

# Oldest paleogenome from the African continent tells of the extinction of the blue antelope

November 3 2022

---



Credit: Pixabay/CC0 Public Domain

The blue antelope (*Hippotragus leucophaeus*) was an African antelope with a bluish-gray pelt, related to the living sable and roan antelopes. The last blue antelope was shot around 1800, only 34 years after it was first described scientifically, making it the only large African mammal

species to have become extinct in historical times.

Now, a team of scientists led by the Museum für Naturkunde Berlin and the University of Potsdam has succeeded in extracting the first nuclear genomes for this species from one of the rare historical specimens from the Swedish Natural History Museum and a 9,800- to 9,300-year-old fossil tooth from Iziko Museums of South Africa.

The results of this study are published in *Molecular Biology and Evolution*. The fossil genome is now the oldest paleogenome retrieved from Africa. Prevailing environmental conditions in Africa, namely high temperatures, are detrimental to biomolecule preservation, making the retrieval of ancient DNA exceedingly challenging.

"The genomes show that population sizes of the blue antelope were low since the end of the last ice age around 10,000 years ago and thereby also at the time when European colonists arrived in southern Africa during the 17th century," explains Elisabeth Hempel, paleogeneticist at the Museum für Naturkunde Berlin and the University of Potsdam. The fossil record confirms a major decrease in the relative abundance of blue antelope specimens towards the end of the last ice age.

"Despite their small range and low population size, blue antelopes survived through the last 10,000 years alongside a long human presence in the region. That is, until the arrival of European colonists and firearms, leading to the end of a species that may have already been struggling due to millennia of habitat loss and range fragmentation," says Elisabeth Hempel.

A previous study by the same team showed that the blue antelope is one of the scarcest mammal species in historical museum collections globally, and studies to date have only succeeded in recovering relatively small portions of DNA (the mitochondrial genome).

**More information:** Elisabeth Hempel et al, Blue turns to grey–Palaeogenomic insights into the evolutionary history and extinction of the blue antelope, *Molecular Biology and Evolution* (2022). [DOI: 10.1093/molbev/msac241](https://doi.org/10.1093/molbev/msac241)

Provided by Museum für Naturkunde Berlin

Citation: Oldest paleogenome from the African continent tells of the extinction of the blue antelope (2022, November 3) retrieved 31 March 2023 from <https://phys.org/news/2022-11-oldest-paleogenome-african-continent-extinction.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.