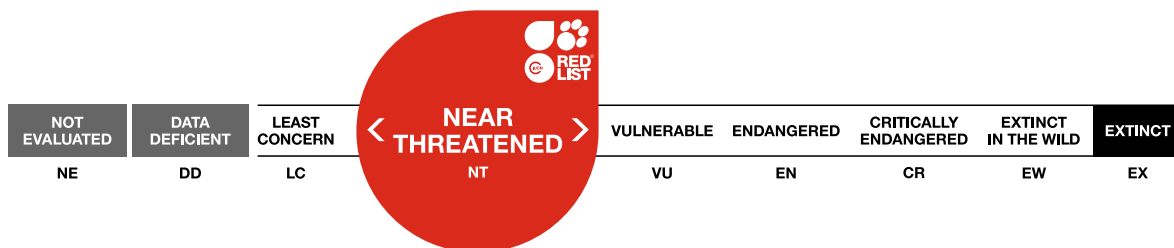


Narcine brasiliensis, Lesser Numbfish

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



View on www.iucnredlist.org

Short citation: Pollom, R. *et al.* 2020. *Narcine brasiliensis*. *The IUCN Red List of Threatened Species* 2020: e.T63157A3124169. <https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T63157A3124169.en> [see full citation at end]

Copyright: © 2020 International Union for Conservation of Nature and Natural Resources

Reproduction of this publication for educational or other non-commercial purposes is authorized without prior written permission from the copyright holder provided the source is fully acknowledged.

Reproduction of this publication for resale, reposting or other commercial purposes is prohibited without prior written permission from the copyright holder. For further details see [Terms of Use](#).

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](#).

If you see any errors or have any questions or suggestions on what is shown in this document, please provide us with [feedback](#) so that we can correct or extend the information provided.

Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Chondrichthyes	Torpediniformes	Narcinidae

Scientific Name: *Narcine brasiliensis* (Olfers, 1831)

Synonym(s):

- *Torpedo brasiliensis* Olfers, 1831

Common Name(s):

- English: Lesser Numbfish

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>.

Taxonomic Notes:

Recent revisions have subdivided the previously wide-ranging *Narcine brasiliensis* into *Narcine bancroftii* (Griffith, 1834) which is widely distributed from North Carolina, USA, through parts of the Gulf of Mexico, the Caribbean Sea, the Greater Antilles, the Lesser Antilles and the northern coast of South America and *Narcine brasiliensis* (Olfers, 1831) which is endemic to the Southwest Atlantic in Brazil, Uruguay, and Argentina (Carvalho 1999, Last *et al.* 2016).

Assessment Information

Red List Category & Criteria: Near Threatened A2d [ver 3.1](#)

Year Published: 2020

Date Assessed: July 1, 2019

Justification:

The Lesser Numbfish (*Narcine brasiliensis*) is a small (to 45 cm total length) ray that occurs in the Southwest Atlantic from southern Brazil to Buenos Aires Province, Argentina. It is benthic on soft substrates of the continental shelf at depths of 6–60 m. It is captured in intense and largely unmanaged commercial and artisanal trawl and beach seine fisheries throughout much of its geographic range. A population reduction is suspected from the peak and subsequent declines in reported ray landings from the Rio del Plata area. This species is discarded when caught and discard survival rates are unknown, but are suspected to be variable based on the injuries of captured individuals. Although this ray is subject to high fishing pressure across its range, it is still observed commonly in fisheries despite this pressure. It is suspected that the Lesser Numbfish has undergone a population reduction of 20–29% over the past three generations (26 years), and it is assessed as Near Threatened (nearly meeting Vulnerable A2d).

Previously Published Red List Assessments

2007 – Data Deficient (DD)

<https://dx.doi.org/10.2305/IUCN.UK.2007.RLTS.T63157A12602819.en>

Geographic Range

Range Description:

The Lesser Numbfish occurs in the Southwest Atlantic from southern Brazil to Buenos Aires Province, Argentina (G. Rincon unpubl. data 2018).

