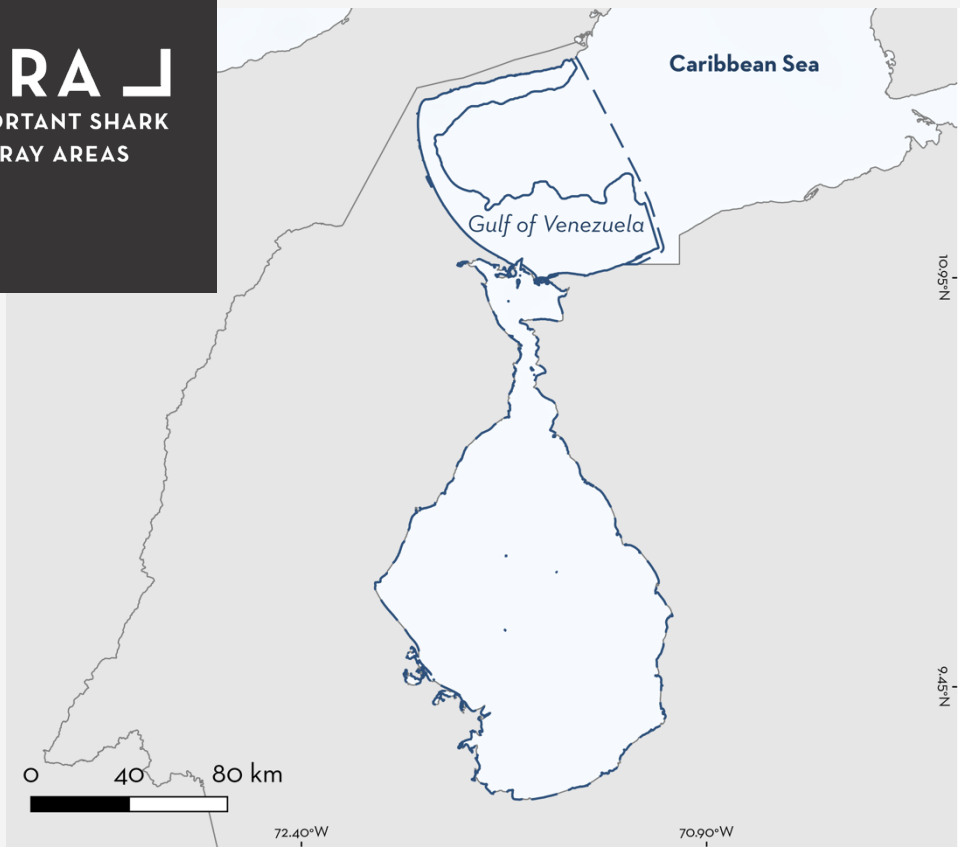
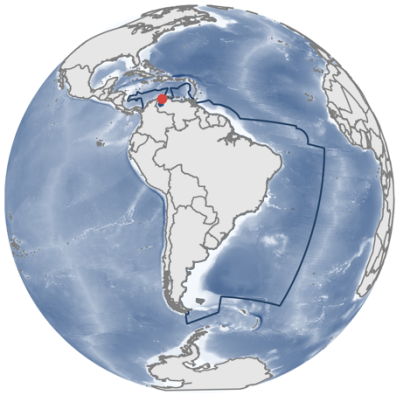
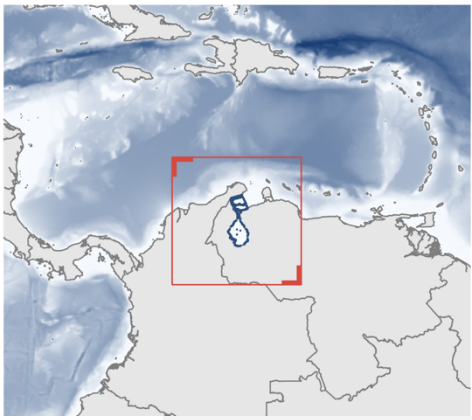
ISRA
IMPORTANT SHARK AND RAY AREAS





