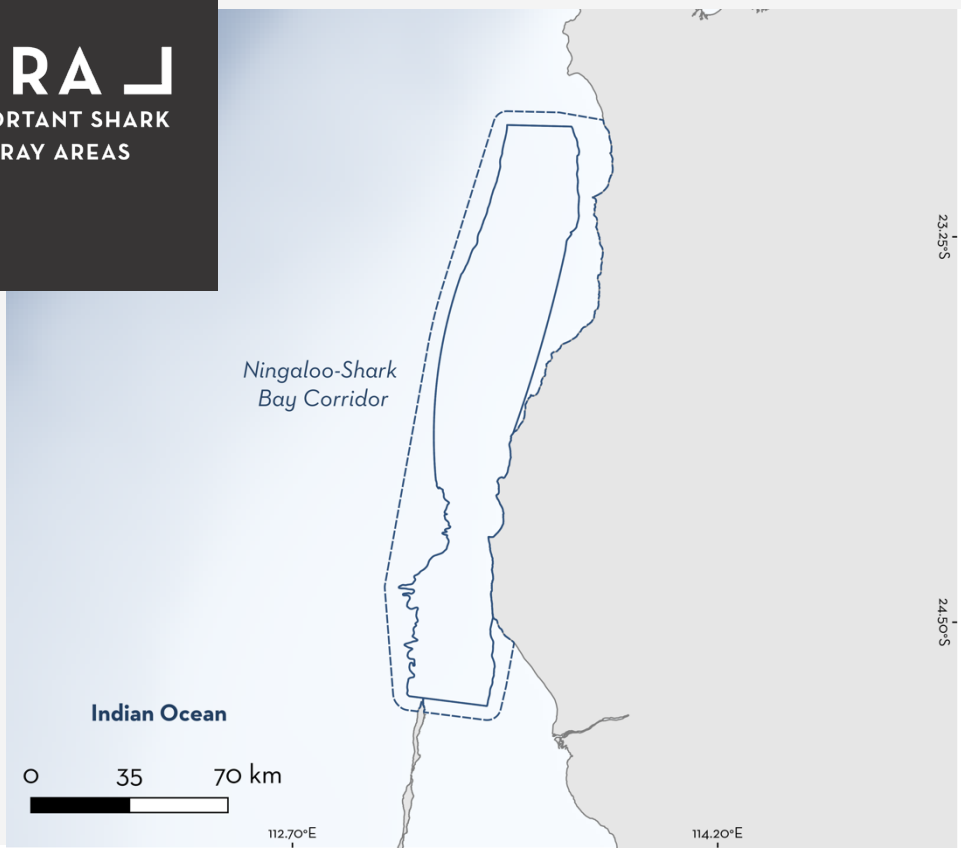
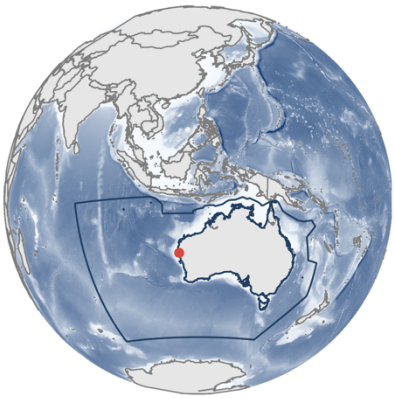
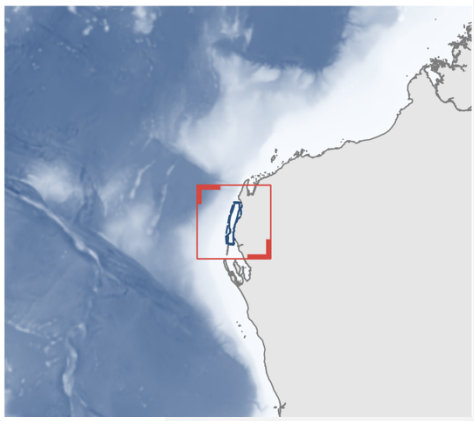
ISRA
IMPORTANT SHARK AND RAY AREAS







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

NINGALOO-SHARK BAY CORRIDOR ISRA

Australia and Southeast Indian Ocean Region

AUSTRALIA

0–50 metres

6,050.6 km²

SUMMARY

Ningaloo-Shark Bay Corridor is located in Western Australia, Australia. This area lies within the Gascoyne Bioregion, where clear, warm waters and a predominantly arid coastline create a relatively low nutrient but highly dynamic marine environment. The coastal waters between Shark Bay and Ningaloo Reef form a dynamic transition zone shaped by seasonal currents, wind patterns, and shelf topography. Within this area there are: **threatened species** and areas important for **movement** (Reef Manta Ray *Mobula alfredi*).

