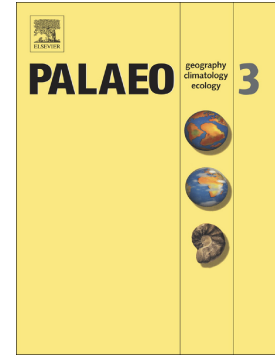


Accepted Manuscript

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PII: S0031-0182(17)30534-5
DOI: doi:[10.1016/j.palaeo.2017.11.053](https://doi.org/10.1016/j.palaeo.2017.11.053)
Reference: PALAEO 8555

To appear in: *Palaeogeography, Palaeoclimatology, Palaeoecology*

Received date: 19 May 2017
Revised date: 22 November 2017
Accepted date: 22 November 2017

Please cite this article as: Yuesong Gao, Lianjiao Yang, Jianjun Wang, Zhouqing Xie, Yuhong Wang, Liguang Sun , Penguin colonization following the last glacial-interglacial transition in the Vestfold Hills, East Antarctica. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. *Palaeo*(2017), doi:[10.1016/j.palaeo.2017.11.053](https://doi.org/10.1016/j.palaeo.2017.11.053)

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Penguin Colonization Following the Last Glacial-Interglacial Transition in the Vestfold Hills, East Antarctica

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Abstract

The population history of the Adélie penguin (*Pygoscelis adeliae*) and its response to climatic and environmental changes have been widely studied in maritime Antarctica and several glacial refugia of Adélie penguins were dated back to the Last Glacial Maximum. However, the process of colony expansion during the subsequent glacial-interglacial transition was less well-documented. In this paper, we investigate an ornithogenic core from Vestfold Hills, East Antarctica, to improve knowledge of postglacial penguin colonization. Local deglaciation occurred around 15.6 kyr BP, based on a coarse-grained detrital layer, a date that is earlier than most of those reported in other studies from the same region. Geochemical analysis of the core suggests penguins started colonizing the northern Vestfold Hills around 14.6 kyr BP, the oldest geological record in East Antarctica on penguin occupation, and their population exhibited a broadly increasing trend thereafter. The population expanded at approximately 6740 yr BP, in the mid-Holocene, which corresponds to a

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