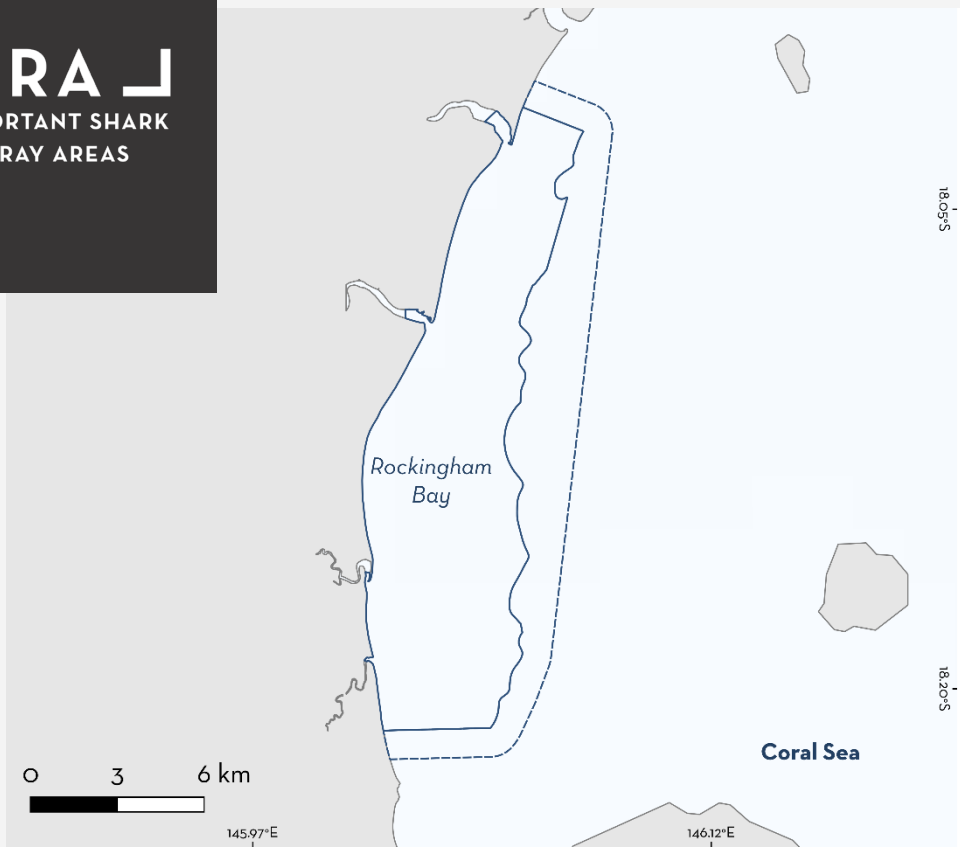
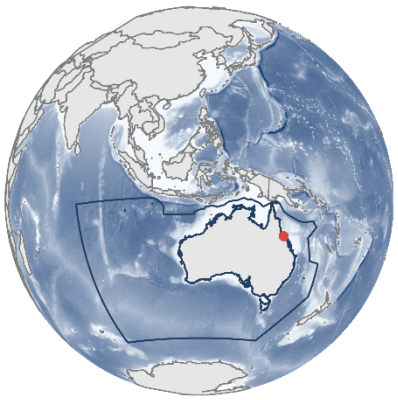
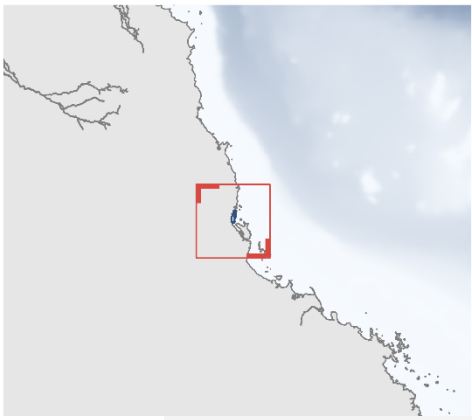
ISRA
IMPORTANT SHARK AND RAY AREAS







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

ROCKINGHAM BAY ISRA

Australia and Southeast Indian Ocean Region

AUSTRALIA

0–10 metres

90.38 km²

SUMMARY

Rockingham Bay is located on the central Great Barrier Reef coast, Queensland, Australia. It encompasses the coastal area of Rockingham Bay. The area is characterised by mangrove-lined foreshores, seagrass, silty substrates, and mudflats. It is influenced by freshwater flood plumes in the wet season along with southeast dry season winds which result in high turbidity. The area overlaps with the Great Barrier Reef Marine Park. Within this area there are: **threatened species** and **reproductive areas** (Scalloped Hammerhead *Sphyrna lewini*).

CRITERIA

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

DESCRIPTION OF HABITAT

Rockingham Bay is located on the central Great Barrier Reef coast, Queensland, Australia. It encompasses the coastal area of Rockingham Bay. The area is characterised by mangrove-lined foreshores, seagrass, silty substrates, and mudflats (Yates et al. 2015a).

