PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF ATTORNEY-GENERAL

Provincial Game Commission

REPORT

For the Year ended December 31st,

1946

VICTORIA, B.C.:
Printed by Don McDiarmid, Printer to the King's Most Excellent Majesty.
1948.

To His Honour C. A. BANKS,

Lieutenant-Governor of the Province of British Columbia.

MAY IT PLEASE YOUR HONOUR:

The undersigned has the honour to submit the Report of the Provincial Game Commission for the year ended December 31st, 1946.

G. S. WISMER,

Attorney-General.

Attorney-General's Department,

Victoria, B.C., 1947.

OFFICE OF THE GAME COMMISSION,
VANCOUVER, B.C., July 1st, 1947.

Honourable G. S. Wismer, K.C.,
Attorney-General, Victoria, B.C.

SIR,—We have the honour to submit herewith our Report for the year ended December 31st, 1946.

We have the honour to be,
Sir,
Your obedient servants,

JAMES G. CUNNINGHAM,
FRANK R. BUTLER,
Game Commissioners.

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As was anticipated, the year under review has been a most trying one in game management problems, and as a result every branch of the Department has been taxed to its utmost to keep up with the steady and ever-increasing number of hunters and fishermen, both resident and non-resident. The increased drain upon the wild-life resources of British Columbia has been the cause of increased interest being taken in game management affairs by the organized sportsmen of the Province.

The Department has had to assume many new and greater duties than ever before. Perusal of the tables accompanying this report will show that the revenue for the year 1946 amounted to $609,912.97, being an increase of $153,433.17 over the previous year. The non-resident revenue alone, which consists of trophy, hunting, and fishing licence fees, amounted to $221,100 or more than a third of the total revenue of the Department for the year. Some 15,102 non-resident angling and hunting licences were issued, an increase of 4,481 over the previous year. This increase was made up principally by anglers; this in spite of the fact that the non-resident anglers' licence fee had been increased 100 per cent. The number of resident hunting and angling licences issued also increased from a total of 85,521 for the year 1945 to 103,074 for 1946, making a grand total of 118,176 resident and non-resident angling and hunting licences issued as compared to 96,778 for 1945.

The East Kootenay, Cariboo, Lillooet, and Kamloops Districts were subject to the heaviest hunting and fishing, with the Cariboo and Lillooet Districts receiving the heaviest concentration of hunters and fishermen, which constituted a serious drain on our game and fish resources. Keeping in mind these conditions, it was decided by your Commission some time ago that, in the interests of proper game management, concrete data must necessarily be obtained as to the quantity of game and fish being taken out of these districts, with the result that a seasonal checking-station was established at Cache Creek in order to contact all sportsmen returning from the Kamloops, Chilcotin, and Cariboo Districts. This station was operating during the entire open season on moose, and the information obtained was most valuable for game management purposes. In addition to securing considerable knowledge on game conditions, the check-up resulted in some sixty-four convictions for game violations. It will be necessary, we feel, to carry on a similar check for a number of years if we are to obtain a complete and clear picture of the annual game-crop that can be safely taken from these areas. This investigation and game check, conducted in conjunction with Mr. James Hatter in his scientific investigation of the moose in the Province, is being carried out under the supervision of the Department of Zoology of the University of British Columbia and your Game Commission. The game check through the Cache Creek station consisted of some 1,234 moose, 1,058 deer, 50 bear, 4 caribou, 3 wapiti or elk, 16 mountain-goat, and 12 mountain-sheep, or approximately 1,600 tons of game.

The statement of big-game trophy-fee payments in the statistical section of this report will furnish an excellent idea of the amount of game taken by non-resident sportsmen. We have no conception of the game taken by residents, except by the records obtained at Cache Creek. It is our hope that by another season we will be able to take some fact-finding move that will enable us to secure more accurate and complete figures on the total game taken throughout the Province. However, we must have the full co-operation of all sportsmen to complete any comprehensive picture of our annual game-crop. A submission of returns by hunters on a voluntary or compulsory basis seems each year to become more or less a necessity.

Any increase in revenue is most desirable from a Departmental point of view, but if these increases should possibly result in a depletion of wild life in any particular district, then such increases must immediately be limited. Your Game Commission is working in full co-operation with the Department of Zoology of the University of British Columbia in order to ensure no serious depletion of our game in any section of the Province.

During the year Mr. James Hatter, under the supervision of the Department of Zoology mentioned and this Department, carried out a preliminary survey of the moose situation throughout the Cariboo and Chilcotin Districts. A brief covering this investigation, which contains some very interesting and valuable information, will be found elsewhere in this report. Speaking of scientific investigations, we would like to mention that we are planning during the coming year to have a number of very important and far-reaching scientific investigations carried out under the advice and guidance of Drs. Ian McTaggart-Cowan and W. A. Clemens, of the Department of the University of British Columbia previously referred to. These investigations will cover a study of the relationship between coarse fish and trout, the advisability or otherwise of embarking on a programme of fertilizing lakes, looking into the effects of lead-poisoning on migratory wild fowl, and a continuation of the moose survey already mentioned, and which will be carried out by Mr. Hatter.

The steady increase of big-game hunters and a consequent demand for accommodation and guiding service resulted in a great deal of dissatisfaction amongst hunters in many parts of the more congested hunting areas. It was impossible to procure sufficient experienced guides to cope with this unusual situation, and in a great many cases, due to the scarcity of Game Wardens and the ever-increasing duties of these officials, many applications for guides' licences were received, and licences were possibly issued without proper investigation into the qualifications of the applicants. This condition resulted in our receiving several complaints, as the inexperienced guides employed did not give satisfactory services to the hunters who engaged them. We sincerely hope that this difficulty will be overcome, or at least greatly alleviated, in the not too distant future.

REGISTRATION OF TRAP-LINES

This system of control continues to be one of the most important services of the Department. We have approximately 4,000 licensed white trappers, the majority of which hold registered trap-lines. In addition to these trappers, there is probably an equal number of registered Indian trappers. Under the trap-line registration regulations, we are reasonably assured that in this Province trappers will annually be able to take a fair quantity of fur. A perusal of the comparative statement appearing on page 61 of this Report, in which is set out the number and kind of pelts taken during the past twenty-six years, will show royalty collected on 155,279 pelts during 1926, while this number was increased to 204,442 pelts (exclusive of squirrel pelts) in 1946. It will be noted further that in spite of a decrease in the population of beaver throughout other parts of North America, the number of beaver trapped in British Columbia during 1946 amounted to 22,899, as against 18,478 during 1926. We feel quite safe in stating that these figures speak well for our system of trap-line registration.

The British Columbia Trappers' Association, under the leadership of Mr. Eric Collier and Mr. E. W. Bobb, has been working in the interests of the trappers. These gentlemen, through their Association, have been advocating the abolishment of firearms as a means of taking squirrels, muskrats, and beaver. Your Commission, however, has made an effort to attend all meetings of this organization, and while anxious to introduce any legislation that will ensure protection to our game, we are not quite prepared at the present time to recommend that such a drastic step be taken as that suggested by Messrs. Collier and Bobb, particularly in view of much opposition against

any such proposal which is continually being received from trappers in many parts of the Province. Enforcement of such a regulation would, we feel, be impossible, due to the fact that the majority of fur passing through fur-auction houses in Vancouver originates in Alaska, the Prairie Provinces, the Yukon, and Northwest Territories, where regulations allow, and in fact we are advised that trappers are encouraged to take their fur by means of, firearms in order to allow for a more selective crop. We have it on good authority that one of the territories mentioned may possibly make the taking of beaver and muskrats by the use of firearms mandatory.

The system of beaver-tagging has been in operation in British Columbia for the past two years, and we believe has acted as a deterrent in the poaching of beaver, but as is the case in respect to any new law, there would appear to be room for considerable improvement in our beaver-tagging regulations. Possession of untagged beaver-pelts resulted in several prosecutions during the year.

REGISTRATION OF GUIDES.

The guide regulations introduced in 1945 did not, we regret to state, begin to cope with the guiding situation in the Province. As stated previously in this Report, the demand for services of guides was so great that employees of this Department were unable to examine properly all applicants for guides' licences in order to ascertain their qualifications, with the result there were some dissatisfied hunters. To give an idea of the work involved, we should make a proper examination of all applicants for guides' licences. We need only state that the total number of such licences reached an all-time high of 1,001 for 1946, as against 237 during the year 1944. Unfortunately the majority of guides' licences are taken out just before, or at the commencement of, the open season for hunting, and when the big-game hunters are in the field demanding services. Some restrictions, no doubt, will have to be made in the number of guides operating in different districts where there is probably some danger of over-shooting.

FUR-FARMING.

During the year steps were taken to transfer the control of fur-farming to the Provincial Department of Agriculture. It is anticipated that the latter Department will be in a much better position to provide the services and control necessary for this specialized class of farming. Your Commission will naturally be pleased to co-operate and assist in any way possible with the Department of Agriculture and the fur-farmers in British Columbia in order to put the fur-farming industry on a sound foundation.

BOUNTIES.

As pointed out in our Report for 1945, the peak of the wolf cycle was reached in 1940, and since that time there has been a steady annual decrease in the wolf population of the Province. During the year 1946 some 932 wolves were presented for bounty, as against 1,659 during the year 1940. There was also a slight decrease in the number of cougar taken in 1946, the figure being 461, as against 472 for 1945. The number of coyote pelts presented for bounty was not as great as in 1945.

The bounty question is a most contentious one amongst stockmen, farmers, and sportsmen, who generally are continually demanding increased bounties, while scientific men throughout the United States and Canada definitely oppose the bounty system as a means of control. These scientific men are all in favour of control when necessary by means of specially trained and properly equipped predatory-animal hunters. Before the close of another year we hope to have trained predatory-animal hunters operating in sections of the Province where reports indicate predatory animals are doing the most damage. It must be realized, however, that it will take some time before a staff of trained hunters, sufficient to control these predators, will be available, and consequently

the Department will undoubtedly be expected to provide funds for the payment of bounties for some time to come.

It was suggested in our Report for 1945 that the whole bounty question should be thoroughly considered at the Interprovincial Wild-life Conference held at Ottawa in order that a system of bounty payments could be equalized or standardized throughout the Dominion, but it would seem that when the question was raised at the conference mentioned, it was soon learned that many of the officials present were not interested in this problem.

PUBLICITY AND TOURIST TRADE.

Your Commission has refrained from advertising outside of the Province, as satisfied non-resident sportsmen and their ever-increasing numbers do not in our opinion warrant an expenditure of any money for advertising without the Province. The money that we would possibly have spent in advertising was expended in an effort to acquaint our own residents with our wonderful heritage in wild life, and their responsibility in keeping a tight rein on the annual cropping of our game. There is undoubtedly a great field for a campaign of education along the lines of conservation, particularly in our schools, where we have from time to time exhibited our wild-life moving pictures and have endeavoured to bring home the need of strict conservation measures being continually enforced in our Province.

There is one phase of tourist trade that has been causing your Commission some concern, and that is in respect to the overcrowding of tourist resorts or camps in some of our more important big-game districts. We have in mind an area where some twenty-one permits to establish tourist camps were issued within a radius of about 10 miles of a lake, and in this area there are at least eleven new applications pending for permits to operate. The area is situated well off the main Cariboo Highway, and about all the existing resorts have to rely upon is the moose-hunting and trout-fishing available in the district. The question therefore arises as to how long the game and fish of the district will last under such pressure. The excellent co-operation received from the Department of Lands and Forests and from the Department of Trade and Industry is very greatly appreciated. In all matters where we have had occasion to call upon these Departments, and especially where we have recommended against the sale of public lands detrimental to the sporting public, we have found these Departments wholeheartedly supporting our recommendations.

GAME PROPAGATION.

We have continued carrying out the programme established during the fall of 1944 by trapping some thirty-three blue grouse in the Campbell River district on Vancouver Island and liberating these birds on Texada Island, where we have every hope of establishing blue-grouse shooting in the future. Returns received from Texada Island indicate that our efforts are meeting with success.

During the year we purchased and liberated 9,223 pheasants from licensed game-bird farmers in the Province. The majority of birds purchased were liberated on the Lower Mainland, where we have some 18,476 licensed hunters depending upon the artificial propagation of pheasants for their sport. Some dissatisfaction has been expressed by a number of sportsmen in other parts of the Province over the liberation of the bulk of pheasants on the Lower Mainland, but in making these liberations we have felt that consideration must necessarily be given to the amount of available game in other areas where the population is not so great in comparison with the large number of licensed hunters on the Lower Mainland, where no other game is available other than pheasants and a few ducks that pass through during the course of their migration.

MIGRATORY GAME BIRDS.

As was the case during the year 1945, the migratory-bird season in 1946 was very disappointing, due partly to the ever-increasing number of sportsmen hunting over an ever-decreasing hunting territory, which has been caused through the draining of practically all the farm land in the more settled portions of the Province, the breaking-up of large holdings into small farms, and the change, especially in the Coastal area, to that of dairy-farming from that of growing grain. These are factors that cannot be overcome, and no doubt are the principal causes of poor migratory-bird shooting on the Lower Mainland Coast. Throughout the Interior, duck-shooting was also disappointing. Probably the brightest picture was in the Kootenay District, where we have fair nesting-grounds, but in the Cariboo District conditions were poor because it was found that ponds which had previously produced ducks were barren of migratory wild fowl during the nesting season, due, no doubt, to the fact that there were insufficient numbers of ducks returning from the South over the fly-ways in this Province.

In 1946 a programme of feeding ducks on controlled game reserves or sanctuaries was introduced, and this system resulted in retaining more ducks on the Lower Mainland. The feed for these game reserves was provided through the sale of "duck stamps" throughout the Lower Mainland area, in co-operation with many prominent sportsmen and under the supervision of a committee appointed by the organized sportsmen of the Lower Mainland.

GAME-LAW ENFORCEMENT.

A perusal of the statement appearing on page 68 of this Report will show a total of 819 prosecutions, as against 652 for the year 1945. These prosecutions resulted in fines amounting to $10,921 being imposed. Many violations of the "Game Act" and regulations were found through the check-up at Cache Creek, where some sixty-four convictions were obtained.

GAME-FISH CULTURE.

From the standpoint of the majority of sportsmen, and especially from non-resident anglers, this branch of the Department is probably the most important. This statement is proven by the increase in non-resident anglers' licences, which reached a total of 12,116 in 1946, as against 8,585 for 1945 and 5,278 in 1944.

Trout-fishing in the Interior appears to be standing up very well considering the heavy amount of fishing in that section of the Province. We feel that the results accomplished by restocking and keeping up the supply of trout with the facilities at our disposal has been all that could be expected, but we must make provision for future expansion by constructing more modern hatcheries and by training more hatchery and fishery officers. With this object in view, we have been planning for the construction of a modern hatchery at Summerland, which we hope to have available for use some time in the not too distant future. As mentioned in our Report for last year, an examination of the various sites proposed by the various Game Associations in the Okanagan for a location for a modern hatchery was investigated by Dr. W. A. Clemens, and he favoured the site of the old trout-hatchery at Summerland. If materials are obtainable, we expect to have this hatchery in operation to take care of the 1948 collection of rainbow-trout eggs.

It might also be mentioned that we are making preparations in our 1947 estimates for the construction of an up-to-date hatchery on Vancouver Island, but, as usual, we are experiencing a great deal of difficulty in locating a suitable site where water, electricity, transportation, and a source of supplies can be obtained. Lack of a suitable water-supply in the Nanaimo district, where we had hoped to acquire property, has

compelled us to look farther afield, and there is a possibility that we may be forced to go as far north as Courtenay before we find the desired location.

The trout-hatchery at Stanley Park in the City of Vancouver had to be discontinued due to the chlorination of the Vancouver domestic water-supply, but we are taking steps to enlarge the capacity of the Smiths Falls Hatchery at Cultus Lake, and we hope to have a battery of cement trout-rearing ponds in operation at this hatchery during the summer of 1947.

As time goes on, and with operations expanding so quickly, there is considerably more need than in the past for the employment of a scientifically trained fish culturist, and we hope, with the co-operation of Dr. W. A. Clemens, to locate a suitable fish culturist in the near future.

Investigation of the coarse-fish problem and fertilization of lakes are some of the difficulties confronting this Commission. We hope to be able to provide in our estimates for 1947 a sufficient sum of money that will permit us to commence investigations of these problems.

A statement showing the trout and egg plantings during the past year will be found on page 71 of this Report.

ACKNOWLEDGMENTS.

We are most grateful for the very valuable assistance extended by all departments of the Government. The officers and men of the British Columbia Police, under the leadership of Commissioner T. W. S. Parsons and Deputy Commissioner John Shirras, have been most co-operative. Dr. W. A. Clemens and Dr. Ian McTaggart-Cowan, of the Department of Zoology, University of British Columbia, have been most helpful and have been ever willing to advise us in connection with our many problems. The assistance these gentlemen have afforded us is most thankfully received, and we hope that the " Game Act " will be amended in the not too distant future to provide for the appointment of these gentlemen as scientific advisers to the Game Commission.

