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Dear Sir:

The attached report entitled HUNTING SEASON REPORT 1956 is submitted herewith for your approval.

Yours truly truly,

"R.Y.E."
per
R. W. Ritcey
Provincial Parks Branch

APPROVED: "R. Y. Edwards
i/c - Section

Date: May 27, 1957

APPROVED in accordance with attached addenda.

H. G. McWilliams
Forester
Provincial Parks Branch

Date: _____

APPROVED: _____

Date: _____

by
R. W. Ritcey
1957

Department of Recreation and Conservation
Provincial Parks Branch
Mr. H. G. McWilliams, Forester

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HUNTING SEASON REPORT 1956

I INTRODUCTION

The 1956 hunting season in Wells Gray Park extended from September 1st to the end of December. Any moose was legal game from September 15th and the same rules applied to caribou. Regulations for other game species were the same as in adjoining districts. A record kill of moose was established and a record number of hunters used the park during the season.

Checking stations were again operated at Hemp Creek, Mahood, Murtle, and Clearwater Lakes. Guides and hunters were very cooperative in supplying information and specimens from their hunts. My wife was responsible for summarizing much of the information from hunter questionnaires. I am indebted to all of these people for the data which has accumulated for this report.

A. KILL GENERAL

Almost three hundred head of big game were killed by park hunters in the past season. This is approximately one big game animal for every third person who actually hunted in the park. The kill of all big game, except for deer and goat, is above last year's. Game populations have remained high but most of the increase in kill is due to increased hunter activity rather than larger animal numbers.

TABLE 1: SUMMARY OF GAME CHECKED IN WELLS GRAY PARK, FALL 1956
HEMP CREEK AND CLEARWATER LAKE CHECKING STATIONS

| | Total | Male | Female | Under 1 year |
|-------------------|-------|------|--------|--------------|
| Moose | 232* | 110 | 94 | 25 |
| Deer | 12 | 7 | 4 | 1 |
| Caribou | 6 | 4 | 2 | |
| Goat | 1 | | 1 | |
| Black bear | 5 | 3 | | 2 |
| Grizzly bear | 2 | 1 | 1 | |
| Grouse | 14 | | | |
| Ducks | 5 | | | |
| Hunters | 705 | | | |
| Hunter days/moose | 7.4 | | | |

MAHOOD LAKE CHECKING STATION

| | | | | |
|-------------------|------|---|---|--|
| Moose | 6 | 3 | 3 | |
| Deer | 3 | 1 | 2 | |
| Caribou | 2 | 1 | 1 | |
| Black bear | 2 | 2 | | |
| Grouse | 3 | | | |
| Hunters | 73 | | | |
| Hunter days/moose | 20.9 | | | |

MURTLE LAKE CHECKING STATION

| | | | | |
|-------------------|-----|---|---|--|
| Moose | 6 | 4 | 2 | |
| Caribou | 3 | 1 | 2 | |
| Grizzly bear | 2 | 2 | | |
| Ducks | 8 | | | |
| Hunters | 11 | | | |
| Hunter days/moose | 4.9 | | | |

PARK TOTALS

| | | | | |
|-------------------|-----|-----|----|----|
| Moose | 244 | 117 | 99 | 26 |
| Deer | 15 | 8 | 6 | 1 |
| Caribou | 11 | 6 | 5 | |
| Goat | 1 | | 1 | |
| Black bear | 7 | 5 | | 2 |
| Grizzly bear | 4 | | | |
| Ducks | 13 | | | |
| Grouse | 17 | | | |
| Hunters | 789 | | | |
| Hunter days/moose | | | | |

* Includes all moose shot north of Grouse Creek, four of these were _____. Two animals were taken where contradictory evidence on age was given, one recorded as calf cow year, the other recorded as a yearling male but the antlers were described as buttons.

TABLE 2: GAME SIGHTING RECORD OF HUNTERS CHECKED AT HEMP CREEK - CLEARWATER LAKE

| | | | |
|--------------|-----|--------------|-----|
| Moose | | Deer | |
| Bulls | 479 | Bucks | 50 |
| Cows | 423 | Does | 103 |
| Calves | 145 | Fawns | 24 |
| Adults | 501 | Adults | 19 |
| Unclassified | 295 | Unclassified | 40 |
| ----- | | ----- | |
| 1843 | | 236 | |

