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QUILTER, RON
GRIZZLY BEAR MANAGEMENT FOR

GRIZZLY BEAR MANAGEMENT

for

KOKANEE GLACIER PARK



Ron Quilter

Wildland Recreation Technology

SELKIRK COLLEGE LIBRARY
CASTLEGAR, B. C.

Acknowledgements

I would like to thank the Parks Branch for administering the sighting sheets over the summer. It is greatly appreciated.

Reader Information

Appendix "A" should be removed from the report and should be available or handy to the reader for quick reference throughout this report.

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A. Introduction

Grizzly Bear Management has been a looming question in Parks over the last few years. With an increase in the amount of recreational use that parks receive, there is a larger invasion of grizzly bear range. This has caused an increase in the number of grizzly bear-man confrontations.

Kokanee Glacier Park is good grizzly habitat and contains grizzly bears(*Ursus arctos horribilis*). Kokanee also has a lot of recreational use. This report will cover some management recommendations to avoid any possible conflicts between grizzly bears and man before they happen.

B. Grizzly Bears - Fig. 1

1. A General Description

The grizzly bear is one of the largest land animals in North America. Only the Polar Bear and the Moose are larger. The grizzly bear can weigh up to 1200 pounds but the average weight is from about 450 to 800 pounds. Grizzly bears pelage can vary from an albino, to red or cinamon, or to the most common, brown or black. Most of their hairs are white or silver tipped hence their nickname "Silver Tip." The grizzly has a large, very distinct hump between the shoulder blades caused by their massive leg muscles. They also have a concave or pushed in face. Both the hump and face distinguish the grizzly from its close relative, the black bear which occupies a similar range.

The grizzly also has immense claws, sometimes over 5 inches in length. This fact along with the bears immense body weight and size makes it impractical for them to climb trees. Although it is possible for some grizzlies to climb, it is very uncommon. Grizzlies are most agile when it comes to running over any terrain and they can attain speeds over 30 miles (50 km.) an hour. This is a major reason why grizzlies are so potentially dangerous.

The grizzly has very developed senses of smell and hearing. They lack substantially in eyesight. This is why grizzlies will stand on their haunches, trying to see and catch a better smell of any peculiarities in the area. Many people who have been confronted by grizzlies believe this to be a warning of a charge when actually the bear is just trying to examine his surroundings.

2. Range and Distribution



Figure 1. Shows outstanding characteristics of the grizzly bear.

1. long claws
2. pushed in or dished face
3. large hump between shoulders
4. silver tipped pelage

The grizzly bear range has been seriously depleted since the arrival of white man in North America. The range used to stretch over half of North America, from Mexico to Manitoba. Over the years due to the spread of man's mechanized and industrial expansion, the grizzly bear range has diminished rapidly. The grizzly is left in only a few major areas including Alaska, the Yukon, some Northwest States, Alberta and British Columbia (map 2). In British Columbia, the grizzly ranges everywhere except for Vancouver and Queen Charlotte Islands, and the lower mainland. The heaviest concentration of grizzly bears follows the main mountain ranges of B.C. including the Rocky and Columbia Mountains. With the diminishing amount of range left for the grizzly, and the ever increasing invasion of his range by logging and mining activities, the grizzly no longer has many places to run. There have been an increase in the number of man verse grizzly incidents in the past few years because the only recreation areas left are within grizzly range.

3. Mating and Life Cycle

Grizzly bears reach sexual maturity in about 4-6 years after birth. The reproductive rate of grizzlies is slow since the females only breed once every several years varying on the food supply available. The female has two oestrus periods in which she accepts the male, in one mating season. These periods last approximately two weeks and are separated by approximately one week. These oestrus periods occur in May or June. The dominant male usually picks his mate and will fend off other subdominant males. The gestation period for grizzly bears takes about eight



MAP 2 DISTRIBUTION OF GRIZZLY BEAR
IN NORTH AMERICA

months. The litter size is usually one to three cubs, and rarely four. The cubs are born in the winter den, usually hairless and come out of the den having matured quite quickly. Young grizzlies will usually spend their first two years with the sow before moving out on themselves. Most of the sow's territorial habits are passed on to the cubs and the cub will remain in the general area(eg. same watershed) after it leaves the sow. This is an important factor to be brought up later in this report. Grizzlies have been found to live up to 25 years of age.

4. Feeding Habits

The grizzly bear is an omnivore or in layman's terms, will eat almost anything. Grizzlies feed on the most available food source at most times. This is why it is important for bears not to become habituated with humans. If grizzlies realize that humans are connected with a relatively easy food source-garbage, then they will attempt to continue the practice of visiting dumps or other points of garbage access.

The bulk of the grizzly diet is vegetable matter. Their body is well suited to this type of food. The bears have grinding teeth similar to deer. Grizzlies seek out more succulent vegetation growth, such as material on avalanche slopes and along stream courses. The grizzlies stomach is single chambered and has no cecum which prevents the digestion of cellulose plant matter. Woody material is also harder to dig up than lush vegetation.

As mentioned grizzly bears feed on easily accessible food sources. They will also take down other larger mammals who are usually sick or weak. The grizzly will not normally hunt large

animals. Carion is another important food source. Grizzlies also seek out small mammals in alpine areas such as marmots and picas. They may spend hours at a time searching for these animals and dig into their holes to reach them.

The major feeding areas for grizzly bears are:

a) Avalanche Slopes

Avalanche slopes provide the grizzly with succulent new growth vegetation after an avalanche has come down. The avalanche will take out most of the woody vegetation the bears do not utilize and will grow more edible material. The avalanche slopes usually fed off are high elevation, south facing slopes. These slopes shed snow earlier and allow more time for new plant growth.

b) Waterways and Stream Courses

Grizzlies feed beside water courses because of the succulent plant materials available on the shores. Waterways are usually bordered by alluvial soils which allow for good plant growth. Some stream courses also provide the bears with spawning fish. Bears feed on these fish extensively during the spawning season.

c) Wet Meadows

In the hot summer, grizzlies usually feed at high elevations to escape the extreme heat. The high elevations provide and alpine forb, herb vegetative community to their liking.

d) Burned Areas

Burns also provide the bears with succulent new vegetation because the old woody fibers have been burnt off and left rich

✓
soils. Predominant in these burned areas is a forb herb community.

e) Talus and Scree Slopes

Grizzlies utilize talus and scree material to seek out small mammals.

f) Garbage Dumps

If grizzly bears get habituated to eating out of garbage dumps, there is a problem. Since Kokanee Glacier is a backcountry park and no dumps are in the general vicinity, I will not go into detail on dumps. The bears may however get habituated with garbage and therefore problems may arise with garbage in the backcountry.

Probably the favorite food sources of grizzly bears are berries, because of the high sugar content, and root, tubers and bulbs which have a high starch content. Huckleberries are a favorite and grow heavily in August and September.

5. Denning and Hibernation

Due to the relatively low use in Kokanee Glacier Park during the winter months, I feel that information on denning and hibernation would not be useful as an addition to this report.



Kokanee Glacier Park - a rugged wilderness
of beauty

C. Kokanee and Grizzlies

1. Kokanee Glacier Park

Kokanee Glacier Provincial Park is a 25,600 hectare mountain wilderness. The main access is located 28.8 km. northwest of Nelson in the West Kootenay Region of British Columbia. It falls within the Slocan range of the Columbia Mountains, an exciting range of rugged mountains. Kokanee Glacier contains many lakes and streams to provide animals and humans a potable source of water throughout the park. The park is named after Kokanee Glacier which lies near the center of the park. This glacier is famous throughout B.C. and is widely renowned for its picture on Kokanee Beer Bottles.

Kokanee Glacier falls within the Nelson Batholith, a granite rock upheaval from thousands of years ago. This granitic rock is extremely rich in minerals that attracted miners to the area and the park is rich in mining history with many mines throughout.

2. Why Kokanee is Grizzly Habitat

Kokanee is prime grizzly habitat. There are all the various habitat requirements within the park. A major fire went through the park in the 1920's and left richer soils for better plant growth. The habitat requirements that grizzlies use will be covered later in this report

3. The Grizzly Bears

Grizzly Bears have habited Kokanee Glacier Park for many years. The habitat is good and only in the past 100 years has man invaded in on the Kokanee area. The minors had problems

with grizzlies

with grizzly bears when the mines were set up years ago.

4. Previous Problems in Kokanee

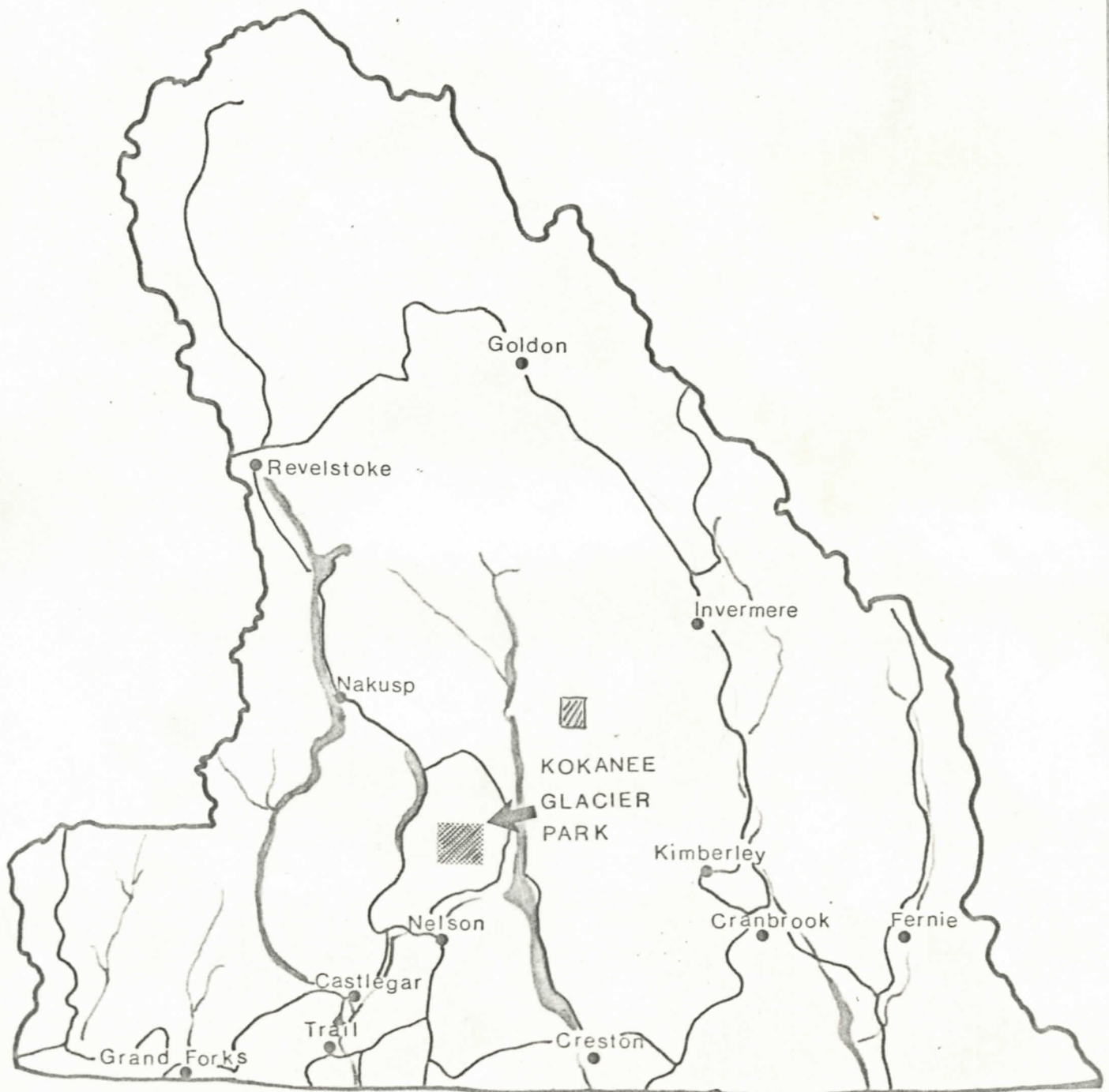
Kokanee Glacier has had a fairly serious grizzly problem once before in the summer of 1966 when the National Ski Team had set up camp at the Slocan Chief Cabin. The ski team did not take good care of their garbage leaving it outside. This attracted the grizzly bears to the area. The team had their cook tent torn down on two different occasions. One bear was killed hoping that this would alleviate the problem.. Approximately two weeks later the bears were back and another bear had to be shot. Officials blamed the ski team with bad camp management. Since then there have been no serious problems in the park.