Again we have had the fullest co-operation from the Department of Lands and Forests; the Department of Agriculture; the Department of Public Works; the Provincial Department of Fisheries; the Federal Department of Fisheries; Mr. J. A. Munro, Federal Wild-life Officer for British Columbia; Game Associations; Farmers' Institutes; and many other organizations and individuals with whom we have come in contact.

"A" DIVISION (VANCOUVER ISLAND, THE GULF ISLANDS, AND THE MAINLAND COAST FROM TOBA INLET NORTH TO CAPE CAUTION, INCLUDING THE ISLANDS ADJACENT TO THE EAST COAST OF VANCOUVER ISLAND NORTH OF CAMPBELL RIVER).

"A" Game Division is supervised from Game Headquarters at Vancouver. The following excerpts are from reports of the game and fishery officers of the Division, along with observations made by members of the Game Commission.

Bear (Black).—Continue to be very numerous, and in some localities it has been recommended that a bounty be provided for their destruction.

Bear (Grizzly).—Affords good sport at the heads of the inlets along the Mainland Coast, particularly the inlets north of Bute.

Deer (Coast or Columbian).—Deer on Vancouver Island continue to be numerous in spite of the heavy pressure from the Island sportsmen, as well as those from the Mainland. Vancouver Island is becoming more and more the hunting-ground for the Mainland Coast hunters. It is only a matter of time when limits and seasons will have to be seriously curtailed on the Island.

Wapiti (Elk).—The several small bands of elk on the Island never seem to increase. They are found in many parts of the Island from Cowichan Lake north to the northern end. There is the possibility that with the clearing-off of the timber, more growth suitable for elk will have a tendency to allow for an increase in numbers.

Fur-bearing Animals.

There is a fair stand of beaver in the Division, where the season is closed. On certain registered trap-lines, where the operator has conserved his fur, permits are granted by the Commission, on the recommendation of the Game Warden of the district, after investigation of the stand of beaver, to allow the trapper to take a certain number of animals. The beaver so taken must be tagged and cleared through the local Game Warden before being sold. Under this method we have a fair control over the situation. There, however, appears to be some leakage, through poaching, but it is hoped that the tagging of beaver throughout the Province will give us a better check on the trapping.

Upland Game Birds.

Grouse (Blue).—The logged-off lands of Vancouver Island provide the finest blue-grouse hunting in Canada. The wet hatching season caused the raising of smaller broods this past spring, but at that there was some very fine sport, and the majority of hunters obtained their limits during the opening week-end. The new regulation of a possession limit of twelve birds worked well and, no doubt, assisted in conserving many grouse.

Grouse (Willow).—These birds are not numerous and should be provided with a further close season for a year or so in order that they may have a chance to come back.

Pheasants.—Unfortunately, owing to the densely populated areas at the south end of Vancouver Island and the many complaints received in the past from the gardeners and bulb-growers of the Cowichan district, this Commission has refrained from liberating pheasants in these areas. The Courtenay district lends itself as a more suitable one for the liberation of these birds, and some fine sport was obtained there by sportsmen enjoying the privilege of hunting over the local farms.

Partridge (European).—According to Game Warden F. H. Greenfield, of Nanaimo, the partridge liberated in the Cedar district are "holding their own with a possible increase." Experimenting with European partridge is a costly affair, and with climatic conditions as they are on the Coast, it is doubtful if they will ever prove successful. We have, however, attempted to purchase additional birds in order to bolster up the present limited stock, but have been unsuccessful in finding a source of supply.

Migratory Game Birds.

The north end of Vancouver Island affords excellent migratory-bird hunting, but the southern and easterly areas are about on a par with the Lower Mainland, ducks and geese being hard pressed by incessant hunting and scarcity of suitable feeding areas.

As usual, what few brant were obtained were killed during the last few days of the season, but from then on until they migrated north, they were found along the coast in very large numbers.

Predatory Animals.

Cougar bounties paid through the Government Agencies on the Island made a slight increase of one animal over those for 1945, bringing the total to seventy-seven animals. There was an increase, however, in the take of wolves, which reached the total of eleven animals, the main increase being through the Cumberland Agency; but six of those animals were taken up or near the Mainland coastal inlets.

"B" DIVISION (KOOTENAY AND BOUNDARY DISTRICTS).

BY C. F. KEARNS, OFFICER COMMANDING.

Herewith I beg to submit annual report of game conditions in "B" Division during the year 1946. Sport-fish matters are the subject of a separate report by Fishery Supervisor C. H. Robinson.

BIG GAME.

Moose.—These animals, while not plentiful in any specific area, are well distributed and continue to extend their range. However, the heavy toll taken of them, both by resident and non-resident hunters, during the past two seasons should be carefully and closely watched and controlled.

It is suggested that control can be effected by a shorter season, the closure of some areas now open, and possibly an increase in the non-resident trophy fees. Moose in this Division are confined to the Rocky Mountains, the adjacent Kootenay-Columbia valleys, and some of the tributary watersheds. They are as yet only occasional in the West Kootenays and the Upper Arrow Lakes section.

Wapiti (Elk).—Are found in the same areas as the moose, but are more plentiful, and likewise continue to extend their range. The kill during the past season was quite heavy, although shortening the 1946 season by two weeks was a wise move, as otherwise, due to the heavy snowfall in late November, an undue number of these animals would undoubtedly have been taken. They are increasing in the Similkameen.

Caribou.—Widely distributed throughout the Selkirk and auxiliary ranges—Kootenay Lakes area—from the United States Border northward, but not in the Rockies or the Boundary-Similkameen areas. They are not hunted much, no doubt due to the accessibility of other big game, but a few are taken each season by residents.

Deer (Mule-deer).—Are well distributed and fairly abundant throughout the Division. Due to the heavy snowfall late in November they were very easy to bag, and the kill was heavy. Most of the hunting was done adjacent to or actually from the main highways.

A distressing number of deer were killed at this period by trains, more than 100 being destroyed between Nelson and Fernie in a single stormy night, the deer presumably finding better travelling on the cleared right-of-way.

The prevailing impression of hunters and Game Wardens prior to the heavy snowfall was that deer were not so plentiful as formerly. Nevertheless, the apparent abundance after the snow was somewhat of an eye-opener, even bearing in mind that the concentration represented most of the deer population.

White-tailed Deer.—The same comment also applies to these deer, but their distribution is not so extensive. They are plentiful in the East and West Kootenays and gaining in numbers in the Boundary and Similkameen.

Bighorn Sheep.—Have not recovered their former number in the Rocky Mountains and, while increasing, cannot yet be classed as plentiful. Due to their elevated range and the very limited numbers that are taken annually as trophies, there would seem to be no reason to alter the present restricted season. These animals have undoubtedly increased in the Similkameen district (Okanagan Falls and Ashnola River sections), where a short open season should be permitted. Game Warden Monks, of Penticton, has counted over 500 of these animals at one period, and this is too many for a range that is grazed also by domestic stock.

Mountain-goat.—Plentiful in the East Kootenays but reported as not being so numerous as formerly in the Rocky Mountains adjacent to Cranbrook. These animals are well distributed in both the East and West Kootenays and are definitely increasing in the Grand Forks-Similkameen areas.

Bear (Grizzly).—These animals are well distributed throughout the Division but are probably more plentiful in the Kootenay Lake area section from the United States Border north. There are a fair number in the Rocky Mountains, and they are comparatively scarce in the Boundary and Similkameen areas.

Black and Brown Bear.—Well distributed throughout the Division, and cause some damage each year in the Kootenay orchards.

Fur-bearing Animals.

A slump of fur prices early in the trapping season was somewhat disconcerting to the trappers, but it is probably a good thing for the conservation of fur-bearing animals, as there was definitely a tendency to overtrap small lines due to the high prices.

Little criticism is heard from the trappers, who are very satisfied with our trap-line registration system, and trap-lines are at a premium. It is interesting to note that trap-lines in the Kootenays contiguous to fairly populous localities seem to yield as good a catch as the more remote trap-lines. This fact is possibly the strongest argument in favour of the present system of allotting specific areas to trappers on a permanent basis.

Marten, lynx, beaver, muskrat, weasel, mink, and red squirrels are the principal fur-bearers, in order of importance. Fisher, fox, wolverine, and otter are scarce.

Upland Game Birds.

Blue Grouse.—Well distributed, but all reports indicate they are not plentiful.

Ruffed (Willow) Grouse.—The cycle of these birds is again on the up-grade after the low year of 1945, and it is expected that they will not be abundant for another three or four years.

Franklin.—Well distributed but not plentiful, being in the same condition as the ruffed grouse.

Sharp-tailed Grouse.—I observed a flock of 200 in the Cranbrook district during the early winter of 1944. These birds were making quite a come-back at that time, but reports from Game Warden Rauch in that vicinity last year does not indicate there are as many as two years previously. Likely they are also subject to a cyclic decrease, but it is hoped that they will continue to increase. One flock is reported in the Similkameen area. The decline of sharp-tailed grouse is unfortunate, as at the turn of the century they were definitely plentiful in the Boundary-Similkameen and in the East Kootenays.

Ptarmigan.—Well distributed from timber-line to the high peaks, but little sought by hunters.

Pheasants.—A decline in the stand of pheasants is generally reported, and this probably can be attributed to a concentration of hunters as well as sundry local conditions, such as late rains, young birds drowned in irrigation-ditches, nests destroyed by agricultural machinery, predators, etc.

Experiments throughout the Division for a number of years have definitely established the Similkameen, Grand Forks, and Creston districts as suitable pheasant areas which can be maintained by annual restocking. This also applies to the immediate district surrounding Nakusp. Introduction of pheasants at other points which seemed suitable have not been successful.

Partridge (European).—Fair stands in Creston, Grand Forks, Penticton-Oliver districts. These birds provide satisfactory sport during short open season.

Quail (California).—Limited to the Penticton-Oliver district, where they are in fair numbers, and this appears to be the only part of the Division that is suitable for these birds.

Migratory Game Birds.

Geese (Canada).—Are nesting in good numbers in the flood lands on either side of the Columbia River from Invermere to near Golden, the sloughs near Creston, and on

the Duncan River north of Kootenay Lake, and also at the north end of the Upper Arrow Lakes. In the latter place there is a large concentration of Canada geese, and they are very difficult to hunt because of the open nature of the country. Goose-hunting in the above areas during the season is quite good.

Ducks.—Conditions are normal regarding locally-reared ducks, particularly in the section between Invermere and Golden, and the sloughs on the Duncan River north of Kootenay Lake, which are the heaviest nesting areas. Creston is still good, although the available locality has been restricted due to reclamation of many sloughs. Ducks, of course, nest in sundry suitable spots all over the Division but not in any particular concentration.

This winter some food has been put out for ducks on Kootenay Lake as well as the Columbia River at Castlegar, as these ducks apparently did not intend to migrate and were having some difficulty in obtaining food due to the icing of the shore-line.

Coots.—Are very numerous and not hunted.

Snipe (Wilson).—Are transitory in migration and are apparently not hunted at all.

Destruction of Vermin.

Eleven Game Wardens and one predatory-animal hunter destroyed 60 cougars, 68 coyotes, 3 bobcats, 82 house-cats, 98 injurious hawks, 30 owls, 460 crows, 167 magpies, 17 eagles, 14 ravens, and 22 wild dogs during the year.

Game-protection.

There were 103 convictions and 3 dismissals under the "Game Act" or Special Fisheries Regulations during the year in this Division.

Game Propagation.

One hundred and sixty-four pheasants were released at points in the vicinity of Penticton, 100 at Grand Forks, 12 at Nakusp, 12 at Castlegar, and 100 in the Grand Forks district.

Game Reserves.

The Elk River Game Reserve, comprising portions of the watersheds of the White, Bull, and Elk Rivers, is the most important reserve in this Division, as it affords protection to deer, moose, elk, sheep, and goats during the open season.

Deer sanctuaries on the Kettle River in the Boundary District and along the Wigwam River in the East Kootenay are natural concentration points for mule-deer and give them respite during the open season, particularly when the snowfall is early.

Three Brothers Game Reserve, near Princeton, is beneficial during the early part of the open season.

Game-bird sanctuaries at Vaseaux Lake, Penticton district, and on Kootenay Lake, near Nelson, continue to meet with general approval.

Revelstoke, Glacier, Kootenay, and Yoho National Parks all lie within this Division, and no hunting is permitted therein.

Fur Trade.

Very little fur is exported out of the Province directly, but goes to Vancouver via local fur-dealers, of whom there are nine in this Division.

Fur-farming.

Mink and silver fox are the popular farmed fur-bearing animals, but eight farmers are also rearing marten, which now seem to thrive in captivity and will no doubt be a most profitable animal to raise.

Fifteen fur-farmers specialize in mink exclusively, seven in silver foxes, one in beaver, one in muskrat, and one in nutria. The remainder raise mink in conjunction with marten or foxes.

Fur-farmers in general seem to be content with current operations and the ready sale of ranch-raised pelts at a good price. Indications are that a further number of people are interested in this business and will shortly enter into it. Some apprehension, however, is felt at the recent sharp decline in fur prices.

Registration of Trap-lines.

This is the salvation of the fur-bearing animals of the Province beyond any shadow of doubt. If the old haphazard methods of trapping prevailed nowadays, inevitably the fur would have been trapped too heavily and a close season would be necessary, as has happened in the past.

The demand for trap-lines continues and none have been available for some years, other than those becoming vacant through death, old age, or failing health. During the past two years a survey was made of the registered trappers to ascertain if any wished to dispose of their trap-lines to returned overseas veterans, and a few mutually agreeable transfers were approved and recorded.

Approximately 500 trappers, including Indians and trappers on private holdings, operate in this Division.

Registration of Guides.

The system of grading guides received a severe test during the past hunting season, and we have gained a great deal of experience which will be beneficial in drafting out new regulations, which are sorely needed.

The influx of non-resident hunters to this Division rather overwhelmed us, although we had anticipated quite a rush. The Game Wardens in the East Kootenay, shortly after the season opened, found themselves acting as a liaison or clearing-house between eager hunters and non-existent registered guides. The Wardens were energetic in securing suitable competent men and persuading them they would find it profitable to act as guides. Generally speaking, the results were satisfactory, but there were a number of instances where the guide did not grasp fully what was required of him by the hunter in the way of accommodation particularly.

We had several complaints of dissatisfied hunters, which were not altogether the guide's fault, although we did have some instances of guides falling down on the job very badly.

The whole guide set-up is applicable to this Division, and possibly this same condition applies to other parts of the Province and should be revised. We should have a more rigid policy of requiring a guide to give suitable guarantees that he is capable of carrying out his contract with non-resident hunters, and we should provide a penalty for his failure to do so. We should also require a guide to be licensed for a territory with which he is familiar; that is, a licensed guide from one area should not be entitled to go into an entirely strange district with his guide's licence as evidence that he is capable in that area.

Special Patrols.

None could be classed as such, although routine patrols were made consistently to remote areas by horse and foot in the summer and fall, and on snowshoes in the winter.

Hunting Accidents.

On June 19th, 1946, Orville Thomas, of Parson, B.C., was charged by a grizzly bear which he shot twice before it knocked him down and mauled his right hand and forearm, his left hand, and the right foot and ankle by biting. Mr. Thomas was accompanied

by his dog, which attacked the bear and the bear chased the dog. Mr. Thomas was able to make his way back to camp without being further molested. He subsequently received attention in the Golden Hospital and took further treatment in Calgary, Alta., and has since fairly well recovered.

On July 14th, 1946, Peter Arishnikoff (aged 12 years), of Penticton, B.C., was shot by a .22-calibre rifle in the hands of George Strukoff, aged 14. The bullet passed through the muscles of Peter Arishnikoff's right leg below the knee. This shooting happened near the Fruitova School at Grand Forks. Peter Arishnikoff subsequently recovered, and the rifle in question was duly confiscated as a result of action by the Provincial Police.

On November 3rd, 1946, Robert Lester Clayton, of Creston, B.C., was shot and killed by a shot from a .35 Remington auto-loading rifle in the hands of Henry Gartland, of Canyon, B.C. Evidence given by Henry Gartland at the subsequent inquest indicated that he was deer-hunting and heard a noise in the bush, followed by movement. His dog started to growl, and he was afraid it would scare the game so he fired and immediately heard a man scream. He found he had shot Robert Lester Clayton in the right leg, 6 inches above the knee, the bullet passing through into the left leg after shattering the bone and separating the large artery in both legs. Robert Lester Clayton was accompanied by his brother, William Clayton. First aid was given and Henry Gartland immediately rushed for a telephone.

When Robert Lester Clayton arrived at the hospital approximately one hour later, he had succumbed from shock and loss of blood. The deceased was 39 years of age and left a wife and four small children. Henry Gartland is 23 years old and had recently been discharged from the Air Force after more than four years' service in Canada and overseas.