TABLE 3: LOCATION OF MOOSE KILLS, WELLS GRAY PARK 1956

| | No. of kills | | No. of kills |
|---------------------------------|--------------|-------------------------|--------------|
| Pyramid | 71 | Murtle Lake | 6 |
| Hemp Creek | 26 | Azure Lake | 6 |
| Deer Creek to Gauge Hill | 25 | Stillwater | 3 |
| 5 Finger Lk to Cranberry Lk | 20 | Grouse Creek | 3 |
| Clearwater Lk excepting above | 20 | road on either side of | |
| foot of Battle Mountain | 20 | Dawson Falls campsite | 3 |
| Green Mountain | 7 | MacLeod Hill | 3 |
| Murtle River - Blackwater Creek | 7 | Battle Mountain | 2 |
| Ray place - Shadow Lake | 7 | flats between Trout and | |
| Mahood Lake | 6 | and Grouse Creeks | 5 |
| | | Clearwater River | 1 |

TABLE 4: AREAS HUNTED BY HUNTERS CHECKED AT HEMP CREEK

| | | | |
|---------------------------------|-----|------------------------------|----|
| Pyramid | 167 | Green Mountain | 30 |
| Five Finger - Cranberry Lake | 143 | Murtle River - Blackwater Cr | 40 |
| Clearwater Lk - Archer Cr. Burn | 84 | MacLeod Hill - Upper Hemp Cr | 23 |
| Deer Creek to Gauge Hill | 25 | Lower Hemp Creek | 50 |
| foot of Battle | 58 | west of Clearwater River | 15 |
| Battle Mountain | 12 | | |
| Horseshoe to Shadow Lake | 40 | | |

B. MOOSE

The record moose kill was again due to an early migration to the lowlands, with a record number of late season hunters. Snow depths were comparable to last year's -- about 30" at Pyramid in mid-December. Early settling of the snow made for easy traveling on snowshoes. Temperatures were not extreme and did not deter hunters from camping out.

Once more, the area south of Pyramid became a slaughter yard in the closing weeks of the season. It is difficult to describe the carnage in this five square miles. Bloody skid trails converged on the mail trail leading to the road. On these trails hunters toiled from dawn to dusk, moving out their meat. some worked far into the night.

In a single day, sixty-three shots were heard in the region and ten moose were killed with others leaving a blood trail into cover. Some hunters were not equipped with snowshoes and did not pursue their game unless it fell within sight of the trail.

One near fatality occurred when hunters returned fire on a part they suspected of narrowly missing them while shooting at another moose. Continued crowding of moose and hunters in their small area will eventually lead to deaths among the hunters as well as the hunted.

A solution to the problem is by no means easy. The popularity of the area is due to two reasons. Kills are very easily taken out, both because of the excellent main pack trail and because of the flat topography. Moose funnel through the area on migration and are temporarily halted by the Murtle River. The region is truly a hunter's paradise but it may also be his route to heaven.

There is some hope that moose may learn to use different migration routes and to cross the Murtle above the hunter concentration. The extension of the Pyramid trail may help spread hunters northward sufficiently to alleviate the problem. There was some use of the new trail this fall and use should increase.

It is encouraging that the Pyramid kill decreased from 40% of the total kill in 1955 to 29% in 1956.

A great increased kill occurred in the area lying along the foot of Battle Mountain from the southern park boundary north to the vicinity of Smith Lake. This area appears to derive its winter population from lightly hunted areas of the Table, Battle, Indian Valley block. The increased kill here is most desirable.

Guided hunters too a smaller share of the kill this year. Fifty of the two hundred and forty-four moose were killed by guided hunters.

Increased horse use for transporting kills was noted; one hundred and forty of two hundred and twenty-one kills checked at Hemp Creek were horse packed or skidded.

C. SEX RATIO

Bulls again outnumbered cows in the kill: 117 to 99 for the park as a whole. Male calves outnumbered female calves 18 to 7 (the sex of one animal was not recorded.) The reason for the great preponderance of male calves is not known. In adults, the disparity between the sexes in the kill is explained by selective shooting for males in the early season. Males are also more easily hunted in the rutting season. In late season, when meat hunters are abroad, there is little selective hunting. They hope for a cow but often take antlerless bulls by mistake. Even the most experienced err at times. The sighting record for moose also shows a slight edge of bulls over cows (Table 2). These records cannot be accepted at face value for many moose are seen after the bulls have lost their antlers and cannot be sexed accurately.