As mentioned, when the various mines were set up in the park the minors had problems with grizzlies. Obviously the minors took as much care with their garbage as the ski team.

5. Hunting

There is an open season for hunting in Kokanee Glacier Park but the grizzly bear is protected within the park.

Location of KOKANEE GLACIER PARK in the Kootenay Region



Miles 20 10 0 20 40 60

D. Problems in Grizzly Behaviour

It has been found through much research in different areas in the grizzly range in North America that grizzlies do not attack unless somehow disturbed. Grizzlies in the backcountry are usually no problem to live with unless the backcountry user does not know proper travel techniques. Grizzly bears in front country areas are usually troublesome because they have become habituated to humans and therefore lose their fear of man. Bears can also lose their fear of man in the backcountry if the users are careless and allow the bears to somehow become habituated.

1. Problems with Backcountry Grizzlies

If all backcountry users were experienced with all aspects of backcountry travel, there would be virtually no conflicts at all. The only reason grizzlies attack are if they are surprised, disturbed or threatened. The following are the major reasons why grizzly bears have attacked humans in the backcountry:

- a) Surprising a grizzly at close range while hiking along a trail. This can be avoided by hiking in groups, talking, singing or carrying some sort of noise maker that will alert a bear before you reach it.
- b) Dogs infuriating grizzlies and returning to the master with a grizzly hot on its tail. No dogs should be allowed in the backcountry.
- c) Disturbing, getting too close, or getting inbetween bear cubs and a sow. Upon sighting of a bear cub, one should clear the area quickly.
- d) Wearing scented deodorants, soap and other cosmetics, or

women hiking during their menstrual period. These smells may aggravate a grizzly and cause him to investigate the smell source.

e) Hiking through prime grizzly habitat. Recognition of these areas would make the hiker more aware and other precautions should be taken. All backcountry users should be able to recognize grizzly country, especially when there are fresh scats, tracks or heavy amounts of berries.

f) Running, or moving to fast if confronted by a grizzly. This quick movement may infuriate the bear and cause an attack. If confronted, move slowly and deliberately.

g) Leaving pack sacks and food near, or in a tent. The smell will attract a grizzly. Packs and contents should be removed far away from the sleeping area, place in a tree if possible.

h) Cooking in, or close to a sleeping area, or getting food smells on clothing. Food smells can penetrate tent and clothing materials, so cook away from the tent and have a rag for wiping hands while cooking available.

i) Camping on trails or in good grizzly habitat. Grizzly bears use trails also since they are the easiest travel route. Camping in these areas just invites trouble.

j) Leaving garbage in areas. This is usually of no consequence to the litterer, but the next users to the littered area may encounter problems.

If these major items are conveyed to the public, and all backcountry users, then conflicts would be cut down. This is the main management objective to avoid conflicts. If these

items were known by all backcountry users then the grizzly bears would not become habituated at all and both grizzlies and humans could use the same backcountry areas.

Grizzly bears are similar to humans in that they are very unpredictable. No matter how many precautions are taken, it is not positive if confrontations or conflicts will stop, but they will be cut down if people know what they are doing.

E. Problems in Kokanee Glacier Park

It has already been established that Kokanee Glacier Park is a good habitat for grizzly bears, and that there are grizzly bears present in the park. This does not necessarily mean that there will be problems between grizzly bears and humans, but because of the park policy, the trail system, and the access, there have been problems and more are anticipated.

1. The User

The policy statement for the park concerning the primary and regional role are as follows:

a) Primary Role

Kokanee Glacier Park is a large, relatively accessible alpine area, of which a primary role will be to educate inexperienced members of the public in alpine recreational opportunities and conduct. Complementary objectives will be natural and human history preservation and interpretation.

b) Regional Role

This is the most accessible alpine park in the Kootenays with access available through seven drainage systems of which six have roads. The park represents an opportunity for the public to experience alpine recreation. Management policies will reflect the high percentage of novice and intermediate users. Kokanee Glacier is central to a West Kootenay population of 75,000 and is also part of the Kokanee Creek corridor which is interpreted in the Nature House at Kokanee Creek Park.

It is obvious from the policy statement that the park will receive a lot of use from the inexperienced public. The park is

extremely rugged in some areas and these areas are used by more experienced users, the present trail system is set aside for the inexperienced user. With all these inexperienced people going into the park there is bound to be conflicts in the park with grizzly bears. The hiker has to be educated before venturing into this area. It is typical to see people of all age classes going to the Slocan Chief Cabin by way of Gibson Lake in running shoes and t-shirts. If this is the way people hike, I am sure they also have no knowledge of grizzly behaviour and will not take the necessary precautions when hiking in grizzly country. This is when conflicts occur.

2. Trail System

The trail system for Kokanee Glacier Park makes it difficult for grizzly management. Except for Woodbury and Coffee Creek Drainages, all other trails lead to one central location, the Glacier area in the center of the park(refer to appendix 1). A good trail system would disperse traffic to different areas and allow for easy trail closure. If the trails were to be cut off because of a conflict in one area, this type of system could probably get away with closing one or two trails off. Kokanee's system needs at least four trails closed at one time if there was a conflict in the area around Slocan Chief Cabin.

The main problem with the trail system is that it centralizes the user. The heaviest used part of the park, around Slocan Chief, is the only area where there have been any grizzly bear problems. This centralizing of the users also centralizes most of the novice hikers. What we have is the heaviest traffic, made

up of inexperienced backcountry users, going toward an area of the park with the only grizzly problem.

3. Access

Another reason for potential conflicts is the fairly easy access to the park. A fairly good dirt road puts the hiker at the park boundary near Gibson Lake. This road leads up off Highway 3A, the road entrance being a very short distance from Kokanee Creek Park. Kokanee Creek is a heavily used campground during the summer months and with displays and information about Kokanee Glacier in the Nature House in the park, many people who should not, venture up to the alpine park. Many of these people have absolutely no experience or knowledge of backcountry travel. With a good trail from Gibson Lake to the Slocan Chief area, many of these people will go up to see the Glacier. This trail and access road are the most heavily used of all the access routes into the park. The other two most heavily used access routes are Enterprise and Keen Creek drainages which also both lead to the core area of the park.

The other drainages in the park do not receive as heavy use because of their location and the condition of the access road. Also the trail condition and length in the access routes could be a deciding factor on which access route a hiker will use. Woodbury Creek Drainage receives moderate use because of the Silver Spray Cabin, but not as many tourists or campers from the campground know about this access route.

4. Solution-Develop a Management Plan

Due to the type of user, the trail system and the fairly

easy access to Kokanee Glacier Park, it is anticipated that there will be problems with grizzly bear-human confrontation and eventually some serious conflicts may occur. The way to handle this situation is to take precautionary measures before any conflicts happen. These precautionary measures will come in the form of a mangement plan. The management plan will give basic objectives, answers for how to properly manage the people using the park to avoid conflicts in the future. If users are aware of all the proper procedures involved in backcountry usage, grizzly bears will not become habituated to humans and therefore the number of grizzly bear and human confrontations will be cut down.

F. Study Methods

1. Habitat

a) Methods

To measure the habitat requirements for grizzly bears to exist in Kokanee Glacier Park, other source materials were utilized. These sources explained the requirements for grizzly habitat and I compared these to what was available for the grizzly bears in Kokanee Glacier. This was done through field checks and air photos as well as my knowledge of the area and through the ranger staff.

Another method I was going to use to determine feeding habits which would show the type of food habitat that the bears lived in, was to collect fecal or scat samples. These samples would have then been analyzed to determine what was in them. Upon consultation with Richard Hansen, a professor in the Composition Analysis Laboratory at the Colorado State University, an average of 15 samples per date would be needed to determine major food items, and over 50 samples for other material eaten. With the amount of field time available for this study, I could not complete this task. Some scat samples were collected and preserved and it was obvious from the amount of pits in the scat that the major food source at that time of year, September, was berries.

b) Results

It can be concluded that Kokanee Glacier Park is a good habitat for grizzly bears. It seems to have all the habitat requirements for grizzlies. Grizzlies need a wide variety of

habitats and Kokanee has the following habitat requirements in a small area within the park boundaries:

- i. Avalanche Slopes or chutes at fairly high elevations. These are found throughout the park with probably the best area being the Enterprise Creek Drainage. All other drainages also have avalanche slopes(Fig. 3)
- ii. Forested Mountain Terrain. This terrain is found throughout the park and is used by grizzlies mainly for cover requirements. Grizzlies usually utilize these forested areas for cover when they are near feeding areas. Day beds are usually located in the trees(fig.4)
- iii. Waterways and Stream Courses. There is a plentiful amount of water in the streams and lakes in Kokanee. The grizzlies utilize these because of the lush vegetation on the banks(fig. 5).
- iv. Talus Slopes. Talus slopes are utilized to hunt for small mammals such as picas in higher elevations. There is a lot of talus material in Kokanee(fig. 6).
- v. Wet, High Elevation Meadows. Kokanee does not have an extensive amount of these meadows but some are available to the grizzlies. Grizzlies utilize these areas in the hot summer months.
- vi. Smaller Mammals for Food Source. Kokanee has a supply of smaller mammals such as picas and marmots that supply grizzlies with this minor but important food source(fig. 7)
- vii. Huckleberries. Huckleberries are prominent throughout the park. These berries supply grizzlies with energy from



Figure 3. Avalanche slopes are common throughout the park. This one is looking down the Woodbury Drainage



Figure 4. Forested mountain terrain near Pontiac Peak



Figure 5. Many water courses are found in the park. This is the top of Coffee Creek from Humpback Ridge.