Resident Ordinary Firearms Licence (Farmer) No. 72281, issued to Henry Gartland, has been cancelled, and I am advised that the Provincial Police are proceeding against Mr. Gartland on a charge of manslaughter, which will probably be heard at the next assizes in May.

Summary and General Remarks.

The time has come to take stock of the game situation in " B " Division because the influx of visiting hunters to this section last year caught us unprepared. This was in no way a normal year where a certain number of hunters make arrangements in advance with their guides and came into British Columbia for a definite purpose. Last fall we had numerous parties who simply drove up from the States with the express purpose of getting meat, and it was a headache for the Game Wardens at Fernie, Cranbrook, Invermere, and Golden to arrange guides for them.

In previous years non-resident hunters came to Southern British Columbia for trophies. During the past season they came for meat and were more concerned with shooting edible young animals than any other feature. In nearly all cases the meat was taken across the Border where, due to the high prices and shortages, it in many cases paid for the non-resident's hunting-trip.

The East Kootenay is a relatively small area and contains a more varied concentration of big-game animals than any similar locality on the continent. We must control the killing of big-game animals herein. This area is also heavily hunted by residents.

In my last annual report I mentioned how the situation was going, but did not think it would be to the extent of this past season. The Game Wardens in the East Kootenay points were so busy with details of office-work they had little time for their regular patrols, although to their credit it is noted that they were energetic during the hunting season, which means that in many cases their wives handled a lot of the details of contacting guides, collecting licence fees and trophy fees, etc.

On November 18th a heavy snowfall drove all deer animals down to the lower levels, where they were killed by any hunter who wished to travel the main roads. We have no authentic numbers of the bags, and it is something we should have a finger on. It is to be hoped that we can work out some system whereby a check may be kept on the annual kill. Checking-stations are one answer, or even big-game tags, but with our present inadequate force of Game Wardens we cannot hope to carry out any such measures. Possibly during the present year an increase in game expenditure may provide for some such measure.

In previous years non-residents were not anxious to hunt deer, but they are coming from the neighbouring States in increasing numbers, particularly in the Boundary District. Non-resident big-game hunting licences, in the States that have big game, are higher than ours, and they have a very good reason; namely, to discourage excessive hunting and fishing. We are now at a period where it is no longer necessary or even desirable to encourage non-residents to hunt big game in Southern British Columbia, but rather to persuade them to go north where there is more room. The situation right now is a matter of considerable concern if we wish to retain our good stock of big-game animals.

In previous Annual Reports I have been optimistic with regard to our wild-life stand, feeling that with our bag-limit we were in no danger of unduly depleting our reserves. However, I have also included the menace of inclement weather as a potential factor. This past winter we have had a combination of heavy hunting and very bad weather, which is not good. The same condition prevailed the previous winter. Also, while bucks only were legal game, the Wardens find far too many females and fawns killed in the woods. This situation can only be met by increasing our field force.

Our permanent Game Wardens are highly capable men, but they are tied up during the hunting season by the necessity of supervising the issuance of licences, collection of fees, and arranging for guides. This is not a condition that is conducive to efficiency. Temporary assistance, both clerical and in the field, is necessary during the open season.

To sum up briefly, we need to tighten up and control regulations respecting guides, hunters, the open season and bag-limits on big game, upland game birds, and sport fish.

We still have a lot of fish and game, but modern transportation makes it accessible overnight to a lot of people who want to hunt and fish. The situation may be different in other parts of the Province, but from the Alberta Border as far as the Similkameen Valley along the United States Border, which is " B " Division, now is the urgent time for remedial and preservative measures.

Our cordial thanks are due to the Provincial Police, the Forest Branch, and Public Works Department for much direct assistance and the use of equipment during the year. The co-operation, advice, and timely assistance of many individual sportsmen, as well as of the various Game Associations in this Division, are gratefully acknowledged.

Report of C. H. Robinson, Fishery Supervisor, covering Game-fish Conditions in " B " Game Division.

I beg to submit herewith report covering a review and trend of the sport fisheries of " B " Game Division for the year ended 1946.

Throughout the Division all lakes and streams accessible to auto travel were well patronized by resident and non-resident anglers, and in some respects angling increased in lakes of higher elevation. The latter was welcomed to balance the trout populations to blend in with the available food-supplies.

Generally, subject to seasonal conditions, most waters produced fair and average catches of trout, except in certain areas where reports were not so favourable, due possibly to excessive fishing.

The productive capacity of numerous accessible waters is such that action should be taken forthwith to guard against serious depletions that will occur unless the catches of trout are further regulated; namely, the number in possession or that can be legally taken during one week, first, for the resident and, second, for the non-resident anglers who may desire to fish for food and recreational purposes.

Favourable weather and precipitation conditions aided natural reproduction, coupled with no serious losses of trout in streams affected with adverse water conditions.

While the interest remains fairly keen toward the development of trout-rearing ponds by the organized sportsmen and individuals, the scarcity of cement slowed up this work, except the part reconstruction of the Kaslo rearing-ponds by the local sportsmen.

Trout distributions are covered in detail elsewhere in the report of the Game Commission.

Similkameen and South Okanagan Waters.

Reports indicated that several lakes situated in the Princeton-Merritt areas did not produce the desired number of trout in comparison to season 1945, although it is possible seasonal conditions were the cause. In addition to the usual plantings of eyed eggs and trout fry, Stoney and Crater Lakes received small allotments of fry; these two small lakes were previously barren of fish life.

Average catches of trout were taken from Alleyne, Davis, Boss, Hornet, Murphy (Bear), Missezula, Osprey, and Thalia (Square) Lakes. The latter lake produced trout weighing up to 19½ lb.

The organized sportsmen of Princeton, numbering some 500 members, continued their active interest and co-operation in experimental operations to reduce the numbers of coarse fish in Wolfe, Lorne, and other lakes. The construction and operation of two fry-retaining pens to determine the suitability of rearing-ponds on leased land, improvements effected to maintain suitable water-levels in Lost (Kump) Lake and the inlet and outlet creeks to assist natural and artificial reproduction and conservation, together with secondary road repairs to assist resident and non-resident anglers to reach certain lakes, were some of the other work undertaken.

Angling for trout in the One Mile Creek chain of lakes did not improve, and in consequence the organized sportsmen are inclined to favour the introduction of small-mouthed black bass. Should this be requested, it should receive careful consideration, in view of these lakes being tributary to the Similkameen River watershed.

Clearwater Lake.—Yielded fair catches of rainbow trout varying from 2½ lb. and less. The reported improved size and condition is probably attributable to the active efforts of the organized sportsmen of the Nickel Plate camp by increasing the productive capacity of the lake with fresh-water weed-growth and the use of commercial fertilizers.

Richter Lake.—This small land-locked lake of about 25 acres in extent, and situated on the property of Frank Richter, produced excellent proportioned specimens of Kamloops trout weighing 5 lb. and less, resulting from the allotment of 15,000 fry released in the lake July, 1944, for public benefit.

Similkameen River.—Angling for rainbow trout remained fairly good throughout the season. The control of concentrator-refuse has greatly assisted toward improvement of fishing.

Osoyoos Lake.—Situated partly in the State of Washington and British Columbia. The yearly restocking of this lake with rainbow trout fingerlings has been reciprocally arranged between the organized sportsmen of Oroville and Oliver-Osoyoos.

Skaha (Dog) Lake.—In spite of the substantial yearly fry plantings in this lake, the catches of Kamloops trout were only fair during the spring and fall. It is possible the molestation and spearing of parent fish when spawning in Shingle Creek may affect the supply, including the migration into Okanagan Lake during the spawning period, etc.

Okanagan Lake (South End).—During the spring and fall the lake provided good trolling for the Kamloops trout, mostly under 10 lb. in weight, together with some fly and bait fishing from the shores. It is hoped that the Summerland Hatchery rearing-ponds can be operated to increase fingerling liberations in place of fry.

The several small alpine lakes situated near Keremeos, Oliver, Penticton, Summerland, Peachland, and Naramata—namely, Cathedral, Bear, Allandale, Deer, Eneas, Island, Big Eneas, Taylor, Glen, Baker, and Chute Lakes, etc.—produced the average catches of rainbow trout. Munro Lake will probably supply good fly-fishing in 1947 as a result of fry planting in 1944–46. It is possible that more fishing in Cathedral Lake would be beneficial.

Conkle (Fish), Bull, Copper, Collier, Clarke, Arlington, Williamson, and other lakes, not very accessible, produced the average catches of rainbow trout, and in some instances natural reproduction has reasonably maintained the supply of trout.

Kettle River, West Fork, and Boundary Creeks.—The additional protection afforded, plus yearly replenishment of rainbow trout, has not solved the problem of producing sufficient legal-sized fish for the resident anglers and the steady influx of American anglers to fish these fairly accessible waters.

Jewel Lake.—This one-time popular lake provided fair trolling and some fly-fishing for Kamloops trout; the weight and condition of the trout has slightly improved, which varied to 8 lb. and less. The American anglers fish the lake steadily, including Wilgress (Loon), which provided good trolling in the spring and fall for Kamloops trout weighing 10 lb. and less.

Smelter Lake.—Artificially created and controlled for hydro-electric power purposes some forty years ago, this lake was completely drained for safety measures by the City of Grand Forks. Approximately 700,000 Kamloops trout eyed eggs and fry were planted in the lake since 1927. Existing conditions restricted fishing in the lake, although trout were taken weighing 16 lb. and over.

Lake Christina.—Some encouraging reports were received of improved fishing for the Kamloops trout during spring and fall; the fish varied in weight to 18 lb. and were mostly taken on baited lines. Numerous resident and non-resident anglers visit and fish the lake, it being a popular summer resort. These fish remain fairly plentiful and mostly frequent the north end of Lake Christina, where fair fishing is available for those interested in this sporting variety of fish.

The kokanee, which is a valuable forage and sport fish which frequents Lake Christina, continued to supply the needs of numerous fishermen, more particularly during the summer months when the trout do not take the trolls freely. The kokanee averaged about four to 1 lb. in comparison to five to 1 lb. in 1945. The late spawning of the kokanee resulted in less than 1,000 lb. being taken by drag-seines for domestic use.

West Kootenay Waters.

Big Sheep, Little Sheep, and Beaver Creeks.—Yielded fair catches of Eastern brook trout for the anglers of Trail and Rossland. Champion Lakes continued to produce fair catches of Kamloops trout as a result of fingerling liberations yearly.

Columbia River.—The stretch of the river flowing between Castlegar and Waneta yielded slightly improved catches of rainbow trout for the Trail anglers. The upward migration of coarse fish from Roosevelt Lake is of concern to the local sportsmen, and steps probably will have to be taken to reduce their numbers.

Lower Arrow Lake. — Each year more anglers fish the lake, owing to its close proximity to Trail. It is also fished by the people occupying the numerous summer homes between Robson and Broadwater. Considering the heavy drain, fairly consistent catches of Kamloops trout were taken by troll and fly, mostly under 10 lb. in weight.

Upper Arrow Lake.—Although to some extent glacial water conditions restrict fishing during the summer months, reports received indicated fairly good Kamloops-trout trolling in the vicinity of Nakusp and St. Leon, including a marked improvement of catches taken in the vicinity of Galena Bay, possibly as a result of eyed-egg plantings in Hill and MacKenzie Creeks and other creeks below Nakusp.

Whatshan Lakes.—This popular chain of lakes continued to provide good fly-fishing in the early part of the season, and later for trolling. It has not been uncommon for parties of anglers to leave the lakes with catches of rainbow trout up to 400 fish. It is questionable just how long the supply will last.

Revelstoke Area.—The fifth substantial planting of cut-throat trout fry incubated in the Revelstoke Hatchery was made in the chain of lakes west of Revelstoke—namely, Summit, Victor, Three Valley, and Griffin Lakes—to replace the rainbow trout previously planted and suspected of migrating to Shuswap Lake. The possible results of these cut-throat liberations remain obscure for the present.

Echo Lake.—A small land-locked lake south of Revelstoke, this was planted with rainbow-trout fry in 1945. Reports indicate a successful planting to date. With the co-operation of the organized sportsmen of Revelstoke, 100,000 rainbow trout eyed eggs were also incubated in the hatchery and subsequently liberated in Summit, Victor, Three Valley, Griffin, and Begbie Lakes, and Greely Creek-Illicillawaet River.

Trout Lake.—When weather conditions were favourable, the lake produced good catches of Kamloops and Dolly Varden trout, mostly taken on the troll by the visiting anglers from the Okanagan region and non-resident American anglers. The Kamloops trout taken varied to 22½ lb. and less. Most anglers who fish the lake expect to take out large catches—for instance a party of seven people caught fifty-eight Kamloops trout weighing from 8 to 13 lb.

Wilson Lakes.—South-west of Nakusp. Yielded fair catches of Kamloops trout and kokanee (silver trout) for the numerous anglers, including an improvement in catches of rainbow trout in Box Lake and less from Summit Lake adjacent to the highway.

Slocan Lake.—Yielded good catches of Kamloops trout, taken by trolls, with some good fly-fishing at the mouths of tributary streams. The fish were mostly under 10 lb. in weight, but it is possible much larger trout inhabit the lake according to reports of lost tackle. The liberation of fingerlings and fry in nursery waters may have contributed to the improvement. After several years the condition of the Kamloops trout in Cahill Lake has improved, and they now vary in weight to 8 lb. The trail improvement effected by the local sportsmen leading to Beatrice Lake may induce more angling to balance the trout populations and scanty food-supplies.

Slocan and Kootenay Rivers.—These two streams, fairly accessible to auto travel, provided fair fly, spinner, and bait fishing for rainbow trout, including Slocan Pool.

West Arm of Kootenay Lake.—Throughout the season this stretch of water provided fair trolling, bait and fly fishing for Kamloops trout and kokanee (silver trout). The liberation of Kamloops-trout fingerlings (Gerrard stock) in the West Arm has been questioned, in view of their possible outward migration to American waters (Roosevelt Lake). However, extensive publicity and inquiries regarding the marked trout caught does not sustain this theory.

Kootenay Lake.—Was fished extensively throughout the season. It is true there was considerable variation in the catches of large Kamloops trout in the vicinity of

Kaslo, Queens Bay, and the Outlet, according to water and weather conditions. However, again during the season, the south end of the lake provided good trolling and was confirmed by one approximate-creel census at one camp where 1,300 trout were recorded varying from 18 lb. and less. Moreover, limit catches of smaller trout were taken throughout the summer on baited multiple lures.

The Nelson Gyro Club conducted their Seventh Kootenay Lake Rainbow Trout Derby, from May 1st to November 16th, inclusive. A total of 374 trout of 5 lb. and over were recorded and weighed in. Total weight, 4,151 lb.; average was 11.1 lb. The largest-fish winner of the competition weighed 23 lb. 6 oz. Compared to a similar competition in 1945 when 489 Kamloops trout were recorded weighing 5,940 lb., the largest-fish winner weighed 23 lb. 14 oz. From a conservation standpoint, a derby staged over a long period should be discouraged in view of unwarranted numbers of trout taken, etc.

Large-mouthed Black Bass.—These non-active fish did not appear so plentiful in the sloughs and back channels on Kootenay Flats and in Kootenay River adjacent during the summer. The bass serves a useful purpose for those anxious to fish during the early spring and summer.

Goat River.—In the lower reaches below the canyon, the migratory Kamloops trout (steelhead) are becoming less each year, hence the request of organized sportsmen, which has been approved, to stock this section of river. The upper reaches of the river above the canyon continued to supply good fly-fishing, more particularly toward the West Fork. Meadow Creek, a tributary, yielded good catches of Eastern brook trout from natural propagation and stocking.

East Kootenay Waters.

Cranbrook Area.—Reports indicated that generally fishing was only fair in the various lakes and streams in comparison to former years.

Moyie River and Lakes.—These waters provided fair fishing for Kamloops, cut-throat, and hybrid trout varying to 15 lb. in weight. The somewhat large plantings of eyed eggs, fry, and fingerlings over a long period is not all that could be desired in these very accessible waters.

Munroe Lake.—This quite important lake continued to provide fair cut-throat trout fishing considering the large amount of angling carried on. Mineral Lake adjacent did not supply the desired number of trout as in former years. It is possible that sawmill operations might be the cause, although the analysis of water sample taken indicated that the lake was free of deleterious substances.

Smith Lake.—Conveniently situated, failed to supply the desired numbers of Kamloops trout in comparison to previous seasons. It was suspected that numbers of parent fish entered the outlet creek and did not return to the lake, hence the scarcity of large trout; yearling fish appeared plentiful.

Premier Lake.—Continued to yield the average catches of Kamloops trout, mostly taken on the troll, varying to 8 lb. in weight. The kokanee (silver trout) introduced, produced good fly-fishing and trolling—in fact these fish are equally as popular as the Kamloops trout. The organized sportsmen of Kimberley take a very active interest in this lake-site, including camp-sites and spawning-grounds, etc.

