 191,528) and estimated global mortality (73%, n = 191,010) (Laglbauer et al. 2025 [In review]). However, no holistic evaluation of the vulnerability status of these species exists (Griffiths and Lezama-Ochoa, 2021). These interactions need to be better documented throughout the IOTC Area of Competence. However, information submitted to the WPEB has highlighted declines in the catches of mobulids in the Indian Ocean, which may suggest a decline in the populations (Shahid et al., 2018, Moazzam, 2018, Fernando 2018, Venables et al., 2024, Fernando and Stewart, 2021). Additional catch declines have been reported in coastal India based on landings and effort data where available (Raje and Zacharia 2009; Chopra et al.,2025 [In review]; Thomas et al. 2022); in Indonesia based on landings data (Lewis et al., 2015; FAO 2024); in Kenya based on IOTC publicly available data (IOTC, 2025); and possible local declines have been indicated in Madagascar of *M. alfredi* since 2015 based on citizen science observations (Diamant et al 2025).

Outlook. Resolution 19/03 *On the conservation of mobulid rays caught in association with the IOTC area of competence* highlights the lack of accurate and complete data collection and reporting to the IOTC Secretariat of interactions and mortalities of mobulids in association with tuna fisheries in the IOTC Area of Competence.

This resolution prohibits CPCs flagged vessels from intentionally setting any gear type for targeted fishing of mobulid rays, if an animal is sighted prior to the commencement of the set. CPCs shall also prohibit vessels from retaining any part or whole carcass of mobulid rays. However, these two provisions do not apply to vessels carrying out subsistence fisheries[1] (which should not be selling any part or whole carcass of the rays). CPCs are required to require their vessels to promptly release mobulids as soon as they are seen in the gear following adopted safe handling and release practices. The CPCs shall also report information and data collected on interactions (the number of discards and releases) with mobulids by vessels through logbooks and/or through observer programmes and this data should be provided to the IOTC Secretariat by 30 June of the following year.

The following should be noted:

- The number of mobulid interactions in various fisheries is highly uncertain and most likely underestimated, thus, this information should be collected/reported as a matter of priority for the WPEB to determine a status for any Indian Ocean mobulid species.

[1] A subsistence fishery is a fishery in which the fish caught are consumed directly by the families of the fishers rather than being bought by middle-(wo)men and sold at the next larger market, per the FAO Guidelines for the routine collection of capture fishery data. FAO Fisheries Technical Paper. No. 382. Rome, FAO. 1999. 113p.

- Available evidence indicates considerable risk to mobulids in the Indian Ocean, particularly from tuna drift gillnet fisheries, followed by purse seiners and longline to a lesser extent.
- Maintaining or increasing fishing effort in the Indian Ocean without appropriate mitigation measures in place will likely result in further declines in a number of mobulid species. An increasing effort by tuna drift gillnet fisheries has been reported to the IOTC, which is a major cause of concern for a number of species, particularly in the northern Indian Ocean.
- The adoption of updated safe handling and release best practices, especially for gillnet and purse seine gears, would improve post-release mortality and reduce fisheries impacts on mobulid populations in the Indian Ocean.
- Efforts should be undertaken to encourage CPCs to investigate means to reduce mobulid bycatch and at-vessel and post-release mortality in IOTC fisheries and improve data collection and reporting for mobulids. This may include alternative data collection mechanisms such as skipper-based reporting, port sampling and cost-effective electronic monitoring systems.

RELEVANT LITERATURE

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