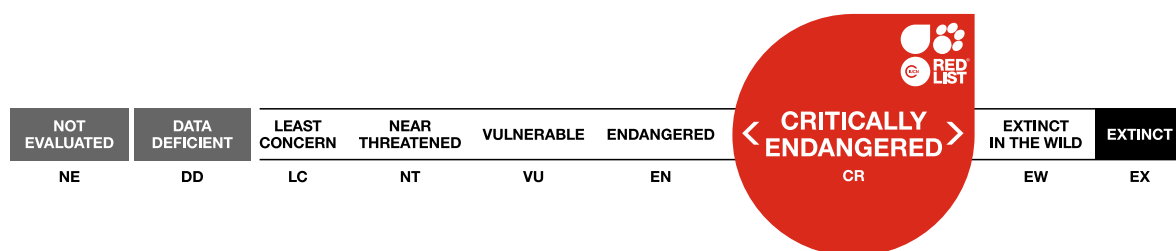


Isogomphodon oxyrhynchus, Daggernose Shark

Assessment by: Pollom, R., Charvet, P., Faria, V., Herman, K., Lasso-Alcalá, O., Marcante, F., Nunes, J., Rincon, G. & Kyne, P.M.



View on www.iucnredlist.org

Citation: Pollom, R., Charvet, P., Faria, V., Herman, K., Lasso-Alcalá, O., Marcante, F., Nunes, J., Rincon, G. & Kyne, P.M. 2020. *Isogomphodon oxyrhynchus*. The IUCN Red List of Threatened Species 2020: e.T60218A3094144. <https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T60218A3094144.en>

Copyright: © 2020 International Union for Conservation of Nature and Natural Resources

Reproduction of this publication for educational or other non-commercial purposes is authorized without prior written permission from the copyright holder provided the source is fully acknowledged.

Reproduction of this publication for resale, reposting or other commercial purposes is prohibited without prior written permission from the copyright holder. For further details see [Terms of Use](#).

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](#).

If you see any errors or have any questions or suggestions on what is shown in this document, please provide us with [feedback](#) so that we can correct or extend the information provided.

Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Chondrichthyes	Carcharhiniformes	Carcharhinidae

Scientific Name: *Isogomphodon oxyrinchus* (Müller & Henle, 1839)

Synonym(s):

- *Carcharias oxyrinchus* Müller & Henle, 1839

Common Name(s):

- English: Daggernose Shark
- Portuguese: Cacao Pato, Tubarão Quati

Taxonomic Source(s):

Fricke, R., Eschmeyer, W.N. and Van der Laan, R. (eds). 2020. Eschmeyer's Catalog of Fishes: genera, species, references. Updated 14 September 2020. Available at: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>.

Assessment Information

Red List Category & Criteria: Critically Endangered A2bcd [ver 3.1](#)

Year Published: 2020

Date Assessed: July 1, 2019

Justification:

The Daggernose Shark (*Isogomphodon oxyrinchus*) is a medium-sized (to 160 cm total length) shark that occurs in the Western Central and Southwest Atlantic from Trinidad and Tobago and eastern Venezuela to Maranhão State, Brazil. It inhabits inshore waters in turbid estuaries, river mouths, and shallow banks at depths of 4–40 m. This species is targeted, along with other sharks, and/or caught as bycatch in intense and largely unregulated artisanal and commercial gillnet and trawl fisheries. Gillnet and trawl fishing effort is intense across much of coastal Atlantic South America with general patterns of decline and sequential overfishing. In northwest Brazil, the decline of this species is well-documented, with the species commonly landed in the 1980s and subsequently becoming increasingly rare to the point where single records are noteworthy. There are very few recent records, with most recent record a neonate captured in 2016. Demographic analysis revealed a population decline of 18.4% per year between 1992 and 2002, equivalent to a >99% population reduction over three generations. Overall, due to the intense and unmanaged fishing pressure that this species is exposed to, its slow life history characteristics that make it particularly sensitive to overfishing, inferred and estimated declines, the paucity of recent records, and ongoing habitat degradation, it is inferred that the Daggernose Shark has undergone a population reduction of >80% over the past three generations (27 years), and it is assessed as Critically Endangered A2bcd.

