

## **\*\*Long-Term Insights from Stable Isotope Analysis of Foraging Strategies of Grizzly Bears in a Dynamic Ecosystem (Poster)**

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As opportunistic omnivores, grizzly bears (*Ursus arctos*) persist in a wide range of environments and alter their diet in response to differences in food availability. Diverse foraging strategies among individuals can buffer a population from environmental variation, yet what foraging strategies individuals deploy and the environmental factors that influence these strategies remain largely unknown. Many landscape changes have occurred over the past 40 years in Yellowstone National Park, yet the annual rate at which bears gain body fat for hibernation has remained consistent. This outcome provides an opportunity to explore how individual bears change their foraging behavior in response to variation in the environment. We are using samples of grizzly bear hair collected during 1998–2022 by the Interagency Grizzly Bear Study Team and stable isotope analysis ( $^{15}\text{N}$ ,  $^{13}\text{C}$ ) to estimate assimilated diet of bears. We are assessing how changes in resources influence the 1) degree of specialization of individual grizzly bears and 2) diet composition of bears across the decades. We will integrate these findings with movement models to understand energetic tradeoffs bears make when responding to environmental change. Characterizing how bears alter their niche breadth and diet composition as a function of changing food resources will provide a more mechanistic understanding of how a long-lived, behaviorally plastic and individualistic species may respond to future changes in the environment.