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Arctocephalus pusillus ssp. pusillus, Cape Fur Seal

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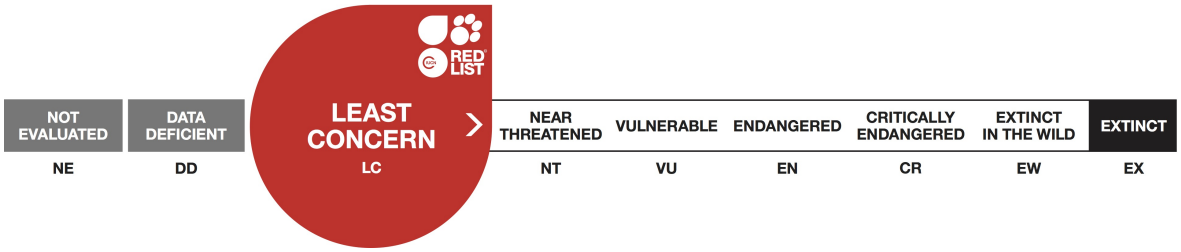

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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Carnivora	Otariidae

Taxon Name: *Arctocephalus pusillus ssp. pusillus* (Schreber, 1775)

Parent Species: See *Arctocephalus pusillus*

Common Name(s):

- English: Cape Fur Seal, Brown Fur Seal, South African Fur Seal

Taxonomic Notes:

The Cape Fur Seal (*Arctocephalus pusillus pusillus*) is one of two recognized subspecies of *A. pusillus*, the other being the Australian Fur Seal (*A. p. doriferus*). While the subspecies are almost identical in both anatomy and behaviour (Warneke and Shaughnessy 1985) they are accorded subspecific status based on one cranial character and separate geographic ranges (Repenning *et al.* 1971).
While there is currently no accepted common name for this species that encompasses both subspecies, the epithets Afro-Australian Fur Seal and Brown Fur Seal have been suggested. The Cape Fur Seal has also been known as the South African Fur Seal.

Assessment Information

Red List Category & Criteria: Least Concern ver 3.1

Year Published: 2015

Date Assessed: December 9, 2014

Justification:

Abundance of Cape Fur Seals is estimated to be approximately two million animals. No subpopulations exist and no sites are isolated from any others. Total abundance is estimated to have increased over the past three generations, and to have been stable over the past two generations. Fluctuations in abundance have been experienced in the southern Namibian rookeries as a result of the effect of poor environmental conditions on prey populations. Smaller island rookeries are possibly more vulnerable to such changes as a result of climate warming. Other known threats are unlikely to cause major population declines in the near future. Although subject to historical over-exploitation, Cape Fur Seal genetic variation remains high. Cape Fur Seals do not meet the IUCN criteria for any threatened category and should be listed as Least Concern.

Previously Published Red List Assessments

2008 – Not Evaluated (NE)

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

Geographic Range

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Range Description:

Cape Fur Seals range along the southwestern and southern coasts of Africa, from Ilha dos Tigres in southern Angola, along the coast of Namibia to Algoa Bay in South Africa (Oosthuizen 1991, Kirkman *et al.* 2013). They are not considered to be migratory and tend to remain within their primary range (Warneke and Shaughnessy 1985, Oosthuizen 1991). However, a number of seals move beyond their normal range and follow the annual winter migration of Sardine eastwards (O'Donoghue *et al.* 2010), some moving as far as the coast of the South African province of KwaZulu-Natal (Port Elizabeth Museum, unpublished data). While feeding is generally restricted to the continental shelf, they have been recorded up to 220 km offshore (Shaughnessy 1979). Sightings of vagrants are limited to one record from Gabon (Thibault 1999) and one from the Prince Edward Islands, South Africa (Kerley 1983).

