

Grizzly Bear Studies in Wells Gray Park to September 1955

by

R.W. Ritcey

Wildlife Section Report No. 51

Project W. G. 8

Grizzly Bear Studies in Wells Gary Park to September 1955

I. Introduction: Grizzly study in Wells Gray Park to date has been incidental work carried out on general wildlife reconnaissances. Some data on distribution, numbers, age distribution, and life history have accumulated. These have been summarized and presented in this report.

During the summer of 1955, an effort was made to intensify the grizzly study. Trips to Murtle Lake in late May and to Mt. Huntley in June were undertaken for the purpose of studying grizzly. One specimen was taken and autopsied while another specimen shot by Mr. F. Ludtke was partially autopsied. It is hoped that it will be possible to continue working on grizzly as a major study but it is expected that most data will be gathered in connection with other studies, chiefly of moose and caribou.

II. Distribution: Grizzly distribution in the park has wide seasonal variation. We know the basic pattern and this is here given as a frame to build upon or to remodel with increasing data.

The grizzly emerges from hibernation in early or mid May, the exact date depending on weather and the physiological condition of the bear. This emergence is apparently from dens at a relatively high elevation, usually above 3,500'. Food is scarce and is mostly carrion of large ungulates which have died during winter from various causes. It is possible that grizzly are able to kill weakened moose which have wintered on higher ranges. Such instances have been reported in the park though such reports are by no means well substantiated. Successful attacks by grizzly on adult moose must be rare. This period of carrion feeding is one of wandering, especially if carrion is scarce. Once meat is found it is usually totally consumed by the bear over a period of several visits. Often it beds down in the vicinity, possibly to protect its find.

As warm weather melts snow from steeper slopes, grizzly begin to graze on grasses which grow rapidly on open, south facing slopes. Corms and tubers of slide lilies (*Erythronium sp.*) and slide potatoes (*Claytonia sp.*) are dug to supplement the grass diet. The earliest baring slopes above 4,500' are foci of grizzly distribution in late May and in early June. However, all grizzly are not confined to such habitats. In their search for carrion they may invade the low country, remaining there through early summer, feeding on grasses and lush vegetation which is further advanced than that in the high country. At this time they may become troublesome to ranchers by preying on livestock, especially spring calves.

With the progression of summer, grizzly are largely confined to high slopes where they graze and dig the rocks of the slide lily. The slide lily habitat appears to be the key to grizzly distribution in July and August.

As fall approaches, grizzly begin to intensify their digging for rodents which has been done sporadically through summer. Ripening huckleberries in high altitude burns are another important food source.

In October, frosts harden the soil making rodent digging difficult and killing berries on which grizzly feed. Some of the bears may then hibernate. One Kokanee stream, Anderson Creek, attracts grizzly in years of heavy fall runs. The run of spring salmon on the Clearwater River also supplies some grizzly food. Late fall is largely a period of wandering similar to that of early spring. Carrion again constitutes a large part of the diet. Remains of hunters' kills are sought after. These are usually covered with moss and debris if not completely consumed. It is not known whether these caches are revisited in spring. Most grizzly are in hibernation before mid November.

III. Numbers: While it is patently impossible to arrive at an accurate figure for the numbers of grizzly in Wells Gary Park on the basis of work to date, we may make a fair estimate on the order of abundance. Extensive reconnaissance to date has shown that practically every mountain range in the southern part of the park with steep slopes supporting a growth of slide lilies has grizzly on it in mid summer. Further, the numbers on any one range is relatively small and is in the order of one to five animals. There is the complicating factor of grizzly which wander through the low count- (missing text off page) calculations. Ten mountains are known to support grizzly in mid summer and seven others with similar habitat are assumed to have bear also. The average estimated number of bear on these mountains is three, which gives a total of about fifty bear. The region included in this estimation is roughly that part of the park south of a line drawn east and west through Mount Huntley.