CRITERIA

Criterion A – Vulnerability; Sub-criterion C4 – Movement

DESCRIPTION OF HABITAT

Ningaloo-Shark Bay Corridor is located in Western Australia, Australia. The area lies within the Gascoyne Bioregion, where clear, warm waters and a predominantly arid coastline create a relatively low nutrient but highly dynamic marine environment (Suthers & Waite 2007). The coastal waters between Shark Bay and Ningaloo Reef form a dynamic transition zone shaped by seasonal currents, wind patterns, and continental shelf topography.

The dominant oceanographic feature is the poleward-flowing Leeuwin Current, which is strongest during the austral autumn and winter, transporting warm, low salinity tropical water southward along the outer shelf. In contrast, during summer, strong southerly winds drive the northward-flowing Ningaloo Current along the inner shelf (Suthers & Waite 2007).

This Important Shark and Ray Area is pelagic and is delineated from inshore and surface waters (0 m) to 50 m based on the depth range of Qualifying Species in 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 Vulnerable Reef Manta Ray (Marshall et al. 2022).

SUB-CRITERION C4 – MOVEMENT

Ningaloo-Shark Bay Corridor is an important area for the movement of one ray species.

Telemetry and photo-identification data indicate that this area functions as a movement corridor linking the feeding areas of Coral Bay and Ningaloo Reef to the north and Denham Sound to the south.

Between 2016–2019, Reef Manta Rays (n = 22) were tagged with miniature pop-up archival satellite tags at sites along the Western Australian coastline: 10 in Coral Bay (May 2016), 10 in Exmouth Gulf (September 2016), and two in Steep Point, Shark Bay (March 2019) (Armstrong et al. 2020). Twelve of the 22 tracks (seven females, five males) reported enough observations for light-based geolocation with their deployments spanning 12–112 days (mean = 62.6 days, standard deviation = 31.9). Eight of the 12 individuals tagged reported southerly latitudinal displacement, using this area, with October deployments featuring a southerly shift compared to May–June deployments. The mean track length for all tags was 839 km (range = 118–1,817 km), with a mean daily distance of 12.3 km/day (range = 6.9–18.6 km/day; 0.3–0.77 km/hr). Reef Manta Rays predominantly remained on the shelf where 94% of depth records are <50 m (Armstrong et al. 2020). Comparison of real tracks against those produced by correlated random walk simulations revealed directional dispersal and connectivity between the Ningaloo Reef and Shark Bay. The only individual tagged in Shark Bay in late March that transmitted data showed a northerly latitudinal movement, using this area, with its final recorded position at northern Ningaloo Reef in late September. This movement range is comparable to seasonal Reef Manta Rays migration observed at similar latitudes on the Australian east coast (Capricorn Cays–Byron Bay).

Ventral photographs of Reef Manta Rays sighted in Coral Bay have been catalogued since 2006 in a photo-identification image database along with metadata such as date and location of sighting (McGregor et al. 2019; Armstrong et al. 2020). Photos were collected primarily by tourism operators who run in-water megafauna interaction tours year-round (2002–2018). As of 2015, long-term photo-identification studies have identified 800 individuals in Coral Bay (Venables et al. 2016; Armstrong et al. 2020; F McGregor unpubl. data 2015). Photo-identification in Shark Bay has been opportunistic with a low sampling effort. Two photo-identified individuals were recorded in Exmouth Gulf and Steep Point in Shark Bay. This suggests that these individuals use this area to move between these two locations with the fastest undertaking the northbound journey in a maximum of 111 days at an average velocity of 4.7 km/day.

