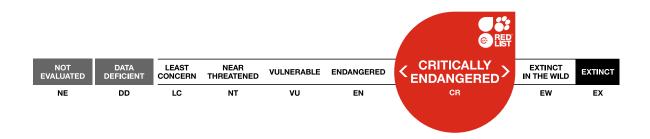


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Carcharhinus porosus, Smalltail Shark

Assessment by: Pollom, R. et al.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Chondrichthyes	Carcharhiniformes	Carcharhinidae

Scientific Name: Carcharhinus porosus (Ranzani, 1839)

Synonym(s):

• Carcharias porosus Ranzani, 1839

Common Name(s):

- English: Smalltail Shark, Smalltail Shark, Tollo
- French: Requiem Tiqueue
- Spanish; Castilian: Aleton, Cazon, Chaspat, Cuero Duro O Cabeza Dura, Sarda, Tiburón Poroso
- Portuguese: Cacao do Salgado, Cação Azeiteiro, Cação Junteiro, Sicuri Branco, Triaqueira

Taxonomic Source(s):

Eschmeyer, W.N., Fricke, R. and Van der Laan, R. (eds). 2016. Catalog of Fishes: genera, species, references. Updated 29 September 2016. Available at: http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp. (Accessed: 29 September 2016).

Taxonomic Notes:

Castro (2011) resurrected *Carcharhinus cerdale*, considering it distinct from *C. porosus*. *Carcharhinus cerdale* is restricted to the Eastern Pacific and *C. porosus* to the Western Atlantic.

Assessment Information

Red List Category & Criteria:	Critically Endangered A2d ver 3.1
Year Published:	2020
Date Assessed:	June 21, 2019

Justification:

The Smalltail Shark (*Carcharhinus porosus*) is a small (<150 cm total length) coastal requiem shark that historically occurred in the Western Central and Southwest Atlantic Oceans from the central, western and southern Gulf of Mexico and along the Caribbean coast of Central and South America to the state of Paraná in southern Brazil, not including the Caribbean Islands. This shark inhabits muddy inshore areas and estuaries to a depth of 84 m and is captured in artisanal gillnets and in commercial trawl fisheries. The meat is likely to be consumed for subsistence or sold locally in most places. The probability of catching this shark over time has declined in all parts of its range from 1970 to 2015, with particularly drastic declines in the southern Gulf of Mexico and off South America. In northern Brazil, this species is still captured in shrimp trawls and gillnet fisheries in Amapá and Pará, but numbers have declined significantly, and it is now rare in Maranhão. Catch rates decline from 2.87 kg per hour to 0.43 kg per hour in the 2000s, equivalent to a population reduction of 85% over three generation lengths (27 years). Records are becoming increasingly rare across eastern and southern Brazil, where this species

has not been recorded for more than 15 years from the eleven states between Ceará (in the northeastern Brazil), to Paraná (in the southeastern Brazil). Demographic modelling suggests the fishing mortality far exceeded population growth rates and a population reduction of >90% over three generations was estimated for the core distribution of this species. Due to the intense and largely unmanaged nature of fisheries in the region, the decreasing probability of catches, the relative lack of recent records in many parts of its range, and alarming declines in other elasmobranchs in the core of its range (northern South America), it is suspected that this shark has undergone a population reduction of >80% over the past three generation lengths (27 years) due to levels of exploitation, and the Smalltail Shark is assessed as Critically Endangered A2d.

Geographic Range

Range Description:

The Smalltail Shark historically occurred in the Western Central and Southwest Atlantic Oceans from the central, western and southern Gulf of Mexico and along the Caribbean coast of Central and South America to the state of Paraná in southern Brazil, not including the Caribbean Islands (Ebert *et al.* 2013).

Country Occurrence:

Native, Extant (resident): Belize; Brazil (Amapá, Maranhão, Pará); Colombia; Costa Rica; French Guiana; Guatemala; Guyana; Honduras; Mexico; Nicaragua; Panama; Suriname; United States; Venezuela, Bolivarian Republic of

Native, Possibly Extinct: Brazil (Alagoas, Bahia, Ceará, Espírito Santo, Paraná, Paraíba, Pernambuco, Rio Grande do Norte, Rio Grande do Sul, Rio de Janeiro, Sergipe, São Paulo)

FAO Marine Fishing Areas:

Native: Atlantic - southwest

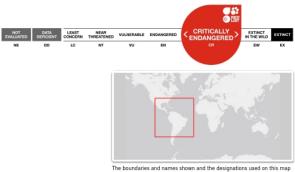
Native: Atlantic - western central

Distribution Map



Legend EXTANT (RESIDENT)

Compiled by: IUCN SSC Shark Specialist Group 2020





The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.