*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*

## GULF OF VENEZUELA ISRA

**South American Atlantic Region**

**VENEZUELA**

**0–25 metres**

**3,097.4 km²**

## SUMMARY

Gulf of Venezuela is located in western Venezuela in the southern Caribbean Sea. It includes the coastal waters of the southern and western edge of the Gulf of Venezuela. The habitat is characterised by shallow water with a sandy and silty substrate, seagrass meadows, coral reefs, and mangroves. It is influenced by freshwater input from Lake Maracaibo and smaller regional rivers, leading to lower salinity levels, and by the trade winds. It partially overlaps with the Refugio de Fauna Silvestre y Reserva de Pesca Ciénaga de Los Olivitos Ramsar Site. Within this area there are: **threatened species** (e.g., Smalleye Hammerhead *Sphyrna tudes*) and **reproductive areas** (e.g., Shovelbill Shark *Sphyrna alleni*).

## CRITERIA

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

## DESCRIPTION OF HABITAT

Gulf of Venezuela is located in western Venezuela. This area encompasses coastal areas of the southern and western edge of the gulf, including the area where the Maracaibo Strait connects Maracaibo Lake to the Gulf of Venezuela. The habitat is characterised by shallow coastal waters, mangrove patches, seagrass meadows, coral reefs, and silt clay and sandy substrates (Zeigler 1964; Espinoza-Rodgríguez et al. 2021). The area is influenced by the outflow of Lake Maracaibo, leading to salinity levels of ~27–35, and by the trade winds (Zeigler 1964). Smaller rivers also discharge into the area, resulting in high rates of sediment resuspension (Espinoza-Rodgríguez et al. 2021). The dry season extends from December–April and the wet season from July–November (Espinoza-Rodgríguez et al. 2021).

This area partly overlaps with the Refugio de Fauna Silvestre y Reserva de Pesca Ciénaga de Los Olivitos Ramsar Site (Ramsar 2025).

This Important Shark and Ray Area is benthic and pelagic and is delineated from inshore and surface waters (0 m) to 25 m based on the bathymetry of the area.

# ISRA CRITERIA

## CRITERION A – VULNERABILITY

Four 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 Smalleye Hammerhead (Pollom et al. 2019); and the Vulnerable Bull Shark (Rigby et al. 2021b), Blacktip Shark (Rigby et al. 2021a), and Caribbean Sharpnose Shark (Carlson et al. 2021).

## SUB-CRITERION C1 – REPRODUCTIVE AREAS

This area is important for the reproduction of five shark species.

A survey conducted between February 2004 to August 2009 included 108 visits to landing sites of fisheries that operate in this area and in the adjacent Lake Maracaibo (Sanchéz & Tavares 2010; Tavares & Sanchéz 2012). Individuals landed in these fisheries were sexed, measured, and their maturity status assessed, with neonates having an open or semi-healed umbilical scar and young-of-the-year (YOY) having a healed umbilical scar. Fishing locations were determined either with GPS points or mapped based on fisher descriptions in relation to the coast.

Bull Shark pups are regularly captured in this area (Tavares & Sanchéz 2012). A total of 128 Bull Sharks were assessed, ranging from 57–260 cm total length (TL). Juveniles measuring between 57–164 cm TL (93% of specimens) were found within this area, while large adult females (>170 cm TL, n = 9) were found in the southern part of Maracaibo Lake, ~200 km away and inland from this area. Most juveniles (79%, n = 94 individuals) were within the size range of 57–80 cm TL, indicative of neonates and YOY (Tavares & Sanchéz 2012). The size-at-birth for the species is 56–81 cm TL (Ebert et al. 2021). Neonates (n = 67) with an open umbilical scar were recorded between April–October, indicating a defined birthing season (Tavares & Sanchéz 2012). Fishers still report captures of Bull Shark pups in the Gulf of Venezuela, including photos from 2023 (L Sanchéz pers. obs. 2025), highlighting the continued use of this area for the early life stages of the species.

