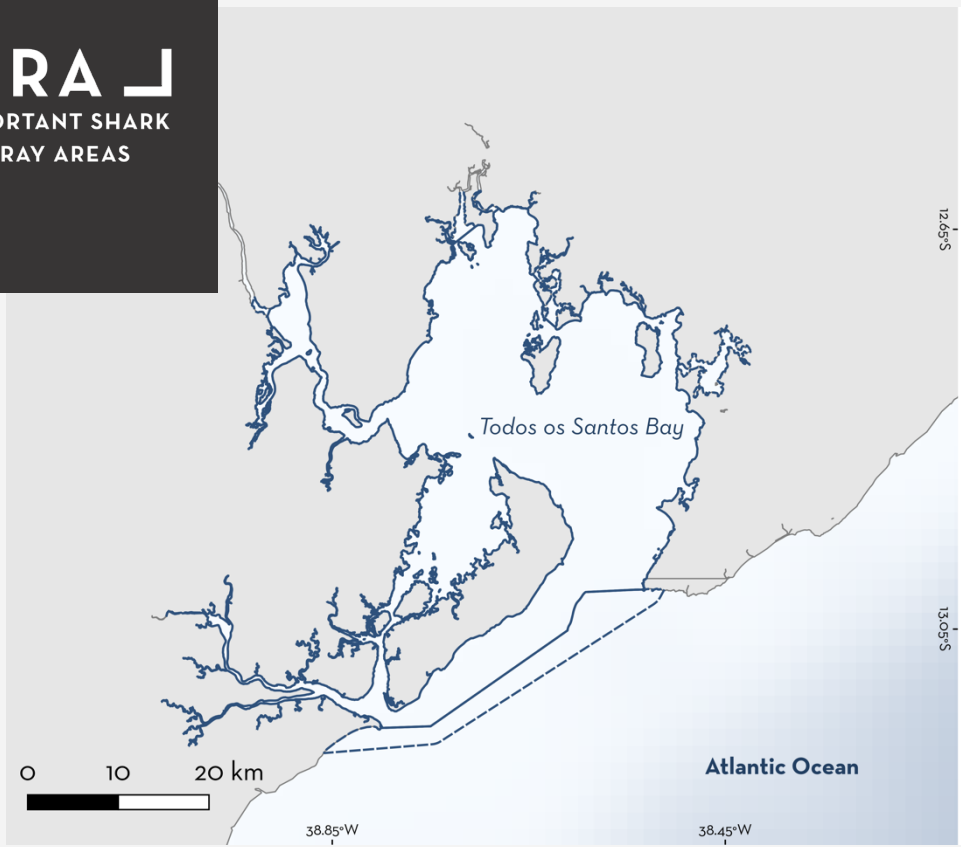
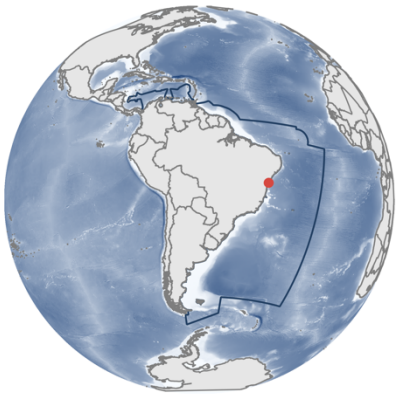
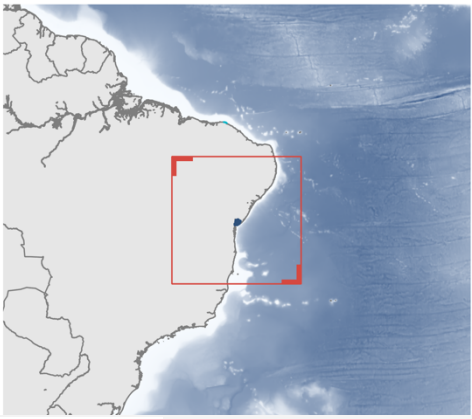
ISRA
IMPORTANT SHARK AND RAY AREAS







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

TODOS OS SANTOS BAY ISRA

South American Atlantic Region

BRAZIL

0–70 metres

1,131.5 km²

SUMMARY

Todos os Santos Bay is located in Bahia state, northeastern Brazil. The habitat is mostly characterised by mangroves and non-vegetated mudflats with varied sediment granulometry occupying large areas within the bay. During the dry period, September–February, there is a higher influence of the ocean due to the intrusion of marine tropical water. Within this area there are: **threatened species** (e.g., Brazilian Guitarfish *Pseudobatos horkelii*) and **reproductive areas** (e.g., Longnose Stingray *Hypanus guttatus*).

