

Pogonias courbina, Southern Black Drum

Assessment by: Haimovici, M., Chao, L., Vieira, J.P., Buratti, C., Díaz de Astarloa, J., Irigoyen, A., Riestra, C., Landaeta, M. & Hüne, M.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Actinopterygii	Perciformes	Sciaenidae

Scientific Name: *Pogonias courbina* (Lacepède, 1803)

Synonym(s):

- *Pogonathus courbina* Lacepède, 1803

Common Name(s):

- English: Southern Black Drum

Taxonomic Source(s):

Fricke, R., Eschmeyer, W.N. and Van der Laan, R. (eds). 2019. Eschmeyer's Catalog of Fishes: genera, species, references. Updated 03 September 2019. Available at: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>.

Taxonomic Notes:

This species was recently separated from *Pogonias cromis* (Azpelicueta *et al.* 2019).

Assessment Information

Red List Category & Criteria: Vulnerable A2bd+4bd [ver 3.1](#)

Year Published: 2020

Date Assessed: December 6, 2019

Justification:

This demersal species inhabits and forms seasonal spawning aggregations in shallow coastal waters and estuaries from southeastern Brazil to Argentina. It is a relatively long-lived, large-bodied species that can attain over 140 cm in length and 40 kg in weight and reach over 50 years in age. The estimated generation length is 28 years. It is targeted by commercial, artisanal and recreational fisheries throughout its range. Fisheries targeted spawning migrations in the Patos Lagoon estuary in southern Brazil at a high level from the 1940s to early 1980s, and landings have declined by 88% since 1982, or over the past 37 years. After these four decades of exploitation, only juveniles and small-sized adults are currently captured in the fishery. In Uruguay and Argentina, fishing effort primarily targets spawning aggregations in the La Plata River estuary. Landings in this fishery increased by 260% since 2000, or over the past 19 years, as compared to landings in the period from 1975-1999. The current absence of large individuals in the La Plata River commercial catch and anecdotal observations of declines by Argentine sportfishers, strongly implies that a truncation in age structure and a significant decline in abundance occurred.

This species has intrinsic characteristics, including large body size, long longevity and high vulnerability to capture during predictable spawning/feeding migrations or aggregations, that cause it to be susceptible to large population declines under exploitation. However, its high fecundity and early age at

maturity (5-10% of the longevity) favours its resilience to exploitation under adequate fisheries management. The large decline in the southern Brazil fishery that targets this species was caused by years of intense fishing pressure, and that stock has not recovered. This is a clear warning that the fishery operating in La Plata estuary will follow the same path of decline unless urgent and drastic management measures are not implemented in the near future. Based on fisheries data and catch observations over time, it is inferred this species has undergone global-level declines of at least 30-40% over the past one and half generation lengths (about 42 years), and due to insufficient conservation measures, this decline is expected to continue over the next one and half generation lengths. Therefore, it is listed as Vulnerable A2bd+4bd with a strong recommendation to improve fisheries monitoring and management.

Geographic Range

Range Description:

This species is endemic to the southwestern Atlantic and occurs from the State of Rio de Janeiro, Brazil to southern Golfo San Matías, Argentina (Menezes *et al.* 2003, Cousseau and Perrotta 2013, Azpelicueta *et al.* 2019). The depth range is 1 to 50 m (Norbis *et al.* 2006, Nion *et al.* 2013, Azpelicueta *et al.* 2019).

Country Occurrence:

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

FAO Marine Fishing Areas:

Native: Atlantic - southwest

Distribution Map

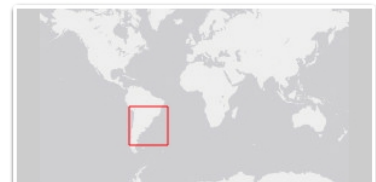


Legend

■ EXTANT (RESIDENT)

Compiled by:

IUCN Marine Biodiversity Unit/GMSA 2020



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



Population

Brazil:

At the northern extent of its range in Rio de Janeiro, targeted fishing primarily occurs by small-scale fishers operating in Guanabara Bay, and landings were not recorded until 2012-2015 where a total of 23.4 t were landed (FIPERJ). In São Paulo, 30 t were reported in 1978 and the average annual landings were 1.2 t between 1986 and 2018, which represents a 98% decline over about the past 40 years (PMAP-IP-SP). In Santa Catarina, annual landings of this species averaged 16.7 t from 1986-1995 (Valentini and Pezzuto 2006). Since 2000, only landings from the industrial fishery are available, and no landings of black drum were reported for that fishery. This probably means that this species is only targeted by small-scale fishers in Santa Catarina. In Rio Grande do Sul, annual landings averaged 996 t from 1945 to 1982 and then declined by about 88% to an average of 126 t from 1982-2011 (CEPERG 2012). Most fishing effort occurred by small-scale gillnet fisheries operating in the Patos Lagoon estuary during the late-spring and summer season with occasional catches by bottom trawlers and purse-seiners operating in coastal waters in autumn (Haimovici and Cardoso 2017). The Patos Lagoon fishery targeted spawning aggregations, and that stock withstood intense fishing for at least three decades before collapsing.

Uruguay and Argentina:

Official fisheries statistics from Argentina record commercial landings of this species, with landings records beginning in 1935 at 280 t (Sanchez *et al.* 2012). Annual landings averaged 45.7 t from 1975 to 2010 and then increased to 238.5 t from 2011 to 2018, which shows a clear expansion of the fishery has occurred in recent years (SAGyP). Fishing has been primarily by gillnet in recent years. Recreational fishers report that historical catches (circa 1960s) were larger in size and quantity as compared to subsequent years, and this is also true for catch in sport fishing tournaments over time (Irigoyen *et al.* 2018, A. Irigoyen pers. comm. 2019). In Uruguay, this species has been targeted and exported by commercial fisheries, probably by bottom trawlers, for at least the past 30 years. Annual landings increased significantly over the past two decades from an average of 267 t in 1977 to 2000 to 561 t in 2001-2018.

The most significant catches for Uruguay and Argentina occur during the spawning season from December to January at the mouth of the Río de la Plata (Azpelicueta *et al.* 2019). Combined landings by Uruguay and Argentina increased by 260% since 2000 in part to meet demand for the export market to Brazil (Urteaga and Perrotta 2001). This intensified fishing on spawning aggregations is very likely to lead to a similar collapse situation as occurred in the Patos Lagoon in Brazil unless effective management is not enforced in the near future. The absence of large individuals in the La Plata River and Patos Lagoon estuaries based on commercial fishing and anecdotal observations of sport fisheries, allow to safely assume that a truncation in the age structure and a significant decline in the abundance occurred.

A recent study by Machado *et al.* (in submission) observed a very high genetic diversity and no genetic structure between individuals sampled from Patos Lagoon and individuals from La Plata River estuary. This suggests there is some connectivity between the two systems. This may favour the resilience of the population, and decrease the extinction risk of local stocks. However, the slow recovery after the fisheries collapse at Patos Lagoon indicates that the recolonization process is slow and that the stocks in these two regions can be considered as unique stocks in terms of fishery management.

Overall summary:

There are gaps and uncertainties in reported landings along this species' range, but the available landings statistics are considered adequate to have a global picture of its abundance trends. Due to its large size (high value) and vulnerability to exploitation during spawning, it is intrinsically susceptible to large population declines when under intense fishing pressure. According to landings trends, its population in Brazil declined by about 80% over the past four decades. Landings in Uruguay and Argentina have increased significantly over the past two decades due to increased fishing effort and targeting of aggregations, and this is not expected to be sustainable. Based on fisheries data and catch observations over time and the life history of the species, there is strong evidence it has undergone global-level declines of at least 30-40% over the past one and half generation lengths (about 42 years), and due to insufficient conservation measures, this decline is expected to continue over the next one and half generation lengths.

