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Pontoporia blainvillei, Franciscana

Errata version

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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Cetartiodactyla	Pontoporiidae

Taxon Name: *Pontoporia blainvillei* (Gervais & d'Orbigny, 1844)

Infra-specific Taxa Assessed:

- *Pontoporia blainvillei* (Rio Grande do Sul/Uruguay subpopulation)

Common Name(s):

- Spanish: Franciscana, Delfín de La Plata, Tonina
- English: La Plata River Dolphin
- French: Dauphin de La Plata

Taxonomic Notes:

This species was listed in the 1996-2002 IUCN Red Lists under the family Platanistidae. It is now most commonly assigned to the family Pontoporiidae, and at least sometimes in the superfamily Inioidea (Muizon *et al*. 2017).

Assessment Information

Red List Category & Criteria: Vulnerable A3d ver 3.1

Year Published: 2017

Date Assessed: August 14, 2017

Justification:

The Franciscana qualifies as Vulnerable under Red List criterion A3d because a projected range-wide decline of more than 30% over three generations (36 years, Taylor *et al*. 2007) is suspected based on the results of a population simulation analysis (Secchi 2006) using actual and potential levels of mortality in gillnet fisheries (with bycatch defined as exploitation for purposes of applying the criteria, i.e. causal factor "(d)" for criterion A). The rate of decline is probably underestimated because a period of only 25 years was considered and other sources of non-natural mortality, including other fisheries, were not incorporated into the analysis. The causes of the suspected population decline have not ceased. On the contrary, fishing effort has increased, at least in some areas in Brazil. In 2012, the Brazilian Government established regulations for gillnet fisheries that included maximum allowable net lengths and several categories of no-fishing areas. However, there is evidence that the level of Franciscana mortality in southern and southeastern Brazil remains high. The numbers of Franciscanas killed in Brazil in gillnets and found washed ashore each year remains in the order of several hundred which is not different from the numbers observed in years that preceded the regulations (e.g., Prado *et al.* 2013, 2016; Cremer *et al.* 2016, E.R. Secchi, unpubl. data). The bycatch is also high in Uruguay and Argentina, where estimates of annual mortality are a few hundred Franciscanas (Capozzo *et al.* 2007, Negri *et al.* 2012, Szephegyi *et al.* 2015).

Previously Published Red List Assessments

2012 – Vulnerable (VU)
http://dx.doi.org/10.2305/IUCN.UK.2012.RLTS.T17978A17623386.en

2008 – Vulnerable (VU)

1996 – Data Deficient (DD)

1994 – Insufficiently Known (K)

1990 – Insufficiently Known (K)

1988 – Insufficiently Known (K)

Geographic Range

Range Description:

Franciscanas inhabit shallow coastal waters (and they sporadically enter the estuary of the La Plata River [Rio de la Plata]) of subtropical and temperate regions of the western South Atlantic Ocean (Crespo 2009, Secchi 2014). They are found only along the east coast of South America (Brazil, Uruguay, and Argentina), from the northern Golfo San Matias, central Argentina (*ca* 42°10'S), to Espírito Santo, southeastern Brazil (18°25'S) (Siciliano 1994, Crespo *et al*. 1998). The species is not distributed continuously throughout its range. Surveys (including beach and aerial surveys, museum specimens, interviews with local people) indicate that Franciscanas are extremely rare or absent in two northern areas: (1) between central and southern Rio de Janeiro State comprising nearly 300 km of coastline and (2) in southern Espírito Santo State comprising approximately 150 km of coastline (Azevedo *et al*. 2002, Siciliano *et al*. 2002, Secchi *et al*. 2003a, Danilewicz *et al.* 2012). The reasons for these gaps are unclear, but the species' preference for shallow and productive waters (Brownell 1989, Pinedo *et al*. 1989, Danilewicz *et al.* 2009) suggests that depth and the narrowness of the continental shelf influence habitat selection (Siciliano *et al*. 2002).