IV. Age distribution and productivity: Thirteen grizzly seen by wildlife workers in six years in the park were classified as eleven adults and two yearlings. Three skulls have been collected, one of a senile male, one of an adult male, and one of a young adult male. This scanty data would indicate that the population is not at present producing many young animals. This probably shows the population to be near capacity for the range. Accounts of grizzly productivity in the literature are scarce. Leopold (1931) quoted Wright stating that the females bear their first young at two or three years of age, producing litters of two cubs every other year. Trippensee (1948) quotes Skinner as stating that females breed at three and a half years, presumably then, bearing first young at four.

Since grizzly are sought primarily as a trophy by hunters, management should aim at producing the largest number of trophy animals possible yearly. Assuming grizzly to arrive at maturity, hence at trophy size, at three years, the maximum number of trophy animals which could be produced on a sustained yield basis from a population of fifty is about eight. If four years is used for trophy age and of producing young, the maximum number produced yearly would be six. These figures are derived from Leopold's (1933) Breeding Potential Tables. Though theoretical, they show what can be expected from a population of a given size producing at its maximum.

V. Management: The maximum number of trophy animals does not correspond with the maximum number of animals which may be produced yearly. A population having a larger percentage of older animals is required than say in a herd of managed moose where the objective is to produce the maximum number of animals yearly regardless of age. Our overall objective in grizzly management should be to obtain as large a population as possible with the most favourable age distribution for the production of mature animals. To achieve this end we must know much more about grizzly than we do now. We need to know grizzly life history in detail in order to learn possible limiting factors. This must include knowledge of habitat requirements. For instance, is fall crucial to grizzly with abundance or scarcity of fall food determining winter survival and cub production? Or, as an alternative, does the early spring period of scarcity act as a limiting factor? Does the limitation of range act directly through starvation or does intraspecific strife keep numbers down? We have some idea of favourable grizzly spring and summer habitat in the park. More needs to be known of fall requirements, habits and denning dates. Age distribution of the population and aging techniques need study. Finally, more and better data on numbers are needed.

Few grizzly have been taken in the park in recent years (Table I). No attempt to greatly increase the kill should be made in the light of our present knowledge. The kill is comprised of two element, the first being those killed by hunters out especially after grizzly and the second made up of bear killed in the low country by hunters or ranchers who happen on them by chance. Grizzly hunters take bear on high ranges in fall and spring chiefly on Mica, Huntley, and Azure ranges. Numbers killed on these ranges may appear excessive but losses seem to be largely recouped by immigration from adjacent territory.

Table I: Known Grizzly Kill Wells Gray Park 1950-1955

Year	Number Killed	Locality	Season
1950	2	Angus Horne Lake	Spring
1951	5	Mica Mtn. (3) Azure range (2)	Fall Fall
1952	2	Mica Mtn.	Fall
1953	3	Azure range (1) Gauge hill (1) South plateau (1)	Fall Fall Fall
1954	0		
1955	2	Mt. Huntley (1) Hemp Creek (1)	Spring Summer

Year	Number Killed	Locality	Season
Total	14	More may be taken	Fall

Wandering grizzly have not suffered unduly from moose hunters. Those animals which roam the low country in late fall may represent the population surplus being old animals unable to find sufficient food to hibernate early. The one animal killed on a moose carcass in 1953 was a senile male with dental apparatus so worn that another year's life was improbable. The opening of caribou hunting and subsequent increased activity in the high country may pose problems of over-harvest of carrion feeding bears.

VI. Grizzly Data, 1955: The following is a summary of grizzly data gathered in the spring, summer and early fall of 1955.

A trip to Murtle, Straight, and Stevens Lakes, and Battle Mountain from April 15 to April 19 revealed no definite grizzly tracks. Tracks seen at a bear's nest south of Murtle Lake were believed to be those of a black bear.

A bear believed to be a grizzly attacked T. Helset in the Blackwater Canyon on April 28. The bear was wounded but not brought to bag.

Tracks of a grizzly were recorded by J.C. Norman on May 1, on the track counting line west of McLeod Hill.

