

Grizzly Bear

(*Ursus arctos*)—Endangered

Description

The grizzly bear gets its name from its frost-tipped dorsal hairs. The fur color varies from dark brown and nearly black to pale yellow. The hump between its shoulders is a muscle overlying the shoulder blades. The total length of the adult body ranges from 6 to 7 feet. The height at the shoulders can be 3 to 3.5 feet. Grizzly bears weigh between 325 and 850 pounds. Grizzlies walk flat-footed, hence they are not adapted for fast locomotion. They can stand up on their hind feet.

Habitat

Grizzlies are opportunistic omnivores and need plenty of space to exploit the land's resources. A grizzly may have a home range of up to 150 square miles depending on habitat quality. Food supply must be both diverse and abundant, allowing bears to cope better with competitive pressures. Bears must work hard to meet their body's present demands for energy and nutrition and still have some left over for hibernation.



Photo courtesy of Barrie Gilbert

The habitat must have enough potential densities to accommodate the bears. The bears select sites usually in the subalpine zone where snow deposition is high. Snow acts as insulation. They may also choose sites close to a body of water, because of water's mediating effect on harsh, cold temperatures. Grizzlies may dig their own dens or modify another. Den openings are usually found on the side of a slope that is protected from prevailing winds.

While it is true that grizzlies are generalist consumers, they also have food preferences. The habitat's supply of *Vaccinium* berries and pine nuts has an effect on how far the bears will travel. If habitat yields are low for these preferred fruits, bears may enlarge their home range or sustain themselves on grasses, forbs, and sedges. In this case, the bears will most likely lose weight. One study shows that weight gain for a bear is largely determined by the pine nut harvest within its home range.

Over half of the grizzly diet is animals. Much of the animal protein a grizzly gets is from carrion. They will locate the carrion by smell, sometimes traveling as much as 18.6 miles to a large carcass. The grizzly may also kill, trapping small rodents in its powerful 4 to 6 inch claws or bringing down a large malnourished game animal in deep snow.

Grizzlies seasonally migrate to rich sources of food like garbage dumps, berry crops, and salmon runs. The bears may move up to 54 miles to congregate at these common feeding stations. During dry seasons, wetlands become a very important aspect of habitat because of the high plant productivity. Wetland plants are succulent and high in protein. Travel

corridors connecting food sources are essential during these migrations. Cover along these corridors is also important. It lessens a grizzly's chances of a human encounter while migrating. The grizzly bear thrives best when isolated from human disturbance.

Grizzlies once extended across the plains. They were most abundantly distributed along drainages. They were found throughout the lower 48 states where only 1% of their historic range exists today. However, the Alaskan and Canadian populations are considered to be healthy.

Life History

The breeding season begins from mid-May to mid-July for the grizzlies in Yellowstone. Even though the timing is different every year, the duration of the season is about 26 days. During this time bears are promiscuous. Several males may mate with a single female. Maximum recorded duration of estrus is 27 days. Bears in their first year of sexual maturity (average age is 3.5 years old) are in estrus for a week or less. These younger females do not conceive. The earliest known conception occurred in female bears who were 4.5 years old. The age at first conception varies with latitude and within populations. It is possibly a function of available forage or the female's weight.

When fertilization is successful the zygote develops and then stops at the blastocyst stage or in the middle of development until the female dens, a process called delayed implantation. It allows females to mate during the season when quality foods are the most available and determine if the summer's resources are going to be enough to support gestation and subsequent lactation. Gesta-

tion and lactation are nutritionally demanding and may drain the mother of the essential elements she needs to sustain herself. As a result, this strategy grants both the mother and her cubs a better chance for survival. Including the time implantation is delayed, the gestational period is six months.

Grizzlies begin to prepare their dens in October and November. Some may even start preparations in September while they are still completely alert to insure safety for themselves. They can gain up to 400 pounds of fat before hibernation.

The cubs are born between January and March. The mother and her new cubs emerge from their den anytime from late March to early May. Six month old cubs begin eating solid food, supplementing their mother's milk. At this time the mother teaches her cubs where to forage and how to hunt small animals including ground squirrels. She also protects her cubs from male grizzlies, wolves, and other predators who welcome a bear cub meal. Mortality rates for first year cubs are high. One study shows almost 50% of grizzly cubs die during this time from malnutrition and predation. Surviving cubs will den with their mother for their first two winters.

