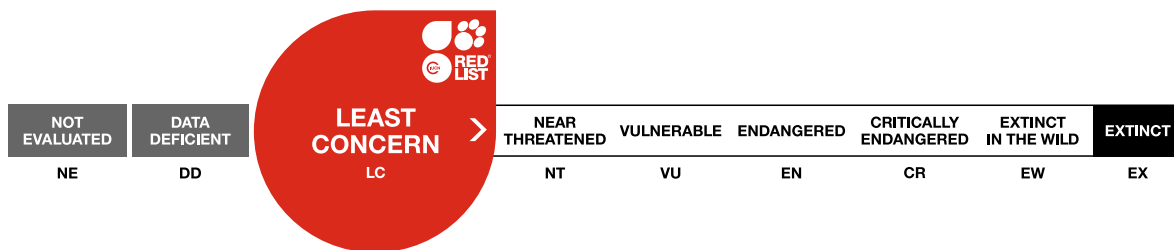


## *Cynoscion guatucupa*, Stripped Weakfish

Assessment by: Haimovici, M., Rico, R. & Ruarte, C.



View on [www.iucnredlist.org](http://www.iucnredlist.org)

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## Taxonomy

| Kingdom  | Phylum   | Class          | Order       | Family     |
|----------|----------|----------------|-------------|------------|
| Animalia | Chordata | Actinopterygii | Perciformes | Sciaenidae |

**Scientific Name:** *Cynoscion guatucupa* (Cuvier, 1830)

### Synonym(s):

- *Otolithus guatucupa* Cuvier, 1830

### Common Name(s):

- English: Stripped Weakfish
- Spanish; Castilian: Pescadilla, Pescadilla de Red
- Portuguese: Maria-mole, Pescada Maria Mole, Pescada-olhuda

### Taxonomic Source(s):

Eschmeyer, W.N. 2013. Catalog of Fishes. Available at: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>. (Accessed: 9 Sep 2013).

## Assessment Information

**Red List Category & Criteria:** Least Concern [ver 3.1](#)

**Year Published:** 2021

**Date Assessed:** September 4, 2019

### Justification:

This benthopelagic species inhabits the continental shelf and estuaries from southeastern Brazil to Argentina. It is an important commercial resource throughout its range. In Argentina and Uruguay, it is considered fully exploited and catches have been under the allowable limit since 2003. The most recent stock assessment for the Argentina-Uruguay common fishing zone, which was conducted in 2019, concluded it is not overfished. Research cruises carried out jointly by Argentina and Uruguay in 2019 indicate an increase in the estimated biomass of the species. Fishing effort has declined significantly due to conservation measures that included seasonal area fishing closures implemented in 2004 as well as reductions in targeted fishing by the coastal fleet for this species. There is evidence this species is likely overfished in Brazil, but uncertainty in the available data prevents an estimate of a percent decline. In the most recent decade, some conservation measures have been implemented to reduce fishing effort in Brazil, and this may have reduced the rate of decline. Population declines are not expected to have reached a Near Threatened or threatened level at this time; therefore, it is listed as Least Concern with a strong recommendation to improve fisheries monitoring and management where needed and continue conservation measures that regulate fishing effort.

## Geographic Range

### Range Description:

This species is distributed in the southwestern Atlantic from north of Rio de Janeiro, Brazil to north of San Matias Gulf, Argentina (Haimovici *et al.* 1989, Caille *et al.* 1997). The depth range is 5-194 metres.