Population

There are no range-wide estimates of population size or trend. In the US Gulf of Mexico, this species is not abundant and it is suspected that habitat there is marginal at the northern extent of its range and hence there are no data on trends there (J.K. Carlson unpubl. data 2020). In the southern Gulf of Mexico, fishers report that this shark was historically abundant across Tabasco, Campeche, and Yucatan states (J.C. Pérez-Jiménez unpubl. data 2019). Compared to the 1980s and 1990s, landings were reportedly sparser in the 2000s and were largely restricted to Tabasco (Pérez-Jiménez *et al.* 2012). Intensive landings surveys on the Yucatan shelf from 2011 to 2013 only recorded 52 individuals, and all were caught in Tabasco (Pérez-Jiménez and Méndez-Loeza 2015). Data are sparse in the Caribbean, but artisanal fisheries dominate and are largely unmanaged there. This shark is rare in Caribbean Colombia, but there is no baseline of abundance there (P. Mejía-Falla unpubl. data 2019). In Venezuela, landings of this shark were variable between 2007–2015, but have declined over the past several years (O. Lasso unpubl. data 2018). There are no data from the Guianas. Due to documented declines in catches in several areas, combined with the level of unmanaged fishing pressure it is exposed to, it is suspected that Smalltail Shark has undergone a population reduction of 50–79% in the Western Central Atlantic over the past three generations (27 years).

In Northern Brazil, this species was the most commonly captured elasmobranch in shrimp trawl and gillnet fisheries targeting Acoupa Weakfish (*Cynoscion acoupa*) and Brazilian Spanish mackerel (*Scomberomorus brasiliensis*) off Amapá, Pará and Maranhão states at depths of 50–80 m (Marceinuk *et al.* 2019). During the 1980s, it comprised up to 70% of the total catch weight in the artisanal gillnet fisheries. Catch rates decline from 2.87 kg per hour to 0.43 kg per hour in the 2000s, this is equivalent to a population reduction of 85% over the equivalent of three generation lengths (27 years) (Santana *et al.* 2020). Demographic modelling suggests the fishing mortality far exceeded population growth rates and a population reduction of >90% over three generations was estimated for the core distribution of this species (Santana *et al.* 2020). In Maranhão State, it was the most common shark in the 1980s, but now it is scarce but is still caught in landings in Raposa, Maranhão state (R. Lessa unpubl. data 2020) and now has undergone a 90% decline there over the past 27 years (F.M. Santana unpubl. data 2018).

Across eastern and southern Brazil this species was common in the 1970s and 1980s. Records are becoming increasingly rare and this species has not been recorded for more than 15 years from the states of Ceará (in the northeastern Brazil), to Paraná (in the southeastern Brazil). This species may have disappeared from at least eleven states in Brazil (e.g, Cearà, Rio Grande do Norte, Paraíba, Pernambuco, Alagoas, Sergipe, Bahia, Espírito Santo, Rio de Janeiro, São Paulo, and Paraná; P. Charvet and F.M. Santana unpubl. data 2020). The last record from the state of Cearà was recorded in 1986 (F. Motta unpubl. data 2018). In São Paulo State, there were only 18 individuals captured between 1990–2002 (F. Motta unpubl. data 2018). In Paraná state, the last records of this species are from the late 1990s (G. Rincon unpubl. data 2018). Overall, the probability of catching this shark over time has declined in all parts of its range from 1970 to 2015, with particularly drastic declines in the Gulf of Mexico and South America. In northern Brazil (Amapá, Pará, and Maranhão), this shark has undergone a three-fold decline in catch probability over 30 years due to shrimp trawling and gillnetting for Acoupa Weakfish (Cynoscion acoupa) and Brazilian Spanish mackerel (Scomberomorus brasiliensis) (Feitosa et al. 2020). Due to the intense and largely unmanaged nature of fisheries in the region, the decreasing probability of catches, documented declines in some areas, and the relative lack of recent records in many parts of its range, combined with alarming declines in other elasmobranchs in the core of its range (northern South America), it is inferred that the Smalltail Shark has undergone a population reduction of >80% over the past three generation lengths (27 years).

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

The Smalltail Shark inhabits muddy inshore areas and estuaries down to a depth of 84 m (Ebert *et al.* 2013, Weigmann *et al.* 2016). It reaches a maximum size of 150 cm total length (TL) (Weigmann 2016), males at 70 cm TL and females mature at 71 cm TL (Lessa and Santana 1998). Reproduction is yolk-sac placental viviparous, and females give birth biannually to 2–7 pups with a size-at-birth of 31–40 cm TL (Lessa *et al.* 1999). It matures at 6 years of age and has a maximum age of 12 years, and thus is estimated to have a generation length of 9 years (Lessa and Santana 1998, Santana *et al.* 2020). This species has a strong habitat association with coastal areas with rich mangrove forests and these areas can be considered as essential habitat for the species both in probability of occurrence and habitat use patterns (Feitosa *et al.* 2020).

