

# When did the 'Siberian unicorn' disappear?

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The beautiful title "Siberian unicorn" belongs to *Elasmotherium sibiricum*—an elasmotherium Siberian rhinoceros, which was thought to have died out 350,000 years ago. Recently, researchers of Tomsk State University (TSU) determined that this "unicorn" had found its last refuge 29,000 years ago in Kazakhstan. An article, describing the recent fossil finding in the Pavlodar Irtysh, was published in February 2016 in the *American Journal of Applied Science*.

"Most likely, the south of Western Siberia was a refúgium, where this rhino persevered the longest in comparison with the rest of its range. There is another possibility that it could migrate and dwell for a while in the more southern areas," said Andrey Shpanski, a paleontologist at TSU. These conclusions were reached after researching the rhinoceros skull, found near Kozhamzhar village in Pavlodar region (Kazakhstan). The skull is well preserved—there are some cracks but no trace of pelletization, gnawing or exfoliation. The fossils were examined by radiocarbon AMS-method analysis in the laboratory 14CHRONO Centre for Climate, the Environment, and Chronology (School of Geography, Archaeology and Palaeoecology; Queen's University Belfast; Belfast, U.K.). The animal died 29,000 years ago. "Most likely, it was a very large male of very large individual age (teeth not preserved). The dimensions of this rhino are the biggest of those described in the literature, and the proportions are typical," said the scientist.

*Elasmotherium sibiricum* was presumed to have become extinct about 350,000 years ago. Its habitat was the vast territory from the Don River to the east of modern Kazakhstan. Elasmotherium residue findings in the

Pavlodar Irtysh showed quite a long habitation of these rhinos in the southeast of the West Siberian Plain. An extinction period can now be compared with the boundary between Kargin thermochron and Sartan cryochron of late pleistocene (boundary of MIS 3 and 2) in Western Siberia. The researchers propose mass radiocarbon studies of mammalian remains that were previously regarded as ancient and presumed extinct more than 50,000 to 100,000 years ago. "Our research makes adjustments in the understanding of the environmental conditions in the geologic time in general. Understanding of the past allows us to make more accurate predictions about natural processes in the near future—it also concerns climate change," said Shpanski.

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