The area is influenced by freshwater flood plumes in the wet season (November–April), along with southeast dry season (May–October) winds which results in high turbidity. The bay is a shallow (<10 m) and sheltered from ocean swells by the Great Barrier Reef (Yates 2014). The area experiences seasonal rainfall with 60–80% typically occurring during the wet season which in turn influences significant seasonal fluctuations in water turbidity (Yates 2014).

The area overlaps with the Great Barrier Reef Marine Park – Marine National Park Zone (UNEP-WCMC & IUCN 2025).

This Important Shark and Ray Area is benthic and pelagic and is delineated from inshore and surface waters (0 m) to 10 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 Critically Endangered Scalloped Hammerhead (Rigby et al. 2019).

SUB-CRITERION C1 – REPRODUCTIVE AREAS

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

Between 2007–2014, observer data were gathered from vessels operating in the commercial gillnet sector of the Queensland East Coast Inshore Finfish Fishery from foreshore nets placed in the area (Harry et al. 2011a). Additionally, between January 2012 and March 2014, fishery-independent surveys were conducted to characterise the shark assemblage in coastal bays spanning ~400 km of Queensland's north coast. Data collection occurred over eight sampling efforts, each lasting at least five weeks. During each round, each bay (this area included) received at least 8 gillnet and 10 longline deployments over four days. Benthic-set gillnets (114 mm mesh, 200–400 m long) were deployed for ~1 hour each with a total of 54 gillnet soak hours in the area (Yates et al. 2015a, 2015b). Longlines were 800 m long with hooks spaced ~10 m apart, averaging 53 hooks per line (range 29–81), and were set for ~40 minutes, with up to two deployed at once, with a total of 74.3 longline soak hours (Yates et al. 2015a, 2015b). All captured sharks were identified, measured, sexed, tagged, with life-stage assessed using length-at-age and anatomical indicators (Harry et al. 2011a; Yates et al. 2015a, 2015b).

Between 2007–2014, a total of 74 Scalloped Hammerheads ranging in size between 44.5–85.0 cm total length (TL) were captured within the area during monitoring by observers (n = 24) and fishery-independent surveys (n = 51; Harry et al. 2011a; Yates et al. 2015a, 2015b). Neonates (n = 53, 71.6%) ranging in size between 44.5–57.0 cm TL were identified based on size (n = 22), or partially open umbilical scars (n = 8). Young-of-the-year (YOY; n = 20, 27%), ranged in size between 59.0–74.5 cm TL. Size-at-birth for the species is 31–57 cm TL (Ebert et al. 2021) and YOY reach ~78 cm TL (Harry et al. 2011b). Neonates and YOY were captured across years in 2007 (n = 24), 2012 (n = 34), 2013 (n = 14), and 2014 (n = 1; Harry et al. 2011a; Yates et al. 2015a, 2015b). Although captures of these life-stages

occurred in January, February, May, June, and September–November, 50.7% of captures occurred between October–February (Yates et al. 2015a, 2015b). Among the coastal bays of the Townsville region spanning ~400 km of coastline, this area contained the highest abundance of early life-stage Scalloped Hammerheads (Harry et al. 2011a; Yates et al. 2015a, 2015b).

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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.

This factsheet has undergone review by the ISRA Independent Review Panel prior to its publication.

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QUALIFYING SPECIES

Scientific Name	Common Name	IUCN Red List Category/ EPBC Act	Global Depth Range (m)	ISRA Criteria/Sub-criteria Met								
				A	B	C1	C2	C3	C4	C5	D1	D2
SHARKS												
Sphyrna lewini	Scalloped Hammerhead	CR/CD	0–1,043	X		X						

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
Carcharhinus amboinensis	Pigeye Shark	VU
Carcharhinus leucas	Bull Shark	VU
Carcharhinus limbatus	Blacktip Shark	VU
Carcharhinus sorrah	Spottail Shark	NT
Carcharhinus tilstoni	Australian Blacktip Shark	LC
Rhizoprionodon acutus	Milk Shark	VU
Rhizoprionodon taylori	Australian Sharpnose Shark	LC
RAYS		
Anoxypristis cuspidata	Narrow Sawfish	CR
Glaucostegus typus	Giant Guitarfish	CR

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.

Australian Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) categories are available at: https://www.dcceew.gov.au/environment/epbc/our-role/approved-lists Abbreviations refer to: CR, Critically Endangered; EN, Endangered; VU, Vulnerable; CD, Conservation Dependent.

There are additional indications that Rockingham Bay is a potential reproductive area for four shark and one ray species.

