

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

NGALI PASSAGE ISRA

New Zealand & Pacific Islands Region

SUMMARY

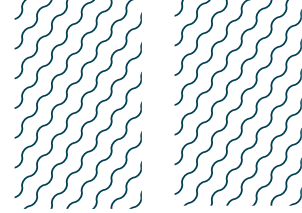
Ngali Passage is located on the large barrier reef system of Gau Island in the Lomaiviti archipelago in Fiji. The area includes a 25–30 m deep channel which connects the lagoon with the open ocean. The habitat is characterised by a coral rubble/sandy substrate, gentle to steep sloping coral reefs, and shallow reef tops. The channel is subject to strong daily tidal currents. This area overlaps with the Kadavu and the Southern Lau Region Ecologically or Biologically Significant Marine Area. Within this area there are: **threatened species**, **reproductive areas**, and **undefined aggregations** (Grey Reef Shark *Carcharhinus amblyrhynchos*).

CRITERIA

Criterion A - Vulnerability; Sub-criterion C1 - Reproductive Areas; Sub-criterion C5 - Undefined Aggregations

—	—
FIJI	—
—	—
0-30 metres	—
—	—
1.41 km²	—
—	—





DESCRIPTION OF HABITAT

Ngali Passage is located on the large barrier reef system of Gau Island in the Lomaiviti archipelago in Fiji. The area includes a 25–30 m deep channel which cuts through the reef in an east-to-west orientation. The channel is characterised by a coral rubble/sandy substrate and the channel sides are gentle to steep sloping coral reefs extending from the shallow reef flat (<5 m depth). The channel is subject to strong daily tidal currents. Through the austral winter the water temperature steadily decreases from ~29°C in April to ~24°C in September (B Chaves pers. obs. 2024).

This area overlaps with the Kadavu and the Southern Lau Region Ecologically or Biologically Significant Marine Area (EBSA; CBD 2024).

This Important Shark and Ray Area is benthopelagic and is delineated from surface waters (0 m) to 30 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 Grey Reef Shark (Simpfendorfer et al. 2020).

SUB-CRITERION C1 – REPRODUCTIVE AREAS

Ngali Passage is an important reproductive area for one shark species.

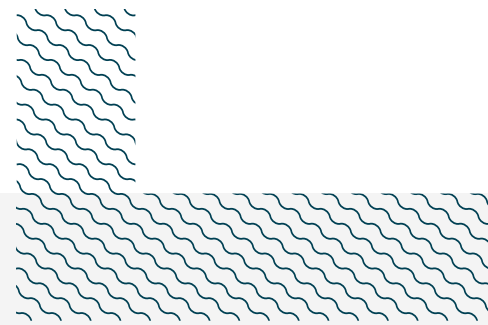
Aggregations of neonates or young-of-the-year (YOY) Grey Reef Sharks are regularly observed in this area (R Barrel, B Chaves, L Gordon & S Campbell pers. obs. 2024). The visually estimated size range was 50–70 cm total length (TL) (B Chaves pers. obs. 2024). The size-at-birth for the species is 45–64 cm TL (Ebert et al. 2021), and these are thus likely to be neonates or YOY individuals. The smallest Grey Reef Sharks in this aggregation (~50 cm TL) are seen in April, at the beginning of winter. They aggregate in the area consistently through to late November/early December, when they are estimated to be ~70 cm TL (B Chaves pers. obs. 2024). Aggregations comprise 15–30 individuals and these neonates/YOY individuals swim in particularly dense schools compared to adults (B Chaves pers. obs. 2024). Dive operators have seen these aggregations on every dive between April and early December over the past two decades, with an average of ~25 dives per year (R Barrel, B Chaves, L Gordon & S Campbell pers. obs. 2024). Additionally, females with visibly extended abdomens were also recorded in the area, particularly in the second half of the year, as were females with mating scars (B Chaves & R Barrel pers. obs. 2024). Combined, these observations show that Ngali Passage is an important area for the early life stages of the species, and potentially also for mating and gestation.

SUB-CRITERION C5 – UNDEFINED AGGREGATIONS

Ngali Passage is an important area for undefined aggregations of one shark species.

Grey Reef Sharks aggregate in this area in groups of five to >40 individuals and are seen on 100% of dives in the area, with observations spanning two decades and ~25 dives per year (R Barrel, B Chaves, L Gordon & S Campbell pers. obs. 2024). In addition to the aggregations of neonate/YOY individuals,

there are also aggregations of larger juveniles and adults. Almost all adults seen in the channel are females (R Barrel, B Chaves, L Gordon & S Campbell pers. obs. 2024). Grey Reef Sharks commonly segregate by sex, with aggregations at other shallow reefs also consisting mostly of females, such as at Johnston Atoll (Economakis & Lobel 1998) or in Palau (Vianna et al 2013). It is thus possible that the aggregation is related to enhancing embryonic development in warmer water, avoiding male harassment, or increasing their growth rate in warm water (Economakis & Lobel 1998), but the nature and functions for this specific aggregation at Ngali Passage is not yet understood.



Acknowledgments

Rob Barrel (NAI'A Fiji), Luke Gordon (The Manta Trust), Bel Chaves (NAI'A Fiji), Sam Campbell (HD Expeditions Fiji), and Christoph A Rohner (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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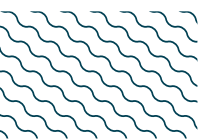
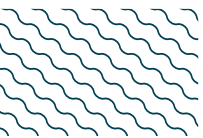
QUALIFYING SPECIES

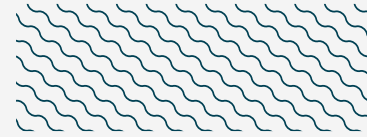
Scientific Name	Common Name	IUCN Red List Category	Global Depth Range (m)	ISRA Criteria/Sub-criteria Met									
				A	B	C1	C2	C3	C4	C5	D1	D2	
SHARKS													
<i>Carcharhinus amblyrhynchos</i>	Grey Reef Shark	EN	0-280	X		X					X		

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
<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.





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Ebert DA, Dando M, Fowler S. 2021. *Sharks of the world: A complete guide*. Princeton: Princeton University Press.

Economakis AE, Lobel PS. 1998. Aggregation behavior of the grey reef shark, *Carcharhinus amblyrhynchos*, at Johnston Atoll, Central Pacific Ocean. *Environmental Biology of Fishes* 51: 129-139. <https://doi.org/10.1023/A:1007416813214>

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