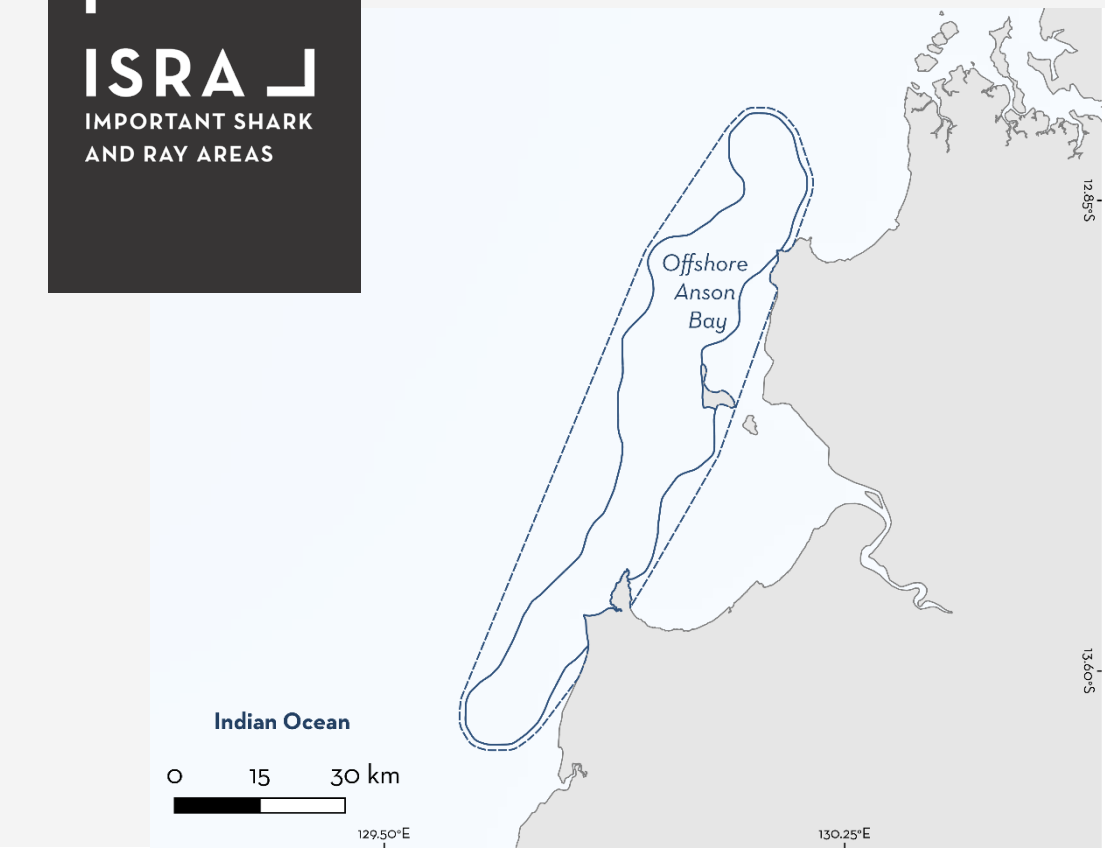
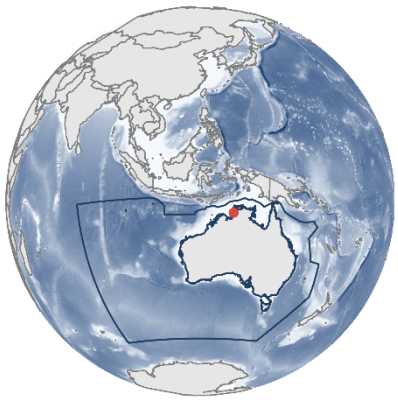
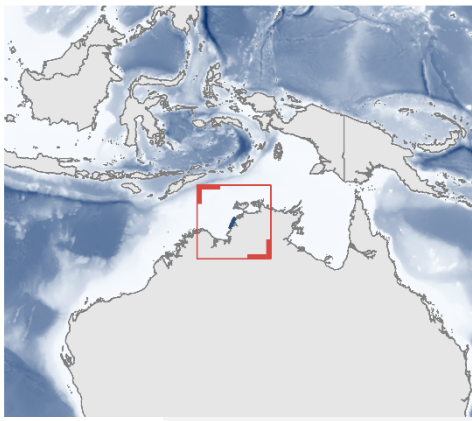
ISRA
IMPORTANT SHARK AND RAY AREAS







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

OFFSHORE ANSON BAY ISRA

Australia and Southeast Indian Ocean Region

AUSTRALIA

0–40 metres

1,544.3 km²

SUMMARY

Offshore Anson Bay is located off the west coast of the Northern Territory, Australia. It features shallow epipelagic waters over soft substrates and patchy reefs, with adjacent coastal zones dominated by mangrove and saltmarsh habitats. The area is influenced by strong tidal currents and seasonal freshwater inflow from the Daly River, which drive estuarine plume formation, salinity gradients, and primary productivity. Within this area there are: **threatened species** (e.g., Longhorned Pygmy Devil Ray *Mobula eregoodoo*) and **undefined aggregations** (e.g., Shorthorned Pygmy Devil Ray *Mobula kuhlii*).

