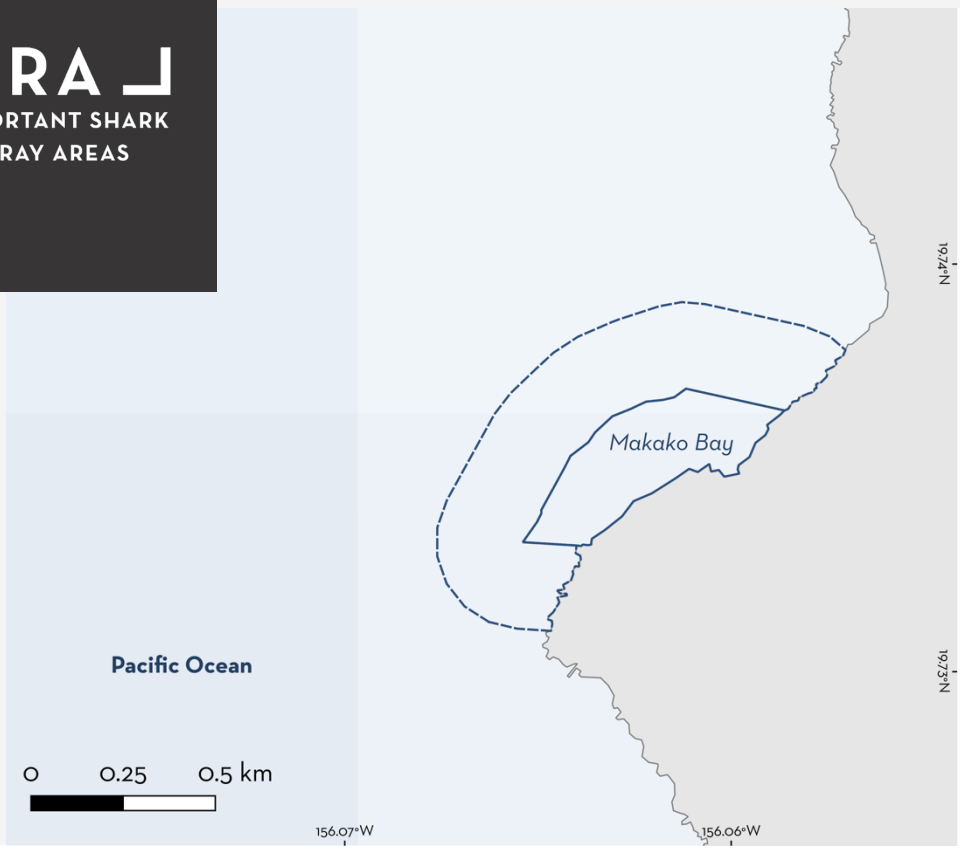
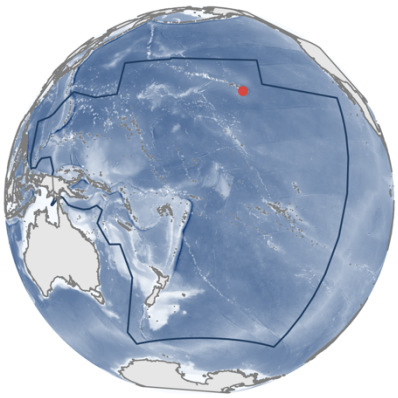
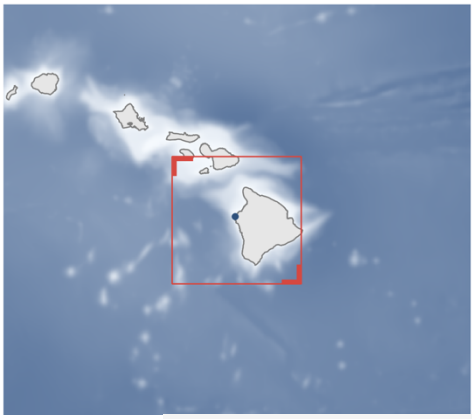
ISRA
IMPORTANT SHARK AND RAY AREAS







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

MAKAKO BAY ISRA

New Zealand & Pacific Islands Region

HAWAII

0-60 metres

0.14 km²

SUMMARY

Makako Bay is situated on the west side of the Big Island in the Hawaiian Islands of the United States of America. The area is characterised by sandy substrates and scattered coral reefs. Keyhole Point to the south of the area provides shelter and protection to Makako Bay during southwest swells. Within the area there are: **threatened species** and **undefined aggregations** (Reef Manta Ray *Mobula alfredi*).

CRITERIA

Criterion A – Vulnerability; Sub-criterion C5 – Undefined Aggregations

DESCRIPTION OF HABITAT

Makako Bay is situated on the west coast of the Big Island of Hawaii in the United States of America. The area is characterised by sandy substrates in the shallow extents, and coral heads scattered throughout as the slope descends into deeper water (B Masiba pers. obs. 2024). In January and February, the area is impacted by south and southwest swells (Stopa et al. 2011), however, Keyhole Point to the south of the area partially protects it from these swells.

This Important Shark and Ray Area is benthic and pelagic and is delineated from inshore and surface waters (0 m) to 60 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 C5 – UNDEFINED AGGREGATIONS

Makako Bay is an important area for undefined aggregations of one ray species.

Between 2011–2024, divers regularly observed aggregations of Reef Manta Rays attending cleaning stations in the area (B Masiba pers. obs. 2024). The area is visited by recreational divers approximately once a week, and Reef Manta Rays are encountered 50% of visits, with an average of two rays observed each visit (range 1–8). Reef Manta Rays are observed attending cleaning stations in 75% of encounters. Cleaning station visitation involves small cleaner wrasse tending to client species such as visiting rays (Armstrong et al. 2021). Surface feeding has also been observed in this area, but less often than cleaning (25% of observations). Occasional courtship trains were also observed (1–2 times per year), whereby a female ray will lead a train of multiple males in courtship behaviour (Stevens 2016). Reef Manta Rays are commonly observed in the area at night when floodlights are used to attract zooplankton and create a feeding environment for the rays, however, the area is also an important cleaning area during the day. Reef Manta Rays are observed sporadically at other locations around the Big Island, however, this area has the second highest recorded encounters from around the island after Keauhou.

Acknowledgments

Brooks Masiba (Manta Ray Dives Hawaii) and Asia O Armstrong (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
RAYS												
Mobula alfredi	Reef Manta Ray	VU	0–711	X						X		

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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