Figure 6. Talus and scree material are found throughout the park.





Figure 7. Small mammals supply grizzlies a food source. This marmot hole above was located near Sunset Lake. An example of a grizzly dug marmot hole(below).





Figure 8. Huckleberries are a major food source for grizzlies and are found throughout the park.

the high sugar content(fig. 8).

2. The Grizzly Bears

To determine the numbers of grizzly bears in the park and their ranges, a number of methods were used.

a) Method 1

A sighting sheet system was set up for the summer of 1978. These sighting sheets asked for information if a grizzly bear was seen by any person using the park(fig.9). These sighting sheets were distributed by the ranger staff to the boxes at the trail heads leading into the park. The boxes were checked periodically over the summer and completed forms were picked up by the rangers and taken to the ranger office at Kokanee Creek Park. The forms were kept here until the end of the summer when I picked them up.

b) Results

This method of data collection seemed quite good on paper but did not go over to well. Only four were collected at the end of the summer. Other sheets were filled out over the summer but were either lost or the information on them was of no use. The completed sheets were all of the same grizzly family; a sow and two cubs which inhabited the area around Slocan Chief Cabin.

Note: Please refer to overlay 1 for this section

c) Sightings

i. Sighting #3,(fig. 10) August 28, 1978

This sighting took place on top of Bridal Veil Cascade which is near the Joker Lakes. The sighting sheet indicated that the grizzly seen was a large male. This is the only report

on this bear the entire summer.

ii. Sighting #4 (fig. 11) September 28, 1978

This sighting was more of a confrontation. It involved two Wildland Recreation students. The two, Claudia Jensen and Eleanor Elston, on a school project, were hiking up the Keen Creek trail at approximately 5 o'clock in the afternoon. Eleanor, hiking about 30 feet in front of Claudia, walked around a bend in the trail and came face to face with a sow and her two cubs who were feeding on berries just off the trail. The girls had been talking earlier about what they would do if they encountered a bear and were quite well prepared. Eleanor turned slowly and walked back down the trail toward Claudia. She unhooked her pack and dropped it on the ground. She told Claudia in a normal voice that there was a bear ahead. The sow and the cubs followed Eleanor back to where the two girls were now standing. The sow closed within ten feet of the girls, then turned and sauntered off into the bush. I think the girls not panicking and their quiet manner saved them from further trouble.

iii. Sighting # 5 (fig. 12) September 24, 1978

Another sighting of the sow and one of her cubs in approximately the same area as sighting #4.

One other sighting sheet was collected but the observer did not know if it was a black or grizzly bear so it was thrown out. Other forms as mentioned were filled out over the summer but were unfortunately misplaced by the ranger staff over the summer. These lost forms, according to the



ATTENTION HIKERS

Figure 10

Have you seen any

GRIZZLY BEARS? YES

If so:

How many 1 adults ✓ cul

Approximately how close to them were

Figures 9-12



ATTENTION HIKERS

Fig 9

Have you seen any

GRIZZLY BEARS?

If so:

How many _____ adults _____ cubs

Approximately how close to them were you?

_____ less than 50 meters

_____ 50 - 200 meters

_____ over 200 meters

What were they doing?

Date of sighting _____

Time of sighting _____

Description; any noticable features

This information is required to determine the grizzly bear ranges in the park. This study is being done by the Wildland Recreation Program at Selkirk College. Your help is greatly appreciated.

Please put any additional information on the back.

Please place an X on map in the approximate position that the sighting took place, and draw an arrow in the direction of travel if relevant.





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Figure 10

ATTENTION HIKERS

Have you seen any

GRIZZLY BEARS? YES

If so:

How many 1 adults ✓ cubs

Approximately how close to them were you?

X less than 50 meters

 50 - 200 meters

 over 200 meters

What were they doing?

Eating Huckleberries

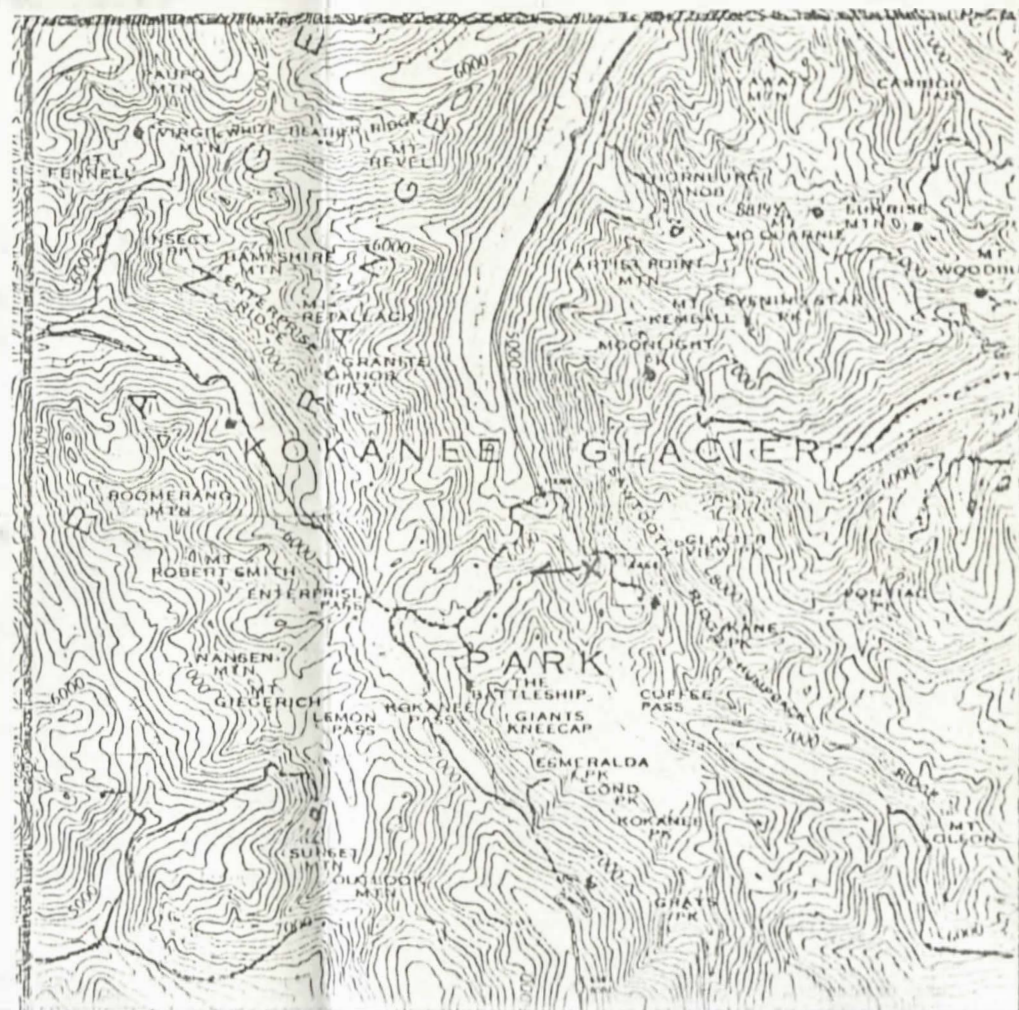
Date of sighting 28 Aug 78

Time of sighting 4 P.M.

Description; any noticeable features

SILVER TIP - Large male

TOP OF BRIDAL VEIL CASCADES





4

ATTENTION HIKERS

Have you seen any

GRIZZLY BEARS?

If so:

How many 1 adults 2 cubs

Approximately how close to them were you?

☒ less than 50 meters

☐ 50 - 200 meters

☐ over 200 meters

What were they doing?

FEEDING ON BERRIES.

Date of sighting 28 SEPTEMBER 1978

Time of sighting 5:00 PM

Description; any noticeable features

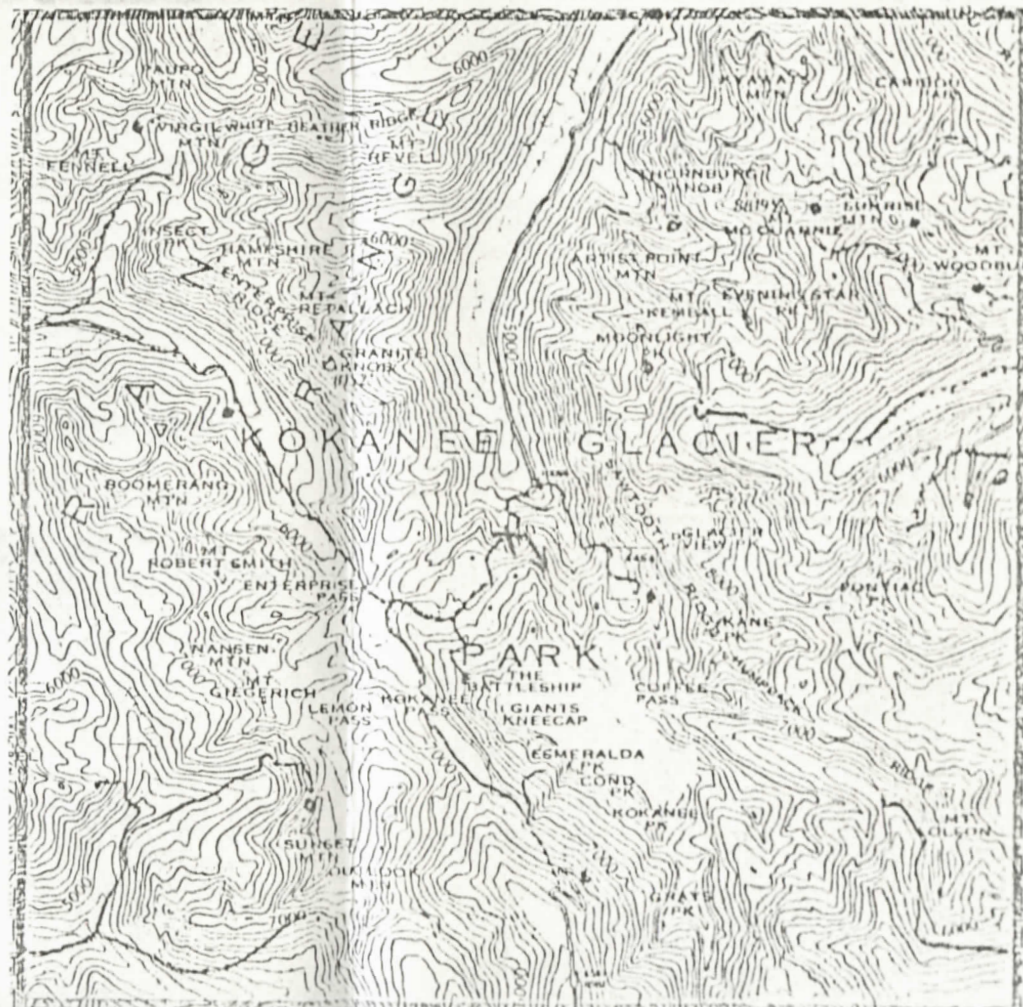
GOLD CREST ON BREAST - BROWN FUR.

