

Not-So-Happy Feet

Introduction

He's black and white, about two feet tall, and by an incredible stroke of luck, he was given a second chance at life. His name is Fatty, and he is one of thousands of birds that have been rescued and rehabilitated by the Southern African Foundation for the Conservation of Coastal Birds (SANCCOB). When he was found in 2015, thirty percent of his body was soaked in oil. Incidentally, his flipper also sported an identification band, indicating that this same penguin had once been rescued and released by SANCCOB in 1997 as a juvenile. After this fortuitous reunion, Fatty received four weeks of care before returning to the wild.

When picturing a penguin, an image of ice and snow may come to mind. However, one species has habituated to warmer climates: the African penguin (*Spheniscus demersus*). As their name suggests, these penguins have settled among the coasts and islands near Namibia and South Africa. Unlike their burlier Antarctic cousins, they are medium-sized at an average height of two feet and an average weight of eight pounds (Smith). Their diet typically consists of fish, such as anchovies and sardines, so their bodies are specially equipped for an aquatic lifestyle. In addition, African penguins are colonial breeders, meaning they breed in colonies at consistent locations - typically in Namibia between November and December. On average, they live up to fifteen years, but many unfortunately do not reach their full lifespan, and the overall population is currently decreasing (*Wildscreen Arkive*).

These penguins once flourished along the coasts of Southern Africa. However, their current population is less than ten percent of its value at the start of the twentieth century

(*Wildscreen Arkive*). This is largely due to detrimental human practices in both history and modern day. Overfishing, guano collection, climate change, and oil pollution all pose as serious threats to the African penguins. Fortunately, new conservation techniques are being developed every year, and organizations like SANCCOB tirelessly endeavor toward rescuing this beautiful species.

Threats

The African penguins have encountered and survived numerous historical threats. In fact, most of the population decline since 1900 occurred during the twentieth century. This was largely due to two reasons: guano harvesting and egg collection. Before human interference, African penguins nested in burrows dug from their own excrement, called guano. However, the anthropogenic practice of harvesting guano for fertilizer has forced African penguins to nest in bushes and boulders: " ... if [guano deposits] have been removed by humans, they will make scrapes in the sand under the shelter of bushes" (*Our Endangered World*). These sand nests are inferior to guano nests because of exposure to environmental threats such as heat stress, flooding, and increased predation, leading to a steep decline in the African penguin population. In addition, during the mid-twentieth century, penguin eggs were eaten as a delicacy. Without regulation, the large-scale removal of eggs devastated their population. To make matters worse, "The destruction was increased because several eggs from each nest were smashed prior to collecting the others, in order to see how fresh they were" (*Our Endangered World*). Fortunately, guano harvesting and egg collection are now prohibited, but the species is still struggling to recover from these historical dangers.

Furthermore, African penguins must overcome a new slew of threats in modern day. In 1978, their population was estimated at 12,162 pairs in Namibia and 70,000 pairs in South Africa. By 2015, it had fallen to 5,700 in Namibia and 19,300 in South Africa - over a fifty-percent decrease in both locations. The total population is now estimated to be roughly 25,000 pairs. In 2010, the International Union for Conservation of Nature (IUCN) officially declared the species as endangered because, " ... it is undergoing a very rapid population decline, probably as a result of commercial fisheries and shifts in prey populations" ("Spheniscus Demersus"). This trend currently shows no sign of reversing, and immediate conservation measures are required to prevent further declines.

A primary cause for this decline is food shortage. Because their diets rely primarily on fish, African penguins must now compete with commercial fisheries. Without adequate monitoring and regulation, these fisheries have occasioned a significant shortage of food resources. The effects are only magnified by climate change. According to a study conducted by Dr. Richard Sherley from the University of Cape Town, "When the young of this endangered species leave the colony for the first time, they travel long distances, searching the ocean for ... an area with ... plenty of ... fish But rapid shifts caused by climate change and fishing mean ... these fish, the penguins' main prey, are scarce with impacts on their survival." African penguins cannot adapt quickly enough to these rapid changes in climate and fish stocks. This is responsible for reducing penguin breeding numbers by fifty percent (Sherley).

Oil pollution is another key factor in their population decline. According to the IUCN, "Past mortality from oil spills has been serious ... and may increase Most of the population is

confined to areas that are near existing or planned major shipping ports" ("Spheniscus Demersus"). In fact, there has been a dramatic increase in the number of oiled birds since 1990. Oil causes their feathers to mat and separate, impairing waterproofing and exposing their sensitive skin to extreme temperatures. Furthermore, oil can severely debilitate their internal organs if ingested. Even when rehabilitation efforts are successful, the birds suffer long-term physiological effects. Pairs involving at least one rehabilitated bird were found to have a thirty-percent lower fledging success rate than unaffected pairs, "[which] may indicate physiological or behavioural problems that reduce the parents' ability to meet the food requirements of older chicks" ("Spheniscus Demersus"). It is speculated that this is due to either the toxicity of heavy oil spills or the effects of prolonged captivity and time between oiling and washing.

Conservation Efforts

Fortunately, there have been numerous conservation efforts in the past. The African penguin is now listed in the Convention on International Trade in Endangered Species and the Convention on Migratory Species, meaning all breeding areas in South Africa are protected as national parks and reserves. The collection of guano and eggs are prohibited, and the recovery of oiled penguins has been largely successful. For example, in June of 2000, a ship carrying 1,300 tons of fuel oil sank six miles offshore. It was one of South Africa's worst environmental disasters, but fortunately, it also led to one of the area's largest bird rescue missions. Organizations like the South African Maritime Safety Authority, International Fund for Animal Welfare, SANCCOB, and International Bird Rescue Center cooperated in cleanup along with

roughly 45,000 volunteers. 90% of the oiled birds were washed and rehabilitated, and 19,500 non-oiled birds were preemptively relocated. They even contracted a South African company named Bio-Matrix to clean and break down the oil pollution ("Saving 20,000 Penguins").

This is only one of many fruitful rehabilitation efforts. In fact, over eighty percent of all African penguins admitted for rehabilitation are returned successfully to the wild ("Spheniscus Demersus"). Other conservation measures include the establishment of twenty-kilometer no-take zones, which has led to a significant increase in chick survival at Robben Island, South Africa. Small fiberglass igloos are also being placed at breeding sites where guano has been harvested, providing shelter from weather and predation. In addition, in 2009, the Namibian Islands' Marine Protected Area was established, reserving almost 4,000 square miles of ocean for penguin breeding and foraging (*Our Endangered World*). Furthermore, new conservation techniques are being devised every year. Professionals are currently investigating the possibility of restoring fish stocks to ensure that adequate prey is available. Dr. Lorien Pichegru from the University of Cape Town is studying the impacts of closing fishing areas around key penguin breeding sites. They are also researching the optimal design of artificial nests, aiming to fashion suitable nest types for each colony by the 2017 breeding season (Braun).

Conclusion

Ultimately, African penguins are incredible creatures who have survived centuries of human interference. Sadly, their numbers continue to decline, and they are still threatened by overfishing, climate change, and oil pollution. Fortunately, organizations like SANCCOB and the International Bird Rescue Center are determined to protect these birds through a variety of

conservation measures. However, these organizations cannot work alone. For example, even while cooperating during the oil spill of 2000, their rehabilitation efforts would not have been nearly as successful without the 45,000 generous souls who volunteered to aid the African penguins. Thus, by spreading awareness, volunteering, and donating to these organizations, we can hopefully rescue this beautiful species from extinction.

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