TABLE 5: ANTLER MEASUREMENTS, 1956 HUNTING SEASON
Moose

| | Mean spread | No. measured | Points | | Basal Diameter | |
|-----------------|-------------|--------------|--------|------|----------------|------|
| | | | L | R | L | R |
| Hemp Creek | 33.21" | 67 | 6 | 6 | 1.83 | 1.87 |
| Murtle Lake | 31.31" | 4 | 5 | 4.75 | 1.29 | 1.29 |
| Mahood Lake | 38.30" | 3 | 8 | 7.3 | 1.13 | 1.37 |
| Wells Gray Park | 33.30" | 74 | 6.1 | 6 | 1.83 | 1.86 |
| Deer | | | | | | |
| Hemp Creek | 20.54" | 6 | 3/8 | 4.3 | 1.22 | 1.23 |

TABLE 6: AGE CLASSIFICATION OF 194 MOOSE JAWS COLLECTED
1956 HUNTING SEASON

| Wear Class | Estimated Age | No. of Jaws | % of Sample | % of Sample over 1 Year |
|------------|---------------|-------------|-------------|-------------------------|
| A- | 4 - 7 mos. | 16 | 8.3% | |
| A | 1 year | 31 | 16.0% | 17.4% |
| B | 2 years | 26 | 13.4% | 14.6% |
| C | 3 - 4 years | 35 | 18.0% | 19.7% |
| D | 4 - 5 years | 34 | 17.5% | 19.1% |
| E | 5 - 7 years | 32 | 16.5% | 18.0% |
| F | 7 - 9 years | 18 | 9.3% | 10.1% |
| G | over 9 years | 2 | 1.0% | 1.1% |
| | | 194 | 100.0% | 100.0% |

TABLE 7: AGE CLASSIFICATION BY MONTH OF 190 JAWS

| Wear Class | Estimated Age | September No. of jaws | October No. of jaws | November No. of jaws | December No. of jaws |
|------------|---------------|--------------------------|------------------------|-------------------------|-------------------------|
| A- | 4 - 7 months | 0 | 1 | 4 | 11 |
| A | 1 year | 2 | 7 | 5 | 16 |
| B | 2 years | 6 | 7 | 5 | 8 |
| C | 3 - 4 years | 5 | 5 | 11 | 12 |
| D | 4 - 5 years | | 7 | 8 | 16 |
| E | 5 - 7 years | | 4 | 11 | 17 |
| F | 7 - 9 years | | 1 | 5 | 12 |
| G | over 9 years | | | 1 | 1 |
| | | 13 | 32 | 50 | 95 |

D. AGE DISTRIBUTION

The yearling fraction in the jaw sample is down from 22.8% in 1955 to 16% this year. The severe winter apparently reduced the survival of 1955's calf crop. The jaw sample showed a slight

increase in calves, from 7% to 8.3% of the sample, as did the sighting records, from 8% to 9% of age classified animals. The increase is probably not significant.

As in 1955, most older animals were killed late in the season. Table 7 shows the ages of the jaw sample by months. In November - December, jaws in the D - G wear groups made up 48% of the sample compared with 27% in September - October. Many of these older animals were taken in the foot of Battle - Hemp Creek areas, where the kill has been relatively light in previous years.

The decrease in mean antler spread from 35.9" last year to 33.3" (Table 5) is mainly the result of fewer old animals in the antler sample. This does not reflect the true age sample. Old bulls shed their antlers earlier than the young bulls so much of the December antler sample was from yearling and two or three year old bulls. The jaw sample, on the other hand, had a large proportion of older animals represented in December.

E. GENERAL CONDITION

Twenty-four moose were examined for condition as judged by fat deposits on back and/or kidney as described by Riney (1955). The sample was too small to determine significant regional differences in condition. However, the following was apparent from the small sample and field observations:

- 1) Fat deposits on mature bulls and cows seem to be near their peak in September.
- 2) There is a steady wasting of fat in mature bulls which continues through December.
- 3) Cows tend to retain their fat through the fall and may even increase in weight.
- 4) Fat deposits in yearlings are small and seldom exceed 2 mm in depth on the back.
- 5) Back fat deposits of calves are not usually measurable.

The highest Riney Index (weight of kidney fat/weight of kidney) recorded was 217% from a bull of the C age group killed on September 27 at Murtle Lake. The deepest back fat deposit measured was 53 mm also from a bull of the C age group killed at Fight Lake on September 16.

F. RETURNS FROM TAGGED MOOSE

Returns from our tagged moose are available for three years now. Population estimates may be arrived at by use of the Lincoln Index. This index is calculated on the assumption that the ratio of tagged animals in the population to the total population is the same as the ratio of tagged animals in the kill to the total kill.