Country Occurrence:

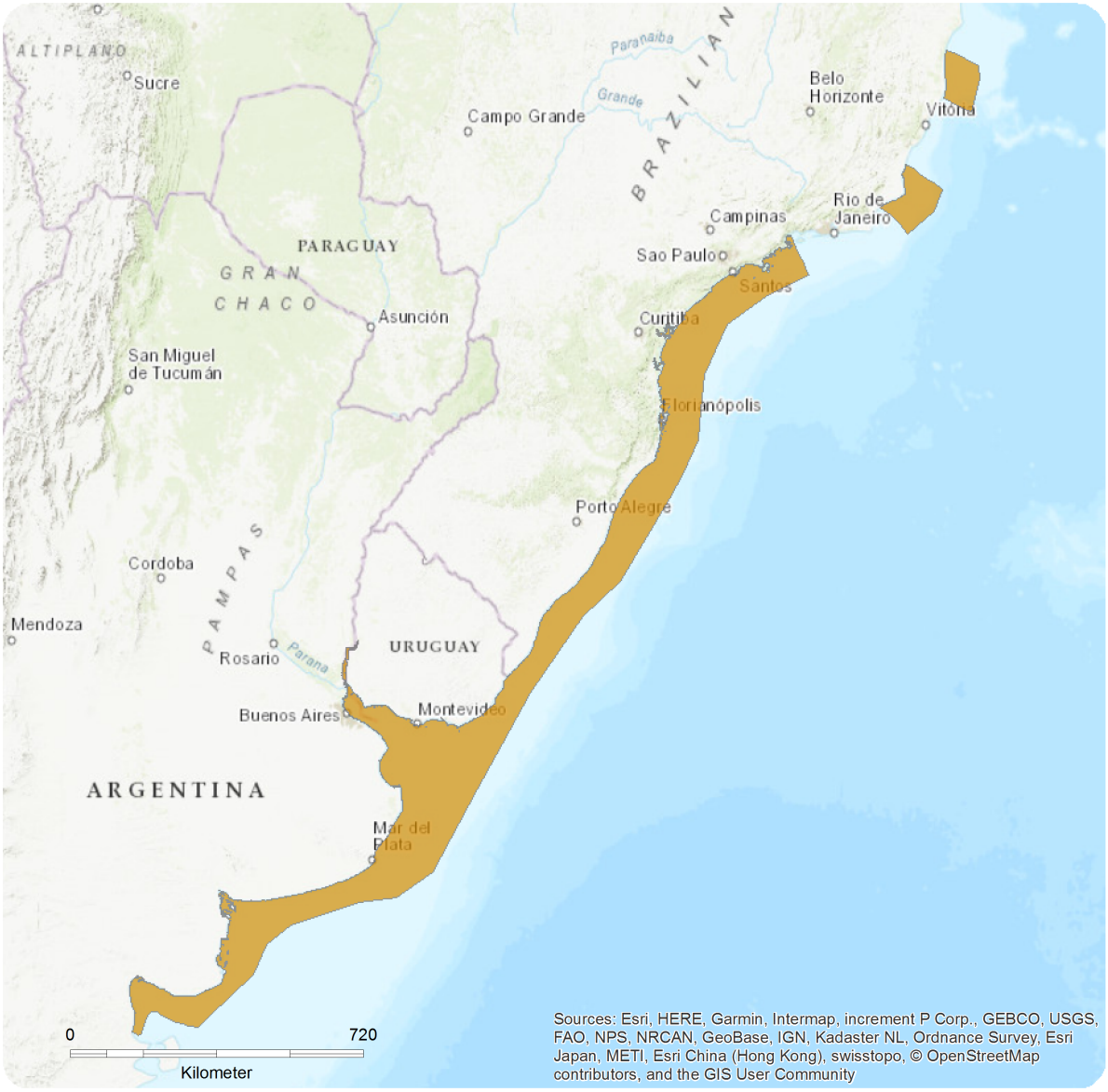
Native: Argentina (Buenos Aires, Chubut, Rio Negro); Brazil (Espírito Santo, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo); Uruguay

