

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

**TUMON & HAGATNA BAYS ISRA**  
**New Zealand & Pacific Islands Region**

**SUMMARY**

Tumon & Hagatna Bays is located on the northwest coast of Guam. The area includes two bays with coral reef substrates. Surgeonfish spawning aggregations occur in the area during the first half of the year. The area overlaps the Tumon Marine Reserve and the Haputo Ecological Reserve Area. Within the area there are: **threatened species, feeding areas,** and areas with **distinctive attributes** (Reef Manta Ray *Mobula alfredi*).

**CRITERIA**

**Criterion A - Vulnerability; Sub-criterion C2 - Feeding Areas; Sub-criterion D1 - Distinctive Attributes**

—	—
<b>GUAM</b>	—
—	—
<b>0-50 metres</b>	—
—	—
<b>14.33 km<sup>2</sup></b>	—
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## DESCRIPTION OF HABITAT

Tumon & Hagatna Bays is located on the northwest coast of Guam. The area includes two bays with coral reef substrates. The area extends from the beach across a shallow lagoon to ~400 m offshore, where the reef drops off into deeper water (Snorkeling Reports 2024). The bays experience little current or wave action. Surgeonfish spawning aggregations occur in the area seasonally (boreal spring to early summer; Hartup et al. 2013), with three species observed to spawn in the area: Convict Tang *Acanthurus triostegus*, Whitespotted Surgeonfish *A. guttatus*, and Striped Surgeonfish *A. lineatus*.

Tumon Marine Reserve and Haputo Ecological Reserve Area (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

### 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 C2 - FEEDING AREAS

Tumon & Hagatna Bays is an important feeding area for one ray species.

Reef Manta Rays target fish spawning aggregations to feed on surgeonfish spawn in the area. This specific feeding aggregation was first documented in 2012, and continual surveys through to 2024 have documented three surgeonfish species (Convict Tang, Whitespotted Surgeonfish, and Striped Surgeonfish) spawning and Reef Manta Rays feeding on that spawn (Hartup et al. 2013; J Hartup unpubl. data 2024).

Most sightings of Reef Manta Rays are recorded during the surgeonfish spawning season. Between 2008-2021, a total of 332 surveys were completed and the presence and absence of fish spawning aggregations and Reef Manta Ray feeding events were documented. Over 500 sightings of individual or aggregations of Reef Manta Rays have been recorded in the area (J Hartup unpubl. data 2024).

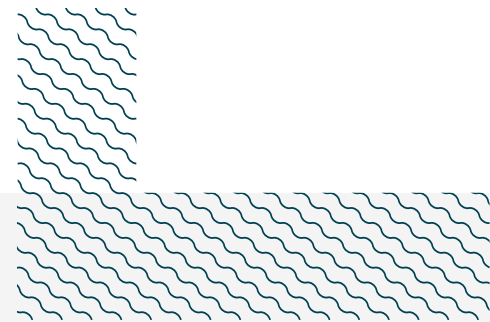
Between 2021-2024, 13 towed satellite tags equipped with GPS capability were deployed on Reef Manta Rays in the area (J Hartup pers. obs. 2024). The satellite tracks revealed high site fidelity to the area, with high numbers of locations transmitted from the area. High numbers of transmitted positions suggest surface orientated behaviour, often associated with feeding behaviour in this species (AO Armstrong pers. obs. 2024).

In addition to being a feeding area, Tumon & Hagatna Bays also serves as an opportunistic cleaning station for Reef Manta Rays where they get cleaned by cleaner fish while waiting for the surgeonfish to spawn (J Hartup pers. obs. 2024). Pregnant females (determined by the presence of distended abdomens) have also been documented in the area (n = 4), and the occasional courtship train, however these observations appear incidental, with feeding the primary focus of the aggregation.

## SUB-CRITERION D1 – DISTINCTIVENESS

Tumon & Hagatna Bays is a distinctive area for one ray species.

Reef Manta Rays target surgeonfish spawning aggregations to feed in Tumon & Hagatna Bays (Hartup et al. 2013). This was first documented in 2012, and continued survey effort through to 2024 has confirmed this unique behaviour in this area. Reef Manta Rays have been confirmed predictably feeding on the spawn of the three Surgeonfish spawning in the area. Spawning generally lasts ~20 minutes and occurs during the outgoing tide. Convict Tang, Whitespotted Surgeonfish, and Striped Surgeonfish spawn seasonally in response to diurnal cues and lunar cycles (Hartup et al. 2013). The number of Reef Manta Rays present at spawning aggregations is positively correlated with the size of the aggregation. This is a novel behaviour for Reef Manta Rays, and unique to this area, supporting Tumon & Hagatna Bays as a distinctive aggregation site for this species.



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Julie Hartup (Micronesian Conservation Coalition; Manta Trust) 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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### Suggested citation

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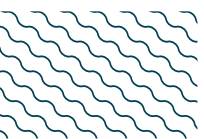
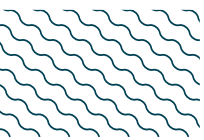
## QUALIFYING SPECIES

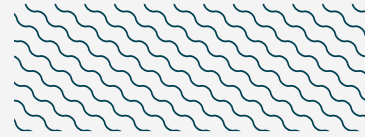
Scientific Name	Common Name	IUCN Red List Category	Global Depth Range (m)	ISRA Criteria/Sub-criteria Met									
				A	B	C1	C2	C3	C4	C5	D1	D2	
RAYs													
<i>Mobula alfredi</i>	Reef Manta Ray	VU	0-711	X			X					X	

## SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
<b>SHARKS</b>		
<i>Triaknodon obesus</i>	Whitetip Reef Shark	VU
<b>RAYS</b>		
<i>Aetobatus ocellatus</i>	Spotted Eagle Ray	EN
<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](http://www.iucnredlist.org) Abbreviations refer to: CR, Critically Endangered; EN, Endangered; VU, Vulnerable; NT, Near Threatened; LC, Least Concern; DD, Data Deficient.*





## REFERENCES

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