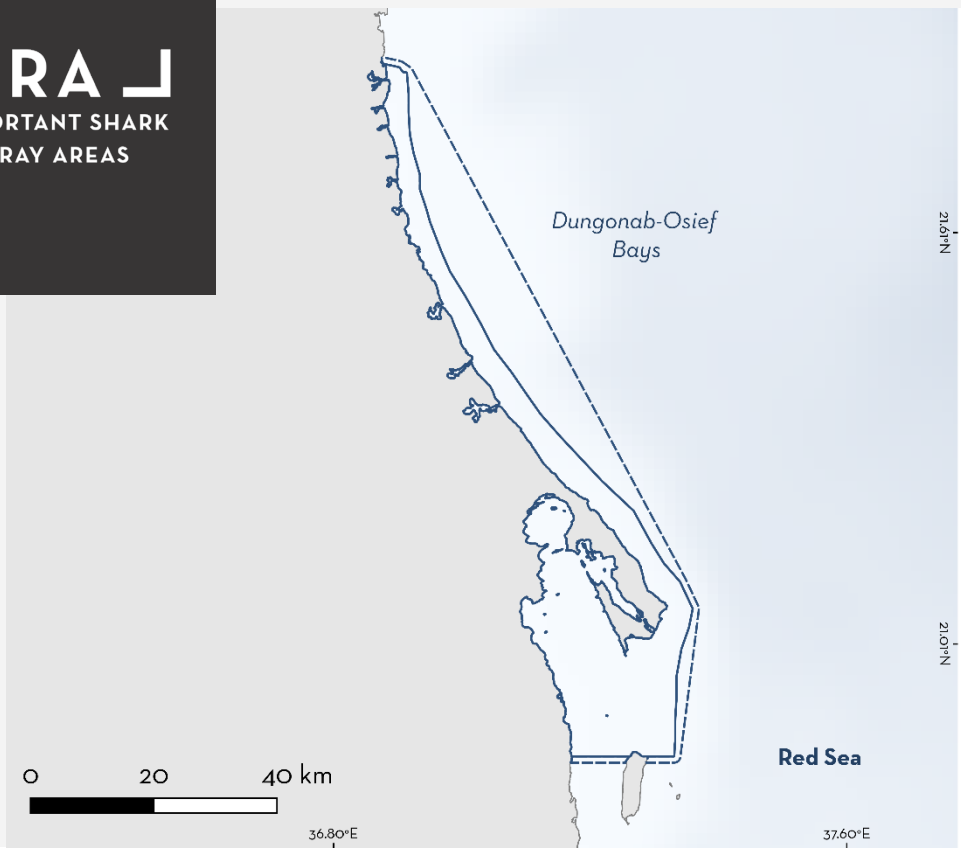
ISRA
IMPORTANT SHARK AND RAY AREAS



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

DUNGONAB-OSIEF BAYS ISRA

Western Indian Ocean Region

SUDAN

0–100 metres

1,050.20 km²

SUMMARY

Dungonab-Osief Bays is located in northern Sudan in the Red Sea. It is characterised by sandy beaches, bays, tidal inlets, saltmarshes, patches of intertidal mud flats, rocky shores with seaweeds and seagrass beds, and rich coral reef growth fringing most of the coastline and islands. It overlaps partially with a National Marine Protected Area, a Ramsar Site (Wetland of International Importance), and a UNESCO World Heritage site. Within this area there are: **threatened species** (e.g., Green Sawfish *Pristis zijsron*); **reproductive areas** (Green Sawfish); and **feeding areas** (Reef Manta Ray *Mobula alfredi*).

CRITERIA

Criterion A – Vulnerability; Sub-criterion C1 – Reproductive Areas; Sub-criterion C2 – Feeding Areas

DESCRIPTION OF HABITAT

Dungonab Bay-Osief Bays lies ~125 km north of Port Sudan in the western Red Sea. The area includes several bays and a large island (Mukkawar Island). It is characterised by a variety of habitats including coral reefs, mangroves, offshore islands, soft-bottom mud flats, sand beaches, hard-bottom rocky shores, saltmarshes, sabkhas (coastal mudflats), and khor (riverbed) basins.

The coastal area from the Egyptian border in the north to Port Sudan in the south includes different habitats, extensive sandy beaches, bays, tidal inlets, saltmarshes, patches of intertidal mud flats in the more sheltered mesas rocky shores with seaweeds and seagrass beds, and rich coral reef growth fringing most of the coastline and islands. The southern half of this coastal stretch, between Port Sudan and Dungonab, supports sparsely distributed Grey Mangrove (*Avicennia marina*) stands. The northern half extending north of Dungonab to Halaib, including Osief, is relatively rich in tidal inlets and has more dense mangroves. Dungonab Bay is one of the largest bays of the Red Sea and lies in the middle of the area (PERSGA/GEF 2004). The area also includes Marsa Inkefal which is also characterised by mangrove stands (I Elhassan pers. obs. 2023).