Previously Published Red List Assessments

2006 – Critically Endangered (CR)

Geographic Range

Range Description:

The Daggernose Shark occurs in the Western Central and Southwest Atlantic from Trinidad and Tobago and eastern Venezuela to Maranhão State, Brazil (Lessa *et al.* 2016).

Country Occurrence:

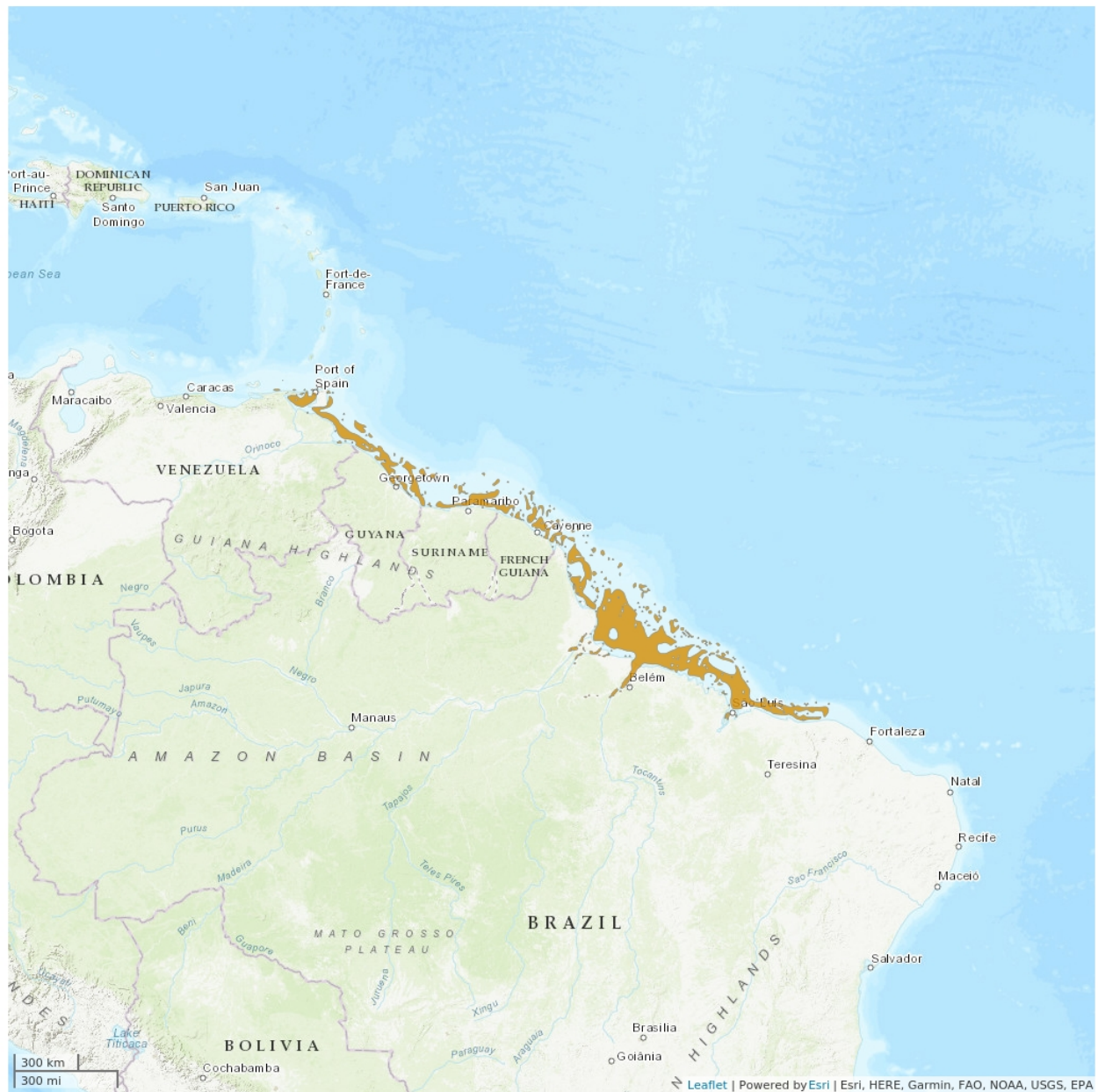
Native, Extant (resident): Brazil; French Guiana; Guyana; Suriname; Trinidad and Tobago; Venezuela, Bolivarian Republic of