Systems: Marine

Use and Trade

In general, requiem sharks in general are fished and valued for their meat, liver oil, and fins (Ebert *et al.* 2013), and this species is likely to be used similarly where it is fished. The meat is likely to be consumed for subsistence or sold locally in most places, however Brazil does import shark meat under the general name *cação*, which is in high demand (Dent and Clarke 2015). The fins of Smalltail Shark were found in Hong Kong in very low numbers and the price is relatively low (Cardeñosa *et al.* 2019), but recent evidence suggests it is one of the most important species in apprehended shipments in Brazil (da Silva Ferrette *et al.* 2019).

Threats (see Appendix for additional information)

The Smalltail Shark is captured in artisanal gillnets and in commercial demersal trawl fisheries, including shrimp trawl fisheries. In Mexico, gillnet and longline fisheries target other coastal sharks and are likely to retain this species (Pérez-Jiménez and Méndez-Loeza 2015). Declines of coastal sharks there have led to increased management measures in recent years. Artisanal fisheries operate with little management in place on the Caribbean coast of Central America.

Artisanal fisheries are intense across much of coastal Atlantic South America, and there are largely unmanaged commercial trawl fisheries in many areas. In Caribbean Colombia, artisanal fisheries are widespread and lack management, and there is also a shallow-water shrimp trawl fishery for which stocks have collapsed (P. Mejía-Falla and A. Navia unpubl. data 2018), but at the present time it is unclear how much, if any, fishing effort is still occurring in this fishery. In Venezuela, commercial and artisanal fisheries are intense, lack management, and have exhibited peaks in catches followed by declines, indicative of sequential overfishing (Mendoza 2015). Groundfish fisheries on the Brazil-Guianas shelf were already fully over-exploited by 2000; these fisheries are multi-gear, multi-species, and multinational, with vessels crossing national maritime borders (Booth *et al.* 2001). Despite some areal closures and the implementation of a total allowable catch of target species, there is now a diminished effort and number of vessels in operation there (Diop *et al.* 2015). In northern Brazil, artisanal fisheries pressure is high and highly commercialised and 44% of target stocks were likely to be

overfished by the end of the 2000s (Vasconcellos *et al.* 2011, Martins *et al.* 2018). Gillnetting effort has increased with the length of nets used increasing three-fold and currently nets of 9–12 km long are in use (Mourão et al. 2014, R. Lessa unpubl. data 2020). The combination of intense and unmanaged artisanal and commercial fishing in that area has led to the disappearance of several elasmobranch species in the region, including Largetooth Sawfish (*Pristis pristis*), Smalltooth Sawfish (*Pristis pectinata*), and Daggernose Shark (*Isogomphodon oxyrhynchus*) (Charvet and Faria 2014, Lessa *et al.* 2016, Reis-Filho *et al.* 2016). In northeastern and eastern Brazil, artisanal fisheries are intense, gillnetting is the predominant gear targeting Acoupa Weakfish (*Cynoscion acoupa*), Brazilian Spanish mackerel (*Scomberomorus brasiliensis*) and Gillbacker Sea Catfish (*Sciades parkeri*), fishers there report that stocks are overexploited, and other sharks have been depleted (Guebert-Bartholo *et al.* 2011, Reis-Filho *et al.* 2016). In southern Brazil, the demersal trawl fishery began in the 1960s and entered a period of rapid expansion in the 1990s and 2000s, resulting in over 650 vessels fishing at depths of 20–1,000 m (Port *et al.* 2016). Artisanal fisheries are also intense, and 58% of stocks targeted by artisanal fishers are overexploited, half of those being collapsed (Vasconcellos *et al.* 2011). Overall, the Smalltail Shark is subjected to intense and largely unmanaged fishing pressure across its range.

Conservation Actions (see Appendix for additional information)

There are no species-specific protections or conservation measures in place in the Western Central Atlantic for the Smalltail Shark. In Mexico, fisheries are managed for all sharks and measures include gear and licence restrictions and seasonal closures. However, measures are not species-specific and do not consider variation in life history of the sharks (Pérez-Jiménez and Méndez-Loeza 2015). In Colombia, targeted industrial fishing of sharks and rays is prohibited, with set bycatch limits (up to 35% of bycatch in the national territory; Resolution 1743 of 2017); however, surveillance and compliance requires strengthening (P.A. Mejía and A.F. Navia unpubl. data 2020). This shark is listed in the Brazilian Ordinance of Ministry of the Environment N° 445, which restricts all harvest and trade of species listed as Endangered or Critically Endangered on the Brazilian National Red List (Feitosa et al. 2018). This legislation came into force in December 2014, however, it was suspended for all of 2015 and the first half of 2016 due to pressure from the fishing industry (Begossi et al. 2017). The ordinance faces increasing industry pressure, including a court challenge to suspend the legislation again, by the Secretaria Nacional de Aquicultura e Pesca (SAP), citing their contention that the Brazilian National Red List was designed specifically for terrestrial species (Spautz 2019) and also, due to financial losses derived from this Ordinance because sharks are viewed by industry as profitable fishing resources. Smalltail Shark has been included in the National Plan of Actions (PAN-tubarões) (2014–2019) implying that a management plan for the species is to be built in the future.

