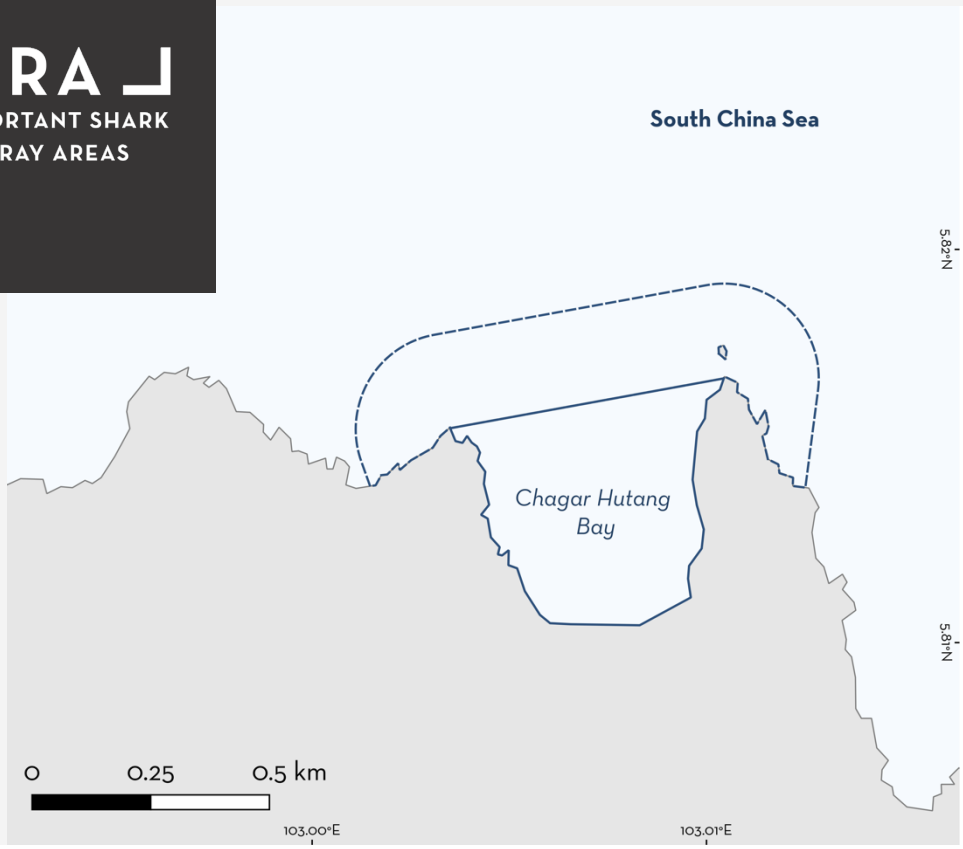
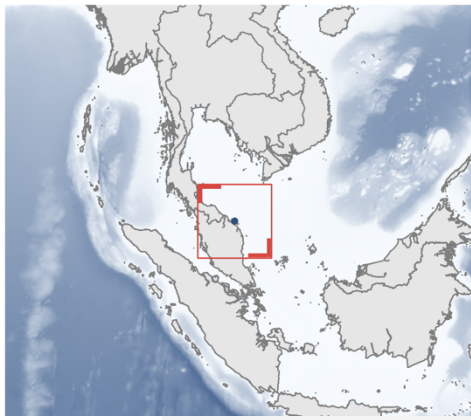
ISRA
IMPORTANT SHARK AND RAY AREAS





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

CHAGAR HUTANG BAY ISRA

Asia Region

MALAYSIA

0–20 metres

0.19 km²

SUMMARY

Chagar Hutang Bay is located at the northern tip of Redang Island (Pulau Redang) on Peninsular Malaysia. The habitat is characterised by coral reefs and sandy substrates. The bay is ~350 m in length and hosts high numbers of sea turtle hatchlings during the nesting season (April–October). The area falls within the Redang Island Marine Park and overlaps with the Redang Island Archipelago and Adjacent Area Ecologically or Biologically Significant Marine Area. Within this area there are: **threatened species**, **reproductive areas**, and **feeding areas** (Blacktip Reef Shark *Carcharhinus melanopterus*).

CRITERIA

Criterion A – Vulnerability; Sub-criterion C1 – Reproductive Areas; Sub-criterion C2 – Feeding Areas

DESCRIPTION OF HABITAT

Chagar Hutang Bay is a naturally protected shallow water bay located at the northernmost part of Redang Island on Peninsular Malaysia. Chagar Hutang Bay is a secluded and sheltered bay surrounded by rocky cliffs. Its 350 m long crescent-shaped beach overlooks clear blue waters and coral reefs. Chagar Hutang Bay is one of the most important Green Turtle *Chelonia mydas* nesting sites in Peninsular Malaysia (Bashir et al. 2020). The peak hatching season, from June to August each year, sees tens of thousands of hatchlings dispersing across the shallow shoreline waters of the bay.

