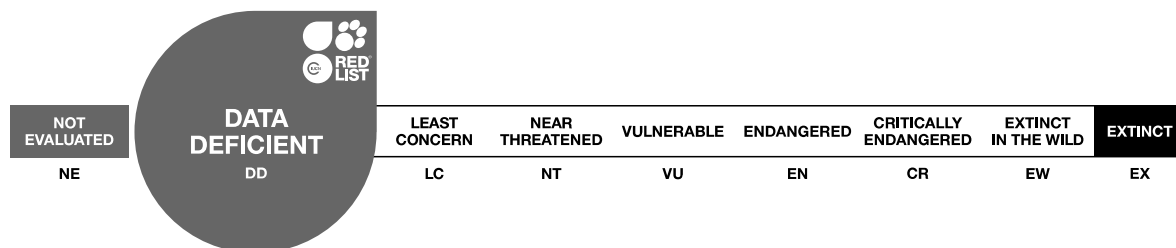


Paralichthys isosceles, Isosceles Flounder

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 isosceles* Jordan, 1891

Common Name(s):

- English: Isosceles Flounder
- Spanish; Castilian: Lenguado
- Portuguese: Linguado-da-Areia

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 relatively minor 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 Rio de Janeiro, Brazil to the southern part of the San Jorge Gulf, Argentina (Haimovici *et al.* 2008). The depth range is 50-180 metres, but more commonly occurs from 70-100 m (Díaz de Astarloa and Munroe 1998, Díaz de Astarloa 2002).

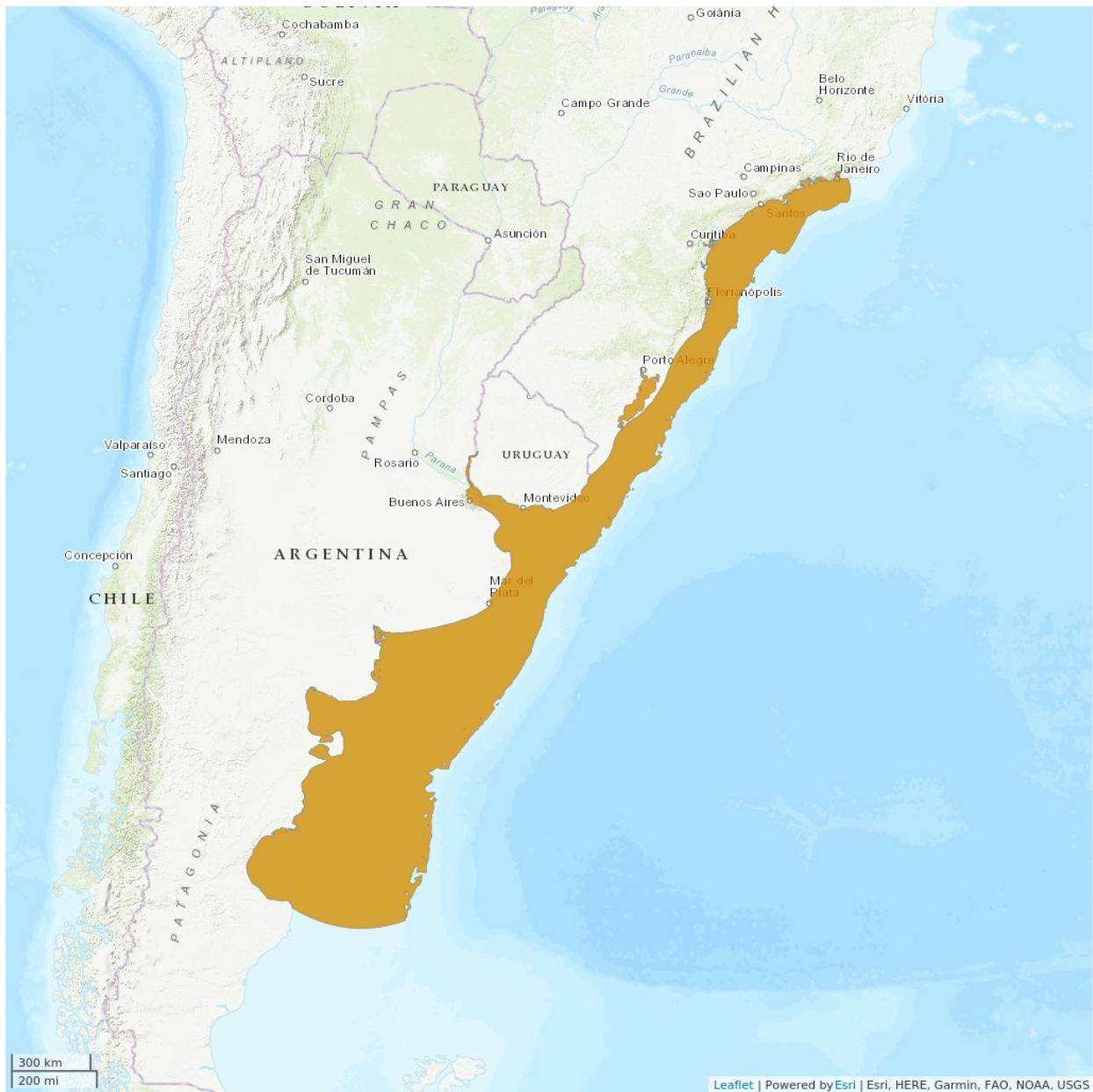
Country Occurrence:

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

FAO Marine Fishing Areas:

Native: Atlantic - southwest

Distribution Map

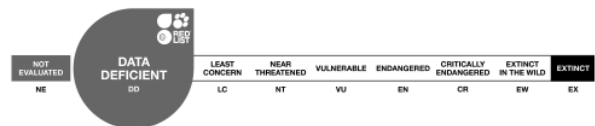


Legend

■ 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 2002). *Paralichthys isosceles* and *P. patagonicus* are sympatric, but *P. patagonicus* has a higher abundance than *P. isosceles* (J.M. Díaz de Astarloa pers. comm. 2019). It is captured and landed with other *Paralichthys* species, and catches are very low when compared to *P. orbignyanus* and *P. patagonicus*, so there are limited species-specific landings data available (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: In Mar del Plata harbor, where 87% of total flatfish captures are landed in Argentina, *P. isosceles* represents 2.4%-2.6% of the total amount of fish sold (Fabr e and D az de Astarloa 2001). 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 (Rodr guez and Riestra 2019).

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

This demersal species occurs on muddy and sandy bottoms where it feeds on fish, cephalopods and crustaceans. It attains a maximum total length of 42 cm, with females generally being larger than males (Haimovici *et al.* 2008). Spawning occurs in spring and summer between October and March (Díaz de Astarloa 2002). Age at first maturity is 2.5 years and longevity is 7 years (Fabr e and Cousseau 1990). When applying an age at first reproduction of 2.5 years and longevity of 7 years, its estimated generation length is 4.75 years based on the following equation recommended by the IUCN Red List methods: Age at first reproduction + (Age at last reproduction – age at first reproduction)/2.

Systems: Marine

Use and Trade

This species is landed in commercial fisheries that target demersal fishes (D az de Astarloa 2002, Rico 2010, D az de Astarloa *et al.* 2018).

Threats (see Appendix for additional information)

Overfishing is a potential major threat.

Conservation Actions (see Appendix for additional information)

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

Credits

| | |
|--|---|
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| Reviewer(s): | Linardich, C. |
| Facilitator(s) and Compiler(s): | Linardich, C. & Fonseca, C. |
| Partner(s) and Institution(s): | Oceanario de Lisboa |

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Citation

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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 -> 9.4. 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 |

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 | | |

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>)

| |
|-----------------------------------|
| 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 |
|--|

| |
|---|
| 3. Monitoring -> 3.1. Population trends |
|---|

| |
|--|
| 3. Monitoring -> 3.2. Harvest level trends |
|--|

Additional Data Fields

| |
|---------------------|
| Distribution |
|---------------------|

| |
|----------------------------|
| Lower depth limit (m): 180 |
|----------------------------|

| |
|---------------------------|
| Upper depth limit (m): 50 |
|---------------------------|

| |
|-----------------------------|
| Habitats and Ecology |
|-----------------------------|

| |
|---------------------------------|
| Generation Length (years): 4.75 |
|---------------------------------|

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