

# Dire future for king penguin population

Climate change could see more than 70% gone by 2100, writes **NICKY WILLEMSE**

**A**N international team of researchers – including South Africa – have completed a study which predicts that more than 70% of the global king penguin population could disappear by 2100.

The results of the study – published in the latest edition of *Nature Climate Change* – show that warmer sea temperatures are shifting the sub-Antarctic birds' main food sources further south and, unless the penguins relocate too, they are likely to starve.

More than 70% of the world's king penguin population form breeding colonies on Crozet, Kerguelen and Marion Island.

These birds rely on the Antarctic Polar Front – an upwelling front in the Southern Ocean, where cold Antarctic water meet, churning up nutrients and attracting enormous amounts of fish – as their main food source.

In the breeding season, parents leave their chicks to swim 350km to 500km to the front, returning days later with

food for their young. But warmer seas are shifting the front further south – and the study predicts that the penguins will have to swim more than 700km, the maximum distance they can travel to find food without compromising the survival of their chicks, due to their own increased energy expenditure. The possible starvation of their chicks could lead to huge population crashes.

study were from Monaco, Italy, Norway, Austria and the United States.

Pistorius, who has been conducting research at Marion Island for the past two decades, said the study had been important in shaping a new three-year collaborative study between South African and France, funded by the South African National Antarctic Programme, to further investigate the impact

**'It's hard to imagine Marion Island without King penguins, but there's no doubt the effect of climate change'**

"The front moves from year to year depending on the temperature of the ocean – and we have already seen impacts in king penguin numbers in the years it has shifted further away from the breeding sites," said Nelson Mandela University senior zoology lecturer Dr Pierre Pistorius who formed part of the French-led research team and was one of the co-authors of the paper.

Other researchers in the

of the shifting front on Marion Island's population.

"What we have found at Marion Island is that king penguin numbers have actually been stable over the past years, but this study provides strong predictions about how it could all change in the future, if we don't do something about global warming..."

"It's hard to imagine Marion Island without king penguins, but there is no



Nelson Mandela University senior zoology lecturer Dr Pierre Pistorius conducts research on king penguins at Marion Island. In 100 years' time, the animals may have disappeared from the sub-Antarctic island, says the writer. PICTURE: OTTO WHITEHEAD

doubt that climate change is causing major changes in the Southern Ocean."

The study says king penguins could save themselves by moving to other islands further south, except they have strict habitat requirements, so a new home might be difficult to find.

To form a colony where they can mate, lay eggs and rear chicks over a year, they need

tolerable temperatures all-year round, no sea ice around the island, relatively smooth beaches – and a food source close by to feed their young.

The research team used high-tech modelling, based on genetic and demographic data, to reconstruct the changes in the worldwide penguin population throughout the last 50 000 years.

What they found was that

past climatic changes, causing shifts in marine currents, sea-ice distribution and Antarctic Polar Front location, have always been linked to critical episodes for the king penguins. However, they have managed to overcome these, relocating during tough times.

However, they have never had to compete with rapid and irreversible changes in their environment caused by human activity.

The polar regions are feeling the impact of climate change the most – and the Southern Ocean is also subject to commercial fishing.

"There are still some islands further south where king penguins may retreat," said study co-author and co-supervisor, Dr Celine Le Bohec from the University of Strasbourg in France.

"But the competition for breeding sites and for food will

be harsh, especially with the other penguin species like the chinstrap, gentoo or Adelle penguins, even without the fisheries.

"It is difficult to predict the outcome, but there will surely be losses on the way.

"If we want to save anything, proactive and efficient conservation efforts but, above all, coordinated global action against global warming should start now."



# South African Library Week

19-25 March 2018

ADVERTORIAL

## About LIASA

LIASA is the SAQA awarded Professional Body that represents libraries and information institutions; all library and information workers; and millions of users and potential users of libraries in South Africa. LIASA aims to unite, develop and empower all people in the library and information field. It represents the interests of and promotes the development and image of library and information services in South Africa. More information about LIASA can be found at <http://www.liasa.org.za>.

More information about the historic relevance of SA Library Week, can be found at: <http://www.liasa.org.za/south-african-library-week/>

The Library and Information Association of South Africa (LIASA) is celebrating South African Library Week from 19-25 March 2018 with the theme **Libraries: heart of the Community**.

The launch event will be held on Monday, 19 March 2018 at the National Library of South Africa: Centre for the Book, Cape Town.

The theme "**Libraries: Heart of the Community**" re-emphasizes the idea that libraries belong to the community and are central to it. All libraries, whether it is a School, Public, Academic or Special library, are at the heart of their communities, to offer vital resources to address community needs, and are places where the community gathers. They are open to their own communities, and provide essential services to help people and neighborhoods thrive. From internet access and help with homework, to story-times and language programs, libraries provide free accessible space, information resources and services for everyone.

In keeping with the UN's Sustainable Development Goals, the LIASA Presidential theme, which is about inclusion and working together to achieve a common vision, libraries play a significant role by increasing access to information in support of the development agenda.

LIASA remains aligned with the South Africa's National Development Plan (NDP) 2030 that will shape communities through among others, skill development in a focused attempt to reduce unemployment especially amongst the youth. Although not recognized as such, a library nourishes and sustains its community, hence this theme encourages and motivates members of society to reflect on the role and value of libraries in their lives.

Libraries have positioned themselves in this space between aspiration and delivery, providing support for education and are the heart of every community... libraries are so much more than books:

- Libraries mirror, reflect and serve communities according to their needs.
- Libraries provide a place to find the resources to learn new skills.
- Libraries provide an opportunity to fight unemployment, illiteracy, digital illiteracy and loneliness.
- Libraries connect people, up-skill them, enable creative learning and build communities.
- Libraries are bridging the disparities within communities.

This 2018 theme "**Libraries: heart of the Community**" is a reminder to all library users that the library is a communal space that caters to specific needs whether these are educational, social, recreational or informative.

In 2017, the Library Association celebrated its 20th anniversary and given its mission encompassing the development of South Africa through access to information, it is imperative that the South African public is invited to partner with LIASA to make "**Libraries: the Heart of the Community**".

In addition to this, in 2018 public libraries in South Africa will be commemorating 200 years of existence, as the first National Library in South Africa (South African Library) was found in Cape Town in 1818. This was the forerunner of the current National Library of South Africa, Cape Town campus.

**Libraries: heart of the community**