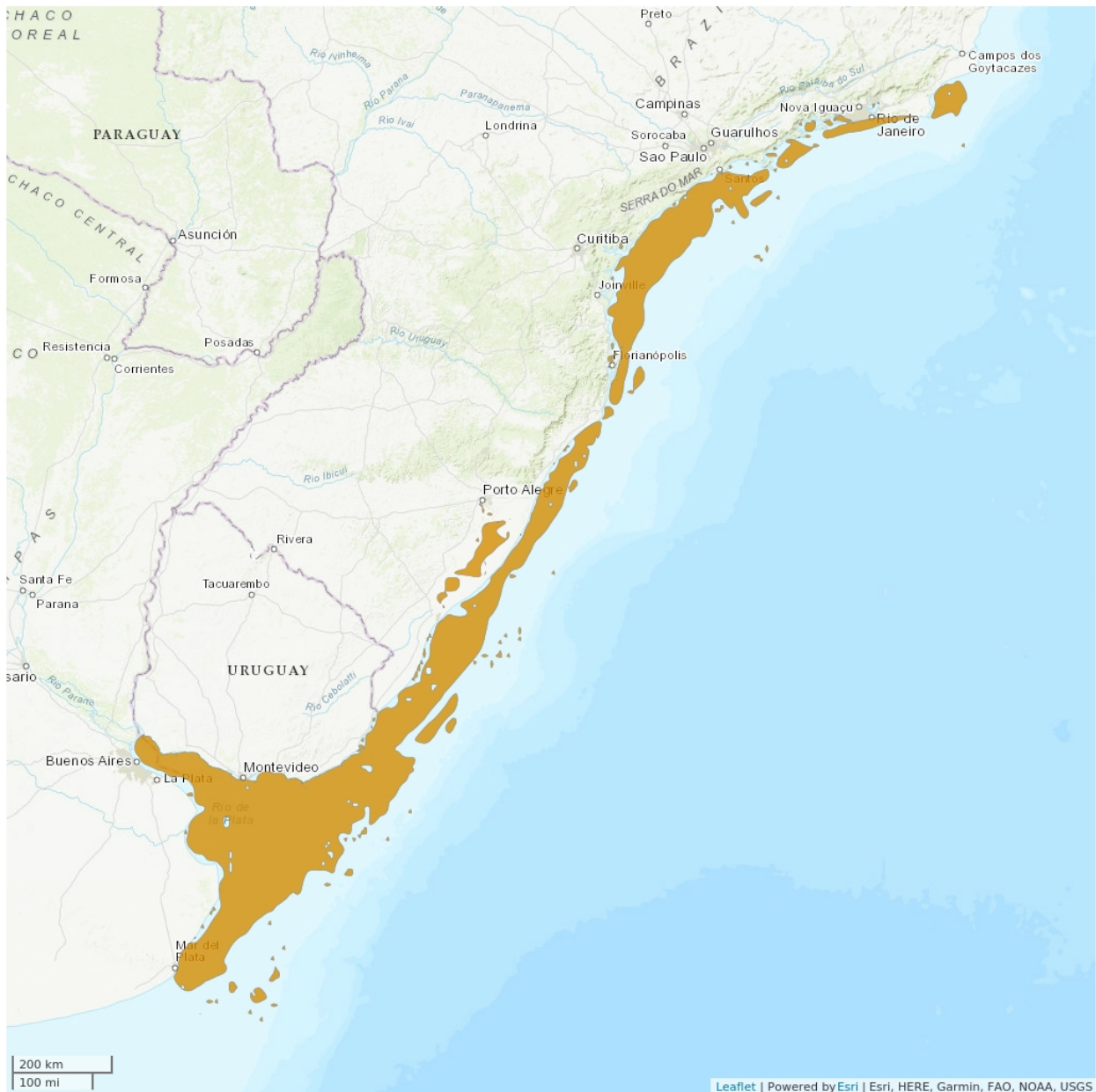
Country Occurrence:

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

FAO Marine Fishing Areas:

Native: Atlantic - southwest

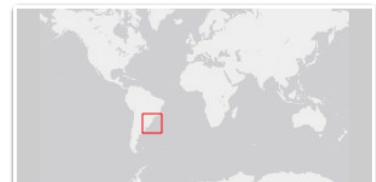
Distribution Map



Legend

■ EXTANT (RESIDENT)

Compiled by:
IUCN SSC Shark Specialist Group 2018



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



Population

Although the level of fishing pressure that this species is exposed to across its range is high, it is still observed commonly in fisheries despite this pressure. It is therefore suspected that the Lesser Numbfish has undergone a population reduction of 20–29% over the past three generations (26 years).

