FEATHER-LOSS MYSTERY *in penguin chicks*

Researchers on both sides of the Atlantic Ocean are grappling with a wildlife mystery: why are some penguin chicks losing their feathers?

The feather-loss disorder first emerged in Cape Town, South Africa, in 2006, when researchers at the Southern African Foundation for the Conservation of Coastal Birds (SANCCOB) observed it in African Penguin chicks that were being artificially reared at the centre. During that year, approximately seven per cent of the penguin chicks at the facility lost their feathers, followed by 18 per cent in 2007 and 11 per cent in 2008. Chicks with feather-loss disorder grew new plumage and were released back into the wild. The ailment is now routinely seen at SANCCOB each year, but it has never exceeded 20 per cent of the chicks admitted for artificial rearing.

On the other side of the South Atlantic, researchers from the Wildlife Conservation Society (WCS), the University of Washington and Centro Nacional Patagónico observed feather-loss disorder in the chicks of wild Magellanic Penguins (which are closely related to African Penguins) for the first time in 2007 at four different study sites along Argentina's coastline. They noted that while feathered chicks took cover from the hot midday sun, featherless chicks remained in the sun's glare. Several of the afflicted chicks died during the study.

In both instances, penguin chicks with feather-loss disorder grew more slowly than their feathered counterparts. Featherless chicks were also smaller in size and weight; both disparities were presumed to be a result of the increased energy expended on thermoregulation in the absence of an insulating coat of feathers and/or down. So far, the possible causes include pathogens, thyroid disorders, nutrient imbalances or genetics. It is not known whether the feather-loss disorder in the African and Magellanic penguin species is related.

'Feather-loss disorders are uncommon in most bird species. We need to conduct further studies to determine the cause and see if this is in fact spreading to other penguin species,' said Dee Boersma, who has conducted studies on Magellanic Penguins for more than three decades. 'We need to learn how to stop its spread, as penguins already have problems with oil pollution and climate variation,' she said. 'It's important to keep disease from being added to the list of threats they face.'

JEFFREY SMITH

SANCCOB

Magellanic (top) and African (above) Penguin chicks affected by feather-loss disorder.

Dr Nola Parsons, the veterinarian and researcher at SANCCOB, says that the disorder in African Penguins seen at the rehabilitation centre is probably caused by an infection as there is no evidence of a parasite, or of malnutrition or stress. But the culprit has proved elusive, so in 2010 Parsons sent samples from affected penguins to Greg Cunningham of St John Fisher College in Rochester, New York, who will try to identify the cause. Parsons says that there have been several cases of feather loss seen in wild African Penguin chicks and, although those chicks recover, the disorder may have dire consequences for wild birds. Anything that threatens the African Penguin is considered a problem because of the species' endangered status.

NOLA PARSONS □

REFERENCE

A study on the disorder appears in the journal *Waterbird* (2010) 33(3): 415–421. The authors of the paper are researchers from the organisations listed above.

Crisis in UTOPIA

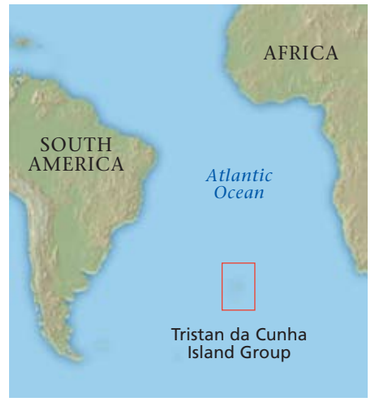
The crisis referred to in the title of Peter Munch's classic book on Tristan da Cunha was the 1961 volcanic eruption that led to the evacuation of the island. But in March 2011, a man-made crisis struck nearby Nightingale Island, with equally dramatic implications for some of the island's inhabitants. From a conservation perspective, Nightingale is more Utopian than its larger neighbour. Home to two endemic landbirds and literally millions of pairs of breeding seabirds, it has barely been altered by human activities, with no introduced mammals and only a few localised weeds.

Early on the morning of 16 March, a bulk carrier full of soya beans en route from Brazil to Singapore ran aground on Nightingale. Quite how the 75 300-tonne *Oliva*, built in 2009, could hit one of the very few specks of land in the vast South Atlantic Ocean has yet to be explained. The gravest concern was that rats or mice might have got ashore and a team from Tristan's Conservation Department left immediately to deploy traps along the shore adjacent to the stranded ship. It will be some time before we know whether the island remains free of rodents. If these creatures do become established, they will need to be eradicated as soon as possible, before they wipe out the Endangered Wilkins' Bunting.

