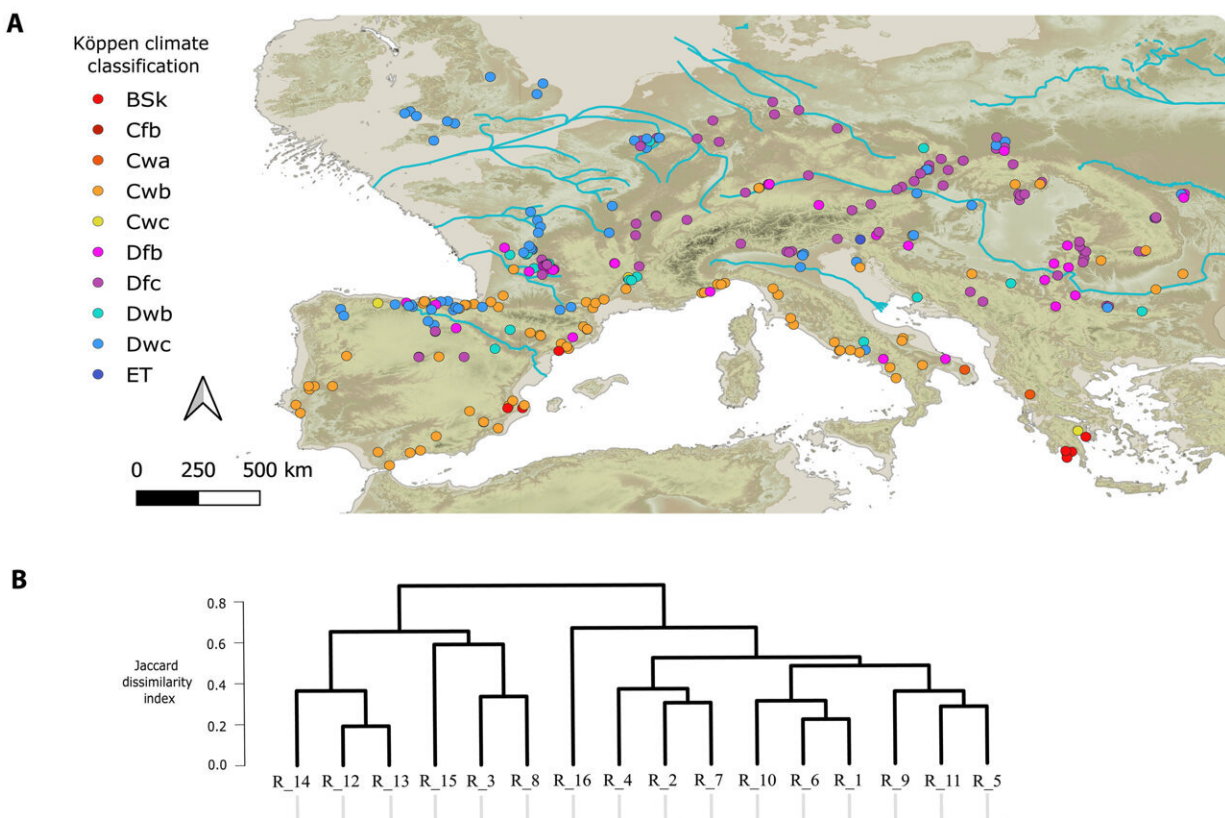


# Neanderthals coexisting with *Homo sapiens* in Europe likely affected by herbivore carrying capacity

September 27 2023, by Bob Yirka



Climate and herbivore species during MIS3. (A) Köppen-Geiger climate classification in each archaeo-paleontological site included in this study. D, continental; C, temperate; E, polar; T, tundra; w, dry winter; f, no dry season; s, dry summer; a, hot summer; b, warm summer; c, cold summer. All climate variables were obtained from the work of Armstrong et al. (90) after bias correction (see the "Paleoclimate reconstruction and validation" section for

details). (B) Cluster dendrogram with the classification of each herbivore paleocommunity in each region according to the Jaccard Dissimilarity Index (JDI). The figure depicts the herbivore species recovered in each region during MIS3. Credit: *Science Advances* (2023). DOI: 10.1126/sciadv.adi4099

A team of evolutionary scientists at Universidad de Cantabria, in Spain, working with a colleague from Mott MacDonald Ltd., in the U.K., has found evidence that suggests *Homo sapiens* and Neanderthals tended to coexist for longer periods in Europe in areas where there were a lot of herbivores.

In their [study](#), reported in the journal *Science Advances*, the group developed techniques to study [coexistence](#) between Neanderthals and *Homo sapiens* in Europe approximately 60,000 years ago.

Prior research has suggested that the arrival of *Homo sapiens* into Europe spelled doom for Neanderthals, though the details of how that happened remain murky. In this new effort, the researchers found evidence suggesting that the disappearance of Neanderthals during the emergence of *Homo sapiens* in Europe may have been coincidental.

To learn more about the history of coexistence between Neanderthals and *Homo sapiens*, the research team built a database about herbivore species living in Europe approximately 60,000 years ago, when both *Homo sapiens* and Neanderthals were living there. The era was also a time of challenging climate change.

By comparing changes in the climate with regions of Europe, the team created a model that showed which parts of Europe were experiencing more or less challenging climate conditions. Next, they created a chronological listing detailing the timeline of the disappearance of

Neanderthals in all the regions they had identified. This allowed them to compare differences in food availability (plants and animals that ate plants) for each of the regions.

The research team found much overlap between where Neanderthals and Homo sapiens were living. Both groups, quite obviously, tended to coexist in those regions where it was easier to find food. Such coexistence, the competitive exclusion principle suggests, should have led to population drops for one or the other, or both, groups.

But according to existing data, such declines did not occur. In fact, it was the opposite—Neanderthals tended to persist longest in regions where they were coexisting with Homo sapiens. This finding suggests a still unknown reason for the decline and disappearance of the Neanderthals.

**More information:** Marco Vidal-Cordasco et al, Neanderthal coexistence with Homo sapiens in Europe was affected by herbivore carrying capacity, *Science Advances* (2023). [DOI: 10.1126/sciadv.adi4099](https://doi.org/10.1126/sciadv.adi4099)

© 2023 Science X Network

Citation: Neanderthals coexisting with Homo sapiens in Europe likely affected by herbivore carrying capacity (2023, September 27) retrieved 29 April 2024 from <https://phys.org/news/2023-09-neanderthals-coexisting-homo-sapiens-europe.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.