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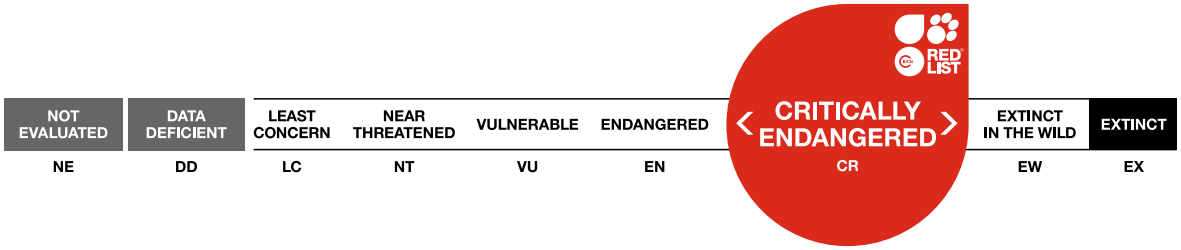
Mustelus schmitti, Narrownose Smoothhound

Assessment by: Pollom, R., Barreto, R., Charvet, P., Chiaramonte, G.E., Cuevas, J.M., Herman, K., Montealegre-Quijano, S., Motta, F., Paesch, L. & Rincon, G.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Chondrichthyes	Carcharhiniformes	Triakidae

Scientific Name: *Mustelus schmitti* Springer, 1939

Common Name(s):

- English: Narrownose Smoothhound
- Spanish; Castilian: Cazón, Gatuzo
- Portuguese: Caçonete E Cação-cola-fina

Taxonomic Source(s):

Fricke, R., Eschmeyer, W.N. and Van der Laan, R. (eds). 2020. Eschmeyer's Catalog of Fishes: genera, species, references. Updated 14 September 2020. Available at: http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp.

Assessment Information

Red List Category & Criteria: Critically Endangered A2bd ver 3.1

Year Published: 2020

Date Assessed: July 1, 2019

Justification:

The Narrownose Smoothhound (*Mustelus schmitti*) is a small (to 109 cm total length) shark that occurs in the Southwest Atlantic from Rio de Janeiro, Brazil to south of Puerto Deseado, Santa Cruz, Argentina. It inhabits the continental shelf and estuaries at depths of 2–195 m. It is captured in intense and largely unregulated commercial and artisanal demersal trawl, gillnet, and beach seine fisheries throughout its geographic range. On the southern Brazilian shelf, catches of adults in research trawl surveys declined by 90% between 1972 and 2002, equivalent to a population reduction of 88% over three generation lengths (28 years). In Uruguay, landings peaked at over 3,200 t in 1999 and have declined steadily since. This fishery was considered over-exploited by 2006. Similar levels of unmanaged exploitation are suspected to be leading to declines in Argentina. This species has a similar geographic and depth distribution to the Critically Endangered Striped Smoothhound (*Mustelus fasciatus*). Overall, due to the intense and largely unmanaged fishing pressure it is exposed to throughout its range, its lack of refuge at depth, and documented declines, it is suspected that the Narrownose Smoothhound has undergone a population reduction of >80% over the past three generations (28 years), and it is assessed as Critically Endangered A2bd.

Previously Published Red List Assessments

2006 – Endangered (EN)
https://dx.doi.org/10.2305/IUCN.UK.2006.RLTS.T60203A12318268.en

Geographic Range

https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T60203A3092243.en

Range Description:

The Narrownose Smoothhound occurs in the Southwest Atlantic from Rio de Janeiro, Brazil to south of Puerto Deseado, Santa Cruz, Argentina (Oddone *et al.* 2005).

Country Occurrence:

Native, Extant (resident): Argentina; Brazil; Uruguay

FAO Marine Fishing Areas:

Native: Atlantic - southwest

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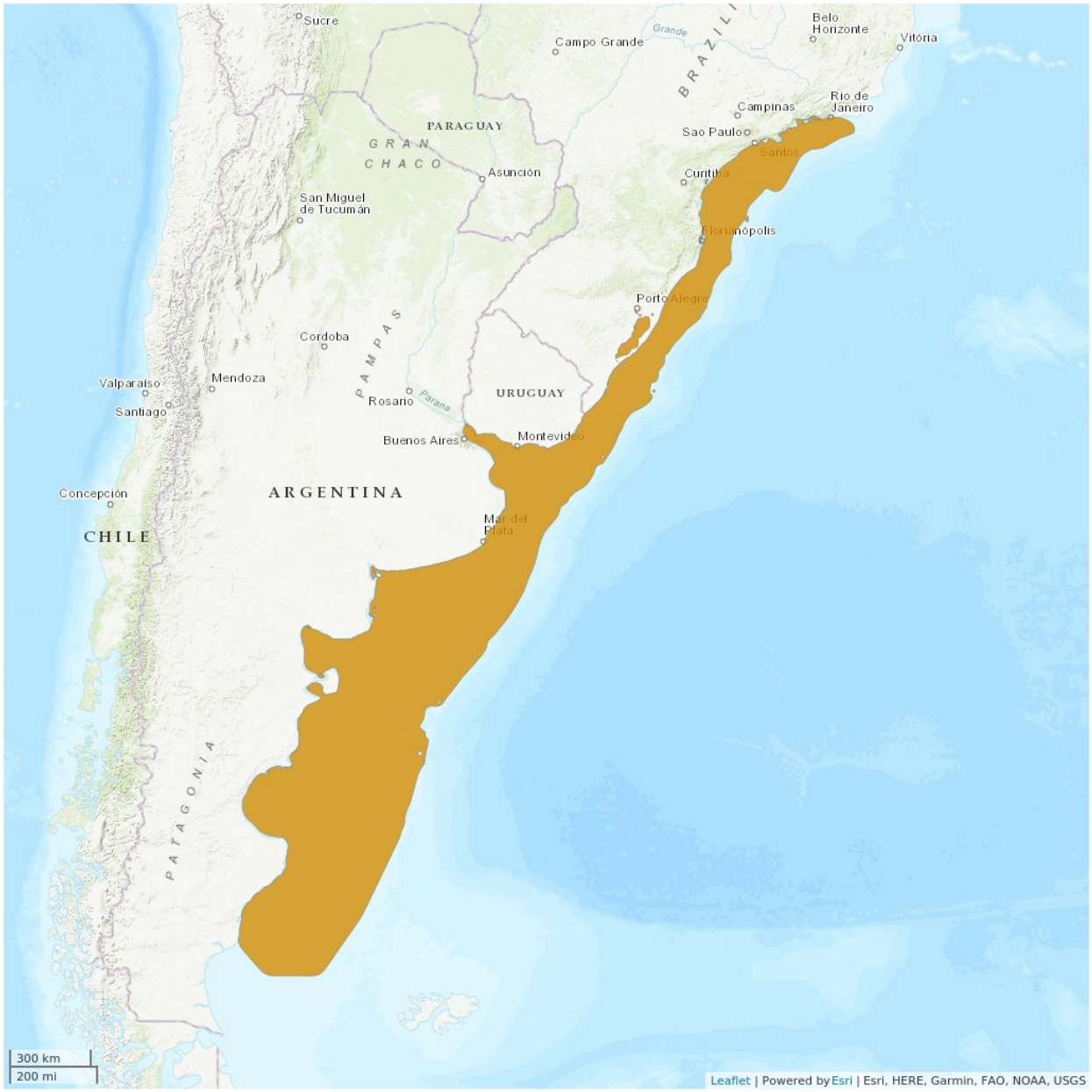
Distribution Map



Legend

EXTANT (RESIDENT)

Compiled by:

IUCN SSC Shark Specialist Group 2018

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

Population

Inferences of population trend have been drawn from one estimate of catch-per-unit-effort (CPUE) from research trawl surveys from the southern Brazil Shelf, and declines in landings in Uruguay. First, on the southern Brazil shelf, research trawl cruises documented a 90% reduction in the catches of adults between 1972 and 2002 (Ferreira *et al*. 2010), equivalent to an 88% reduction over three generations. Second, in Uruguay, landings peaked at over 3,200 t in 1999 and have declined steadily since (Casselberry and Carlson 2015). This fishery was considered over-exploited by 2006 as a result of intensive fishing pressure (Defeo *et al.* 2009). Overall, due to the intense and unmanaged fishing pressure that this species is exposed to across its range, its lack of refuge at depth, its relatively unproductive life history, and documented declines in several areas in its restricted range, it is suspected that the Narrownose Smoothhound has undergone a population reduction of >80% over the past three generations (28 years).

Current Population Trend: Decreasing

Habitat and Ecology **(see Appendix for additional information)**

The Narrownose Smoothhound inhabits the continental shelf and estuaries at depths of 2–195 m (Weigmann 2016, Molina *et al.* 2017). It reaches a maximum size of 109 cm total length (TL); females mature at 45–72 cm TL or 7.6 years and males at 49–59 cm TL or 6.8 years (Oddone *et al.* 2005, Segura and Milessi 2009, Molina *et al.* 2017). Reproduction is viviparous, and females give birth to 1–10 pups after a gestation period of 11–12 months (Ebert *et al.* 2013). Generation length is 9.3 years and maximum age is 11 years (Molina *et al.* 2017), and this species has a natural intrinsic rate of population growth of 0.175 (Cortés 2007). There are known nursery areas in Bahía Engaño and the Ría Deseado estuary, Argentina (Chiaramonte and Pettovelo 2000, Van der Molen and Caille 2001).