Acknowledgments

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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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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			

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
Carcharhinus obscurus	Dusky Shark	EN
Galeocerdo cuvier	Tiger Shark	NT
Rhincodon typus	Whale Shark	EN

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 is additional evidence that Ningaloo-Shark Bay Corridor may be an important movement area for three shark species. Based on satellite and acoustic telemetry data, a few individuals of each of Dusky Shark, Tiger Shark, and Whale Shark have been reported to use this corridor area (Ferreira et al. 2015; Norman et al. 2016; Reynolds et al. 2017; Braccini et al. 2018; Bignell et al. 2025; D'Antonio et al. 2025). Additional information is needed to confirm the importance of the area for these species.

REFERENCES

Armstrong AJ, Armstrong AO, McGregor F, Richardson AJ, Bennett MB, Townsend KA, Hays GC, van Keulen M, Smith J, Dudgeon CL. 2020. Satellite tagging and photographic identification reveal connectivity between two UNESCO World Heritage Areas for Reef Manta Rays. *Frontiers in Marine Science* 7: 725. https://doi.org/10.3389/fmars.2020.00725

Bignell CJ, Patterson TA, Donovan A, Vanderklift MA, Rochester W, Semmens JM, Pillans RD. 2025. Satellite tracking reveals sex-specific differences in the geographical and vertical habitat use of whale sharks, *Rhincodon typus*, in the eastern Indian Ocean. *Marine Biology* 172: 105. https://doi.org/10.1007/s00227-025-04616-5

Braccini M, de Lestang S, McAuley R. 2018. Dusky sharks (*Carcharhinus obscurus*) undertake large-scale migrations between tropical and temperate ecosystems. *Canadian Journal of Fisheries and Aquatic Sciences* 75: 1525–1533. https://dx.doi.org/10.1139/cjfas-2017-0313

D'Antonio B, Ferreira LC, Fisher R, Thums M, Pattiaratchi CB, Sequeira AM, Meekan M. 2025. Natural and artificial structures influence the movement and habitat connectivity of whale sharks (*Rhincodon typus*) across seascapes. *Diversity and Distributions* 31: e13950. https://doi.org/10.1111/ddi.13950

Ferreira LC, Thums M, Meeuwig JJ, Vianna GMS, Stevens J, McAuley R, Meekan MG. 2015. Crossing latitudes—long-distance tracking of an apex predator. *PLoS ONE* 10: e0116916. https://doi.org/10.1371/journal.pone.0116916

Marshall A, Barreto R, Carlson J, Fernando D, Fordham S, Francis MP, Herman K, Jabado RW, Liu KM, Pacoureau N, et al. 2022. *Mobula alfredi* (amended version of 2019 assessment). *The IUCN Red List of Threatened Species* 2022: e.T195459A214395983. https://dx.doi.org/10.2305/IUCN.UK.2022-1.RLTS.T195459A214395983.en

McGregor F, Richardson AJ, Armstrong AJ, Armstrong AO, Dudgeon CL. 2019. Rapid wound healing in a reef manta ray masks the extent of vessel strike. *PLoS ONE* 14: e0225681. https://doi.org/10.1371/journal.pone.0225681

Norman BM, Reynolds S, Morgan DL. 2016. Does the whale shark aggregate along the Western Australian coastline beyond Ningaloo Reef? *Pacific Conservation* Biology 22: 72–80. http://dx.doi.org/10.1071/PC15045

Reynolds SD, Norman BM, Beger M, Franklin CE, Dwyer RG. 2017. Movement, distribution and marine reserve use by an endangered migratory giant. *Diversity and Distributions* 23: 1268–1279. https://doi.org/10.1111/ddi.12618

Suthers IM, Waite AM. 2007. Coastal oceanography and ecology. In: Connell SD, Gillanders BM, eds. *Marine ecology*. Melbourne: Oxford University Press, 199–226.

Venables S, McGregor F, Brain L, van Keulen M. 2016. Manta ray tourism management, precautionary strategies for a growing industry: a case study from the Ningaloo Marine Park, Western Australia. *Pacific Conservation Biology* 22: 295–300. https://doi.org/10.1071/PC16003