St. Mary Lake, River, and Tributaries.—Authentic reports indicate that the Kamloops trout fingerlings liberated commencing 1942 were fairly well established, and some matured trout were observed spawning in tributary streams. Of course, the native cut-throat trout supplied fair trolling and fly-fishing for the numerous resident anglers.

Skookumchuck and Kootenay Rivers.—Subject to water conditions, these streams supplied good angling for cut-throat and Dolly Varden trout.

Horseshoe Lake.—After a brief closure of less than two years, this small land-locked productive lake provided excellent trolling and fly-fishing for Kamloops trout. However, with the daily concentration of local anglers taking limit catches of trout, the supply was soon reduced. The several small lakes and streams supplied fair catches of Kamloops and cut-throat trout. The results of Eastern brook trout fry planted in Echo Lake three consecutive years remains obscure at present.

Fernie Area.—As in other parts of the East Kootenay District, reports indicate a definite change in the supply of trout in several lakes and streams. No doubt the increasing amount of fishing is the cause of depletions.

Manistee and Loon Lakes.—Yielded good catches of Kamloops trout during the spring and fall, varying in weight to 20 lb. The systematic stocking of the lakes has maintained a reasonable supply of large fish, and probably contrary to a theory that lakes which were previously barren will not produce large trout over a lengthy period, in this instance of twenty-three years, and similarly in Silver Springs Lakes for twenty-five years, these small alpine lakes continue to yield 5-lb. trout.

McBain's (Rosen) Lake.—Fishing for Kamloops trout showed some improvement after yearly plantings of fry over a long period. The lake is a popular summer resort for the residents of the Fernie district.

North Star Lake.—The introduction of Kamloops trout in this lake, commencing the year 1937, was successful, but for reasons undetermined very few trout were caught the past two seasons. Moreover, Tie and Burton Lakes supplied only a few trout. The latter small lake is now infested with shiners illegally introduced. The several other lakes, including Edwards, Surveyors, and Barnes Lakes, continued to provide fair angling for Kamloops and cut-throat trout in the latter lake.

Grave (Emerald) Lake.—This lake supplied fair catches of Kamloops trout taken by troll and fly, as a result of yearly plantings of fry. The lake is quite important from a recreational and fishing standpoint and very creditable improvements have been accomplished by the organized sportsmen of Michel-Natal in the form of a bridge over the Elk River and a secondary road constructed leading from the bridge to the lake. The change of direct transportation of fry to the lake is welcomed after using pack-horses for twenty-three years and wading the river under hazardous conditions.

Elk River and Tributaries.—These excellent cut-throat waters produced fair catches of trout, including Dolly Varden (bull trout) in the South Fork or Wigwam River, varying to 10 lb. in weight.

Columbia District.

Columbia Lake.—Although this lake is stocked annually with substantial allotments of eyed eggs, owing to the scarcity of boats and accommodation few rainbow trout are caught. However, the plantings have greatly assisted to improve and maintain the supply of trout in Lake Windermere, which were originally established from Columbia Lake.

Lake Windermere.—Reports were not quite so favourable as during the year 1945 with regard to the catches of rainbow trout, varying to 8 lb. in weight. The tourists from the numerous summer camps fish the lake, hence the incentive to improve conditions by reducing the numbers of squawfish and the establishment of kokanee.

Summary of Hatchery Operations.

Summerland Hatchery.—Seasonal operations from May 15th to August 31st for South Okanagan and Similkameen waters: Kamloops trout eyed eggs received from Beaver Lake Hatchery, 600,000; Penask Lake Hatchery, 200,000; total, 800,000. Resultant fry liberated, 765,355 in twenty-nine lakes and streams and one rearing-pond.

Nelson Hatchery.—Yearly operations for East and West Kootenay, Boundary, and Okanagan waters: Kamloops trout eyed eggs received from Penask Lake Hatchery, 1,200,000; resultant fry liberated, 479,396, and 679,840 eyed eggs; total, 1,159,236, in thirty-four lakes and streams. Kamloops trout eyed eggs received from Gerrard Hatchery, 120,000; resultant fry, 115,541, liberated in Nelson rearing-ponds. Eastern brook trout eggs collected at Boundary Lake, 320,000; resultant fry and fingerlings liberated, 289,888, in seventeen lakes and streams, as carried over from the fall of 1945. Kokanee eggs received from Meadow Creek operations, 1,868,000; resultant eyed eggs planted, 1,340,000, in twenty-three lakes. Eggs on hand for fry liberations, 352,000, in three lakes in 1947.

Gerrard Hatchery.—Seasonal operations from April 1st to June 30th: Kamloops trout eggs collected, 554,000; eyed eggs shipped to Cranbrook Hatchery, 120,000; Nelson Hatchery, 120,000; Kaslo Hatchery, 239,790; total, 479,790.

Kaslo Hatchery.—Yearly operations: Kamloops trout eyed eggs received from Gerrard Hatchery, 239,790; resultant fry liberated in Bjerkness rearing-pond, 50,000; Kaslo rearing-ponds and hatchery troughs, 185,840; total, 235,840. Kokanee eggs received from Meadow Creek, 128,000, for Kootenay Lake.

Meadow Creek-Lardeau.—Kokanee eggs collected, 2,000,000, for waters of the Interior.

Cranbrook Hatchery.—Seasonal operations for East Kootenay waters: Cut-throat trout eggs collected at Fish Lakes, 1,823,000; Munroe Lake, 15,000; total, 1,839,000. Resultant eyed eggs planted, 1,426,125; fry, 314,095; total, 1,740,220, planted in thirty-two lakes and streams and one rearing-pond. Hybrid eggs collected at Munroe Lake, 21,500; resultant fry planted in one river and one lake, 17,365. Kamloops trout eyed eggs received from Gerrard Hatchery, 120,000; Lloyds Creek Hatchery, 200,000; Penask Lake Hatchery, 350,000; total, 670,000. Resultant eyed eggs, fry, and fingerlings planted: Gerrard stock—fry, 11,564; advanced fry, 30,180; fingerlings, 74,264; total, 116,008, in eleven lakes; Lloyds Creek and Penask stock—resultant eyed eggs and fry planted, 537,704, in twenty lakes.

Revelstoke Hatchery.—Seasonal operations in conjunction with Revelstoke Rod and Gun Club: Cut-throat trout eyed eggs received from the Cranbrook Hatchery, 170,000, resultant fry being liberated in four lakes; Kamloops trout eyed eggs received from Beaver Lake Hatchery, 100,000. Resultant fry liberated, 98,500, in six lakes.

Summary of Rearing-ponds operated, etc.

Summerland Hatchery Rearing-ponds.—Fifty thousand Kamloops trout fry liberated in the ponds and held for a brief period, then released gradually into Okanagan Lake.

Nelson Hatchery Rearing-ponds.—Kamloops trout fingerlings carried over from 1945 in No. 1 circular pond, 5,000. Resultant liberation April 1st to 23rd in West Arm of Kootenay Lake, 4,815; coming 2-year-old fish 4 to 9 inches in length (marked by removal of adipose and left ventral fins).

No. 2 pond: Lloyds Creek stock carried over from 1945, 18,191 fry; resultant liberation of fingerlings in Kootenay River (Slocan Pool), February 10th, 11,959 3-inch fingerlings.

Nos. 3, 4, and 5 ponds: Kamloops trout fry (Gerrard stock) released in ponds and carried over from 1945—No. 3 pond, 31,200; No. 4 pond, 31,200; No. 5 pond, 31,200. Resultant liberation of fingerlings, April 1st to 12th, coming 1-year-old fish, 3 to 5 inches in length, 75,945, weight count in West Arm of Kootenay Lake; 2,090, Champion Lake; 5,000 transferred to No. 1 circular pond for retainment, spring 1947. Total liberations, 83,035, from 100,000 eyed eggs received.

Kamloops trout eyed eggs received from Gerrard Hatchery, June, 1946, 120,000. Resultant fingerlings in ponds as at December 31st, 1946: No. 2 pond, 9,955; No. 3 pond, 28,509; No. 4 pond, 37,107; No. 5 pond, 37,170; total, 112,741.

No. 1 circular pond resultant yearling fish from 5,000 released in pond as at December 31st, 4,996.

Bjerkness Rearing-ponds.—Kamloops trout fry (Gerrard Stock) released in the No. 1 pond August 16th, 50,000. Resultant liberation of fingerlings into Kootenay Lake, October 16th and 17th, 26,475, 2 to 3 inches in length, weight count. Visible losses extremely light—predator birds and insects probably account for heavy loss—23,525.

Kaslo Hatchery Rearing-ponds.—Due to the reconstruction of the upper section of the large pond at the expense of the organized sportsmen, coupled with extreme low temperatures of water around 32 degrees and formation of ice, only small allotment of 2,500 fingerlings was carried in the pond for experimental purposes. Fry retained in hatchery troughs, approximately 185,000. Resultant fingerlings liberated in Kootenay Lake, November, 25,000. Approximate remainder of fingerlings in troughs as at December 31st, 155,000.

New Denver Rearing-pond.—Operations suspended due to mining operations.

Matthew Creek Rearing-ponds.—The usual 30,00 cut-throat trout fry were released in series of old abandoned beaver-dams, wherefrom the fish gradually enter St. Mary River.

Fernie Rearing-ponds.—During June 10,000 cut-throat fry were released in No. 1 and No. 2 ponds, and resultant unrecorded fingerlings were released in the Elk River adjacent during the fall. The ponds are operated by the organized sportsmen of Fernie with fair success, but now require an overhaul for effective operation and results.

Grand Forks Nursery Waters.—As the intended improvements to the nursery were not effected by the organized sportsmen of Grand Forks, the 3,000 Kamloops trout advanced fry (Gerrard Stock) supplied August 9th were placed in the original retaining-pen, and approximately 2,000 resultant fingerlings 2 to 4 inches in length were released into Christina Lake on October 25th. The retainment of the fish under natural conditions was fairly successful. The remainder of the fingerlings will be released next spring.

Princeton Rearing-ponds (Proposed).—In view of the possible development of rearing ponds by the organized sportsmen of Princeton on a leased site adjacent to One Mile Creek and 3 miles north of Princeton, two experimental retaining-pens 3 by 4 by 12 feet each were used to carry 5,000 Kamloops trout fry from July 20th to November 7th with fair success. The resultant fingerlings were released in the two small lakes leased, which will be improved upon next spring at the expense of local sportsmen.

Five applications were received to purchase small allotments of trout fry for liberation in ponds and small private lakes, which received favourable consideration.

Ova Collections.

In view of the heavy demand for Kamloops trout eyed eggs from the consolidated operations at Lloyds Creek and Penask Lake Hatcheries to augment the supply of eggs needed at the Nelson Hatchery, an unsuccessful attempt was made to collect a quantity at Box Lake, near Nakusp.

The early freeze-up at Boundary Lake, Nelway, resulted in 170,000 Eastern brook trout eggs being collected, in comparison to 320,000 in 1945.

High-water conditions in the Lardeau River, Gerrard, seriously curtailed the collection of Kamloops trout eggs, which amounted to 554,000, in comparison to 1,022,000 in 1945.

Two million kokanee eggs were collected at Meadow Creek, Lardeau, for distribution in lakes of the Interior, in comparison to 5,500,000 collected in 1945.

The collection of cut-throat trout eggs at Kiahko (Fish) Lakes, Cranbrook district, amounted to 1,823,500, in comparison to 1,328,000 in 1945. Munroe Lake, 1,500, in comparison to 119,500 in 1945. Munroe Lake hybrid trout eggs, 21,500, in comparison to 204,250 in 1945.

In view of the quality of cut-throat trout eggs collected at Fish Lakes and under ideal conditions to operate, a reserve was placed on the area of some 480 acres to protect this valuable natural resource.

Hatcheries.

In addition to repairs carried out to the walls and base of the Gerrard Hatchery in 1946, the roof of the building was completely reshingled and minor repairs effected, thereby making the building serviceable for a number of years.

The ground floor of the Kaslo Hatchery building, leased to the Department for a period of twenty-five years, was completely modernized with concrete floor and gutters and eighteen hatching-troughs 2 feet by 16 feet by 8 inches, equipped with jet arrangement water-supply. The modern set-up in use will comfortably carry 5,000,000 eggs or 1,000,000 fry.

Taking full advantage of the unsurpassed water-supply, and as supported by the organized sportsmen, the old hatchery building at Summerland will be replaced with a spacious and modern building to take care of fish-cultural requirements in the Okanagan region affected by irrigation, etc.

Miscellaneous Subjects.

Fertilization of Lakes.—The experimental use of commercial fertilizers to increase the productivity of certain lakes mentioned in the report of 1945 is again referred to.

Clearwater Lake, Hedley: Elevation 6,000 feet. Fertilizer applied to selected areas: 400 lb. of 4–8–5 and 400 lb. of 4–8–12 in the spring of 1945; 400 lb. of 4–8–12 toward the fall of 1946.

Authentic report received indicates beneficial results attained by the experiment of larger trout and improved condition and weed-growth, etc.

Bear Lake, Zincton: Elevation 3,500 feet. Fertilizer applied: 1 ton of 4–8–12 in May, 1945; 1 ton of 4–8–12 in July, 1945; 1 ton 4–8–12 in May-June, 1946, in selected areas throughout. Report of experiment satisfactory from a standpoint of increased growth and improved condition of mountain Kamloops trout, together with weed-growth, etc. Both experiments were conducted at the expense of organized sportsmen.

As during the season of 1945, fertilizer 4–8–12 was applied to No. 1 semi-natural Bjerkness rearing-pond, with satisfactory results.

The future use of commercial fertilizers under investigation by qualified biologists at Paul Lake, Kamloops, is awaited with interest.

Salvage and Transfer of Trout.—To conserve the food-supplies and to reduce the numbers of surplus spawners at Fish Lakes, 360 male cut-throat trout were transferred to Munroe Lake, 24 miles distant, without loss in transit.

As a result of abundant precipitation, there was no serious loss of stranded trout, nor was it necessary to retrieve or transfer any from affected areas on Little and Big Sheep Creeks, etc.

Destruction of Coarse Fish.—Reducing the numbers of these undesirable fish is still a major problem to contend with, and some attempt was made at permanent traps and others in the experimental stage, as referred to herewith.

Princeton Area: Lorne Lake—squawfish, suckers, and chub, 936 (2,000 lb.); Wolfe Lake—25 squawfish (100 lb.); Otter and Frembd Lakes—50 suckers, 27 squaw-

fish, and 6 whitefish (150 lb.); 2,250 lb. taken in traps installed at the expense of the organized sportsmen of Princeton.

Oliver Area: Madden Lake—32,340 shiners (*Richardsonius balteatus*) taken in two traps installed at the expense of organized sportsmen of Oliver.

Okanagan Lake: Outlet trap—235 carp (625 lb.). High-water conditions prevent the operation of other traps.

Lake Christina: Whitefish, 95 (80 lb.); carp, 32 (110 lb.); ling, 138 (685 lb.); suckers, 265 (785 lb.); total, 2,098 lb.

Windermere Lake and Sloughs: Squawfish, 650 (760 lb.); suckers, 345 (410 lb.); total, 1,105 lb.

Kootenay Lake: Queens Bay—Experimental use of a drag-seine was not successful, as the reported schools of squawfish did not return.

Columbia River: At the request of the organized sportsmen of Trail, the operation of a drag-seine was attempted, but without success, due to the rugged nature of the shore-line and only a few coarse fish present.

Trout Foods.—Three tons of stripped kokanee from Meadow Creek were placed in cold storage at the Nelson Hatchery and 2 tons in cold storage at Kaslo to assist with feeding of trout fingerlings retained in the Nelson-Kaslo rearing-ponds.

Fishways.—The five small fishways installed in dams under 10 feet in height are in fair condition and working order. Situated at the outlet of Okanagan Lake, Eholt Creek, outlet of McBain's Lake, Alexander Creek, Crowsnest, and Paddy Ryan Lakes, Windermere.

Cottonwood Creek, Nelson: The replacement of old lumber with concave concrete flume of approximately 600 feet in length was completed by the Canadian Pacific Railway at Nelson during the fall to afford free passage to all fish that frequent the stream. The flume is equipped with staggered concrete stops spaced 4 feet apart and of 4- by 42- by 4-inch dimensions.

Obstructions.—Lardeau River: During the fall additional work was effected of the recently formed obstruction in the north channel of river adjacent to the handy log-jam, 1 mile below Gerrard, to allow free passage to the parent Kamloops trout from Kootenay Lake to reach their spawning-grounds adjacent to Gerrard without delay or injury.

Duncan River: The removal of a recently formed log and debris obstruction, 1 mile north of the confluence of Meadow Creek, is receiving attention by the Federal authorities for navigation purposes. The removal will be beneficial to the future migration of spawning trout.

Pollutions by Mining Industries.—Due to several mines closing down temporarily, the pollution of streams frequented with fish has not been serious. Moreover, wherever possible, the operators are sympathetic in their endeavours to prevent serious pollutions, as referred to herewith.

