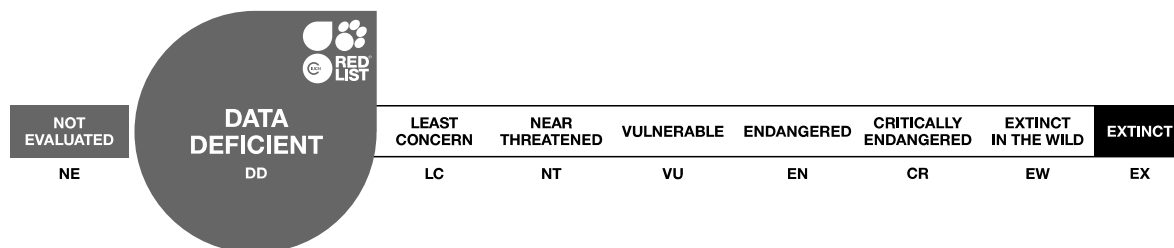


## *Paralichthys orbignyanus*, Brazilian Flounder

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



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## Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Actinopterygii	Pleuronectiformes	Paralichthyidae

**Scientific Name:** *Paralichthys orbignyanus* (Valenciennes, 1839)

### Synonym(s):

- *Platessa orbignyana* Valenciennes, 1839

### Common Name(s):

- English: Brazilian Flounder, Mud Flounder
- Spanish; Castilian: Lenguado

### Taxonomic Notes:

Many authors have considered this species to be a junior synonym of *Paralichthys brasiliensis*, a species that is often confused with; however, these species can be distinguished by meristic characteristics and both are currently accepted as separate nominal species (Díaz de Astarloa *et al.* 2006).

## Assessment Information

**Red List Category & Criteria:** Data Deficient [ver 3.1](#)

**Year Published:** 2020

**Date Assessed:** December 6, 2019

### Justification:

This demersal species occurs from southern Brazil to Argentina and is taken in multi-species commercial fisheries that target demersal fishes through much of its range. It is a smaller component of the catch of *Paralichthys* species as compared to catch of the sympatric *P. patagonicus*. For purposes of this assessment, half of the global population is considered to occur in Brazil and the other half in Uruguay and Argentina. According to landings and catch per unit effort data, the demersal fish stocks of Brazil are inferred to have declined by at least 30% and possibly to 50%. Due to the lack of specific data for this species, an estimate for population decline is not available or cannot be suspected at this time. According to stock assessment and fisheries data, there is no decline detected in the demersal stock in Argentina and Uruguay and abundance indices show an increase in recent years (since 2014). Fishing effort continues at an unsustainable level in Brazil, the fishery is not well-monitored and conservation measures are insufficient. Conservation measures in Argentina and Uruguay include a total allowable catch limit and regular monitoring of stock status. Based on the potential major threat from overfishing in at least half of its global population, but lack of quantified data, it is listed as Data Deficient with a recommendation to improve fisheries monitoring, including the collection of species-specific data, as well as implement conservation measures to reduce effort in Brazilian fisheries.

## Geographic Range

### Range Description:

This species is distributed in the southwestern Atlantic from Cabo Frio, Rio de Janeiro, Brazil to the northern part of the Gulf of San Matías, Argentina (Prisco *et al.* 2001, Díaz de Astarloa *et al.* 2006). Along its distribution, it can also be found in estuarine areas and coastal lagoons such as Lagoa dos Patos of Brazil, Laguna de Rocha of Uruguay, Rio de la Plata estuary, Mar Chiquita coastal lagoon and Rio Negro estuary of Argentina (Prisco *et al.* 2001, Díaz de Astarloa *et al.* 2006). It occurs at depths to 45 metres, but is more common shallower than 20 m (Díaz de Astarloa *et al.* 2006).

**Country Occurrence:**

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

**FAO Marine Fishing Areas:**

**Native:** Atlantic - southwest

# Distribution Map

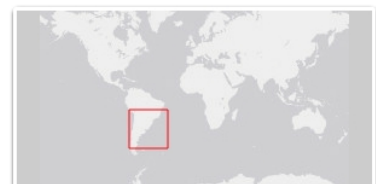
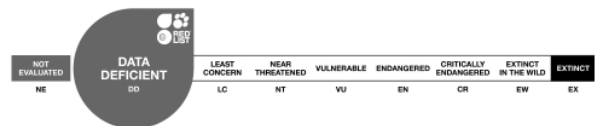


