

Evaluating interior Alaska wolf diets via stable isotope analyses

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Gray wolves (*Canis lupus*) are commonly viewed as obligate predators of ungulates with alternative prey providing little to their annual diets. However, salmon, primarily chum (*Oncorhynchus keta*) and chinook (*O. tshawytscha*), are widely available from summer to early winter throughout much of interior Alaska. Although recent studies have shown that coastal wolf populations utilize salmon, there has been no assessment of use of salmon by non-coastal wolves. We hypothesize that this relatively abundant, and risk-free, food source should be an important component of interior wolf diets. As a part of wolf research conducted at Denali National Park and Preserve, we analyzed the isotopic signatures of carbon and nitrogen of bone collagen from radiocollared wolves that died during 1986-2002, and of tissues from their ungulate prey and locally-spawning chum salmon. Stable isotope analyses have been used in environmental studies to estimate the contributions from several sources (prey species) to a mixture (wolf tissue) when the isotopic composition of the sources are distinct. We provide an assessment of the utility of stable isotope analyses for differentiating wolf diets and investigate the availability and importance of salmon to Denali wolves.

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