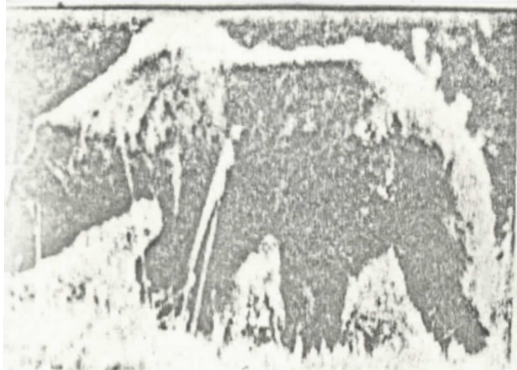
Figure 11

This information is required to determine the grizzly bear ranges in the park. This study is being done by the Wildland Recreation Program at Selkirk College. Your help is greatly appreciated.

Please put any additional information on the back.

Please place an X on map in the approximate position that the sighting took place, and draw an arrow in the direction of travel if relevant.





ATTENTION HIKERS

Figure 12

Have you seen any

GRIZZLY BEARS?

If so:

How many 1 adults 1 cubs

Approximately how close to them were you?

✓ less than 50 meters

 50 - 200 meters

 over 200 meters

What were they doing?

Eating huckleberries

Date of sighting Sept 04/78

Time of sighting 16:00 hrs.

Description; any noticable features

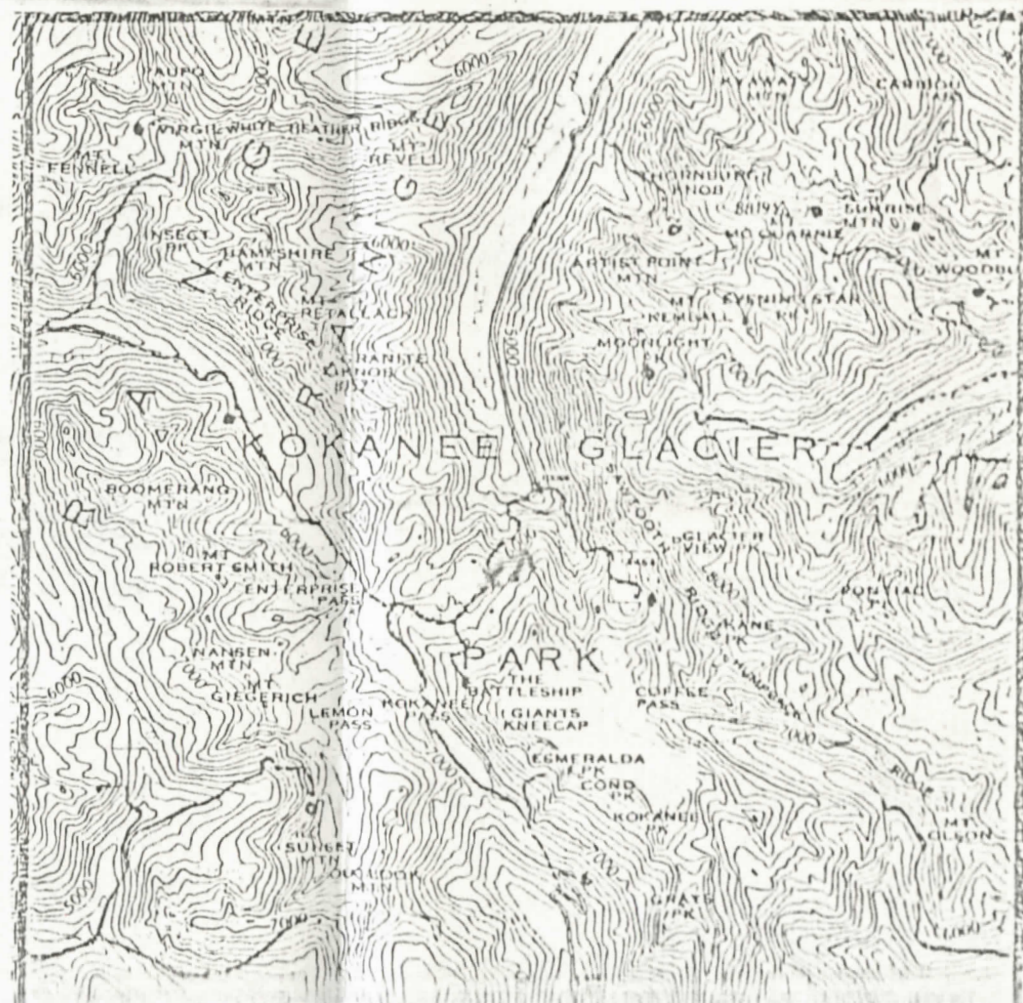
Too close

This information is required to determine the grizzly bear ranges in the park. This study is being done by the Wildland Recreation Program at Selkirk College.

Your help is greatly appreciated.

Please put any additional information on the back.

Please place an X on map in the approximate position that the sighting took place, and draw an arrow in the direction of travel if relevant.



ranger staff were all of the sow and her cubs

d) Method 2

The second method I used to obtain sighting data of grizzly bears was through a map in the ranger office at Kokanee Creek. This map had information from previous summers as well as the summer of 1978. The map contained information on all the major wildlife seen in the park including grizzlies.

e) Results

The results showed that the positions of these sightings matched the positions of my other sightings quite well. These sightings however did not have all the information that would have been useful.

f) Sightings

i. Sighting #6 Summer of 1977

A grizzly was seen at Helen Dean Lake Lake

ii. Sighting #2 August 22, 1978

The sow and her cubs were seen on the road up the Keen Creek Drainage.

iii. Sighting #1 August 18, 1978

The sow and her two cubs were seen at the A-frame ranger cabin, probably after more food after an initial find earlier in the summer.

iv. Sighting #7 June 27, 1978

Three grizzlies were seen together (no mention of size or sex) near the trail head of the Woodbury Drainage.

g) Method 3

My third method was through my personal observations and

talk with the rangers as well as other people who ventured into the park. All people I knew who were going up to the park, were told to watch out for grizzly bears as well as scats and tracks. Scats were seen on all trails in the park but because of the similarity between black and grizzly bear scat, this information did not hold any validity.

h) Results

i. Sign 1 Early September, 1978

Hiking along the Woodbury Creek trail approximately 1 mile from the trail head, I noticed a large area in the bush on the side of the trail, about 20 feet by 8 feet that had been trampled. According to John Carter, ex-ranger of Kokanee Glacier who I was hiking with, the area had been trampled by grizzly bears. It could have been the location of a day bed but these are usually more pronounced and on the edge of feeding areas. It looked as if it was caused by more than one grizzly or bear. This would correspond with the earlier sighting #7. No tracks were found in the area, probably due to heavy rains, but scat samples in the area were numerous.

ii. Other Information

Another sighting took place in September of 1977. I checked the log book at the Slocan Chief Cabin and a couple of hikers had seen a sow and two young cubs on the shore of Kaslo Lake, which is quite close to the Slocan Chief Cabin. This, I believe was the same sow that is presently in the core area and that the cubs were in the first summer at the time of this sighting.

I gathered a lot of information from two of the rangers who worked in the park in the 1978 season, Eric Dafoe and Brian Millar. They indicated to me several areas where a large number of scats and other signs were found. I also got information on other sightings. One sighting, which a sheet was filled out for and subsequently lost, almost caused trouble for one hiker. The hiker was treed by a grizzly in the area around the cabin. No more information was available but presumably it was the sow.

It was also indicated that the Enterprise Creek Drainage is a major area for grizzly bears. The area is south facing with many avalanche slopes. One girl I know says she spotted a grizzly near the valley bottom while she was hiking along the trail. This sighting occurred in September of 1977. I also saw many scats along the entire length of the trail which was a veritable treasure chest for huckleberries on which the bears feed voraciously. The trail is located on the north facing slope but the bears utilize this north facing slope as well especially in the later months from August on until denning time.

3. Discussion

From the information collected a trend can be set even with the low frequency and amount of sightings. It is obvious from the information I have collected that there is a problem in one area of the park, the core area with the sow and her two cubs.

The problem that has been established in the Slocan Chief

area is that the sow grizzly has become habituated to humans. This bear seems to have no apparent fear of humans. This bear has two cubs; from all reports, indications are that it is the second year the cubs have been with the sow meaning that they will not be with her next year. The cubs, through being with the sow, will probably also have little or no fear of humans. This could cause a trend which would be drastic for the park and the park users for years to come. It has been found that grizzly territorial habits are inherited from the parent. This means that these cubs will also stay in the general area of the central portion of the park. These bears will all be potentially dangerous to all hikers in the area.

What probably started the sow hanging around the core area of the park, could be caused by a mistake made by the ranger staff early in the 1978 summer. While staying at the A-frame ranger cabin, situated near the Slocan Chief Cabin, the rangers left some foodstuff outside. The sow discovered this and disposed of it. The bear could have been staying in the area due to occasional garbage pickings near the cabin from careless hikers. After the sow had discovered this food it stayed in the area for the rest of summer. This bear was seen quite often and posed a threat to at least two different hikers.

The sow and her cubs, seemed to use the established trails for any movement. This could be a hazard to hikers in the area. The bears seemed quite content to utilize this core area for feeding because it seems quite plentiful for food. The sightings were all in the same area spread out over the entire summer. The

bears were seen in June, August and September in the vicinity of the cabin.

There are also grizzly bears near the Woodbury Drainage. I think that this area is just a part of these grizzly bear's ranges and that their range extends outside of the park. These bears are also making use of the trails. There is potential for conflicts in this area in the future. The Parks Branch are trying to disperse the hiking traffic to all areas of the park. The Woodbury area will probably receive heavier use in the future mainly because it also has a destination spot, the Silver Spray Cabin. Scats were found near the cabin and with an increased use of the cabin, there will be an increase in garbage problems which will result in an increase in grizzly activity in the area.

I also feel that the other bears sighted in the park were not mistaken sightings and that there are two more grizzlies within the park. The Enterprise Creek Drainage is an excellent area for grizzlies and as I have mentioned there were numerous scats and the one sighting in the area. There could possibly be more grizzlies in this area because of the food available at certain times of year. I also believe that there is a boar that was sighted near the Joker Lakes. This could have been a sighting of the sow but I don't think that the sow travels to this area. This boar could be the mate of the sow but that is just a guess. I believe that this boar would have a fairly large range and does not use the normal travel patterns such as trails. There is potential hazard for both of these bears to move into the Slocan Chief area.

