POMENE ISRA

Western Indian Ocean Region

SUMMARY

Pomene is located on the central coast of the Inhambane Province in southern Mozambique. The area stretches ~70 km of the coastline around Pomene and Morrungulo. The area is characterised by a diversity of habitats including coastal dune systems, an extensive mangrove forest, an estuary, tidal sand flats, interspersed seagrass beds, subtropical rocky reefs, and pelagic waters. The area overlaps with the Mozambique Channel Ecologically or Biologically Significant Marine Area. Within this area there are: **threatened species** (e.g., Reef Manta Ray *Mobula alfredi*); **feeding areas** (Whale Shark *Rhincodon typus*); **resting areas** (Indo-Pacific Leopard Shark *Stegostoma tigrinum*); and **undefined aggregations** (Reef Manta Ray).

CRITERIA

**Criterion A – Vulnerability; Sub-criterion C2 – Feeding Areas;
Sub-criterion C3 – Resting Areas; Sub-criterion C5 – Undefined Aggregations**

MOZAMBIQUE

0–100 metres

1,033.08 km²

sharkrayareas.org

DESCRIPTION OF HABITAT

Pomene is located in the central Inhambane Province on the southern coast of Mozambique. Mesoscale cyclonic/anticyclonic eddies move southward through the Mozambique Channel (Schouten et al. 2003). The continental shelf in the area is narrow with a steep slope, leading to eddy-driven shelf-edge upwelling that periodically increases plankton biomass and creates large prey aggregation areas for filter feeders (Roberts et al. 2014; Vinayachandran et al. 2021). Upwelling events in the area are intense, with daily amplitudes of up to 7.5°C at Zambia Reef north of the Pomene headland (Rohner et al. 2014). This coastal area has a diversity of habitats, including dune systems, an extensive mangrove forest, estuarine ecosystems, tidal sand flats, and interspersed seagrass beds. The seaward side is characterised by pelagic waters with underlying subtropical rocky reefs, with a reef system (10–40 m depth) extending parallel to shore, including ridges and pinnacles surrounded by sandy substrate.

The area overlaps with the Mozambique Channel Ecologically or Biologically Significant Marine Area (EBSA; CBD 2023).

This Important Shark and Ray Area is benthopelagic and extends from inshore and surface waters (0 m) to 100 m, based on the distribution of the Qualifying Species and the bathymetry of the area.

ISRA CRITERIA

CRITERION A – VULNERABILITY

Three Qualifying Species considered threatened with extinction according to the IUCN Red List of Threatened Species[TM] regularly occur in the area. These are the Endangered Whale Shark (Pierce & Norman 2016) and Indo-Pacific Leopard Shark (Rigby et al. submitted), and the Vulnerable Reef Manta Ray (Marshall et al. 2022).

SUB-CRITERION C2 – FEEDING AREAS

Pomene is an important feeding area for one shark species.

Local residents and tourism operators have reported regular observations of Whale Sharks in the area since 2007 (A Marshall pers. obs. 2023). Data collected during aerial surveys (2012–2016; n = 9) support this, with a total of 24 Whale Sharks recorded in surface waters, 15 of which were actively feeding (63%). An opportunistic snorkel survey in October 2021 identified six individuals actively sub-surface feeding (Marine Megafauna Foundation unpubl. data 2023). Fifteen satellite-tracked Whale Sharks between 2010–2012 spent a high proportion of time in coastal areas of southern Mozambique, and frequented areas with higher chlorophyll-α than randomised model sharks, indicating that feeding was a major motivation for their habitat use. Kernel Utilisation Densities (KUDs) identified a hotspot within the Pomene area, showing that the area is likely to be an important feeding site (Rohner et al. 2018). Frequent and intense shelf-edge upwelling in the area, with daily temperature amplitudes of up to 7.5°C at an ~18 m deep rocky reef, leads to increased productivity in these waters and productive feeding grounds for Whale Sharks. Stomach content analysis of three stranded individuals at Pomene headland in August 2009, found mysid shrimps (61% Index of Relative Importance [IRI]) in one specimen and sergestid shrimps (56% IRI) in another specimen. These prey groups are often found in coastal waters, indicating recent feeding in the area (Rohner et al. 2013).