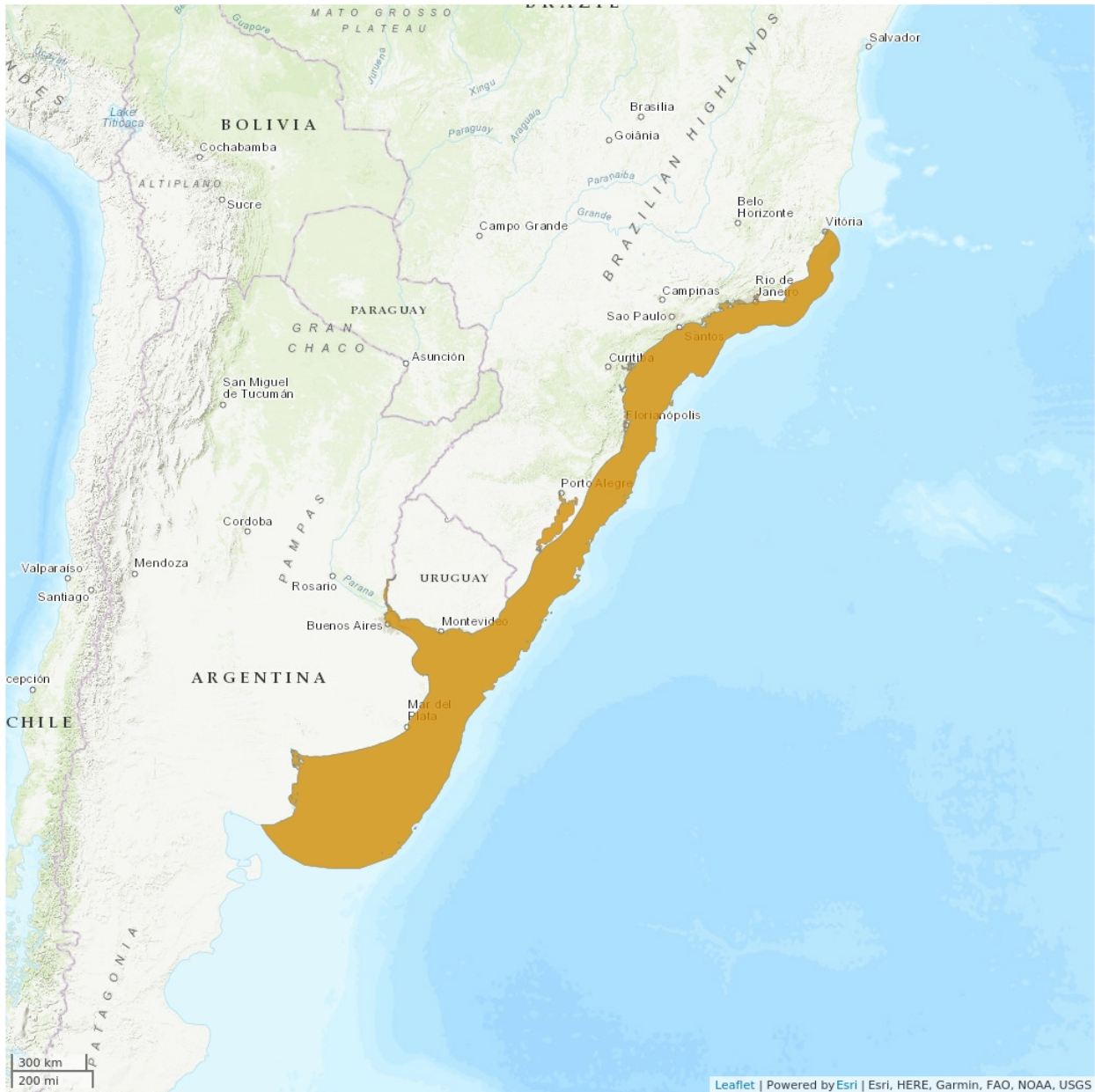
**Country Occurrence:**

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

**FAO Marine Fishing Areas:**

**Native:** Atlantic - southwest

# Distribution Map

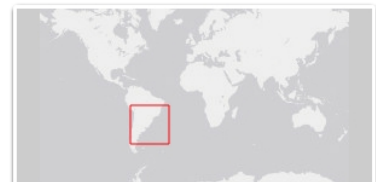


## Legend

■ 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 abundant in parts of its range (Ruarte and Aubone 2010). There is evidence of two separate stocks, with the larger of the two occurring south of Santa Marta Cape (29°S). This larger stock undertakes seasonal migrations between autumn and spring northward from the fishing grounds of Uruguay to Argentina to the coastal waters of Rio Grande do Sul, southern Brazil (Villcock de Miranda and Haimovici 2007). The second, smaller stock, which attains smaller sizes and ages and has a distinct metazoan parasite community, occurs off São Paulo and Rio de Janeiro (Vargas Boldrin 1980, Timi *et al.* 2005).