FAO Marine Fishing Areas:

Native: Atlantic - southwest

Distribution Map

Pontoporia blainvillei

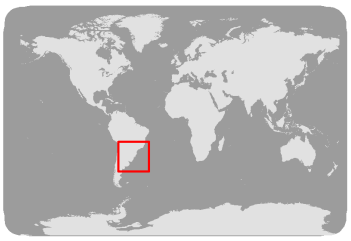


Range

Extant (resident)

Compiled by:

IUCN SSC Cetacean Specialist Group



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

http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T17978A50371075.en

Population

Based on genetic, morphological, distribution, and population parameters, Secchi *et al*. (2003a) proposed four provisional management units (Franciscana Management Areas, or FMAs) with the following ranges: FMA I - coastal waters of Espírito Santo (ES) and Rio de Janeiro (RJ) States, Brazil; FMA II - São Paulo (SP), Paraná (PR), and Santa Catarina (SC) States, Brazil; FMA III - coastal waters of Rio Grande do Sul (RS) State, southern Brazil, and Uruguay; and FMA IV - coastal waters of Argentina, including the provinces of Buenos Aires and Rio Negro (only occasional in as far south as Chubut).

Since the study of Secchi *et al*. (2003a), new genetic and morphological data have indicated the potential for subpopulation structure throughout the range of the Franciscana (Lázaro *et al*. 2004; Mendez *et al*. 2008, 2010; Véras 2011; Barbato *et al*. 2012; Costa-Urrutia *et al*. 2012; Cunha *et al*. 2014; Negri *et al*. 2015; Gariboldi *et al*. 2015; Ott *et al*. 2015), leading to the development of new sub-divisions within each FMA (Cunha *et al*. 2014). However, because (1) the degree of differentiation within the various FMAs was highly variable, (2) some studies were based only on mitochondrial DNA data, and (3) there is currently no consensus on threshold levels of gene flow above which management units should be adopted, recent refinements in Franciscana subpopulation structure were limited to regions where the greatest levels of genetic difference were observed (Anonymous 2015). In this sense, FMA I was considered an Evolutionarily Significant Unit and split into two distinct management units (FMA Ia and FMA Ib, Cunha *et al*. 2014), a division also supported by well-known gaps in the distribution of the species, one between SP and RJ and another in ES (Siciliano *et al*. 2002, Danilewicz *et al*. 2012). In addition, the boundary between FMA II and FMA III was moved about 250 km to the north and currently lies at the central coast of SC State (Ott, 2002, Véras 2011, Cunha *et al*. 2014, Ott *et al*. 2015).

There is no range-wide abundance estimate for the species, but estimates have been calculated for a portion or the whole of individual FMAs.

• Danilewicz *et al*. (2012) conducted aerial surveys in ES (FMA Ia) and RJ (FMA Ib) in 2011. No on-effort sightings were recorded in FMA Ia, despite relatively large survey effort, suggesting that the population of Franciscanas in ES is small, a hypothesis further supported by the very low genetic diversity of this stock (Cunha *et al*. 2014). Abundance of Franciscanas in FMA Ib was estimated at nearly 2,000 individuals (coefficient of variation (CV) 0.46), indicating that this is the smallest and the one with the lowest density among all FMAs for which estimates are available.

• Abundance in FMA II was estimated at 8,500 individuals (CV 0.34) (Zerbini *et al*. 2010) in 2008/9. This estimate is considered to be biased low because habitat offshore of the 30 m isobath was not surveyed. Within FMA II, there are also abundance estimates for Baia da Babitonga (Babitonga Bay) in SC, where a possibly isolated population of Franciscanas occurs (Cremer *et al*. 2012). Boat-based line transect surveys estimated 50 animals in the early 2000s (CV 0.29, Cremer and Simões-Lopes 2008) and 55 individuals in 2011 (Zerbini *et al*. 2011), indicating no evidence for a change in the number of Franciscanas within Babitonga Bay over a 10-year period.

