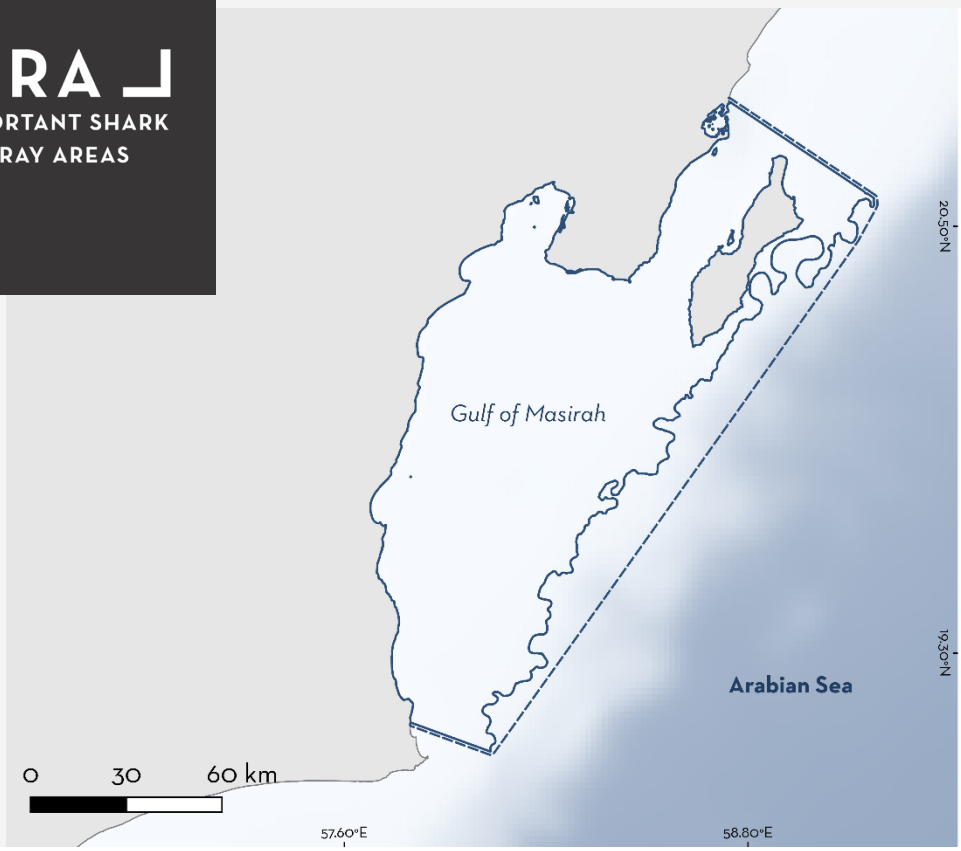
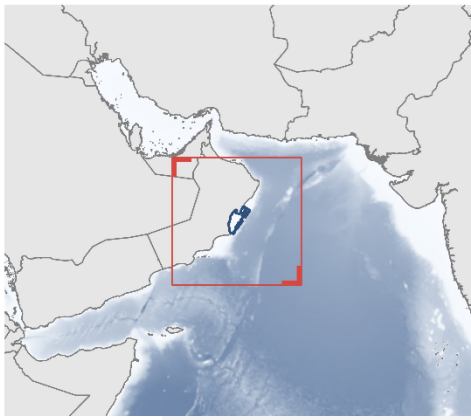
ISRA
IMPORTANT SHARK AND RAY AREAS





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

GULF OF MASIRAH ISRA

Western Indian Ocean Region

OMAN

0–100 metres

11,758.57 km²

SUMMARY

Gulf of Masirah is located in the Arabian Sea, in the Al Wusta Governorate of Oman. It extends from Masirah Island in the northern part to Ad Duqm in the south. The area is a large shallow embayment and is characterised by rocky and sandy areas, mangroves, seagrass beds, and coral reefs. Monsoon winds produce seasonal upwelling and cause an increase in productivity. This area overlaps with one protected area, two Key Biodiversity Areas, and one Ecologically or Biologically Significant Marine Area. Within the area there are: **threatened species** (e.g., Blacktip Shark *Carcharhinus limbatus*) and **reproductive areas** (e.g., Milk Shark *Rhizoprionodon acutus*).

CRITERIA

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

DESCRIPTION OF HABITAT

Gulf of Masirah is located in the Arabian Sea, on the southeastern coast of the Sultanate of Oman, in the Al Wusta Governorate. It extends from Masirah Island in the northern part to Ad Duqm in the south. The area is the largest shallow embayment along the coast of Oman, and is characterised by rocky and sandy areas, mangroves, seagrass beds, and coral reefs (Fouda & Ali-Muharrami 1995; Blue et al. 2014; Spreter er al. 2022).

The area is influenced by southwest monsoon winds (June–September) and northeast monsoon winds (December–March) producing a strong coastal current (Sheppard 2018). This current produces upwellings and causes an increase in productivity along the Arabian Sea (tenfold increases compared to inter-monsoon periods) and decreases in sea surface temperatures (~17°C) compared to the annual mean (~25°C; Sarma et al. 2013; Sheppard 2018; Willson et al. 2020).

This area overlaps with the Al Wusta Wetland Reserve, two Key Biodiversity Areas (KBA), Barr al Hikman and Masirah Island (KBA 2023a, 2023b), and the Oman Arabian Sea Ecologically or Biologically Significant Marine Area (EBSA; CBD 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 distribution of the Qualifying Species in the area and the maximum depth of the area.

