

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

AGRIHAN ISRA

New Zealand & Pacific Islands Region

SUMMARY

Agrihan is located in the northern part of the Mariana Arc in the northwest of the Pacific Ocean. It is part of the Commonwealth of the Northern Mariana Islands, a self-governing commonwealth in association with the United States of America. The habitat is mostly coral, with developing reefs that have carbonate deposits but lack a fully formed three-dimensional structure. Within this area there are: **threatened species** and **reproductive areas** (Grey Reef Shark *Carcharhinus amblyrhynchos*).

CRITERIA

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

**NORTHERN
 MARIANA
 ISLANDS**

0-200 metres

12.22 km²





DESCRIPTION OF HABITAT

Agrihan is located in the middle part of the Mariana Arc in the northwest of the Pacific Ocean. It is part of the Commonwealth of the Northern Mariana Islands, an unincorporated territory associated with the United States of America (Brainard et al. 2012). This area holds one of the greatest coral assemblage richness of the Northern Mariana Islands (Houk & Starmer 2009). The habitat is mostly coral, with developing reefs that have carbonate deposits but lack a fully formed three-dimensional structure (Brainard et al. 2012). There are also large rocks with a reef matrix made from coral skeletons cemented by coralline algae, and high-relief structures with carbonate foundations that are well-colonised by marine life (Houk & Starmer 2009).

This Important Shark and Ray Area is delineated from surface waters (0 m) to 200 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).

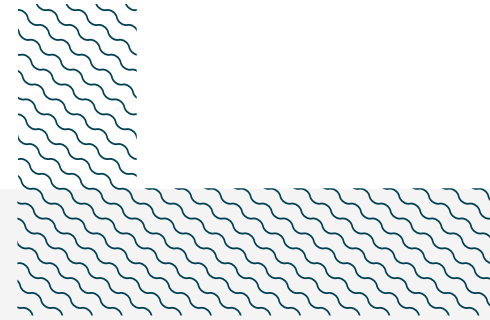
SUB-CRITERION C₁ – REPRODUCTIVE AREAS

Agrihan is an important reproductive area for one shark species.

Observations have been made from contemporary and historical towed-diver surveys (TDS) and stationary point count (SPC) surveys. The TDS method involves two divers towed behind a boat (~2.2 km track). The diver at ~15 m depth recorded the number, size (TL), and species of all fishes measuring >50 cm total length (TL) within a belt-transect extending 5 m on either side and 10 m in front of the diver, from the bottom to the surface (total area surveyed = 20,000 km²) (Brainard et al. 2012). The SPC survey involved two divers conducting simultaneous counts of all fishes in adjacent, visually estimated 15-m-diameter cylindrical plots extending from the substrate to the limits of vertical visibility. The SPC survey is a comprehensive small-scale survey approach that covers small areas of the reef (~350–600 m²), thus, aggregations, and rare and patchily distributed species are not well surveyed (Brainard et al. 2012).

Aggregations of up to 34 young-of-the-year (YOY) and juvenile Grey Reef Sharks were recorded in the area. These were determined to be YOY and juveniles based on the size-at-birth of this species (45–60 cm total length [TL]; Ebert et al. 2021) and the size-at-maturity (120–145 cm TL; Ebert et al. 2021).

Between 2009–2017, 31 TDS were conducted in the area (2009 = 11; 2011 = 10; 2017 = 10) (CREP PIFSC 2017a, 2017b). Fourteen aggregations were recorded with group sizes ranging from 3–23 individuals (size range 65–150 cm TL, most <100 cm TL) (CREP PIFSC 2017a, b; ESC PIFSC 2019). In addition, during the expeditions but ‘off transect’, aggregations of four individuals (125 cm TL) and 23 (n = 12 [88 cm TL] + n = 11 [125 cm TL]) were observed in 2003, and one aggregation (n = 9; 90 cm TL) in 2009 (ESC PIFSC 2019).



Acknowledgments

Kaylyn McCoy (NOAA Pacific Islands Fisheries Science Center), Adel Heenan (Bangor University), 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.

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. 2024. Agrihan 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	
SHARKS													
<i>Carcharhinus amblyrhynchos</i>	Grey Reef Shark	EN	0-280	X		X							

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
<i>Nebrius ferrugineus</i>	Tawny Nurse Shark	VU
<i>Triaenodon obesus</i>	Whitetip Reef Shark	VU
RAYS		
<i>Taeniurops meyeri</i>	Blotched Fantail Ray	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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