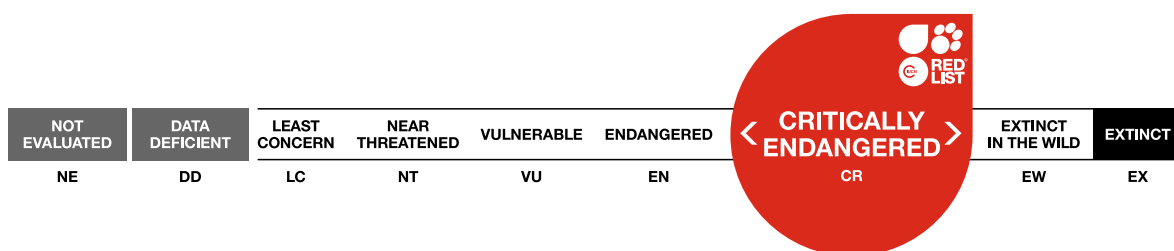


Atlantoraja castelnaui, Spotback Skate

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



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Chondrichthyes	Rajiformes	Arhynchobatidae

Scientific Name: *Atlantoraja castelnaui* (Miranda Ribeiro, 1907)

Synonym(s):

- *Raja castelnaui* Miranda Ribeiro, 1907

Common Name(s):

- English: Spotback Skate
- Spanish; Castilian: Raia-chita, Raia-jereba, Raya Chita, Raya Pintada, Raya a Lunares

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 Spotback Skate (*Atlantoraja castelnaui*) is a medium-sized (to 147 cm total length) skate that occurs in the Southwest Atlantic from Rio de Janeiro, Brazil, to Buenos Aires, Argentina. It inhabits the continental shelf and upper slope from inshore to 300 m depth. It is captured in intense and largely unmanaged demersal trawl fisheries throughout its geographic range. Two lines of evidence indicate a population reduction. First, in Santa Catarina State, Brazil, catch-per-unit-effort (CPUE) declined by an estimated 54% between 1974 and 1981. Second, a 75% decline in CPUE was estimated from 1994 to 1999 in Rio Grande do Sul, Brazil. Both declines are consistent with a population reduction of >99% over three generation lengths (48 years). This large skate has a slow life history, and many skates with similar characteristics have undergone severe population reductions and face increased extinction risk. It is highly susceptible to exploitation and does not have any refuge from fishing at depth. Overall, due to declining abundance from intense and largely unmanaged fishing through most of its range combined with its large size and presumed late age-at-maturity (and therefore high sensitivity to fishing pressure), it is suspected that the Spotback Skate has undergone a population reduction of >80% over the past three generation lengths (48 years), and it is assessed as Critically Endangered A2bd.

Previously Published Red List Assessments

2004 – Endangered (EN)

<https://dx.doi.org/10.2305/IUCN.UK.2004.RLTS.T44575A10921544.en>

Geographic Range

Range Description:

The Spotback Skate occurs in the Southwest Atlantic from Rio de Janeiro, Brazil to San Matías Gulf in Chubut, Argentina (Cousseau *et al.* 2000, Last *et al.* 2016).

