

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

UNGUJA ISRA

Western Indian Ocean Region

SUMMARY

Unguja is located in the Zanzibar Archipelago, Tanzania. The area is characterised by the presence of coral reefs, mangroves, and sandy substrates. The area overlaps with one Ecologically or Biologically Significant Marine Area, two Key Biodiversity Areas, and two protected areas. Within the area there are: **threatened species** (e.g., Bowmouth Guitarfish *Rhina ancylostomus*); **range-restricted species** (Zanzibar Guitarfish *Acroteriobatus zanzibarensis*); **reproductive areas** (e.g., Bluespotted Maskray *Neotrygon caeruleopunctata*); and the area sustains a **high diversity of sharks** (23 species).

CRITERIA

Criterion A - Vulnerability; Criterion B - Range Restricted;
Sub-criterion C1 - Reproductive Areas; Sub-criterion D2 - Diversity

UNITED
 REPUBLIC OF
 TANZANIA

0-60 metres

2,776.34 km²





DESCRIPTION OF HABITAT

Unguja is the main southern island in the Zanzibar Archipelago, Tanzania. It is separated from the mainland by ~40 km of shallow waters. The area is characterised by the presence of coral reefs, mangroves, and sandy substrates. Unguja is mainly influenced by the East African Coastal Current and monsoon winds. Southern monsoon winds (May–September) are stronger than northeast monsoon winds (November–March) and produce higher Chlorophyll- α concentrations (Peter et al. 2018). Mean sea surface temperature ranges from 23°C (austral winter) to 30°C (Limbu & Kyewalyanga 2015; Semba et al. 2016). Heavier rains occur in May, when the Wami and Ruvu Rivers have a higher discharge flowing to the area (Painter 2020).

The area overlaps with the Zanzibar (Unguja)–Saadani Ecologically or Biologically Significant Marine Area (EBSA; CBD 2023) and two Key Biodiversity Areas (KBA), Zanzibar Island-South Coast and Tumbatu Island (KBA 2023a, 2023b). In addition, it overlaps with the Menai Bay Conservation Area and Chumbe Island Coral Park.

This Important Shark and Ray Area is benthopelagic and is delineated from inshore and surface waters (0 m) to 60 m based on the bathymetry of the area and the distribution of the Qualifying Species.

ISRA CRITERIA

CRITERION A – VULNERABILITY

Twenty-two Qualifying Species considered threatened with extinction according to the IUCN Red List of Threatened Species™ regularly occur in the area. Threatened sharks comprise one Critically Endangered species, one Endangered species, and four Vulnerable species; threatened rays comprise two Critically Endangered species, 10 Endangered species, and four Vulnerable species (IUCN 2023).

CRITERION B – RANGE RESTRICTED

This area holds the regular presence of Zanzibar Guitarfish as a resident range-restricted species.

Zanzibar Guitarfish are regularly caught in local fisheries within the area year-round with 128 individuals landed between 2019–2023 (Wildlife Conservation Society unpubl. data 2023). While recorded at a mainland site, this species has not been reported from other islands (e.g., Pemba Island) despite regular landing site surveys. This species is endemic to the Somali Coastal Current Large Marine Ecosystem.

SUB-CRITERION C1 – REPRODUCTIVE AREAS

Unguja is an important reproductive area for two ray species.

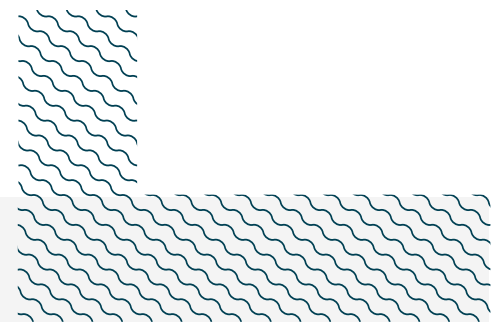
Between 2019–2023, 748 Bluespotted Maskray were recorded from the catch of artisanal fisheries in the area, of which 34 (4.5%) measured between 15–25 cm disc width (DW) (Wildlife Conservation Society unpubl. data 2023). Size-at-birth for the species is ~17 cm DW (Last et al. 2016) and size-at-one-year is ~25 cm DW according to age-and-growth studies (O’Shea et al. 2023). Therefore, these individuals were likely neonates or young-of-the-year. In comparison, artisanal landing data from

