

The reindeer and the mammoth already lived on the Iberian Peninsula 150,000 years ago

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The reindeer and the mammoth already lived on the Iberian Peninsula 150,000 years ago. Credit: Peter Novák

A team made up of members of the University of Oviedo (UO) and the Complutense University of Madrid (UCM) have gathered together all findings of the woolly mammoth, the woolly rhinoceros and the reindeer in the Iberian Peninsula to show that, although in small numbers, these big mammals, prehistoric indicators of cold climates, already lived in this territory some 150,000 years ago.

The presence of the woolly mammoth (*Mammuthus primigenius*), the woolly rhinoceros (*Coelodonta antiquitatis*), the [reindeer](#) (*Rangifer tarandus*), and to a lesser extent the wolverine (*Gulo gulo*), the arctic fox (*Alopex lagopus*), the musk-ox (*Ovibos moschatus*) and the Saiga antelope (*Saiga tatarica*), has been linked to the paleoclimatic scale created on the

basis of the [isotopic composition](#) of oxygen in the ice of Greenland.

"The findings of cold climate fauna in the Iberian Peninsula coincide with the periods of greatest global cooling recorded in the ice of Greenland", Diego Álvarez-Lao, main author of the work and researcher in the Palaeontology Department of the UO explains to SINC.

The study, which has been published in the journal *Quaternary International*, reveals that the oldest remains of mammals adapted to cold climates found in the Iberian Peninsula belong to great prehistoric mammals which lived isolated in Spain 150,000 years ago.

The "glacial fauna" entered the Peninsula at that time because "the environmental conditions in central and northern Europe were so extreme that the animals were obliged to migrate to the south, where the climate was less severe", Álvarez-Lao explains.

44,000 years ago these animals became more common in the Iberian Peninsula but only for periods. "The cold periods (with the presence of glacial fauna) alternated with milder periods", adds the researcher.

The increase in temperatures caused a biological crisis

According to the team, the last findings of these cold species date back some 10,000 years, and coincide with the end of the glaciations. At that time, the climate became warmer in the whole northern hemisphere and the favourable habitat for these faunae was reduced to increasingly more northern latitudes and to smaller spaces.

"The increase in temperatures caused a genuine biological crisis for these animals from extremely cold climates. Some species such as the

reindeer and the arctic fox found their new habitat in the arctic regions of the planet, where they still survive today. Others, such as the [woolly mammoth](#) and the woolly rhinoceros weren't so lucky", specifies the paleontologist.

According to the studies of pollen remains associated with these findings, the landscape of the period in which the great mammals lived in the [Iberian Peninsula](#) comprised mainly of steppes, or herbaceous vegetation. "Trees would have been very scarce in these times of extreme cold and environmental aridity", Álvarez-Lao points out.

More than 72 sites with remains of mammals

The Spanish researchers found the fossil remains of glacial climate fauna in 72 Iberian sites, the majority of which are in the north of the peninsula (Cornisa Cantabrica and Catalonia). There are also some traces in inland areas of the peninsula and even in the south, where the site of the woolly mammoths of Padul (Granada) lies.

"These species lived alongside different human cultures. There is evidence in some sites of the Basque country, Navarra and Catalonia that the Neanderthals coexisted with the mammoths and the reindeer at specific times. However, the majority of evidence of these faunae coincides with the periods of the Gravettian, Solutrean and Magdalenian cultures (during the Upper Paleolithic era in West Europe)", states Álvarez-Lao.

More information: Álvarez-Lao, Diego J.; García, Nuria.

"Chronological distribution of Pleistocene cold-adapted large mammal faunas in the Iberian Peninsula" *Quaternary International* 212(2): 120-128, 2010.

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