

The Great Penguin Debate

The African Penguin *Spheniscus demersus* has officially been uplisted from Vulnerable to Endangered by BirdLife International. This decision was based on the alarmingly rapid decreases that the species is experiencing. BirdLife South Africa's **Ross Wanless** assesses its predicament.

In the 1920s, despite more than a century of sustained persecution, principally by egg-collectors and guano-scrappers, approximately a million pairs of African Penguins bred on Dassen Island, off the west coast of South Africa. By 2009 the global population had shrunk to a mere 26 000 pairs and of those, just over 5 000 pairs nested at Dassen. That's half a per cent of the former numbers on the island. Averaged over 100 years, this collapse represents a loss of 20 000 birds per year from just one colony, equivalent to 1 600 birds a week, or more than two birds an hour. This phenomenon is not unique to Dassen Island but is an example of the massive reduction in African Penguin numbers around the southern African coast.

The end of guano-scraping and egg-collecting in the 1960s did not result in a change in fortunes for the penguins. The woes that still beset them are legion: predation by cats, gulls, seals and possibly sharks, extreme weather, oil spills, disturbance by humans at breeding colonies, the disappearance of the fish they eat... Many of these threats are being addressed in some way, but there is currently a great divide (possibly better described as a yawning crevasse)

about one impact on penguin numbers: the birds' competition with commercial purse-seine fishing for sardines and anchovy.

On one side of the debate sits the fishing industry, which maintains that there are plenty of fish in the sea. Yet despite an ostensibly well-managed fishery, the number of penguins continues to fall. This prompts the industry's leaders to conclude that something else besides fishing is causing the decrease.

On the other side are ranged the biologists and conservation bodies. They have studied penguins for decades and watched as their numbers increased when the fish stocks recovered in the good years (at the beginning of the new millennium), and then fell when the stocks dropped. They've also seen how penguins now arrive at the colonies weighing less and lay fewer two-egg clutches, and how more breeding attempts fail than previously. The birds struggle to find sufficient food to raise their chicks and frequently their fishing expeditions take too long. Even when the chicks are nearly mature, their parents often have to abandon them while they go to sea to fatten up before their enforced fast during the annual

moult. The chicks also weigh less and are smaller when they fledge than a few years ago. With a certainty equal to that of the fishermen but in opposition to them, the researchers conclude that the penguins are struggling to find fish.

The bottom line is that fishing is, by an order of magnitude, the greatest human influence on the marine environment. Efforts are being made to address this holistically – the Ecosystem Approach to Fisheries is an example – but they are still in their infancy. These endeavours are embodied in the concept that fish cannot be harvested or managed in isolation – they are integral parts of an ecosystem. Fish eat things and are themselves eaten, so taking them out of the sea means we alter balances. For many, the collapsing penguin population is exceedingly disturbing because it suggests that the entire ecosystem may be out of kilter. Penguins are among the easiest marine species to monitor. Who knows how target and predatory fish, whales, sharks and dozens of other interdependent species are faring? While the penguins are in something of a crisis, it's important to frame the debate about their conservation in a much broader setting.

As with many vexed problems, the devil is in the detail. The exact nature and timing of decreases at penguin colonies vary, as do the range and magnitude of threats the birds face. To deal with this, it has been suggested that the Precautionary Approach be applied. This is enshrined in a number of international agreements, including the Ramsar Wetlands Convention, the Convention on Biological Diversity, the Convention on International Trade in Endangered Species (CITES) and the Bonn Convention on Migratory Species. It is also enacted in South African law, namely the Marine Living Resources Act. In general terms the Precautionary Approach advocates that when the best information available indicates that there are reasonable grounds to believe that serious or irreversible environmental harm will occur, including in cases of scientific uncertainty, appropriate action must be taken. In other words, in the dire circumstances facing the African Penguin, the burden of proof is not to show whether reduced fishing pressure will be helpful. If there is opposition to a proposed action, the burden of proof lies in demonstrating that the action will not have a significant effect on the penguins.

To the fishing industry, the Precautionary Approach raises a red flag.

The industry quite rightly expresses grave concern that the principle is too vaguely defined and has potential to be used in a way that causes huge damage to a fishery without effecting meaningful change for the problem under consideration.

In the case of the African Penguin, no one doubts that the species is heading for the plughole. But proposals to close areas to fishing or to limit catches cause understandable consternation among the purse-seine fishermen. The problem is that while the industry vigorously disputes that it is responsible for the decreases, and therefore insists that closures will not help the penguins but only harm the industry, there are no plausible alternative explanations on the table. Therein lies the rub: because no alternative explanations are being put forward, there are also no alternative suggestions for how to improve the lot of the penguins, over and above what is already being done.

Heroic organisations like SANCCOB have kept the species on the planet at a time of crisis. Herculean research programmes by the University of Cape Town's Animal Demography Unit and Percy FitzPatrick Institute and the work done by Dr Rob Crawford have examined the myriad parameters that could

shed light on the causes of decreases in incredible detail. Cynics might say that the African Penguin is being studied to extinction.

But despite all this research, there are still some fundamental unknowns. Are there enough fish in the sea for penguins? If so, why are the birds not finding them? Can closures around islands actually help penguins, when fish move around so freely? What other causes can account for the huge, ongoing decreases in penguin numbers? What other actions can be taken to turn things around for the penguins? Does fishing activity *per se* affect penguin foraging behaviour, in view of the fact that they don't associate with vessels (unlike albatrosses, which suffer in a different way as a result of their strong attraction to fishing boats)?

Getting behemoths like government and the powerful fishing lobbies to change the way a fishery is managed takes time and patience. For some species, time is running out. If iconic birds like the African Penguin go extinct on our watch, what hope is there for the marine ecosystem on which future generations will depend?

For more information about the plight of the African Penguin, see Africa – Birds & Birding, vol. 14, no. 3, pages 42–53. ■

