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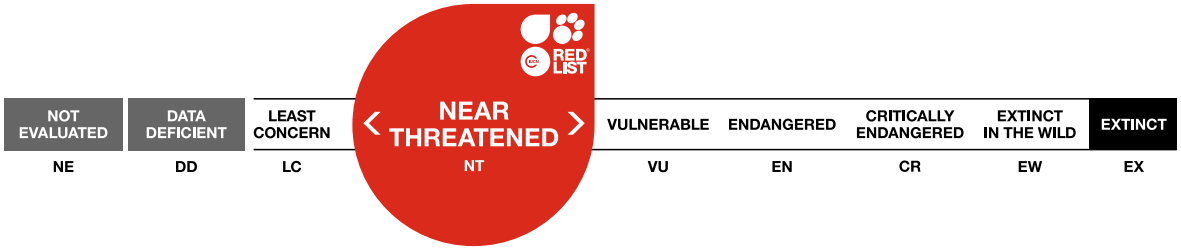
Scope(s): Global
Language: English

Bathyraja macloviana, Patagonian Skate

Assessment by: Pollom, R., Dulvy, N.K., Acuña, E., Bustamante, C., Chiaramonte, G.E., Cuevas, J.M., Herman, K., Paesch, L., Pompert, J. & Velez-Zuazo, X.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Chondrichthyes	Rajiformes	Arhynchobatidae

Scientific Name: *Bathyraja macloviana* (Norman, 1937)

Synonym(s):

- *Raja macloviana* Norman, 1937
- *Rhinoraja macloviana* (Norman, 1937)

Common Name(s):

- English: Patagonian Skate
- Spanish; Castilian: Raya Espinosa

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:

Compagno (1999, 2005) reallocated this species from *Bathyraja* to the genus *Rhinoraja* but the validity of this move remains unconfirmed. Both are currently in use, until a definitive systematic revision of these genera is conducted; a revision is underway with the Ph.D. thesis of Jimena San Martin.

Assessment Information

Red List Category & Criteria: Near Threatened A2bd ver 3.1

Year Published: 2020

Date Assessed: February 7, 2019

Justification:

The Patagonian Skate (*Bathyraja macloviana*) is a small (to 71 cm total length) skate that occurs in the Southeast Pacific Ocean off Magallanes, Chile and in the Southwest Atlantic Ocean from Uruguay to Tierra del Fuego, Argentina and the Falkland Islands (Malvinas) and is demersal on the inner continental shelf and upper slope at depths of 50–515 m. It is captured in demersal trawl fisheries targeting skates, finfish, and squid. Skates are typically not recorded or managed at the species level. For example, in Argentina, there are no species-specific data, but catch-per-unit-effort of rays, in general, declined in the 1990s and early 2000s. In the Falkland Islands (Malvinas) target skate fishery, this species increased in relative abundance in catch compared to other larger species, but there are no data on absolute changes in density or biomass from that area. Little is known about the Chilean portion of the population, but it is captured there and is typically discarded dead. Overall, due to the level of inadequately managed fishing pressure it is exposed to, declines in skates in general in some parts of its range, and its relatively small size that likely makes it productive enough to withstand some fishing

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pressure, it is suspected that this skate has undergone a population reduction of 20–29% over the past three generations (28.5 years). Therefore, the Patagonian Skate is assessed as Near Threatened, nearly meeting the threshold for Vulnerable A2bd.

Previously Published Red List Assessments

2018 – Near Threatened (NT)
https://dx.doi.org/10.2305/IUCN.UK.2007.RLTS.T63117A136602277.en

2007 – Near Threatened (NT)
https://dx.doi.org/10.2305/IUCN.UK.2007.RLTS.T63117A12612149.en

Geographic Range

Range Description:

The Patagonian Skate occurs in the Southeast Pacific Ocean off Magallanes, Chile and in the Southwest Atlantic Ocean from Uruguay to Tierra del Fuego, Argentina and the Falkland Islands (Malvinas) (Last *et al*. 2016).