This is one of the most frequently landed species from northern Rio Grande do Sul, southern Brazil to Argentina (Haimovici and Cardoso 2017, Carozza *et al.* 2018). It has been fished by industrial fleets since the 1950s throughout its range. Total landings in the region were 5,000 t in the early 1970s, increased to a maximum of ca. 49,000 t in 1995 and decreased gradually to ca. 17,000 t in 2018 (M. Haimovici pers. comm. 2019). Landings in Sao Paulo from 2014-2018 declined from around 100 tons to less than 20 t (Statistics from Instituto de pesca SP <http://www.propesq.pesca.sp.gov.br/especie/148/show>). Fisheries landings and catch per unit effort (CPUE) data cannot be directly translated to abundance trends because they include vulnerabilities, biases, and market factors that influence fishing (M. Haimovici pers. comm. 2020). Landings of this species fluctuate widely (Ruarte *et al.* 2001, Vasconcellos *et al.* 2007) similar to other sciaenid species, especially the members of this genus. These fluctuations have been attributed to changes in the carrying capacity of the ecosystem, changes in the fishing effort, or both (Villcock de Miranda and Haimovici 2007). Interannual variability in environmental conditions strongly influences the recruitment success of this coastal species. In addition, fishing effort has declined in recent years since the fleet that traditionally had the greatest impact on the stock has switched to target other species, such as Patagonian shrimp (*Pleoticus muelleri*). For these reasons, landings data are not considered good indicators of abundance of this species (INIDEP Researchers pers. comm. 2020). Carozza (2012) classified this species according to its life history parameters based on criteria described by King and McFarlane (2003) as an intermediate strategist, meaning it can withstand unfavourable conditions, experience fluctuations in biomass caused by interannual changes in recruitment and can migrate in search of more favourable environmental conditions. An estimation of the Steepness (h) parameter of the stock-recruitment relationship based on life history of the species (Mangel *et al.* 2010) indicated this is a resilient species with high value of h (0.82) (Ruarte 2017). These characteristics combined with its adaptive trophic strategy cause this species to be adaptable and resilient.

**Brazil:** The species is not abundant in southeastern Brazil and is incidental catch in commercial fisheries targeting *Micropogonias furnieri*, *Macrodon atricauda*, and *Cynoscion jamaicensis*. Landings amount to a few hundred tonnes a year (M. Haimovici pers. comm 2019). Although, it is an important component of the bottom trawl and gillnet fisheries in southern Brazil (Haimovici and Cardoso 2016). Between 1976 and 2002 in Rio Grande do Sul, southern Brazil, landings, mean body sizes and ages clearly declined and total and fishing mortality increased, which suggests that the stock was overfished (Haimovici and Miranda 2005, Miranda and Haimovici 2007). Discards of small individuals of this species in the trawl fishery are high, ca. 30% (Haimovici and Perez Habiaga 1982, L. Cardoso and M. Haimovici pers. comm. 2019). Although it is considered to be overexploited, catch per unit effort (kg/day at sea) did not change substantially in recent years (Haimovici and Cardoso 2017). The species is overexploited in southern Brazil, although a quantitative estimate of the percent decline in Rio Grande do Sul, southern Brazil is

not available at this time (M. Haimovici pers. comm. 2020).

**Uruguay and Argentina:** With the foundation of Mar del Plata city in 1874 and the immigration of fishermen from Europe during these years, this was one of the first species targeted by the coastal fleet in Argentina (Ruarte *et al.* 2004). The coastal fishing fleet began targeting this species in Buenos Aires Province in the 1930s. Landings reached 5,197 t in 1936 and this level of catches was maintained until the 1970s. Catches increased sharply in 1979 with the typical natural fluctuations of the population of the species. The coastal fishing fleet operates in two main fishing areas: El Rincón (south of Buenos Aires Province including Bahía Blanca estuary) and north of Buenos Aires Province to waters shared with Uruguay (AUFMZ and adjacent waters) (Lasta *et al.* 2001, INIDEP Researchers pers. comm. 2020). Several fleets from different ports converge in the El Rincón area: the coastal fleet from Mar del Plata and Necochea ports, the artisanal fleet from Bahía Blanca and Monte Hermoso (Ruarte *et al.* 2015) and sport fishing in Bahía Anegada.

The artisanal fishery in the Bahía Blanca estuary collapsed between 2000 and 2004, partially as a result of heavy fishing pressure from the industrial fishing fleet operating in open waters around the estuary (Lopez-Cazorla *et al.* 2014). In Bahía Blanca estuary in Argentina, this species comprised the bulk of the catches by coastal fishing fleets (50% of the total annual catch in 1993). However, stock size and yield have undergone significant fluctuations to the extent that the proportion of the landings it comprised declined significantly in recent decades (Sardinia and Lopez-Cazorla 2005). For these reasons, the Federal Fisheries Council (CFP; <http://cfp.gob.ar/>) followed the recommendation of INIDEP researchers (Carozza *et al.* 2004) and implemented fishing seasonal area closures in 2004 (Acta CFP 53/2004). These measures were expanded to include more area and time since then (Actas CFP: 07/2005; 04/2009; 07/2009; 08/2009; 14/2009; 27/2009). Currently, a large area is closed to fishing for 6 months out of the year (CFP Resolution 2/10). As a result of this reduction in fishing effort, landings of this and other demersal species have declined significantly. Over the past decade, the average annual landings of this species were 2,000 tons. In addition, the fishing sector operating in Bahia Blanca decreased effort as the port strongly oriented its economy towards the development of petrochemical activity, which caused many fishing boats to leave.