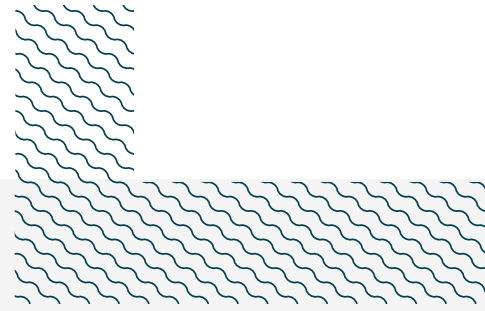## SUB-CRITERION C3 – RESTING AREAS

Pomene is an important resting area for one shark species.

Indo-Pacific Leopard Shark sightings (n = 47) were recorded during visual dive surveys (n = 110) and Baited Remote Underwater Video (BRUV) surveys in the area between 2021–2023 (April–December), as well as a single opportunistic sighting recorded in 2014 (Marine Megafauna Foundation unpubl. data 2023). Indo-Pacific Leopard Sharks were observed at eight sites, but there was one main site from which 67% of sightings were recorded. Resting behaviour was observed in 70% of sightings, in groups of up to four individuals. Resting was observed during the day (08:00–14:00), a typical behaviour for this nocturnal forager (Dudgeon et al. 2008). Eighteen individuals have been identified through photo-identification in this area, with Indo-Pacific Leopard Sharks at Praia do Tofo ~50 km south of the area showing site fidelity to particular sites (Pottie et al. 2021), and one individual encountered on six occasions at the same rocky reef. This species is typically rare in the Western Indian Ocean, and Pomene is likely to be an extension to their nearby major identified hotspot along the east African coast, located off Praia do Tofo (Pottie et al. 2021).

SUB-CRITERION C5 – UNDEFINED AGGREGATIONS

Pomene hosts undefined aggregations of one ray species.

This area is an important cleaning habitat for Reef Manta Rays. This species is predominantly observed being actively cleaned at rocky reef cleaning stations in the area, where cleaner fishes remove parasites and dead skin off their body (Marshall et al. 2011; Marine Megafauna Foundation unpubl. data 2023). This is an important behaviour for the species, with acoustically tracked individuals spending up to 8 hours a day at such sites in nearby waters (Venables et al. 2020). To date, there are two identified high-use cleaning stations in this area. From 2020–2023, local dive operators have been diving these rocky reefs twice per week during February–December. Reef Manta Rays were observed on ~25% of dives and were actively cleaning in >90% of sightings, in groups of up to 15 individuals (S Counsel pers. comm. 2023).

Suggested citation

IUCN SSC Shark Specialist Group. 2023. Pomene ISRA Factsheet. Dubai: IUCN SSC Shark Specialist Group.

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												
Rhincodon typus	Whale Shark	EN	0–1,928	X			X					
Stegostoma tigrinum	Indo-Pacific Leopard Shark	EN	0–62	X				X				
RAYS												
Mobula alfredi	Reef Manta Ray	VU	0–711	X						X		

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
Carcharhinus amblyrhynchos	Grey Reef Shark	EN
Carcharhinus leucas	Bull Shark	VU
Carcharhinus limbatus	Blacktip Shark	VU
Galeocerdo cuvier	Tiger Shark	NT
Nebrius ferrugineus	Tawny Nurse Shark	VU
Sphyrna lewini	Scalloped Hammerhead	CR
Triaenodon obesus	Whitetip Reef Shark	VU
RAYS		
Acroteriobatus leucospilus	Greyspot Guitarfish	EN
Aetobatus ocellatus	Spotted Eagle Ray	EN
Himantura uarnak	Coach Whipray	EN
Megatrygon microps	Smalleye Stingray	DD
Mobula birostris	Oceanic Manta Ray	EN
Mobula kuhlii	Shorthorned Pygmy Devil Ray	EN
Pastinachus ater	Broad Cowtail Ray	VU
Pateobatis fai	Pink Whipray	VU
Pateobatis jenkinsii	Jenkins' Whipray	VU
Rhina ancylostomus	Bowmouth Guitarfish	CR
Rhinoptera jayakari	Oman Cownose Ray	EN
Taeniurops meyeni	Blotched Fantail Ray	VU

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.
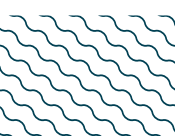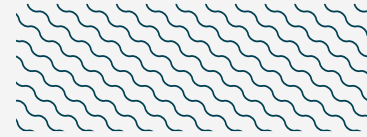
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