FAO Marine Fishing Areas:

Native: Atlantic - southwest

Native: Atlantic - western central

Distribution Map

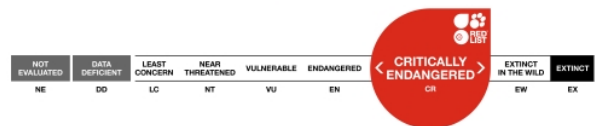


Legend

■ 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.

Population

In Trinidad and Tobago, annual shark landings between 1972 and 1993 were variable but showed a general pattern of decline over time (Shing 1994), which is suspected to have continued to the present day. In eastern Venezuela, landings are typically not recorded to species level but artisanal fisheries are intense and it is suspected that declines have occurred there; the situation is suspected to be similar in the Guianas. In northwestern Brazil, the decline of this species is well-documented, with the species having been commonly encountered in landings in the 1980s and becoming increasingly rare up to the present (Lessa *et al.* 2016). Although the species is still present there (a neonate was captured in late 2016) (Feitosa *et al.* 2019), the rarity of recent records leads to inference of a drastic population reduction. Furthermore, demographic analysis revealed that between 1992 and 2002 the population decreased at an average rate of 18.4% per year (Santana and Lessa 2002), which is equivalent to a >99% population reduction if scaled over three generations. Overall, due to the intense and unmanaged fishing pressure that this species is exposed to, its slow life history characteristics that make it particularly susceptible to overfishing, the observed ongoing declines in landings since the 1980s, the rarity of recent records, and ongoing habitat degradation and loss, it is inferred that the Daggernose Shark has undergone a population reduction of >80% over the past three generations (27 years).

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

The Daggernose Shark inhabits inshore waters in turbid estuaries, river mouths, and shallow banks at depths of 4–40 m (Ebert *et al.* 2013), and has also been recently recorded in freshwater (Feitosa *et al.* 2019). It reaches a maximum size of 160 cm total length (TL); females mature at 115 cm TL (6–7 years old) and males at 103 cm TL (5–6 years old) (Lessa *et al.* 2000). Reproduction is placental viviparous, and females give birth to 3–8 pups that are 43 cm TL at birth (Lessa *et al.* 2000, Ebert *et al.* 2013). Young are born at the beginning of the rainy season after a one-year gestation, and females are thought to exhibit a two-year reproductive cycle (Lessa *et al.* 2000). Maximum age is at least 12 years (Lessa *et al.* 2000), and generation length is estimated to be 9 years. This shark migrates offshore during the rainy season and inshore during the dry season (Ebert *et al.* 2013).

Systems: Freshwater (=Inland waters), Marine

Use and Trade

This species' fins and meat are not of high quality, and therefore the meat is only likely to be consumed for subsistence or sold locally in most places.

Threats (see Appendix for additional information)

The Daggernose Shark is targeted along with other sharks, and/or caught as bycatch in artisanal and commercial gillnet and trawl fisheries. Artisanal fisheries are intense across much of coastal Atlantic South America, and gillnets are a primary gear in most areas. In Trinidad and Tobago, artisanal gillnet fisheries are intense and have been in operation since at least the 1960s, and there were around 400 vessels operating in the early 1990s; the government there led an initiative with the help of the UN Food and Agricultural Organization (FAO) to develop the shark fishery in 1983 (Shing 1994). In Venezuela, commercial and artisanal fisheries are intense, they lack management, and have exhibited peaks in

