

World's largest king penguin colony has declined by 90%

Number of king penguins on the remote Île aux Cochons has fallen from 2m to 200,000, warn scientists

AFP in Paris

Mon 30 Jul 2018 21.50 BST

Last modified on Mon 30 Jul 2018 22.15 BST



A huge colony of king penguins on the Île aux Cochons in 1982. Photograph: Henri Weimerskirch/AFP/Getty Images

The planet's largest colony of king penguins has declined by nearly 90% in three decades, researchers have warned.

The last time scientists set foot on France's remote Île aux Cochons – roughly half way between the tip of Africa and Antarctica – the island was blanketed by 2m of the penguins, which stand about a metre tall.

But recent satellite images and photos taken from helicopters show the population has collapsed, with barely 200,000 remaining, according to a study published in *Antarctic Science*.

Why the colony on Île aux Cochons has been so decimated remains a mystery.

"It is completely unexpected, and particularly significant since this colony represented nearly one third of the king penguins in the world," said lead author Henri Weimerskirch, an ecologist at the Centre for Biological Studies in Chize, France, who first set eyes on the colony in 1982.

Climate change may play a role. In 1997, a particularly strong El Niño weather event warmed the southern Indian Ocean, temporarily pushing the fish and squid on which king penguins depend south, beyond their foraging range.

"This resulted in population decline and poor breeding success for all the king penguin colonies in the region," Weimerskirch said.

El Niño events are cyclical events that occur every two to seven years, but they can be amplified by global warming, which itself produces many of the same results, albeit on a longer timescale.

Indeed, Weimerskirch and colleagues showed in an earlier study that climate change, on its current trajectory, will probably make the Crozet islands – the archipelago that contains Île aux Cochons – unviable for king penguins by mid-century.

Migration is not an option because there are no other suitable islands within striking range.

Other factors may be contributing to the decline of the Île aux Cochons colony, including overcrowding. "The larger the population, the fiercer the competition between individuals," noted a statement from France's National Centre for Scientific Research, which funded the study. "The repercussions of lack of food are thus amplified and can trigger an unprecedented rapid and drastic drop in numbers."

But this so-called "density-dependent effect" can also be made worse by climate change, the study notes.

Another possible culprit is avian cholera, which has affected seabirds on nearby Marion and Amsterdam Islands, including some king penguins. But until Weimerskirch and other researchers return to Île aux Cochons – hopefully, he said, in early 2019 – they won't know for sure.

It is also possible that invasive species such as rats, mice or cats, have found their way on to the island. The Red List of Threatened Species conservation status for king penguins is currently "least concern," but the new data may prompt a

reevaluation.

King penguins are the second-largest penguin species after the Emperor. They do not make a nest, but rather lay one egg at a time and carry it around on their feet covered with a flap of abdominal skin, called a brood patch. Parents take turns incubating the egg, switching every couple of weeks over a two-month period.

Antarctica's king penguins 'could disappear' by the end of the century

Climate change and overfishing could push the region's king penguin populations to the brink of extinction, a new study shows

Matthew Taylor

Mon 26 Feb 2018 16.40 GMT

Last modified on Tue 27 Feb 2018 00.02 GMT



King penguins in Salisbury Plain, South Georgia Island. Photograph: MB Photography/Getty Images

Rising temperatures and overfishing in the pristine waters around the Antarctic could see king penguin populations pushed to the brink of extinction by the end of the century, according to a new study.

The report, published in the journal *Nature Climate Change*, found that as global warming transforms the environment in the world's last great wilderness 70% of king penguins could either disappear or be forced to find new breeding grounds.

Co-author Céline Le Bohec, from the CNRS/University of Strasbourg in France, warned the species “could disappear” unless urgent steps were taken.

“If no actions aiming at halting or controlling global warming, and the pace of the current human-induced changes – climate change, overfishing – stay the same, the species may disappear in the near future.”