Pemba Island during the same period indicate that 822 Bluespotted Maskrays were landed, of which only three (0.4%) measured <25 cm DW. Furthermore, of the eight artisanal fisher landing sites monitored across mainland Tanzania during this same period, the Bluespotted Maskray was only recorded in Somanga landing site (199 individuals), with no individuals <25 cm DW observed (Wildlife Conservation Society unpubl. data 2023). These findings suggest that Unguja sustains a large number of these smaller rays and is more important for this species than other sites in Tanzania.

Between 2019-2023, 37 Bowmouth Guitarfish measuring 52-240 cm TL were recorded from the catch of artisanal fisheries in the area (Wildlife Conservation Society unpubl. data 2023). Size-at-birth for the species is ~46 cm TL (Last et al. 2016) and size-at-one-year is ~73 cm TL according to age-and-growth studies (Kurniawan et al. 2021). Five individuals (13% of individuals recorded) were 52-54 cm TL and could be considered young-of-the-year. One landed female measuring 232 cm TL was likely pregnant due to her extended abdomen. In comparison, during the same period, 23 Bowmouth Guitarfish were observed at artisanal fisher landing sites in Pemba Island and mainland Tanzania, with none of these measuring <73 cm TL (Wildlife Conservation Society unpubl. data 2023). Life history knowledge for this species is scarce (Kyne et al. 2019), so this evidence highlights the regional importance of Unguja as an important reproductive area for this species.

SUB-CRITERION D2 - DIVERSITY

Unguja sustains a high diversity of Qualifying Species (23 species). This exceeds the regional diversity threshold (22 species) for the Western Indian Ocean. These species have been observed regularly in landings from artisanal fisheries operating exclusively within the area (Schaeffer 2004; Barrowclift et al. 2017; Temple et al. 2019, 2020; Wildlife Conservation Society unpubl. data 2023).



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QUALIFYING SPECIES

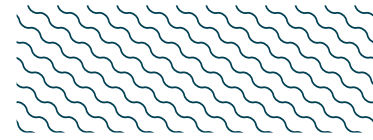
Scientific Name	Common Name	IUCN Red List Category	Global Depth Range (m)	ISRA Criteria/Sub-criteria Met								
				A	B	C1	C2	C3	C4	C5	D1	D2
SHARKS												
<i>Carcharhinus falciformis</i>	Silky Shark	VU	0-500	X								X
<i>Carcharhinus leucas</i>	Bull Shark	VU	0-164	X								
<i>Hemipristis elongata</i>	Snaggletooth Shark	EN	0-130	X								
<i>Rhizoprionodon acutus</i>	Milk Shark	VU	0-1,200	X								
<i>Sphyrna lewini</i>	Scalloped Hammerhead	CR	0-1,043	X								
<i>Triaenodon obesus</i>	Whitetip Reef Shark	VU	0-330	X								
RAYS												
<i>Acroteriobatus zanzibarensis</i>	Zanzibar Guitarfish	EN	0-80	X	X							
<i>Aetobatus ocellatus</i>	Spotted Eagle Ray	EN	0-60	X								
<i>Bathytoshia lata</i>	Brown Stingray	VU	0-800	X								
<i>Himantura leoparda</i>	Leopard Whipray	EN	1-70	X								
<i>Himantura uarnak</i>	Coach Whipray	EN	0-50	X								
<i>Mobula kuhlii</i>	Shorthorned Pygmy Devil Ray	EN	0-50	X								
<i>Mobula mobular</i>	Spinetail Devil Ray	EN	0-1,112	X								

