

# Researchers uncover origins of cattle farming in China

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An international team of researchers, co-led by scientists at the University of York and Yunnan Normal University, has produced the first multi-disciplinary evidence for management of cattle populations in northern China, around the same time cattle domestication took place in the Near East, over 10,000 years ago.

The [domestication](#) of cattle is a key achievement in human history. Until now, researchers believed that humans started domesticating cattle around 10,000 years ago in the Near East, which gave rise to humpless (taurine) cattle, while two thousand years later humans began managing humped cattle (zebu) in Southern Asia.

However, the new research, which is published in *Nature Communications*, reveals morphological and genetic evidence for management of cattle in north-eastern China around 10,000 years ago, around the same time the first domestication of taurine cattle took place in the Near East. This indicates that humans may have started domesticating cows in more regions around the world than was previously believed.

A lower jaw of an ancient cattle specimen was discovered during an excavation in north-east China, and was carbon dated to be 10,660 years old. The jaw displayed a unique pattern of wear on the molars, which, the researchers say, is best explained to be the results of long-term human management of the animal. Ancient DNA from the jaw revealed that the animal did not belong to the same cattle lineages that were

domesticated in the Near East and South Asia.

The combination of the age of the jaw, the unique wear and genetic signature suggests that this find represents the earliest evidence for cattle management in north-east China; a time and place not previously considered as potential domestication centre for cattle.

The research was co-led in the Department of Biology at the University of York by Professor Michi Hofreiter and Professor Hucai Zhang of Yunnan Normal University.

Professor Hofreiter said: "The specimen is unique and suggests that, similar to other species such as pigs and dogs, cattle domestication was probably also a complex process rather than a sudden event." Johanna Paijmans, the PhD student at York who performed the DNA analysis, said: "This is a really exciting example of the power of multi-disciplinary research; the wear pattern on the lower jaw itself is already really interesting, and together with the carbon dating and ancient DNA we have been able to place it in an even bigger picture of early [cattle](#) management."

Provided by University of York

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