• Recent surveys in FMA III have been conducted only within the Brazilian portion (RS State) and the estimates were 6,800 (CV 0.32) in 2004 (Danilewicz *et al*. 2010) and nearly 10,000 dolphins (CV 0.20) in 2014 (D. Danilewicz *et al*., unpub. data). Because the survey methods and data analysis between these two estimates differed, it is not appropriate to conclude that the higher estimate in 2014 represents an increase in abundance in RS. Surveys to estimate Franciscana abundance have never been conducted in

Uruguay.

• Aerial surveys conducted in Argentina (FMA IV) in 2003-2004 estimated a population of nearly 15,000 individuals (CV 0.42, Crespo *et al*. 2010). This estimate is believed to be negatively biased because it was not corrected for perception bias and because density estimated for offshore areas (depths greater than 30 m) was not extrapolated to non-surveyed areas.

Population viability analysis using estimates of abundance, fisheries-related incidental mortality, and rates of population growth from the early 2000s suggested that levels of bycatch were not sustainable in all FMAs and that Franciscanas in FMAs II, III and IV would decline by at least 30% in 25 years (Secchi and Fletcher 2004, Secchi 2006). These analyses led to the previous Red List classification of the Franciscana as Vulnerable. The modelling exercise conducted by Secchi and Fletcher (2004) and Secchi (2006) is considered to underestimate the risk of decline of Franciscanas, because estimates of bycatch were believed to be biased low in some areas. In fact, most recent data on bycatch (see the *Threats* section below) indicate that the numbers caught annually in FMAs II and IV are roughly twice as high (e.g., Rosas *et al*. 2002, Bordino and Albareda 2004, IWC 2005) as the values used in the projections by Secchi (2006). Abundance estimates obtained from the mid 2000s to early 2010s suggest that bycatch levels are still unsustainable in FMAs Ib, II, and IV where the annual removals range from 3-6% of the estimated population sizes (Crespo *et al*. 2010, Zerbini *et al*. 2010, Danilewicz *et al*. 2012). There are no estimates of bycatch or abundance for Franciscanas in FMA Ia.

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

Although sometimes described as a 'river dolphin', the Franciscana does not occur in freshwater habitats. The species is generally found in turbid coastal waters, but also inhabits clear waters as well as marine areas associated with islands and rocky shores (Pinedo *et al*. 1989, Danilewicz *et al*. 2009). Franciscanas are found mainly in the marine environment and only occasionally in estuaries (Santos *et al*. 2009) and one inland bay (Cremer and Simões-Lopes 2008). They are relatively common in the Uruguayan part of the La Plata River estuary (Praderi 1986). Franciscanas are primarily coastal, inhabiting waters beyond the surf zone and out to the 30 or 50 m isobath, depending on the region. For example, in FMAs III and IV they occur in waters up to 50 m deep (Crespo *et al*. 2010, Danilewicz *et al*. 2010), while in FMAs I and II they appear to be restricted to waters inshore of the 25 or 30 m isobath. Franciscana density decreases with distance from the coast, although the rate and degree of the decrease vary according the width of the continental shelf (Crespo *et al*. 2010, D. Danilewicz, unpub. data).

Franciscanas apparently do not migrate, although seasonal inshore–offshore movements have been documented in some areas (Bordino *et al*. 1999, Bordino 2002). Movements of 70-90 km along the coastline have been recorded for satellite-tagged individuals in Argentina (Wells *et al*. 2013). Predation by both large sharks and Killer Whales (Orcinus orca) has been documented (Praderi 1985, Ott and Danilewicz 1996, Santos and Netto 2005).