Country Occurrence:

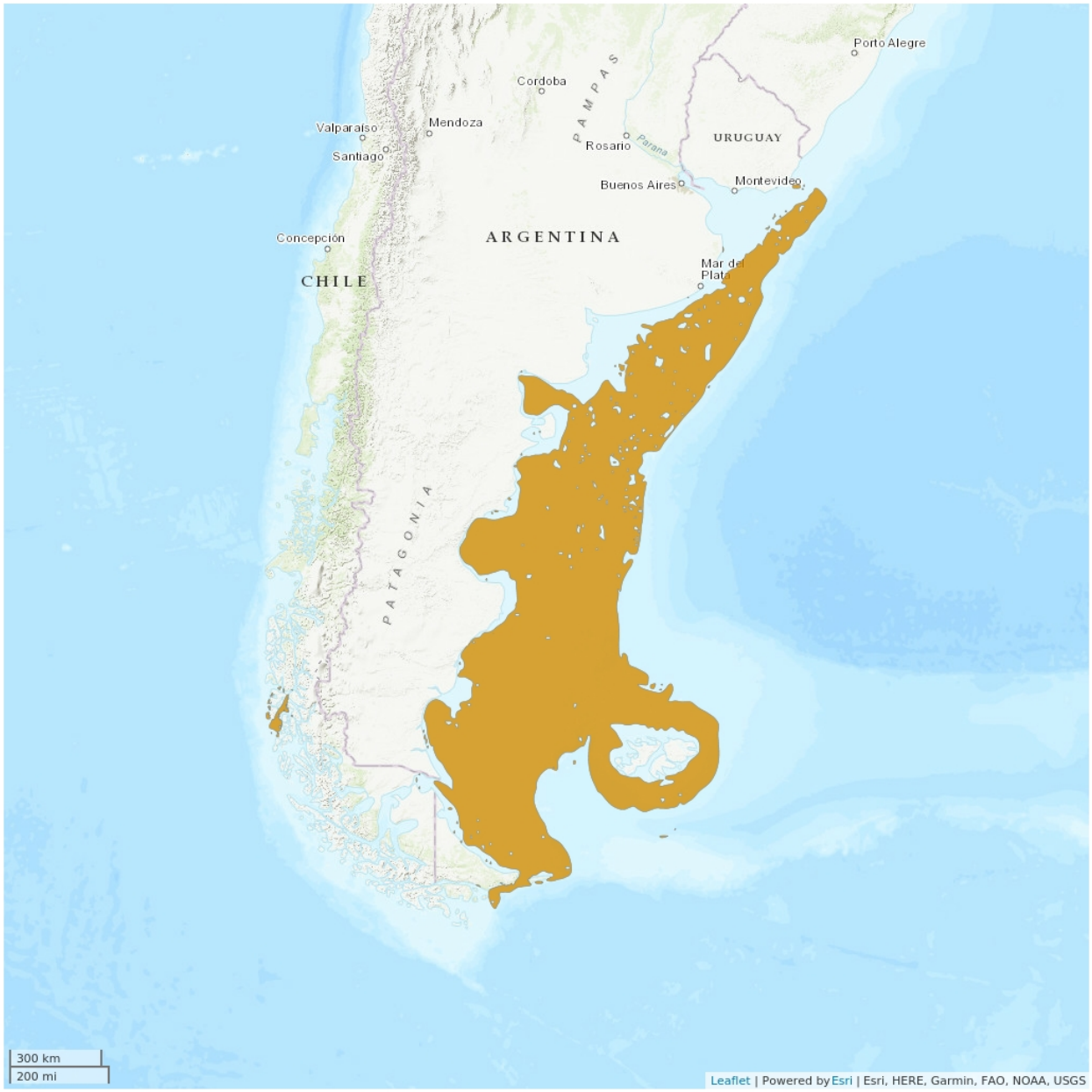
Native, Extant (resident): Argentina; Chile; Falkland Islands (Malvinas); Uruguay

FAO Marine Fishing Areas:

Native: Pacific - southeast

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.

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Population

There are no population size estimates for this skate. Across its range, skates are typically not recorded or managed at the species level. 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). 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). In the Falkland Islands (Malvinas), catch-per-unit-effort (CPUE) was stable from 1993 until about 2007 and increased from 2007 to 2013 (Winter *et al.* 2015). Little is known about the Chilean portion of the population, but it is captured there and is typically discarded dead.

Overall, due to the level of inadequately managed fishing pressure it is exposed to, declines in skates in general in some parts of its range, and its relatively small size that likely makes it productive enough to withstand some fishing pressure, it is suspected that this skate has undergone a population reduction of 20–29% over the past three generations (28.5 years).

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

The Patagonian Skate is demersal on the inner continental shelf and upper slope at depths of 50–515 m (Last *et al.* 2016). It reaches a maximum size of 71 cm total length (TL) (Last *et al.* 2016), although larger unconfirmed specimens of 98 cm TL have been noted in very deep waters off the Diego Ramírez Islands (Reyes and Torres-Florez 2009, Weigmann 2016). Females mature at 46–55 cm TL and males at 50–54 cm TL (Paesch and Oddone 2008, Last *et al.* 2016). As in other skates, reproduction is oviparous (Last *et al.* 2016). Generation length (GL) is suspected to be about 9.5 years, based on data available for the larger Whitedotted Skate (*Bathyraja albomaculata*), which reaches a maximum size of 100 cm TL, has an age-at-maturity of 10 years, a longevity of 17 years, and thus a GL of 13.5 years (Henderson *et al.* 2005).