Similkameen River: This stream has been free of pollution, except the discharge of ash from the Granby Mining, Smelting, and Power Company steam electric plant. Remedial measures are now being taken for impoundment on suitable land adjacent to the plant. The control of concentrator refuse by the said company and the Kelowna Exploration Company and Mascot Mining Company, of Hedley, is now well taken care of.

Columbia River: The discharge of refuse from the smelter and fertilizer plants operated by the Consolidated Mining and Smelting Company of Trail continued in this river, and this situation is very difficult to avoid.

Salmon River and Sheep Creek: Mining operations have been suspended during the year at the Sheep Creek Gold Mines, Limited, and the Gold Belt Mining Company. In order to prevent recurrence of serious pollutions resulting from the discharge of

concentrator refuse, the management in each case has been consulted as to the control and impoundment of refuse.

Salmon River (Upper Reaches): In the event of the Trimetal Mining Company operating the Golden Age mine, arrangements were effected with the management to impound the concentrator refuse.

Sitkum Creek: During the spring this stream was seriously polluted with concentrator refuse (no chemicals) owing to a breach in the dam. At considerable expense, the operators were most sincere in their efforts to impound and control the waste.

Seaton and Carpenter Creeks: The management of the Zincton Mines, Limited, Sheep Creek, has taken the desired remedial measures to prevent the serious pollution of streams mentioned by pumping and impoundment to protect the interests of a hydro-electric plant and sport fisheries.

Summit Creek: The Bayonne Consolidated Mines, Limited, suspended operations.

St. Mary River: The extensive precautionary measures taken by the Consolidated Mining and Smelting Company has prevented the serious pollution of the river in treatment of ores from the Sullivan mine.

Elk River: The control and impoundment of coal-sludge from the washing-plants operated by the Crows Nest Pass Coal Company on Coal Creek and Michel has prevented serious pollutions.

Lumber Industries.—With the exception of two complaints of sawdust entering Giveout Creek, Nelson, and the Salmon River, Salmo (rectified forthwith), operators have complied with the fishery regulations in force.

Diseases.—During the year no mortality of sport fish was observed or reported in "B" Game Division.

Ova Collections.—With somewhat restricted shipments of trout eyed eggs from the consolidated operations at Lloyds Creek and Penask Lake Hatcheries to meet demands of the Nelson Hatchery, further attention will be given to possible local collections.

Co-operation.—During the year excellent co-operation was received from the organized sportsmen, individuals, municipalities, Forest Service, and Water Rights Branch, the Consolidated Mining and Smelting Company, and scientific information was supplied by Dr. W. A. Clemens and Dr. G. Clifford Carl, Director, Provincial Museum, which is hereby gratefully acknowledged.

"C" DIVISION (KAMLOOPS, YALE, OKANAGAN, CARIBOO, CHILCOTIN, AND SQUAMISH DISTRICTS).

By R. M. Robertson, Officer Commanding.

I have the honour to submit herewith my annual report on game conditions in "C" Game Division during the year ended December 31st, 1946.

Big Game.

Moose.—The increase over that of previous years in the number of non-resident big-game hunters primarily bent on obtaining moose for a meat supply poses the question as to what amount of hunting pressure this Province can stand before the moose population proceeds on a downward scale. Up to 1945 the bag-limits obtained showed no decrease. During 1946 hunting of moose maintained its steady pressure both by resident and non-resident alike.

In recent years the movement of moose into new areas to the south and south-east portion of the Province has been of a most conspicuous nature. With this southward movement of moose, the wolf has also appeared. Additional information on this will appear under the heading of predators.

In the Kamloops area there appeared to be no immediate scarcity of moose and the same applied to other Detachments in the Cariboo. Clinton Detachment reports the majority of bulls taken last year were very young animals. One significant feature of the Wells Detachment report is the apparent scarcity or disappearance of moose from that district. My annual report for 1937 pointed out that moose were first observed in the Bowron Lake area in 1901. The report describes the southward movement of moose from 1901 to 1937. Both the former Game Warden and the present officer have drawn my attention to this situation. It would appear that no further intrusion of moose from the north is taking place in the Bowron Lake area. The field survey on moose conducted by the University of British Columbia in 1946 by Mr. James Hatter, will probably reveal some very interesting factual data of breeding areas to the south, centring mainly in the lower portion of the Cariboo. If large areas to the south of Bowron Lake favourable for breeding purposes are revealed, and are not subject to hunter invasion, the welfare of the moose population is definitely assured. Under such circumstances the problem before us is one for careful gauging and regulation. To say that we can afford to take a greatly increased hunter invasion would be to invite disaster. Non-resident hunters in the habit of coming here for years would be the first to admit the fallacy of any such suggestion. Wardens have not the time to conduct any intensive survey of actual game conditions but must leave this to experts specializing in game management.

Caribou.—A report comes to hand from Bowron Lake that caribou have appeared in the Bowron Lake Sanctuary. The closed season existing in the Clearwater terrain of the Kamloops district should continue. The reported scarcity in various parts of this Division is certainly not due to over-shooting. Returning for a moment to the north again, word comes that three fairly large herds are concentrated in the Quesnel Detachment and points east. A patrol will be made to ascertain their numbers and conditions. From other areas no reports of interest are available. I would, however, stress the importance of conducting an ecological study in relation to caribou welfare. There is some mystery attached to the movement of this species, as most of the information available concerns their apparent scarcity and the expression " remnants of a former large caribou population " is occasionally heard.

Deer.—The unfavourable season protected this animal. Snowfall during the latter part of the year and, after that, frost made travel in the woods a noisy undertaking. We need never feel any concern over the deer population in British Columbia. Ontario, with many times the population of this Province, according to one authority at Ottawa, has just as many deer as ever. In certain districts the ratio of bucks to does varies from time to time, but over the years recovery soon takes place. Taken as a whole over the entire Division, the odds were against the hunter, due to unfavourable climatic conditions.

Grizzlies.—At the head of Texas, Whitecap, and Bear Creeks, in the Lillooet area, there are opportunities for grizzlies. Unfortunately the trails are not kept open, and much work would have to be done to enable hunters to reach the above grounds. Bowron Lake is considered good grizzly country, but the type of hunting there is carried out mostly on foot and by boat. To hunt in this area, physical fitness is really an essential requirement. Three Valley in the district to the east of Salmon Arm and in the Revelstoke and Crowfoot Ranges are districts in which opportunities prevail if the right guides are chosen. There is much to be said in favour of knowing just where to go and who to employ as a guide. Black bears are still a menace to stock in the Cariboo District and lower portions of the Province. They are seldom hunted.

Mountain-goats.—Goats in the Lillooet area are not numerous. In Bowron Lake they are also reported as being scarce, and none has been taken for several years.

Williams Lake district reports are favourable. Actually very few goats are taken in any of the districts.

Mountain-sheep.—West of the Fraser and on the Limestone Range in the Clinton district reports state that this species is holding its own. In the Bear Creek district, near Kelowna, three rams about 4 years old were observed. These rams are no doubt overflow remnants of the Shorts Creek population on the west side of Okanagan Lake. The area adjacent to Squaam Bay on Adams Lake received scant attention from sheep-hunters. The closed season on mountain-sheep at Squilax should be maintained. A census will be taken of those animals from time to time.

In the Yalakom district of Lillooet a band of wolves has moved in. No damage to sheep has been reported. There is a demand for a predatory-animal hunter to cope with this situation. We have been short of help in this respect.

In the Big Creek district of the Chilcotins a request has been made by a long-time resident and guide in which he draws to our attention the necessity for preserving the limited-sized band of mountain-sheep in that district. Any suggested open season covering limited areas should first be submitted for the consideration of the biologist. There is no finer sight for a nature-lover or photographer than to watch these animals grazing on the lower slopes of Shorts Creek, Squilax, Squaam Bay, and west of Williams Lake and other areas to the south.

Fur-bearing Animals.

From Bowron Lake a report comes to hand of a parasite affecting muskrats. This took place about three years ago and appears to have killed off large numbers. Rabbits in this area are numerous, and a corresponding increase in lynx has been noted. Other fur-bearers are normal. Squirrels have apparently made a surprising come-back despite the heavy take over most of this Division. With the additional food-supply for fewer squirrels over a period of years, one can readily look for some sort of increase.

In the matter of beaver-farming of trap-lines, much remains to be done. There are, as mentioned in a previous report, too many loop-holes, not so much for the trapper now that beaver-tagging has taken place, but for those engaged in the industry of handling furs. Until changes for the better take place, it is indeed a difficult problem trying to inaugurate a sound and fool-proof system of beaver conservation.

We are definitely short of help in the checking of registered trap-lines. The use of aeroplanes during the winter months is an immediate necessity, especially for the more inaccessible regions, as it would effect a great saving of time and money. Trappers get their food-supplies on their registered trap-lines well before winter sets in. Where a Warden has to make long and arduous trips into the more remote regions, he invariably has to back-pack his food-supply on the one trip. One special patrol made recently took over two weeks. Creation of ponds, water-fowl projects, problems of food as affecting the health and quality of fur-bearers, unusual predator action, trap-line fur-bearing potential, and a host of other allied matters await the action of the engineer and the biologist with extensive experience in the field. We have not yet begun to scratch remotely the surface of this potential fur-bearing wealth. Unlike mining, it can be renewed year after year with the prospects of an ever-increasing harvest, provided scientific research is utilized as the tool for full development.

Game Propagation.

Twelve beavers were trapped alive at Bowron Lake and liberated in different parts of this Division. Water-storage is too important for us to pass up, and the most important and least expensive of all water-storage agencies lies within our reach. More apparatus for live trapping of beavers is necessary. We are inadequately equipped for extensive work. The most brilliant example of what beavers can do

toward the increase of water-fowl in this Province can be seen on the trap-line of Mr. Eric Collier. In addition, Mr. Collier's work with a shovel and scraper in the damming-up of water from the melting snows and holding back the spring run-off is well worth a visit of inspection. As a fur-farmer specializing in the raising of rats at present on the large number of artificially created ponds plus the present additional work of beaver activity, he is now enjoying substantial dividends as a result of honest and painstaking effort. While it is true that there may be off-years due to disease and other factors, these problems could be largely overcome by the advice of an expert on diseases of fur-bearers.

Fur-farming.

Very little activity prevails in this industry. It has reached a new low level in British Columbia. Experimental farms are necessary if we are to hold our position against outside competition. The Department of Trade and Industry could perhaps provide an incentive in conjunction with the Dominion Government on better fur-farming methods. It is officially reported that there is a scarcity of experts in this and other fields.

Fur-traders.

The bulk of fur is sold in Vancouver by Interior trappers. Unfortunately we have no direct access to the Vancouver records of these fur-buyers and therefore are not in a position to know what trappers are actually doing. The returns from trappers at the end of the season are not sworn affidavits.

Upland Game Birds.

European partridges are increasing along the Fraser River and in the Ashcroft and Vernon districts. They are scarce around Kelowna. Quail, from reports received, have to a very large extent disappeared from the Salmon Arm area. Around Kelowna this game bird has increased. The Cariboo climate is too severe for quail. The following Detachment reports are submitted on the grouse situation in this Division:—

Detachment.	Blue Grouse.	Willow Grouse.
Kelowna	Slight increase.	Scarce.
Vernon	Not numerous.	Not numerous.
Salmon Arm	Decrease.	Improving.
Kamloops	Not increasing.	Decrease.
Clinton	More numerous.	Slow increase.
Merritt	Numerous on upper ranges.	Very few seen.
Williams Lake	Scarce.	Scarce.
Wells	Not numerous.	Improving.
Lillooet	Increasing but still scarce.	Slight increase; recommend closed season.
Quesnel	Still scarce.	Still scarce.

Taken as a whole the grouse situation in this Division does not present an optimistic picture. Perhaps a combination of disease and over-shooting has had much to do with the situation. Prairie chicken fluctuate far too much in numbers to be taken into serious account. These game birds are too often mistaken for grouse by the careless hunter. Occasionally coveys are seen. Shorter seasons and smaller bag-limits rather than closed seasons would be worth considering.

Regarding pheasants, reports to hand indicate a scarcity. Kelowna reports pheasants very scarce. The wet weather for the first three days of the open season

had much to do with the small bag-limits. There was little movement of the pheasant population. Vernon had a daily bag-limit of four birds, while surrounding districts cut down the bag-limit to two birds for the first three days. This situation served to concentrate the hunters more around Vernon. Too much publicity of the actual stand of game birds has its disadvantages. There is always a strong tendency for hunters to gather at points of game concentration.

Sixty pheasants were liberated at Salmon Arm and 100 pheasants at Kamloops. About 60 birds were liberated near Kelowna by a private citizen.

Migratory Game Birds.

It is worth while to show Detachment reports on the subject of migratory game birds, especially ducks and geese:—

Detachment.	Ducks.	Canada Geese.
Kelowna	Poor.	Scarce; few killed.
Vernon	Larger increase because of closing of military camp.	No report.
Salmon Arm	Increase.	No report.
Kamloops	Not numerous.	Only fair.
Merritt	Very few taken.	Fair in spots.
Clinton	Numerous west of Fraser.	Numerous.
Williams Lake	Scarce.	Quite common
Lillooet	Of little account.	Pemberton Valley, 300 geese.
Quesnel	Dry weather; poor, spotty.	Poor, spotty.
Bowron Lake	Poor.	Plentiful in fall.

The above report is not a good one. The poor seasons, if continued, with an ever-increasing army of hunters, both in Canada and the United States, may call for drastic reductions.

Any mechanism of a war- or peace-time development capable of killing water-fowl and not wounding is a step toward conservation. Far too many birds to-day are brought down wounded and lost. These are unfortunately not included in the day's take. Improved and effective killing should be encouraged rather than the present ineffectual methods as followed to-day. If it were possible to take a census of ducks wounded and lost, the figures over the entire continent would be of staggering proportions. We are evidently paying the price to-day for being too optimistic in the past. Banding operations in spring and fall in Northern and Southern British Columbia would teach us a great deal of any temporary diversion or change of route along the fly-ways.

Vermin.

Eleven Game Wardens and one predatory-animal hunter destroyed the following predators during 1946: 48 dogs, 13 bears, 171 coyotes, 751 crows, 475 magpies, 236 hawks, 157 owls, 171 cats, 26 eagles, 14 cougars, 39 ravens, and 4 wolves.

Reports made several years ago by a former Warden revealed, while following wolf tracks on saddle-horse, that these animals usually followed a fairly definite route or pattern by starting at one point and covering a considerable distance to report at another. A recent aeroplane flight taken by one of the Wardens at Kamloops showed a similar route taken by wolves as discovered by the rider operating as described above,

except for a slight variation. The aeroplane flight, however, enabled us to add to the former report in that the wolves continued on in the form of a semi-circular route. If it can be proven that wolves follow a definite pattern in their travels at all times, it should be a comparatively simple matter to deal with overconcentrations or bands of these predators. In the recent aeroplane flight and subsequent study of the route taken by wolves, the writer checked the trap-line maps over which this band or bands of wolves were operating. The tracks clearly crossed several trap-lines, and to confirm what was seen from the aeroplane, letters were sent to the various trappers asking for information of what they observed within their registered trap-line boundaries in the form of wolf movements. Reports received from trappers confirmed to a very large extent observations made from the air. Sketches were received which largely coincided with the sketch of wolf movements observed from the aeroplane while flying at a very low altitude.

One Game Warden was detailed to make the first wolf-hunt from an aeroplane operating from Kamloops. With the use of an automatic shotgun, one wolf was killed on a fairly large lake and another badly wounded. This was done at an altitude of only a few feet above the ice.

As an efficient means of destruction of predators, the killing of wolves from an aeroplane leaves much to be desired. These animals are not lacking in boldness, as on more than six occasions they were observed close to and within a farmyard in the North Thompson area. Examination of the tracks by the writer several days after confirmed this report.

Game Protection.

Two hundred and twelve prosecutions under the "Game Act" were recorded. Of these, two were dismissed. Kamloops and Kelowna Detachments were most active in this respect. The checking-station at Cache Creek revealed sixty-nine prosecutions and convictions. There is a great lack of knowledge of the game regulations on the part of hunters. Nearly all Detachments lacked sufficient help. The greatly increased population of the Interior and the totally inadequate staff to cope with such large numbers revealed the necessity for more assistance all over this Division. As a deterrent to offenders under the "Game Act," the temporary suspension of the hunting licence plus a fine would do more to prevent deliberate violations than any other form of action.

Game Reserves.

The Minnie Lake Game Sanctuary and the Bowron Lake and Tranquille Reserves are primarily the main but limited areas for protection of fur-bearers and water-fowl. Efforts have been made by Game Associations for the creation of additional sanctuaries within settled areas, invariably without success, because of the opposition from private land-holders.

Yalakom Game Reserve, where mountain-sheep roam, according to reports, has been visited by packs of wolves. No information is available at present as to the exact extent of this invasion. The waters of the North Thompson, South Thompson, and Thompson Rivers opposite Kamloops were declared a closed area for the protection of water-fowl, largely as a result of public interest. This project, right from the beginning, was a great success. When the open season on water-fowl took place, hundreds of mallards and other water-fowl soon found out that they were not molested there, and on the log-boom erected within this area, mallards were closely packed for protection. It was a sight to behold. We have not enough of such areas. All progressive cities invariably have, where possible, their water-fowl sanctuaries.

