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Arctocephalus australis, South American Fur Seal

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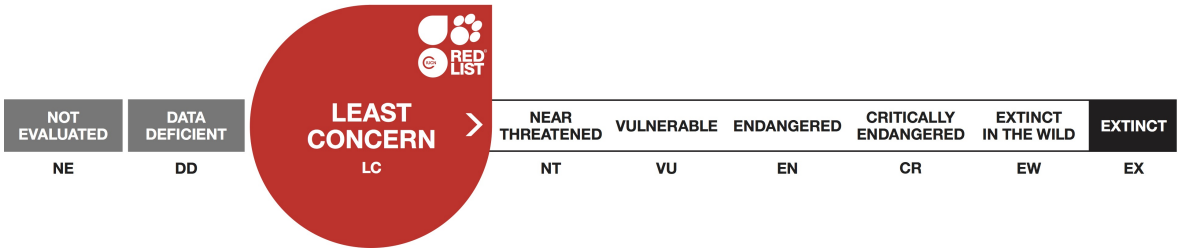

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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Carnivora	Otariidae

Taxon Name: *Arctocephalus australis* (Zimmermann, 1783)

Synonym(s):

- *Arctophoca australis* (Zimmermann, 1783)

Infra-specific Taxa Assessed:

- *Arctocephalus australis* (Peruvian/Northern Chilean subpopulation)
- *Arctocephalus australis* ssp. *australis*

Common Name(s):

- English: South American Fur Seal
- French: Otarie à fourrure Australe
- Spanish: Oso Marino Austral

Taxonomic Notes:

In 2011 the genus of all Fur Seals other than *Arctocephalus pusillus* was changed from *Arctocephalus* to *Arctophoca* (Committee on Taxonomy 2011) based on evidence presented in Berta and Churchill (2012). However, in 2013, based on genetic evidence presented in Nyakatura and Bininda-Emonds (2012), this change was considered to be premature and these species were returned to the genus *Arctocephalus* pending further research (Committee on Taxonomy 2014).

In the past, two subspecies were recognized: *Arctocephalus australis australis* (Zimmerman, 1783) for the Falkland subpopulation and *A. a. gracilis* (Nehring, 1887) for the mainland subpopulation. Animals from the Falklands have been reported to be larger than animals from coastal South America (Rice 1998). However, the validity of these subspecies was disputed (Reijnders *et al.* 1993). In their review of pinniped taxonomy, Berta and Churchill (2012) concluded that the Fur Seals in Peru and northern Chile probably represent an unnamed subspecies. After examining all the morphological, genetic and distributional evidence, Oliveira and Brownell (2014) concluded that *A. a. gracilis* should be treated as a junior synonym of *A. a. australis*, and they supported the recognition of a Peru/northern Chile subspecies. This assessment combines the IUCN Red List assessments for the South American and Peruvian Fur Seal subspecies to assess the status of the South American Fur Seal as a species.

Assessment Information

Red List Category & Criteria: Least Concern ver 3.1

Year Published: 2016

Date Assessed: January 28, 2016

Justification:

The total number of South American Fur Seals is estimated at about 238,000 and population size of the

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South American subspecies is likely increasing. The species does not meet any IUCN criteria for a threatened listing and should be listed as Least Concern. However, the Peruvian subspecies is much less abundant (about 21,000 total) and the IUCN Pinniped Specialist Group has listed it as Vulnerable.

Previously Published Red List Assessments

2008 – Least Concern (LC) – http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T2055A9211535.en

1996 – Lower Risk/least concern (LR/lc)

Geographic Range

Range Description:

The South American subspecies is distributed along the western South Atlantic (southern Brazil, Uruguay, Argentina, and the Falkland Islands), and eastern South Pacific (southern Chile) coasts. On the Atlantic side, haulouts can be found along the coasts of Rio Grande do Sul in Brazil (approximately from 29º to 32º S) (Muelbert and Oliveira 2006, Oliveira 2013), although the northern limit for breeding colonies is at Islas del Castillo, Uruguay (34º21'S, 53º44'W). Throughout the coast of Argentina, breeding and non-breeding colonies continue to be found until Tierra del Fuego-Isla de los Estados at the extreme south, also including the Falkland Islands (Túnez *et al*. 2008, Crespo *et al*. 2015). Their distribution continues all around the southern tip of South America to the Pacific side, to Isla Guafo in southern Chile (43º33'S, 74º51'W) (Oliveira 2004).

