

Bear hunting altered genetics more than Ice Age isolation

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It was not the isolation of the Ice Age that determined the genetic distribution of bears, as has long been thought. This is shown by an international research team led from Uppsala University in Sweden in the latest issue of *Molecular Ecology*. One possible interpretation is that the hunting of bears by humans and human land use have been crucial factors.

Twenty thousand years ago Europe was covered by ice down to Germany, and the climate in the rest of Europe was such that several species were confined to the southern regions, like the Iberian Peninsula and Italy. These regions were refuges, areas where species could survive during cold periods and then re-colonize central and northern Europe when it got warmer.

But the brown bear was not limited to these regions it could roam freely across major parts of southern and central Europe. The current study analyzed mitochondria from bear remains. Some of the fossils are 20,000 years old. The analysis shows that the genetic pattern in these ancient brown bears differed from that of bears living today.

“Previously today’s genetic structure was interpreted as showing that the brown bear was isolated in southern Europe, just like many other species. But our study shows that this was not the case,” says Love Dalén, one of the Swedes participating in the study.

The new findings show instead that the brown bear survived in central

Europe, even during the coldest period of the Ice Age. The scientists now believe that the genetic pattern found in today's brown bears is the result of historical hunting and of human activities in the brown bear's natural environment. A few thousand years ago, there were brown bears all over Europe, while today there are just a few remaining populations in Spain, Italy, the Balkans, and Scandinavia.

“It's not strange that findings were interpreted differently in the past, with the brown bear extinct in most of its old area of inhabitation. We only had the remnant populations to work with,” says Anders Götherstam, who directed the study.

Source: Uppsala University

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