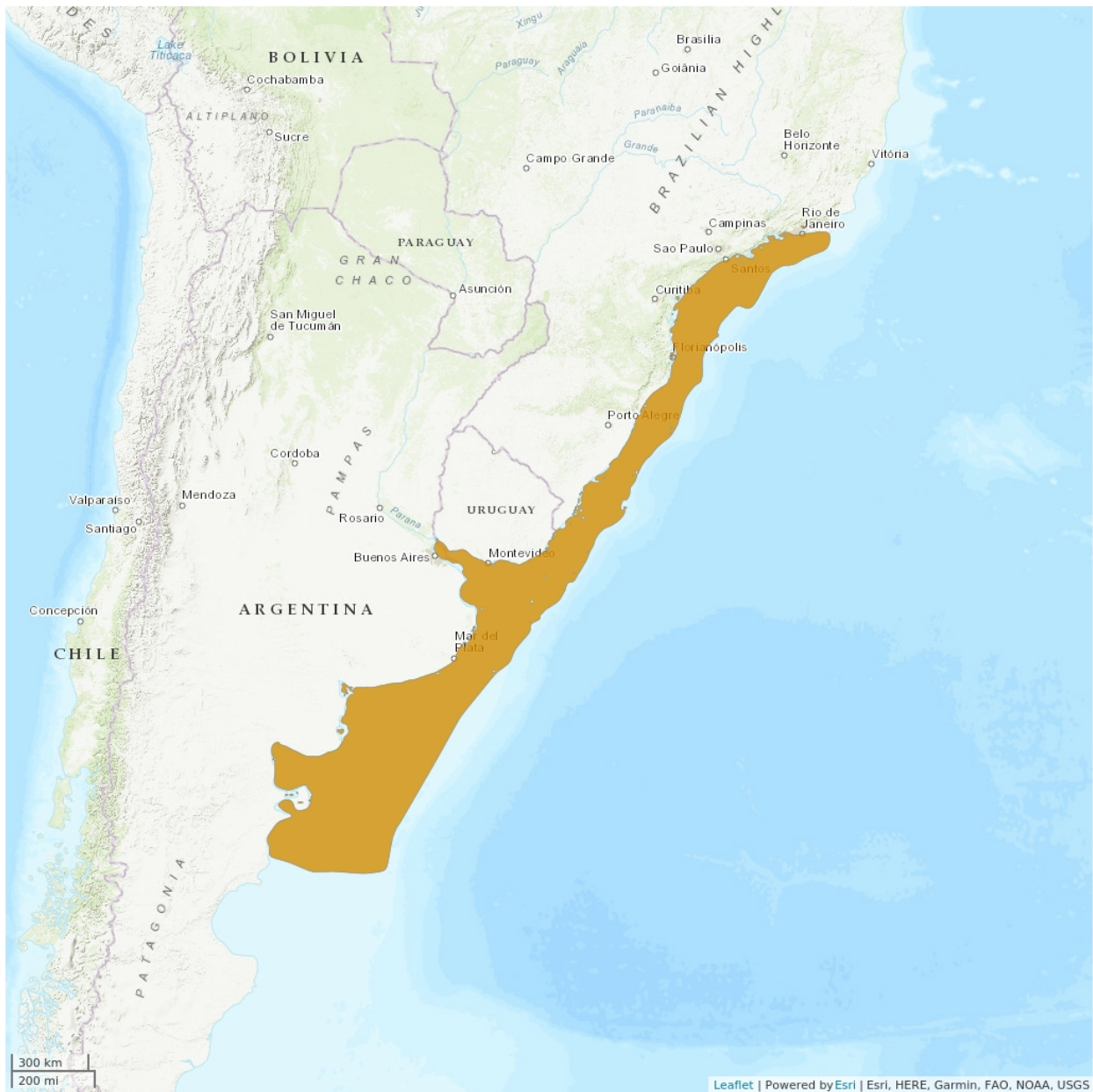
Country Occurrence:

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

FAO Marine Fishing Areas:

Native: Atlantic - southwest

Distribution Map

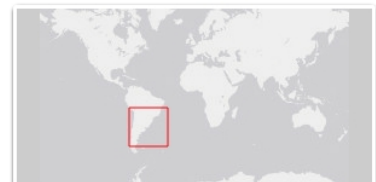
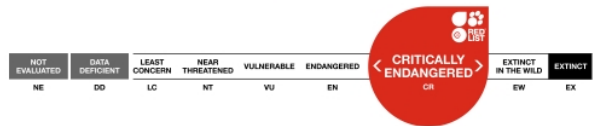


Legend

■ EXTANT (RESIDENT)

Compiled by:

