

Declining fertility rates may explain Neanderthal extinction, suggests new model

May 29 2019



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A new hypothesis for Neanderthal extinction supported by population

modelling is put forward in a new study by Anna Degioanni from Aix Marseille Université, France and colleagues, published May 29, 2019 in the open-access journal *PLOS ONE*.

The lack of empirical data allowing testing of hypotheses is one of the biggest challenges for researchers studying Neanderthal extinction. Many hypotheses involve [catastrophic events](#) such as disease or climate change. In order to test alternative hypothetical extinction scenarios, Degioanni and colleagues created a Neanderthal population model allowing them to explore [demographic factors](#) which might have resulted in declining populations and population extinction over a period of 4,000-10,000 years (a time frame compatible with known Neanderthal history). The researchers created baseline demographic parameters for their Neanderthal extinction model (e.g. survival, migration, and [fertility rates](#)) based on [observational data](#) on modern hunter-gatherer groups and extant large apes, as well as available Neanderthal paleo-genetic and empirical data from earlier studies. The authors defined populations as extinct when they fell below 5,000 individuals.

The authors saw that in their model, extinction would have been possible within 10,000 years with a decrease in fertility rates of young (

Citation: Declining fertility rates may explain Neanderthal extinction, suggests new model (2019, May 29) retrieved 19 April 2024 from <https://phys.org/news/2019-05-declining-fertility-neanderthal-extinction.html>

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