Chagar Hutang Bay is located within the Redang Island Marine Park. It overlaps with the Redang Island Archipelago and Adjacent Area Ecologically or Biologically Significant Marine Area (EBSA; CBD 2024).

This Important Shark and Ray Area is benthopelagic and is delineated from inshore and surface waters (0 m) to 20 m based on the bathymetry of the area.

ISRA CRITERIA

CRITERION A – VULNERABILITY

One Qualifying Species within the area is considered threatened with extinction according to the IUCN Red List of Threatened Species. The Blacktip Reef Shark is assessed as Vulnerable (Simpfendorfer et al. 2020).

SUB-CRITERION C1 – REPRODUCTIVE AREAS

Chagar Hutang Bay is an important reproductive area for one shark species.

During 2015–2016, researchers caught 22 Blacktip Reef Sharks from the area (Borella 2016). Nineteen of these individuals ranged in size 45–64 cm total length (TL), indicating that these were neonates or young-of-the-year (YOY). Between 2018 and 2019, a further 15 neonate and YOY Blacktip Reef Sharks were sampled ranging in size 41.0–67.5 cm TL (mean = 54.2 cm TL) (Ali 2022). Size-at-birth for this species is 30–52 cm TL (Ebert et al. 2021). Preliminary analysis of data collected in 2022 and 2023 supported Chagar Hutang Bay being used by small Blacktip Reef Sharks (<90 cm in TL; N Tollen unpubl. data 2024), with baited remote underwater video station surveys (BRUVS) recording up to 10 individuals in a frame. In June 2023, nine individuals were captured and tagged, with an average weight of 0.45 kg and average size of 65 cm TL (N Tollen unpubl. data 2024). The bay is influenced by the northeast monsoon season, making it inaccessible between November and February each year, and resulting in the closure of the research station during these months. Sightings of neonate and YOY sharks are common between March to October in the shallower areas of the bay when the research station is open, with the occasional sighting of adult-sized Blacktip Reef Sharks (M Abdullah pers. obs. 2024). These combined datasets highlight the importance of the area for early life-stages of this species.

SUB-CRITERION C2 – FEEDING AREAS

Chagar Hutang Bay is an important feeding area for one shark species.

Blacktip Reef Sharks in the area are reported to seasonally prey exclusively on Green Turtle hatchlings that emerge from their nests (Bashir et al. 2020). Opportunistic stomach content analysis was conducted on three dead shark specimens from the area and revealed their digestive tracts exclusively contain turtle hatchlings (Bashir et al. 2020). In addition to stomach contents, stable isotope analysis conducted in the area has confirmed that the dietary signature of turtle hatchlings is higher in Blacktip Reef Sharks during the nesting season, but that there is seasonal variation (Bashir 2022). Between 2018 to 2023, Blacktip Reef Sharks were observed throughout the Green Turtle nesting season (March–October) patrolling the shallow shoreline waters and predating on swimming hatchlings (M Abdullah pers. obs. 2024). All Blacktip Reef Shark age classes are observed predating on turtle hatchlings, however most observations of Blacktip Reef Sharks in Chagar Hutang Bay are of smaller individuals (M Abdullah pers. obs. 2024). Chagar Hutang Bay is one of the most important sea turtle conservation sites on Peninsular Malaysia. For example, over 2,000 nests were laid during the 2022 nesting season, with an estimated >150,000 hatchlings emerging that season (N Tollen pers. obs. 2024). The ample prey availability in the area provides reliable foraging opportunities for Blacktip Reef Sharks, and combined with the shallow protected waters of the bay, contributes to the importance of this area for this species.

Acknowledgments

Maizah M Abdullah (Universiti Malaysia Terengganu), Nicholas Tollen (Universiti Malaysia Terengganu), 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 9 – Asia workshop for their contributions to this process.

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

This project was funded by the Shark Conservation Fund, a philanthropic collaborative pooling expertise and resources to meet the threats facing the world's sharks and rays. The Shark Conservation Fund is a project of Rockefeller Philanthropy Advisors.

Suggested citation

IUCN SSC Shark Specialist Group. 2024. Chagar Hutang Bay ISRA Factsheet. Dubai: IUCN SSC Shark Specialist Group.

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												
Carcharhinus melanopterus	Blacktip Reef Shark	VU	0–75	X		X	X					

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