



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

## HŌLANIKŪ-KURE ATOLL ISRA

### New Zealand & Pacific Islands Region

#### SUMMARY

Hōlanikū-Kure Atoll is the most remote island in the Northwestern Hawaiian Islands of the United States of America. This is an isolated coral atoll with a circular outer reef creating the 9.6 km diameter lagoon. The majority of the lagoon is less than 5 m depth and consists of unconsolidated benthic habitat with 10% or less of macroalgae or seagrass. The area overlaps with the Northwestern Hawaiian Islands Key Biodiversity Area and with the Papahānaumokuākea Marine National Monument. Within this area there are: **reproductive areas** (Galapagos Shark *Carcharhinus galapagensis*) and **feeding areas** (Tiger Shark *Galeocerdo cuvier*).

#### CRITERIA

**Sub-criterion C1 – Reproductive Areas; Sub-criterion C2 – Feeding Areas**

HAWAII

0-50 metres

67.8 km<sup>2</sup>



## DESCRIPTION OF HABITAT

Hōlanikū-Kure Atoll is located on the Northwestern Hawaiian Islands of the United States of America. This is Hawaii's most remote island and is an isolated coral atoll rising from over 100 m depth. The closest island is Midway Atoll, ~87 km to the southeast. The area includes Green Island, the only permanent island in the atoll. Since its formation 29.8 million years ago, Kure Atoll has drifted to the 'Darwin Point' where it is the most northern coral atoll in the world and lies just south of the latitudinal threshold beyond which coral reefs can no longer grow (Friedlander et al. 2009; Papahānaumokuākea Marine National Monument 2024). The circular outer reef creates the 9.6 km diameter lagoon with depths ranging from 0 to 10 m depth. The majority of the lagoon is less than 5 m depth and consists of unconsolidated benthic habitat with 10% or less of macroalgae or seagrass (Walsh et al. 2002; Friedlander et al. 2009). Water in the lagoon and surrounding reefs is typically clear and waters are warmed by the Kuroshio Current, being between 17°C and 29°C (Vroom et al. 2009). The outer reef is comprised of spur and groove formations that descend into the surrounding coral reef and deep reef platform up to 100 m depth (Friedlander et al. 2009).

The area overlaps with the Northwestern Hawaiian Islands Key Biodiversity Area (KBA 2024). It also overlaps with the Papahānaumokuākea Marine National Monument (UNEP-WCMC & IUCN 2024).

This Important Shark and Ray Area is benthic and pelagic and is delineated from inshore and surface waters (0 m) to 50 m based on the bathymetry of the area.

## ISRA CRITERIA

### SUB-CRITERION C1 – REPRODUCTIVE AREAS

Hōlanikū-Kure Atoll is an important reproductive area for one shark species.

Diving surveys have indicated that Galapagos Shark young-of-the-year (YOY) regularly occur in the area (CREP-PIFSC 2017). Towed dive surveys (undertaken up to 30 m depth and covering ~2.5 linear km in ten five-minute segments) conducted in 2016 (September, n = 13 surveys) and 2017 (September, n = 13), recorded the presence of YOY Galapagos Shark (CREP-PIFSC 2017). Individuals between 75–100 cm total length (TL) were considered YOY, as these sizes are close to the 80 cm TL that has been reported as size-at-birth for the species (Wetherbee et al. 1996). Of the 54 Galapagos Sharks recorded in these surveys, 20 individuals (37%) measured <100 cm TL (11/27 in 2016 and 9/27 in 2017; CREP-PIFSC 2017). YOY Galapagos Sharks were mostly observed in forereefs, either as single individuals or in pairs at depths of 9–18 m (CREP PIFSC 2017). Anecdotal observations by the National Oceanic and Atmospheric Administration (NOAA) in August 2024 indicate that Galapagos Sharks were present in the area with 'hundreds' of individuals observed (Kure Atoll Conservancy 2024). Additionally, visual and drone surveys conducted in the inner lagoon during 2024 have recorded YOY Galapagos Sharks (<100 cm TL) with 129 individuals (up to five seen at once) observed in 88 of 205 surveys (C Dudzik unpubl. data 2024).

### SUB-CRITERION C2 – FEEDING AREAS

Hōlanikū-Kure Atoll is an important feeding area for one shark species.

Anecdotal predation events of Tiger Shark on Laysan Albatross *Phoebastria immutabilis* and Black-footed Albatross *Phoebastria nigripes* were documented in the area in July 2016, June 2017, July 2018 (Kure Atoll Conservancy 2024), and summer 2020 (Thomas 2024). During boreal summer 2024,

predation rates on albatrosses by Tiger Sharks were quantified (C Dudzik et al. unpubl data 2024). During 363 drone surveys, 26 interactions with albatrosses from 42 observations of Tiger Sharks were recorded, of which 20 (76.9%) resulted in successful predation events (C Dudzik unpubl. data 2024).

Laysan Albatross and Black-footed Albatross use Hōlanikū-Kure Atoll as a breeding area from October–July (Arata et al. 2009; Hyrenbach et al. 2012). Nesting has been monitored since early 2000s (Agreement on the Conservation of Albatrosses and Petrels 2024a, 2024b). Breeding adults and sub-adults arrive around October to the area and leave around July along with hatch-year birds. Eggs start hatching around December–January and after one month, adults start to make foraging trips and come back to the area to feed the chicks (Arata et al. 2009). Chick-rearing season runs from February–June when chicks start to fledge (Arata et al. 2009; Hyrenbach et al. 2012). Tiger Sharks have been reported to move to locations in the Northwestern Hawaiian Islands with large albatross colonies during the fledging season (Holland et al. 1999; Arata et al. 2009; Meyer et al. 2010). Predictable shark foraging migrations to the area are consistent with the feeding behaviour reported for the species around the globe (Heithaus et al. 2007; Werry et al. 2014).

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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
SHARKS												
<i>Carcharhinus galapagensis</i>	Galapagos Shark	LC	0-528			X						
<i>Galeocerdo cuvier</i>	Tiger Shark	NT	0-1,275				X					

*IUCN Red List of Threatened Species Categories are available by searching species names at [www.iucnredlist.org](http://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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