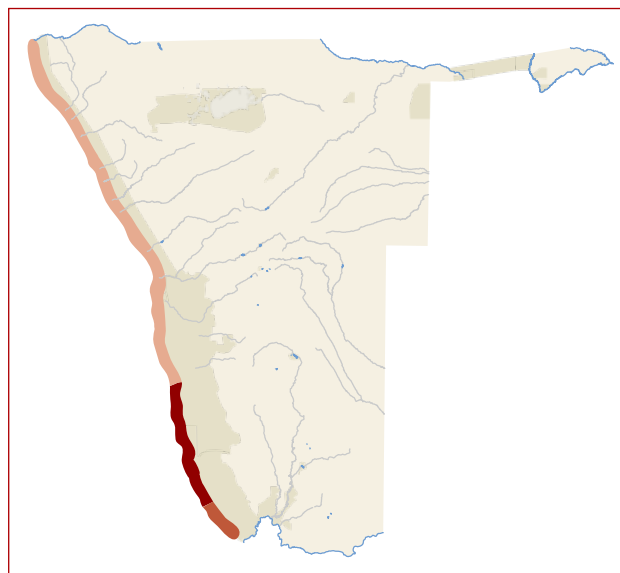


AFRICAN PENGUIN (JACKASS PENGUIN) | *Spheniscus demersus*

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DISTRIBUTION AND ABUNDANCE

Globally, African Penguins breed on 24 islands and four mainland sites between Hollamsbird Island, Namibia and Bird Island, Algoa Bay, South Africa (Kemper *et al.* 2007b). In Namibia, African Penguins currently breed on nine islands (Kemper *et al.* 2001, 2007b, Roux *et al.* 2003, MFMR unpubl. data) and two mainland sites (Simmons & Kemper 2003, Bartlett *et al.* 2003). Breeding ceased at Seal Island and Albatross Rock more than a century ago and no evidence of breeding has been noted on Pomona Island since 2005 (Kemper 2007b, MFMR unpubl. data). One pair was recorded on Hollamsbird Island in 1989, when the remote island was last surveyed (Williams & Dyer 1990); its current status as a penguin breeding locality is not known. Since 2006, after an absence of more than a century, a few pairs have settled on Penguin Island (MFMR unpubl. data). Non-breeding birds, particularly first-year birds, are frequently found north of their breeding range (Crawford & Whittington 1997) and vagrants have been reported from as far north as Gabon (Malbrant & Maclatchy 1959).

The most recent estimate of the Namibian population is 29,000 individuals in adult plumage, of which 5,500 pairs are known (MFMR unpubl. data). This represents 20% of the estimated global adult breeding population. Numbers of African Penguins per breeding locality in Namibia are listed in Table 2.10. Penguins occupy an

Conservation Status:	Endangered
Southern African Range:	Coastal Namibia, South Africa
Area of Occupancy:	79,000 km ²
Population Estimate:	29,000 adult individuals and 5,500 breeding pairs in Namibia
Population Trend:	Decline of more than 50% in last three generations
Habitat:	Mostly inshore marine waters, coastal islands and isolated mainland caves
Threats:	Loss of prey base, breeding habitat degradation, low recruitment, seal and gull predation, pollution from oiling

area of 78,500 km² in Namibia (Jarvis *et al.* 2001), of which only 2 km² is breeding habitat (Simmons *et al.* 2001b, AJ Williams pers. comm.).

TABLE 2.10:

Number of African Penguin breeding pairs at individual breeding localities in Namibia (listed north to south), estimated from annual peaks of monthly nest counts at Mercury, Ichaboe, Halifax and Possession islands, and from opportunistic counts elsewhere (Williams & Dyer 1989, Bartlett *et al.* 2003, Kemper *et al.* 2007a, MFMR unpubl. data).

