

Study highlights climate threat to king penguins

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King penguins back from the foraging trip Credit: T. Powolny

Warmer sea temperatures are forcing Indian Ocean king penguins to travel further for food, cutting into their breeding season researchers said Tuesday, warning of a "serious threat" from climate change.

A rise of one degree Celsius (1.8 degree Fahrenheit) in the [ocean surface temperature](#) shifts the birds' hunting ground about 130 kilometres (81 miles) southward, said a study in the journal *Nature Communications*.

Researchers from France and Japan fitted king penguins from the Crozet archipelago in the southern Indian Ocean with satellite transmitters, and tracked their foraging trips for a period of 16 years until 2010.

They looked particularly at the Antarctic Polar Front, an area where warm and cold waters converge to offer a rich banquet of plankton and fish.

Usually, the penguins will travel about 300-500 km

(200-300 miles) for food.

But in years which were warmer due to weather "anomalies" like El Nino, "the penguins not only went further but also they dived deeper," said the study.

During one warm period, in 1997, mean foraging distances for chick-rearing penguins doubled, said the study, and the birds had to dive about 30 metres (100 feet) deeper on average.

"Synchronously with these very unfavourable environmental conditions, the penguin breeding population experienced a 34 percent decline," said the report.

The findings illustrated that [ocean](#) warming had an immediate and major effect on the penguins' wellbeing, said the researchers.

"Non-flying, swimming predators such as penguins are highly sensitive to environmental changes especially during the breeding period because of their low travelling speed," they wrote.

"Future climatic scenarios indicate a warming of the surface waters that should lead to a progressive southward shift of the Polar Front... potentially representing a serious threat for penguins and other diving predators of the Southern Ocean."

For the study, six to 15 [penguins](#) from the Baie du Marin colony on Possession Island were fitted with [satellite transmitters](#) every summer.

More information: *Nature Communications*, nature.com/articles/doi:10.1038/ncomms9220

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