Systems: Marine

Use and Trade

This houndshark is intensely exploited throughout its range for meat (Segura and Milessi 2009). Demand is increasing in Brazil, where shark meat is sold as *cação,* and consumers have little knowledge that they are consuming sharks (Bornatowski *et al.* 2015). Brazil is now one of the major importers of shark meat (Dent and Clarke 2015), and this species is likely included.

Threats **(see Appendix for additional information)**

The Narrownose Smoothhound is captured in commercial and artisanal demersal trawl, gillnet, and beach seine fisheries, which are intense across its range. In southern Brazil, the 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 there are also intense, and 58% of stocks targeted by artisanal fishers were over-exploited by 2010, half of those being collapsed (Vasconcellos *et al.* 2011). In São Paulo state alone, there are over 300 small-scale trawl vessels (Rodrigues *et al*. 2019). In Uruguay, the industrial trawl fleet was developed in the late 1970s, and many stocks were over-exploited by the 1990s (Defeo *et al.* 2011, Lorenzo *et al.* 2015). Artisanal vessels fishing in Uruguayan waters increased from 269 vessels in 1975 to 905 vessels in 1996, and after a restructuring in 1997, the number of vessels increased from 393 to 795 in 2010 (Lorenzo *et al.* 2015).

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This is thought to be an underestimate as many artisanal vessels are not registered. This shark is highly commercialized there and is targeted in these fisheries (Segura and Milessi 2009, Silveira *et al.* 2018). In Argentina, commercial fishing began in the late 1800s, became industrialized after World War II (Mateo 2006), and increased rapidly in the 1980s (Watson *et al*. 2006). By 1992 there were over 300 coastal trawlers. This number increased to over 400 in 2015, and the number of fishing trips undertaken by that fleet nearly doubled from over 7,600 to nearly 14,000 over that time frame. The overall number of fishing vessels in operation in Argentina has grown from under 300 in 1990 to nearly 1,000 in 2015 (Dirección Nacional de Planificación Pesquera 2016). This shark has long been targeted and caught as bycatch there and this practice continues with little management (Chiaramonte 1998, Van der Molen *et al.* 1998, De Wysiecki *et al.* 2017). Overall, this houndshark is subjected to intense fishing pressure across its range that is inadequately managed, and it has no refuge at depth. Other smoothhounds that are fished are often able to withstand well-managed fishing pressure, however in other areas that lack management their stocks have collapsed (Ebert *et al.* 2013, Colloca *et al.* 2017).

Conservation Actions **(see Appendix for additional information)**

This houndshark is listed in the Brazilian Ordinance of Ministry of the Environment No. 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, Vooren *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), who brought forward their contention that the Brazilian National Red List was designed specifically for terrestrial species (Spautz 2019). There are no species-specific protections or conservation measures in place in Uruguay or Argentina. 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 life history and population size and trend, and species-specific monitoring should be undertaken in both commercial and artisanal fisheries.

Credits

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Facilitator(s) and Compiler(s): Kyne, P.M., Pollom, R., Charvet, P. & Dulvy, N.K.

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

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Citation

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External Resources

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

Appendix

Habitats

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

Habitat	Season	Suitability	Major Importance?
9. Marine Neritic -> 9.3. Marine Neritic - Subtidal Loose Rock/pebble/gravel	Resident	Suitable	Yes
9. Marine Neritic -> 9.4. Marine Neritic - Subtidal Sandy	Resident	Suitable	Yes
9. Marine Neritic -> 9.5. Marine Neritic - Subtidal Sandy-Mud	Resident	Suitable	Yes
9. Marine Neritic -> 9.6. Marine Neritic - Subtidal Muddy	Resident	Suitable	Yes
9. Marine Neritic -> 9.10. Marine Neritic - Estuaries	Resident	Suitable	Yes

Use and Trade

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

End Use	Local	National	International
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	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.2. Intentional use: (large scale) [harvest]	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.3. Unintentional effects: (subsistence/small scale) [harvest]	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.4. Unintentional effects: (large scale) [harvest]	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	2. Species Stresses -> 2.1. Species mortality		

Conservation Actions in Place

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

Conservation Action in Place
In-place research and monitoring
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: Not Applicable
In-place species management
Harvest management plan: Yes
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

Research Needed
1. Research -> 1.3. Life history & ecology
1. Research -> 1.4. Harvest, use & livelihoods
2. Conservation Planning -> 2.1. Species Action/Recovery 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): 195
Upper depth limit (m): 2
Habitats and Ecology
Generation Length (years): 9.3

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The IUCN Red List Partnership

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