Breeding locality	Number of breeding pairs	Date of most recent estimate
Hollamsbird Island	1	1988
Sylvia Hills cave	11	2004
Oyster Cliffs cave	45	2002
Mercury Island	3,171	2011
Neglectus Islet	5	2008
Ichaboe Island	661	2011
Penguin Island	3	2010
Halifax Island	852	2011
Possession Island	594	2011
Plumpudding Island	86	2008
Sinclair Island	68	2008



ECOLOGY

African Penguins breed throughout the year, with a primary breeding peak in Namibia between October and February and a secondary peak between June and October (Kemper 2006). Peak fledging takes place between October and February (MFMR unpubl. data). Birds first breed at an average age of four to seven years (Whittington *et al.* 2005a). The timing of breeding is thought to be related to local food abundance (Crawford *et al.* 2006), although it may be poorly synchronised at a particular breeding locality (Kemper 2006). Up to two eggs are laid, with an average clutch size of 1.84; replacement clutches and relaying after a successful breeding attempt are common in Namibia (Kemper 2006). About 41% of all breeding attempts produce at least one fledgling, but breeding success varies between years, seasons, localities and habitats (Kemper 2006). Monitored nesting attempts at Halifax Island were more successful in artificial burrows (43%) and nests under bushes (34%) than for exposed surface nests (31%) (Kemper *et al.* 2007a). After fledging, African Penguins stay at sea until they return to a breeding locality (not necessarily their natal one) to moult into their first adult plumage at the age of 12 to 23 months (Kemper & Roux 2005). Adult birds undergo an annual moult; moult seasonality is bimodal, with a primary peak between March and April and

a secondary peak between December and January (Kemper *et al.* 2008). The annual survival rate of first-year birds averages 0.71, that of adults between 0.77 and 0.83 (Kemper 2006).

Permanent movement of breeding birds between Namibia and South Africa is rare; movement of young birds between countries is more common, with birds generally dispersing northward (Whittington *et al.* 2005b, 2005c, Kemper 2006). Recent information obtained from satellite telemetry indicated that newly fledged African Penguins from South Africa may feed in Namibian waters (Sherley *et al.* 2013). Non-breeding penguins are known to travel frequently between breeding localities within Namibia (Kemper & Roux 2005, MFMR unpubl. data); breeders tend to show high fidelity to their breeding locality. Breeding penguins in Namibia usually forage within 20 km of the coast, but have been recorded as far as 60 km offshore (Ludynia *et al.* 2012). Non-breeding penguins have been noted more than 100 km offshore (Sherley *et al.* 2013).

After Sardine *Sardinops sagax* stocks collapsed in Namibia during the late 1960s and early 1970s, remaining stocks off Namibia contracted to the north of the breeding colonies. The diet available to penguins foraging in southern Namibia now consists mainly of nutritionally inferior Bearded Goby *Sufflogobius bibarbatatus* (Ludynia *et al.* 2010a).



THREATS

The replacement of energy-rich prey (Sardine and Anchovy *Engraulis encrasicolus*) by energy-poor prey (Bearded Goby) is thought to be the primary cause of the continued decline of the African Penguin (Ludynia *et al.* 2010a). African Penguins formerly bred in burrows excavated into accumulated guano. Most penguins in Namibia now breed on the surface, after historical guano exploitation significantly reduced the availability of quality burrowing habitat (Wilson & Wilson 1989). This offers inadequate protection from predators, with eggs and young chicks vulnerable to Kelp Gull *Larus dominicanus* predation (Hockey & Hallinan 1981, van Heezik & Seddon 1990). Hot easterly winds during winter may cause heat stress, which can force adult birds to desert their nests, leaving eggs and chicks in surface nests exposed to direct solar radiation and predators (Kemper 2006). Guano was last harvested commercially at Ichaboe Island in 2010. A new license was issued in 2012, despite recommendations that no more guano should be harvested within the Namibian Islands' Marine Protected Area.

Other current threats include competition for food with fisheries, seals and other seabirds (du Toit *et al.* 2003),

predation by seals, mainly by individuals specialising in seabird predation (du Toit 2001, du Toit *et al.* 2004), competition for breeding space with seals (Crawford *et al.* 1989, du Toit *et al.* 2003), human disturbance (Frost *et al.* 1976), and the occasional flooding of nests during severe storms (Kemper 2006). As a flightless bird, the African Penguin is particularly vulnerable to marine pollution, and especially to oil spills (Williams 1993). Although no major oil spill has yet occurred along Namibia's coast, persistent chronic oiling occurs regularly, from ships discharging waste oil and sunken boats leaking oil. Cases of entanglement in plastic debris washed up at breeding localities, including discarded fishing line, have been noted (J Kemper pers. obs.). African Penguins appear to be susceptible to incidents of paralytic shellfish poisoning following toxic plankton blooms, through the ingestion of contaminated prey (J Kemper unpubl. data).



