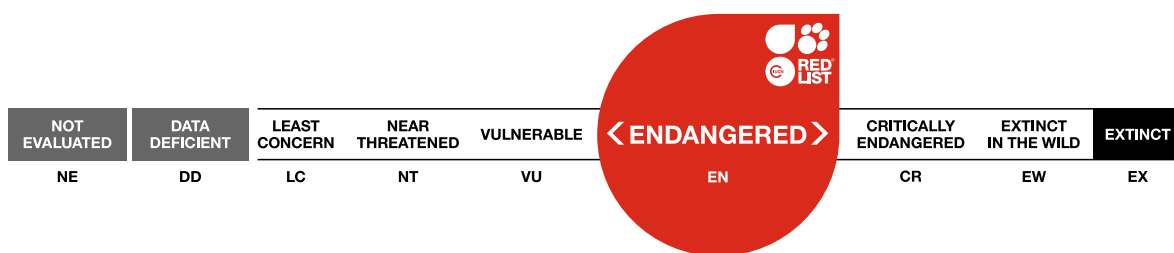


## *Atlantoraja cyclophora*, Eyespot Skate

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



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**Citation:** Pollom, R., Barreto, R., Charvet, P., Chiaramonte, G.E., Cuevas, J.M., Faria, V., Montealegre-Quijano, S., Motta, F. & Paesch, L. 2020. *Atlantoraja cyclophora*. *The IUCN Red List of Threatened Species* 2020: e.T61398A3103491. <https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T61398A3103491.en>

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## Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Chondrichthyes	Rajiformes	Arhynchobatidae

**Scientific Name:** *Atlantoraja cyclophora* (Regan, 1903)

### Synonym(s):

- *Raia cyclophora* Regan, 1903

### Common Name(s):

- English: Eyespot Skate
- Spanish; Castilian: Raja Ojona, Raya de Círculos
- Portuguese: Raia-santa

### 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:** Endangered A2bd [ver 3.1](#)

**Year Published:** 2020

**Date Assessed:** July 1, 2019

### Justification:

The Eyespot Skate (*Atlantoraja cyclophora*) is a small (to 74 cm total length) skate that occurs in the Southwest Atlantic from Rio de Janeiro, Brazil to San Matías Gulf, Argentina. It inhabits the continental shelf from inshore to 100 m depth, and occasionally to 320 m. It is captured in intensive and largely unmanaged demersal trawl fisheries which operate throughout its geographic and depth range. In southern Brazil there are no time-series of abundance, but fisheries there are intense and it is suspected that they are leading to population reduction. In Uruguay, research trawl catch-per-unit-effort of this species declined 82% from 1,910 kg/hr in 2004–2013 to 343 kg/hr from 2013 to 2017, equivalent to a >95% population reduction scaled over three generations (40.5 years). 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. 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. Overall, due to intense and increasing fishing pressure across its range, decreasing abundance, and its relatively slow life history, it is suspected that the Eyespot Skate has undergone a population reduction of 50–79% over the past three generations (40.5 years), and it is assessed as Endangered A2bd.

### Previously Published Red List Assessments

2006 – Vulnerable (VU)

