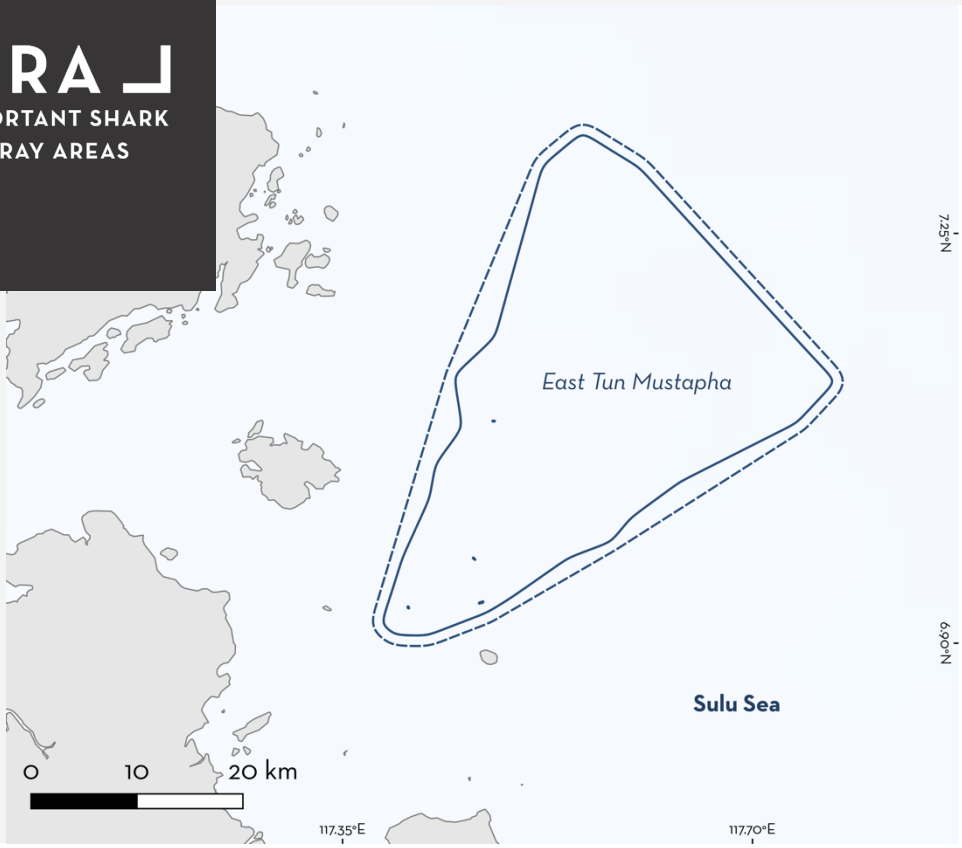
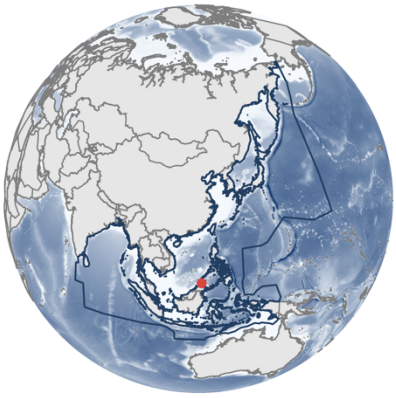
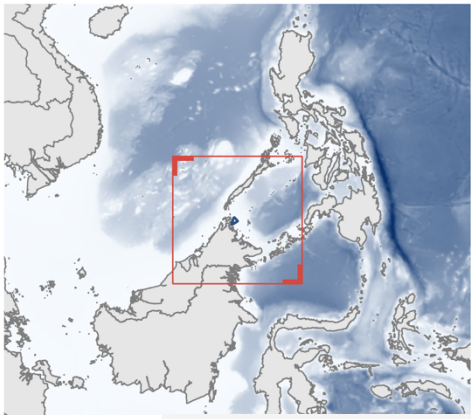
ISRA
IMPORTANT SHARK AND RAY AREAS







Blue lines indicate the area meeting the ISRA Criteria; dashed lines indicate the suggested buffer for use in the development of appropriate place-based conservation measures

EAST TUN MUSTAPHA ISRA

Asia Region

MALAYSIA PHILIPPINES

0–75 metres

963.16 km²

SUMMARY

East Tun Mustapha is a transboundary area near Malawali Island in northeast Sabah, Malaysia and southern Palawan, Philippines. The area features sand, rock, and rubble substrates, and coral reef habitats. It overlaps with the Tun Mustapha Marine Park Marine Protected Area, and with the Sulu-Sulawesi Marine Ecoregion Ecologically or Biologically Significant Marine Area. Within this area there are: **threatened species** (e.g., Scalloped Hammerhead *Sphyrna lewini*); and **reproductive areas** (e.g., Bottlenose Wedgefish *Rhynchobatus australiae*).

CRITERIA

Criterion A – Vulnerability; Sub-criterion C1 – Reproductive Areas

DESCRIPTION OF HABITAT

East Tun Mustapha is situated near Banggi and Malawali Islands in the northeast region of Sabah, Malaysia and southern Palawan, Philippines. The area is characterised by coral reef habitat, and sand, rock, and rubble substrates (Allen Coral Atlas 2024).

