Press Release

Ice Age hunters decimated mammoth populations 30,000 years ago

Tübingen researchers show climate and food supplies were stable – humans caused big herbivores to die out

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Researchers from the University of Tübingen and the Senckenberg Nature Research Society say hunting by humans appears significantly cut mammoth populations in western Europe around 30,000 years ago. The researchers analyzed bones, teeth and mammoth ivory from the Gravettian era (30,500 - 22,000 years ago) to show that climate conditions as well as food and water supplies for these giant herbivores remained stable. Yet the study, led by biogeologist Dr. Dorothée G. Drucker and published in “Quaternary International,” shows that their numbers declined.

Finds of mammoth bone or ivory artefacts become rarer throughout the Gravettian. Dr. Drucker and her colleague Professor Hervé Bocherens of Tübingen University and the Senckenberg Center for Human Evolution and Paleoenvironment (HEP) focused on finds from Germany’s Swabian Jura region and the Dordogne valley in southwestern France. With help from researchers at the Muséum National d’Histoire Naturelle in Paris, Drucker and Bocherens found further indications that the slow disappearance of mammoths was linked to intense hunting by humans.

They analyzed the composition of stable isotopes in mammoth, horse and reindeer bones. The relative amounts of carbon, sulfur and nitrogen isotopes provide indications of the stability of the animals’ ecological niche. All three species showed a mainly stable concentration of isotopes during the Gravettian – which means their environment changed little.

There was a noticeable change, however, in the remains of horses from the Swabian Jura, where the concentration of the ^{15}N nitrogen isotope increased during the Gravettian, approaching the levels found in mammoth bone. The researchers conclude from this that the horses in the region were taking over the ecological niche of receding mammoth

populations. To discover whether there were climatic reasons for this, the scientists measured levels of the oxygen isotope ^{18}O. Changes in its levels would indicate changes in climate.

But there were no signs of major climate changes in that epoch, says Drucker, “so it is highly likely that the decrease in mammoth populations in southwestern Germany was caused by humans.” It seems Ice Age hunter-gatherers caused significant changes to the ecosystem they lived in more than 20,000 years ago.

Publication:

Dorothee G. Drucker, Carole Vercoutere, Laurent Chiotti, Roland Nespoulet, Laurent Crepin, Nicholas J. Conard, Susanne C. Münzel, Thomas Higham, Johannes van der Plicht, Martina Laznickova-Galetova, Herve Bocherens: “Tracking possible decline of woolly mammoth during the Gravettian in Dordogne (France) and the Ach Valley (Germany) using multi-isotope tracking (13C, 14C, 15N, 34S, 18O)”; *Quaternary International*,
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The Mammoth of Vogelherd Cave (found 2006): The latest research suggests that humans hunted mammoths to the point of extinction in western Europe 30,000 years ago.

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