## Geographic Range

### Range Description:

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

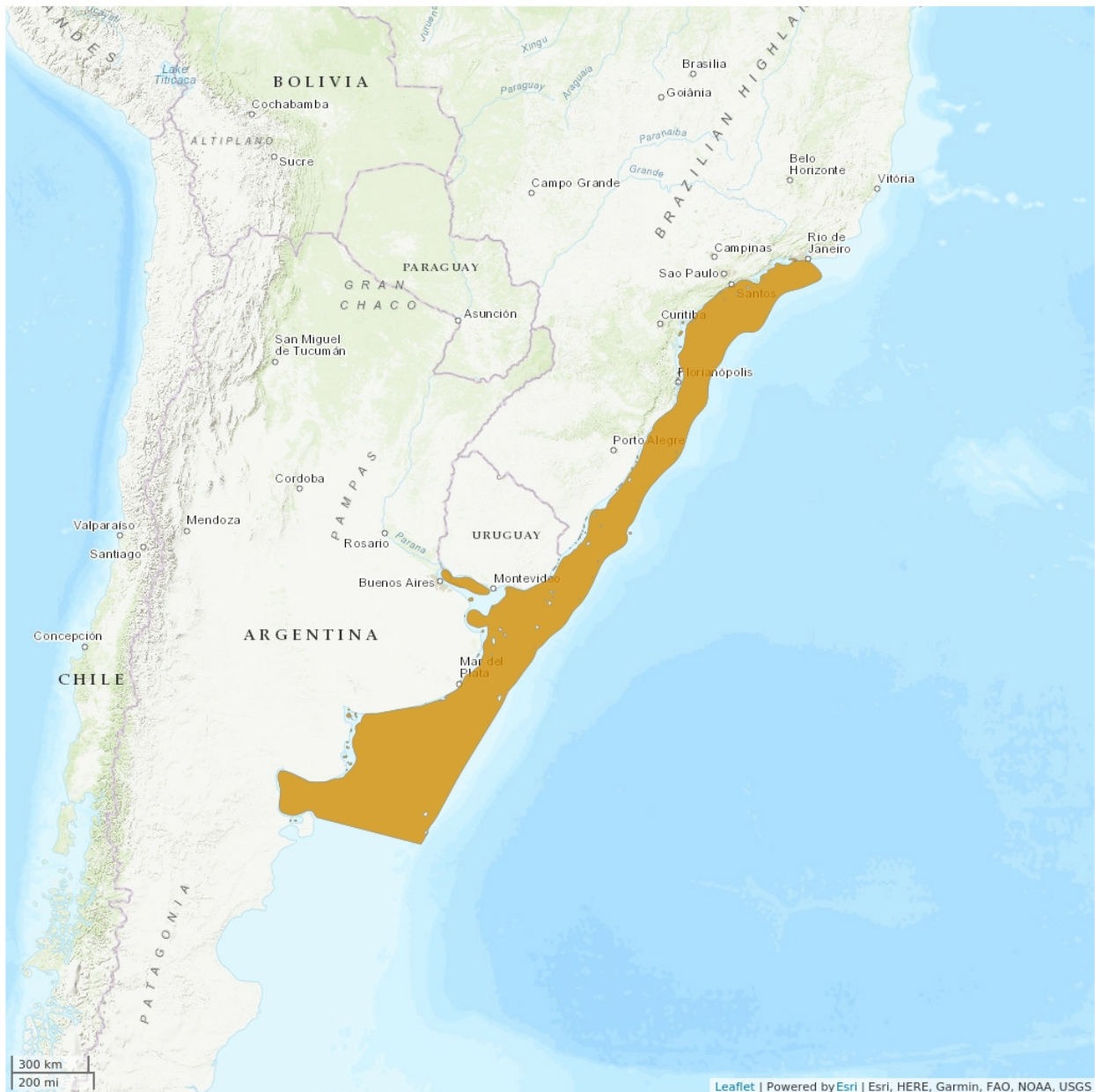
### Country Occurrence:

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

### FAO Marine Fishing Areas:

**Native:** Atlantic - southwest

# Distribution Map

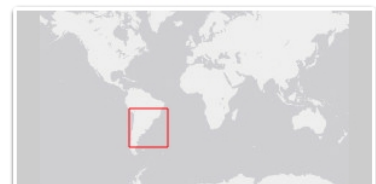


## Legend

■ 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 southern Brazil there are no time-series of abundance, but fisheries there are intense and it is suspected that they are leading to population reduction. In Uruguay, research trawl catch-per-unit-effort (CPUE) of this species was 320 kg/hr during 1994–2003, and declined by 82% from 1,910 kg/hr in 2004–2013 to 343 kg/hr in 2013–2017 (L. Paesch unpubl. data 2018), equivalent to a >95% population reduction if scaled over three generations (40.5 years). In 794 Uruguayan research trawls carried out in the Argentina-Uruguay Common Fishing Zone (AUCFZ) between 2010 and 2016, this species was recorded in 200 hauls (Paesch 2018). In the Uruguayan fisheries statistics for the coastal industrial trawler fleet, this species was originally included in the generic category 'skates', which refers mostly to the Smallnose Fanskate (*Sympterygia bonapartii*); however since 2014 a new category 'coastal rays' has been reported on. Landings have been variable but declined from over 75 t in 2014 to 17 t in 2016, and then increased to 57 t in 2018 (CTMFM 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 (Chiaramonte 2014, 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). Overall, due to intense and increasing fishing pressure across its range that lacks adequate management and declines in indices of abundance (research trawl CPUE and skate landings), it is suspected that this skate has undergone a population reduction of 50–79% over the past three generations (40.5 years).

**Current Population Trend:** Decreasing

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

The Eyespot Skate is demersal on the continental shelf from inshore to 100 m depth, and occasionally to 320 m on the upper slope (Last *et al.* 2016). It reaches a maximum size of 74 cm total length (TL); females mature at 53–65 cm TL and males at 45–60 cm TL (Last *et al.* 2016, Wehitt *et al.* 2018). Reproduction is oviparous, and young hatch at 10 cm TL (Last *et al.* 2016). Generation length is estimated as 13.5 years, close to that of the related and similarly-sized Whitedotted Skate (*Bathyraja albomaculata*), which has an age-at-maturity of 10 years and a maximum age of 17 years (Henderson *et al.* 2005).

**Systems:** Marine

## Use and Trade

This skate is taken as utilized bycatch in demersal trawl fisheries and, like other skates, is sold locally and traded internationally to Asian markets (Casarini 2006, Dent and Clarke 2015). It is mostly discarded in the Uruguayan artisanal fishery (Silveira *et al.* 2018).

## Threats (see Appendix for additional information)

The Eyespot Skate is captured in intensive commercial and artisanal demersal trawl fisheries that operate throughout its geographic and depth range (Casarini 2006, Tamini *et al.* 2006, Orlando *et al.* 2011). Industrial fishing effort began early and has increased rapidly in southern Brazil, Uruguay, and Argentina, followed by similar increases in artisanal effort. In southern Brazil, the industrial 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). Over half (58%) of stocks targeted there by artisanal fishers were over-exploited by 2010, and half of those have 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). 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). This is thought to be an underestimate as many artisanal vessels are not registered. This species is captured but is typically still discarded in Uruguay (Silveira *et al.* 2018). In Argentina, industrial trawl fisheries started to expand in the 1950s and increased rapidly in the mid-1980s (Watson *et al.* 2006), and this species was caught in low numbers in the early 2000s (Crespi-Abril *et al.* 2013). These fisheries are intense, they lack adequate management measures, and this skate does not have any refuge at depth. It is smaller and is likely to be more productive than the Critically Endangered Spotback Skate (*Atlantoraja castelnaui*), and therefore is likely to be less sensitive to fishing pressure than that species.

## Conservation Actions (see Appendix for additional information)

There are no species-specific protections or conservation measures in place for this skate. It is included in the annual maximum permitted catch (MPC) in the Argentina-Uruguay Common Fishing Zone for coastal skates. 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.

## Credits

**Assessor(s):** Pollom, R., Barreto, R., Charvet, P., Chiaramonte, G.E., Cuevas, J.M., Faria, V., Montealegre-Quijano, S., Motta, F. & Paesch, L.

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

**Contributor(s):** Oddone, M., Massa, A., Hozbor, N. & Vooren, C.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

### 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
In-place land/water protection
Conservation sites identified: No

<b>Conservation Action in Place</b>
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>)

<b>Conservation Action Needed</b>
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>)

<b>Research Needed</b>
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

<b>Research Needed</b>
------------------------

3. Monitoring -> 3.3. Trade trends
------------------------------------

## Additional Data Fields

<b>Distribution</b>
---------------------

Lower depth limit (m): 320
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Upper depth limit (m): 0
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<b>Habitats and Ecology</b>
-----------------------------

Generation Length (years): 13.5
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