During the northeast monsoon from November to March, the eastern region of Sabah, including East Tun Mustapha, experiences higher rainfall and lower air temperatures due to cold air flows originating from Siberia (Malaysian Meteorological Department 2024). At the northern tip off Kudat, a town located 70 km from East Tun Mustapha, there is a relatively low concentration of surface chlorophyll-*a* throughout the year compared to other areas in Sabah (Abdul-Hadi et al. 2013). The wind speed in the northern tip off Kudat is relatively higher than the rest of the northeast coast of Sabah throughout the year. This strong wind may stir up sediments from the seabed and increase water turbidity, especially in shallow coastal waters of the area. This is particularly true in habitats with loose sediment or where the bottom is easily resuspended, such as in East Tun Mustapha.

East Tun Mustapha partially overlaps with the Tun Mustapha Marine Park Marine Protected Area. The area also overlaps with the Sulu-Sulawesi Marine Ecoregion Ecologically or Biologically Significant Marine Area (EBSA; CBD 2024).

This Important Shark and Ray Area is benthopelagic and is delineated from inshore and surface waters (0 m) to 75 m based on the bathymetry of the area.

ISRA CRITERIA

CRITERION A – VULNERABILITY

Two Qualifying Species within the area are considered threatened with extinction according to the IUCN Red List of Threatened Species. These are the Critically Endangered Scalloped Hammerhead (Rigby et al. 2019) and Bottlenose Wedgefish (Kyne et al. 2019).

SUB-CRITERION C1 – REPRODUCTIVE AREAS

East Tun Mustapha is an important reproductive area for one shark and one ray species.

Between 2020–2022, species capture data were documented via images of bycatch events on trawlers (Marine Research Foundation unpubl. data 2024). GPS-linked cameras were installed on 37 trawl vessels (of a total of 1,507 vessels registered in Sabah, Malaysia) across six key fishing districts covering most of Sabah. The objective was to identify shark and ray bycatch hotspot areas. Although this means that bycatch was only observed from a small proportion of vessels, the GPS-linked cameras provide the exact location of the captures as a major benefit to delineating boundaries of bycatch hotspots. Over the 299 vessel-weeks monitoring period between 2020–2021, 5,009 bycatch events were recorded across the whole of Sabah, with 518 individuals (10% of total) from 28 species documented within East Tun Mustapha. Individuals were measured from photos based on the known widths of the vessels.

A total of 71 Scalloped Hammerheads were captured on monitored vessels across the whole of Sabah, with almost two-thirds (44 individuals, 62%) caught in East Tun Mustapha, indicating that this is the major hotspot of the species in this region. Of these 44 individuals, 28 could be measured from the photos, and the others were within the same size class but could not be directly measured. All 28 were either neonates (n = 18) or young-of-the-year (YOY) (n = 10) based on a size range of 40–71

cm total length (TL). The size-at-birth for Scalloped Hammerheads ranges from 31–57 cm TL (Ebert et al. 2021). The YOY classification is based on an estimated growth rate of 63 cm for females and 54 cm for males during the first year (Chen et al. 1990). Altogether, this indicates that East Tun Mustapha is an important area for early life stages. There was a peak in Scalloped Hammerhead captures from May–October, indicating possible seasonality in the species' reproductive cycle. Additionally, the species was also observed in landing site surveys in August 2015 to July 2016 in Sandakan out of which vessels also operate in East Tun Mustapha (Arshad et al. 2017). A total of 42 Scalloped Hammerheads were recorded among 135 monitored landings. Average size was ~55 cm TL, indicating that these were mostly neonates and YOY.

A total of 23 Bottlenose Wedgefish were captured across the whole of Sabah, with 14 (61%) captured within East Tun Mustapha. There were 14 neonates/YOY in the whole of Sabah, with eight (57%) caught within East Tun Mustapha. This is a relatively large cluster of neonate/YOY Bottlenose Wedgefish, which are now rarely captured in the wider region due to population declines. Neonates/YOY caught within East Tun Mustapha ranged from 34–67 cm TL. They were identified as neonates/YOY based on the size-at-birth of 46–50 cm TL (White & Dharmadi 2007). Although few individuals were caught by the monitored vessels, they allowed the delineation of the hotspot for early life stage individuals. Other non-monitored vessels also likely catch neonate and YOY individuals in the area. A landing survey of trawlers operating out of Sandakan in 2015–2016 found 45 individuals among 135 monitored landings (Arshad et al. 2017). They ranged from 68.3–165 cm TL and included neonates and YOY as well as adults. Combined with the regional context of few captures elsewhere in Sabah, this underlines the importance of this area for this threatened species.

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Ho Kooi Chee (Marine Research Foundation), Nicolas J Pilcher (Marine Research Foundation), and Christoph A Rohner (IUCN SSC Shark Specialist Group – ISRA Project) contributed and consolidated information included in this factsheet. We thank all participants of the 2024 ISRA Region 9 – Asia workshop for their contributions to this process.

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QUALIFYING SPECIES

Scientific Name	Common Name	IUCN Red List Category	Global Depth Range (m)	ISRA Criteria/Sub-criteria Met								
				A	B	C1	C2	C3	C4	C5	D1	D2
SHARKS												
Sphyrna lewini	Scalloped Hammerhead	CR	0–1,043	X		X						
RAYS												
Rhynchobatus australiae	Bottlenose Wedgefish	CR	0–60	X		X						

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
Atelomycterus marmoratus	Coral Catshark	NT
Chiloscyllium punctatum	Grey Carpetshark	NT
RAYS		
Maculabatis gerrardi	Whitespotted Whipray	EN

IUCN Red List of Threatened Species Categories are available by searching species names at www.iucnredlist.org Abbreviations refer to: CR, Critically Endangered; EN, Endangered; VU, Vulnerable; NT, Near Threatened; LC, Least Concern; DD, Data Deficient.

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