Registration of Trap-lines.

The system at present in operation has stood the test of time. Combined with a programme of education and greater supervision or inspection, the previous suggestions as contained under the heading of " Fur-bearing Animals " could well be included to bring this system to a state of perfection. Great and lasting credit is due Mr. Frank Butler, one of our Game Commissioners, for organizing and putting this system into effect. There is an old axiom which says, " Success is a continuous journey . . . never can it be considered a destination."

Registration of Guides.

It has been observed by the Wardens that there is a badly unbalanced situation under this heading. If the 460 guides now registered in " C " Game Division were more evenly distributed, it would be better for big-game conditions generally. Far too many guides are operating heavily hunted districts.

One possible solution is a system of registered areas for guides, providing a specific number of guides to each area.

Guides are now arranging to take hunters to the areas farther afield by aeroplane next year. I sincerely hope that adequate provision will be made to enable officers in the field to move rapidly and keep pace with the new trend of travel. It would appear that larger aeroplanes are more likely to be used by big-game parties, as to transport moose carcasses by smaller plane would be a much more costly undertaking. Nothing like the money paid out under the present system, along our highways, in our hotels and camps, will be spent if aeroplanes are brought into full use to land within easy reach of the hunting-field. It is the visiting hunter travelling along our highways and byways who leaves the money behind. Only where there are no highways in the more remote parts of the Province should aeroplanes be used, but only after a careful survey of its actual wild-life wealth has been conducted.

Special Patrols.

A special patrol was made by Game Warden Gill, of Lillooet, into Lizza Lake area and into the Shulap Mountains, checking the number of sheep in that area. Very few sheep were found, but it is believed they had nearly all moved over into the Yalakom Reserve and Red Mountain areas, as signs of bands moving that way were in evidence on the divide.

Game Warden Hillen, of Quesnel, made a special patrol to the Nazko and Blackwater. He also patrolled to the Ahbau Creek and Lake country and in the Quesnel River area.

Hunting Accidents.

William Hershey, Little Fort, B.C., was shot in the right leg between the knee and the ankle, by Roger Eakin while they were tramping through the bush. Mr. Eakin's rifle caught in a bush and accidentally discharged. The bone of Mr. Hershey's leg was not damaged. This is the only hunting accident recorded in " C " Division this season.

Summary.

The year 1946 was one of the busiest years we have ever had, both from the viewpoint of angling and big-game hunting. The latter attraction drew several thousand resident and non-resident hunters, mainly to the Cariboo, where, like the year previous, a heavy toll of big-game animals, mainly moose, was taken. As to how long the area can stand that strain could best be answered by those responsible for the big-game survey which was started and carried on throughout the year.

Scientific research should proceed simultaneously with a programme of public education. Both are important and interdependent. A point of interest brought out in the report from Wells is that moose have either decreased or have left the Bowron Lake area, where they were first seen in 1901. If there are any similar records of a mass movement of big game in the early history of British Columbia, it would be of considerable interest, as the recent invasion of the Cariboo District by tremendous numbers of moose is a phenomenon worthy of note.

Other species of big game are in a comparative sense at a standstill. Caribou have actually decreased, despite the very limited hunting. This situation partly applies to mountain-sheep and mountain-goat, since there are very few reports of increase. In places we know that it is impossible for mountain-sheep to increase and " overflow " as many hunters would like, largely because the surrounding terrain is not suitable for their propagation. Besides, the intrusion of agriculture has had a detrimental effect on their winter range.

In the matter of fur conservation there is room for considerable improvement. The use of a ski-equipped aeroplane for winter visits to registered trap-lines by flying squads of trained Wardens with trapping experience would help considerably. These flying visits could be of a mainly educational nature, and advice could perhaps be given to the young trapper on a variety of wild-fur subjects. This system would effect a vast saving of time and money, and would be much more efficient than the old method of carrying out foot patrols, especially in the more inaccessible regions.

Upland game birds have not fared so well. This applies to almost every species. I am optimistic enough to believe that they can be brought back, provided we take into consideration the ever-increasing population of hunters in relation to the size of the crop.

The season for migratory water-fowl was not a good one. Shorter seasons and smaller bag-limits would appear to be the only way out of a seemingly complex problem. Our shooting season in British Columbia is not of long duration, and much of the so-called northern flight in the Interior simply does not exist or what does exist passes overhead in the night on its way south. Without uniformity of regulation, which does not exist either in Canada or the United States, there is not a great deal of hope at present.

The most controversial subject on the calendar is the effect of the predator on wild life. More friendship has been lost over this subject than all the other phases of wild life put together. I am unable to understand why hunters demand to be paid to improve their hunting. There should be a natural impulse to destroy where it is desirable, especially if one feels that his hunting is being jeopardized. It is a problem requiring intelligent study and guidance.

Better enforcement of game regulations was carried out during the open season. The checking-station created by the Game Commission at Cache Creek on a largely twenty-four-hour basis revealed that an astonishing lack of knowledge or partial disregard of the regulations is one of the main problems before us, then there is room for the employment of a greater field staff.

The Game Associations are doing a wonderful work in drawing to the attention of the general public the growing importance of our wild-life resources. The responsibility for the increase or scarcity of these resources rests to some extent in the hands of the active members of the wild-life associations. The showing of educational films on game and fishery conservation provides a steady and ever-increasing attraction for old and young alike.

The subject of game reserves is one of increasing importance in view of the advent of the aeroplane, which affords greater accessibility and saving of time. The entire Province can now be considered as a huge landing-field.

The suggestion of designating areas over which no aeroplanes would be allowed to land might well be considered. I would respectfully suggest the employment of aeroplane pilots as game officers operating out of Divisional Headquarters, but using their own aeroplanes from the local flying-field. A great deal can be seen from the air which could never be discovered by means of ground patrol.

Before the 1947 hunting season materializes, surely effective means will be found to eliminate the unfortunate overcrowding of guides and hunters.

New Wardens (overseas veterans) and Wardens of long experience were untiring in their efforts to carry out their duties under extremely trying conditions. It is to be hoped that their work during the forthcoming year will be rendered easier for them by the appointment of additional officers. To the Provincial Police, through Inspector Gammon, and the Forest Service, through Colonel Parlow, and to other organizations, I would like to extend my sincere thanks for their ready assistance, which was gladly rendered at all times.

GAME FISH.

Vernon. — Kamloops trout eggs and fingerlings were planted in the lakes and streams of this Detachment by the staff of the Beaver Lake Hatchery.

One planting made in troughs in Coldstream Creek was very successful and fry were observed in the creek later in the season. The water in this creek remained fairly constant in flow all through the summer and fall, so that there should be little or no loss from fry and fingerlings being stranded.

The coarse-fish trap on Otter Creek, flowing into Okanagan Lake at the Indian reserve, was placed in operation early in April, and between that time and early in May, when the extra-high water washed out one end of the trap, 1,500 lb. of carp were taken from the trap plus some taken by the Indians and local residents, of which there are no records.

The amount of trash coming down during the high water made it impossible to keep the grills clean, so to save the trap from going out altogether, the grills were removed till May 8th, when the water was running clean again.

From this time on there were plenty of carp in the stream above the trap, but only approximately 500 lb. were taken from the trap.

A new coarse-fish trap was installed in the stream between Woods and Kalamalka Lakes at Oyama, and was in operation on May 8th. Between May 20th and June 6th approximately 5,000 lb. of suckers and squawfish were taken from the trap.

Very few carp, about 500 lb. were taken from the trap, although there were hundreds lying off the mouth of the creek in Woods Lake. By the use of a drag-net to close off the creek above the trap, another 1,500 lb. were taken. The total shipped out by the Thorlakson brothers was 2,206 lb.

I believe that there were three factors that were against the successful operation of this trap: it was installed too late; it was constructed of bright new lumber, and it was located too close to the public road, in that the local residents were constantly interfering with it.

Sugar Lake.—Is on the Upper Shuswap River in a setting of high, bare-topped mountains with heavily timbered lower slopes. Used as a reservoir by the British Columbia Power Commission, who have raised the water some 25 feet, which has spoiled the foreshore in most parts. Good catches of Kamloops trout up to 2 lb. are taken on both fly and troll. Dolly Varden up to 8 lb. are taken in the lake and river below the falls early in the season. There is a lodge at each end of the lake, where boats are kept for rent. Ten miles north of the Vernon–Edgewood Road by good gravel road from Cherryville.

Echo Lake.—The lake averages less than a quarter of a mile in width and is 1½ miles long. It has no natural spawning facilities but has been stocked with fry for a

number of years. Kamloops trout up to 8 lb. were taken last year on both fly and troll. There are boats for hire and a lodge is to be built this year. Reached by a good gravel road, 15 miles from Lumby.

Aberdeen Group.—Situated on the high plateau to the east of Kalamalka Lake at the 4,500-foot level. Limit catches of Kamloops trout can be taken in nearly any of the five lakes. Catches of 2½-lb. fish were made last year. Very bad road; not advisable to attempt the trip by car. Horses could be obtained from some of the farmers at Lavington. No boats available. Most anglers use rafts and fish with fly.

Kelowna.—The new hatchery at Beaver Lake will no doubt prove to be very satisfactory, and good results are expected next year. The Kelowna Hatchery ponds have been stocked with fry and the No. 3 pond will be drained in April of its 2-year-old fingerlings.

Okanagan Lake.—Kamloops trout up to 18 lb. have been caught on the troll. Several thousand fingerlings will be released this spring into this lake from the Kelowna rearing-ponds.

Beaver and Dee Lake Chain.—Due to less fry being liberated, the size of the trout has increased greatly.

Woods Lake.—Some of the finest kokanee (sockeye) silvers are taken from this lake. Average weight, 1½ lb. Coarse fish abound, and it is hard to plant trout fry for that reason. We are planting several thousand fingerlings this spring from the Kelowna rearing-ponds.

Oyama (Island) Lake.—Trout up to 15 lb. are taken in this lake. We have a fish-trap there, where our fishery officer gathers some fine spawn which is transported to the Beaver Lake Hatchery for eyeing and planting elsewhere.

Clinton.—Coarse fish taken in 1946: Bridge Lake, 2 tons; Crystal Lake, 1 ton; Deka Lake, 2½ tons. Suckers at Burns Lake appear to have been winter-killed. The coarse fish taken were suckers, squaw, and chub. The coarse fish in the Bridge Lake watershed are increasing.

Williams Lake.—Trout eggs were planted in the following lakes during the summer. Williams Lake received three trays of eggs, which were planted in the creek at the north end of this lake. One tray of trout eggs was planted in a small creek west of this lake, but taking into consideration the very low water-level, I doubt if these eggs will amount to very much. One tray of trout eggs was also planted in Tadd Lake under the same conditions as Abel Lake.

Big Lake received 30,000 trout eggs, and the water was ideal for planting. This was done in the creek about 200 yards from the lake-shore.

Rose Lake received 30,000 trout eggs, but this lake seems to be very difficult, in that young trout find it hard to return to the lake. The Indian Department built a dam at the west end of Rose Lake for irrigation purposes. During the high water in the spring, mud and leaves back up for several hundred yards. This prevents the fish from reaching the original spawning-ground. Game Warden Jobin is afraid that fishing for trout in this lovely lake will be a thing of the past in the near future.

Lillooet.—Preparations have been made for a new dam to be installed at the outlet of Pavilion Lake with a new fish-screen. This will be completed this spring, as soon as weather conditions permit. This work is being completed by Mr. R. Benson, manager of Spencer's Ranch at Pavilion. Six lakes were stocked with eyed eggs during 1946, and all hatches were very successful. Crown and Pavilion Lakes were stocked with fry, as there are no suitable creeks for planting eggs. Crown and Turquoise Lakes at Pavilion are very heavily fished, and these will have to be stocked more heavily.

Summary.—Angling in this Division reached a new high during the past year, especially for visitors. Thousands of non-resident anglers came specifically to enjoy the sport, despite the additional licence fee. Many of the lakes which were " off-colour " in 1945 came to life in 1946. The occasional off-year for some bodies of water has a

revitalizing effect. No lake can be expected to produce endless bag-limits if heavily fished and still maintain its weight of trout.

One lake in the Kamloops district last year, roughly 4 miles long by one-quarter mile wide, had as high as from sixty to seventy boats with fishing parties on several occasions. The greatly increased population in the Okanagan Valley at Vernon, Kelowna, and Salmon Arm put an additional strain on heavily taxed lakes.

Kamloops and points in the Cariboo were crowded with new arrivals. Accommodation was and is still at a premium. Hundreds of new applications for lodge-sites for fishing and hunting were received. These came to hand in a steady stream, which indicated the growing popularity of this attraction as one of great potential value. To all this there is, however, a limit, as the trend where lakes are heavily fished is to produce fish or trout that are smaller in size.

In the matter of coarse fish and their alleged adverse effects on feed and plankton growth, etc., not enough is known by the general public of what damage coarse fish do. There is too much guessing and not enough observation or scientific research on the vital subject. The use of aeroplanes and their effect on trout populations will require careful study.

We are definitely in the realm of big business, and it is up to us to supply that demand through scientific fish-culture and a synchronized educational programme for the benefit of the rising generation of Canadians. The suggestion has been made of creating purely fly-fishing lakes. We should digress from the orthodox methods of fish conservation of other Provinces or countries unless it can be shown that they have developed something of an outstanding nature for us to follow.

"D" DIVISION (ATLIN, SKEENA, OMINECA, PRINCE RUPERT, FORT GEORGE, PEACE RIVER, AND YUKON BOUNDARY DISTRICTS).

By T. Van Dyk, Officer Commanding.

Big-game Animals.

Despite the fact that both resident and non-resident hunters have greatly increased in numbers in the past year, moose showed a smaller decline in numbers than was anticipated. Reports are received to the effect that these animals are gradually moving westward down the Skeena River valley, while increased numbers are reported as being seen in the vicinity of Terrace, and still others have been seen on the Lower Nass River, close to tidal waters.

The deer situation is, however, less favourable, as it would appear that animals are fast decreasing, this having been observed in different parts of the Division.

Caribou also are on the decline, while mountain-goat and mountain-sheep appear to be holding their own. Grizzly bears show no sign of any change, while black bears are still rapidly increasing, and it is believed that the removal of the bag-limit on these would result in their reduction to a point where they would not become a menace to the domestic stock of farmers. Unless this action is taken, it is feared that requests will be made to have black bears declared predatory animals, and this may result in a movement being brought about to have a bounty paid on animals destroyed.

Reports are frequently received from farmers who claim that their live stock was killed by timber-wolves, and upon investigation it has been found that the destruction was brought about by black bears.

Fur-bearing Animals.

Exceptionally large catches of fur-bearing animals were taken by most trappers, due to abnormally high prices which prevailed in the earlier part of the season. This applied especially to beaver during spring trapping. Since the prices have levelled off,

it is believed that smaller catches will be taken and fur-bearers will be permitted to increase on most trap-lines.

Beavers have shown a further increase on the lines of most white trappers throughout the Division, but this does not apply in the case of most Indians, whose breeding stock is fast being depleted.

The matter of establishing beaver preserves over Indian trap-lines should be encouraged, and the appointment of a trap-line official by the Indian Affairs Department to supervise and instruct Indians in conservation and care of their trapping areas should be considered.

Upland Game Birds.

The nesting period having been most unfavourable during the past spring, it is found that willow grouse, Franklins, and prairie chickens are very scarce, and the matter of closing the season on these throughout the Division should be given consideration. Ptarmigan remain fairly plentiful in the higher areas and are very seldom hunted.

Migratory Game Birds.

From all parts of the Division reports reaching this office would indicate that ducks and geese are on the decline, therefore a shorter season and greatly reduced bag-limit would be advisable. This condition, no doubt, is partly caused by excessive hunting in the south and unfavourable nesting seasons in the north, and some measure of conservation will have to be adopted.

Vermin.

As in previous years, complaints have been received from farmers in various parts of the Division that domestic animals have been attacked by wolves. In some cases the complainant was issued a permit authorizing the use of poison, instructions as to its use being supplied where necessary, and in many instances this resulted in the destruction of a number of predators.

An increase in bounty would perhaps result in greater efforts being put forth by all hunters to destroy these pests, but it is believed that the employment of experienced full-time predatory-animal hunters would be advisable. Good results were shown by the predatory-animal hunter who was operating in Tweedsmuir Park last winter, and I would recommend that he be again employed during next winter.

Game Protection.

By reason of increased office duties it is believed that not enough time is spent in the field by Game Wardens in this Division. It would perhaps be advisable to employ clerks in some of the Detachment offices, especially during the hunting season, or make arrangements with storekeepers in the area for the sale of hunting licences, thus reducing the amount of time to be spent in the office.