CRITERIA

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

DESCRIPTION OF HABITAT

Todos os Santos Bay is located in Bahia state, northeastern Brazil. The habitat is mostly formed by mangroves and non-vegetated mudflats occupying large areas within the bay (Santos et al. 2020). The distinct bathymetric gradients, estuarine connectivity, and seascape heterogeneity define its boundaries to the adjacent continental shelf and open ocean. The Paraguaçu River is the main river that flows into the bay (Santos et al. 2020). This is the second-largest coastal bay in Brazil and is dominated by bidirectional currents, which are stronger during the ebb tide in most of the bay (Lessa et al. 2001). The tidal regime is characterised by symmetrical diurnal tides ranging between 2.1–2.4 m (Cirano & Lessa 2007). The mean annual rainfall in the region is ~2,400 mm, with a rainy season occurring from March–August (mean monthly precipitation is ~280 mm) and a dry season from September–February (~110 mm per month; Reis-Filho et al. 2018). During the dry period, there is a higher influence of the ocean due to the intrusion of marine tropical water (Santos et al. 2020).

This Important Shark and Ray Area is benthic and pelagic and is delineated from surface waters (0 m) to 70 m based on the bathymetry of the area.

ISRA CRITERIA

CRITERION A – VULNERABILITY

Six Qualifying Species considered threatened with extinction according to the IUCN Red List of Threatened Species regularly occur in the area. Threatened sharks comprise two Vulnerable species; threatened rays comprise two Endangered species and two Vulnerable species (IUCN 2025).

Shovelbill Shark is also considered Critically Endangered according to the Brazilian Risk of Biodiversity Extinction Assessment (Lessa et al. 2025).

SUB-CRITERION C1 – REPRODUCTIVE AREAS

Todos os Santos is an important reproductive area for three shark and five ray species.

Between 2015–2024, pregnant animals, neonates, and young-of-the-year (YOY) were recorded across 625 landings surveys of artisanal fisheries operating in this area that use gillnets, artisanal bottom trawls, and hook and line gear. Fishery landings were monitored monthly in ten fishing communities located throughout the bay (JA Reis-Filho unpubl. data 2024).

Brazilian Sharpnose Shark were captured year-round in gillnet fisheries (n = 216). Neonates (n = 17; ranging 27.1–31.9 cm total length [TL]) and YOY (n = 21; ranging 37–42.4 cm TL) were observed (17.6%), with YOY peaking in December and January. The average number of individuals per landing was four (max = 9). Pregnant females (n = 4) were observed between May–August (JA Reis-Filho unpubl. data 2024). Size-at-birth for Brazilian Sharpnose Shark is 33–34 cm TL (Ebert et al. 2021).

A total of 477 Caribbean Sharpnose Shark were captured in artisanal fisheries using gillnets. The average number of individuals per landing was nine (max = 16). Neonates (n = 39; 8.2%, ranging 30–35 cm TL) and YOY (n = 96; 20.1%, ranging 40.2–50.5 cm TL) were recorded in 37% of the 625 landings, peaking in December and January. Pregnant females were also recorded (n = 15), mostly between May–August (JA Reis-Filho unpubl. data 2024). Size-at-birth for Caribbean Sharpnose Shark is 31–39 cm TL (Ebert et al. 2021).

