

Old dog, new tricks: Study IDs 9,400-year-old mutt

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This June 2009 photo provided by University of Maine researcher Samuel Belknap III shows the Hinds Cave in southwest Texas. Belknap found a bone fragment of what he says is the oldest-known domesticated dog in North America, while examining a waste matter recovered from the cave. (AP Photo/Samuel Belknap III)

Nearly 10,000 years ago, man's best friend provided protection and companionship - and an occasional meal. That's what researchers are saying after finding a bone fragment from what they are calling the earliest confirmed domesticated dog in the Americas.

University of Maine graduate student Samuel Belknap III came across the fragment while analyzing a dried-out sample of human waste unearthed in southwest Texas in the 1970s. A carbon-dating test put the age of the bone at 9,400 years, and a DNA analysis confirmed it came

from a dog - not a wolf, coyote or fox, Belknap said.

Because it was found deep inside a pile of human excrement and was the characteristic orange-brown color that bone turns when it has passed through the [digestive tract](#), the fragment provides the earliest direct evidence that dogs - besides being used for company, security and hunting - were eaten by humans and may even have been bred as a food source, he said.

Belknap wasn't researching dogs when he found the bone. Rather, he was looking into the diet and nutrition of the people who lived in the Lower Pecos region of Texas between 1,000 and 10,000 years ago.

"It just so happens this person who lived 9,400 years ago was eating dog," Belknap said.

Belknap and other researchers from the University of Maine and the University of Oklahoma's molecular anthropology laboratories, where the [DNA analysis](#) was done, have written a paper on their findings.

The paper has been scientifically reviewed and accepted, pending revisions, for publication in the [American Journal of Physical Anthropology](#) later this year, said editor in chief Christopher Ruff. He declined comment on the article until it has been published.

Dogs have played an important role in [human culture](#) for thousands of years.

There are archaeological records of dogs going back 31,000 years from a site in Belgium, 26,000 years in the Czech Republic and 15,000 years in Siberia, said Robert Wayne, a professor of [evolutionary biology](#) at UCLA and a dog evolution expert. But canine records in the New World aren't as detailed or go back nearly as far.

For his research, Belknap - who does not own a dog himself - had fecal samples shipped to him that had been unearthed in 1974 and 1975 from an archaeological site known as Hinds Cave and kept in storage at Texas A&M University. The fragment is about six-tenths of an inch long and three- to four-tenths of an inch wide, or about the size of a fingernail on a person's pinkie.

He and a fellow student identified the bone as a fragment from where the skull connects with the spine. He said it came from a dog that probably resembled the small, short-nosed, short-haired mutts that were common among the Indians of the Great Plains.

Judging by the size of the bone, Belknap figures the dog weighed about 25 to 30 pounds. He also found what he thinks was a bone from a dog foot, but the fragment was too small to be analyzed.

Other archaeological digs have put dogs in the U.S. dating back 8,000 years or more, but this is the first time it has been scientifically proved that dogs were here that far back, he said.

Darcy Morey, a faculty member at Radford University who has studied dog evolution for decades, said a study from the 1980s dated a dog found at Danger Cave, Utah, at between 9,000 and 10,000 years old. Those dates were based not on carbon-dating or DNA tests, but on an analysis of the surrounding rock layers.

"So 9,400 years old may be the oldest, but maybe not," Morey said in an e-mail.

Morey, whose 2010 book, "Dogs: Domestication and the Development of a Social Bond," traces the evolution of dogs, said he is skeptical about DNA testing on a single bone fragment because dogs and wolves are so similar genetically.

Belknap said there may well be older dogs in North America, but this is the oldest directly dated one he is aware of. For many years, researchers thought that dog bones from an archaeological site in Idaho were 11,000 years old, but additional testing put their age at between 1,000 and 3,000 years old, he said.

"If there's one thing our discovery is showing it's that we can utilize these techniques and learn a lot more about dogs in the New World if we apply these tests to all these early samples," he said.

The earliest dogs in North America are believed to have come with the early settlers across the Bering land bridge from Asia to the Americas 10,000 years ago or earlier, said Wayne, who has not seen Belknap's research.

It doesn't surprise Belknap that dogs were a source of food for humans.

A lot of people in Central America regularly ate dogs, he said. Across the Great Plains, some Indian tribes ate [dogs](#) when food was scarce or for celebrations, he said.

"It was definitely an accepted practice among many populations," he said.

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