In 1954 there were 25 tagged moose available to hunters, assuming no mortality to tagged animals other than hunting. One tagged moose was reported in a kill of 99. Let X equal population size: $25 / X = 1 / 99$ $X = 2,475$

In 1955 there were 69 tagged animals available. Three tagged moose were reported in a kill of 146: $69 / X = 3 / 146$ $X = 3,358$

In 1956 there were 92 tagged moose available. 7 tagged moose were reported in a kill of 244: $92 / X = 7 / 244$ $X = 3,207$

There are many complicating factors to this method of population estimate, but the data so far are encouraging. The 1955 and 1956 returns give very similar results which may or may not be due to chance. Failure to return even a few tags would impair the value of population estimates with our present small sample size. A small reward, possibly in the form of a wildlife photo, should be offered for tag returns.

G. MULE DEER

The deer kill dropped from 21 last year to 15 this year, despite a great increase in hunter numbers. The decrease is directly attributable to reduction of deer numbers by the relatively severe winter of 1955-56. The present winter is equally severe and deer numbers will remain low for the next hunting season.

However, there is no reason why the kill should not be at least double the present average. The limited winter range is stocked to capacity and deer are wasted through starvation and predation every year. We have no accurate data on deer numbers but I would estimate at least 500 deer to be in the park in the regular hunting season. To take such a small number of deer from a population of this order is indeed very poor management. The only practical way to increase the kill is to shoot any deer throughout the entire deer season. No extension of the present deer season into December is recommended as overhunting parts of the winter rangeland could easily occur then. The best dates for the deer season would probably be from September 14 to December 1st inclusive.

H. CARIBOU

Eleven caribou were killed by hunters and one was taken for study during the season. This was double last year's harvest.

A guided party shot four caribou on Battle, one more than the limit proposed last year. However, three of the four animals killed were males, two of which were very old. The kill was probably of value in that it removed animals soon to die from other causes. The antlers of the Battle bulls were large enough to make presentable trophies, the largest having an outside beam measurement of 40" with a total of 16 points and a spread of 41".

Three caribou taken at Murtle Lake were young adults (two cows and a bull) and the fourth was a bull approaching senility. Fall reconnaissance at Murtle Lake by R. G. Miller and by wildlifers found abundant caribou sign indicating that the population there is beginning to increase. The dense cover of the region and poor travel conditions will be sufficient to ensure that overhunting will not occur in the Murtle area/

A young cow and young bull caribou were shot in the Angus Horne Creek area by an unguided party who were successful in getting a caribou there last year. This region, like the Murtle Lake country, provides enough cover so that there is little danger of overhunting it.

Two caribou were taken by guides in the Mica Mountain area.

A slight increase in the caribou take can be expected in the next few years. There is little danger of taking too many except in the Battle - Table area. Here continued checks on the summer population and fall hunting must be kept. Any excessive kill should result in a closure of the area to caribou hunting.

I. MOUNTAIN GOAT

Increased interest was shown in goat hunting this year, with three unguided and two guided hunting parties seeking goat. One goat was killed on Mount Huntley. There is no immediate danger of the goat population being overhunted. Most hunters are unwilling to devote the time and effort needed to reach suitable goat country in order to have a successful hunt.

J. GRIZZLY

Four grizzly were killed, three males and one female. All four were large, mature bear. Three of the kills were by hunters seeking other species and encountering grizzly accidentally. Several hunters interested primarily in grizzly were disappointed.

Park grizzly are relatively scarce and the allowable harvest is small, probably not more than 6 - 8 animals yearly. The kill of four for the fall hunt is very near the optimum if any spring hunting is to be allowed at all.

K. BLACK BEAR

Seven black bear were killed during the fall season. This is slightly higher than average. The summer berry crop was light and possibly the bear population was more vulnerable with increased wandering for food.

Despite some summer bear nuisance, the present July - August closed season on black bear should remain in effect. Normal berry crop and education of campers should minimize bear problems at campsites.

II. SUMMARY, SPECULATIONS, AND RECOMMENDATIONS

The 1956 hunting season was the most successful to date. A high take of all species except goat and deer were realized. Actual hunter numbers were the highest to date, while hunter success remained very good. A record kill of moose and caribou were realized.

It is likely that there will be little further increase in the moose kill without better distribution of hunting. Development of the area west of the Clearwater River would help.

The Pyramid area has become a potentially dangerous hunting ground but a wait and see policy is indicated for a year before remedial measures are taken.

Existing regulations are probably adequate for all species except deer. Here an increase in the kill is needed and another deer season is recommended. No other changes in hunting regulations are recommended unless the spring census reveals a major change in the population.