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AFRICAN PENGUINS A LOOMING CRISIS

The African Penguin *Spheniscus demersus* is confined to the coasts and offshore islands of South Africa and Namibia, where the world population breeds at fewer than 30 colonies. This species was heavily impacted by guano harvesting in the mid 19th Century (which destroyed their nesting habitat) and subsequently by intense egg harvesting in the first half of the 20th Century (which caused a rapid population decrease). At the start of the 20th Century, South Africa's Dassen Island alone was estimated to be home to 1 400 000 penguins: today only 26 200 pairs remain in the world and numbers continue to dwindle rapidly.

A key problem for the remaining African Penguins is food. Because they cannot fly, they must find food close to the colony. In recent years, heavy fishing pressure and an eastward movement of their fish prey (possibly in response to climate change) have reduced food availability around many colonies, resulting in reduced breeding success and falling penguin numbers.

Researchers at the Percy FitzPatrick Institute of African Ornithology at the University of Cape Town are using high-technology equipment to try to find a solution to the penguins' problems. Penguins hunt for their food underwater, which makes it almost impossible to observe their hunting behaviour and success. However, it is possible to attach small, electronic devices to the birds which record the entire 'story' of a hunting trip – where they were at any time, and where, when and how deep they dived. By piecing together the data from multiple foraging trips

at different times of the year, researchers can build up a picture of the underwater world used by the penguins. This information is critical if effective no-fishing zones are to be established around breeding colonies to protect the penguins' feeding grounds: we need to know how big these exclusion zones should be. As an experiment, no-fishing zones have already been established around two penguin islands, one on the west coast and one on the south coast. Custom-built devices will now be used to establish the effectiveness of these zones. The hunting and breeding performance of penguins on islands with fishing exclusion zones are being compared with the same parameters for birds breeding on islands where fishing is still allowed.

This research is happening now because answers need to be found quickly. In the last 100 years, numbers of African Penguins have fallen by more than 95% and if that trajectory continues there is a real risk that this species could approach extinction – a final journey from which there is no return. The research is also expensive – the cost of each device that we use to track the penguins at sea approaches US \$5000. Obviously, the more of these devices we can acquire, the quicker we will have the information that could hold the key to a penguin recovery.

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