CPUE estimates were recently improved by incorporating Fishing Vessel Positioning System (VMS) data (García and Martínez Puljak 2018), which provides potentially valuable information on the spatial and temporal patterns of trawling (Mills 2007). According to the most recent stock assessment conducted for the Argentina-Uruguay common fishing zone in June 2019, this species exceeded the biological points of reference in most of the scenarios, and is not considered to be overfished, but is fully exploited. Total catch has been less than the recommended total catch limit since 2003. Fishery independent scientific surveys carried out jointly by Argentina and Uruguay (coded EH-03/19) in November 2019, indicated an increase in the estimated biomass of this species (CTMFM 2019, INIDEP Researchers pers. comm. 2020).

**Current Population Trend:** Decreasing

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

This benthopelagic species occurs over the continental shelf and in estuary habitats (Jaureguizar 2006, Miranda and Haimovici 2007). Adults inhabit the inner shelf usually to 50 m depth, but may occur to 150 m in Rio Grande do Sul, southern Brazil. Juveniles are mostly zooplanktonic, while adults feed primarily

on benthic crustaceans and demersal and pelagic fish (Vieira 1990, Martins 2000). Availability of prey items can vary by type depending on interannual changes in environmental conditions. This species adapts to these changes in prey abundance by having a flexible diet. For example, when the abundance of pelagic fish is diminished in the El Rincón area, this species preys on small crustaceans (García 2007) and migrates into coastal lagoons to forage on amphipods and isopods during their peak abundance (Blasina *et al.* 2015). Similar seasonal changes in food consumption have previously been reported for this species in the Bahía Blanca estuary (Lopez-Cazorla 1996) and in coastal southern Brazil (Lucena *et al.* 2000). This flexible and opportunistic feeding behavior contributes to sustain its population.

The outer La Plata River estuary and Bahía Blanca in Argentina are important nursery grounds (Jaureguizar *et al.* 2006). Spawning occurs throughout its range from Bahía Blanca (41°S) to Rio Grande do Sul, southern Brazil (30°S), with peaks in spring and early autumn (Cassia 1986, Vieira and Haimovici 1997). The large amount of spawning area and spawning period contributes to higher reproductive potential and increased spawning success. These characteristics may influence the possibility of colonizing new areas and eventually the development of more abundant populations (Militelli *et al.* 2013). Adults undertake seasonal migrations between autumn and spring (April-September) moving northward from Uruguay and Argentina to the coastal waters of Rio Grande do Sul, southern Brazil and returning southward in summer (Miranda and Haimovici 2007). In Rio Grande do Sul, southern Brazil, small juveniles recruit in spring and summer to coastal waters less than 25 m depth and move to deeper waters (25-50 m) when they attain about 10 cm total length in autumn. They remain in deeper waters for the next 1-2 years before joining the adult stock seasonal migrations (Haimovici *et al.* 1997). This species can attain 50-65 cm length (Vieira and Haimovici 1993).

In Argentina and Brazil, this is a relatively slow-growing species that matures around 3 years and 27-35 cm length (Cordo 1986, Cassia 1986, Vieira and Haimovici 1997, Militelli and Macchi 2006, Militelli *et al.* 2013). Oldest aged individuals were 9 years in Rio de Janeiro, southeastern Brazil (Vargas-Bolderini 1980), 15 years in Rio Grande do Sul, southern Brazil (Vieira and Haimovici 1993), 18 years in northern Argentina (Cassia 1978) and 23 years in Bahía Blanca (Lopez-Cazorla 2000). Intense fishing pressure led to increased growth and lower maximum ages (Miranda and Haimovici 2007, Ruarte and Perrotta 2007). Natural mortality is estimated as 0.20-0.25 in Brazil (Miranda and Haimovici 2007) and 0.3 in Argentina and Uruguay (CTMFM 2019). When applying the equation recommended by the IUCN Red List methods:  $1/\text{adult mortality} + \text{age of first reproduction}$ , the generation length is about 6-8 years. When applying an age at first reproduction of 3 years and longevity of 23 years, its estimated generation length is 13 years based on the following equation:  $\text{Age at first reproduction} + (\text{Age at last reproduction} - \text{age at first reproduction})/2$ . For the purposes of this assessment, the generation length estimate applying natural mortality is considered to be of higher accuracy.