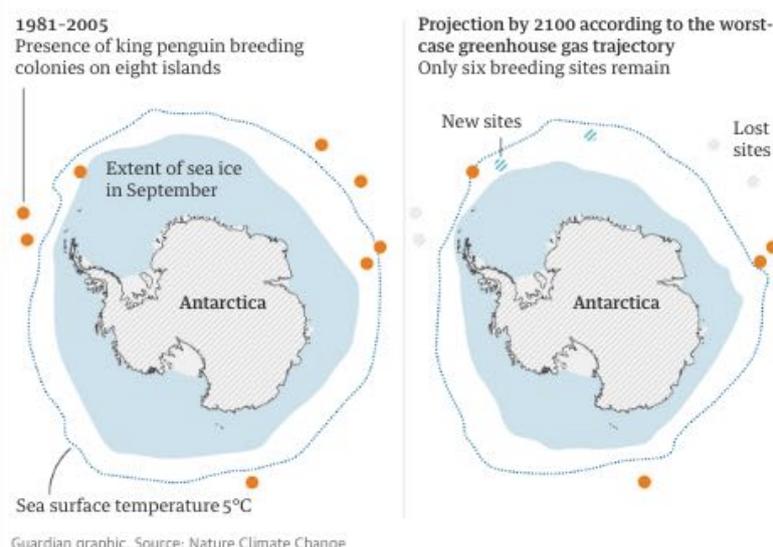
The findings come amid growing concern over the future of the Antarctic. Earlier this month a separate study found that a combination of climate change and industrial fishing is **threatening the krill population in Antarctic waters**, with a potentially disastrous impact on whales, seals and penguins.

But today's report is the starkest warning yet of the potentially devastating impact of climate change and human exploitation on the Antarctic's delicate eco-systems.

Le Bohec said: “Unless current greenhouse gas emissions drop, 70% of king penguins – 1.1 million breeding pairs – will be forced to relocate their breeding grounds, or face extinction before the end of the century.”

King penguins – the second largest type of penguin – only breed on specific isolated islands in the Southern Ocean where there is no ice cover and easy access to the sea.

Past and future breeding range of the king penguin



As the ocean warms a body of water called **the Antarctic polar front** – an upwelling of nutrient rich sea that supports huge abundance of marine life – is being pushed further south. This means that king penguins, that feed on fish and krill in this body of water, have to travel further to their feeding grounds leaving their hungry chicks for longer.

And as the distance between their breeding grounds and their food grows, scientists predict entire colonies will be wiped out.

Le Bohec, who led the study with Robin Cristofari from the Centre Scientifique de Monaco and Emiliano Trucchi from the University of Ferrara in Italy, said the plight of the king penguin should serve as a warning about the future of the entire marine environment in the Antarctic.

“Penguins, like other seabirds and marine mammals, occupy higher trophic levels in the ecosystems: they are what we call bio-indicators of their ecosystems,” she said.

“Thus, penguins, as sensitive indicators of changes in marine ecosystems, are key species for understanding and predicting impacts of global change on the marine biome, and on polar regions for species living in sub-Antarctic and Antarctic areas.”

The report found that, although some king penguins may be able to relocate to new breeding grounds closer to their retreating food source, suitable new habitats would be scarce.

“The main issue is that there are only a handful of islands in the Southern Ocean and not all of them are suitable to sustain large breeding colonies,” said Cristofari.

Le Bohec added: “There are still some islands further south where king penguins may retreat but the competition for breeding sites and food will be harsh, especially with other species like the chinstrap, gentoo or Adélie penguins, even without the fisheries.

“It is difficult to predict the outcome, but there will surely be losses on the way – if we are to save anything, proactive and efficient conservation efforts but above all coordinated global action against global warming should start now.”

Scientists and environmental campaigners are **pushing for the creation of the world’s biggest marine protection area in the Antarctic**. If successful the 1.8m sq km fishing-free zone would protect species, such as penguins, leopard seals and whales. Experts say it would also help mitigate the effects of climate change, soaking up huge amounts of carbon dioxide from the atmosphere and **locking it away in deep-sea sediments**.

The proposal, which is backed by a range of governments and being championed by Greenpeace, goes before the the Antarctic decision-making body Convention for the **Conservation** of Antarctic Marine Living Resources (CCAMLR) later this year.