

Media Release

Chiefs of Staff, News Directors

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Retreating Antarctic ice may benefit Adelie penguins of the East Antarctic

Amid global concern about the impact of climate change on biodiversity, a study led by IMAS researcher Jane Younger has found that Adelie penguins in East Antarctica could be one species that benefits from shrinking Antarctic glaciers.

Published today in the journal *BMC Evolutionary Biology*, the study looked at the DNA of Adelie penguins to identify population trends over the last 22 000 years.

It found that the penguin population in East Antarctica is 135 times larger now than it was when the last ice age ended around 19 000 years ago.

Adelie penguins nest on ice-free land along the Antarctic coastline and therefore benefit from deglaciation, while their foraging for food for their chicks is made easier by a reduction in sea ice.

Lead Author Jane Younger said the research showed that when considering the effects of climate change, it is important to consider the long-term impact over millennia as well as the immediate effects.

“We found that the Adelie penguin population in East Antarctica was very small during the ice age, but then penguin numbers increased by roughly 135-fold after the ice age ended.

“The increase started around 14,000 years ago, about the same time as glaciers were shrinking in East Antarctica.

“Glacier retreat provided new ice-free ground suitable for Adélie penguin nesting (unlike emperor penguins, the Adelies cannot breed on ice).

However, Ms Younger said the benefits for the East Antarctic Adelies could be balanced by the impact of climate change on its main food sources, and by less favourable conditions in other parts of the Antarctic.

“For Adelie penguin populations to expand they must have adequate food supplies to meet the requirements of the expanding population.

“Whether this will be the case in the future remains to be seen, as the impacts of climate change on Adelie penguin prey species, such as Antarctic krill, are unclear at this time.

“It is very important to note that Adelie penguin numbers are declining in some parts of Antarctica, it would therefore be incorrect to state that climate change is universally good for Adelie penguins.”

IMAS Lead Author Jane Younger was joined in the research by co-authors Dr Louise Emmerson and Dr Colin Southwell from the Australian Antarctic Division, Dr Patrick Lelliott from the Australian School of Advanced Medicine and the Australian National University, and Dr Karen Miller from the Australian Institute of Marine Science and the School of Biological Sciences at the University of Tasmania.

The research was supported with funding of \$90,400 from the Australian Government’s Australian Antarctic Science Grant Program as well as \$40 286 from the SeaWorld research and Rescue Foundation.

Video and stills of Adelie penguins are available at:

ftp://ftp.aad.gov.au/Public/News_Media_Files/Adelie_Penguin_research/

The *BMC Evolutionary Biology* article is available at

<http://dx.doi.org/10.1186/s12862-015-0502-2>

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