## Legend

■ 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

This species is common throughout its range (Díaz de Astarloa *et al.* 2006). It is captured and landed with other *Paralichthys* species, and catches are lower than *P. patagonicus*, but higher than *P. isosceles*, and there are limited species-specific landings data available overall (Díaz de Astarloa 2002). For purposes of this assessment, half of the global population is considered to occur in Brazil and the other half in Uruguay and Argentina. There is no decline detected in Argentina and Uruguay and abundance indices show an increase in recent years (since 2014). Demersal fish stocks in Brazil have declined significantly since the 1970s-1980s, but specific statistics for this species are not collected, and its status is poorly understood. *Paralichthys patagonicus* is inferred to have declined by 30-50% in Brazil. **Brazil:** In Brazil, it is taken in flounder fisheries, but occurs less commonly in the catch than other *Paralichthys* species that occur there (Díaz de Astarloa *et al.* 2018). Stock assessments are not conducted for Brazil (J. Vieira pers. comm. 2019). The fishery is considered totally exploited or overexploited. Landings from Santa Catarina State represent 60% of the overall catch, and the catch of *Paralichthys* species are mostly comprised of *P. patagonicus*. From 1950 to 2010, landings in Brazil peaked in the 1970s at 6,000 tonnes and then declined to 3-4,000 t through the 1980s, 1990s and 2000s, which represents a 50% decline over a 39 year time period (1971 to 2010). Estimated exploitation rates in southern Brazil indicate catches were no longer sustainable in the mid-1980s (Araújo and Haimovici 2000b). In southern Brazil, annual landings (combined with *P. orbignyanus*) surpassed 2,000 t in 1989 and have declined since (Araújo and Haimovici 2000a, Díaz de Astarloa 2002). Landings of *P. patagonicus* in 1986 were 1,800 t, and from 1986 to 2000, landings fluctuated slightly between 1,000 and 2,500 t. Flatfish fisheries in Brazil were developed during the 1980s when artisanal fisheries moved to shallow coastal waters and started using double-rig trawling gear, the most efficient gear in capturing *Paralichthys* species (Díaz de Astarloa 2002). Effort has remained the same or increased over time and catch per unit effort has declined. A 2005 report indicated severe overexploitation in Brazil based on different indices (Haimovici and Araújo 2005). Data were not collected over the most recent 15 years, but fishing effort has continued, so declines are inferred to have continued. In Brazil, fishing effort actually occurred on the Uruguay population, so some of the catch is reflected in those statistics.

**Argentina and Uruguay:** *Paralichthys patagonicus* is the most frequently landed species of flatfish in Argentina fisheries, with *P. orbignyanus* and *P. isosceles* also taken, but in smaller amounts (Rico 2010, Díaz de Astarloa *et al.* 2018). The common demersal fishing area, which is where the fishery that targets flatfishes and other demersal fishes operates, includes Uruguay and northern Argentina, with the highest catch occurring off Buenos Aires and declining to the south. Flatfish species represent only 6% of this catch and some vessels changed the target species towards the south to target prawn, so effort declined in recent years. Catch per unit effort (CPUE) from 1999 to 2018 was very variable. Biomass estimates from 1934 to 2018 show somewhat of a decline, but this is highly uncertain as the indices of abundance trend upward since about 2014 or over the past 4-5 years. Data from recent research cruises are expected to improve these model indices. According to the most recent stock assessment of the demersal fishery, it is not overfished and overfishing is not occurring. A Total Allowable Catch (TAC) limit was implemented for this fishery in recent years, and actual total catch has not reached this limit (Rodríguez and Riestra 2019).

**Current Population Trend:** Decreasing

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

This demersal species occurs on muddy bottoms (Díaz de Astarloa and Munroe 1998). It frequently uses shallow lagoons and estuaries as nursery grounds, while adults are more common on the inner continental shelf (Prisco *et al.* 2001, Magnone *et al.* 2015). Females grow faster and larger and attain a total length of 103 cm, while males attain 61 cm (López-Cazorla 2005, Radonic and Macchi 2009). Females are thought to live to 7 years of age, with males to 6 (López-Cazorla 2005). It is a batch spawner with a spawning season between October and April (Mellito da Silveira *et al.* 1995). Life history data are not sufficient to estimate a generation length, but based on using proxy data from *Paralichthys patagonicus* and *P. isosceles*, its generation length is expected to be between 5-10 years.

**Systems:** Marine

## Use and Trade

This species is landed in commercial fisheries that target demersal fishes (Díaz de Astarloa 2002, Rico 2010, Díaz de Astarloa *et al.* 2018). After landings of this species started decreasing, aquaculture was suggested as an alternative (Díaz de Astarloa *et al.* 2002, Radonic *et al.* 2007, Sampaio *et al.* 2008).

## Threats (see Appendix for additional information)

Overfishing is a potential major threat. Some coastal and lagoonal areas have been degraded due to increasing eutrophication caused by pollution from agricultural activities, but the impacts to this species are unknown (Magnone *et al.* 2015).

## Conservation Actions (see Appendix for additional information)

In Uruguay and Argentina, fishing effort is regulated through total allowable catch limits, a closed-area off Ël Rincon during the spawning season (October to March) and regular stock assessments monitor its status there. Conservation measures are insufficient in Brazil.

## Credits

<b>Assessor(s):</b>	Riestra, C., Díaz de Astarloa, J., Vieira, J.P., Buratti, C., Irigoyen, A., Landaeta, M. & Hüne, M.
<b>Reviewer(s):</b>	Linardich, C.
<b>Facilitator(s) and Compiler(s):</b>	Linardich, C. & Fonseca, C.
<b>Partner(s) and Institution(s):</b>	Oceanario de Lisboa

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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 -> 9.6. 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	No	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 -> 5.4.2. Intentional use: (large scale) [harvest]	Ongoing	Whole (>90%)	Slow, significant declines	Medium impact: 7
	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	Unknown	Unknown	Unknown
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
9. Pollution -> 9.3. Agricultural & forestry effluents -> 9.3.1. Nutrient loads	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 species management
Harvest management plan: Yes

## Conservation Actions Needed

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

<b>Conservation Action Needed</b>
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3. Species management -> 3.1. Species management -> 3.1.1. Harvest management
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## Research Needed

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

<b>Research Needed</b>
------------------------

1. Research -> 1.2. Population size, distribution & trends
--

1. Research -> 1.3. Life history & ecology
--

1. Research -> 1.4. Harvest, use & livelihoods
--

3. Monitoring -> 3.1. Population trends
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## Additional Data Fields

<b>Distribution</b>
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Lower depth limit (m): 45
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Upper depth limit (m): 1
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<b>Habitats and Ecology</b>
-----------------------------

Generation Length (years): 5-10
---------------------------------

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