

New study changes conditions for Spanish brown bears

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Brown bears from the Iberian Peninsula are not as genetically different from other brown bears in Europe as was previously thought. An international study being published this week in *Proceedings of the National Academy of Sciences, PNAS*, shows that, on the contrary, the Spanish bear was only recently isolated from other European strains. These findings shed new light on the discussion of how to save the population of Spanish bears.

The researchers extracted DNA and determined the gene sequence of bears from prehistoric material, primarily from the Iberian Peninsula. Some of the material was as much as 80,000 years old. When the data material was analyzed, what emerged was a totally unexpected pattern.

“We expected to be able to follow the Spanish brown bear far back in time, but we found to our amazement that it had genetic material from bears in other parts of Europe. In fact, it seems that the Spanish bear was isolated for the first time in our own time,” says doctoral student Cristina Valdiosera, who performed most of the laboratory and analytical work.

“These bears have possibly been isolated in Spain for a few thousand years, which is a very short period in an evolutionary perspective. In other words, there has been a flow of genes to and from the Iberian Peninsula throughout most of the time brown bears have been there. This is extremely interesting data when we discuss transporting bears from other areas to Spain for the purpose of preservation,” says Anders Götherstam, who directed the study.

The number of bears on the Iberian Peninsula is limited, with the population divided into two small groups in the north. In-breeding and genetic depletion constitutes a serious threat to the bears' survival in this area. For preservation purposes, the possibility of introducing bears from other areas to the Iberian Peninsula has been discussed, but it has been objected that this would entail the extinction of the genetically unique Iberian bear. It has also been feared that bears from other areas are not as well adapted to the living conditions on the Iberian Peninsula as the Spanish bears are.

“But since there has never been a genetically isolated brown bear on the Iberian Peninsula until very recently, these arguments can be questioned,” says Anders Götherstam.

Source: Uppsala University

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