

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

## EDGECUMBE BAY ISRA

### Australia and Southeast Indian Ocean Region

#### SUMMARY

Edgumbe Bay is located along the Whitsunday Coast in Queensland, Australia. It encompasses the estuaries of Greta Creek and Gregory River. The area is characterised by mangroves and intertidal flats, with silty substrates and mudflats. The area is influenced by freshwater discharge from the rivers and by southeasterly winds and high water turbidity. Within this area there are: **threatened species** and **reproductive areas** (Blacktip Reef Shark *Carcharhinus melanopterus*).

#### CRITERIA

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

—	—
<b>AUSTRALIA</b>	—
—	—
<b>0-15 metres</b>	—
—	—
<b>66.97 km<sup>2</sup></b>	—
—	—





## DESCRIPTION OF HABITAT

Edgecumbe Bay is located along the Whitsunday Coast in Queensland, Australia. It encompasses the estuaries of Greta Creek and Gregory River. The area is characterised by mangroves and intertidal flats, with silty substrates and mudflats (Yates et al. 2015).

The area is influenced by freshwater discharge from the rivers and by southeasterly winds and high water turbidity. The area experiences a tropical climate with distinct wet (November–April) and dry (May–October) seasons, influenced by monsoonal patterns and occasional cyclonic activity (Bruinsma & Danaher 2001).

This Important Shark and Ray Area is benthic and pelagic and is delineated from inshore and surface waters (0 m) to 15 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 Blacktip Reef Shark (Simpfendorfer et al. 2020).

### SUB-CRITERION C<sub>1</sub> – REPRODUCTIVE AREAS

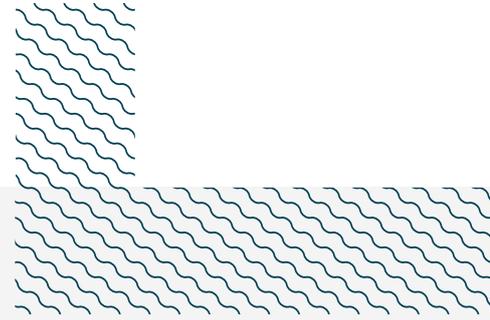
Edgecumbe Bay is an important reproductive area for one shark species.

Between 2009–2012, data were gathered from observers on vessels operating in the commercial gillnet sector of the Queensland East Coast Inshore Finfish Fishery from foreshore nets placed in the area (AV Harry unpubl. data 2025). All captured sharks were identified, measured, sexed, tagged, with life-stage assessed using length-at-age and anatomical indicators (Yates et al. 2015; AV Harry unpubl. data 2025).

Between 2008–2011, a total of 36 Blacktip Reef Sharks ranging in size between 55.8–160.0 cm total length (TL) were recorded within the area by fishery observers (AV Harry unpubl. data 2025). Neonates (n = 6, 17%) ranging in size between 55.8–73.0 cm TL were identified based on size (n = 2) or a partially open umbilical scar (n = 4). Young-of-the-year (n = 21, 58.3%), ranged in size between 60–70 cm TL. Size-at-birth for the species is estimated at 58.7 cm TL and YOY are up to 70 cm TL based on growth curves (Chin 2013; Chin et al. 2013). Neonates and YOY were captured across years in 2008 (n = 5), 2009 (n = 10), and 2011 (n = 12; AV Harry unpubl. data 2025). The remaining individuals captured in Edgecumbe Bay (n = 9) ranged from 71–160 cm TL (mean = 107 cm TL) and included both sexes (five females, three males, one unsexed), indicating use of the area by small juveniles (n = 5), measuring between 71.0–76.5 cm TL. Captures of these life-stages occurred only in March and August (Yates et al. 2015). Mating and parturition in the region occur during the austral summer (December–February; Chin 2013; Chin et al. 2013), coinciding with the presence of neonates in the area.

Although Edgecumbe Bay is located ~200 km south of Magnetic Island, which also hosts important habitat for young Blacktip Reef Sharks, these areas are individually important. Blacktip Reef Sharks in the Western Pacific display natal philopatry, with females returning to particular areas to pup (Mourier & Planes 2013). Additionally, neonatal Blacktip Reef Sharks in Australia exhibit small home ranges (Chin et al. 2016). Edgecumbe Bay has the highest proportion of neonates and YOY for this species along the mainland coast between Cape York and Mackay in Queensland. Although total

abundance is lower than at island-associated sites in the Great Barrier Reef lagoon, the high proportion of early life-stages indicates that Edgumbe Bay is an important reproductive area, with limited data reflecting its remoteness.



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We acknowledge the Traditional Owners of Country throughout Australia and recognise the continuing connection to land, waters, and culture. We pay our respects to Elders past, present, and emerging.

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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	
<b>SHARKS</b>													
<i>Carcharhinus melanopterus</i>	Blacktip Reef Shark	VU	0-100	X		X							

## SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
<b>SHARKS</b>		
<i>Carcharhinus brevipinna</i>	Spinner Shark	VU
<i>Carcharhinus coatesi</i>	Australian Blackspot Shark	LC
<i>Carcharhinus limbatus</i>	Blacktip Shark	VU
<i>Carcharhinus sorrah</i>	Spottail Shark	NT
<i>Carcharhinus tilstoni</i>	Australian Blacktip Shark	LC
<i>Rhizoprionodon acutus</i>	Milk Shark	VU
<i>Rhizoprionodon taylori</i>	Australian Sharpnose Shark	LC
<b>RAYS</b>		
<i>Glaucostegus typus</i>	Giant Guitarfish	CR
<i>Rhynchobatus australiae</i>	Bottlenose Wedgefish	CR

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.



## SUPPORTING INFORMATION



There are additional indications that Edgumbe Bay is a potential reproductive area for one shark species.

Between 2012–2014, a total of 69 Spottail Sharks ranging in size between 57.5–130.0 cm TL were captured within the area during fishery-independent surveys (Yates et al. 2015; AV Harry unpubl. data 2025). Of these, 32% were either neonates or YOY. Neonates (n = 4, 6%) ranging in size between 57.5–59.5 cm TL were identified based on size. Young-of-the-year (n = 5, 7.2%) ranged in size between 60–70 cm TL. Size-at-birth for the species is 45–60 cm TL (Ebert et al. 2021) and YOY reach ~72 cm TL (Harry et al. 2013). Neonates and YOY occurred across 2012 (n = 2), 2013 (n = 2), and 2014 (n = 5; Yates et al. 2015; AV Harry unpubl. data 2025). Captures of these life-stages occurred in January, February, March, and November. Edgumbe Bay encompassed 29% of Spottail Shark neonates and YOY captured within ~400 km of coastal bays in the Townsville region (Yates et al. 2015). Further information is required to determine the importance of the area for the reproduction of the species.



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