Systems: Marine

Use and Trade

In the Southwest Atlantic, skates larger than ~30 cm disc width are typically utilized or exported for human consumption (Laptikhovsky 2004). In the Southeast Pacific, this species is not known to be utilized and is discarded dead in Chile. Korean buyers there prefer long-nosed dark-bellied skates (*Dipturus* spp.) rather than the white-bellied (*Bathyraja* spp.) skates.

Threats (see Appendix for additional information)

This skate is captured in demersal trawl fisheries targeting skates, finfish, and squid.

In the Southeast Pacific, it is captured rarely in the targeted Yellownose Skate (*Dipturus chilensis*) fishery, which operates at depths of 30–300 m. There is also a deepwater crustacean fishery operating between 280 and 474 m (E. Acuña unpubl. data 2019). Trawl and longline fisheries targeting Chilean Hake (*Merluccius australis*) operate there at depths of 50–300 m (Mateo *et al.* 2019) and likely capture this

skate.

In the Southwest Atlantic, skate landings increased considerably in Argentina due to international demand and declined after peaking in 2007 and declining afterward (Estalles *et al.* 2011). This skate is a regular bycatch in bottom trawl fisheries in both Argentina and Uruguay, particularly where Argentine Hake (*Merluccius hubbsi*), Patagonian Scallop (*Zygochlamys patagonica)* and other demersal teleosts are targeted (García de la Rosa *et al*. 2000, Paesch and Oddone 2008, Schejter *et al.* 2012). In the Falkland Islands, this species is captured in the target skate fishery that is managed as a single stock and not at the species level (Winter *et al.* 2015). Furthermore, it is captured in the Argentine Longfin Squid (*Doryteuthis gahi*) trawl fishery where it discarded with low survival rates (Laptikhovsky 2004).

Overall, this skate is subjected to inadequately managed fishing pressure across most of its range, and there is no refuge at depth. It may have some refuge in remote areas off Magallanes and Tierra del Fuego, and its small body size may indicate a productive enough life history that would allow it to withstand some fishing pressure.

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

There are no species-specific protections or conservation measures in place for the Patagonian Skate. In Chile, the target skate fishery is regulated through reference points and an annual total allowable catch (TAC) for the target Yellownose Skate (70 t in 2018), with no further species-specific measures in place (Mateo et al. 2019). The Chilean Hake fishery there is certified by the Marine Stewardship Council, however there are again no species-specific bycatch measures in place. Regulations and management tools need to be species-specific due to differing life histories and abundance patterns between the targeted species and other species caught as bycatch such as this.

In Argentina, there are theoretically TACs, minimum sizes and overall annual quotas for skates, however, little attention is paid to these and there is no regular monitoring by authorities (M. Stehmann pers. comm. 2006). In the AUCFZ, it is managed with the group 'offshore skates' through a total allowable catch (CTMFM 2018). Species-specific assessments of direct and indirect catches are a priority.
The Falkland Islands (Malvinas) multispecies skate fishery is managed by limiting fishing effort. The effort that each vessel is likely to exert is calculated (based on size, duration of licence and past fishing history) and, since 1994, only a limited number of licences are granted to ensure that the total allowable effort (determined from assessments of stock status) is not exceeded. Stock status assessments are not, however, species-specific and a sustainable total allowable effort for the entire stock may not translate to sustainable levels of effort for individual species (Agnew *et al.* 2000). Following declines in skate CPUE in the early 1990s, in 1996, the southern area (below 52°S) was closed to rajid fishing and the fishery is now resticted to the area north of the islands. This closure is extended to 50°30'S (between 56°30W and 58°W) during the second season of each year to exclude the skate fishing fleet from Patagonian Longfin Squid (*Doryteuthis gahi*) fishing grounds (Agnew *et al.* 2000). All licensed vessels there are required to provide daily catch and effort details, including discards of commercial and non-commercial species to the Falkland Island Fisheries Department. There is, however, no requirement to report species-specific information. Scientific observers are deployed onboard vessels in order to quantify the catch composition by species and to obtain detailed biological data on individual species (Winter *et al.* 2015).

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Further research is needed on life history, population size and trends, and threats. All fisheries should be monitored for bycatch at the species level.