Franciscanas feed on several species of shallow-water fish (e.g., sciaenids, engraulids, gadids, batrachoids, trichiurids and carangids), cephalopods, and crustaceans (Brownell 1989, Di Beneditto and Ramos 2001, Rodriguez *et al*. 2002, Danilewicz *et al*. 2002, Troina *et al*. 2016). Their coastal marine habitat is typically characterized by continental run-off with high discharge of high-nutrient river flows

(e.g., Patos Lagoon [Lagoa dos Patos] in RS and the La Plata River [Río de la Plata] in Argentina and Uruguay). Juvenile sciaenids, the most important prey of Franciscanas, are typically associated with continental runoff and the influence of subtropical shelf waters (Crespo 2009).

Systems: Marine

Threats (see Appendix for additional information)

The main threat to the species is incidental mortality in gillnet fisheries (there are no reports of direct exploitation of Franciscanas), which has been observed since at least the mid 1960s (Van Erp 1969). In the 1960s, the bycatch in Uruguay alone (at two villages) was as high as 1,500-2,000 animals (Brownell and Ness 1969, Pilleri 1971), but changes in the fisheries' target species resulted in a significant decrease in the bycatch in the 1980s (Crespo *et al.* 1986, Praderi 1997). Bycatch estimates in the early 2000s totaled at least 2,900 animals per year in all management stocks combined (e.g., Ott *et al*. 2002, Secchi *et al*. 2003b), but these numbers are thought to be underestimated to an unknown extent, primarily due to: (1) captures in other non-monitored types of fisheries (e.g., active gillnetting, Secchi *et al*. 1997; trawling, Szephegyi *et al.* 2015); (2) under-reporting of bycatch by fishermen; and (3) dolphins captured sometimes falling from the net during retrieval (Secchi *et al*. 2003b). Annual bycatch is believed to be higher in FMA III with estimates of 1,300 animals/year (Ott *et al*. 2002, Secchi *et al*. 2003b, 2004) and much higher in some years (Prado *et al.* 2013), followed by FMA IV: 500-800 individuals/year (Bordino and Albareda 2005), FMA II: > 700 /year (Rosas *et al*. 2002, IWC 2005), and FMA Ib: > 110/year (Di Beneditto 2003). These annual mortality estimates suggest that bycatch levels continue to be unsustainable (Danilewicz *et al.* 2009, 2012; Crespo *et al.* 2010, Zerbini *et al.* 2010, Prado *et al.* 2013).

Stomach contents of Franciscanas from Rio Grande do Sul have included many kinds of debris: discarded fishing gear such as pieces of nylon net (17% of 36 stomachs), "cellophane" (or some other type of synthetic packaging material), and plastic fragments (6%) (Bassoi 1997). This problem has also been reported in northern Argentina, where cellophane, fishing debris, and plastic were found in 45%, 32% and 16% of the examined stomachs, respectively (Bastida *et al*. 2000, Danilewicz *et al*. 2002). The effects of such debris ingestion on health status of individual Franciscanas have not been assessed, and the subpopulation or population-level implications are uncertain. Debris ingestion is a new threat that did not exist, at least in Uruguay, in the early 1970s (R.L. Brownell, Jr., pers. comm., August 2017).

Other known or potential threats include various forms of habitat degradation (e.g., overfishing; destruction of the benthic community and bycatch of small sciaenid fish—main Franciscana prey—by trawling; and chemical and acoustic pollution) (e.g., Bassoi and Secchi 2000, Danilewicz *et al*. 2002, Rodríguez *et al*. 2002, Laílson-Brito *et al*. 2007, Yogui *et al.* 2010, Holz 2014).

Conservation Actions (see Appendix for additional information)

The Franciscana is listed in Appendix II of CITES. Measures are needed to reduce the level of bycatch of this species.

Credits

Assessor(s): Zerbini, A.N., Secchi, E., Crespo, E., Danilewicz, D. & Reeves, R.

Reviewer(s):	Brownell Jr., R.L., Hammond, P.S. & Notarbartolo di Sciara, G.
Facilitators(s) and Compiler(s):	Lowry, L.