Country Occurrence:

Native: Angola (Angola); Namibia; South Africa (Marion-Prince Edward Is. - Vagrant)

Vagrant: Gabon

FAO Marine Fishing Areas:

Vagrant: Atlantic - southeast, Indian Ocean - western

Population

Estimates indicate that approximately two million Cape Fur Seals bred at some 40 rookeries or rookery groups in 2009 (Kirkman *et al.* 2013). Total population size is estimated from counts of pups ashore made every few years at the end of the breeding season (Kirkman *et al.* 2007). These indicate that the abundance of this subspecies has been relatively stable since 1993 (Butterworth *et al.* 1995, Kirkman *et al.* 2013). However, there have been substantial changes in distribution during this time period with an increase in the number of colonies, a northward shift in range and an increase in abundance in some areas (northern Namibia and north-western South Africa: Kirkman *et al.* 2013). In 2004 some 75% of Cape Fur Seals bred at three sites: the Atlas Bay-Wolf Bay-Long Islands Complex and Cape Cross in Namibia, and Kleinzee in South Africa (Kirkman *et al.* 2007). All of these sites have experienced small declines in abundance since that time (Kirkman *et al.* 2013). Most of the smaller rookeries are estimated to contain more than 1,000 adults. While the abundances of the larger rookeries are relatively stable, they do experience fluctuations. Fluctuations are greater in southern Namibian rookeries (Kirkman *et al.* 2013) which have experienced major mortality events due to the impact of poor environmental conditions on prey populations (Gammelsrød *et al.* 1998, Gerber and Hilborn 2001). Smaller rookeries tend to experience greater fluctuations than larger rookeries (Kirkman *et al.* 2007, 2013).

In terms of national distributions, approximately 60% of pup production took place at 23 rookeries in Namibia, 40% at 16 rookeries in South Africa and less than 2% at a single rookery in Angola (Kirkman *et al.* 2007, 2013).

While rookeries are separated by between a few to several hundred kilometres, tag data (Oosthuizen 1991) and genetic evidence (Matthee *et al.* 2006) indicate substantial movement between them with no distinct subpopulations.

Generation length has been calculated at 9.1 years (Pacifici *et al.* 2013). Population change over three generations from 1982-2009 has been positive (Kirkman *et al.* 2013).
Current Population Trend: Increasing

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

This species is the largest of the Fur Seals, with the Cape Fur Seal being slightly smaller than the conspecific Australian Fur Seal (Warneke 1995). They are also highly sexually dimorphic. Adult male Cape Fur Seals are 2.0-2.3 m long and average 247 kg in weight. Adult females are 1.2-1.6 cm long and weigh an average of 57 kg. At birth they weigh around six kilograms (Shaughnessy 1979).

Females become sexually mature at three to six years and males at nine to 12 years. The annual pregnancy rate of mature females has been estimated at 71% (Wickens and York 1997). Gestation lasts 51 weeks, including a three-month delay of implantation. Longevity and adult mortality rate are unknown (Reijnders *et al.* 1993, Butterworth *et al.* 1995).

Cape Fur Seals are highly polygynous. Breeding is from late October to the beginning of January, with adult males arriving at the colonies first. Females give birth 1.5-2.0 days after arrival ashore. The peak of pupping is in the first week of December, although there is variation between colonies (David 1987a, De Villiers and Roux 1992). Adult females attend the pup for about six to seven days before coming into

oestrous, mating and departing on their first foraging trip (Rand 1955). These trips average 5.2 days, and attendance periods average 1.8 days. Trips become longer as the season progresses (Gamel *et al.* 2005). While some pups may start foraging at seven months, they are usually weaned at 10-12 months, with suckling rarely continuing for two to three years (Warneke and Shaughnessy 1985, David and Rand 1986).

Cape Fur Seals are generalist foragers that take a wide variety of prey, including Cape Hake, Horse Mackerel, Pelagic Goby, Pilchards, Anchovy, squid of the genus Loligo, Rock Lobster, shrimp, prawns and amphipods (David 1987b, de Bruyn *et al.* 2003, Mecenero *et al.* 2006, Connan *et al.* 2014). They have also been reported to occasionally take African Penguins and several species of flying seabirds (du Toit *et al.* 2004, Makhado *et al.* 2006).

Characteristics of diving varies between sites, with the majority of recorded dives on the west coast of South Africa being to less than 50 m depth (Kooyman and Gentry 1986), while those on the south east coast are more than 60 m (Stewardson 2001). Mean dive duration is varies between one minute (Stewardson 2001) and 2.1 minutes (Kooyman and Gentry 1986). The diurnal frequency of dives shows a bimodal distribution with most dives taking place at dusk or during the first half of the night, with a smaller peak after dawn (Kooyman and Gentry 1986, Stewardson 2001). The maximum recorded diving depth is 204 m (Kooyman and Gentry 1986).