Between 2007–2014, a total of 13 Pigeye Sharks ranging in size between 69.1–100 cm TL were captured within the area during fishery-independent surveys (Harry et al. 2011a; Yates et al. 2015a, 2015b). Neonates (n = 11, 84.6%) ranging in size between 69.1–76.0 cm TL were identified based the presence of an open umbilical scar (n = 10) or a partially open umbilical scar (n = 1). YOY (n = 1) measured 76.5 cm TL. Size-at-birth for the species is ~60–72 cm TL (Ebert et al. 2021) and YOY reach 80 cm TL (Tillett et al. 2011). Neonates and YOY were captured across years in 2012 (n = 5), 2013 (n = 5), and 2014 (n = 3). Captures of these life-stages occurred between January–February. Among the coastal bays in the Townsville region, except for Cleveland Bay (where survey effort was substantially higher), Rockingham Bay encompassed 39% of Pigeye Shark neonates and YOY captured within the ~400 km of coastal bays in the Townsville region. Further information is required to determine the importance of the area for the reproduction of the species.

Blacktip Shark and Australian Blacktip Shark are grouped together as they are morphologically similar species and are indistinguishable in the field (Harry et al. 2011a). These two species occur in approximately equal frequencies in northern Australia (Ovenden et al. 2010). Size-at-birth for Australian Blacktip Shark is 60 cm TL (Ebert et al. 2021) and size for YOY ranges between 60–70 cm TL (Harry et al. 2013). While Blacktip Shark size-at-birth is 38–72 cm TL (Ebert et al. 2021) and size for YOY is 83.2–89.9 cm TL (Smart et al. 2013). The length-at-age estimates for Australian Blacktip Shark were used to Blacktip Shark/Australian Blacktip Shark neonates and YOY (<70 cm TL), or the presence of open or partially open umbilical scar to ensure that no juvenile sharks were misclassified. Between 2007–2013, a total of 22 Blacktip Sharks/Australian Blacktip Sharks ranging in size between 57.5–143 cm TL were captured within the area from observer data (n = 5) and fishery-independent surveys (n = 17; Harry et al. 2011a; Yates et al. 2015a, 2015b). Neonates and YOY (n = 15, 68%) ranging in size between 57.5–75.4 cm TL were identified based on size (n = 7), presence of an open umbilical scar (n = 3), or a partially open umbilical scar (n = 5). Neonates and YOY were captured across years in 2007 (n = 1), 2012 (n = 9), and 2013 (n = 5). Although captures of these life-stages occurred in January, February, June, and September–November, 86.7% of captures occurred between October–February, excluding December (Harry et al. 2011a; Yates et al. 2015a, 2015b). Among the coastal bays in the Townsville region across ~400 km of coastline, Cleveland Bay, Repulse Bay, and Rockingham Bay contained the highest abundance of early life-stage Blacktip Sharks/Australian Blacktip Sharks (Harry et al. 2011a; Simpfendorfer et al. 2014). Further information is required to determine the importance of the area for the reproduction of the species.

Between 2012–2013, a total of 15 Spottail Shark ranging in size between 50.5–101.7 cm TL were captured within the area during fishery-independent surveys (Harry et al. 2011a; Yates et al. 2015a, 2015b). Neonates (n = 6, 40%) ranging in size between 50.5–58.5 cm TL were identified based on size (n = 2), open umbilical scar (n = 1), or a partially open umbilical scar (n = 3). Young-of-the-year (n = 4, 27%), ranged in size between 61.0–69.5 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 were captured in 2012 (n = 7) and 2013 (n = 3; Harry et al. 2011a; Yates et al. 2015a, 2015b). Captures of these life-stages occurred mainly in February (50%) and May (30%) (Yates et al. 2015a, 2015b). Although immature Spottail Sharks occupy a broad range of coastal habitats and depths rather than discrete nursery areas (Kinney 2011; Knip 2011), Rockingham Bay contained the second-highest abundance of early life-stage Spottail Sharks, after Edgecumbe Bay located >300 km to the south (Harry et al. 2011a; Yates et al. 2015a, 2015b). Rockingham Bay encompassed 32.2% of Spottail Shark neonates and YOY captured

within the ~400 km of coastal bays in the Townsville region. Further information is required to determine the importance of the area for the reproduction of the species.

Between 2012–2021, a total of seven Narrow Sawfish ranging in size between 75.0–160.8 cm TL were captured during fishery-independent surveys (n = 5) within the area or submitted by citizen scientists (n = 2) to the Sharks And Rays Australia platform (SARA 2025; AV Harry unpubl. data 2025; BE Wueringer unpubl. data 2025). Young-of-the-year (n = 6, 85.7%), ranged in size between 75–145 cm TL. Size-at-birth of the species is 43–70 cm TL (Last et al. 2016) and YOY are estimated at <150 cm TL, based on growth curves (Peverell 2009). Neonates and YOY were captured across years in 2013 (n = 2), 2014 (n = 2), 2019 (n = 1), and 2021 (n = 1). Captures of these life-stages occurred in February and October. An additional immature Narrow Sawfish (160.8 cm TL) was captured in 2012 (AV Harry unpubl. data 2025). Further information is required to determine the importance of the area for the reproduction of the species.

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