

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

NGARDMAU PASSAGE ISRA

New Zealand & Pacific Islands Region

SUMMARY

Ngardmau Passage is located in Ngardmau State in Palau. The area is situated on the western barrier reef and is known locally as 'Devilfish City' or Iwekakou Channel. The habitat is characterised by large rocks and sandy substrates. It is influenced by the rise and fall of the tides driving water through the channels and passages. Within this area there are: **threatened species** and **feeding areas** (Reef Manta Ray *Mobula alfredi*).

CRITERIA

Criterion A - Vulnerability; Sub-criterion C2 - Feeding Areas

—	—
PALAU	—
—	—
0-40 metres	—
—	—
1.83 km²	—
—	—





DESCRIPTION OF HABITAT

Ngardmau Passage is located in Ngardmau State in Palau. The area is situated on the western barrier reef of Palau and is known locally as 'Devilfish City' or Iwekakou Channel. The habitat is characterised by large rocks and sandy substrates (Harel-Bornovski & Bornovski 2015). Reef channels and passages on the outer reefs of Palau are conduits between the ocean and lagoon, exchanging water, oxygen, plankton, and sediments (Colin 2009). The area is influenced by the rise and fall of the tides driving water through the channels and passages. Ocean water flows into the lagoon on flood tides; lagoon waters flow seaward on ebb tides (Colin 2009).

This Important Shark and Ray Area is benthic and pelagic and is delineated from surface waters (0 m) to 40 m based on the bathymetry of the area.

ISRA CRITERIA

CRITERION A - VULNERABILITY

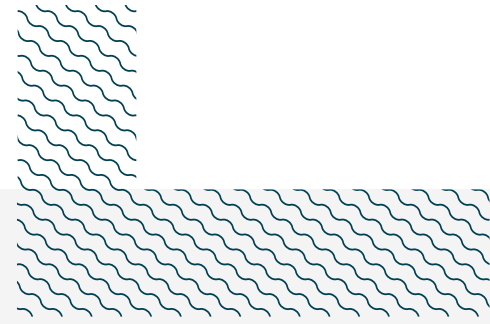
One Qualifying Species considered threatened with extinction according to the IUCN Red List of Threatened Species regularly occurs in the area. This is the Vulnerable Reef Manta Ray (Marshall et al. 2022).

SUB-CRITERION C2 - FEEDING AREAS

Ngardmau Passage is an important feeding area for one ray species.

Between 2013-2024, during the months of January-May, feeding aggregations of >10 Reef Manta Rays were regularly and predictably observed by recreational divers within the area. Aggregations peaked at between 40-50 individuals in April-May (J Alpert pers. obs. 2013-2024). The largest aggregations were observed when the incoming current is strong before the new and full moons. The largest Reef Manta Ray aggregation in Palau of >70 individuals was observed within this area (Etpison & Colin 2013). The exact location of Reef Manta Rays feeding within the area changes daily depending on the currents, tides, and wind, and covers a large area making it difficult to locate and stay with the feeding Reef Manta Rays. Reef Manta Rays are seen somersaulting in dense patches of zooplankton. Within the area, they are mostly seen feeding in 'trains', one Reef Manta Ray closely following another (Etpison & Colin 2013). Feeding is generally in shallow waters (0-10 m), but sometimes deeper within the area (J Alpert pers. obs. 2013-2024).





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Jesse Alpert (Alpert Pictures) and Vanessa Bettcher Brito (IUCN SSC Shark Specialist Group - ISRA Project) contributed and consolidated information included in this factsheet. We thank all participants of the 2024 ISRA Region 10 - New Zealand and Pacific Islands workshop for their contributions to this process.

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Suggested citation

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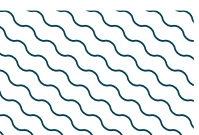
QUALIFYING SPECIES

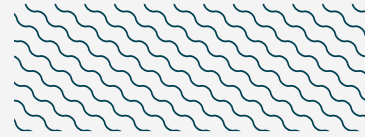
Scientific Name	Common Name	IUCN Red List Category	Global Depth Range (m)	ISRA Criteria/Sub-criteria Met									
				A	B	C1	C2	C3	C4	C5	D1	D2	
RAYS													
<i>Mobula alfredi</i>	Reef Manta Ray	VU	0-711	X			X						

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
<i>Carcharhinus amblyrhynchos</i>	Grey Reef Shark	EN
<i>Triaenodon obesus</i>	Whitetip Reef Shark	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.





REFERENCES

Colin PL. 2009. *Marine Environments of Palau*. San Diego: Indo-Pacific Press.

Etpison M, Colin P. 2013. Palau Manta ID Project 2012-2013. Koror: Coral Reef Research Foundation.

Harel-Bornovski T, Bornovski N. 2015. *Palau diving and snorkeling guide*. Koror: Jeremy Devillier.

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>