Credits

Assessor(s):	Pollom, R., Dulvy, N.K., Acuña, E., Bustamante, C., Chiaramonte, G.E., Cuevas, J.M., Herman, K., Paesch, L., Pompert, J. & Velez-Zuazo, X.
Reviewer(s):	Finucci, B. & Simpfendorfer, C.
Contributor(s):	McCormack, C., Lamilla, J. & Stehmann, M.F.W.
Facilitator(s) and Compiler(s):	Kyne, P.M., Pollom, R. & Dulvy, N.K.
Authority/Authorities:	IUCN SSC Shark Specialist Group (sharks and rays)

Bibliography

Agnew, D.J., Nolan, C.P., Beddington, J.R. and Baranowski, R. 2000. Approaches to the assessment and management of multispecies skate and ray fisheries using the Falkland Islands fishery as an example. *Canadian Journal of Fisheries and Aquatic Science* 57: 429-440.

Comisión Técnica Mixta del Frente Maritimo (CTMFM). 2018. Plan de acción regional para la conservación y pesca sustentable de los condrictios en el área del Tratado del Río de la Plata y su Frente Marítimo. CTMFM Publicaciones Ocasionales. Montevideo, Uruguay. 144 pp.

Estalles, M., Coller, N.M., Perier, M.R. and Di Giácomo, E.E. 2011. Skates in the demersal trawl fishery of San Matías Gulf: species composition, relative abundance and maturity stages. *Aquatic Living Resources* 24(2): 193–199.

García de la Rosa, S.B., Sánchez, F. and Prenski, B.L. 1999. Rayas, pesca de altura. In: J. Cajal and L.B. Prensky (eds). *Diagnóstico de los recursos pesqueros*. INIDEP.

Henderson, A.C., Arkhipkin, A.I. and Chtcherbich J.N. 2005. Distribution, growth and reproduction of the white-spotted skate *Bathyraja albomaculata* (Norman, 1937) around the Falkland Islands. *Journal of Northwest Atlantic Fishery Science* 35: 79–87.

IUCN. 2020. The IUCN Red List of Threatened Species. Version 2020-3. Available at: www.iucnredlist.org. (Accessed: 10 December 2020).

Laptikhovsky, V.V. 2004. Survival rates for rays discarded by the bottom squid trawl fishery of the Falkland Islands. *Fishery Bulletin* 102: 757-759.

Last, P., White, W., de Carvalho, M., Séret, B., Stehmann, M. and Naylor, G. 2016. *Rays of the World*. CSIRO Publishing, Clayton.

Mateo, I., Polonio, V. and Saa, E. 2019. Marine Stewardship Council Full Assessment Public Comments Draft Report For The Chile Austral hake (*Merluccius australis*) industrial trawl and longline, Facilitated by Federación de Industrias Pesqueras Del Sur Austral. SAI Global, Dundalk, Ireland.

Paesch, L. and Oddone, M.C. 2009. Size at maturity and egg capsules of the softnose skates *Bathyraja brachyurops* (Fowler, 1910) and *Bathyraja macloviana* (Norman, 1937) (Elasmobranchii: Rajidae) in the SW Atlantic (37.00'-39.30'S). *Journal of Applied Ichthyology* 25: 66–71.

Reyes, P. R., Torres-Florez, J. P. 2009. Diversidad, distribución, riqueza y abundancia de condrictios de aguas profundas a través del archipiélago patagónico austral, Cabo de Hornos, Islas Diego Ramírez y el sector norte del paso Drake. *Revista de Biología Marina y Oceanografía* 44: 243-251.

Schejter, L., Escolar, M., Remaggi, C., Álvarez-Colombo, G., Ibañez, P. and Bremec, C.S. 2012. By-catch composition of the Patagonian scallop fishery: the fishes. *Latin American Journal of Aquatic Research* 40(4): 1094–1099.

Weigmann, S. 2016. Annotated checklist of the living sharks, batoids and chimaeras (Chondrichthyes) of the world, with a focus on biogeographical diversity. *Journal of Fish Biology* 88(3): 837-1037.

Winter, A., Pompert, J., Arkhipkin, A. and Brewin, P.E. 2015. Interannual variability in the skate assemblage on the South Patagonian shelf and slope. *Journal of Fish Biology* 87(6): 1449–1468.

Citation

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Disclaimer

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
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	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)

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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
2. Conservation Planning -> 2.3. Harvest & Trade Management Plan
3. Monitoring -> 3.1. Population trends

Research Needed
3. Monitoring -> 3.2. Harvest level trends

Additional Data Fields

Distribution
Lower depth limit (m): 515
Upper depth limit (m): 50
Habitats and Ecology
Generation Length (years): 9.5

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.

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