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

The Lesser Numbfish is benthic on soft substrates of the continental shelf at 6–60 m depth (Weigmann 2016). It reaches a maximum size of ~45 cm total length (TL); females mature at 32 cm TL and males at 28 cm TL (Rolim *et al.* 2016). Reproduction is viviparous, with an average litter size of 4 pups that are ~11 cm TL at birth (Last *et al.* 2016). Nurseries are known to exist in Brazil off the northern coast of Santa Catarina State and the southern coast of Paraná state (Martins *et al.* 2009). Generation length is suspected to be ~8.7 years, based on an age-at-maturity of 6.3 years and a maximum age of 11 years (F.M. Santana unpubl. data 2018).

Systems: Marine

Use and Trade (see Appendix for additional information)

Like other electric rays, this species is typically discarded when caught.

Threats (see Appendix for additional information)

The Lesser Numbfish is captured in commercial and artisanal trawl and beach seine fisheries, which are intense and lack adequate management across much of 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 are also intense in Brazil, and 58% of stocks targeted by artisanal fishers are over-exploited, half of those being collapsed (Vasconcellos *et al.* 2011). In São Paulo state alone, there are over 300 small-scale trawl vessels; this species made up nearly a third (28%) of the bycatch observed in the shrimp fishery at Perequê Beach between December 2014 and November 2015 (Rodrigues *et al.* 2019). In Uruguay, from where this species has rarely been recorded, 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). 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. 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 reported landings of rays from the Rio del Plata area increased from nearly zero in 1993 to a peak of over 8,000 t in 2009 but have since been declining (Cortes *et al.* 2014). Survival rates when discarded are unknown, but are suspected to be variable based on data available regarding injuries of captured individuals. Chances of survival are likely to be higher when drag

and soak times are reduced in trawl and net fisheries, respectively (Rodrigues *et al.* 2019). Whether this species' continued presence in landings is due to high survivorship or a productive enough life history to withstand fishing pressure (as a discard) requires further study.

Conservation Actions (see Appendix for additional information)

Annual spatial closures for shrimp trawling are in place in Brazil (IBAMA 2008), and these may benefit the Lesser Numbfish because they overlap in space with nursery areas and in time with the pupping season (Martins *et al.* 2009). Further research is needed on life history and population size and trends, and species-specific monitoring of all catches should be undertaken in commercial and artisanal fisheries. Monitoring is needed to ensure this species does not become threatened in the near future.

Credits

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

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

Contributor(s): Rosa, R. & Furtado, 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)