Great White Sharks (Martin *et al.* 2005) and Killer Whales (Rice and Saayman 1987) are predators of Cape Fur Seals at sea. On shore their pups are preyed on by Black-backed Jackals and Brown Hyenas (Skinner *et al.* 1995, Oosthuizen *et al.* 1997, Kuhn *et al.* 2008).

Systems: Terrestrial, Marine

Use and Trade

The commercial harvesting of Cape Fur Seals in South Africa ceased in 1990 (Wickens *et al.* 1991) and is now prohibited under terms of the Policy on the Management of Seals, Seabirds and Shorebirds (MLRA 2007).

Cape Fur Seals continue to be harvested commercially and hunted for trophies in Namibia under permits issued under terms of the Marine Resources Act of 2000 (Campbell *et al.* 2011). The most profitable product is thought to be male genitalia (Kirkman 2006), but others products are pelts, leather products, oil, meat, and bone meal for consumption (Campbell *et al.* 2011). In 2010, 43,168 pups and 4,573 adult males were harvested, while the 2011 harvest was 45,794 pups and 3,626 adult males (Japp *et al.* 2012).

Threats (see Appendix for additional information)

Cape Fur Seals were hunted heavily during the 17th, 18th and 19th centuries and their population was reduced to low levels (Warneke and Shaughnessy 1985, David 1987a). Under protection, the population has increased greatly but it is unknown whether it has recovered to pre-exploitation levels (Kirkman *et al.* 2007). In some parts of its range (e.g., Algoa Bay) estimates indicate that the current abundance remains lower than pre-exploitation estimates (Stewardson 1999). Levels of exploitation of Cape Fur Seals were not as severe as those experienced by other species of Fur Seals and genetic variation

remains high (Matthee *et al.* 2006).

Seal harvests in South Africa were first controlled in 1893 and were suspended in 1990 (Wickens *et al.* 1991). They continue in Namibia at the mainland colonies of Cape Cross and the Wolf and Atlas Bays Group (Japp *et al.* 2012). Harvest levels have remained high even in years with high levels of pup and adult natural mortality in Namibia (Kirkman *et al.* 2007, Japp *et al.* 2012). This mortality has been attributed to a scarcity of fish and poor marine productivity along the coast of Namibia, which occurs at intervals (Gammelsrød *et al.* 1998, Gerber and Hilborn 2001).

Cape Fur Seals are reported to interact with commercial fisheries, both via direct competition and operationally. A number of commercially exploited species of fish are eaten by seals (David 1987b, Wickens *et al.* 1992). While the effects of these interactions are difficult to assess due to the complexities of the marine food web and the range of species that seals prey on (David 1987b, Punt and Butterworth 1995), it is possible that changes in fishing effort and changes in the abundance and distribution of commercially harvested fish species (Barange *et al.* 1999, Roy *et al.*2007, Moloney *et al.* 2013, Roux *et al.* 2013), may result in reduced prey populations.

The impact of direct mortality of seals due to fisheries is not well known and the effects of current interactions have not been studied. Seals have been taken incidentally in past fishing operations and levels of take have been estimated to be low (Wickens *et al.* 1992, David and Wickens 2003). A number are also shot illegally during fishing operations (Wickens *et al.* 1992). Cape Fur Seals are further known to become entangled in marine debris. Rates of entanglement vary by colony, but have been estimated to be between 0.12-0.66% (Shaughnessy 1980). The lack of information, especially in light of changes in the fishing industry, requires further research in this area.

Cape Fur Seals come in regular contact with a number of species of terrestrial carnivores (Skinner *et al.* 1995, Oosthuizen *et al.* 1997, Kuhn *et al.* 2008), including domestic animals (Port Elizabeth Museum, unpublished records), and are therefore at risk of exposure to diseases that could lead to epidemics (Lavigne and Schmitz 1990, Kirkman 2006).