**Systems:** Marine

## Use and Trade

This species is taken in commercial bottom trawl, otter trawl and gill net fisheries and is the second most-fished demersal coastal species in the region (Ruarte *et al.* 2004, Miranda and Haimovici 2007, Haimovici and Cardoso 2017). In Argentina, it is one of the most important fishing resources for coastal communities, for both industrial and artisanal fleets and sport fishing. It is part of a multi-species demersal fishery in Argentina known as the 'coastal fish assemblage' (Carozza *et al.* 2001).

## Threats (see Appendix for additional information)

Overexploitation is a major threat to this species in Brazil. Fishing caused declines in Uruguay and Argentina in the past, but conservation measures have since been implemented that appear to have effectively reduced fishing effort below harmful levels. Given this species has an early maturation and high fecundity, it is expected the population would recover given the reduction of fishing pressure (M. Haimovici pers. comm. 2020). It is dependent on estuaries, especially during early life history stages, so it may also be impacted by anthropogenic activities that frequently cause pollution and habitat degradation within these systems (Lanfranchi *et al.* 2006, Jaureguizar *et al.* 2006, Carozza *et al.* 2018).

## Conservation Actions (see Appendix for additional information)

**Argentina and Uruguay:** Stock assessments and scientific surveys are conducted regularly for Argentina and Uruguay. Conservation measures used to manage fishing include the following: total allowable catch limit for the north of 39 °S area, minimum landing size of 30 cm total length (CTMFM Resolution N° 5/1999) and seasonal fishing area closure. Other measures implemented to protect other coastal, demersal species also contribute to controlling fishing effort for this species. The regulations intended to protect *Pogonias courbina* are especially relevant: fishing closure in spawning grounds during spawning season from November to March (Resolution CARP-CTMFM N° 1/2004), limitation of the entry of vessels larger than 21.9 m length to the Samborombón Bay for the protection of whitemouth croaker (Resolution CARP 3/1998), prohibition of bottom trawling vessels larger than 28 m in length in the AUFCZ (CTMFM Resolution No. 10/2000), annual fishing closure area between November and February (CTMFM Resolution 10/2011), multi-species reproductive closure area and area of fishing effort restriction (CFP Resolution 2/10), net mesh size in river and sea waters of Buenos Aires provincial jurisdiction may not be less than 120 mm (Provision N°008/96 Buenos Aires Province) and the prohibition of bottom trawling within three miles of the coast of Buenos Aires Province for the purposes of environmental protection. Between 2000 and 2006, there was a closed area in spring-summer off the Uruguayan coast for the protection of juveniles of this species. Currently, there is an additional area closed to fishing between October and March yearly in front of San Antonio Cape (Buenos Aires Coast) (CTMFM Resolution 10/2011). These measures have resulted in fishing effort reductions. Improvements in collection of fishing effort data as well as biological parameters are needed to improve stock assessment modeling (Carozza *et al.* 2018).

**Brazil:** In Brazil, all types of motorized bottom trawl fishing were banned up to 12 nautical miles off the coast along 623 km of Rio Grande do Sul by a law implemented in 2018. This law is expected to reduce the catch and discard of young individuals of this species as well as other commercial demersal fishes in the region. Conservation measures that include spatial fishing closures, possibly seasonal closures and limitations on effort are highly recommended for Brazil, as well as improving collection of catch data, encouraging stakeholder forums and funding enforcement of fishing regulation compliance (Cardoso *et al.* 2019).

## Credits

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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               |
| 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      | 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   | Minority (50%)  | Slow, significant declines | Low impact: 5 declines |
|  | 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 -> 1.1. Ecosystem conversion<br>1. Ecosystem stresses -> 1.2. Ecosystem degradation |                            |                        |
| 9. Pollution -> 9.3. Agricultural & forestry effluents -> 9.3.1. Nutrient loads  | Ongoing   | Unknown   | Unknown                    | Unknown                |
|  | Stresses: | 1. Ecosystem stresses -> 1.1. Ecosystem conversion<br>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 research and monitoring  |
| Systematic monitoring scheme: Yes |

|                                     |
|-------------------------------------|
| <b>Conservation Action in Place</b> |
| In-place species management         |
| Harvest management plan: Yes        |

## Conservation Actions Needed

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

|   |
|---|
| <b>Conservation Action Needed</b>   |
| 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>)

|  |
|--|
| <b>Research Needed</b>                                     |
| 1. Research -> 1.2. Population size, distribution & trends |
| 3. Monitoring -> 3.1. Population trends                    |

## Additional Data Fields

|                                |
|--------------------------------|
| <b>Distribution</b>            |
| Lower depth limit (m): 194     |
| Upper depth limit (m): 5       |
| <b>Habitats and Ecology</b>    |
| Generation Length (years): 6-8 |

## 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](#).

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