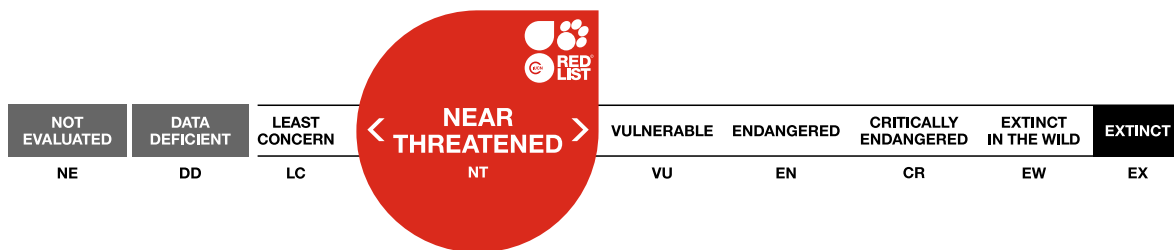


Bathyraja brachyurops, Broadnose Skate

Assessment by: Pollom, R. *et al.*



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Chondrichthyes	Rajiformes	Arhynchobatidae

Scientific Name: *Bathyraja brachyurops* (Fowler, 1910)

Synonym(s):

- *Raja brachyurops* Fowler, 1910

Common Name(s):

- English: Broadnose Skate
- Spanish; Castilian: Raya de Cola Corta, Raya de los Canales

Taxonomic Source(s):

Fricke, R., W.N. Eschmeyer and R. Van der Laan (eds.). 2020. Eschmeyer's catalog of fishes: Genera, species, references. Available at: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>. (Accessed: March 2020).

Taxonomic Notes:

Until *Bathyraja cousseauae* was described recently, this was often identified as *B. brachyurops*.

Assessment Information

Red List Category & Criteria: Near Threatened A2bd [ver 3.1](#)

Year Published: 2020

Date Assessed: February 7, 2019

Justification:

The Broadnose Skate (*Bathyraja brachyurops*) is a medium-sized (to 125 cm total length) skate that occurs in the Southeast Pacific and Southwest Atlantic Oceans from Biobío, Chile, south around Cape Horn and north to Rio Grande do Sul, Brazil, including the Falkland Islands (Malvinas). It is demersal on the inner continental shelf and upper slope at depths of 28–604 m. This skate is taken as bycatch in inadequately-managed demersal trawl and longline fisheries throughout most of its range. In the Argentina-Uruguay Common Fishing Zone, it is taken as bycatch but recorded with all other coastal skates. Species-specific catch time-series for Argentinian fisheries are unavailable, but overall skate landings were minimal prior to 1994 before rising rapidly and reaching a peak in 2007 and then dropping again until 2017. It is one of the main species captured in the Falkland Islands (Malvinas) multispecies target skate fishery, where the catch-per-unit-effort time-series suggests its relative abundance increased over the period 1994–2013. In Chile, it is a retained bycatch of the commercial longline fishery targeting Yellownose Skate, and in trawl fisheries targeting Chilean Hake and crustaceans. Overall, due to the level of fishing pressure that this skate is exposed to throughout much of its geographic range, its limited refuge at depth, its continued common presence in fisheries catches, and its moderately productive life history that allows it to withstand some fishing pressure, combined

with an increasing trend in the Falkland Islands (Malvinas) and declines in skates in general elsewhere in its range, it is suspected that a population reduction of 20–29% has occurred over the past three generations (42 years). Therefore, the Broadnose Skate is assessed as Near Threatened, nearly meeting the threshold under criterion A2bd.

WORKSHOP TEXT: Caught and discarded in a range of fisheries throughout its range. It is not targeted or retained. It is large-bodied and other large-bodied species of similar size have declined under relatively light fishing pressure. NT A2d, globally VU as 2/3 of habitat in Atlantic