Blacktip Shark pups are regularly captured in this area (Tavares & Sanchéz 2012). A total of 111 Blacktip Sharks were assessed, ranging from 57–199 cm TL. The size-at-birth for the species is 38–72

cm TL and the size-at-maturity varies from 120–190 cm TL (Ebert et al. 2021). Most of the specimens (82%) measured <70 cm TL, indicating that these were neonates and YOY, and almost all specimens were juveniles (98%) with sizes between 57–133 cm TL (Tavares & Sanchéz 2012). Neonates (n = 21) with an open umbilical scar were reported from the Gulf of Venezuela near to where Lake Maracaibo enters the sea (Tavares & Sanchéz 2012), highlighting the importance of this area for the early life stages of the species.

Caribbean Sharpnose Shark pups are regularly captured in this area (Tavares & Sanchéz 2012). A total of 45 individuals were assessed and all were juveniles measuring 38–68 cm TL. Almost half of them (42%) were neonates (38–40 cm TL). All others were either YOY or small juveniles (41–68 cm TL), based on their size (Tavares & Sanchéz 2012). The size-at-birth for the species is 31–39 cm TL and they reach maturity at age two with a size of 60–70 cm TL for males and 65–80 cm TL for females (Ebert et al. 2021).

Shovelbill Shark pups are regularly captured in this area (Tavares & Sanchéz 2012). A total of 25 individuals were assessed and all were neonates or YOY measuring 34–42 cm TL. The size-at-birth for this newly-described species is not known, but the similar Bonnethead Shark *Sphyrna tiburo* is born between 24–40 cm TL (Ebert et al. 2021).

Smalleye Hammerheads are regularly captured in this area (Tavares & Sanchéz 2012). A total of 17 individuals were assessed and ranged in size from 29–43 cm TL. The size-at-birth for the species is ~30 cm TL and the size-at-maturity is 80–92 cm TL for males and 98–114 cm TL for females (Ebert et al. 2021), indicating that all of these were either neonates or YOY (Tavares & Sanchéz 2012). Although few individuals were captured, this area represents an important site for this rare species with a relatively small range from western Venezuela (this area) to Brazil (Ebert et al. 2021).

Although there are little contemporary research data for most of these species from the area, this fishery is still operating and captures of juvenile sharks (known as 'cazones') are regularly observed in this area, with most individuals of all species being neonates, YOY, or small juveniles (L Sanchez pers. obs. 2025).

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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** | | | | | | | | | | | | |
| *Carcharhinus leucas* | Bull Shark | VU | 0–256 | X | | X | | | | | | |
| *Carcharhinus limbatus* | Blacktip Shark | VU | 0–140 | X | | X | | | | | | |
| *Rhizoprionodon porosus* | Caribbean Sharpnose Shark | VU | 0–500 | X | | X | | | | | | |
| *Sphyrna alleni* | Shovelbill Shark | NE | 0–90 | | | X | | | | | | |
| *Sphyrna tudes* | Smalleye Hammerhead | CR | 0–80 | X | | X | | | | | | |

## SUPPORTING SPECIES

| Scientific Name | Common Name | IUCN Red List Category |
|---|---|---|
| **SHARKS** | | |
| *Carcharhinus plumbeus* | Sandbar Shark | EN |
| *Carcharhinus porosus* | Smalltail Shark | CR |
| *Ginglymostoma cirratum* | Atlantic Nurse Shark | VU |

*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 the larger Gulf of Venezuela-Lake Maracaibo Estuary System is important for the reproduction of Bull Sharks. Large adult females >170 cm TL (n = 9) were recorded from the lake in a 2004–2009 fishery landings survey (Tavarez & Sanchéz 2012). By contrast, neonates and YOY were recorded in the Gulf of Venezuela. While pregnancy was not specifically assessed, it is likely that these females were pregnant and giving birth in the freshwater environment, based on the species' general ecology (Gausmann 2021). There is no contemporary evidence of pregnant females in Lake Maracaibo but considering the presence of neonates and small juveniles in the gulf, it is likely that this area continues to be important for Bull Shark reproduction. Adult Bull Sharks in the historic study were captured in the southern end of Lake Maracaibo ~200 km from the gulf. In this same area, large juveniles were recently captured in 2023 (L Sanchéz pers. obs. 2025). We thus added a large buffer to the ISRA boundary that includes the entire lake system. Further information is required to understand the importance of this area for this life-history process.

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