

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

## SWATCH-OF-NO-GROUND ISRA

### Asia Region

### SUMMARY

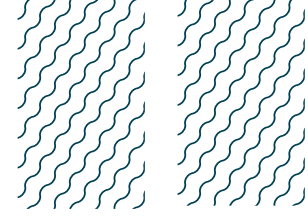
Swatch-of-No-Ground is within Bangladesh waters in the northern coastal Bay of Bengal. It sits just offshore of the world's largest mangrove forest, the Sundarbans, and encompasses the tip of a deep submarine canyon. The area is characterised by muddy waters and substrates forming shifting mudflats, channels, and the world's largest submarine fan. The area overlaps with the Swatch-of-No-Ground Marine Protected Area. Within the area there are: **threatened species** (e.g., Bull Shark *Carcharhinus leucas*); and **reproductive areas** (e.g., Blacktip Shark *Carcharhinus limbatus*).

### CRITERIA

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

— —  
**BANGLADESH**  
 — —  
**0-500 metres**  
 — —  
**2,055.14 km<sup>2</sup>**  
 — —





## DESCRIPTION OF HABITAT

Swatch-of-No-Ground is located on the continental shelf of the northern Bay of Bengal which includes the head of the trough-shaped Swatch-of-No-Ground canyon and surrounding waters south of the Sundarbans mangrove forest (the world's largest mangrove forest). This submarine canyon crosses the continental shelf diagonally. The water within the area is mostly turbid with muddy substrates (Kudrass et al. 1998; Smith et al. 2008; Subrahmanyam et al. 2008). These features form shifting mudflats, channels, and the world's largest submarine fan.

During the boreal summer monsoon, the area receives heavy rainfall, while the winter monsoon is dry and cool. Water temperatures vary, with the highest temperatures in the southwest during the summer months, and the coolest temperatures in the northeast during the winter (Kuehl et al. 1997). Salinity also varies between seasons based on inflow from large rivers, with high salinity in the west and comparatively lower salinity in the east (Smith et al. 2008). The monsoon-driven discharge from the large river system mixes with cool, upwelling canyon waters offshore the Sundarbans and is distributed across the epipelagic and mesopelagic zones of the coastal belt by a seasonally reversing tide (Kuehl et al. 1997; Smith et al. 2008).

The area overlaps with the Swatch-of-No-Ground Marine Protected Area.

This Important Shark and Ray Area is benthopelagic and is delineated from surface waters (0 m) to 500 m based on the bathymetry of the area.

## ISRA CRITERIA

### CRITERION A – VULNERABILITY

Three Qualifying Species considered threatened with extinction according to the IUCN Red List of Threatened Species regularly occur in the area. These are the Critically Endangered Scalloped Hammerhead (Rigby et al. 2019) and the Vulnerable Blacktip Shark (Rigby et al. 2021a) and Bull Shark (Rigby et al. 2021b).

### SUB-CRITERION C1 – REPRODUCTIVE AREAS

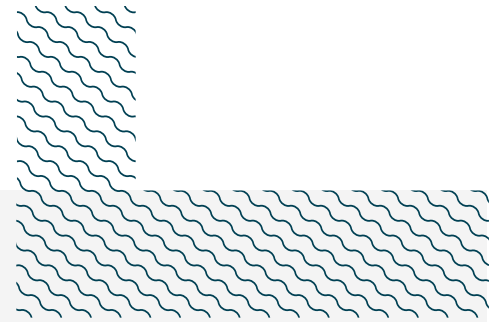
Swatch-of-No-Ground is an important reproductive area for three shark species.

Geo-referenced catch records from 7,238 net sets were collected from 2015 to 2023 via a network of small-scale coastal and marine fishers to understand the spatial ecology and catch characteristics of sharks and rays (BFD & WCS 2021; WCS unpubl. data 2023). Monitored fishers mostly use gill nets targeting Hilsa Shad *Tenualosa ilisha* or other economically valuable bony fishes, which can result in the incidental capture of sharks. Exact capture locations of the Qualifying Species were provided by the GPS units given to fishers. Length measurements of monitored sharks were compared to published data on size-at-birth (Ebert et al. 2021) to confirm the presence of neonates of these species. Some of the smaller individuals which were well below published size-at-birth likely represent aborted pups. The proportion of neonates represented in the catch suggests that this productive area is a nursery area for these species.

Out of 198 Bull Sharks recorded in the fisheries catch, 144 neonates (73% of the catch) were identified with a size range of 33–69 cm total length (TL) compared to the published size-at-birth of 56–81 cm TL (Ebert et al. 2021). Neonate Bull Sharks were most frequently caught in June, although they were recorded in other months (March, July, September, November).

Out of 688 Blacktip Sharks, 491 neonates (71% of the catch) were identified with a size range of 23–71 cm TL compared to the published size-at-birth of 38–72 cm TL (Ebert et al. 2021). Neonate Blacktip Sharks were most frequently recorded in October and November, although they have been recorded throughout the year.

Out of 409 Scalloped Hammerheads, 45 neonates (11% of the catch) were identified with a size range of 18–55 cm TL compared to the published size-at-birth of 31–57 cm TL (Ebert et al. 2021). Neonate Scalloped Hammerheads were recorded most frequently in August and November, although they have been recorded throughout the year.



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Mohammad Shamsuddoha (Wildlife Conservation Society, Bangladesh), Raisa Noor (Wildlife Conservation Society, Bangladesh), Elisabeth Fahrni Mansur (Wildlife Conservation Society, Bangladesh), and Peter M Kyne (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.