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
<i>Mobula thurstoni</i>	Bentfin Devil Ray	EN	0-100	X								
<i>Neotrygon caeruleopunctata</i>	Bluespotted Maskray	LC	0-100			X						
<i>Pastinachus ater</i>	Broad Cowtail Ray	VU	0-60	X								
<i>Pateobatis fai</i>	Pink Whipray	VU	0-200	X								
<i>Pateobatis jenkinsii</i>	Jenkins' Whipray	EN	0-90	X								
<i>Rhina ancylostomus</i>	Bowmouth Guitarfish	CR	0-70	X		X						
<i>Rhinoptera jayakari</i>	Oman Cownose Ray	EN	0-50	X								
<i>Rhynchobatus australiae</i>	Bottlenose Wedgefish	CR	0-60	X								
<i>Taeniurops meyeri</i>	Blotched Fantail Ray	VU	0-439	X								
<i>Urogymnus asperrimus</i>	Porcupine Ray	EN	1-30	X								

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
<i>Carcharhinus albimarginatus</i>	Silvertip Shark	VU
<i>Carcharhinus amblyrhynchos</i>	Grey Reef Shark	EN
<i>Carcharhinus humani</i>	Human's Whaler Shark	DD
<i>Carcharhinus longimanus</i>	Oceanic Whitetip Shark	CR
<i>Carcharhinus obscurus</i>	Dusky Shark	EN
<i>Carcharhinus plumbeus</i>	Sandbar Shark	EN
<i>Carcharhinus sorrah</i>	Spottail Shark	NT
<i>Centrophorus moluccensis</i>	Smallfin Gulper Shark	VU
<i>Echinorhinus brucus</i>	Bramble Shark	EN
<i>Galeocerdo cuvier</i>	Tiger Shark	NT
<i>Hemigaleus microstoma</i>	Sicklefin Weasel Shark	VU
<i>Heterodontus ramalheira</i>	Whitespotted Bullhead Shark	DD
<i>Hexanchus griseus</i>	Bluntnose Sixgill Shark	NT
<i>Hexanchus nakamurai</i>	Bigeyed Sixgill Shark	NT
<i>Isurus oxyrinchus</i>	Shortfin Mako	EN
<i>Loxodon macrorhinus</i>	Sliteye Shark	NT
<i>Mustelus manazo</i>	Starspotted Smoothhound	EN
<i>Mustelus mosis</i>	Arabian Smoothhound	NT
<i>Sphyrna mokarran</i>	Great Hammerhead	CR
<i>Sphyrna zygaena</i>	Smooth Hammerhead	VU
<i>Stegostoma tigrinum</i>	Indo-Pacific Leopard Shark	EN
RAYS		
<i>Aetomylaeus vespertilio</i>	Ornate Eagle Ray	EN
<i>Maculabatis ambigua</i>	Baraka's Whipray	NT
<i>Megatrygon microps</i>	Smalleye Stingray	DD
<i>Plesiobatis daviesi</i>	Giant Stingaree	LC
<i>Rhinobatos austini</i>	Austin's Guitarfish	DD
<i>Rhinobatos holcorhynchus</i>	Slender Guitarfish	DD
<i>Taeniura lymma</i>	Bluespotted Lagoon Ray	LC

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.



SUPPORTING INFORMATION

There are additional indications that Unguja is an important reproductive area for one ray species. Between 2019-2023, 1,844 Baraka's Whiprays were recorded in landings from artisanal fisheries (Wildlife Conservation Society unpubl. data 2023). Of these individuals, 27 observed in multiple years measured 26-36 cm DW, with size-at-birth being ~20 cm DW for this species and size-at-one-year being ~36 cm DW according to age-and-growth studies (Temple et al. 2020). Therefore these 27 individuals can be considered neonates or young-of-the-year based on their size. More information is needed to confirm the reproductive importance of the area.



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