No females reproduce every year. In fact, out of 19 bears studied 12 had reproductive cycles of three years or higher. The average reproductive rate for this study was 0.70 cub/year.

Grizzlies usually live for 15 years. However, there are a few cases of bears living 30 years or more in the wild.

Threats and Reasons for Decline

The grizzly needs a large area of quality habitat. This demand has placed bears in direct competition with human progress. The soils most valued by farmers yield the high protein plants grizzlies require. The presence of grizzlies

hinders efforts to extract minerals, coal, and oil. Some ranchers believe the grizzly bear is a threat to their livestock. Perceived as pests, these bears are eliminated. Thus, the most serious threats to grizzlies are humans.

Some efforts to control poaching have been in vain. Humans who fear or contend with the bears easily bait and kill them. It is difficult for law enforcers to detect illegal kills. Enforcers and conservationists need to know a grizzly population's dynamics well enough to protect them. However, grizzly populations are always difficult and expensive to monitor.

Another threat to grizzly survival is encroaching human urbanization and recreational development. Human development continues to move steadily into grizzly home ranges. Wilderness connections between the grizzlies in the western U.S. and the larger Canadian Alaskan population have been severed, isolating grizzly populations and thus, gene flow. Reduced habitats are unable to support healthy populations of grizzlies. In these cases, malnutrition and parasite susceptibility kill the bears.

Recovery Efforts

Investigations are underway to claim land as critical habitat for the grizzly bear. The Endangered Species Act of 1973 protects land that satisfies spatial and nutritional needs and includes sites for breeding, reproduction, and shelter. Research biologists are working hard on delineating such habitat. Modern techniques for determining grizzly habitat are being developed. Satellite imagery analysis coupled with ground truthing has proven to be a useful method for habitat delineation.

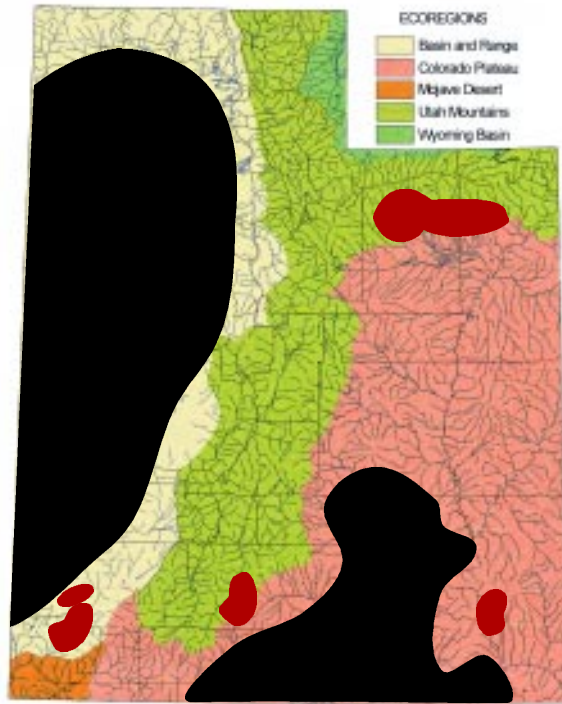
Conservationists also work to have more population data. They use radio collars, biotelemetry, scat analysis, marking/tagging, and mandatory hunter reports to learn more about grizzly movements,



diet, behavior, physiology, etc. Management must closely follow the research. However, enormous costs plague the management programs designed to protect the grizzlies from poaching and maintain their habitat.

There has also been talk of reintroducing the grizzly bear in the Bitterroot region of Idaho. A population here would be the first step to link the two populations in the Yellowstone ecosystem and in Montana. Restoring gene flow between these populations would increase genetic variation and thus adaptability and survival.

What You Can Do

You can respect the restrictions placed on hikers, campers, hunters, and other nature users to avoid wilderness areas reserved for grizzlies. You can go to Yellowstone and Glacier National Parks and learn more about the grizzly bear through the educational programs offered there. Do not allow fear to dictate whether or not you support grizzly bear reintroductions. Remember that most grizzly bear attacks have occurred in National Parks where there are high human densities. The bears have learned to associate humans with food and have become more bold. These reintroductions under consideration are supposed to occur in wilderness areas.



-  Distribution of the Grizzly Bear in 1850.
-  Distribution of the Grizzly Bear in 1920.



Grizzly Bear habitat photo courtesy of Barrie Gilbert.

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