To conserve the population and permit recovery, a suite of measures will be required which will need to include species protection, spatial management, bycatch mitigation, and harvest management, all of which will be dependent on effective enforcement. Further research is needed on distribution, population size and trends, and threats. Commercial and artisanal fisheries bycatch should be monitored to the species level.

Credits

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Authority/Authorities:	IUCN SSC Shark Specialist Group (sharks and rays)

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External Resources

For <u>Supplementary Material</u>, and for <u>Images and External Links to Additional Information</u>, please see the Red List website.

Appendix

Habitats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Habitat	Season	Suitability	Major Importance?
9. Marine Neritic -> 9.6. Marine Neritic - Subtidal Muddy	Resident	Suitable	Yes
9. Marine Neritic -> 9.10. Marine Neritic - Estuaries	Resident	Suitable	Yes
13. Marine Coastal/Supratidal -> 13.4. Marine Coastal/Supratidal - Coastal Brackish/Saline Lagoons/Marine Lakes	Resident	Suitable	Yes

Use and Trade

(http://www.iucnredlist.org/technical-documents/classification-schemes)

End Use	Local	National	International
Medicine - human & veterinary	Yes	Yes	Yes
Food - human	Yes	Yes	Yes

Threats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Threat	Timing	Scope	Severity	Impact Score
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.1. Intentional use: (subsistence/small scale) [harvest]	Ongoing	Whole (>90%)	Slow, significant declines	Medium impact: 7
	Stresses:	2. Species Stress	ses -> 2.1. Species mo	ortality
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.3. Unintentional effects: (subsistence/small scale) [harvest]	Ongoing	Whole (>90%)	Slow, significant declines	Medium impact: 7
	Stresses:	2. Species Stresses -> 2.1. Species mortality		ortality
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.4. Unintentional effects: (large scale) [harvest]	Ongoing	Whole (>90%)	Slow, significant declines	Medium impact: 7
	Stresses:	2. Species Stress	ses -> 2.1. Species mo	ortality

Conservation Actions in Place

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Action in Place

In-place research and monitoring

Conservation Action in Place	
Action Recovery Plan: No	
Systematic monitoring scheme: No	
In-place land/water protection	
Conservation sites identified: No	
Area based regional management plan: No	
Occurs in at least one protected area: Unknown	
Invasive species control or prevention: No	
In-place species management	
Harvest management plan: No	
Successfully reintroduced or introduced benignly: No	
Subject to ex-situ conservation: No	
In-place education	
Subject to recent education and awareness programmes: No	
Included in international legislation: No	
Subject to any international management / trade controls: No	

Conservation Actions Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Action Needed

- 1. Land/water protection -> 1.1. Site/area protection
- 3. Species management -> 3.1. Species management -> 3.1.1. Harvest management
- 3. Species management -> 3.1. Species management -> 3.1.2. Trade management
- 3. Species management -> 3.2. Species recovery
- 5. Law & policy -> 5.1. Legislation -> 5.1.2. National level
- 5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.2. National level

Research Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Research Needed

1. Research -> 1.2. Population size, distribution & trends

1. Research -> 1.3. Life history & ecology

Research Needed
1. Research -> 1.4. Harvest, use & livelihoods
2. Conservation Planning -> 2.1. Species Action/Recovery Plan
2. Conservation Planning -> 2.3. Harvest & Trade Management Plan
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.2. Harvest level trends
3. Monitoring -> 3.3. Trade trends

Additional Data Fields

Distribution
Lower depth limit (m): 84
Upper depth limit (m): 0
Habitats and Ecology
Generation Length (years): 9

The IUCN Red List Partnership



The IUCN Red List of Threatened Species[™] is produced and managed by the <u>IUCN Global Species</u> <u>Programme</u>, the <u>IUCN Species Survival Commission</u> (SSC) and <u>The IUCN Red List Partnership</u>.

The IUCN Red List Partners are: <u>Arizona State University</u>; <u>BirdLife International</u>; <u>Botanic Gardens</u> <u>Conservation International</u>; <u>Conservation International</u>; <u>NatureServe</u>; <u>Royal Botanic Gardens</u>, <u>Kew</u>; <u>Sapienza University of Rome</u>; <u>Texas A&M University</u>; and <u>Zoological Society of London</u>.