The Peruvian subspecies is distributed along the coast of Peru and northern Chile. In Peru they occur from Isla Mazorca (11° 20'S) to Ilo (17°42'S), with a small isolated colony occurring in northern Peru at Isla Foca (5° 20'S) (Oliveira *et al*. 2012). At the southern limit of Peru, colonies continue on the north coast of Chile (from 17°- 2° S) (Torres 1985, Guerra and Torres 1987), although the distribution of this species in Chile is now expanding to the South, reaching to 29°S (Sepúlveda, pers. comm.). Thus, the majority of the breeding population occurs in Peru from 15° to 17°S.

Country Occurrence:

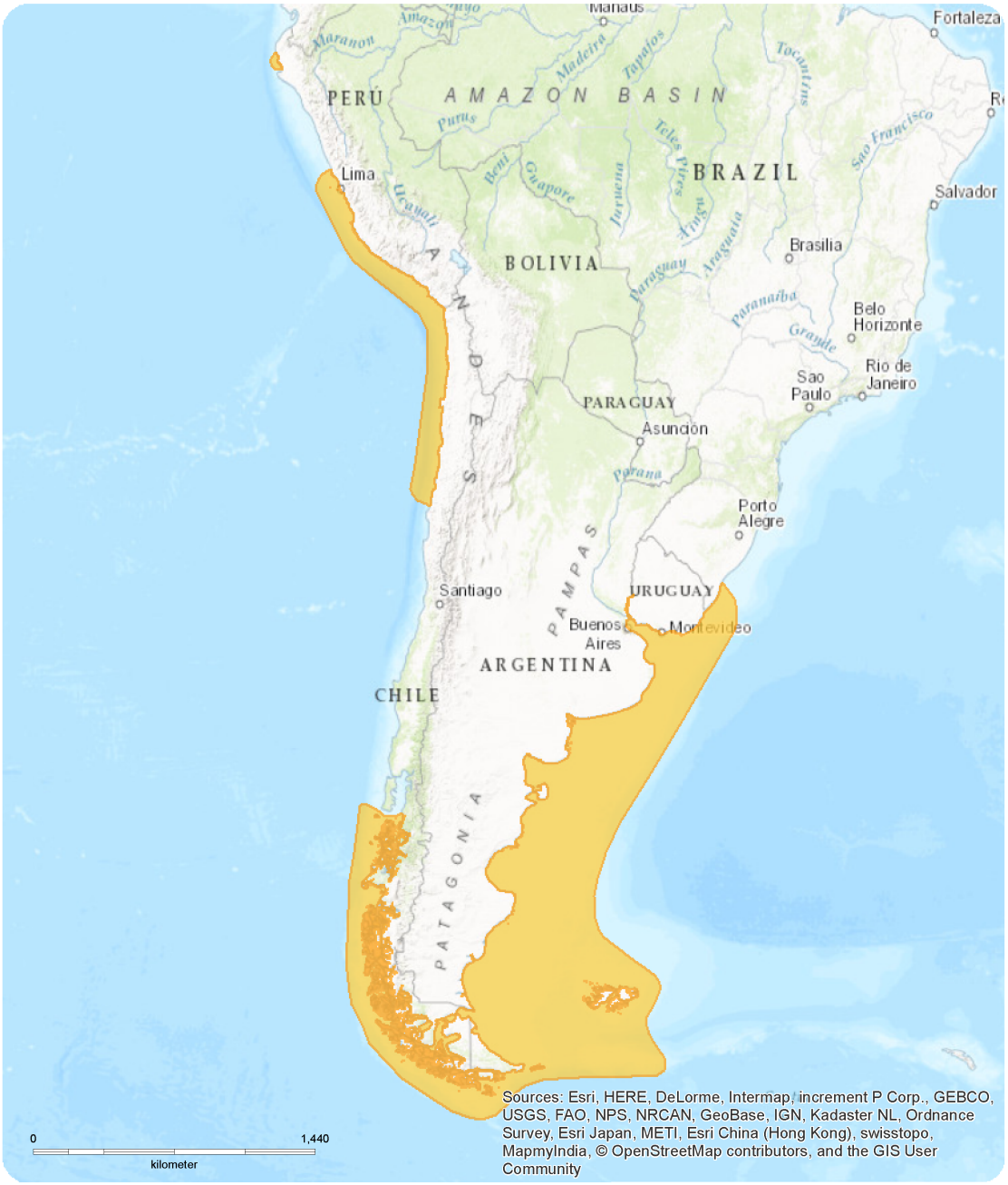
Native: Argentina; Brazil; Chile; Falkland Islands (Malvinas); Peru; Uruguay