Between August–December 2012 and in March 2013, eight Shovelbill Sharks were caught by gillnets and artisanal longlines within this area. Five of the eight individuals were measured and analysed, and all had open or healed umbilical scars indicating they were neonates or YOY (35.5–56.5 cm TL; Reis-Filho et al. 2014). Between 2015–2024, neonate (n = 14; ranging 28.2–32.9 cm TL) and YOY (n = 76; ranging 35–39.6 cm TL) Shovelbill Sharks were observed in 21.3% of landings within this area and accounted for 30.1% of the 299 individuals recorded. Neonates and YOY exhibited seasonal peaks, with 23% of neonates and 38% of YOY recorded between December–February (JA Reis-Filho unpubl. data 2024). One pregnant female was observed in November. In Brazil, the size-at-birth for Shovelbill Shark is 31–35.6 cm TL (Silva & Lessa 1991).

Of 306 Lutz's Stingray recorded in this area (size range: 35–125 cm disc width [DW]), 38 (12.4%) were pregnant, with the highest pregnancy frequencies between November–February, and 53 were neonates and YOY (n = 53; 17%) peaking in April and May. Full-term embryos of Lutz's Stingrays were ~25 cm DW when born by induced abortion (Bettcher et al. 2022).

A total of 1,157 Longnose Stingray (size range: 18–159 cm DW) were captured from 625 monitored landing events. Among these, 306 individuals (26.5%) were pregnant (size range: 69–105 cm DW), with respective reports peaking between November–February (accounting for 67% of all recorded pregnant individuals). Neonates and YOY (n = 36; 3.1%, 16.2–19.1 cm DW) were also recorded, mainly in April and May. Size-at-birth for Longnose Stingrays is 14–17 cm DW (Gianeti et al. 2019).

Of 168 Large-eye Stingrays (size range: 14.3–55 cm TL), 24 (14.3%) were pregnant, most frequently recorded in December. Neonates (n = 2; ranging 14.3–14.7 cm DW) and YOY (n = 8; ranging 17.3–21.8 cm DW) were identified, with YOY appearing primarily in April. Size-at-birth for Large-eye Stingrays is 13–14 cm DW (Yokota & Lessa 2007).

Of the 188 Chola Guitarfish recorded (size range: 28–132 cm TL), 55 (29.3%) were pregnant and recorded primarily in December and January. Neonates (n = 2; 28–28.9 cm TL) and YOY (n = 22; 33.4–39.5 cm TL) were also observed. YOY Chola Guitarfish measure ~39.2 cm TL (Caltabellotta et al. 2019).

Of 215 American Cownose Ray (size range: 51–79 cm DW), 69 (32%) were pregnant, with peak pregnancies occurring from August to September. Two YOY (51–54.3 cm DW) were also recorded. Size-at-birth for American Cownose Rays is 20–43 cm DW (Last et al. 2016).

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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
SHARKS												
Rhizoprionodon lalandii	Brazilian Sharpnose Shark	VU	0–149	X		X						
Rhizoprionodon porosus	Caribbean Sharpnose Shark	VU	0–500	X		X						
Sphyrna alleni	Shovelbill Shark	CR*	0–90	X		X						
RAYS												
Hypanus berthalutzae	Lutz's Stingray	VU	0–100	X		X						
Hypanus guttatus	Longnose Stingray	NT	0–70			X						
Hypanus marianae	Large-eye Stingray	EN	1–30	X		X						
Pseudobatos percellens	Chola Guitarfish	EN	0–110	X		X						
Rhinoptera bonasus	American Cownose Ray	VU	0–60	X		X						

*Considered CR nationally but NE globally.

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
RAYS		
Aetobatos narinari	Whitespotted Eagle Ray	EN
Gymnura micrura	Smooth Butterfly Ray	NT
Narcine brasiliensis	Lesser Numbfish	NT
Pseudobatos horkelii	Brazilian 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.

SUPPORTING INFORMATION

There are additional indications that Todos os Santos Bay is an important reproductive area for one ray species.

A total of 164 Brazilian Guitarfish were recorded (size range: 34.7–144 cm TL), of which 41 (25%) were pregnant recorded primarily in December and January. One neonate (34.7 cm TL) and 17 YOY (ranging 37.5–39.6 cm TL) were recorded (11%), with YOY peaking in April. Brazilian Guitarfish YOY are ~48.1 cm TL (Caltabellotta et al. 2019).

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