There could be more grizzlies that use parts of the park as part of their ranges. These bears would be complete wilderness grizzlies and therefore never seen.

4. Mapping of Potential Conflict Areas-refer to overlay 2

The mapping of the potential conflict areas was done according to the following criteria:

- a) Human Use Patterns
- b) Amount of Use to a Given Area
- c) User Experience
- d) Grizzly Habitat
- e) Grizzly Evidence in Area
- f) Grizzly Behaviour

i. Slocan Chief Area

This area at the present time, is the most dangerous area of the park for potential confrontations with grizzly bears. It is the main destination area of the park with four main trails leading to it. The bears inhabiting the area have become habituated with humans. This area receives the largest amount of use and the user is relatively inexperienced.

ii. Enterprise Creek Drainage

Enterprise Creek has the most potential for grizzly habitat and so it has to be rated as high for potential conflicts.. There have been grizzlies sighted in the area and there are large amounts of scat all over the trail. The trail probably receives the second most use of all the trails in the park. The user in this area may have a little more experience than the user from Gibson Lake but still relatively inexperienced.

iii. Woodbury Creek Drainage

This area has potential for conflict because of the sighting sign and increased use it will receive. It is not an extreme area because the bears in the area have not become habituated. Silver Spray Cabin and Sunset Lake already have fairly high use levels and an increase in use would increase the chances of bears staying in the area which would increase possible confrontations.

iv. Lemon and Coffee Creeks

These areas do not receive as much use as the other areas of the park. Also there were no sightings in these areas. Both areas have trails through them and scats were found along these trails. These trails get used by moderately experienced hikers and therefore any conflicts should be handled quite well by the user. Since there is use on the trails and scat were found, there is still potential for confrontations to occur.

v. Keen Creek and Gibson Lake Trails

These areas provide good grizzly habitat and receive quite a lot of use, especially the Gibson Lake trail. The hikers in these areas are relatively inexperienced and may not know how to handle themselves if confronted by a grizzly. These areas also border the extreme conflict area around Slocan Chief and there is potential for the habituated bears to move into these areas.

vi. All Areas Not Colored

These areas still have potential for conflicts but are the out of the way areas.

out of the way areas. People who venture into these areas are usually experienced hikers or mountaineers who have knowledge of backcountry travel. Any grizzlies in these areas would not be habituated and if any confrontations occurred, the hiker could probably use his knowledge to escape uninjured without conflict.

G. The Management Plan

1. Objectives

The objective of the management plan is to make Kokanee Glacier Park a safe place to recreate as well as retain a part of Canada's natural heritage, the grizzly bear. Humans and grizzlies can both live together in a given unit for short periods of time. In other words, the human is a visitor in the grizzly bears territory. With Kokanee Park, the policy statement indicates that it is for inexperienced or novice hikers. There could be a liability problem if any attacks occur, since it is stated for inexperienced hikers. Areas designated for this type of use should be quite safe for the user. This could lead some people to think that the bears should be permanently removed from the park. The ultimate objective is to ensure that humans and grizzly bears can cohabitate in Kokanee Glacier Park.

2. Management Options

There are several options that can be employed to solve the objectives.

a) Remove grizzlies

One option would be to remove the grizzly bear completely from Kokanee Park. This can be done two ways:

- i. Shoot bears-this would ensure that the bears would be gone.
- ii. Translocation-The bears could be tranquilized and moved to other locations. This option would be a problem. The bears that were moved, would be moved into an already in-

habited area of other bears. The new arrival would probably not last long. Also, most grizzlies are homing bears and would tend to find the place they were originally taken from. The bears would have to be moved long distances for this to be effective. This option is by far the most expensive and not at all practical.

b) Keep People Out

This option is also very impractical. It is called Kokanee Glacier "Park" not wildlife sanctuary. The park was established for people to recreate in. Being able to see a grizzly is a recreation theme. Seeing them safely is the important thing.

c) Limit Use

This option could be a good method on cutting down on confrontations. If the use of the park was limited to experienced users then the man-bear conflict level would go down. This option would also be expensive for it would need staff at all entrances to quiz or exam potential users. It also does not comply with the park policy.

d). Remove Habituated Bears

This may be a good option also. It does not solve the problem though. If the habituated bears are removed and the user type remains the same then other bears will soon become habituated as well.

e. Accomodate Humans and Grizzlies

Make the park safe enough that both grizzly bears and humans can use it without any serious effects.

3. Management Decisions

The decision for managing the grizzly problem in Kokanee Glacier Park is to accomodate both grizzly bears and humans. To properly manage this, the people will have to be managed. It is a people problem that causes grizzly problems. This will be done by making Kokanee Glacier a safe place to hike as well as be able to obtain a unique recreational experience of witnessing a grizzly bear in its wilderness surroundings.

H. Management Recommendations

Before any management can happen in the park, planning must take place. All possible conflict areas must be mapped out(overlay 2) and these must be modified whenever necessary. From the location of the conflict areas the management tools can be put in effect properly.

To properly manage Kokanee Glacier Park for the grizzly, there are many different areas to be covered. The following recommendations are a guide to the managers of Kokanee Glacier. These recommendations will help to avoid any future confrontations between grizzly bears and humans in the park.

1. Pack Holders

The first recommendation is the installation of pack holders at various areas of the park(fig. 13). Pack holders are devices to hold packs out of the reach of bears. They would have to be solid enough to withstand any punishment that a bear may give it. The problem with these packholders is that they are aesthetically unattractive in a backcountry situation. I feel that the safety of the hikers will overcome their objection to them.

Campers are informed that they should hang their packs between trees or high in a tree. The problem in some areas in Kokanee, is that the trees are not available, or are too short to be of any use.

Please refer to Overlay 3 for the following

These pack holders will be located in areas of the park that will receive use by campers. The locations for the holders are:

- a) near Slocan Chief Cabin
- b) Joker Lakes
- c) Blue Grouse Basin
- d) Sunset Lake
- e) Silver Spray Cabin
- f) Wolf Cascade

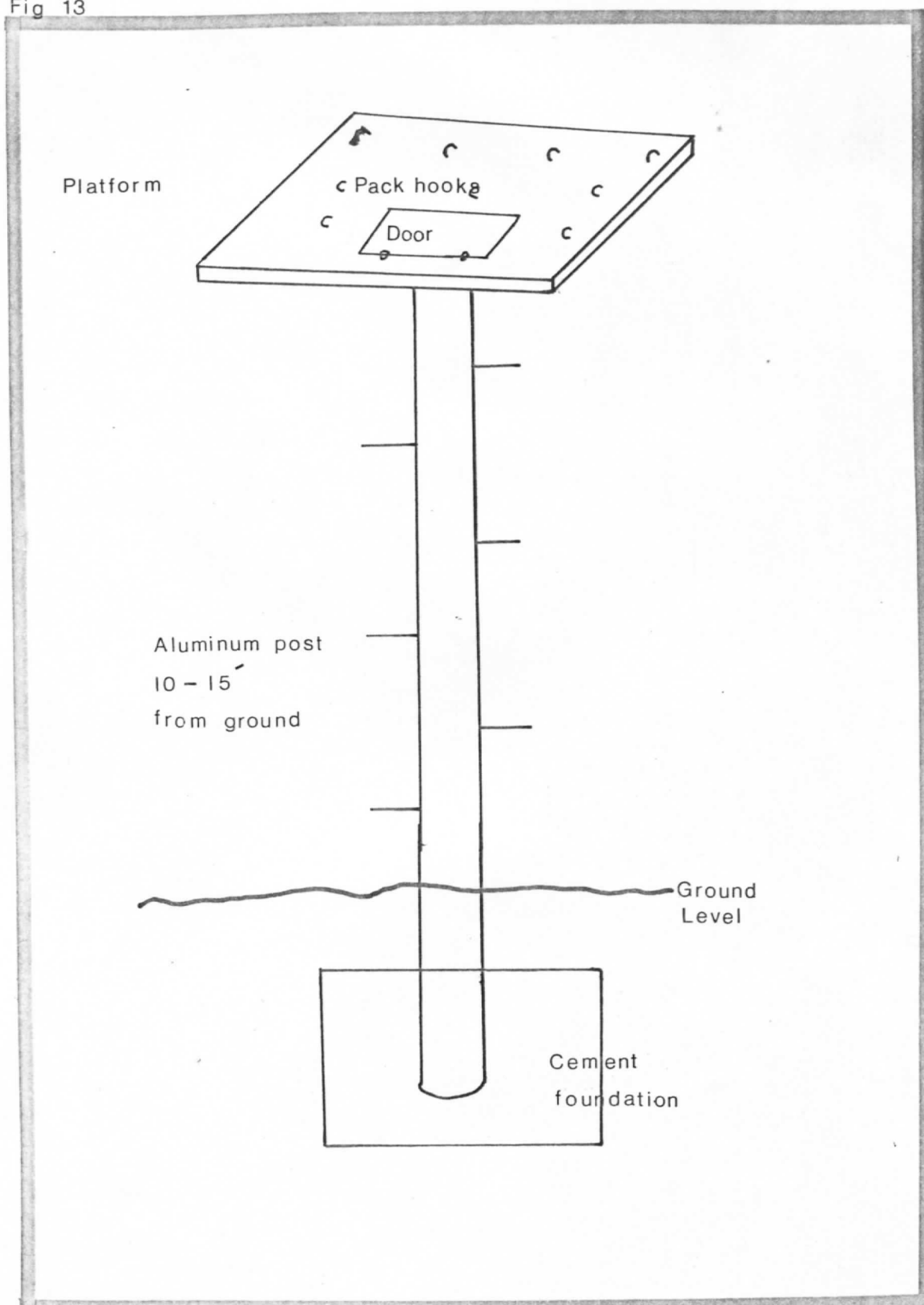
The reason for the pack holders at, or in the general vicinity of Slocan Chief and Silver Spray Cabins, is that they are both destination areas. Because of this, both cabins could receive overloads of the sleeping capacity. The Parks Branch has signs recommending that all hikers take a tent along with them just in case the cabins are full. If the cabins are full the camper would have to tent up for the night and would need someplace to put their packs.

The pack holders are placed in the other areas because these are the main areas for possible camping areas. They are all located at the end of trails.

All other areas of the park off trails that would receive camping use, I feel do not need pack holders. People using these areas should be fairly experienced in backcountry travel and should be able to find alternate places for their packs. Also bears in these areas may not be at all habituated and may not recognize humans as a food source.

There could be more areas in the future that would require pack holders. The area through the 3 lakes system, Grey Eagle, Lendrun and Nalmet may receive additional use in the near future. Also, Heather Lake and Tanal Lake which were originally planned

Fig 13



Example of Pack Holder - Various Designs Available

for primitive campsites may be good areas for packholders.

Pack holders should not be placed at the trail heads. Although camping may take place at all trail heads, especially Gibson Lake and Woodbury Creek trails, the campers have their cars to leave their packs in. It may not be a bad idea to have pack holders in these areas but it is not that necessary.