FAO Marine Fishing Areas:

Native: Atlantic - southwest, Pacific - southeast

Distribution Map

Arctocephalus australis

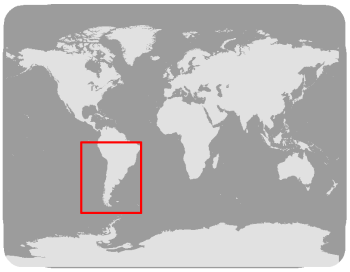


NE | DD | LC LEAST CONCERN | NT | VU | EN | CR | EW | EX

Range

Extant (resident)

Compiled by:
Susana Cardenas



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

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Population

Available data on South American Fur Seal abundance were compiled and reviewed in the 2016 IUCN Red List assessments for the two recognized subspecies. Estimates of the number of mature individuals, and population trend, for each of those subspecies were as follows:

• South American Fur Seal--99,000, trend increasing weakly;

• Peruvian Fur Seal--10,500, trend unknown.

The figures indicate the total number of mature Southern Fur Seals is approximately 109,500, and 219,000 is a reasonable estimate of the total population size. Since the much more abundant South American subspecies is known to be increasing it is likely the species as a whole is increasing also.
Current Population Trend: Increasing

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

South American Fur Seals are sexually dimorphic. Adult males are approximately 1.3 times longer and 3.3 times heavier than adult females. Adult males can reach 2 m and 90–160 kg, and possibly 200 kg; females do not exceed 1.5 m long and weigh on average 60 kg. Males of the Peruvian subspecies are smaller than the South American subspecies and females are slightly larger (Oliveira *et al.* 2005, 2008a). Newborns are 50-65 cm and 3-7.5 kg (Vaz-Ferreira 1982, Punta San Juan Program unpublished data), with initial mass being significantly greater for male pups (Baladán Corbo 2012). Females reach their maximum reproductive value at 3-5 years old (Lima and Páez 1995, 1997). Their reproductive cycle has a duration of 11 months, with a 3-4 month embryonic diapause (Vaz Ferreira *et al.* 1982, Katz *et al.* 2013).

Breeding takes place from late October through mid January (Majluf 1987a, Franco-Trecu 2005). Pupping peaks in mid November to mid December, and mating occurs 1-6 days after the female gives birth (Franco-Trecu 2005, Pavés and Schlatter 2008). Following birth, the mother suckles her pup and fasts on shore for almost 11 days (Franco-Trecu 2010). Then the female begins to make foraging trips punctuated by time attending the pup ashore, spending up to 4-5 days foraging at sea and 1-2 days feeding offspring at rookeries (Bastida and Rodriguez 2003). During the first three months of maternal care, duration of foraging trips by females is highly variable, which affects the survival of offspring since longer trips increase pup mortality (Franco-Trecu *et al.* 2010b).

