

Our bond with dogs may go back more than 27,000 years

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This image compares an ancient Taimyr Wolf bone from the lower jaw to a modern pipette. Credit: Love Dalén

Dogs' special relationship to humans may go back 27,000 to 40,000 years, according to genomic analysis of an ancient Taimyr wolf bone

reported in the Cell Press journal *Current Biology* on May 21. Earlier genome-based estimates have suggested that the ancestors of modern-day dogs diverged from wolves no more than 16,000 years ago, after the last Ice Age.

The genome from this ancient specimen, which has been radiocarbon dated to 35,000 years ago, reveals that the Taimyr wolf represents the most recent common ancestor of modern [wolves](#) and dogs.

"Dogs may have been domesticated much earlier than is generally believed," says Love Dalén of the Swedish Museum of Natural History. "The only other explanation is that there was a major divergence between two [wolf populations](#) at that time, and one of these populations subsequently gave rise to all modern wolves." Dalén considers this second explanation less likely, since it would require that the second wolf population subsequently became extinct in the wild.

"It is [still] possible that a population of wolves remained relatively untamed but tracked human groups to a large degree, for a long time," adds first author of the study Pontus Skoglund of Harvard Medical School and the Broad Institute.

The researchers made these discoveries based on a small piece of [bone](#) picked up during an expedition to the Taimyr Peninsula in Siberia. Initially, they didn't realize the [bone fragment](#) came from a wolf at all; this was only determined using a genetic test back in the laboratory. But wolves are common on the Taimyr Peninsula, and the bone could have easily belonged to a modern-day wolf. On a hunch, the researchers decided to radiocarbon date the bone anyway. It was only then that they realized what they had: a 35,000-year-old bone from an ancient Taimyr wolf.

The DNA evidence also shows that modern-day Siberian Huskies and

Greenland sled dogs share an unusually large number of genes with the ancient Taimyr wolf.



Ancient Taimyr Wolf bone from the lower jaw. The animal lived approximately 27,000 to 40,000 years ago. Credit: Love Dalén

"The power of DNA can provide direct evidence that a Siberian Husky you see walking down the street shares ancestry with a wolf that roamed Northern Siberia 35,000 years ago," Skoglund says. To put that in perspective, "this [wolf](#) lived just a few thousand years after Neandertals disappeared from Europe and modern humans started populating Europe and Asia."



DNA from this small piece of a rib bone from an ancient Taimyr wolf suggests that dogs may have been domesticated 27,000 years ago. Credit: Love Dalén

Provided by Cell Press

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