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

This is a demersal, estuary-dependent species. It utilizes estuary habitats as nursery areas, especially the coastal lagoons of Lagoa dos Patos, Laguna de Rocha, Río de la Plata and Mar Chiquita (Azpelicueta *et al.* 2019). It primarily feeds on large benthic invertebrates, including bivalves and crabs (Blasina *et al.* 2010). Juveniles occurs in tide pools on rocky coasts of the Río de la Plata (Abella *et al.* 1979). This species is a group-synchronous, broadcast spawner that forms aggregations in less than 10 m of water near the mouths of bays and estuaries (Fitzhugh *et al.* 1993). Spawning takes place in the spring from October to December in Río de la Plata (Macchi *et al.* 2002) and between October and March in southern Brazil (Haimovici 1998). It can attain at least 117 cm total length (Azpelicueta *et al.* 2019). Individuals of over 140 cm in length were frequent in the commercial catches along southern Brazil (Haimovici 1997) and in recreational fishing along the Buenos Aires province in Argentina.

In the Patos Lagoon estuary, first maturity was attained at around 4-5 years and 65 to 80 cm total length in the early 1980s (Haimovici 1998). Size and age at maturity decreased in the 2010s to 45-50 cm total length at ages 2-3 years (Santos *et al.* 2016, Haimovici and Cardoso 2017). Older individuals reported were over 50 years of age (Haimovici 1998, Chao *et al.* 2015). Age at first maturity in the La Plata estuary was estimated as 3-5 years by Urteaga and Perrota (2001). When applying an age at first reproduction of 4 years and longevity of 52 years, its estimated generation length is 28 years based on the following equation recommended by the IUCN Red List methods: $\text{Age at first reproduction} + (\text{Age at last reproduction} - \text{age at first reproduction})/2$.

Systems: Marine

Use and Trade

This species is targeted by small-scale, industrial and recreational fisheries in estuarine and coastal waters throughout its range. It is targeted during the spawning season at the mouth of the Río de la Plata and the inshore waters of Samborombón Bay in the Río de la Plata estuary (Azpelicueta *et al.* 2019). In Argentina, it is taken in a multi-species fishery.

Threats (see Appendix for additional information)

Overexploitation is a major threat to this species. Life history characteristics, including predictable

aggregate spawning behaviour, long longevity and slow recovery cause it to be particularly susceptible to declines under heavy exploitation. As this species is dependent on estuaries, it may also be impacted by anthropogenic activities that frequently cause pollution and habitat degradation within these systems, but the impact is not known at this time.

Conservation Actions (see Appendix for additional information)

In Argentina, there are at least five fishing regulations in place to reduce effort, including a restriction that allows this species to be taken only by gillnet (in place since 1999) as well as the implementation of area closures. However, landings increased three-fold in the past two decades. There are some protections from fishing in the Mar Chiquita Lagoon, which is a biosphere reserve. In Brazil, this species was included in the National List of Endangered Species of the Environmental Ministry as 'Endangered' (MMA 2014), with the fishery being prohibited.

Although nominally protected along most of its range, fishing regulations do not seem sufficient to reduce declines or allow recovery. An action plan is needed to integrate management and international cooperation amongst Brazil, Uruguay and Argentina and designate fishery exclusion areas (no-take zones), especially to reduce fishing on spawning aggregations (Azpelicueta *et al.* 2019). For example, the collapsed fishery in Patos Lagoon estuary targeted aggregations entering the lagoon during or after spawning (Haimovici and Cardoso 2017), and both Argentinian and Uruguayan fisheries in the Rio de la Plata estuary also now target spawning aggregations.

Credits

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Authority/Authorities: IUCN SSC Sciaenid Red List Authority

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Appendix

Habitats

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

Habitat	Season	Suitability	Major Importance?
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	No	No	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	Whole (>90%)	Rapid declines	High impact: 8
	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	Whole (>90%)	Rapid declines	High impact: 8
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
9. Pollution -> 9.1. Domestic & urban waste water -> 9.1.2. Run-off	Ongoing	Unknown	Unknown	Unknown
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation		

Conservation Actions in Place

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

Conservation Action in Place
In-place land/water protection
Occurs in at least one protected area: Yes

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
3. Species management -> 3.2. Species recovery

Research Needed

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

Research Needed
1. Research -> 1.2. Population size, distribution & trends
2. Conservation Planning -> 2.1. Species Action/Recovery Plan
2. Conservation Planning -> 2.3. Harvest & Trade Management Plan
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.2. Harvest level trends

Additional Data Fields

Distribution
Lower depth limit (m): 50
Upper depth limit (m): 1
Habitats and Ecology
Generation Length (years): 28

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