Time spent on feeding trips and attending offspring likely varies with location, changes in marine productivity, and age of offspring, or a combination of these factors. Trip distances, trip durations and lengths of visits increase throughout the season. During the early lactation females perform short nocturnal foraging trips. Trip duration starts increasing during mid-lactation, but the majority of foraging effort still concentrates close to breeding sites. Later in the season, when pups are capable of withstanding longer fasts and metabolic demands of pregnancy and lactation are higher, females may stay at sea longer and forage in more distant prey patches (Thompson *et al.* 2003). In the Atlantic, the effects of El Niño-La Niña are less strong. Within the usual variability, the differences between years are relatively minor and the effects of the El Niño Southern Oscillation (ENSO) are relatively moderate. In the absence of drastic changes in the ecosystem, attendance patterns are not affected (Franco-Trecu 2010).

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Colonies are generally found along rocky coasts, on ledges above the shoreline or in boulder strewn areas. Most areas utilized have some source of shade such as at the base of cliffs or under boulders, and easy access to the ocean or tidal pools (Stevens and Boness 2003). Around midday, Fur Seals make daily movements from high and dry levels of the rookeries to cool off in low and wet areas or in the sea (Cassini 2001, Vaz-Ferreira and Ponce de León 1984). During the reproductive season, these movements can often cause female aggression towards conspecifics, mostly at other females, in order to protect their new-born pups and maximize their offspring's survival (Cassini 2001).

Males are polygynous and territorial, and fighting can result in serious wounds and scars (Cappozzo 1995). The number of breeding females associated with a territorial male varies between 3-6 in southern Chile (Pavés and Schlatter 2008) and 6-20 at Punta San Juan (Majluf 1987a). The highest number of territorial males at the colonies can be found in late December, decreasing in January (Franco-Trecu 2005, Franco-Trecu *et al.* 2014). Individual bulls can occupy territories for up to 60 days (Cappozzo 1995) until most of the females are mated, and then they leave their territories to start foraging at sea (Pavés and Schlatter 2008). Only a few adult males out of the total population achieve mating, and a large proportion is excluded to peripheral or male exclusive areas. In Uruguay, the breeding pattern is a "lek" system where females have extensive home ranges that overlap with the small territories of many males. Females move freely in the colony and males do not monopolize access to females (Franco-Trecu *et al.* 2014).

Most pup mortality take place at the beginning of the breeding season, during the peak of birthing (Franco-Trecu 2010). In general, the principal causes of death of South American Fur Seal pups are enteritis with microscopic lesions of bacteremia (associated with the presence of hookworms) (28%), and starvation, trauma, and drowning (63%) (Seguel *et al.* 2013). Locally, pup mortality is also caused by predation by adult male South American Sea Lions that can be significant at some colonies (Harcourt 1993). Maternal aggression was also recognized as an important source of mortality for Peruvian Fur Seals before the 1997-98 ENSO (Harcourt 1991,1992; Majluf 1992).

Based on satellite tracking data, South American Fur Seals apparently forage between 50 and 600 m with no clear water-depth preference, and mean duration of the female foraging trips during the breeding season is 126 hours (Thompson *et al.* 2003). Lactating females in Uruguay forage 41-185 km from the breeding sites (Vaz-Ferreira 1976, York *et al.* 1998). For the Peruvian Fur Seal, ENSO years have a negative impact on animals and during those years females must spend much more time attempting to forage, which affects offspring growth and survival (Majluf 1987a, Gentry and Kooyman 1987). During the 1983 ENSO, adult female Peruvian Fur Seals showed mean dives to 29 m, with a maximum of 170 m and mean duration of 2.5 minutes and maximum of 7 minutes (Majluf 1987b). During the 1997 ENSO, adult females had to spend longer periods at sea foraging (10-20 days) causing their pups to die of starvation.