Although Cape Fur Seals are visited by tourists at a number of colonies, disturbance is believed to be minimal (Kirkwood *et al.* 2003).

While climate change does not pose the same level of threat to Cape Fur Seals as it does for many other species of pinnipeds, it remains important (Kovacs *et al.* 2012). Climate mediated changes in prey species (Barange *et al.* 1999, Roy *et al.* 2007, Moloney *et al.* 2013, Roux *et al.* 2013) may be responsible for changes in the distribution of rookeries (Kirkman *et al.* 2013). It is also possible that climate change was responsible for recent periods of high mortality along the Namibian coast (Gammelsrød *et al.* 1998, Gerber and Hilborn 2001), although a high mortality event was recorded in the same region in the early 19th century (Wyatt 1980). Pups are vulnerable to high temperatures (De Villiers and Roux 1992), and changes leading to higher ambient temperatures and fewer windy days may increase mortality (Kovacs *et al.* 2012). A number of pups are born on small and low lying islands (Kirkman *et al.* 2013) and are susceptible to high mortality during summer storms (Hofmeyr *et al.* 2011). Rising sea levels and possible changes in the frequency of such storms induced by climate change will threaten such colonies with extirpation.

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Conservation Actions (see Appendix for additional information)

Although Cape Fur Seals have been protected in South Africa since 1893 by the Fish Protection Act, and in Namibia since 1922 by the Sealing and Fisheries Proclamation, they were still subject to government run or government authorized commercial harvests (Wickens *et al*. 1991, Butterworth *et al*. 1995, David and Wickens 2003). Those harvests ceased in South Africa in 1990 (Wickens *et al*. 1991) but continue in Namibia (Japp *et al*. 2012). In South Africa the Sea Birds and Seals Protection Act of 1973 (SBSPA), provides broad protection for Seals. Furthermore, the commercial killing of Seals is now prohibited in South Africa in terms of the Policy on the Management of Seals, Seabirds and Shorebirds (MLRA 2007). While the conservation and harvesting of Seals in Namibia was previously controlled by the SBSPA this has been replaced by the Marine Resources Act of 2000 which relaxed restrictions aimed at ensuring a humane harvest (Kirkman 2006, Algers *et al*. 2007).

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
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
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.2. Intentional use: (large scale)	Ongoing	Minority (50%)	Causing/could cause fluctuations	Low impact: 5
	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)	Ongoing	Majority (50-90%)	Negligible declines	Low impact: 5
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
6. Human intrusions & disturbance -> 6.1. Recreational activities	Ongoing	Minority (50%)	No decline	Low impact: 4
	Stresses:	2. Species Stresses -> 2.2. Species disturbance		
8. Invasive & other problematic species & genes -> 8.1. Invasive non-native/alien species -> 8.1.1. Unspecified species	Ongoing	Minority (50%)	Causing/could cause fluctuations	Low impact: 5
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
11. Climate change & severe weather -> 11.1. Habitat shifting & alteration	Ongoing	Whole (>90%)	Causing/could cause fluctuations	Medium impact: 7
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
11. Climate change & severe weather -> 11.3. Temperature extremes	Ongoing	Whole (>90%)	Causing/could cause fluctuations	Medium impact: 7
	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: Yes
In-Place Land/Water Protection and Management
Conservation sites identified: Yes, over part of range
Occur in at least one PA: Yes
Percentage of population protected by PAs (0-100): 31-40
Area based regional management plan: No
Invasive species control or prevention: Not Applicable
In-Place Species Management
Harvest management plan: Yes
Successfully reintroduced or introduced beningly: No
Subject to ex-situ conservation: No
In-Place Education
Subject to recent education and awareness programmes: No
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 -> 3.1. Species management -> 3.1.1. Harvest management

Research Needed

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

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

Additional Data Fields

Distribution
Estimated area of occupancy (AOO) (km²): 470040
Continuing decline in area of occupancy (AOO): No
Extreme fluctuations in area of occupancy (AOO): No
Estimated extent of occurrence (EOO) (km²): 3104650
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): 50
Lower depth limit (m): 204
Population
Number of mature individuals: 1000000
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): 9.1
Movement patterns: Not a Migrant
Congregatory: Congregatory (and dispersive)

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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