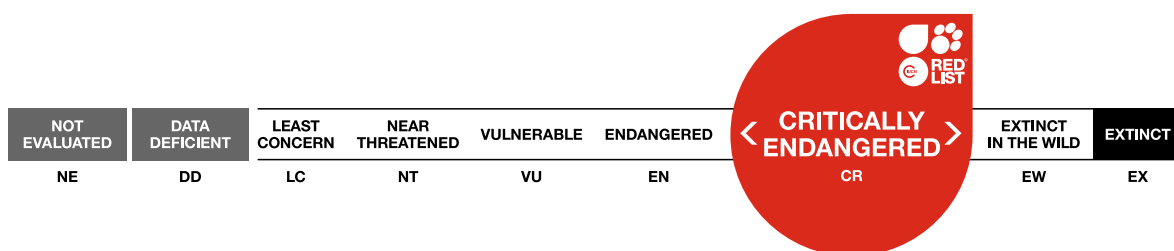# *Mustelus fasciatus,* Striped Smoothhound

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.

NOT EVALUATED	DATA DEFICIENT	LEAST CONCERN	NEAR THREATENED	VULNERABLE	ENDANGERED	CRITICALLY ENDANGERED	EXTINCT IN THE WILD	EXTINCT
NE	DD	LC	NT	VU	EN	CR	EW	EX

View on www.iucnredlist.org

Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Chondrichthyes	Carcharhiniformes	Triakidae

Scientific Name: *Mustelus fasciatus* (Garman, 1913)

Synonym(s):

- *Galeorhinus fasciatus* Garman, 1913

Common Name(s):

- English: Striped Smoothhound, Striped Dogfish
- Spanish; Castilian: Gatuso, Gatuzo
- Portuguese: Cação-listrado, Cação-malhado, Recorre-costas

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 <u>ver 3.1</u>

Year Published: 2020

Date Assessed: July 1, 2019

Justification:

The Striped Smoothhound (*Mustelus fasciatus*) is a medium-sized (to 177 cm total length) shark that occurs in the Southwest Atlantic from Santa Catarina, Brazil, to southern Buenos Aires Province, Argentina. It is demersal on the continental shelf and upper slope, from inshore to 500 m depth. It is captured in intense and largely unmanaged commercial and artisanal demersal trawl, gillnet, and beach seine fisheries throughout its range. There are two population reduction estimates from research trawl surveys: (1) the southern Brazilian shelf; and, (2) the Argentina-Uruguay Common Fishing Zone. First, on the southern Brazilian shelf, catches of adults in research trawl surveys declined by 95% between 1981 and 2005, equivalent to a >99% population reduction over three generation lengths (43.5 years). Second, in the coastal region of the Bonaerensean District of northern Argentina and Uruguay, the biomass of this shark in trawl surveys decreased by 96% between 1994 and 1999, also equivalent to a >99% reduction over three generations. Due to the level of intense and largely unmanaged fishing pressure across its range, combined with its relatively unproductive life history, and noted declines, it is suspected that the Striped Smoothhound has undergone a population reduction of >80% over the past three generations (43.5 years), and it is assessed as Critically Endangered A2bd.

Previously Published Red List Assessments

2004 – Critically Endangered (CR)
https://dx.doi.org/10.2305/IUCN.UK.2004.RLTS.T44581A10908329.en

Geographic Range

Range Description:

The Striped Smoothhound occurs in the Southwest Atlantic from Santa Catarina, Brazil, to Carmen de Patagones, southern Buenos Aires Province, Argentina (Ebert *et al.* 2013, Cuevas *et al.* 2018).

Country Occurrence:

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

FAO Marine Fishing Areas:

Native: Atlantic - southwest

Distribution Map
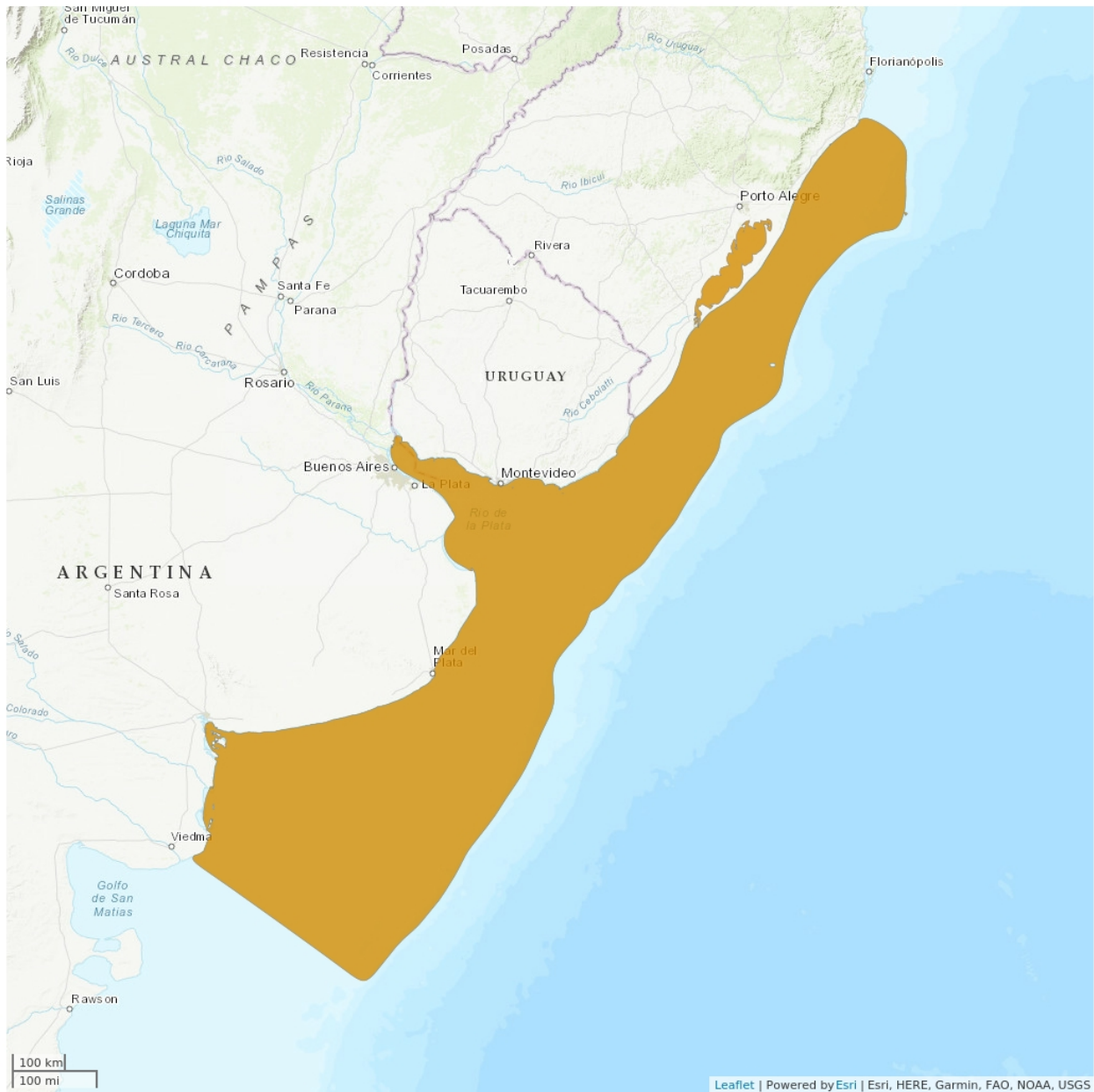
Legend

█ EXTANT (RESIDENT)

Compiled by:

IUCN SSC Shark Specialist Group 2018

NOT EVALUATED	DATA DEFICIENT	LEAST CONCERN	NEAR THREATENED	VULNERABLE	ENDANGERED	CRITICALLY ENDANGERED	EXTINCT IN THE WILD	EXTINCT
NE	DD	LC	NT	VU	EN	CR	EW	EX
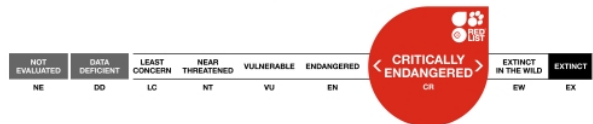
The boundaries and names shown and the designations used on this map
do not imply any official endorsement, acceptance or opinion by IUCN.

Population

Inferences about population trends have been drawn from two estimates of catch-per-unit-effort (CPUE) from research trawl surveys in two areas: (1) the southern Brazilian shelf; and, (2) the Argentina-Uruguay Common Fishing Zone. First, on the southern Brazilian shelf, catches in research trawl surveys declined by 95% between 1981 and 2005 (R. Barreto unpubl. data 2018), equivalent to a >99% reduction over three generations (43.5 years). Second, in the coastal region of the Bonaerensean District of northern Argentina and Uruguay, biomass of this species in trawl surveys decreased by 96% between 1994 and 1999 (Massa *et al.* 2002), equivalent to a >99% reduction over three generations. Due to the level of intense and largely unmanaged fishing pressure across its range, combined with its relatively unproductive life history, its lack of refuge at depth, and declines in CPUE, it is suspected that this houndshark has undergone a population reduction of >80% over the past three generations (43.5 years).

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

The Striped Smoothhound is demersal on the continental shelf and upper slope from inshore to 500 m depth (Weigmann 2016). It reaches a maximum size of 177 cm total length (TL); females mature at 112 cm TL and males at 119 cm TL (Soto 2001, Weigmann 2016). Reproduction is viviparous, and females give birth to 6–12 pups after a gestation of about a year that are 35 cm TL at birth (Soto 2001, Ebert *et al.* 2013). Generation length is estimated to be ~14.5 years, similar to that of the Gummy Shark (*Mustelus antarcticus*), which has an age-at-maturity of 11 years and a maximum age of 18 years (Troynikov and Walker 1999). There is a nursery area in Rio Grande do Sul (Soto 2001).

Systems: Marine

Use and Trade

This shark is utilized bycatch and is consumed and sold locally. Increased demand for shark meat, or cação, in Brazil is leading to imports there (Dent and Clarke 2015), and this species may be included.

Threats (see Appendix for additional information)

The Striped 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). Deep-water fisheries such as the gillnet fishery targeting monkfish (*Lophius gastrophysus*) there were considered to be over-exploited by the late 2000s due to governance limitations (Perez *et al.* 2009). 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). 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). Overall, this smoothhound is subjected to intense and inadequately managed fisheries across its range, and there is very little refuge at depth.

Conservation Actions (see Appendix for additional information)

This species 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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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

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
11. Marine Deep Benthic -> 11.1. Marine Deep Benthic - Continental Slope/Bathyl Zone (200-4,000m)	-	-	-

Use and Trade

End Use	Local	National	International
Food - human	Yes	Yes	Yes

Threats

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

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

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

Research Needed
1. Research -> 1.2. Population size, distribution & trends
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): 500
Upper depth limit (m): 0
Habitats and Ecology
Generation Length (years): 14.5

The IUCN Red List Partnership

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

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