The location of foraging grounds almost certainly depends on the distribution of preferred prey (Laptikhovsky 2009). The foraging area of the South American Fur Seals southwest of the Falkland Islands coincides with the region of the highest abundance of the Lobster Krill (*Munida* spp.), the most important food resource of Fur Seals off the Falklands (Laptikhovsky 2009). Seasonal variations in intensity and position of both the Falkland Current and Argentine Drift could also be a reason for seasonal changes in female foraging grounds (Thompson *et al.* 2003).

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The Southern Fur Seal diet varies according to prey availability. Although they are trophic generalists with the potential to prey upon many species, a few species dominate their diet. Pelagic and demersal fishes and cephalopods are the most common prey (Vásquez 1995; Zavalaga *et al.* 1998, Arias-Schreiber 2000, 2003; Oliveira *et al.* 2008b, Vallejos 2010, Franco-Trecu *et al.* 2012, 2013, 2014).

Systems: Terrestrial, Marine

Use and Trade

Human subsistence hunting of South American Fur Seals undoubtedly began with first contact and continues today. Commercial exploitation began after the discovery of South American Fur Seals by Europeans in the 18th century. As an example, in 1775 the ship States from Boston, loaded 13,500 skins from the Falkland Islands area (Bonner 1982). A managed harvest was conducted in Uruguay, and between 1965 and 1991 (when harvesting ceased) 234,000 Fur Seals were harvested. Harvest levels generally declined in the 20th century bringing about the cessation of hunting at many locations (Ximenez and Languth 2002). In Peru, commercial harvests are believed to have reduced Fur Seal numbers to the point that it was thought that few, if any, Fur Seals were left by the late 20th Century (Majluf and Trillmich 1981, Muck and Fuentes 1987). That led to the banning of all sealing in 1959, and population numbers increased following protection.

Threats (see Appendix for additional information)

Development of large and small scale commercial fisheries have a negligible effect on South American Fur Seals in the Atlantic due to the minimal overlap between Fur Seal prey items and target commercial species (Crespo pers. comm.). In contrast, industrial fishing along the coast of Peru may threaten the pelagic resources on which Fur Seals depend. Those fisheries started in the 1950s and 1960s, and contributed to several declines in biomass of Anchoveta which is a major prey of Fur Seals (Pauly and Palomares 1989, Pauly and Tsukayama 1987).

Mortality due to bycatch and interactions is known to occur occasionally in artisanal and other fisheries (Maijluf *et al.* 2002, Franco-Trecu *et al.* 2009, De Maria 2012, Sepúlveda pers. comm., Cárdenas-Alayza unpublished data). Incidental captures of Fur Seals in shark nets have been reported in Uruguay (Scialabba 1989, Franco-Trecu *et al.* 2009).

During the 1970s and part of the 1980s, South American Fur Seals (and other wildlife) were hunted illegally in southern Chile and Argentina to bait traps set for Southern King Crab. Bait used between 1976 and 1980 was estimated as 200–400 tons per year (Cárdenas *et al.* 1987). Because this fishery is decreasing due to overexploitation, hunting pressure on the Fur Seal is being reduced. In Peru, Arias-Schreiber (1993) reported that it is common for some fishermen to kill and use pinnipeds as bait to catch saltwater Snails. However, the incidence of illegal Fur Seal catches and their impact on populations are not known.

The limited number of large, dense breeding aggregations could make this species particularly sensitive to the effects of oil spills and disease epidemics. Like other Fur Seals, South American Fur Seals are vulnerable to oil spills because of their dependence on their thick pelage for thermoregulation. In February 1997, 5,000 metric tons of crude oil were spilled from the vessel San Jorge onto on the coast of

Isla de Lobos in southern Uruguay. Nearly 5,000 South American Fur Seal pups (2-3 months old) were heavily oiled and/or died (Mearns *et al.* 1999).

With the breeding population located at a limited number of rookeries, human activities could have populations consequences if disturbance occurs (Cárdenas-Alayza 2012).

