

Ancient wolves had bone-crushing teeth, scientists find

by Bend_Weekly_News_Sources

A specialized breed of ancient gray wolves once roamed Alaska's icy expanses, with bone-crushing jaws for taking on huge prey, scientists say. The extinct Alaskan wolves had robust bodies, strong jaws, and massive canine teeth for killing prey larger than themselves and regularly consuming large bones, according to the researchers. But the wolves apparently died out along with other big animals at the end of the last Ice Age. "The unique attributes of Alaskan Pleistocene [Ice-Age] wolves had not been previously recognized," said Blaire Van Valkenburgh of the University of California, Los Angeles, one of the researchers. "The living gray wolf differs dramatically from that which roamed Alaska just 12,000 years ago." The findings appear in the June 21 online issue of the research journal *Current Biology*. The gray wolf is one of the few large predators that survived the mass extinction of the late Ice Age. Nevertheless, wolves disappeared from northern North America at that time, she said; but they lived on in the Old World, which may explain their presence in North America today. To study Alaska's ancient wolves, Van Valkenburgh and colleagues collected bones of the animals from permafrost deposits and examined their chemical composition and DNA. The late-Pleistocene wolves were genetically and physically distinct from existing wolves, the scientists reported: the skull shape, tooth wear and bone chemistry suggest they were hunters and scavengers of extinct megafauna.

The archaic wolves had "more massive teeth and broader skulls with shorter snouts, enhancing their ability to produce strong bites," Van Valkenburgh said. "The studies of their tooth wear and fracture rate showed high levels of both, consistent with regular and frequent bone-cracking and -crunching." Those characteristics probably came in handy in ancient Alaska, where the wolves faced stiff competition for food from some formidable competitors, she added, including lions, short-faced bears, and saber-tooth cats. During periods of intense competition among predators, modern wolves also consume carcasses more fully, she noted. They ingest more bone and eat faster, increasing the risk of tooth fracture. The long-ago demise of this specialized wolf form may portend things to come for specialized groups of existing predators, Van Valkenburgh said. For example, a unique type of madrigal North American gray wolf was recently discovered. Packs of them migrate across the tundra along with caribou and keep their numbers in check. In contrast, other wolves are territorial and non-migratory. "Global warming threatens to eliminate the tundra and it is likely that this will mean the extinction of this important predator," she said.

Courtesy Cell Press and World Science staff

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