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External Resources

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
10. Marine Oceanic -> 10.1. Marine Oceanic - Epipelagic (0-200m)	Resident	Suitable	Yes

Threats

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

Threat	Timing	Scope	Severity	Impact Score
11. Climate change & severe weather -> 11.1. Habitat shifting & alteration	Ongoing	Majority (50-90%)	Unknown	Unknown
3. Energy production & mining -> 3.1. Oil & gas drilling	Ongoing	Unknown	Unknown	Unknown
4. Transportation & service corridors -> 4.3. Shipping lanes	Ongoing	Minority (50%)	Unknown	Unknown
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.3. Unintentional effects: (subsistence/small scale) [harvest]	Ongoing	Majority (50-90%)	Very rapid declines	High impact: 8
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.4. Unintentional effects: (large scale) [harvest]	Ongoing	Majority (50-90%)	Very rapid declines	High impact: 8
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
6. Human intrusions & disturbance -> 6.1. Recreational activities	Ongoing	Unknown	Unknown	Unknown
9. Pollution -> 9.1. Domestic & urban waste water -> 9.1.1. Sewage	Ongoing	Unknown	Unknown	Unknown
9. Pollution -> 9.1. Domestic & urban waste water -> 9.1.2. Run-off	Ongoing	Unknown	Unknown	Unknown
9. Pollution -> 9.2. Industrial & military effluents -> 9.2.1. Oil spills	Ongoing	Minority (50%)	Unknown	Unknown
9. Pollution -> 9.4. Garbage & solid waste	Ongoing	Unknown	Unknown	Unknown
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
9. Pollution -> 9.6. Excess energy -> 9.6.3. Noise pollution	Ongoing	Unknown	Unknown	Unknown

Conservation Actions in Place

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

Conservation Actions in Place
In-Place Research, Monitoring and Planning
Action Recovery plan: Yes
Systematic monitoring scheme: No
In-Place Education
Included in international legislation: Yes
Subject to any international management/trade controls: Yes

Conservation Actions Needed

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

Conservation Actions Needed
2. Land/water management -> 2.1. Site/area management
3. Species management -> 3.2. Species recovery
4. Education & awareness -> 4.3. Awareness & communications
5. Law & policy -> 5.1. Legislation -> 5.1.1. International level
5. Law & policy -> 5.1. Legislation -> 5.1.2. National level
5. Law & policy -> 5.1. Legislation -> 5.1.3. Sub-national level
5. Law & policy -> 5.2. Policies and regulations
5. Law & policy -> 5.3. Private sector standards & codes
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.1. International level
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.2. National level
5. Law & policy -> 5.4. Compliance and enforcement -> 5.4.3. Sub-national level
6. Livelihood, economic & other incentives -> 6.1. Linked enterprises & livelihood alternatives
6. Livelihood, economic & other incentives -> 6.2. Substitution
6. Livelihood, economic & other incentives -> 6.3. Market forces
6. Livelihood, economic & other incentives -> 6.5. Non-monetary values

Research Needed

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

Research Needed
1. Research -> 1.1. Taxonomy
1. Research -> 1.2. Population size, distribution & trends

Research Needed
1. Research -> 1.5. Threats
2. Conservation Planning -> 2.1. Species Action/Recovery Plan
2. Conservation Planning -> 2.2. Area-based Management Plan
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.2. Harvest level trends
3. Monitoring -> 3.4. Habitat trends

Additional Data Fields

Distribution
Continuing decline in area of occupancy (AOO): No
Extreme fluctuations in area of occupancy (AOO): No
Continuing decline in extent of occurrence (EOO): No
Extreme fluctuations in extent of occurrence (EOO): No
Lower depth limit (m): 35
Upper depth limit (m): 0
Population
Continuing decline of mature individuals: Yes
Extreme fluctuations: No
Population severely fragmented: No
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: No
Generation Length (years): 13
Movement patterns: Not a Migrant

Errata

Errata reason: The original version of this assessment was published with an older version of the distribution map. This errata assessment uses the updated distribution map.

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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