

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

## ROEBUCK BAY ISRA

### Australia and Southeast Indian Ocean Region

#### SUMMARY

Roebuck Bay is located in the Kimberley region, Western Australia, Australia. It is situated in Yawuru Country and is a large, semi-enclosed tropical embayment, with extensive intertidal sand and mudflats. Extensive mangrove forests fringe the shoreline and seagrass meadows occur in shallow subtidal zones. This area overlaps with the Yawuru Nagulagun/Roebuck Bay Marine Park and the Roebuck Bay Ramsar Site. Within this area there are: **threatened species** and **reproductive areas** (Indo-Pacific Leopard Shark *Stegostoma tigrinum*).

#### CRITERIA

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

— AUSTRALIA —

— 0-20 metres —

— 449.9 km<sup>2</sup> —





## DESCRIPTION OF HABITAT

Roebuck Bay is located in the Kimberley region, Western Australia, Australia. It is situated in Yawuru Country. This area is a large, semi-enclosed tropical embayment, in the Canning Basin, located near Broome. This bay is dominated by a macrotidal system with extensive intertidal sand and mudflats and intertidal creeks (DPW 2016). This area has one of the most biologically diverse and productive tropical intertidal flats in Western Australia (Bennelongia 2009). The seafloor is dominated by soft sediments, fine silts, clays, and muddy sands, derived from the erosion of nearby pindan soils and coastal mangroves (DPW 2016). These flats support dense populations of benthic invertebrates (e.g., polychaetes, crustaceans, molluscs). Extensive mangrove forests fringe the shoreline, primarily composed of White Mangrove (*Avicennia marina*) (Mathews et al. 2011). Seagrass meadows (mainly *Halodule uninervis* and *Halophila ovalis*) occur in shallow subtidal zones (DPW 2016).

The South Equatorial Current and Indonesian Throughflow supply warm, low salinity, nutrient poor waters to northern Western Australia (Suthers & Waite 2007). Nearshore water movement and mixing patterns in this area are mainly driven by the large tidal ranges, seabed topography, and local winds (DPW 2016). The climate is tropical monsoonal with a distinct wet season (roughly November–April) and a pronounced dry season (roughly May–October).

This area overlaps with the Yawuru Nagulagun/Roebuck Bay Marine Park (WA DBCA 2025) and the Roebuck Bay Ramsar Site (Wetland of International Importance; Ramsar 2025).

This Important Shark and Ray Area is benthic and pelagic and is delineated from inshore and surface waters (0 m) to 20 m based on the bathymetry of the area.

## ISRA CRITERIA

### CRITERION A – VULNERABILITY

One Qualifying Species considered threatened with extinction according to the IUCN Red List of Threatened Species regularly occurs in the area. This is the Endangered Indo-Pacific Leopard Shark (Rigby et al. 2024).

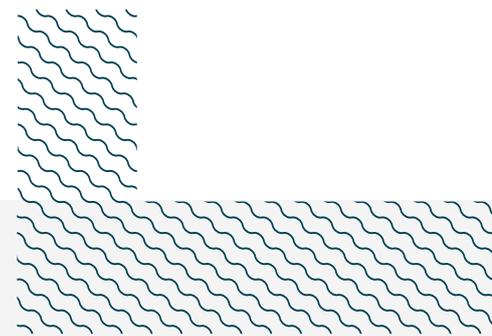
### SUB-CRITERION C<sub>1</sub> – REPRODUCTIVE AREAS

Roebuck Bay is an important reproductive area for one shark species.

Between 2014–2025, sixteen records of small Indo-Pacific Leopard Sharks swimming close to the surface were posted on social media or reported by citizen scientists. Records come from December–June but are primarily from the wet season. These reports correspond to neonates and young-of-the-year (YOY) identified by their distinctive coloration and characteristic surface-swimming behaviour typical of this early life-stage (20–60 cm total Length; Dudgeon & White 2012). Local ocean users have noted that these sightings are regular and occur yearly during the wet season (J Hounslow & G Carlin pers. obs. 2014–2025). Neonates display an undulating swimming motion with their slender bodies on the sea surface, characterised by a striking banded coloration and a long, single-lobed caudal fin that mimics sea snakes (Dudgeon & White 2012; Ebert et al. 2021).

Although this area has been poorly studied, with no targeted research and records based solely on citizen science, early life-stages have been regularly observed for nine years, supporting its role as a reproductive habitat for this species. Across its known distribution, only four Important Shark and

Ray Area have been identified for reproductive purposes of this species (i.e., pre-copulatory behaviour, egg cases) in Oman, Thailand, and New Caledonia (Jabado et al. 2023, 2024a, 2024b). Only one of these areas in Oman has reported one neonate; therefore, this area represents the only site where neonate and YOY individuals have been regularly recorded on a global scale.



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We acknowledge the Traditional Owners of Country throughout Australia and recognise the continuing connection to land, waters, and culture. We pay our respects to Elders past, present, and emerging.

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### **Suggested citation**

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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	
<b>SHARKS</b>													
<i>Stegostoma tigrinum</i>	Indo-Pacific Leopard Shark	EN	0-90	X		X							

## SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
<b>SHARKS</b>		
<i>Galeocerdo cuvier</i>	Tiger Shark	NT
<i>Nebrius ferrugineus</i>	Tawny Nurse Shark	VU
<i>Negaprion acutidens</i>	Sharptooth Lemon Shark	EN
<b>RAYS</b>		
<i>Mobula eregoodoo</i>	Longhorned Pygmy Devil Ray	EN
<i>Pristis zijsron</i>	Green Sawfish	CR

*IUCN Red List of Threatened Species Categories are available by searching species names at [www.iucnredlist.org](http://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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