CRITERIA

Criterion A – Vulnerability; Sub-criterion C5 – Undefined Aggregations

DESCRIPTION OF HABITAT

Offshore Anson Bay is located off the west coast of the Northern Territory, Australia. The area extends from offshore of Dundee Beach to offshore of northern Thamarrurr, encompassing waters to the west of Anson Bay and the Peron Islands. It lies on the shallow tropical continental shelf, with depths mostly between 10–20 m, reaching ~40 m centrally, and consists of epipelagic waters overlying soft sediment substrates and patchy reefs (Lucieer et al. 2025). The area meets the coastline at the north and south of Anson Bay, which is dominated by mangrove and saltmarsh (Lucieer et al. 2025).

The region experiences a monsoonal climate with strong semi-diurnal tides and a tidal range exceeding 7 m, producing high current velocities and dynamic sediment transport. It is strongly influenced by the adjacent Daly River, one of the largest perennial rivers in the Northern Territory, which delivers large volumes of freshwater, sediments, and nutrients into Anson Bay during the wet season (typically November–April, peaking January–March; Cartwright et al. 2025). These seasonal pulses form plumes that extend into offshore Anson Bay, creating salinity gradients and promoting enhanced primary productivity.

This Important Shark and Ray Area is pelagic and is delineated from inshore and surface waters (0 m) to 40 m based on the depth range of habitat in the area.

ISRA CRITERIA

CRITERION A – VULNERABILITY

Two Qualifying Species considered threatened with extinction according to the IUCN Red List of Threatened Species regularly occur in the area. These are the Endangered Longhorned Pygmy Devil Ray (Rigby et al. 2022a) and Shorthorned Pygmy Devil Ray (Rigby et al. 2022b).

SUB-CRITERION C5 – UNDEFINED AGGREGATIONS

Offshore Anson Bay is important for undefined aggregations of two ray species.

Fishery-dependent data from a commercial pelagic net fishery operating in this area provide evidence for regular assemblages of Longhorned Pygmy Devil Rays and Shorthorned Pygmy Devil Rays. Since 2019, it has been a requirement that catches of this species group are reported in mandatory fishery logbooks. Animals captured have been reported as 'pygmy devil rays', a grouping comprised of both Longhorned Pygmy Devil Rays and Shorthorned Pygmy Devil Rays (NT DAF 2024), with Longhorned Pygmy Devil Ray being the dominant species (Notarbartolo di Sciara et al. 2020; CL Dudgeon unpubl. data 2025; J Pini-Fitzsimmons unpubl. data 2025).

Between 2018 and 2023, 952 interactions with pygmy devil rays were reported across the fishery, with annual interactions ranging between 2–408 individuals (average ± standard error = 190.4 ± 70.9 per year; NT DAF 2024). Reported interactions have increased over this period, but this is likely due to the introduction of mandatory reporting and increased awareness amongst fishers. As a result, the annual average reported catch since the 2020/2021 fishing season is 287.3 ± 66.2 individuals per year (NT DAF 2024). Hotspot analyses undertaken for the fishery's ecological risk assessment show that >90% of interactions occurred in Offshore Anson Bay (visually estimated from the heatmap in NT DAF [2024]). Point data are not available for these interactions, but the heatmap across the

fishery (which covers territorial waters of the Northern Territory apart from some spatial closures) indicates that no other fished area matches the extent of interactions seen within this area.

The environment within the area reflects the nearshore habitat preferences of these species (Broadhurst et al. 2018; Notarbartolo di Sciara et al. 2020; Fernando & Stewart 2021). The aggregative behaviour of pygmy devil ray species is well documented (Notarbartolo di Sciara et al. 2017; Carpenter 2023; Palacois et al. 2023) and has been recorded in both Longhorned Pygmy Devil Ray and Shorthorned Pygmy Devil Ray (Murie & Marshall 2016; Broadhurst et al. 2018; Palacois et al. 2023). The high level of fishery interactions in Offshore Anson Bay is considered indicative of this aggregating behaviour and is not seen on this scale elsewhere in the Northern Territory. Interactions between pygmy devil rays and the commercial pelagic net fishery operating within this area frequently involve ≥2 individuals of the same species per net (CL Dudgeon unpubl. data 2025; J Pini-Fitzsimmons pers. obs. 2025), demonstrating that the rays aggregate by species within the area. Further information is required to understand the nature and function of these aggregations.

Acknowledgments

Joni Pini-Fitzsimmons (Charles Darwin University; School of Natural Sciences, Macquarie University), Emily E Taljaard (Charles Darwin University), Carol Palmer (Charles Darwin University), Christine L Dudgeon (Biopixel Oceans Foundation), and Peter M Kyne (Charles Darwin University; IUCN SSC Shark Specialist Group – ISRA Project) contributed and consolidated information included in this factsheet. We thank all participants of the 2025 ISRA Region 08 – Australia and Southeast Indian Ocean workshop for their contributions to this process.

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.

This factsheet has undergone review by the ISRA Independent Review Panel prior to its publication.

This project was funded by the Shark Conservation Fund, a philanthropic collaborative pooling expertise and resources to meet the threats facing the world's sharks and rays. The Shark Conservation Fund is a project of Rockefeller Philanthropy Advisors.

Suggested citation

IUCN SSC Shark Specialist Group. 2025. Offshore Anson Bay 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
RAYS												
Mobula eregoodoo	Longhorned Pygmy Devil Ray	EN	0–50	X						X		
Mobula kuhlii	Shorthorned Pygmy Devil Ray	EN	0–50	X						X		

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
RAYS		
Anoxypristis cuspidata	Narrow Sawfish	CR
Mobula alfredi	Reef Manta Ray	VU
Mobula birostris	Oceanic Manta Ray	EN
Pristis clavata	Dwarf Sawfish	CR
Pristis zijsron	Green Sawfish	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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