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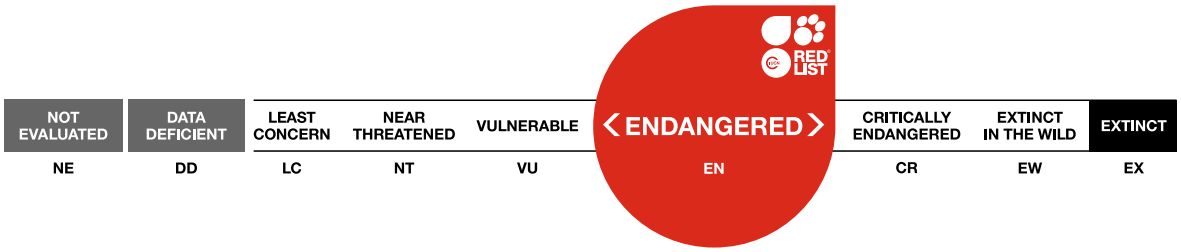
Dasyatis hypostigma, Groovebelly Stingray

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



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Chondrichthyes	Myliobatiformes	Dasyatidae

Scientific Name: *Dasyatis hypostigma* Santos & Carvalho, 2004

Synonym(s):

- *Dasyatis hipostigma* Santos & Carvalho, 2004 [orth. error]

Common Name(s):

- English: Groovebelly Stingray
- Portuguese: Arraia Manteiga

Taxonomic Source(s):

Eschmeyer, W.N., Fricke, R. and Van der Laan, R. (eds). 2016. Catalog of Fishes: genera, species, references. Updated 29 September 2016. Available at: http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp. (Accessed: 29 September 2016).

Taxonomic Notes:

This species has been mistaken mainly for *Dasyatis* (=*Hypanus*) *say* but also for *Dasyatis pastinaca* in the past. The specific name has been misspelled as *hipostigma*, including in the original description.

Assessment Information

Red List Category & Criteria: Endangered A2bcd ver 3.1

Year Published: 2020

Date Assessed: July 1, 2019

Justification:

The Groovebelly Stingray (*Dasyatis hypostigma*) is a medium-sized (to 58 cm disc width) ray that occurs in the Southwest Atlantic from Espírito Santo, Brazil to southern Buenos Aires Province, Argentina. It inhabits estuaries and the inner continental shelf at depths of 5–80 m. This stingray is highly valued and the meat is sold locally. It is captured in intense and largely unmanaged artisanal and commercial demersal trawl and gillnet fisheries that operate throughout its geographic range. This species is also likely to be affected by coastal habitat degradation and conversion around large cities. In Buenos Aires Province, it declined in research trawl landings by more than 86% between 1981 and 2006, equivalent to a population reduction of >88% over three generations. Fisheries are intense in the Brazilian portion of its range and similar reductions are suspected there. The level of management in place in the Argentina-Uruguay Common Fishing Zone may have prevented such a steep trajectory there. Overall, due to the presence of intense and mostly unmanaged fishing pressure across its range, at least one decline in an index of abundance, and a decline in habitat quality, balanced with a suspected better situation in the Argentina-Uruguay Common Fishing Zone, it is suspected that the Groovebelly Stingray has undergone a population reduction of 50–79% over the past three generation lengths (27 years), and it is assessed as

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Endangered A2bcd.

Previously Published Red List Assessments

2006 – Data Deficient (DD)
https://dx.doi.org/10.2305/IUCN.UK.2006.RLTS.T60154A12314601.en

Geographic Range

Range Description:

The Groovebelly Stingray occurs in the Southwest Atlantic from Espírito Santo, Brazil to southern Buenos Aires Province, Argentina (Ruocco 2012, Paesch *et al.* 2014, 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.

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Population

In Buenos Aires, Argentina, the abundance of this species in research trawls decreased by 7.9% annually between 1981 and 2006 for a total decline of 87.4% over that time frame (Ruocco 2012), equivalent to an 88.6% population reduction over three generations. Fisheries are intense in the Brazilian portion of its range and similar reductions are suspected there. The level of management in place in the Argentina-Uruguay Common Fishing Zone may have prevented such a steep trajectory there, but there is no species-specific management and some reduction in that portion of the population is still suspected, but most likely not at the levels shown by the Argentinean data. Overall, due to the presence of intense and mostly unmanaged fishing pressure across its range, at least one decline in an index of abundance, and a decline in habitat quality, balanced with a suspected better situation in the Argentina-Uruguay Common Fishing Zone, it is suspected that the Groovebelly Stingray has undergone a population reduction of 50–79% over the past three generation lengths (27 years).

Current Population Trend: Decreasing

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

The Groovebelly Stingray inhabits estuaries and the inner continental shelf at depths of 5–80 m (Last *et al*. 2016). It reaches a maximum size of 58 cm disc width (DW); females are mature by 49.7 cm DW or about 5.5 years of age, and males by the time they are 45 cm DW or 4.6 years of age (Ribeiro *et al.* 2006, Last *et al.* 2016). Reproduction is viviparous and females give birth to two pups per litter (Ribeiro *et al.* 2006). Maximum age is estimated at 12 years (Ruocco 2012), and therefore generation length is estimated to be nine years.

Systems: Marine

Use and Trade

This stingray is heavily commercialized, highly valued, and sold locally for its meat (G. Rincon unpubl. data 2018).

Threats **(see Appendix for additional information)**

The Groovebelly Stingray is caught in artisanal and commercial demersal trawl and gillnet fisheries (Tomàs *et al.* 2010, Rodrigues *et al.* 2019). 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 there are also intense, and 58% of stocks targeted by artisanal fishers are over-exploited, half of those being collapsed (Vasconcellos *et al.* 2011). In São Paulo state, there are over 300 small-scale trawl vessels and this species is captured there (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). 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, increasing to over 400 by 2015. Consequently, 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). Gillnets are also prevalent there and were known to target

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elasmobranchs in the 1990s and 2000s (Chiaramonte 1998, Colautti *et al.* 2010). Overall, this species is subjected to intense and mostly unmanaged fishing pressure across its limited range, and it has no refuge at depth. Its small size and presumed relatively fast generation time may provide it some ability to withstand fishing pressure, but not at current levels of exploitation. This stingray is also likely to be affected by coastal habitat degradation and conversion around large cities, as urban development within its range is among the highest along any coast in the world (Ferreira and Lacerdo 2016).

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

There are no species-specific protections or conservation measures in place for this species. To conserve this 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 population size and trends and use and trade, and species-specific monitoring should be undertaken in commercial and artisanal fisheries.

Credits

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

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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 -> 9.2. Marine Neritic - Subtidal Rock and Rocky Reefs	Resident	Suitable	Yes
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
9. Marine Neritic -> 9.10. Marine Neritic - Estuaries	Resident	Suitable	Yes

Use and Trade

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

End Use	Local	National	International
Food - human	Yes	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 -> 5.4.1. Intentional use: (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 -> 5.4.2. 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

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(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
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)

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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
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): 80
Upper depth limit (m): 5
Habitats and Ecology
Generation Length (years): 9

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.