Professor was right: Mastodon weapon was older than thought, scientists say

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It's not unusual for an archaeologist to get stuck in the past, but Carl Gustafson may be the only one consumed by events on the Olympic Peninsula in 1977.

That summer, while sifting through earth in Sequim, Wash., the young Gustafson uncovered something extraordinary - a mastodon bone with a shaft jammed in it. This appeared to be a weapon that had been thrust into the beast's ribs, a sign that humans had been around and hunting far earlier than anyone suspected.

Unfortunately for Gustafson, few scientists agreed. He was challenging orthodoxy with less-than-perfect evidence.

For almost 35 years, his find was ridiculed or ignored, the site dismissed as curious but not significant.

But last month, a team that re-examined his discovery using new technology concluded in the prestigious journal Science that Gustafson had been right all along.

The pierced bone was clear evidence that human beings were hunting large mammals in North America 13,800 years ago - about 800 years before the so-called Clovis people were thought to have migrated across the Bering land bridge from Asia.

The announcement came as sweet vindication for the now-retired

Washington State University professor.

"I was pretty bitter about the whole thing for a long time," Gustafson, 75, recalled. "I don't like saying it. I never really admitted it except to my wife. It was so frustrating. But I'm very humbled and happy it turned out this way."

His discovery has helped redefine our understanding of the history of the Americas.

"I'm very sympathetic towards his situation," said Daniel Fisher, professor of evolutionary biology and curator of the Museum of Paleontology at the University of Michigan. "People didn't pay enough attention to this."

The turnaround puts Gustafson in great company. A colleague called him the J Harlen Bretz of anthropology, a reference to the geologist-detective who theorized in the 1920s that Eastern Washington's scablands had to have been carved by a massive flood. It took 50 years for other scientists to agree.

"I think that's been the most gratifying aspect of this entire project - being able to go to Carl's house and show him all the data and the dates," said Mike Waters, director of the Center for the Study of the First Americans at Texas A&M University, who led the recent re-examination. "You could just see the excitement on his face. His wife told me later that it was one of his best days ever."

Of course, another day stands out, too.

It started with a bowling alley owner in Sequim who just wanted to put in a pond.

Manny Manis was turning over dirt with a backhoe in August 1977 when he unearthed what looked like the tusk of a mammoth. An excited Manis and his wife, Clare, started calling around to experts.

In Pullman a week later, Gustafson heard about the find. He grabbed an 8-foot-long roll of cotton batting and a 2.5-ton truck and drove to the Olympic Peninsula. He expected to be done in a few days. (He would spend every summer there until 1985.)

There, in the earth, lay the bones of a mastodon, an elephantlike creature that went extinct about 11,000 years ago. Within hours Gustafson found the rib bone with an odd fragment in it.

"I saw the object stuck into the bone," Gustafson recalled. "I could see some of the bone was crushed in, as if you'd penetrated the object with a spear or an ice pick. It looked like a human-modified bone stuck into this rib."

Gustafson was thrilled but knew he had to slow down. He and colleagues collected seeds and other organic material amid the bones and had them sent to be radiocarbon dated. The rib bone was sent to be X-rayed.

The dating suggested the bone was 14,000 years old, but the margin for error was high. The X-rays showed what looked to be a projectile point, but it was blurry.

Still, Gustafson believed he'd stumbled upon a game changer.

Since the 1930s, many scientists had come to believe it was unlikely that humans in the Americas predated Clovis people. For starters, there was a lot of evidence of Clovis people, but nothing credible had surfaced to suggest humans were here earlier.

"There was also an entrenched point of view within the academic community commonly known as the Clovis-first position," Fisher said. Many scientists held challenges to that position to far greater scrutiny, he said.

Gustafson's find was called inconclusive, or simply reinterpreted. The "weapon" was probably just a piece of tusk left behind by another mastodon after a fight, some said. It could have been a broken antler from a charging elk, others argued.

"It was just so frustrating," Gustafson said. "I had all this stuff, all this information."

Gustafson and his son returned again and again to the site, amassing more evidence. Sometimes they lived for months on credit cards. They found other bones that appeared sharpened, but it was never entirely clear.

Quentin Mackie, at the University of Victoria's Department of Anthropology, agreed the Clovis-first model most likely subjected Gustafson's site to unfair critiques. But over the years Gustafson, too, didn't share his results in a great number of high-profile journals.

"I just think Carl was hiding his light under a bushel," Mackie said. "I respect what Carl did. He poured countless hours into documenting the site. But for the rest of us, we rely on publication of results in peer-reviewed journals, and I don't think his evidence was presented in a way that was persuasive enough. And I hate to say that."

Gustafson concedes his output could have been greater.

"I probably should have published more," Gustafson said. "But I had so much. I didn't know how to take all this information and make a story

out of it."

He also lacked important modern tools.

By the late 1990s, Gustafson had retired and the Clovis-first model was under increasing scrutiny. Evidence of pre-Clovis people had been found in South America, and other sites had surfaced, or would soon, in Wisconsin, Texas and Oregon - some more than 15,000 years old. The tide was changing.

One of the scientists helping write that new history was Waters at Texas A&M. One day he called Gustafson and asked if he could subject his materials to new tests. Gustafson happily agreed.

"The Manis site had always been intriguing to me," Waters said.

So he and his team put the rib bone through an industrial-strength CT scan. They used DNA sequencing and protein analysis. They sent samples to other labs to rule out other possibilities.

Using these and other tests not available to Gustafson in the 1970s and '80s, they narrowed the age of the bone down to 13,800 years.

The CT scan showed the embedded shaft in the rib clearly had been whittled to a point. And other tests revealed it, too, was made of mastodon bone - not tusk, not elk antler.

"When I saw that this was sharpened to a sharp tip, I thought my gosh, this is an actual projectile point," Waters said.

Waters and his colleagues showed Gustafson was right.

"It's about time," said Clare Manis Hatler, the wife of Manny Manis,

who died more than a decade ago. Over the years she'd become friends with Gustafson and had long ago been convinced he was right. "It was so depressing to watch people attack Carl's work. It's tough to have people shooting at you for 30-plus years."

As for Gustafson, he isn't resting on his laurels. He's already gone back to his basement and begun poring again over his reams of data. Waters' research has given him the confidence to start working out a narrative for one last scientific paper.

"I'm still not sure just how to do it," he said, "but I've started putting this stuff together in ways that are beginning to make sense to me."