



Singapore Journal of
Scientific Research

ISSN: 2010-006x

science
alert

<http://scialert.net/sjsr>

Being Good Moms Couldn't Save the Woolly Mammoth

New research from The University of Western Ontario leads investigators to believe that woolly mammoths living north of the Arctic Circle during the Pleistocene Epoch (approx. 150,000 to 40,000 years ago) began weaning infants up to three years later than modern day African elephants due to prolonged hours of darkness.

This adapted nursing pattern could have contributed to the prehistoric elephant's eventual extinction. The findings were published recently in the journal, *Palaeogeography, Palaeoclimatology, Palaeoecology*.

By studying the chemical composition of adult and infant mammoth teeth, Jessica Metcalfe, an Earth Sciences PhD student working with professor Fred Longstaffe, was able to determine woolly mammoths that once inhabited Old Crow, Yukon didn't begin eating plants and other solid foods before the age of two (and perhaps as late as three) and considers predatory mammals like saber-toothed cats and a lack of sufficient vegetation to be the secondary reasons for delayed weaning.

"In modern Africa, lions can hunt baby elephants but not adults. They can't kill adults. But they can kill babies and by and large, they tend to be successful when they hunt at night because they have adapted night vision," explains Metcalfe, who examined fossil specimens alongside Grant Zazula of the Yukon Paleontology Program. "In Old Crow, where you have long, long hours of darkness, the infants are going to be more vulnerable, so the mothers nursed longer to keep them close"

Metcalfe says delayed weaning by Old Crow mammoths may have further significance for understanding mammoth life histories and extinction.

"Today, a leading cause of infant elephant deaths in Myanmar is insufficient maternal milk production," offers Metcalfe. "Woolly mammoths may have been more vulnerable to the effects of climate change and human hunting than modern elephants not only because of their harsher environment, but also because of the metabolic demands of lactation and prolonged nursing, especially during the longer winter months."

Metcalfe concludes that knowing more about the past, can only help researchers understand more about the present and the future.

"Mammoths lived all over the world for thousands of years, even millions of years, and then became extinct about 10,000 years ago, which was around the time the climate started warming the last time," says Metcalfe. "Understanding their ecology, their adaptations and their behaviour not only gives us insight into why they became extinct but also, potentially, gives us a better understanding of modern day mammals and how they might respond to the current warming of the planet"

Jessica Z. Metcalfe, Fred J. Longstaffe, Grant D. Zazula. Nursing, weaning, and tooth development in woolly mammoths from Old Crow, Yukon, Canada: Implications for Pleistocene extinctions. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 2010; 298 (3-4): 257 DOI: 10.1016/j.palaeo.2010.09.032