

GRIZZLIES OF THE BRO

By Harry Reynolds
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Barrow

IT IS EARLY April in the mountains of the eastern Brooks Range but the land is still locked in the hold of winter. Under the snow, low alpine vegetation covers bench lands and mountain slopes while scattered patches of willows occur along the river valleys. There are no conifers north of the range's crest and many parts of the mountains are rocky and barren of all vegetation. After emerging from its den, a mature male grizzly bear travels along the frozen rivers in search of a winter-killed moose or the remains of a caribou downed by wolves. Although the majority of its food is made up of vegetation such as grasses, sedges, roots and berries, it occasionally kills on its own and, more often, appropriates kills made by other animals.

The remote land in which it lives provides only marginal habitat for grizzly bears. Long winters and short cool summers limit the growth of plants which are the mainstay of the bear's diet. When the snow

begins to melt in May, the bear will dig for roots of willow and Eskimo potato along the river valleys. Later in the month, the snow will gradually begin leaving the mountain slopes and foothills but will not disappear from the low flat coastal plain to the north until mid-June. This male grizzly, like others in the Brooks Range population, has been shaped by its harsh environment and has adapted to it in many ways.

In order to determine the basic facts of grizzly life history and population status in this region, the Department of Fish and Game conducted a study in the central Brooks Range in 1970-71. To the east, from 1973 to 1975, biologists from the department and Renewable Resources Consulting Services, funded by Alaska Arctic Gas, undertook an intensive research project designed to determine food habits, movement patterns, denning habits and population biology. By gaining a better understanding of what grizzly populations require from their environment, man can help to maintain the ecological system of which these bears are an integral part.



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OKS RANGE

There are relatively few bears in this vast wilderness of rivers and mountains which stretches 650 miles from east to west and lies at only 22 degrees latitude south of the pole. In the eastern Brooks Range, the density of the population is dependent on the quality of the habitat, including the topography and vegetation available in any area. In places of good bear habitat, densities may reach one bear for every 53 square miles. If all available habitat is considered, some of which is rarely or never used, densities are one bear per 100 square miles or more.

Grizzlies of the Brooks Range are smaller than their relatives at lower latitudes. Adult males weigh an average of 400 pounds while an unusually large bear can reach 600 pounds. By comparison, male grizzlies in Wyoming weigh from 500 to 1,100 pounds and some records indicate that exceptionally large bears on the Alaska Peninsula have reached 1,600 pounds.

In the last days of April, females with one to three cubs emerge from winter dens. Snow is begin-

ning to melt on exposed ridges and the sun shines 17 hours a day. The cubs, born in the den in January, weighed no more than three pounds at birth. Now they weigh close to 15 pounds apiece. Their weight gain during the next three years will be slow. By the time they are weaned, they may approach their mother's weight of 250 pounds. There is a good chance that their mother will not wean them until the spring of their fourth summer. This long relationship under the protective care of the female provides the young with the benefits of her experience in den building and foraging and ultimately gives them a better chance for survival.

By mid-June, the rivers are rushing through ice-choked channels and the first flowers are in bloom. The bears move into alpine valleys to graze on succulent shoots. Horsetails are an important food plant during this time of year, as is Richardson's saxifrage.

June also marks the height of the grizzly breeding season which will last until early July. A boar and a sow may remain together for a few days while breeding takes place and then separate. Individuals may breed with several different mates during the season.

Although breeding takes place in midsummer, the embryo develops only for a short time and then undergoes a dormant phase until late October. This reproductive mechanism, called delayed implantation, allows fat reserves in females to build up throughout the summer season without the physiological drain of a developing embryo.

The bears in the eastern Brooks Range have a low productivity. Some females may produce young for the first time at age 7 but others do not have cubs until they are 11 or 12. Also, on the average, they have litters every 4.2 years, so that even if a sow is productive until the age of 22, she would have an average of fewer than eight young during her lifetime. This compares with a theoretical production of more than 13 young for female grizzlies in Wyoming and on the Alaska Peninsula.

Individual grizzly bears do not have territories which they protect from trespass by all other grizzlies. A grizzly's home range, or the area in which it lives, is usually included in the home ranges of a number of other bears. However, grizzlies are usually solitary except during the breeding season or at a food source. In these mountains, adult males have home ranges as large as 900 square miles. Females have ranges from 80 to 180 square miles. Sows with cubs of the year have the smallest ranges but as the young grow and food demands for the family increase the size of the range increases. Breeding females have large home ranges.

Within any home range the actual area which a bear utilizes for foraging, denning and breeding is relatively small and is often restricted to river valleys and a few tributary drainages. Because of the rugged and unproductive nature of much of this mountain

(continued on page 16)



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ISOLATION ENDED—Increasing presence of man in Brooks Range grizzly country brings need for careful management to insure their future.

GRIZZLIES.....

(continued from page 5)

country, only a fraction of the land can provide the types of habitat necessary for the grizzlies' livelihood.

By late summer, ripening berries become a major food source for Brooks Range bears. Grizzlies are seen along the gravel bars of the river valleys feeding on soap berries. Alpine bearberries, crowberries and blueberries are also utilized.

Cold temperatures and snow arrive in the area by mid-September and following the first major storm in October, the bears begin to den. Grizzlies occasionally den in natural rock caves but more frequently they dig dens on south-facing slopes after the top soil layers have frozen hard enough to provide support for the structure. A den site has certain characteristics: the soil must be well-drained, the permafrost layer must be at least three feet below the surface and there must be a supply of vegetation nearby. Dug dens consist of a tunnel sloping up to a chamber about four feet in diameter. The bear scrapes vegetation from nearby slopes and drags it into the den to form a sleeping mat. Sometimes grass and woody shrubs are used to fill a portion of the den entrance. New dens are constructed each year as most old dens collapse during the spring thaw. In 1973, 71 per cent of 14 bears under observation entered their dens between Oct. 5 and 12 and in 1974, six of eight dens were dug between Oct. 3 and 9. A few bears, most likely adult males, are active until early November. After the onset of denning, bears may occasionally leave their dens for short periods



ADFG Photos by Harry Reynolds

but most remain inactive throughout the long dark winter until the sun returns in the spring and another cycle of seasons begins.

Although the bears of the Brooks Range live within remote mountain valleys, they are no longer isolated from the presence of man. In recent years, sport hunting has been the greatest cause of mortality of grizzlies in this area. In order to maintain the grizzly population size and integrity, more intensive management and restrictive harvests will have to be established. Also, as access to the area increases with the onset of North Slope oil development, man-bear encounters will increase. Portions of the land once used by grizzlies will be disturbed or appropriated by man. These grizzlies which live in a harsh environment at the northern extent of their range can easily be jeopardized by the increasing presence of man. The future of the Brooks Range grizzlies requires continued monitoring of their population size and structure and careful consideration of their management. ☉

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Federal fish, wildlife funds

ALASKA is receiving \$3.7 million in federal aid to fish and wildlife restoration in fiscal 1976.

The funds come from excise taxes on firearms, ammunition and fishing equipment and are distributed to the states under a formula which involves the number of licenses sold and the area of each state.

The 1976 distribution will give Alaska \$2.69 million for wildlife restoration and \$1.01 million for fish restoration.

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