

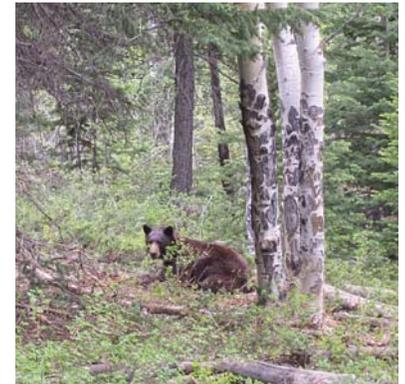


**Rocky Mountain National Park  
Continental Divide Research Learning Center**

# Bear Nutrition

## The Question: How has black bear diet and nutrition changed in the park?

Black bears are omnivorous, typically feeding on a wide variety of plants and animals. However, much of the black bear habitat in the park is tundra, which provides limited food sources for black bears. Lack of fire and other disturbances has allowed coniferous forest habitat to progress toward climax conditions, thereby decreasing the diversity of bear food. Consequently, black bears have relied heavily upon grass and ants and other animal substances. In addition, the relatively short growing season due to the park's overall high elevation provides less time for seasonal foraging. Biologists attribute the low population density of black bears in the park and the bear's relatively small average adult size as revealed in a 1984-1991 study to these factors. Park managers concerned about the long-term viability of the population sponsored a new study to look at black bear status.



The park has one of the lowest densities of black bears in the country.

## The Project: Analyze collected black bear scat for content and nutritional value and make direct observations of radiocollared, foraging bears.

Roger Baldwin and Louis Bender (from New Mexico State University and the U.S. Geological Survey, New Mexico Cooperative Fish and Wildlife Research Unit) collected samples of black bear scat from the summer of 2003 to autumn of 2006. Scat contents included remnants of grasses, other herbaceous plants, berries, hard mast, ants, other insects, small mammals, ungulates, garbage, and non-food items (plastic, metal foil). Comparisons of data obtained in this study with that obtained in a 1984-1991 study provided an assessment of temporal changes in food content. Nutritional analyses included gross energy (total energy as measured by calories), crude fat, and fecal nitrogen (a measure of protein consumption). Radiotracking from May through time of denning provided observations on foraging behavior.

## The Results: Grasses, berries, and ants are mainstays of black bear diet with seasonal variations that include other food. Anthropogenic foods (garbage) are more common than observed 20 years ago.

Primary components of annual black bear diets included grasses (24.2%), berries (16.8%), and ants (31.2%), with consumption of vertebrates less than 12%. Consumption of grasses, berries, and small mammals vary by season. Important sources of protein in spring are from insects and ungulates; in summer from insects and small mammals; and in autumn from insects and small mammals. Principal sources of crude fat came in the summer from ungulates. The only significant sources of gross energy were ungulates in spring and ants during autumn. Compared to the previous study, scientists found grass more frequently and ants less frequently in the black bear diets. (The bark beetle outbreak in the park may open the forest landscape, resulting in more bear food sources such as berries.) In this study, scientists found anthropogenic (human) foods were about 15 times more commonly utilized than in 1984-1991. The increased use of human foods likely has contributed to increases in observed body size, body condition, and population growth rate for bears, as reported in another aspect of the study.

Although human food contributes to body condition improvements for bears, encounters with people near homes and campsites can lead to the removal of the bear due to the risk it poses to human safety. From a park perspective, a fed bear is also not a wild bear. To minimize bears obtaining food, the park installed bear-proof trashcans. The park will implement mandatory bear canisters for overnight backcountry use beginning in the summer of 2009. However, bears do not recognize boundaries, so anthropogenic food sources outside the park, unless secured, will continue to jeopardize the survival and wildness of individual park bears.