

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

NEW IRELAND PROVINCE ISRA

New Zealand & Pacific Islands Region

SUMMARY

New Ireland Province is located in the Bismarck Sea in northeastern Papua New Guinea. The area encompasses the waters surrounding the islands of western New Ireland, the Tigak Islands, and northeastern Lovongai Island. The area is characterised by coral reefs, seagrass meadows, and sand flats. It is influenced by the warm North Equatorial Current, the South Equatorial Current, and the New Guinea Coastal Undercurrent. This area overlaps with a Marine Protected Area, an Ecologically or Biologically Significant Marine Area, and two Key Biodiversity Areas. Within this area there are: **threatened species** (Bottlenose Wedgefish *Rhynchobatus australiae*); **range-restricted species** (Kuhl's Maskray *Neotrygon kuhlii*); and **undefined aggregations** (Bottlenose Wedgefish).

CRITERIA

Criterion A - Vulnerability; Criterion B - Range Restricted; Sub-criterion C5 - Undefined Aggregations

PAPUA NEW GUINEA

0-100 metres

716.8 km²



DESCRIPTION OF HABITAT

New Ireland Province is located in the Bismarck Seascape in northeastern Papua New Guinea. The area encompasses the waters surrounding the islands of northwestern New Ireland, the Tigak Islands and northeastern Lovongai Island (New Hanover), including the Tsoi Islands. The northeastern coastline of New Ireland Province is flanked by shelf seas that gradually descend into the Pacific Ocean, and which support coral-rich fringing reefs, reef shelves, patch reefs, seagrass and sandy-substrate reef flats, lagoons, and subtidal reef flats (Muttenthaler et al. 2012). The southwestern region of the island is flanked by a drop off into the Bismarck Sea, a global focal point for marine biodiversity in the Coral Triangle ecoregion.

The area is influenced by the warm North Equatorial Current, the South Equatorial Current, and the New Guinea Coastal Undercurrent with water ranging from 28–30°C throughout the year. The area experiences two seasons during the year, the northwest monsoon from November–April with stronger winds from the northwest, which impact sea surface conditions, increase rainfall, and enhance nutrient upwelling along the coastline (Muttenthaler et al. 2012). While dry southeasterly trade winds blow almost continuously between May–August (Muttenthaler et al. 2012).

This area overlaps with the Lovongai Marine Protected Area (UNEP-WCMC 2024), the New Britain Trench Region Ecologically or Biologically Significant Marine Area (EBSA; CBD 2024), and two Key Biodiversity Areas (KBAs): (1) Tsoi Island and (2) Tigak Islands and Reef (KBA 2024a, b).

This Important Shark and Ray Area is benthopelagic and is delineated from inshore and surface waters (0 m) to 100 m depth 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 Critically Endangered Bottlenose Wedgefish (Kyne et al. 2016).

CRITERION B – RANGE RESTRICTED

New Ireland Province holds the regular and predictable presence of the Kuhl's Maskray as a resident range-restricted species. This species is reported from the area based on baited remote underwater video system (BRUVS) surveys deployed in the region in 2017 (Simpfendorfer et al. 2023) and due to its occurrence in fisheries catch-and-effort surveys undertaken from late 2015 to early 2017 (WCS Report 2020).

During BRUVS surveys the maximum number of each taxon in a single video frame (MaxN) was recorded. In September 2017, of 98 BRUVS deployments within this area, 14.3% recorded Kuhl's Maskray (MaxN = 1) (Simpfendorfer et al. 2023). This represents 26.4% of all deployments that recorded this species within the broader New Zealand and Pacific Islands region. Papua New Guinea accounted for 54.7% of the deployments that recorded the Kuhl's Maskray: 14 within this area, 11 in the Conflict Islands, and three in Kimbe Bay (Simpfendorfer et al. 2023). Additionally, from late 2015 to early 2017 (between the months of August–December), fisheries catch-and-effort data were collected annually from thirteen communities in the Kavieng District, western New Ireland Province

(WCS 2020). Among sharks and rays, Kuhl's Maskray was the second most frequently recorded species, with a total of ten individuals caught in the area over the sampling period.

The distribution of Kuhl's Maskray is poorly defined and very little is known about its range or habitat preferences, and currently it is only known from the Solomon Islands and Papua New Guinea (Last et al. 2016).

SUB-CRITERION C5 – UNDEFINED AGGREGATIONS

New Ireland Province is an important undefined aggregation for one ray species.

Bottlenose Wedgefish are regularly observed aggregating in sand flats and shallow water exposed to strong currents between southeastern Tsoi Island and northwestern Tigak Island within the area (J Booth pers. obs. 2024; Scuba Ventures pers. comm. 2024). Sightings occurred year-round between 2019–2023 where large aggregations of between 3–10 or more individuals can be seen resting together (J Booth pers. obs. 2024). This area appears to be important for this species with records of 15 animals captured in 2023–2024 and photographed in several communities from across the area (J Booth pers. obs. 2024). Further information is needed to understand the nature and function of these aggregations.

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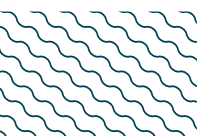
QUALIFYING SPECIES

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>Rhynchobatus australiae</i>	Bottlenose Wedgefish	CR	0–60	X						X		
<i>Neotrygon kuhlii</i>	Kuhl's Maskray	DD	0–31		X							

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
<i>Carcharhinus melanopterus</i>	Blacktip Reef Shark	VU
<i>Nebrius ferrugineus</i>	Tawny Nurse Shark	VU
<i>Triaenodon obesus</i>	Whitetip Reef Shark	VU
RAYS		
<i>Neotrygon annotata</i>	Plain Maskray	NT
<i>Rhina ancylostomus</i>	Bowmouth Guitarfish	CR
<i>Taeniura lessoni</i>	Oceania Fantail Ray	DD
<i>Taeniura lymma</i>	Bluespotted Lagoon Ray	LC

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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