The matter of employing additional Game Wardens to carry out periodical patrols of highway-construction areas should be considered, as it is feared that this work will be sadly neglected if it must be carried out by the present staff.

Game Reserves.

There are no game reserves in this Division, but several sanctuaries have been established, and these are located at Prince Rupert, Smithers, Vanderhoof, and Prince George. Periodical patrols of these sanctuaries are carried out, with the result that they are frequented by many birds during the periods of migration.

The matter of establishing a game reserve in Tweedsmuir Park has been suggested by various residents in that area.

Fur Trade.

Reports are coming in from all Detachments in the Division that trappers have ceased operating their lines early this season by reason of the greatly reduced prices currently offered for fur, therefore it is anticipated that the fur trade will show a marked decrease in volume. This reduced trapping should result in an increase in the number of fur-bearers throughout the Division and a greater volume of fur taken when prices improve.

Fur-farming.

Only a very few fur-farms remain in operation as a result of a slump in prices. This industry is fast becoming a thing of the past, and my previous suggestion of experiments being carried out under the supervision of a Government pathologist to revive this industry should be considered.

Registration of Trap-lines.

Completion of this work is greatly hampered by reason of the fact that accurate maps of the northern portion of the Division are not as yet available, and the matter of straightening out all trap-lines will receive attention as suitable maps are obtainable.

Registration of Guides.

A large number of resident and non-resident hunters now visit this part of the Province, and it is anticipated that their numbers will increase each year. Complaints of activities of unscrupulous guides have reached this office, and this condition will grow worse with the increase in number of hunters.

Special Patrols.

No patrols of a special nature were undertaken last year, but numerous routine patrols were carried out efficiently by Game Wardens and Provincial Police constables throughout the Division.

Hunting Accidents.

I regret to report that several hunting accidents occurred, these being as follows:—

Mrs. Irene Joan West, South Hazelton, B.C., whilst out hunting in the vicinity of Seaton, was fatally wounded on November 27th, 1946, by another hunter, Fred Spitzl. The Coroner's jury returned a verdict "that Mrs. West came to her death from a gunshot wound and we find that this shot was fired from the rifle in the hands of one Fred Spitzl."

Fred G. McDonald, Prince Rupert, B.C., on September 15th, 1946, whilst out hunting, was accidentally shot in the calf of the left leg by a gun in the hands of Otto Quast. Both McDonald and Quast fired at a hawk, when the shell in Quast's gun missed fire. A few minutes later the gun went off, with the result that McDonald was injured. He has fully recovered from the injury.

Harold Wesley, Indian, Prince Rupert, B.C., was accidentally shot in the fleshy part of the shoulder by Philip Sankey whilst picking berries at North Pacific Cannery. Wesley has completely recovered.

Stanley Garbitt, Moberly Lake, B.C., was accidentally shot and instantly killed on May 31st, 1946, at Egg Lake, 20 miles west of Moberly Lake, when his sister, Vivian, aged 10 years, picked up a loaded shotgun which had been laid on the ground by her father, the charge striking the boy in the back. The Coroner ruled that no inquest was necessary and no blame was attached to anyone.

GAME-FISH CULTURE.

Rod and Gun Clubs in the Division were again supplied by the Department with eyed trout eggs, the Prince George Rod and Gun Club receiving 100,000, which resulted in a hatch of approximately 60,000 fish. The low hatch was caused by abnormally warm water in the Nechako River, from which the water-supply is obtained, and approximately half of the fish perished when the C.N.R. power-line failed and it became necessary to run chlorinated water into the hatchery. As a result of this, the club has decided to move its hatchery to a more suitable site, and this will be done before next season.

Bulkley Valley Rod and Gun Club at Smithers received 70,000 eggs. This resulted in a good hatch, and various lakes in the district were again stocked.

Results obtained by the McBride Rod and Gun Club were not so encouraging, as some unknown person tampered with the water-supply, which caused a loss of the hatch.

Before any eggs are supplied to a club in future, the application will be fully investigated to see that adequate provisions have been made to properly handle eggs, otherwise such application will not be recommended.

Sixty thousand kokanee eggs were received by the Prince George Rod and Gun Club, of which 10,000 were planted in West Lake, the remainder being planted in a creek flowing into Tatin Lake, near Endako. Good results from such plantings are anticipated.

SUMMARY AND GENERAL REMARKS.

As a result of an increase in the numbers of both resident and non-resident hunters throughout the Division, it is felt that game animals will show a decrease in numbers during the year. This applies especially to deer, which are becoming very scarce, these animals falling an easy prey to predatory animals when the snow becomes deep.

The grouse population also showed a sharp decline, due to excessive hunting and a most unfavourable nesting period. For this reason a close season on these throughout the entire Division should be considered. During last year, hunting was prohibited in the Prince George area, while the season remained open in other Detachment areas, and this resulted in excessive hunting in districts which were open, and very little was accomplished by such close season.

Game Wardens in " D " Division carried out their duties in a very efficient manner, and I wish to extend my sincere thanks to members of the Provincial Police for their kind co-operation, also to the other departments and the members of the various Rod and Gun Clubs for their kind assistance.

" E " DIVISION (MAINLAND COAST NORTH TO TOBA INLET AND LOWER MAINLAND AS FAR INLAND AS NORTH BEND).

" E " Division comprises the Mainland Coast from Point Roberts to Toba Inlet and as far inland as North Bend. This Division is also supervised from Game Headquarters at Vancouver, and the following are excerpts from reports of Game Wardens and Fishery Officers of the Division:—

BIG GAME.

Deer (Coast or Columbian).—While the Coast deer are fairly plentiful throughout the Division, hunting is becoming more difficult owing to the fact that the logged-off lands that had previously allowed fairly easy hunting have now been almost completely covered with a dense growth of green timber. Throughout the Fraser Valley complaints are continually being received of damage by deer to farmers' crops, and the density of the woods adjacent to these farms makes the problem more difficult.

Wapiti (Elk).—The elk herd at McNab Creek is just about holding its own. The reports indicate that there is considerable poaching owing to the fact that the herd is in such an isolated location.

Fur-bearing Animals.

We have several fairly good registered trap-lines in the Division, but the majority of the fur is taken within the boundaries of municipalities on the Lower Mainland, where the principal fur is the lowly muskrat. The red fox, while considered a fur-bearing animal under the " Game Act," actually is a predator in so far as the Lower Mainland is concerned. This animal is much too numerous in the area and is the cause of severe depredation to the stock of game birds in the district.

Upland Game Birds.

Grouse (Blue).—The southern portion of the Division, with the exception of the areas around Pitt Lake and north of Haney, is not a blue-grouse country. The areas mentioned do produce a fair number of grouse, and they appear to be slightly increasing. The islands in Howe Sound, which in former years provided good blue-grouse hunting, owing to the heavy growth of young timber over the previously logged-off areas, are no longer considered suitable for this kind of sport.

Grouse (Willow).—Willow or ruffed grouse are not plentiful. The number of birds in the Lower Mainland has been very disappointing. Their numbers do not seem to have materially changed in the last three years along the Mainland coast, in spite of the fact that they are very little hunted in the areas provided with an open season.

California Quail.—A few quail are found in the Delta portion of the Division, but not in sufficient numbers to warrant an open season.

Pheasants.—Many factors have a bearing on the stand of pheasants in the Division: the area of the Lower Mainland is becoming so thickly populated, and large farms formerly producing grain are now being broken up into small holdings and producing vegetables or providing pasturage for dairy herds. With the ever-increasing hunting population, poor nesting seasons, and the factors previously mentioned, it is becoming more necessary to rely upon the artificial method of supplying pheasants, and that is by liberating them in areas heavily hunted in order to at least provide some sport for the hunters of the Lower Mainland.

Migratory Game Birds.

Ducks.—As was the case during the previous year, duck-hunting on the Lower Mainland was very disappointing. The same conditions as mentioned in regard to the pheasants apply equally well to our duck population. If we expect to hold ducks in the Lower Mainland with conditions as they are, some further provision must be made for their welfare. More resting or protected areas must be provided, and on those areas food must be available. The experiment of feeding migratory game birds on Government-controlled game reserves where proper protection and food was provided proved to be a successful venture and was no doubt responsible for the retaining of many thousands of ducks in the district throughout the winter. Feeding was conducted long after the season had expired. Some criticism was heard over the system employed in creating these game reserves, and it has been strongly suggested that many more and smaller reserves should be created in the district.

Geese.—With the exception of a few geese at the heads of some of the inlets up the coast, and probably Pitt Lake, the Division does not lend itself to good goose-hunting, with the exception of the lesser snow-goose. These birds are winter residents around the mouth of the Fraser River and number around 7,000. During extremely cold or

rough weather the hunting of snow-geese provides fine sport for the man who has the intestinal fortitude to hunt them.

Black Brant.—The Boundary Bay area provides the main hunting-ground for this very fine game bird, but the district is so small as compared to the numbers eager to hunt them that very drastic regulations are necessary in the hunting of brant in order to provide some sport for as many as possible.

Band-tailed Pigeons.—While an open season on band-tailed pigeons is provided for the latter half of September, the actual number of birds in the area or taken by sportsmen is very small. They appear to be more plentiful during the spring migration.

Predatory Animals.

The chief predatory animal of the Division is the red fox, and some of the Game Wardens keep dogs for the purpose of controlling the numbers in areas where they are most numerous. Red fox are mostly found in that portion of the Lower Mainland south of the Fraser River from Rosedale to Ladner. From reports in the past, it appears that these animals originated from stock liberated in the State of Washington many years ago.

A few cougar are taken each year in the Division, but it cannot be claimed that they are numerous. This could also be said of the coyote. A few animals put in an appearance occasionally, the odd one being observed in the Municipality of West Vancouver.

A SUMMARIZED INTERIM REPORT ON A STUDY OF THE MOOSE OF CENTRAL BRITISH COLUMBIA, 1946.

By James Hatter.

During the seven months' field research on moose in Central British Columbia, observation and investigation were directed along eight primary lines, and considerable information was accumulated. This was embodied into a detailed preliminary report of about 150 typed pages, including illustrations. The cost of reproducing this has made it impossible to have the report prepared in entirety for widespread distribution. Also, inasmuch as the study will continue, the printing or mimeographing of a large interim report at this time is hardly worth while because much of the data will be included in a final report when the study is concluded.

The Problems.

1. Determination of the distribution and seasonal movements of the moose.
2. Present and past numerical status.
3. Food conditions on the winter ranges.
4. Food preferences.
5. Decimating factors (factors responsible for losses).
6. Predation by wolves.
7. Parasites and disease.
8. Effect of recent hunting pressure.

Areas extensively studied.

The main localities extensively covered by the field-study lie within that area west of the North Thompson and Clearwater Rivers to the Fraser River, the Quesnel area, Burns Lake-Ootsa Lake, and portions of the Bulkley Valley.

Distribution of Moose in Central British Columbia.

The 54th parallel may be considered as an approximate frontier in central British Columbia south of which moose were absent, except for possible stragglers, prior to the settlement of British Columbia in the middle of the last century.

The first definite evidence of moose in the Bowron Lake area was the observation of tracks at the mouth of the Upper Swamp River on Long Lake in 1905. In the west, moose were first seen and killed near Francois Lake as early as 1905, and at Ootsa Lake in 1912.

Since then moose have penetrated west as far as Kitimat and Bella Coola and south to Pemberton. Even at Squamish moose have been seen. The most southerly record is 10 miles north of Princeton. Moose have been recorded within recent years at Ideal Lake and at Penask Lake.

Following are sight records marking the first appearance of moose at numerous points south of latitude 54. The later dates for any one locality are probably indicative of the time when moose became sufficiently numerous to be more readily observed in these sparsely settled regions.

Locality.	Year.
Beaver Pass	1912
Horsefly River	1914
Horsefly River	1910
Horsefly	1917
Williams Lake	1923
Murtle River	1916
Lac la Hache	1918–20
Forest Grove	1922–23
Horse Lake	1921
Bridge Lake	1916
Gustafsen Lake	1925
14 miles north of Jesmond	1924
North Bonaparte River	1925
70-Mile House	1922
Port Edward (10 miles east of Prince Rupert)	1944
Kurnitsa (35 miles west of Armsbury)	1945
Ootsa Lake	1912
South of Ootsa Lake	1913
Prince George	1910
Puntchesakut Lake	1916
Riske Creek	1915
Hanceville	1920
Big Creek	1926
Beaver Lake	1912–13
Chilcotin River	1914
East of Lac la Hache	1920–21
Clinton	1921–22
Tranquille	1924
Upper Deadman's Creek	1920
Bonaparte Lake	1926
Loon Lake	1927–28
Loon Lake Mountain	1936
12 miles south-east of Bonaparte Lake	1930
Red Lake	1936
Munro	1945
7 miles east of Kamloops	1946
Nicola Lake	1932
Penask Lake	1933
Ideal Lake (approximately 15 miles east of Okanagan Centre)	1940
10 miles north of Princeton	1945
Barkerville	1906
Cottonwood	1911
Quesnel	1915
Baker Creek valley	1915
Muskeg and Salmon Rivers	1917
Nukko Lake	1910
Vanderhoof	1919
Endako	1920
Francois Lake	1905
Houston	1922
Telkwa	1922–24
Clore River	1931
Kitimat	1940
Williams Lake	1924
North Bonaparte	1910
Deadman's Creek	1920
40 miles north of Pemberton	1929

Numerical Status.

Most persons questioned agreed that moose have increased steadily since their first invasion of Central and Southern British Columbia. Furthermore, reports from widely separated areas, interestingly enough, indicate that they first became noticeably abundant about the same time; namely, 1926.

There are, however, numerous reports of a decrease in the numbers of moose within the past few years. Mr. Eric Collier believes that in his vicinity moose have suffered a very heavy decrease since 1941. Mr. W. J. Sande reports that moose in the McGregor River area have declined fully 75 per cent. in numbers since 1932. Reports of decrease in Northern British Columbia are not unusual. At Lower Post moose are said to have decreased since 1940. In the vicinity of Muskwa, according to Mr. H. Courvoisier, moose have been on the decrease since 1936. At Bowron Lake moose have decreased since about 1932. In the Bonaparte area both Messrs. S. E. Davis and Claude Johnson believe that there has been a decrease in the past two years because too many bulls are killed prior to breeding. Mr. S. Levick, at Fawn, states that in this area moose are now on the decrease. At Jesmond, Mr. H. W. Caldwell reports that moose have decreased in the past two years. In all, 22 per cent. of those commenting on the status of moose indicated a recent decrease in the population.

Annual Migration.

Characteristic winter migrations occur at Ootsa Lake, west of Quesnel, and in the Horsefly area. There is reason to believe that moose may travel as much as 50 or 60 miles from summer to winter range at Ootsa Lake.

Damage to Haystacks and Fences.

Recently moose have become a nuisance in certain agricultural districts, and there are ample reports to demonstrate that they may cause considerable damage to haystacks and fences. However, few persons have taken any trouble to protect their crops from raiding moose. According to the successful results of some farmers, the average 5-foot fence proves no obstacle to a moose. A 7- or 8-foot fence, constructed of heavy timbers, is necessary in areas receiving little snowfall. Whether the fence be of the A-frame type or merely a snake fence, the timbers must be of sufficient thickness to withstand the impact of a moose. In the A-frame fence the diameter of the poles will depend upon the distance between supports and may vary from 4 to 8 inches at the middle point. A fence built close to the stack will prove more successful than one leaving a space inside. Also, if two heavy rails be placed atop both of the A-frame posts, it may not be necessary to build the fence so high. In areas receiving a heavy snowfall, the height of the fence must be increased a proportionate amount because trampling will pack down the snow to form a platform that will reduce the effective height of the fence a corresponding amount.

Ranchers should keep their line fences free from growing vegetation because moose may unknowingly run into such camouflaged fences. It is recommended that where moose break down line fences, a heavy rail be placed on top of the posts to serve as a reinforcement and also to make the fence more apparent.

Winter-range Depletion.

Evidence of overbrowsing was manifest in all areas wintering large numbers of moose. This may be an indication of widespread impending food shortages over large areas within the Province.

Range depletion was most evident at Ootsa Lake and in the area west of Quesnel. However, even at Bridge Lake there is good reason to believe that the wintering moose

population is too great for the carrying capacity of the winter range. Other signs of overuse were noted at Fawn, Ten Mile Lake north of Quesnel, in the Beaver Valley near Horsefly, and at Quick in the Bulkley Valley.

List of the More Palatable Food Plants.

Heavy browsing upon these species will indicate a capacity population or over-abundance: Red osier dogwood (*Cornus stolonifera*), paper birch (*Betula papyrifera*), upland willow (*Salix sp.*), trembling poplar or aspen (*Populus tremuloides*), mountain ash (*Pyrus sitchensis*), bog birch (*Betula glandulosa*), saskatoon (*Amelanchier florida*), lowland fir (*Abies grandis*), high-bush cranberry (*Vibernum pauciflorum*), false box (*Pachystima myrsinites*), maple (*Acer douglasii*), horsetail (*Equisetum sp.*), sedge (*Carex sp.*), yellow pond lily (*Nymphæa polysepala*).