Bibliography

- Carvalho, M.R. de. 1999. A systematic revision of the electric ray genus *Narcine* Henle, 1834 (Chondrichthyes: Torpediniformes: Narcinidae), and the higher-level phylogenetic relationships of the orders of elasmobranch fishes (Chondrichthyes). Unpublished Ph.D. thesis. The City University of New York.
- Cortés, F., Pérez, M., Cueto, S., Hozbor, N., and Massa, A. M. 2014. Evaluación del conjunto de rayas costeras en el área del tratado del Río de La Plata y su frente marítimo. Periodo 1981-2013. Instituto Nacional de Investigación y Desarrollo Pesquero (INIDEP). 18 pp.
- Defeo, O., Puig, P., Horta, S. and Álava, A. de. 2011. Coastal fisheries of Uruguay. In: Salas, S., Chuenpagdee, R., Charles, A. and Seijo, J.C. (eds), *Coastal Fisheries of Latin America and the Caribbean*. FAO Fisheries and Aquaculture Technical Paper. No. 544. FAO, Rome, Italy.
- Dirección Nacional de Planificación Pesquera. 2016. Archivos de desembarques de la Pesca Marítima. Subsecretaría de Pesca y Acuicultura. Buenos Aires, Argentina Available at: https://www.agroindustria.gob.ar/sitio/areas/pesca_maritima/desembarques/.
- Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (IBAMA). 2008. Instrução Normativa 189, de 23 de setembro de 2008. Brasília, Brazil Available at: <http://www.ibama.gov.br/component/legislacao/?view=legislacao&legislacao=114466>. (Accessed: 03 July 2019).
- IUCN. 2020. The IUCN Red List of Threatened Species. Version 2020-3. Available at: www.iucnredlist.org. (Accessed: 10 December 2020).
- Last, P., White, W., de Carvalho, M., Séret, B., Stehmann, M. and Naylor, G. 2016. *Rays of the World*. CSIRO Publishing, Clayton.
- Lorenzo, M.I., Defeo, O., Moniri, N.R. and Zylich, K. 2015. Fisheries catch statistics for Uruguay. Working Paper Series. Fisheries Centre, University of British Columbia, Vancouver, Canada.
- Martins, R.R., Assunção, R. and Schwingel, P.R. 2009. Distribuição e abundância de *Narcine brasiliensis* (Olfers, 1931)(Elasmobranchii, Narcinidae) no litoral norte do Estado de Santa Catarina, Brasil. *Pan-American Journal of Aquatic Sciences* 4(4): 423–435.
- Mateo, J. 2006. Sembrando anzuelos para tiburones. Las demandas vitamínicas de la II Guerra Mundial y el desarrollo de la pesca comercial marítima en Argentina (1943-1952). *Boletín del Instituto de Historia Argentina y Americana "Dr. Emilio Ravignani"* 29(3): 119–150.
- Port, D., Perez, J.A. and Menezes, J.T. de. 2016. The evolution of the industrial trawl fishery footprint off southeastern and southern Brazil. *Latin American Journal of Aquatic Research* 44(5): 908–925.
- Rodrigues, A.F.S., de Sousa Rangel, B., Wosnick, N., Bornatowski, H., Santos, J.L., Moreira, R.G. and de Amorim, A.F. 2019. Report of injuries in batoids caught in small-scale fisheries: implications for management plans. *Oecologia Australis* 23(1): 78–89.
- Rolim, F.A., Rotundo, M.M. and Vaske-Júnior, T. 2016. Notes on the reproductive biology of the Brazilian electric ray *Narcine brasiliensis* (Elasmobranchii: Narcinidae). *Journal of Fish Biology* 89(1): 1105–1111.
- Vasconcellos, M., Diegues, A.C. and Kalikoski, D.C. 2011. Coastal Fisheries of Brazil. In: Salas, R., Chuenpagdee, A. Charles and J.C. Seijo (eds), *Coastal fisheries of Latin America and the Caribbean*, pp. 73-116. FAO, Rome.
- Watson, R., Revenga, C. and Kura, Y. 2006. Fishing gear associated with global marine catches II. Trends

in trawling and dredging. *Fisheries Research* 79: 103-111.

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.

Citation

Pollom, R., Barreto, R., Charvet, P., Chiaramonte, G.E., Cuevas, J.M., Faria, V., Herman, K., Marcante, F., Montealegre-Quijano, S., Motta, F., Paesch, L. & Rincon, G. 2020. *Narcine brasiliensis*. *The IUCN Red List of Threatened Species* 2020: e.T63157A3124169. <https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T63157A3124169.en>

Disclaimer

To make use of this information, please check the [Terms of Use](#).

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 -> 9.5. Marine Neritic - Subtidal Sandy-Mud	Resident	Suitable	Yes
9. Marine Neritic -> 9.6. Marine Neritic - Subtidal Muddy	Resident	Suitable	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: Yes, over part of range
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

Conservation Action in Place
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

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
3. Monitoring -> 3.1. Population trends

Additional Data Fields

Distribution
Lower depth limit (m): 60
Upper depth limit (m): 6
Habitats and Ecology
Generation Length (years): 8.7

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](#).