On May 20, a moose kill at the east end of Murtle Lake was visited. Old grizzly tracks were seen at the kill but only hair and bone fragments of the moose remained. The animal, a mature bull was mostly intact when first found on April 17. Bear had eaten most of it in less than a month. Smaller mammals including wolverine had assisted in consuming the carcass. A fresh grizzly track was seen on the Blue River trail on May 22 by R.G. Miller so the bear may have remained in the vicinity after disposing of the moose carcass.

No definite grizzly track was found at Straight Lake on May 22 or 23. Tracks of one bear may have been made by a grizzly or a black. Slopes at the west side of Straight Lake were just beginning to show bare patches at the time. There was little greenery for bear to feed on. Alder slides with extensive grassy openings come right to the lake shore at Straight Lake and may offer one of the best areas in the park for grizzly study.

One old grizzly track was seen on the Murtle River about one mile north of the north end of Murtle Lake on May 23. Apparently it had been feeding on the remains of an adult moose found 1/2 mile east of the tracks. A bed and several bear scats containing moose hair were found near the remains. A wolverine shared the feast. No grizzly tracks were recorded on a trip up the west side of the Murtle River to within two miles of the head of the Murtle River basin May 25 and 26. Old bear tracks were seen at intervals along the valley. They were melted out and may have been either grizzly or black bear tracks. A black bear was seen on an opening slope at about the 4,500' level.

The valley of the upper Murtle River seems to have considerable areas of spring grizzly habitat. Steep slides come almost to the valley floor on both sides of the river. It was difficult to determine whether these slides contained much grazing area at the time of our visit as the slopes were mostly snow covered.

A track of a bear believed to be a grizzly was seen on McLeod Hill on May 27. Earlier in the month two grizzlies were seen at the ranch of F. Ludtke. Another grizzly was seen at the Ray farm in early June by D. Green.

An adult bear believed to be a grizzly was seen on snow patches near the 6,500' level on Mt. Huntley on June 15 by wildlife workers. On the following day, two grizzly were seen at the bottom of the slide at the 5,500' level on the south slope of Huntley. The male of this pair was taken as a specimen. Teeth showed it to be an adult in its prime. Autopsy showed it to be in excellent condition with fat deposits in subcutaneous tissue and body cavity. A light infestation of thread worms was found in the connective tissue about the trachea. Stomach contents were grass upon which (?missing text off page) slide lilies was found although the plants were in bloom in openings frequented by bear. The only excavation found was in one spot where a grizzly had dug for a ground squirrel.

Mr. F. Ludtke shot a young adult male grizzly at his ranch on July 10. He believed it to be a menace to his family and livestock. An autopsy performed on the animal showed it to be thin but in apparent good health. It had a roundworm infestation about the trachea and kidney similar to the specimen taken on Mt. Huntley. This animal had been eating ripening *Shepherdia* berries and leafy vegetation. Scats found nearby contained part of a caribou calf.

Reports of grizzly at homesteads at the base of Battle Mtn. were received through the summer. In early June, a calf was reported to have been killed and eaten by grizzly at the C. Ludtke ranch.

Fresh grizzly tracks were seen on Kilpil Mtn. above the 5,000' level in early July by wildlife workers. No further sign was recorded until September when old tracks of two grizzly were found on Goat Peaks. It is difficult to distinguish between grizzly and black bear tracks except under ideal conditions. One probably obtains a very conservative estimate of numbers when he records only definite grizzly sign.

VII. Summary and conclusions: The grizzly population in the southern part of the park is in the order of fifty animals. At present the kill of between 2 and 3 animals annually is probably somewhat less than annual production. However no large increase in the kill is recommended in the light of present knowledge. A kill of more than 6-8 animals yearly would be considered excessive.

Distribution shows much seasonal variation. Spring and fall are periods of scarcity where wandering in search of carrion may occur. Summer is a period of plenty which

finds most grizzly on high slopes supporting growths of yellow slide lily. Winter hibernation from November to May is probably chiefly confined to elevations above 3,500'.

Studies to date have been general but intensification of study can be now undertaken with a framework of distribution data at hand. Future studies should include food habits, diseases, age distribution, and census methods.