Genetic study shows white rhinos intermixed during ice age offering hope for saving sub-species

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An international team of researchers has found genetic evidence of northern and southern white rhinoceros' intermingling during the last ice age. In their paper published in *Proceedings of the Royal Society B*, the group describes their study and their hopes that the new information may lead to a new population of hybrids.

This past March, the last remaining male northern white rhinoceros died, suggesting that the sub-species was on the brink of extinction—just two females now exist. In stark contrast, the southern white rhino has been flourishing in the sub-Saharan grasslands as government agencies have worked hard to protect them. The northern and southern white rhinos have been living apart for so long that they have evolved into two sub-species. To prevent the complete loss of the northern sub-species, scientists have been investigating the possibility of establishing a population of hybrid rhinos—half northern, half southern. But it was not clear how distinct the two species might be—too many genetic differences would mean they would not be able to reproduce. To date, only one such hybrid was ever produced, a female that lived from 1977 to 2009. She never mated, however, offering little in the way of hope for a hybrid population. In this new effort, the researchers conducted a genetic analysis of 200 northern and southern rhinos, comparing them for compatibility.

The researchers report that their analysis showed that the two sub-species had mated occasionally during the last ice age, which would greatly increase the likelihood of the two sub-species being able to successfully mate today. They note that even if the possibility does exist, there is no guarantee that offspring would be healthy enough to survive. The only way to find out for sure is to try to create hybrids and see how they fare.

This past July, a team working on producing hybrids announced that they had successfully created hybrid embryos. The next step will be to place them in southern white rhino mothers currently living in captivity. Before that can happen though, the team will need to receive permission from authorities to obtain and use sperm collected from deceased northern males.

More information: Contrasting evolutionary history, anthropogenic declines and genetic contact in the northern and southern white rhinoceros (Ceratotherium simum) *Proceedings of the Royal Society B* (2018). rspb.royalsocietypublishing.or … .1098/rspb.2018.1567

Press release