CONSERVATION STATUS

Until 2005, the Namibian population decreased more rapidly than the South African population (Kemper *et al.* 2001, Kemper 2007), which was then classified as globally *Vulnerable* (IUCN 2012a). Following recent large-scale declines in the South African population the species was uplisted in 2010 to globally *Endangered* (Crawford *et al.* 2011, IUCN 2012a); it is also listed as *Endangered* in South Africa (Taylor *et al.* in press). Using current IUCN criteria, the African Penguin qualifies for the *Endangered* category in Namibia because of an estimated decline of 55% in the number of breeding pairs in the last three generations (IUCN criteria A2(a) (c)). Between 1956, when the first comprehensive census of an already depleted population was made and 2010, the number of breeding pairs in Namibia declined by 4% per year and that of individuals in adult plumage by 2.4% per year. This long-term decline is mainly the result of a 95% decrease in population at Possession Island since 1956, from nearly 50,000 birds in 1956 to fewer than 2,500 in 2011 (Cordes *et al.* 1999, MFMR unpubl. data). Over the last decade, penguin numbers have remained relatively stable at Possession and Mercury islands, have increased at Halifax Island, but have halved at Ichaboe Island, until 2006 the second-most important African Penguin breeding locality in Namibia.

The Namibian population remains particularly at risk from catastrophic events such as oil spills. A large oil spill between Mercury and Ichaboe islands would immediately threaten 70% of the Namibian penguin population. All breeding islands were declared nature reserves in 1987 while under South African control, but this status lapsed in 1994 when they became Namibian territory. Since 2009, all islands and some known key penguin foraging areas are formally protected

through the proclamation of the Namibian Islands' Marine Protected Area (Currie *et al.* 2009). Five of the breeding islands (Mercury, Ichaboe, Penguin, Halifax and Possession) have global Important Bird Area status (Simmons *et al.* 2001b). Three of the islands (Mercury, Ichaboe and Possession) are permanently staffed by personnel from the Ministry of Fisheries and Marine Resources, further limiting potential disturbance from illegal landings. The two mainland sites, Sylvia Hill and Oyster Cliffs, are caves inaccessible to land predators, situated within the Namib-Naukluft National Park. It has been included in Annex 2 of the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA), in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and in Appendix II of the Convention for the Conservation of Migratory Species of Wild Animals (CMS). In 2010, it was listed by the U.S. Fish and Wildlife Service under the Endangered Species Act of 1973. Any revised or new Namibian Parks and Wildlife legislation needs to provide *Specially Protected* status to this species.



ACTIONS

Enforcement of regulations pertaining to the Marine Resources Act (Act 27 of 2000) and to the Namibian Islands' Marine Protected Area is crucial to ensure sound conservation management of the species. Detailed management plans are required for each island to ensure that conservation management strategies are implemented. These should include island-specific oil contingency plans. The Namibian National Oil Spill Contingency Plan needs urgent revision, and effective, realistic measures must be put in place in order to be prepared in the event of even a minor spill. Oil pollution legislation should be reviewed for vessels illegally discharging oil at sea and such legislation must be strictly enforced. Guano harvesting on all natural seabird breeding islands should cease by 2015 (Currie *et al.* 2009). Research and monitoring programmes on the main islands (Mercury, Ichaboe, Halifax and Possession) should be continued to assess population trends and measure the effectiveness of conservation management actions. Although several aspects of African Penguin demography and foraging ecology have been studied extensively in Namibia and elsewhere, essential information on the dispersal of fledglings, the identification of foraging hotspots of breeding and non-breeding birds, as well as those of penguins fattening up prior to and after moult need to be investigated. Monitoring of seal populations at and near the islands should also continue and individual predators that target seabirds should be removed. The use of artificial nest burrows to improve breeding success should be promoted on all islands lacking guano.