catches followed by declines, indicative of sequential overfishing (Mendoza 2015). There are no data from the Guianas but artisanal fisheries are widespread and suspected to be intense. Groundfish fisheries on the Brazil-Guianas shelf were already fully over-exploited by 2000; these fisheries are multi-gear, multi-species, and multinational, with vessels crossing national maritime borders (Booth *et al.* 2001). Despite some areal closures and the implementation of a total allowable catch of target species, there is now a diminished effort and number of vessels in operation there (Diop *et al.* 2015). In northwestern Brazil, artisanal fisheries pressure is high and 44% of target stocks were likely to be overfished by the end of the 2000s (Vasconcellos *et al.* 2011). The combination of intense and unmanaged artisanal and commercial fishing in that area has led to the disappearance of several elasmobranch species in the region, including this species and the Largetooth Sawfish (*Pristis pristis*) (Lessa *et al.* 2016, Reis-Filho *et al.* 2016). Demographic analysis indicates that this shark has an extremely low resilience to fishing pressure. The decline of this species is well-documented in northwestern Brazil, with the species having been commonly encountered in landings in the 1980s and becoming increasingly rare up to the present. Furthermore, this shark faces threats to its habitat including mangrove deforestation for aquaculture and coastal development and pollution from the increasing human population in the region (Magris and Barreto 2015).

Conservation Actions (see Appendix for additional information)

In Brazil, this shark has been protected on paper since it was assessed nationally as 'threatened' 2004 (IN 05 of 21/5/2004 (MMA/SEAP). It is now listed in the Brazilian Ordinance of Ministry of the Environment No. 445, which restricts all harvest and trade of species listed as Endangered or Critically Endangered on the Brazilian National Red List (Feitosa *et al.* 2018). The newer legislation came into force in December 2014, however, it was suspended for all of 2015 and the first half of 2016 due to pressure from the fishing industry (Begossi *et al.* 2017). The ordinance faces ongoing and increasing industry pressure, including a current 2019 court challenge to suspend the legislation again, by the Secretaria Nacional de Aquicultura e Pesca (SAP), who brought forward their contention that the Brazilian National Red List was designed specifically for terrestrial species (Spautz 2019). There are no known protections or conservation measures in place for the Daggenose Shark in any of its other range states. To conserve the 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 distribution, population size and trends, and use and trade, and species-specific monitoring should be undertaken in commercial and artisanal fisheries.

Credits

Assessor(s): Pollom, R., Charvet, P., Faria, V., Herman, K., Lasso-Alcalá, O., Marcante, F., Nunes, J., Rincon, G. & Kyne, P.M.

Reviewer(s): Lessa, R. & Dulvy, N.K.

Contributor(s): Lessa, R. & Almeida, Z.

Facilitator(s) and Compiler(s): Kyne, P.M., Pollom, R., Charvet, P. & Dulvy, N.K.

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

Bibliography

Begossi, A., Salivonchik, S., Hallwass, G., Hanazaki, N., Lopes, P.F. and Silvano, R.A. 2017. Threatened fish and fishers along the Brazilian Atlantic Forest Coast. *Ambio* 46(8): 907–914.

Booth, A., Charuau, A., Cochrane, K., Die, D., Hackett, A., Lárez, A., Maison, D., Marcano, L.A., Phillips, T., Soomai, S., Souza, R., Wiggins, S., and Ijsspol, M. 2001. Regional Assessment of the Brazil-Guianas Groundfish Fisheries. Regional reviews and national management reports. Fourth Workshop on the Assessment and Management of Shrimp and Groundfish Fisheries on the Brazil-Guianas Shelf. Cumaná, Venezuela, 2-12 October, 2000. 152 pp.

Diop, B., Sanz, N., Duplan, Y.J. Jr., Guene, E.M., Blanchard, F., Doyen, L. and Pereau, J.-C. 2015. Global warming and the collapse of the French Guiana shrimp fishery. Working Document 2015-1. Université des Antilles, Schœlcher, Martinique.

Ebert, D.A., Fowler, S. and Compagno, L. 2013. *Sharks of the World*. Wild Nature Press, Plymouth.

Feitosa, L.M., Lessa, R.P.T., Martins, A.P.B., Barbieri, R. and Nunes, J.L.S. 2019. Daggernose Shark: an elusive species from Northern South America. *Fisheries* 44(3): 144–147.