IUCN SSC Shark Specialist Group 2018



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

Population

In Santa Catarina State, Brazil, a decline in catch-per-unit-effort (CPUE) of 54% was estimated between 1974 and 1981; similarly, a 75% decline in CPUE was estimated from 1994 to 1999 in Rio Grande do Sul (Ferreira *et al.* 2010), both equivalent to a population reduction of >99% if scaled over three generations (48 years). In the Uruguayan fisheries statistics for the coastal industrial trawler fleet, this species is included in the generic category 'skates' which refers mostly to the Smallnose Fanskate (*Sympterygia bonapartii*), therefore, there are no specific data for the Spotback Skate from that fishery. This species was caught in 30% of Uruguayan research trawl surveys carried out between 2010 and 2016 in the Argentina-Uruguay Common Fishing Zone (AUCFZ), making up 10% of the skate landings by weight. In 794 research trawls over that time frame, this skate was recorded in 224 hauls (Paesch 2018). In the Rio del Plata Estuary, the landings of coastal rays including this species was low until the mid-1990s, but increased retention led to substantial increases in landings which peaked in 2008, followed by a decline (Cortés *et al.* 2014). In Argentina, reported landings of skates in general increased from 900 t in 1993 to a peak of 28,000 t in 2007, and then declined to 24,000 t in 2009–2010 (Ministerio de Agricultura Ganadería y Pesca 2010, cited in Estalles *et al.* 2011). Trawl landings data for rays >90 cm total length in size from the Southwest Atlantic show a sharp increase in the 1990s and 2000s, from less than 1,000 t to a peak of nearly 4,000 t in 2007. Landings then declined to 1,000–1,500 t between 2008 and 2013 despite increased effort (Port *et al.* 2016, FAO 2019), equivalent to a >99% decline over three generations. Although these reported landings data are not species-specific, they do suggest a substantial increase in fishing pressure over the past several decades, and the recent decline in landings in some areas may represent a reduction in population size (although this needs to be confirmed with estimates of standardized CPUE and/or fisheries-independent research). Overall, due to declining indices of abundance in many areas, ongoing intense and unmanaged fishing through most of its range, and its large size and presumed late age-at-maturity (and therefore high susceptibility to fishing pressure), it is suspected that the Spotback Skate has undergone a population reduction of more than 80% over the past three generation lengths (48 years).

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

The Spotback Skate inhabits the continental shelf and upper slope from inshore to 300 m depth (J.M. Cuevas, unpubl. data 2018). It reaches a maximum size of 147 cm total length (TL); females mature at 106–114 cm TL and males at 91–100 cm TL (Oddone *et al.* 2008, Colonello *et al.* 2012, Last *et al.* 2016, Weigmann 2016). Reproduction is oviparous and females lay 9–12 egg cases between January and October, and young skates hatch at 17 cm TL (Last *et al.* 2016). Generation length is estimated at about 16 years based on a female age-at-maturity of 10.6 years and a maximum age of 20.8 years (Hozbor and Massa 2013).

Systems: Marine

Use and Trade

This skate is taken as utilized bycatch in demersal trawl fisheries and is sold locally and traded internationally to Asian markets (Dent and Clarke 2015, Silveira *et al.* 2018).

Threats (see Appendix for additional information)

The Spotback Skate is captured in demersal trawl fisheries, which operate throughout its range (Casarini 2006, Tamini *et al.* 2006, Orlando *et al.* 2011). 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 to 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 and half of those had 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). The industrial fleet increased from 46 vessels in 1975 to a peak of 121 in 2004, followed by a decline to 81 vessels in 2010 (Lorenzo *et al.* 2015). During the expansion phase of this fishery, landings increased six-fold from 1975 to 1981. Subsequent depletion of these species led to a diversification of the fisheries into retaining non-traditional (i.e. bycatch) species, masking the decline in previous target species (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, and this number increased to over 400 by 2015. 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). The Spotback Skate was caught in 71% of trawl landings in the San Matías Gulf surveyed over a two-year period from 2007 to 2009, however the majority of these individuals (88%) were juveniles (Estalles *et al.* 2011). This skate is large and has a slow life history (Colonello *et al.* 2012), and many skates with similar characteristics have undergone severe population declines and face increased extinction risk (Dulvy and Reynolds 2002). These animals are highly susceptible to exploitation, are exposed to largely unmanaged fishing pressure across their range, and do not have any 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, Oddone *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 Acuicultura e Pesca (SAP), who brought forward their contention that the Brazilian National Red List was designed specifically for terrestrial species (Spautz 2019). This species is included in the annual maximum permitted catch (MPC) of the Argentinian and Uruguayan fisheries for coastal skates in the Argentina-Uruguay Common Fishing Zone (CTMFM 2018). This measure is currently not likely to be an adequate management measure, because landings have been higher than the quotas. 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 trends, and species-specific monitoring should be undertaken in trawl fisheries.

Credits

Assessor(s): Pollom, R., Barreto, R., Charvet, P., Chiaramonte, G.E., Cuevas, J.M., Faria, V., Herman, K., Motta, F., Paesch, L. & Rincon, G.

Reviewer(s): Dulvy, N.K. & Kyne, P.M.

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

Use and Trade

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

End Use	Local	National	International
Food - human	No	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 -> 5.4.3. 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

Conservation Action in Place
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
1. Research -> 1.3. Life history & ecology
1. Research -> 1.4. Harvest, use & livelihoods
2. Conservation Planning -> 2.1. Species Action/Recovery Plan

Research Needed
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): 300
Upper depth limit (m): 0
Habitats and Ecology
Generation Length (years): 16

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