Within two days, the *Oliva*'s back broke and she spilled more than 1 000 tonnes of fuel oil into the sea right next to the world's largest colony of Northern Rockhopper Penguins. To make matters worse, south-easterly winds carried some of the oil to Inaccessible Island, threatening penguin colonies on that island too. All told, more than 60 per cent of the global population of Northern Rockhoppers was at risk of being oiled. The penguins had finished breeding, but most adults were still moulting. Conservation officers tried to stop clean birds from reaching the sea by closing off paths through the tussock, but this was impossible at many of the larger colonies. Thousands of penguins were oiled, but only some of those at the more accessible sites could be rescued.

The response to the crisis was constrained by the islands' remoteness; it takes roughly a week to reach Tristan from South Africa as there is no air access. The small Tristan community rose to the occasion. Assisted by Estelle van der Merwe, a former SANCCOB director who accompanied the initial salvage operation, they set up a penguin cleaning station. The island's swimming pool was partially emptied and used to exercise the cleaner birds (those up to 20 per cent oiled). One of the greatest challenges was feeding the penguins: the more than 3 700 oiled birds needed at least 600 kilograms of fish per day. Boats went out fishing specifically for the penguins, while volunteers cut up the fish and fed the birds. After some delays, a five-person team from SANCCOB in Cape Town was dispatched with more supplies, including frozen fish, to ease the situation on Tristan.

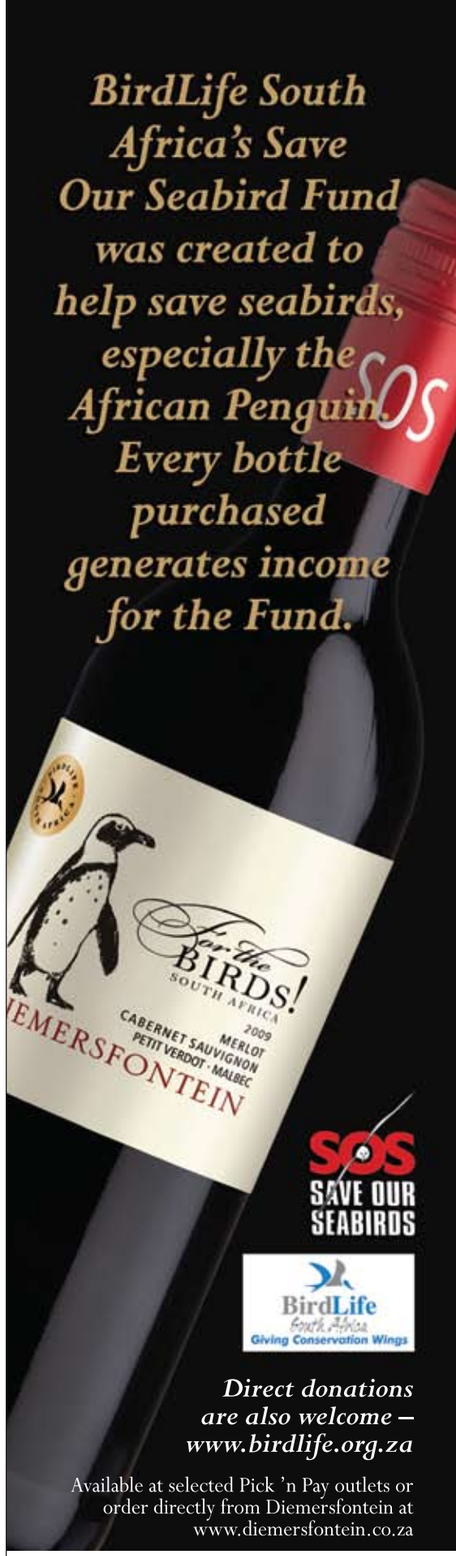
The full impact on the penguin population will only become clear once the birds return to breed in spring. Even more worrying for the Tristan community, though, is the effect on the islands' rock lobster fishery. Fishing has had to be halted at Nightingale and Inaccessible islands, which has severe implications for the Tristan economy. The one positive outcome is that there are moves afoot to declare the Tristan Islands a Particularly Sensitive Sea Area, which would require passing ships to remain further offshore, hopefully preventing a mishap like this from happening again.



PETER RYAN □

KATRINE HERIAN

Tristan Islanders feed oiled Northern Rockhopper Penguins in the island's swimming pool, which was partly drained as an exercise pool.



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