ISRA CRITERIA

CRITERION A – VULNERABILITY

Three Qualifying Species considered threatened with extinction according to the IUCN Red List of Threatened Species™ regularly occur in the area. These are the Critically Endangered Scalloped Hammerhead (Rigby et al. 2019) and the Vulnerable Milk Shark (Rigby et al. 2020) and Blacktip Shark (Rigby et al. 2021).

SUB-CRITERION C1 – REPRODUCTIVE AREAS

Gulf of Masirah is an important reproductive area for three shark species.

Between 2009–2011, 168 Blacktip Sharks (65–306 cm total length [TL]) were recorded in artisanal fisheries operating in the area (Henderson & Reeve 2014). From these individuals, 51 were classified as neonates based on their size and the presence of umbilical scars, with 60% of the sharks caught in the Gulf of Masirah. Neonates were landed almost exclusively in boreal autumn, with few individuals found in spring and winter. The presence of these life stages was previously reported (2002–2004) in artisanal fisheries within the area (Henderson et al. 2004), confirming their regular presence. Since 2010, opportunistic sightings during other research surveys (yearly between August and October) indicate that neonates and young-of-the-year are still being landed in artisanal fisheries operating in the Gulf of Masirah (A Willson unpubl. data 2023).

Milk Shark was reported as the most landed species in artisanal fisheries along the coast of Oman (n = 3,000) between 2002–2004 and 2009–2011 with most individuals caught in the Gulf of Masirah (Henderson et al. 2007; Henderson & Reeve 2014). Monthly sampling in the Gulf of Masirah revealed that this was the most landed species in the area (n = 1,100), from fisheries operating at depths <100 m. Based on their size (<65 cm TL), almost all individuals were mature, according to the reported size-at-maturity for the species (~68 cm TL; Ebert et al. 2021). Pregnant females were observed in all

seasons, with pregnancy stage advancing from spring to winter, when the majority of females observed were in late pregnancy stages (~50%) with large-sized embryos (~24 cm TL). However, late pregnancy females were observed year-round (Henderson et al. 2006). This confirm that the entire gestation period occurs in the Gulf of Masirah. Between 2009–2011, 36 neonates were observed in the area, mostly during spring and summer (Henderson & Reeve 2014). Even if the proportion of neonates compared to other life stages was higher in other areas north and south of the Gulf of Masirah (Muscat and Dhofar), neonates observed in the Gulf of Masirah represented 60% of all neonates recorded in Oman (Henderson & Reeve 2014). Since 2010, opportunistic sightings during other research surveys (yearly in late summer from August to October) indicate that this species is still regularly landed (A Willson unpubl. data 2023).

Based on landings from artisanal fisheries between 2009–2011, 47 neonate Scalloped Hammerheads were recorded along the coast of Oman (Henderson & Reeve 2014). From these neonates, 80% (n = 37) were recorded in the Gulf of Masirah mostly during summer, although some were also observed in autumn. Additionally, of all the Oman coast, this area was where the majority of adults, including pregnant females, were recorded, mostly during summer (Henderson & Reeve 2014; RW Jabado unpubl. data 2023).

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Emiliano García-Rodríguez (IUCN SSC Shark Specialist Group - ISRA Project) and Andrew Willson (Future Seas Global SPC) contributed and consolidated information included in this factsheet. We thank all participants of the 2023 ISRA Region 7 – Western Indian Ocean 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												
Carcharhinus limbatus	Blacktip Shark	VU	0–140	X		X						
Rhizoprionodon acutus	Milk Shark	VU	1–200	X		X						
Sphyrna lewini	Scalloped Hammerhead	CR	0–1,043	X		X						

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
Carcharhinus falciformis	Silky Shark	VU
Carcharhinus macloti	Hardnose Shark	NT
Carcharhinus melanopterus	Blacktip Reef Shark	VU
Carcharhinus sorrah	Spottail Shark	NT
Heterodontus omanensis	Oman Bullhead Shark	DD
Loxodon macrorhinus	Sliteye Shark	NT
Stegostoma tigrinum	Indo-Pacific Leopard Shark	EN
RAYS		
Acroteriobatus salalah	Salalah Guitarfish	NT
Glaucostegus halavi	Halavi Guitarfish	CR
Gymnura poecilura	Longtail Butterfly Ray	VU
Himantura uarnak	Coach Whipray	EN
Rhinoptera jayakari	Oman Cownose Ray	EN
Taeniura lymma	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 Gulf of Masirah is an important area for range-restricted species and reproductive purposes of other ray species. Oman Bullhead Shark is a range-restricted species endemic to the Gulf of Masirah. This species was described based on three individuals captured from this area at 72 m depth in 1989 (Baldwin 2005). Additional information is needed to confirm the contemporary and regular presence of this species in the area. In addition, other range-restricted species, Salalah Guitarfish has been reported as bycatch in shrimp fisheries within the area during surveys in 2013 (Al-Mamry et al. 2015). More information is needed to confirm the regular presence of this species in the area.

Neonates of Halavi Guitarfish and Longtail Butterfly Ray were also observed in the area based on catches from artisanal fisheries between 2002–2004 and 2009–2011 (Henderson et al. 2004; Henderson & Reeve 2014). More information is needed to confirm the regular presence of these life stages and the importance of this area compared to others.

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