New deglaciation data opens door for earlier First Americans migration

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A new study of lake sediment cores from Sanak Island in the western Gulf of Alaska suggests that deglaciation there from the last Ice Age took place as much as1,500 to 2,000 years earlier than previously thought, opening the door for earlier coastal migration models for the Americas.

The Sanak Island Biocomplexity Project, funded by the National Science Foundation, also concluded that the maximum thickness of the ice sheet in the Sanak Island region during the last glacial maximum was 70 meters – or about half that previously projected – suggesting that deglaciation could have happened more rapidly than earlier models predicted.

Results of the study were just published in the professional journal, *Quaternary Science Reviews.*

The study, led by Nicole Misarti of Oregon State University, is important because it suggests that the possible coastal migration of people from Asia into North America and South America – popularly known as "First Americans" studies – could have begun as much as two millennia earlier than the generally accepted date of ice retreat in this area, which was 15,000 years before present.

Well-established archaeology sites at Monte Verde, Chile, and Huaca Prieta, Peru, date back 14,000 to 14,200 years ago, giving little time for expansion if humans had not come to the Americas until 15,000 years

before present – as many models suggest.

The massive ice sheets that covered this part of the Earth during the last Ice Age would have prevented widespread migration into the Americas, most archaeologists believe.

"It is important to note that we did not find any archaeological evidence documenting earlier entrance into the continent," said Misarti, a post-doctoral researcher in Oregon State's College of Earth, Ocean, and Atmospheric Sciences. "But we did collect cores from widespread places on the island and determined the lake's age of origin based on 22 radiocarbon dates that clearly document that the retreat of the Alaska Peninsula Glacier Complex was earlier than previously thought."

"Glaciers would have retreated sufficiently so as to not hinder the movement of humans along the southern edge of the Bering land bridge as early as almost 17,000 years ago," added Misarti, who recently accepted a faculty position at the University of Alaska at Fairbanks.

Interestingly, the study began as a way to examine the abundance of ancient salmon runs in the region. As the researchers began examining core samples from Sanak Island lakes looking for evidence of salmon remains, however, they began getting radiocarbon dates much earlier than they had expected. These dates were based on the organic material in the sediments, which was from terrestrial plant macrofossils indicating the region was ice-free earlier than believed.

The researchers were surprised to find the lakes ranged in age from 16,500 to 17,000 years ago.

A third factor influencing the find came from pollen, Misarti said.

"We found a full contingent of pollen that indicated dry tundra

vegetation by 16,300 years ago," she said. "That would have been a viable landscape for people to survive on, or move through. It wasn't just bare ice and rock."

The Sanak Island site is remote, about 700 miles from Anchorage, Alaska, and about 40 miles from the coast of the western Alaska Peninsula, where the ice sheets may have been thicker and longer lasting, Misarti pointed out. "The region wasn't one big glacial complex," she said. "The ice was thinner and the glaciers retreated earlier."

Other studies have shown that warmer sea surface temperatures may have preceded the early retreat of the Alaska Peninsula Glacier Complex (APGC), which may have supported productive coastal ecosystems.

Wrote the researchers in their article: "While not proving that first Americans migrated along this corridor, these latest data from Sanak Island show that human migration across this portion of the coastal landscape was unimpeded by the APGC after 17 (thousand years before present), with a viable terrestrial landscape in place by 16.3 (thousand years before present), well before the earliest accepted sites in the Americas were inhabited."

Provided by Oregon State University

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