Dungonab-Osief Bays overlaps with the Dungonab Bay/Mukawar Island Marine Protected Area, the Dungonab Bay - Mukkawar Island Marine National Park (a UNESCO World Heritage Site), and the Dongonab Bay-Marsa Waiai Ramsar Site (Wetland of International Importance; Ramsar 2023).

This Important Shark and Ray Area is benthopelagic and is delineated from inshore and surface waters (0 m) to 100 m based on the depths used by the Qualifying Species in the area.

ISRA CRITERIA

CRITERION A – VULNERABILITY

Two Qualifying Species within this area are considered threatened with extinction according to the IUCN Red List of Threatened Species™. These are the Critically Endangered Green Sawfish (Harry et al. 2022) and the Vulnerable Reef Manta Ray (Marshall et al. 2022).

SUB-CRITERION C1 – REPRODUCTIVE AREAS

Dungonab-Osief Bays is an important reproductive area for one ray species.

Since 2011, there have been 14 records of Green Sawfish in this area based mostly on confirmed fisher reports. This is the second largest clustering of contemporary Green Sawfish records in the Western Indian Ocean (the largest clustering is also in Sudan). Green Sawfish regularly occur in the area, including records from the years 2011, 2015, 2016, 2017, 2018, and 2020 (Elhassan 2018; I Elhassan, unpubl. data 2023). This is the only sawfish species currently found in the Sudanese Red Sea (Elhassan 2018), and one of two remaining sawfish species in the Western Indian Ocean (alongside the Largetooth Sawfish *Pristis pristis*). It is distinctive from other shark and ray species, and recognisable based on its elongated, tooth-studded rostrum.

There is further detail available on the size classes of contemporary Green Sawfish records in this area (Elhassan 2018; I Elhassan, unpubl. data 2023). The size-at-maturity is > 320 cm total length (TL) and size-at-birth is ~75–90 cm TL (Lear et al. 2023). Between 2015–2017, eight immature Green Sawfish were caught from muddy coastal lagoons close to Osief Bay, in water <10 m deep. In 2016, two juvenile Green Sawfish were caught in Marsa Abu Ausher at 2 m depth on muddy substrate. In

2018, a 200 cm TL juvenile was caught in Abu Shagra at 4 m depth on muddy substrate. In 2011, a gravid Green Sawfish was caught from deeper waters of Osief Bay. In 2020, two juveniles were reported by fishers from mangrove habitat in Marsa Inkefal. These observations are consistent with known habitat preferences, further inferring that Dungonab-Osief Bays is an important reproductive area for Green Sawfish.

The temporal and spatial scale of contemporary records in Sudan is regionally, if not globally, significant for Green Sawfish.

SUB-CRITERION C2 – FEEDING AREAS

Dungonab-Osief Bays is an important feeding area for one ray species.

Reef Manta Rays regularly and predictably aggregate to feed on plankton. While the exact environmental conditions and oceanographic features driving local plankton abundances in this area remain unknown, the resulting abundance of Reef Manta Rays has been well studied. Acoustic monitoring of Reef Manta Rays indicates high residency to this area with at least one of nineteen animals detected on 96% of monitored days over a roughly two-year period (Knochel et al. 2022). Reef Manta Rays have been observed feeding in central Dungonab during June, October, and November across multiple years (Kessel et al. 2017) including reports from the 1950s, local survey efforts in 2006 and 2007, and tagging efforts in 2012, and reports from Cousteau (2013) (J Cochran pers. obs. 2023). Aggregations of Reef Manta Rays included up to eight individuals (APF 2006), and smaller aggregations of males, females, and juveniles have also been reported (Cousteau 2013).

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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
RAYS												
Mobula alfredi	Reef Manta Ray	VU	0–711	X			X					
Pristis zijsron	Green Sawfish	CR	0–100	X		X						

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
Carcharhinus albimarginatus	Silvertip Shark	VU
Carcharhinus amblyrhynchos	Grey Reef Shark	EN
Carcharhinus brevipinna	Spinner Shark	VU
Carcharhinus falciformis	Silky Shark	VU
Carcharhinus melanopterus	Blacktip Reef Shark	VU
Galeocerdo cuvier	Tiger Shark	NT
Rhincodon typus	Whale Shark	EN
Sphyrna lewini	Scalloped Hammerhead	CR
Sphyrna mokarran	Great Hammerhead	CR
Triaenodon obesus	Whitetip Reef Shark	VU
RAYS		
Glaucostegus halavi	Halavi Guitarfish	CR
Mobula birostris	Oceanic Manta Ray	EN
Rhynchobatus djiddensis	Whitespotted Wedgefish	CR

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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