Conservation Actions **(see Appendix for additional information)**

South American Fur Seals are protected and managed by laws in most of the countries where they occur. In Peru it is illegal to poach, export, or transport Fur Seals for commercial purposes (Decreto Supremo No. 013-99-AG). The catastrophic decline that followed the 1997-1998 ENSO led to South American Fur Seals being categorized as in danger of extinction in Peru (Decreto Supremo No. 034-2004-AG), and this decree was recently revised and Fur Seals remain in the same category (Decreto Supremo No. 004-2014-MINAGRI). In Chile, the status of total protection was given to all *Arctocephalus* species in 1978 (Torres 1987, Reijnders *et al.* 1993), and in 1995 the protection was extended for 30 years (Decreto Supremo No. 225-Subsecretaría de Pesca; Sielfeld 1999). In Argentina, marine mammals are under the administration of the provinces. At the Falkland Islands, Fur Seals are protected by British law. In Brazil, all the pinniped species have been protected by law since 1986 (Portaria SUDEPE n0 N-11, de 21-02-1986) and also by the National Action Plans for Conservation of Brazilian Aquatic Mammals (IBAMA 2001, Rocha-Campos *et al.* 2011). In Uruguay, the South American Fur Seal was named as a focal object of conservation in the Marine Protected Area of Cabo Polonio by the National System of Protected Areas. South American Fur Seals have also been afforded protection by the establishment of numerous reserves and marine protected areas, including privately owned sites.

Credits

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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
10. Marine Oceanic -> 10.2. Marine Oceanic - Mesopelagic (200-1000m)	Resident	Suitable	Yes
12. Marine Intertidal -> 12.1. Marine Intertidal - Rocky Shoreline	Resident	Suitable	Yes
13. Marine Coastal/Supratidal -> 13.1. Marine Coastal/Supratidal - Sea Cliffs and Rocky Offshore Islands	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	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.1. Intentional use: (subsistence/small scale) [harvest]	Ongoing	-	-	-
	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]	Past, unlikely to return	-	-	-
	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	-	-	-
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.3. Indirect species effects -> 2.3.2. Competition		
6. Human intrusions & disturbance -> 6.1. Recreational activities	Ongoing	-	-	-
	Stresses:	2. Species Stresses -> 2.2. Species disturbance		
6. Human intrusions & disturbance -> 6.3. Work & other activities	Ongoing	-	-	-
	Stresses:	2. Species Stresses -> 2.2. Species disturbance		

9. Pollution -> 9.2. Industrial & military effluents -> 9.2.1. Oil spills	Ongoing	-	-	-
	Stresses:	2. Species Stresses -> 2.1. Species mortality		

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: No
Systematic monitoring scheme: No
In-Place Land/Water Protection and Management
Conservation sites identified: Yes, over part of range
Occur in at least one PA: Yes
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
1. Land/water protection -> 1.1. Site/area protection
1. Land/water protection -> 1.2. Resource & habitat protection
2. Land/water management -> 2.1. Site/area management

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
1. Research -> 1.5. Threats
1. Research -> 1.6. Actions
3. Monitoring -> 3.1. Population trends

Additional Data Fields

Distribution
Estimated area of occupancy (AOO) (km²): 1973796
Continuing decline in area of occupancy (AOO): No
Extreme fluctuations in area of occupancy (AOO): No
Estimated extent of occurrence (EOO) (km²): 8591520
Continuing decline in extent of occurrence (EOO): No
Extreme fluctuations in extent of occurrence (EOO): No
Continuing decline in number of locations: No
Extreme fluctuations in the number of locations: No
Upper elevation limit (m): 5
Lower depth limit (m): 600
Population
Number of mature individuals: 109500
Continuing decline of mature individuals: No
Extreme fluctuations: No
Population severely fragmented: No
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: No
Generation Length (years): 11.7
Movement patterns: Not a Migrant
Congregatory: Congregatory (and dispersive)

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