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### **Suggested citation**

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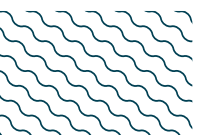
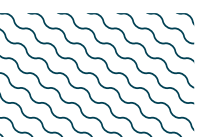
## QUALIFYING SPECIES

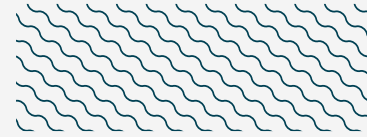
Scientific Name	Common Name	IUCN Red List Category	Global Depth Range (m)	ISRA Criteria/Sub-criteria Met									
				A	B	C1	C2	C3	C4	C5	D1	D2	
<b>SHARKS</b>													
<i>Carcharhinus leucas</i>	Bull Shark	VU	0-256	X		X							
<i>Carcharhinus limbatus</i>	Blacktip Shark	VU	0-140	X		X							
<i>Sphyrna lewini</i>	Scalloped Hammerhead	CR	0-1,043	X		X							

## SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
<b>SHARKS</b>		
<i>Carcharhinus amblyrhynchoides</i>	Graceful Shark	VU
<i>Carcharhinus amboinensis</i>	Pigeeye Shark	VU
<i>Carcharhinus brevipinna</i>	Spinner Shark	VU
<i>Carcharhinus sorrah</i>	Spottail Shark	NT
<i>Galeocerdo cuvier</i>	Tiger Shark	NT
<i>Scoliodon laticaudus</i>	Spadenose Shark	NT
<b>RAYS</b>		
<i>Glaucostegus granulatus</i>	Sharpnose Guitarfish	CR
<i>Gymnura poecilura</i>	Longtail Butterfly Ray	VU
<i>Hemirhynchus bennetti</i>	Bennett's Stingray	VU
<i>Himantura leoparda</i>	Leopard Whipray	VU
<i>Himantura uarnak</i>	Coach Whipray	EN
<i>Himantura undulata</i>	Honeycomb Whipray	EN
<i>Maculabatis bineeshi</i>	Shorttail Whipray	CR
<i>Maculabatis pastinacoides</i>	Round Whipray	EN
<i>Mobula tarapacana</i>	Sicklefin Devil Ray	EN
<i>Narcine lingula</i>	Chinese Numbfish	VU
<i>Pastinachus gracilicaudus</i>	Narrow Cowtail Ray	EN
<i>Pastinachus solocirostris</i>	Roughnose Cowtail Ray	EN
<i>Pateobatis bleekeri</i>	Bleeker's Whipray	EN
<i>Pristis pristis</i>	Large-tooth Sawfish	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.





## REFERENCES

- Bangladesh Forest Department & Wildlife Conservation Society (BFD & WCS). 2021.** Shark and ray assessment report: Baseline information on the status, threats, and governance in Bangladesh. Prepared by the Wildlife Conservation Society Bangladesh for the Forest Department, Ministry of Environment, Forest and Climate Change, Government of the People's Republic of Bangladesh, Dhaka.
- Ebert DA, Dando M, Fowler S. 2021.** *Sharks of the world: A complete guide*. Princeton: Princeton University Press.
- Kudrass HR, Michels KH, Wiedicke M, Suckow A. 1998.** Cyclones and tides as feeders of a submarine canyon off Bangladesh. *Geology* 26: 715-718. [https://doi.org/10.1130/0091-7613\(1998\)026%3C0715:CATAFO%3E2.3.CO;2](https://doi.org/10.1130/0091-7613(1998)026%3C0715:CATAFO%3E2.3.CO;2)
- Kuehl SA, Levy BM, Moore WS, Allison MA. 1997.** Subaqueous delta of the Ganges-Brahmaputra river system. *Marine Geology* 144: 81-96. [https://doi.org/10.1016/S0025-3227\(97\)00075-3](https://doi.org/10.1016/S0025-3227(97)00075-3)
- Rigby CL, Dulvy NK, Barreto R, Carlson J, Fernando D, Fordham S, Francis MP, Herman K, Jabado RW, Liu KM et al. 2019.** *Sphyrna lewini*. *The IUCN Red List of Threatened Species 2019*: e.T39385A2918526.
- Rigby CL, Carlson J, Chin A, Derrick D, Dicken M, Pacoureaux N. 2021a.** *Carcharhinus limbatus*. *The IUCN Red List of Threatened Species 2021*: e.T3851A2870736. <https://dx.doi.org/10.2305/IUCN.UK.2021-2.RLTS.T3851A2870736.en>
- Rigby CL, Espinoza M, Derrick D, Pacoureaux N, Dicken M. 2021b.** *Carcharhinus leucas*. *The IUCN Red List of Threatened Species 2021*: e.T39372A2910670. <https://dx.doi.org/10.2305/IUCN.UK.2021-2.RLTS.T39372A2910670.en>
- Smith BD, Ahmed B, Mowgli R, Strindberg S. 2008.** Species occurrence and distributional ecology of nearshore cetaceans in the Bay of Bengal, Bangladesh, with abundance estimates for Irrawaddy dolphins *Orcaella brevirostris* and finless porpoises *Neophocaena phocaenoides*. *Journal of Cetacean Research and Management* 10: 45-58.
- Subrahmanyam V, Krishna KS, Ramana MV, Murthy KSR. 2008.** Marine geophysical investigations across the submarine canyon (Swatch-of-No-Ground), northern Bay of Bengal. *Current Science* 94: 507-513. <https://www.jstor.org/stable/24101997>