OLD TEXT *Bathyraja albomaculata* is a medium sized (to 96 cm TL), wide-ranging skate from the Southwest Atlantic off Uruguay, Argentina and the Falkland/Malvinas Islands and more rarely recorded off Chile in the Southeast Pacific. This species is known from a wide depth range (between 55 m and 861 m) with higher densities at depths that differ latitudinally in the Southwest Atlantic. It is reportedly taken as bycatch in deepwater benthic trawl teleost target fisheries and also in the *Dipturus chilensis* directed skate fishery off Argentina. There is little species-specific trawl landing information available but fishing pressure off Argentina has increased substantially over the past decade and in 1999, there was a decrease in the captures of rays by the deep sea fishing fleet of around 15% with regard to 1998. A decline in the biomass of *B. albomaculata* captured during fishery-independent investigations at 45° to 55°S was also reported off Argentina from 1998 to 1999, however the second phase of investigations employed gear which likely reduced the capture of rays. In longline fisheries targeting *Dipturus chilensis* off Argentina and Chile, they are thought to comprise up to 10% (on deeper water trips) and <5% of the landed catch, respectively. In the multispecies skate trawl fishery north of the Falkland/Malvinas Islands, *B. albomaculata* is the second most important species forming 28% of the catch. In the early 1990s the fishery experienced dramatic declines, especially in the southern area which was closed to the rajid fleet in 1996. Between 1993 and 1997 *B. albomaculata* replaced *B. griseocauda* as the dominant species in the catch in the northern fishery area. A recent assessment of the northern ray population, utilizing observer data, has shown no significant trend in CPUE for this species. There have been no studies to determine the abundance of *B. albomaculata* in the southern area since the rajid fishery closure; however, it is also caught as bycatch by finfish trawlers that operate around the Falkland/Malvinas Islands and within the southern rajid closure. In an extensive study of the abundance of *B. albomaculata* in the Southwest Atlantic between 1998 and 2003, the species was generally absent between 48°S and 52°S, where it was formerly abundant, coincident with heavy fishing pressure in the area. *B. albomaculata* displays slow growth and late maturity and can be susceptible to overfishing if not closely monitored. Although more information is required to assess the magnitude of past declines, the vulnerability the species has shown to overfishing in the past and the continued fishing pressure through much of its range justifies an assessment of Vulnerable, on the basis of observed and inferred past and suspected future declines.

Previously Published Red List Assessments

2007 – Least Concern (LC)

<https://dx.doi.org/10.2305/IUCN.UK.2007.RLTS.T63111A12609195.en>

Geographic Range

Range Description:

The Broadnose Skate occurs in the Southeast Pacific and Southwest Atlantic Oceans from Biobío, Chile, south around Cape Horn and north to Rio Grande do Sul, Brazil, including the Falkland Islands (Malvinas)

(Menni and Stehmann 2000, Last *et al.* 2016).

Country Occurrence:

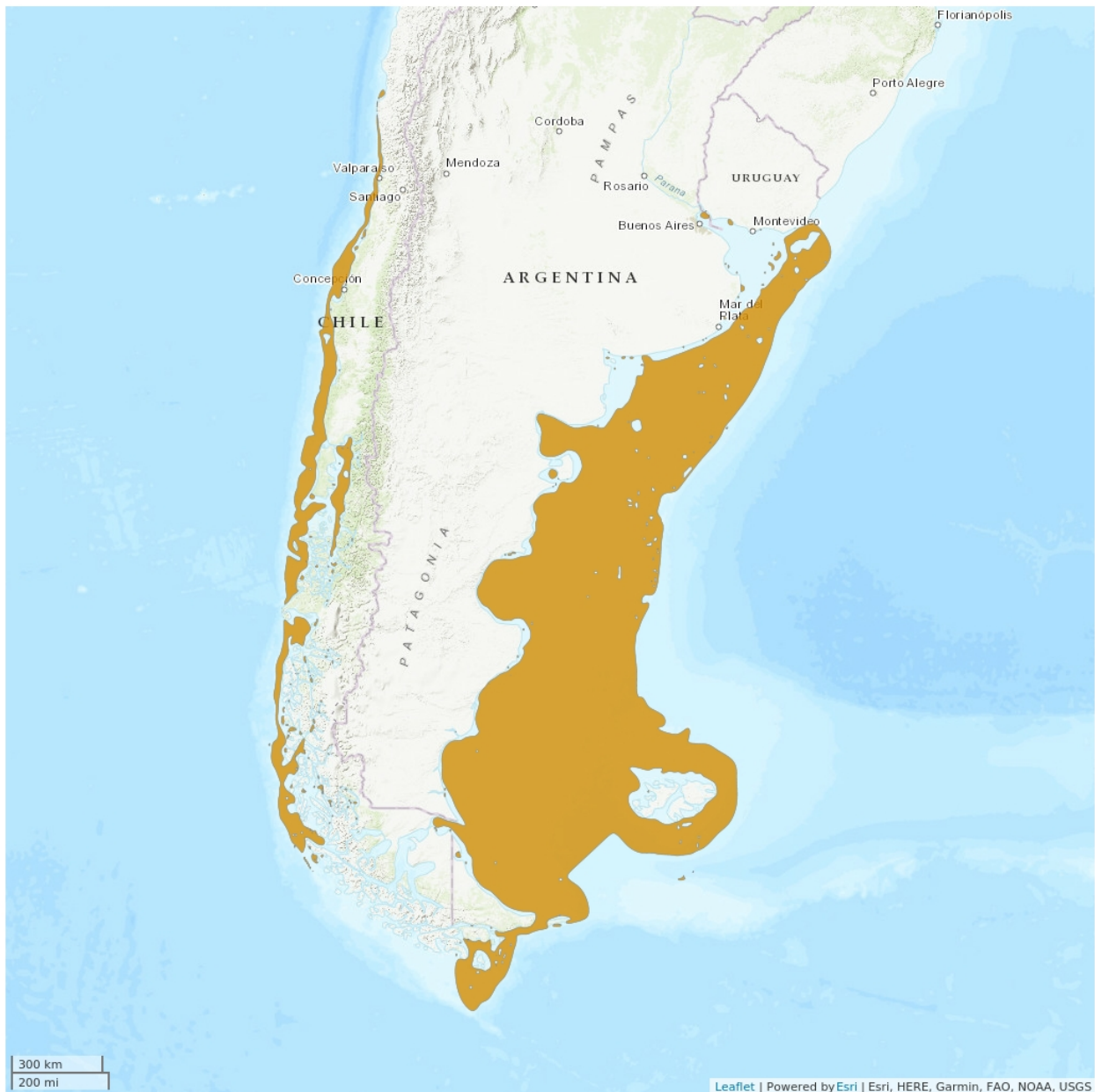
Native, Extant (resident): Argentina; Brazil; Chile; Falkland Islands (Malvinas); Uruguay

FAO Marine Fishing Areas:

Native: Atlantic - southwest

Native: Pacific - southeast

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

There are no population size estimates for this skate. Species-specific catch time-series for Argentinian skate fisheries are unavailable, but overall skate landings were <1,000 t prior to 1994, rising to >15,000 t in 2001, reaching a peak of 28,038 t in 2007 and dropping to 17,793 t in 2017 (G. Chiaramonte, unpubl. data 2019). It is still one of the main species captured in the Falkland Islands (Malvinas) multispecies target skate fishery (Winter *et al.* 2015). Analyses of a catch-per-unit-effort (CPUE) time-series there suggests that its abundance increased over the period 1994–2013 (Winter *et al.* 2015, Winter 2018). In the Argentina-Uruguay Common Fishing Zone (AUCFZ), species-specific data are not available but landings of 'offshore skates' have only been recorded since 2014 and have fluctuated between 2,000 and 4,500 t (CTMFM 2018). It remains a secondary minor catch (0.2% in 2015–2016) in Chilean trawl fisheries (Mateo *et al.* 2019).

Overall, due to the level of fishing pressure that this skate is exposed to throughout much of its geographic range, its limited refuge at depth, its continued common presence in fisheries catches, and its moderately productive life history that allows it to withstand some fishing pressure, it is suspected that a population reduction of 20–29% has occurred over the past three generations (42 years).

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

The Broadnose Skate is demersal on the inner continental shelf and upper slope at depths of 28–604 m (Last *et al.* 2016, Weigmann 2016). It reaches a maximum size of 125 cm total length (TL) (Weigmann 2016). There is geographic variation in size-at-maturity: females mature at 67 cm TL and males at 65.4 cm TL in the Argentinean-Uruguayan Common Fishing Zone (Paesch and Oddone 2009), whereas females mature at 57.9 cm TL and males at 63.9 cm TL in the Falkland Islands (Malvinas) (Arkhipkin *et al.* 2008). As in other skates, reproduction is oviparous (Last *et al.* 2016). Female age-at-maturity is approximately 8 years and the maximum age is 20 years; generation length is therefore estimated to be 14 years (Arkhipkin *et al.* 2008).