2. Trail Closures

The Parks Branch should integrate a system of closing trails at times considered dangerous by the Park officials or rangers. If a conflict does arise somewhere in the park, the trail or trails leading to that section of the park should be closed off until something is done about that specific problem. ie. removing bear from area. Any bear that causes trouble more than twice in the backcountry should be killed, or removed from the park. It is felt that if grizzly bears become habituated in the backcountry they are too dangerous to have around.

This type of action is to be avoided through public education to be covered in the next recommendations.

The trail closures could be designed as a sign at the trail heads. At danger periods, the sign could be erected crossing the trail specifying that the trail was closed because of grizzly problems.

3. Bear Proof Garbage Cans

I feel there is need for a bear proof garbage can in only one area of the park-Gibson Lake. This lake receives a lot of use because of the picnic area it has and because it is very close to the campground at Kokanee Creek. This area collects a lot of

garbage and the Parks Branch already regulates the garbage in this area. If bears ever start visiting this area which is very possible, with the present condition there could be problems. A bear proof garbage system could ensure that there will be no problems in the area.

4. Pamphlets

Pamphlets on bears, including how to act in the backcountry, proper camping precautions, recognition of prime grizzly habitat, and recognition of the two different types of bears should be available at all trail heads. The pamphlets already distributed in B.C. Provincial Parks and the National Parks (Appendix 2) are quite good but the pamphlets should be generalized for each area or park they are distributed in. The pamphlets given out at the trail heads should have information on Kokanee's grizzly bears. An up to date map of the danger areas of the park could deter hikers from venturing into these areas and therefore alleviate any possible conflicts. The pamphlets presently being distributed at Kokanee Creek Nature House should be continued because a large amount of Nature House visitors also visit at least part of Kokanee Glacier Park, usually the Gibson Lake area.

5. Nature House Display

Tied in quite closely to the pamphlets would be a display on bears at the Kokanee Nature House. The visitors to the Nature House could interpret the material on bears and with a good catchy design, the display could convey important material to the visitor. Most people are interested in bears because of the unpredictable and dangerous aspects of the bears. A display at the nature house

could be a major influence on educating the public. It could also defer some inexperienced people from using Kokanee Glacier which may be an advantage.

6. Up to Date Sighting Records

If up to date records of sightings of grizzly bears were kept, the ranges of the bears may soon become apparent. This could be a good management tool for future use. If a bear was involved in a conflict, it would not take as long to track it down if his regular patterns were known. These sightings could also be included in the pamphlet at the trail heads.

7. Radio Collar Danger Bears

If a bear is involved in a conflict with a human who was at fault, the bear should be able to continue its life. The bear however, should be radio collared if possible. Radio Telemetry is very expensive but if more problems occur in the park, I think the money is well worth it. The bear would have to be immobilized to collar the bear and this may have a bad effect on the bear. The bear may realize that it was humans that immobilized him and lose fear or create an anger toward humans.

Radio Telemetry could monitor all of the animals movements and the animal could be easily found in case of conflicts. If the animal was found to be visiting the high use areas most of the time it should be translocated or else killed if the practice continued.

A lot of the onus for ensuring that all backcountry users are aware of safe travel procedures will be on the park rangers. The Parks Branch should ensure that all the rangers are extremely conversant with all the safety procedures in backcountry travel. The

rangers should make periodic checks of backcountry users to ensure that the users know what they are up against using the backcountry. The rangers should also issue fines to users for such actions as littering, and for not using structures such as pack holders in the areas they are supplied in. Strict enforcement would soon teach people proper procedures.

I. Conclusion

I feel that there is a high potential for more extensive grizzly bear, man conflicts in Kokanee Glacier Park. These problems may be avoided if the recommendations previously mentioned are put into effect. This area is an excellent recreational area and it can continue to be if there are no serious conflicts.

Kokanee Glacier does not have the potential for having completely habituated grizzlies such as are present in parks such as Yellowstone, because there are no large developments within the park. It does however have potential for grizzlies to become habituated with humans carrying food which could cause serious problems.

The recommendations here are not extremely costly and I believe the Parks Branch could include them in their planning budget over the next few years. An ounce of prevention is worth two of cure.



Appendix 1



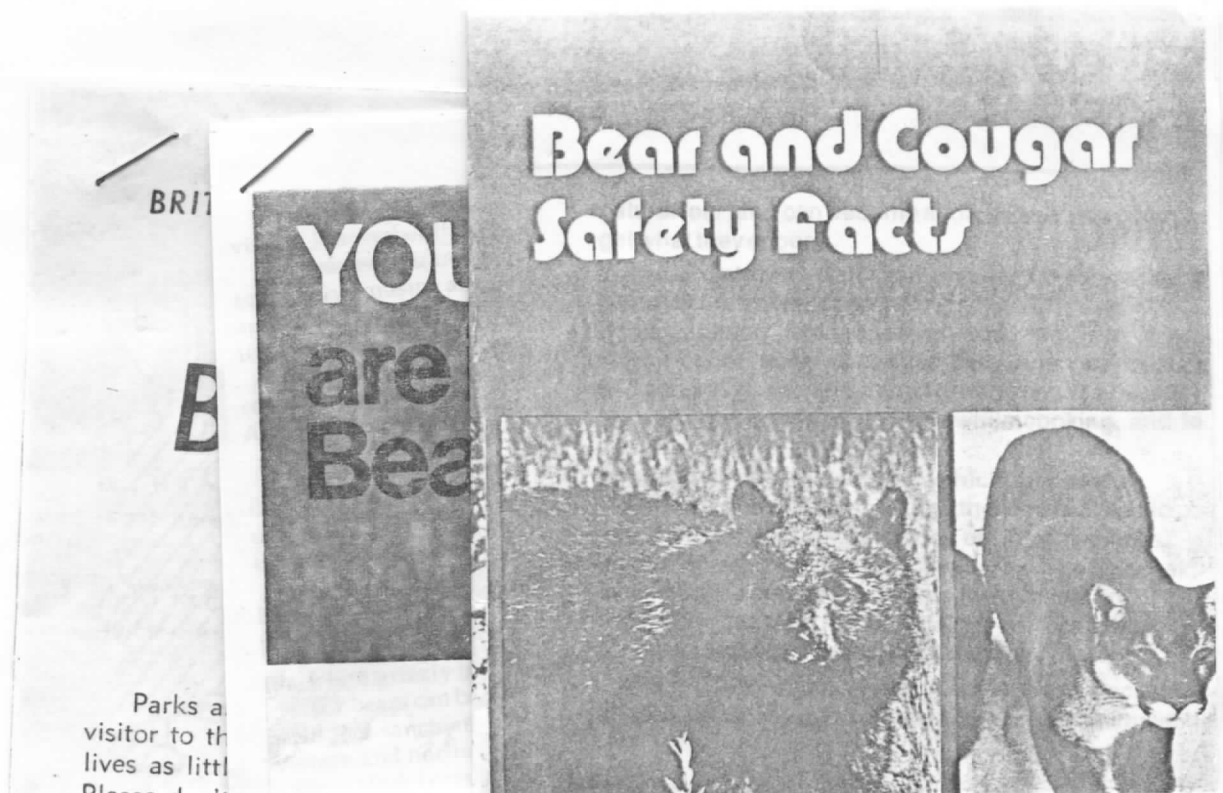


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BARTER
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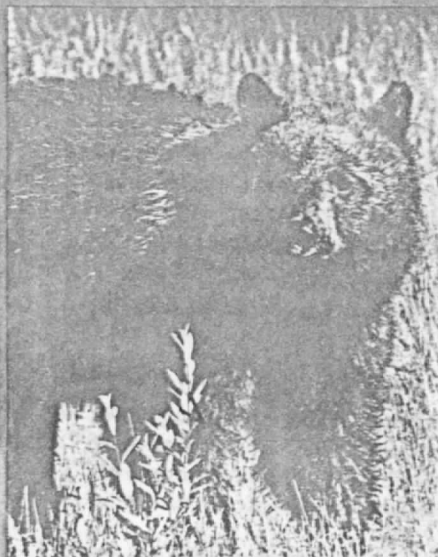
SLOAN
LAKE

HELEN DEANE
LAKE



Appendix 2

Bear and Cougar Safety Facts



Photographs by TOM W. HALL



Province of
British Columbia

Ministry of
Recreation and
Conservation

An ounce of Prevention

Many different kinds of animals inhabit the wilderness. More and more, they are having to share it with man. Black bear, grizzly bear and cougar are three of the larger species who make their home in wild places. While conflict between these animals and people can't always be avoided, a healthy respect for their wildness is the key to reducing the number of dangerous encounters.

Many of the precautions which make us better guests in their territory will also help prevent them from becoming unwelcome trespassers in ours.

How not to teach an animal bad habits

Cougars normally avoid man, but individual animals that visit residential areas may kill livestock or present a human safety hazard. Bears are prone to scavenge, and can become dependent on garbage. They have poor eyesight, but an excellent sense of smell.

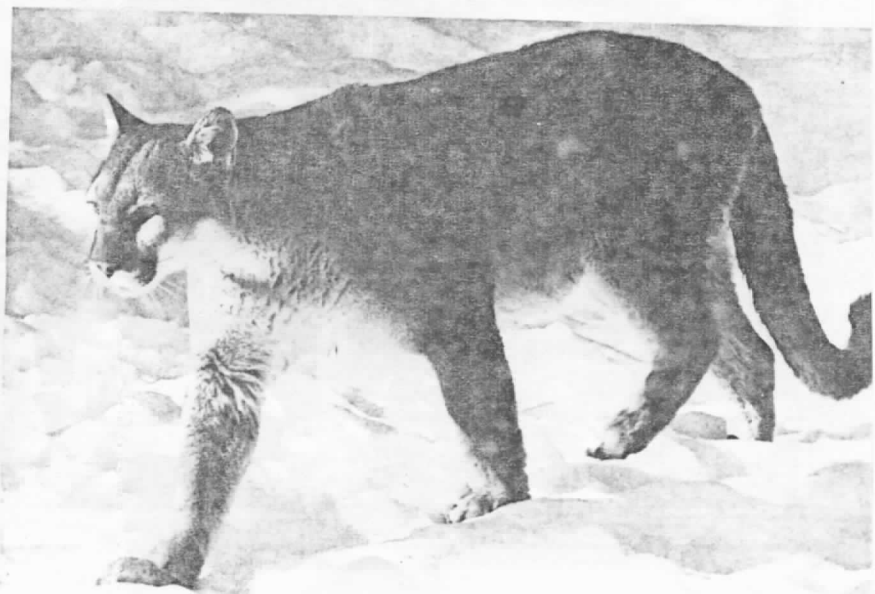
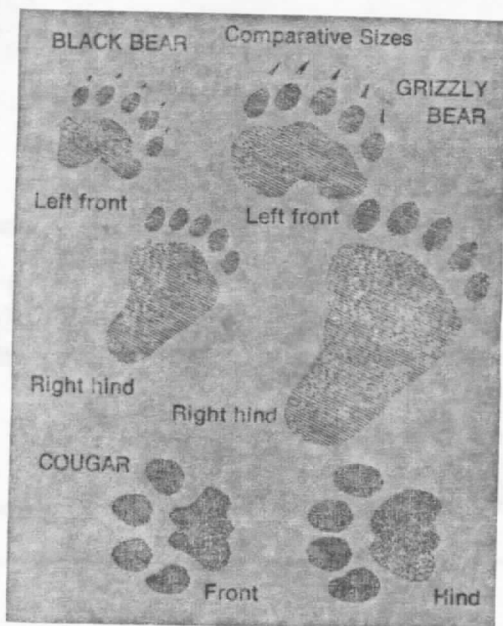
- Never feed a bear. Ever. Bears that become accustomed to accepting food from humans lose their

natural fear, and can become aggressive if they don't get what they expect.