Feitosa, L.M., Martins, A.P.B., Giarrizzo, T., Macedo, W., Monteiro, I.L., Gemaque, R., Silva Nunes, J.L., Gomes, F., Schneider, H., Sampaio, I., Souza, R., Sales, J.B., Rodrigues-Filho, L.F., Tchaicka, L. and Carvalho-Costa, L.F. 2018. DNA-based identification reveals illegal trade of threatened shark species in a global elasmobranch conservation hotspot. *Scientific Reports* 8(1): 3347.

IUCN. 2020. The IUCN Red List of Threatened Species. Version 2020-3. Available at: www.iucnredlist.org. (Accessed: 10 December 2020).

Lessa, R., Batista, V.S. and Santana, F.M. 2016. Close to extinction? The collapse of the endemic daggernose shark (*Isogomphodon oxyrinchus*) off Brazil. *Global Ecology and Conservation* 7: 70–81.

Lessa, R.P.T., Moro, G., Charvet, P. and Santana, F.M. 2018. *Isogomphodon oxyrinchus*. In *Livro Vermelho da Fauna Brasileira Ameaçada de Extinção*, pp. 957–959. Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio), Brasília, Brazil.

Lessa, R., Santana, F.M., Batista, V. and Almeida, Z. 2000. Age and growth of the daggernose shark *Isogomphodon oxyrinchus* from northern Brazil. *Marine and Freshwater Research* 51:339–347.

Magris, R.A. and Barreto, R. 2010. Mapping and assessment of protection of mangrove habitats in Brazil. *Pan-American Journal of Aquatic Sciences* 5(4): 546-556.

Mendoza, J.J. 2015. Rise and fall of Venezuelan industrial and artisanal marine fisheries: 1950-2010. In: #2015 - 27 (ed.), Working Paper Series. The University of British Columbia Fisheries Centre, Vancouver, Canada.

Reis-Filho, J.A., Freitas, R.H., Loiola, M., Leite, L., Soeiro, G., Oliveira, H.H., Sampaio, C.L., José de Anchieta, C.C. and Leduc, A.O. 2016. Traditional fisher perceptions on the regional disappearance of the Largetooth Sawfish *Pristis pristis* from the central coast of Brazil. *Endangered Species Research* 29(3): 189–200.

Santana, F.M. and Lessa, R. 2002. Análise demográfica do cação-quati, *Isogomphodon oxyrinchus* na região norte do Brasil. *III Reunião da Sociedade Brasileira para o Estudo de Elasmobrânquios* 3: 90–91.

Shing, C.C.A. 1994. Sharks: Overview of the Fisheries in Trinidad and Tobago. 47th Meeting of the Gulf and Caribbean Fisheries Institute 47: 318–336. Isla Margarita, Venezuela.

Spautz, D. 2019. Secretaria Nacional de Pesca pede para suspender lista de peixes ameaçados de extinção. NSC Total News, Florianópolis, Brazil. Available at: <https://www.nsctotal.com.br/colunistas/dagmara-spautz/secretaria-nacional-de-pesca-pede-para-suspender-lista-de-peixes>. (Accessed: 14 June 2019).

Vasconcellos, M., Diegues, A.C. and Kalikoski, D.C. 2011. Coastal Fisheries of Brazil. In: Salas, R. Chuenpagdee, A. Charles and J.C. Seijo (eds), *Coastal fisheries of Latin America and the Caribbean*, pp. 73-116. FAO, Rome.

Citation

Pollom, R., Charvet, P., Faria, V., Herman, K., Lasso-Alcalá, O., Marcante, F., Nunes, J., Rincon, G. & Kyne, P.M. 2020. *Isogomphodon oxyrhynchus*. *The IUCN Red List of Threatened Species* 2020: e.T60218A3094144. <https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T60218A3094144.en>

Disclaimer

To make use of this information, please check the [Terms of Use](#).

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 -> 9.1. Marine Neritic - Pelagic	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 -> 5.4.1. 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

(<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: Yes, over part of range
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: Yes
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>)

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

Research Needed
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): 40
Upper depth limit (m): 4
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](#).