Systems: Marine

Use and Trade

In Chile, they are discarded dead and not utilized. Korean buyers prefer long-nosed dark-bellied skates (*Dipturus* spp.) rather than the white-bellied (*Bathyraja* spp.) skates. Skates larger than 30 cm disc width are generally retained for human consumption in the Southwest Atlantic (Laptikhovskiy 2004).

Threats (see Appendix for additional information)

In the Southeast Pacific, the Broadnose Skate is caught infrequently as bycatch of the target longline fishery for Yellownose Skate (*Dipturus chilensis*) off Chile. This fishery operates at depths of 30–300 m, mainly at the upper end of the Broadnose Skate depth range (Lamilla *et al.* 2001, 2002). Landings for the fishery comprised 85% Yellownose Skate and 10% Roughskin Skate (*D. trachydermus*), with the remaining 5% made up of other skates including this species (Lamilla *et al.* 2001, 2002). It is captured as secondary catch at depths of 50–300 m in the Marine Stewardship Council (MSC) certified trawl fishery for Chilean Hake (*Merluccius australis*). In 2015–2016, about 80 t were captured (Mateo *et al.* 2019).

There may be some refuge for Broadnose Skate at greater depths where fishing does not occur. This species may be bycatch of the Patagonian Toothfish longline fishery operating at depths of 300–2,500 m in southern Chile (Lamilla 2003).

In the Southwest Atlantic, this skate is an important component of the skate catches of the Uruguayan trawl fleet and the coastal shrimp and Argentine Hake (*Merluccius hubbsi*) trawl fishery in Chubut, province, Argentina (García de la Rosa *et al.* 2000, Massa *et al.* 2004, Núñez *et al.* 2018). Furthermore, it was captured in 75% of trawl hauls to 500 m for Patagonian Scallop (*Zygochlamys patagonica*) (Schejter *et al.* 2012). In Argentina, there are no species-specific data, but rays in general declined in CPUE in the 1990s and early 2000s. In the Falkland Islands (Malvinas), this species is one of four dominating commercial catches at depths to 400 m in the multispecies skate fishery where it comprised 26.5% of the aggregate catch (Winter *et al.* 2015). Increases in abundance have been attributed to its early maturation and fast growth, which suggest that this skate may be able to sustain higher fishing pressure than others (Winter *et al.* 2015).

Overall, this species is caught in inadequately managed fisheries over much of its depth range, it has some refuge at depths of 500–800 m, and its moderately productive life history may allow it to sustain some level of managed fishing pressure.

Conservation Actions (see Appendix for additional information)

There are no species-specific protections or conservation measures in place for this skate. In Chile, the target skate fishery is regulated through reference points and an annual total allowable catch for the target Yellownose Skate (70 t in 2018), with no further species-specific measures in place (Mateo *et al.* 2019). Regulations and management tools utilised need to be species-specific due to differing life histories and abundance patterns between the target Roughskin and Yellownose skates and other species caught as bycatch such as the Broadnose Skate. The Chilean Hake trawl and longline fisheries are MSC certified and intend on further studying this species as bycatch (Mateo *et al.* 2019).

In Argentina, the assessment of direct and indirect catches is a priority. In the AUCFZ, it is managed with the group 'offshore skates' through a total allowable catch (CTMFM 2018). In the Falklands (Malvinas), the multispecies skate fishery is managed by limiting effort. There is a multispecies stock assessment, but this may not translate into sustainable effort for individual species (Winter *et al.* 2015). Further research is needed on life history, population size and trend, and threats. Bycatch should be monitored to the species level in all fisheries.

Credits

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

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

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Citation

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External Resources

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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	No

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 -> 5.4.2. 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	-	-	Low impact: 3
	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: 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
3. Species management -> 3.1. Species management -> 3.1.1. Harvest management

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
1. Research -> 1.5. Threats
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.2. Harvest level trends

Research Needed

3. Monitoring -> 3.3. Trade trends

Additional Data Fields

Distribution

Lower depth limit (m): 604

Upper depth limit (m): 28

Habitats and Ecology

Generation Length (years): 14

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