- In residential areas, don't invite bears through careless disposal of refuse. Keep your back yard clean.
- When camping, avoid cooking foods that give off a strong odour, such as canned fish. Burn out tin cans and scraps after a meal, or use dried foods. It's best not to wipe your hands on clothes while cooking, and to avoid cooking near your tent.
- Store food in the trunk of your vehicle, or make a bear-proof cache by suspending the food in a plastic bag at least 10 feet off the ground between two trees.
- In a provincial campground, use the garbage disposal facilities provided. In the backcountry, hikers are required to pack out all garbage. It is useless to bury garbage. Bears can easily smell it out and dig it up.
- Avoid pitching camp where you find fresh tracks or droppings or along a trail clearly used by animals.

Never take an animal by surprise

- When you are on the trail, watch for signs of bears, such as droppings, fresh tracks, or their strong scent.
- Be careful near berry patches or the banks of streams where salmon are spawning. Never approach a fresh kill.
- Carry a noisemaker, such as a bell, or a tin can filled



with a few pebbles. Attach it to your walking staff or pack. The human voice is one of the most unfamiliar sounds in the wilderness, so talking or singing are effective. Be extra careful in thick bush.

- Never travel alone through wilderness country. Do not let children straggle far behind or rush ahead.
- Leave your pet at home. The excited barking of a dog can enrage a bear. The dog may retreat to its master — and draw the bear's attack to you. Cougars also find pet dogs easy prey.
- Be particularly careful in high winds, when an animal may not be able to pick up your scent soon enough to avoid you.
- Female bears with cubs are especially dangerous. Never approach a cub, even if it seems to be alone, and never get between a cub and its mother.
- Evidence indicates that bears are likely to be more aggressive toward those wearing scented cosmetics, hair spray, or deodorant, and toward women in menstrual period.

If all precautions fail

If you meet a bear, it will most likely run away. But bears can be unpredictable. Learn to recognize the signs of a bear attack, and above all don't panic.

- A bear rearing up on its hind legs is probably taking a more careful sniff to make certain of who you are. The



signs of an attack are growling, with ears laid back.

- Running or waving of the arms will only provoke a bear.
- If the bear is close, back away slowly, talking as calmly as possible, towards a tree or behind rocks or into a gully. Do not do anything suddenly.
- Should a charge be unavoidable, protect your stomach, thighs and neck by lying down on the ground in a hunched position with knees drawn up to the chest and hands clasped over your neck. The bear may try to maul you but it will do less damage if you can manage to lie still. Usually the bear will retreat immediately after the attack.

What do they look like? Where do they live?

Black Bear (*Ursus Americanus*)

Vary in weight up to 600 pounds and are up to about 5 feet long. Fur colour varies from black to brown to cinnamon or blond. There is often a white patch at the throat. Claws are short and well-adapted for climbing. Diet is broad and includes berries, grass, roots, herbs, fish, carrion, and whatever mammals they can catch. The nose is longer than that of the grizzly, and black bears have no shoulder hump.

Like grizzlies, black bears inhabit almost every type of terrain, from coastal beaches to forests, dry grassland and subalpine meadows. In the forest, they like open spaces where berries can be found and many forms of succulent plants such as clover and grasses. Like grizzlies, they also eat spawning salmon. Variations of the black bear are the white Kermode bear of the Terrace-Kitimat area, and the glacier bear of the far northwest corner of the Province. Both of these are rare and protected.

Grizzly Bear (*Ursus Arctos Horribilis*)

Weigh up to 1100 pounds, with 450 to 800 pounds being more usual. Colour very variable, but each hair is usually white-tipped. Claws very long and ill-suited for climbing. The face is notably concave or dished. Grizzlies usually have a prominent shoulder hump.

The grizzly is a migratory bear, moving from valley bottoms deep in bush up to alpine meadows where it eats alpine vegetation and small animals. Grizzlies are found at the head of many coastal inlets where there are salmon streams, and in open areas of the forest left by fire or logging where berries can grow.

Grizzlies are more temperamental than black bears, and less common, but as the backcountry becomes more

popular with hikers, grizzly bear encounters are likely to increase.

Cougar (*Felis concolor*)

Largest of several wild cats living in British Columbia, including the lynx and the bobcat. In colour reddish-brown to grey-brown, with lighter underparts and no markings. The long tail is a prominent feature.

Cougars are very rarely seen. Males and females do not live together but have separate territories varying in size from 5 to 25 square miles. Deer, young elk, and many smaller animals including mice and insects are their usual foods.

While attacks by cougars on man are rare, they do occur, and even one is too many. That is why they have been included in this brochure. It is particularly important not to let small children venture alone into bush areas where cougars are known to be present.

A word about wildlife management

When we deal with problem animals, it is as individuals. At one time, people thought that there were "bad" animal species, which should be reduced or eliminated wherever possible. But we have since learned that all wildlife is important to the natural balance of living systems, and the days of bounties and extensive poisoning programs are in the past.

If an animal is causing a problem, the first attempt may be to capture and move it to an area where it will be able to go back to its natural habits. This is most often seen in the form of live traps set for bears in residential areas. However, this approach has its limitations. Animals are often forced into such areas because of a loss of their natural habitat. There is simply not enough room for all the animals, and putting animals back may simply bump out others, like a game of musical chairs.

Before it is released in the wild, a nuisance animal is marked for identification. If the same animal reappears again and again, it may have to be destroyed.

The same is true of an animal that is threatening human lives or preying on livestock.

Feeding bears and other wildlife, whether intentionally or through carelessness, is therefore more than just a problem: it can also be a source of tragedy — for ourselves, for the animal concerned, for the environment as a whole. Making sure it doesn't happen is a job for everyone, for as long as there are wild things and wild places to protect and enjoy.

YOU are in Bear Country



It's been their home for thousands of years. You're the visitor. Remember that and act accordingly.

The bear is an animal that demands your respect. Its seemingly amusing antics belie its great strength and agility. But it will defend itself, its young and its territory if it feels threatened.

Knowledge and alertness can help you avoid an encounter with a bear that could be hazardous.
ALL BEARS ARE POTENTIALLY DANGEROUS.

They are unpredictable and can inflict serious injury. Because of this, NEVER feed or approach a bear. It is unlawful to feed bears — this is to protect both you and the animal.

Every bear has individual behaviour characteristics. Not even the experts can be sure how one will react in a particular situation.

Black and grizzly bears

Black bears can be found in most of Canada's national parks. But sanctuary for the grizzly is now limited to the western and northern mountain parks.

Since black bears adapt readily to human environments, they are seen more frequently than grizzlies.

Black bear (*Ursus americanus* Pallas)

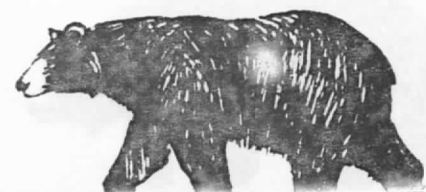
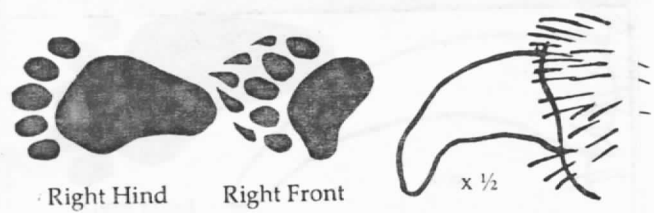
Colour: varies from pure black to cinnamon or blonde; most are black with brownish muzzle; often a white patch below throat or across chest.

Height: about three feet at the shoulder.

Length: about five feet.

Weight: ranges from 125 pounds to more than 600. Females are generally smaller than males.

Distinguishing characteristics: smallest member of the North American bear family. Usually has straight facial profile and tapered nose with long nostrils. Feet are flat-soled with short, curved claws. Smaller than the grizzly and has a higher head carriage and straighter shoulder-rump line. Agile climber.



Black bear prefer heavily-wooded areas and dense bush-land year-round. But the grizzly is migratory. In summer it is the elusive inhabitant of high alpine country, while in spring and fall it descends to the valley bottoms. It is often lured into areas occupied by humans by the promise of easily-obtained food. And now more and more people are using the backcountry — invading the grizzly's traditional domain.

A few hints to avoid a bear encounter

Stay alert and think ahead.

Always hike in a group.

Carry a noisemaker, such as bells, or cans containing stones. Most bears will leave the vicinity if they are aware of your presence. BUT REMEMBER in dense bush and near rushing water, your noisemaker may not be effective.

Be especially alert when travelling into the wind. The bear may not get your scent and be unaware of your approach. This is especially true in a strong, rushing wind.

Keep in the open and avoid food sources such as berry patches and carcass remains. Bears feel threatened if surprised. So watch for bear signs — fresh tracks, digging and scats (droppings).

Grizzly bear (*Ursus arctos horribilis* Ord)

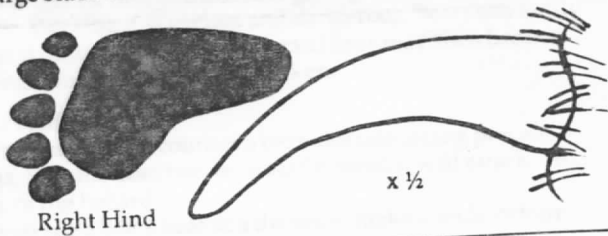
Colour: varies from black to blonde; frequently with white tipped fur, giving a grizzled appearance.

Height: about 3½ feet at the shoulder; reaches 6 to 7 feet when standing on hind legs.

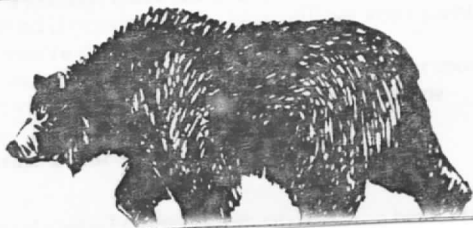
Weight: averages about 450 pounds; some weigh up to 1,000 pounds. Females are generally smaller than males.

Distinguishing characteristics: prominent humps over the shoulders formed by the muscles of massive forelegs. Sloping back line. Dished or concave face. Long curved claws.

A small grizzly is often difficult to distinguish from a large black bear. Treat all bears with extreme caution.



Right Hind



NEVER go near a bear cub. You could end up tangling with several hundred pounds of angry mother.

Take photographs with a telephoto lens. Bears have a tolerance range which when encroached upon may bring on an attack. Keep your distance at all times.

Don't take your dog into the backcountry. The sight and smell of a dog often infuriates a bear and may bring on an attack. Your dog would be no match for him. And when in trouble your pet may come running back to you with the bear in pursuit.

Some suggestions for safe camping

Bears will eat almost anything. Don't invite a bear with food or garbage. Garbage-trained bears associate food with humans and soon lose their fear of man. Because of this loss of fear, the bear might become a danger to campers and have to be destroyed.

DON'T LET YOUR CARELESSNESS CAUSE THE UN-NECESSARY DEATH OF A BEAR.

In established campgrounds:

Keep your campsite clean.

Lock food in the trunk of your vehicle.

Don't leave dirty utensils around the campsite.

Don't cook or eat in your tent. The lingering odors are an open invitation.

After eating, put the garbage in containers provided by the park.

In the backcountry:

Camp off animal or walking trails and near large, sparsely-branched trees you can climb if necessary.

If you notice fresh bear signs, choose another area.

Cache your food away from your tent, preferably suspended from a tree.

Don't store food or eat in your tent.

Cook away from your tent. Food smells can permeate the tent and attract a bear.

Freeze-dried foods are lightweight and relatively odor-free.

Pack out all non-combustible garbage to the nearest container. Burying it is useless and dangerous. Bears can easily smell it and dig it up. The attracted bear may then become a danger to the next group of hikers.

Bear confrontations

You may still encounter a bear, despite taking precautions. But this does not necessarily mean it will attack. To reduce the hazard:

- if you see a black bear at a distance, make a wide detour;
- if you see a grizzly, leave the area at once;
- keep upwind if possible so the bear will get your scent and know you're there;
- if you cannot detour or retreat, wait until the bear moves away from your path — always leave him an escape route;
- never harass a bear — it may urge him to attack.

Attacks

Most grizzly attacks result from surprising a bear, com-

Black bears are not as aggressive as grizzlies. The majority of encounters between humans and black bears have resulted from feeding the bear or coming between a sow and her cubs.

There is no guaranteed life-saving method of handling an aggressive bear. But some behaviour has proved more successful than others.

KEEP CALM AND TRY TO ASSESS THE SITUATION.

Running is not a good solution. Most bears can run as fast as a racehorse and quick, jerky movements can trigger an attack.

A bear rearing on its hind legs is not always aggressive. If it moves its head from side to side, it may only be trying to get your scent and focus its weak eyes. Remain still and speak in low tones. This may indicate to the animal you mean no harm.

Think about your surroundings before you act.

If you meet an aggressive grizzly in a wooded area, speak softly and back slowly toward a tree. At the same time slowly remove your pack and set it on the ground to distract the bear.

Climb a good distance up the tree. Adult grizzlies can't climb as a rule, but large ones can easily stretch eight to ten feet up a tree.

Black bears are agile climbers so a tree may not offer an escape.

If you have no escape route you may, as a last resort, have to "play dead". Drop to the ground face down, lift your legs up to your chest and clasp your hands over the back of your neck. Wearing your pack will shield your body. Bears have been known to inflict only minor injuries under these circumstances. It takes courage to lie still, but resistance would be useless.

Sometimes bears will bluff their way out of a threatening situation by charging and then veering away at the last second.

Few bear attacks have occurred in the national parks, especially considering the numbers of visitors each year. The majority of man-bear encounters have been brought about by carelessness and ignorance.

Our national parks are dedicated to the protection of all wildlife. With your co-operation, we can live up to this concept. If garbage and handouts are no longer available, contact between bears and humans will be reduced and the risks lessened.



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BEAR !



Parks are the homes of many wild creatures. You are a visitor to their home, and we ask you to interfere with their lives as little as possible. All animals deserve your respect. Please don't approach them or offer food.

Bears are amongst the largest of park animals. Only moose are larger. The chances are that you won't see one, for they are usually shy of man. Along the trails, though, you will likely find their "scats" and see the logs and stumps they have ripped apart in search of grubs. You may even smell a nearby bear.

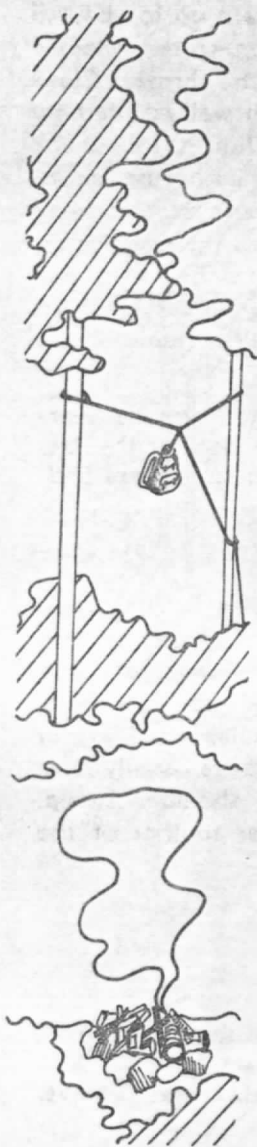
If you do meet a bear treat it with great caution and respect. They can be dangerous and unpredictable. Bears are more dangerous if they lose their fear of man. It is important that you, the visitor, know how to act in the bear's home, both for your own sake and for that of the bear. Bears become problems only when thoughtless people feed them or leave food where they can find it.

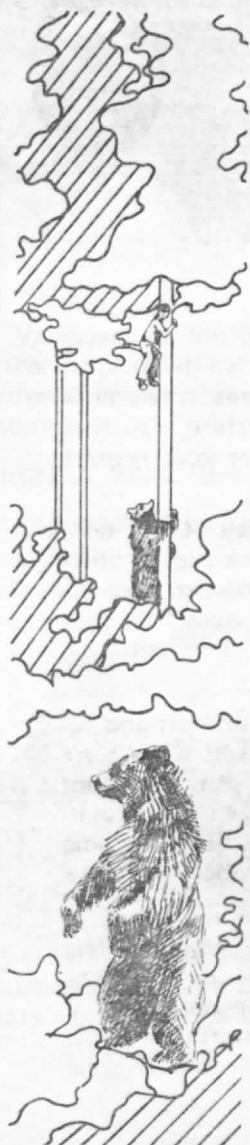
The bears need your help. If they become camp prowlers or roadside beggars they soon give trouble and must be moved away or destroyed. Each time this occurs the park loses a magnificent animal and becomes a less interesting area to visit. Help the bears, the park, and yourself by following the instructions in this pamphlet.

PARKS BRANCH

In Camp

- Food attracts bears. Store all food in your car trunk or make a bear cache by suspending food in a pack at least 10 feet above ground and well away from tree trunks. Keep no food on park tables or in your tent except at meal times.
- Never offer food to bears. To do so invites trouble for you and for later campers and may result in the need to destroy the bear.
- Burn out all tin cans and burn all food scraps after each meal. A clean camp attracts few bears.
- Avoid pitching camp where bear sign is evident or close to a walking trail. Bears often use the trails at night. Choose a place where there are handy trees to climb.
- Bang plates and shout to frighten away prowling bears.
- Evidence indicates that bears are especially likely to be aggressive toward women wearing scented cosmetics, hair spray, or deodorant, and toward those in menstrual period.



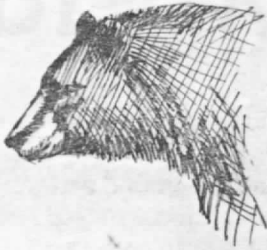


On the Trail

- Watch for bear sign. Be alert if you see warm droppings or other fresh sign, or smell a bear.
- If you meet a bear he will most likely run away, but bears can be unpredictable.
- If he stands his ground, don't panic and run—that may excite the bear and invite pursuit. Slowly remove your pack, then retreat or make a wide detour. Watch for escape routes and handy trees to climb.
- If the bear advances in aggressive manner, climb a tree or back **slowly** away. If you run off in panic this act may trigger an attack by the bear. Stay out of the way or up the tree until you are sure the coast is clear.
- Female bears with cubs are especially dangerous. Never approach a cub, even if it seems to be alone, and never get between the cub and its mother. To do either invites real trouble.
- A dog may be a problem companion. Bears do attack dogs and dogs do retreat to their masters. You are safer without a dog.

BLACK BEAR (*Ursus americanus*)

Vary in weight up to 600 pounds and are up to about 5 feet long. Fur colour varies from black to brown to cinnamon or blond. There is often a white patch at the throat. Claws

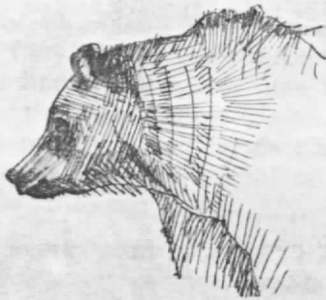


are short and well-adapted for climbing. Diet is broad and includes berries, grass, roots, herbs, fish, carrion, and whatever mammals they can catch. The nose is longer than that of the Grizzly, and Black Bears have no shoulder hump.

Variations on the Black Bear are the white Kermode Bear of the Terrace-Kitimat area, and the Glacier Bear of the far northwest corner of the Province. Both of these are rare and protected.

GRIZZLY BEAR (*Ursus arctos horribilis*)

Seldom seen by park visitors. Weighs up to 1,100 pounds, with 450 to 800 pounds being more usual. Colour very variable, but each hair is usually white-tipped. Claws very long and ill-suited for climbing. The face is notably concave or dished. Grizzlies usually have a prominent shoulder hump. Diet is similar to that of the Black Bear.



PLEASE HELP TO PROTECT THE BEARS BY OBSERVING THE PRECAUTIONS LISTED IN THIS PAMPHLET. THESE MAGNIFICENT ANIMALS ARE IN DANGER. YOU CAN HELP TO SEE THAT THEY SURVIVE.

1207 21 8AM

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LEGEND

TRAILS
ACCESS ROADS
RANGER CABIN
SLOCAN CHIEF CABIN
MAJOR PEAKS

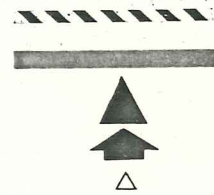
GRIZZLY SIGHTINGS
AND SIGN
ACTUAL SIGHTINGS
POSITIVE SIGN

POTENTIAL
CONFLICT AREAS
EXTREME
HIGH
MODERATE

MANAGEMENT
TOOLS
PACK HOLDERS
TRAIL CLOSURE SIGNS
BEAR PROOF GARBAGE CANS

OVERLAY 1, 2, 3

SCALE 1: 80,000



KOKANEE GLACIER PROVINCIAL PARK