The Problem of Forest Succession.

During the past fifty years much of Interior British Columbia was burned over. This resulted in a temporary abundance of winter food plants such as upland willows, birch, poplar, etc.; but gradually jack-pine forests are becoming dominant on the old burns, with the result that the good food plants, high in light requirements, cannot tolerate these thick forests. Therefore, reproduction of browse is at a standstill, except in the more recent burns.

There is need for multiple land use in British Columbia which would involve the setting-aside of selected areas of moose winter range and the manipulation of these areas to maintain a lasting food-supply. The only practical method of increasing browse on the winter range is by controlled burning of small selected areas. Such burning should be undertaken only with the co-operation of the Forestry Department, as indiscriminate burning may prove highly dangerous and detrimental to the wild life in the area.

Some of the most successful moose guides in the Interior are those persons who hunt over or in proximity to burns situated in favourable wintering areas. This is not because moose are easier to see there, but because recent burns attract them due to the abundance of nutritious browse.

Parasites and Disease.

The winter tick (*Dermacentor albipictus*) appears to be the most serious parasite of British Columbia moose. Several persons have reported finding dead moose heavily infested with ticks. Heavy infestations are occurring west of the Fraser River, at Loon Lake, Savona, and in portions of the North Thompson area.

Food shortages on preferred winter range may prove to be an important factor in forcing moose into tick-infested areas, as well as in reducing their ability to withstand the infestations of this parasite.

Three internal parasites were discovered for the first time in the Interior moose. These are the tapeworm (*Moneizia*), the hydatid cyst of *Echinococcus granulosus*, and the leg-worm *Onchocerca cervipedis*. Echinococcus, which is a human parasite also, was found at Ootsa Lake. Wolves are the alternate host. There is no reason at present to assume that internal parasites, with the possible exception of echinococcus, are affecting the welfare of moose.

Diseases.

Mr. Eric Collier has described a condition which seems to indicate a disease of the respiratory system of moose. Similar symptoms are reported from Bowron Lake, Lower Post, and Gold Bar. The colloquial name for the disease is T.B. or "rotten lungs." It is hoped that persons reporting on disease in the future will save specimens

of the tissue, preserved in formaldehyde. The writer will supply this to anyone interested.

Several persons have reported moose dead from unknown causes.

Other Decimating Factors.

In the northern districts, annually an unknown number of moose lose their lives by breaking through the ice on lakes. This is especially so where lakes and river-courses block annual migrations from winter to summer range.

Few bull moose appear to die from antler-locking or from injuries inflicted while fighting. Only one case of a broken leg came to the writer's attention.

Bog-holes cause the death of moose in some localities. Near Puntchesakut Lake, for instance, there are some bog-holes in which quite a large number of moose have become mired in the past eight years.

Crippling by hunters has been quite evident according to reports. Twenty-four per cent. of the persons replying to the moose questionnaire attributed a number of the moose carcasses found in the woods to crippling by hunters. Particularly was this the case in the heavily hunted sections of the Cariboo. The lack of sporting ammunition and the use of full metal-cased bullets during the war years probably increased the crippling losses.

Wolf Predation.

There is a wide-scale agitation for increased bounties on wolves. This, however, is largely because predation appears to be the obvious and simplest explanation for losses among big game. Persons who so advocate intensified predator-control by the bounty system do not realize that this system has failed all over North America. Furthermore, the demonstrated need for predator-removal is quite local in British Columbia. Wolf predation on moose has been overrated, and in some areas where predation is apparent, the moose population is too large for the carrying capacity of the winter range. Not one person could present any data by which wolf predation on moose could be intelligently appraised. A detailed account of a predator kill should include:—

(1) Age and sex of the prey.
(2) Depth of snow, and whether crusted.
(3) Abundance of palatable food in the area inhabited by the prey.
(4) Population density of the prey and abundance of the predator.
(5) Systematic autopsy of the prey and a knowledge of what to look for and ability to interpret this.
(6) Identification of parasites and pathologies noted.

Approximately 80 per cent. of the wolf bounties in the past four years have been paid to areas north of latitude 54. Predator-control in the ranching districts should be carried on by trained predator hunters, for this would ensure the capture of those individual predators of particular menace in the locality.

Hunting Pressure.

Preliminary data from one open season is hardly adequate to prove what effect the recent heavy hunting is having upon the moose herds in the Cariboo. In 1946, 1,234 moose were checked at Cache Creek. Statistical data collected at this checking-station would seem to indicate that over-shooting in certain areas is rapidly removing the older mature bulls and that the non-breeding and young adult age-groups remain to receive the brunt of the shooting. Excessive slaughter of young bulls will seriously impair the quality of the future herds. Twenty-five per cent. of the moose killed in the Bonaparte area in 1946 were yearlings. A large percentage of the remaining kills were young animals in their third and fourth years. Large heads are becoming scarce in the Bonaparte area.

THE 1946 MOOSE KILL IN CENTRAL BRITISH COLUMBIA CLASSIFIED ACCORDING TO ANTLER SPREAD.

(Based on 620 specimens measured at Cache Creek.)

Area 1.

Inches.	Number.	Per Cent.
24.5 and less (yearlings)	63	25.7
25–29.5	64	26.1
30–34.5	49	20.0
35–39.5	25	10.2
40–44.5	21	8.5
45–56	23	9.4
Total	245	

Area 2.

Inches.	Number.	Per Cent.
24.5 and less (yearlings)	17	34.0
25–29.5	9	18.0
30–34.5	11	22.0
35–39.5	4	8.0
40–44.5	5	10.0
45–50	4	8.0
Total	50	

Area 3.

24.5 and less (yearlings)	----	------
25–29.5	21	15.0
30–34.5	28	20.2
35–39.5	51	36.7
40–44.5	22	15.8
45–49.5	11	7.9
50–55.5	6	4.3
Total	139	

Area 4.

24.5 and less (yearlings)	12	14.4
25–29.5	9	10.8
30–34.5	21	25.3
35–39.5	17	20.5
40–44.5	14	16.8
45–49.5	6	7.2
50–56.5	4	4.8
Total	83	

Area 5.

24.5 and less (yearlings)	4	5.6
25–29.5	12	16.9
30–34.5	18	16.9
35–39.5	14	19.7
40–44.5	9	12.7
45–49.5	11	15.5
50–52	3	4.2
Total	71	

Area 6.

24.5 and less (yearlings)	----	------
25–29.5	----	------
30–34.5	3	21.4
35–39.5	2	14.3
40–44.5	5	35.7
45–49.5	3	21.4
50–50.5	1	7.2
Total	14	

Area 7.

24.5–34.5	----	------
35–39.5	3	75.0
50.5	1	25.0
Total	4	

Area 8.

24.5 and less (yearlings)	2	14.3
25–29.5	1	7.2
30–34.5	1	7.2
35–39.5	5	35.7
40–51.5	5	35.7
Total	14	

Description of Areas.

Area 1.—Bridge Lake, Eagan Lake, Clinton, 100-Mile House, 70-Mile House, Green Lake, Young's Lake, Bonaparte Lake, Loon Lake, Hihium Lake, Criss Creek, Vidette, Deadmans Creek, Roe Lake, Deka Lake, Fawn, Horse Lake.

Area 2.—Canim Lake, Forest Grove, Lac la Hache, Timothy Lake, Buffalo Creek.

Area 3.—Quesnel Lake, Horsefly Lake, Horsefly, 150-Mile House, Ochiltree, Miocene, Williams Lake, Meldrum Creek, Soda Creek, McLeese Lake, Macalister, Hydraulic, Likely, Keithley Creek, Beaver Valley, Murphy Lake.

Area 4.—Quesnel, Alexandria, Narcosli Creek, Baker Creek, Cottonwood, Quesnel River, Wingdam, Cinema, Moose Heights, Strathnaver, Hixon, Punchaw, Nazko, Kersley, Australian, Ahbau Creek.

Area 5.—Big Bar Creek, Jesmond, Chilcotin River, Gang Ranch, Riske Creek, Big Creek, Hanceville, Alexis Creek, Springhouse.

Area 6.—Taseko Lake, Chilko Lake, Tatlayoko Lake, Kleena Kleene, Charlotte Lake, Atnarko River, Anahim Lake, Chezacut, Chilko River, Eagle Lake, Tatla Lake.

Area 7.—Clearwater River, Murtle Lake, Azure Lake, Blue River, McMurphy, Little Fort, Vavenby, Barriere, Mahood Lake, Clearwater Lake, Wells Gray Park.

Area 8.—Prince George, Fraser River east of Prince George, Nechako, Drainage, Bulkley Valley, and all British Columbia north of this line.

Norway, a country one-third the area of British Columbia, has produced 1,024.4 moose per year for forty-one years between 1889 and 1930, or a total of 43,026. Cow moose are legitimate game there, and since 1889, 19,711 females have been killed as against 23,315 bulls. In this way the Norwegians appear to have kept the sexes balanced and the productivity up.

Some General Life-history Observations.

Shedding of Antlers.

Reports indicate that of recent years bull moose have shed their antlers earlier. However, increased numbers of this animal in Central British Columbia have made people more aware of its habits than was the case years ago.

Breeding Season.

Much still remains to be learned about the factors which govern the onset of breeding and about the habits of both sexes at this time. No one has yet demonstrated just how polygamous moose are. A knowledge of this, however, is very important because productivity is probably related to the proportion of mature bulls to mature cows. If the sex ratio becomes overbalanced in favour of the females, a condition may arise where too few bulls are present to breed all the cows. If all the fertile cows are not bred, then there remains a residual population that is adding nothing to the future of the herd. This residuum of cows, nevertheless, consumes winter browse which is often very limited in amount.

Julius Quanstrom first heard moose (sex unknown) calling on September 4th. Johnny Hansen, at Bridge Lake, states that moose may begin the rut as early as the 10th or 11th of September. Wilfred Armstrong, of Quesnel, places the commencement of the breeding season between the 12th and 15th of September. Fred Tibbles, of Quesnel, also marks the date at about September 15th. Hansen saw the first moose-wallows at Bridge Lake on September 12th, and according to him the rut was over by October 12th.

Obviously the early season of the past few years has caused the removal of many bulls prior to breeding. However, since it would be unwise to permit any further increase in the moose herds, the effect of such hunting is not deemed serious. But there is the possibility that the sex ratio in the heavily hunted areas has been set

off-balance and some of the cows are not being bred. These animals, as stated before, may be depleting the winter range and furnishing nothing in return.

Average Antler Spreads for 1946.

	Inches.		Inches.
Area 1	31.2	Area 5	36.2
Area 2	30.5	Area 6	40.1
Area 3	34.4	Area 7	39.2
Area 4	34.9	Area 8	38.2

Sex and Age Ratios obtained in 1946.

Area.	No. of Moose Recorded (Duplication present).	Percentage of Males of all Animals over 12 Months.	Percentage of Females of all Animals over 12 Months.	Percentage of Calves of all Females over 12 Months.
1. Bonaparte Drainage	1,358	22.1	77.9	33.0
2 and 3. Horsefly and Lac la Hache	358	22.4	77.6	30.2
Ootsa Lake, Burns Lake, and vicinity	301	38.6	61.4	60.0
Guides' record (whole Interior)	.....	34.9	64.9	45.6
Cache Creek hunters' record (whole Interior)	725	33.5	66.5	34.4
Jasper National Park (no hunting)	119	43.7	56.3	19.4

Proposed Future Studies.

It is deemed advisable to mention the problems requiring attention as the moose-study is projected into the future. Persons interested in this research will therefore have some idea as to the purpose of such a study, and also perhaps be more likely to contribute facts that will assist in the possible solution of some of the problems.

Certain important phases of suggested future research are presented in outline form as follows:—

1. Extensive reconnaissance of certain wintering areas not covered in the preliminary study.

(*a*) Winter range in the Pemberton area.
(*b*) Examination of winter range in certain areas west of the Fraser River in the Chilcotin District.
(*c*) Winter range in the Clearwater River area.
(*d*) Winter range in the vicinity of Canim Lake.
(*e*) Additional range-studies in the Blackwater area.
(*f*) Condition of winter and summer browse in the vicinity of the Bowron Lake Game Reserve.
(*g*) Range reconnaissance in the Salmon River area.
(*h*) Additional range-studies at Ootsa Lake.
(*i*) Winter range in the vicinity of Germansen Landing.
(*j*) Winter range east of Prince George in the vicinity of Hansard.
(*k*) Some information on the winter ranges near Telegraph Creek.

Purpose of the above winter-range studies:—

(1) To determine whether these important and widely separated ranges have been overbrowsed by moose. This will indicate the general extent of overbrowsing as studied in certain areas in 1946.
(2) Possible reasons for the rapid extension of the moose range during the past forty years into the central and southern portions of the Province.
(3) Effect of normal forest succession on palatable winter browse.

(4) To determine if wolf predation is correlated with food shortages on overbrowsed winter range.

(5) Parasitism and disease as related to winter-food scarcity.

2. More information on the present and past numerical status of moose in the above-mentioned areas. Confirmation of reported population decreases within recent years.

Purpose: That the moose population trends be more positively understood.

3. Additional information on food habits of moose.

Purpose: Additional data to account for presence and absence of moose in various areas and possibilities for maintaining the moose herds in balance with the available foods. Recognition of key browse plants or indicators of overbrowsing.

4. Predator coactions, with emphasis on the wolf. Intensive winter studies in an area supporting an abundance of moose and where wolf predation is in evidence.

Purpose: To contribute knowledge on the subject of predation. The practical application of this is in the need for predator-control under various environmental circumstances.

5. Disease and parasitism in moose. The nature of these and of the contributing factors.

Purpose: A better understanding of the possible causes, such as food, predators, climatic conditions, and population density.

6. Additional data on hunting pressure to serve as a check on that presented in the present preliminary report.

Purpose: To positively determine what extent the more accessible moose herds will tolerate heavy hunting without definite evidence of abnormal ratios and low productivity. Comparison of sex and age classes in relation to hunting pressure. Ultimate application in the harvesting of moose on a sustained basis.

7. General life-history data, such as:—

(1) Breeding habits.
(2) Intra-specific intolerance.
(3) Antler characteristics and growth.
(4) Seasonal movements and traditional behaviour in annual migrations.
(5) Habitat preferences.
(6) Home range.
(7) Parental care and behaviour of cow with calf.
(8) Orphaned calves.
(9) Fighting.
(10) Senses.
(11) Injuries.

Purpose: To acquire basic facts relating to life-history and ecology of the British Columbia moose.

Ultimate purpose of the moose-study:—

(1) A contribution to knowledge.
(2) Factual basis for management and conservation of moose in British Columbia.

Information on moose from any source in British Columbia will be gratefully received by the writer. He may be contacted through the Department of Zoology, University of British Columbia, Vancouver, B.C.

STATISTICAL STATEMENTS.

COMPARATIVE STATISTICS, 1913–46, INCLUSIVE.

Calendar Year.	Prosecutions.					Revenue derived from Sale of Game Licences and Fees.	Revenue derived from Fur Trade.
	Informations laid.	Convictions.	Cases dismissed.	Firearms confiscated.	Fines imposed.		
1913	188	181	7	.....	$4,417.50	$109,600.80	.....
1914	294	273	21	.....	5,050.00	92,034.20	.....
1915	279	258	21	.....	4,097.50	72,974.25	.....
1916	127	110	17	.....	2,050.00	66,186.97	.....
1917	111	97	14	.....	1,763.50	65,487.50	.....
1918	194	167	17	5	3,341.00	75,537.00	.....
1919	267	242	25	36	6,024.50	116,135.00	.....
1920	293	266	27	46	6,073.00	132,296.50	$5,291.39
1921	329	312	17	74	6,455.00	114,842.00	24,595.80
1922	359	317	42	44	7,275.00	127,111.50	51,093.89
1923	309	280	29	24	5,676.50	121,639.50	60,594.18
1924	317	283	34	24	4,758.00	125,505.50	56,356.68
1925	296	279	17	43	5,825.00	123,950.50	56,287.78
1926	483	439	44	39	7,454.00	135,843.50	62,535.13
1927	518	469	49	47	10,480.50	139,814.00	71,324.96
1928	439	406	33	29	7,283.50	140,014.75	58,823.07
1929	602	569	33	54	9,008.00	142,028.22	47,329.89
1930	678	636	32	33	9,572.75	147,660.00	45,161.11
1931	676	625	51	40	8,645.00	137,233.31	46,091.08
1932	538	497	41	37	5,493.50	141,269.55	40,363.79
1933	498	474	24	22	3,531.00	135,876.94	44,167.48
1934	477	454	23	4	5,227.82	149,955.11	47,102.81
1935	454	438	16	19	4,399.50	148,689.64	49,831.95
1936	451	436	15	14	3,965.00	157,647.30	52,196.50
1937	585	552	33	20	5,332.50	177,771.33	53,697.48
1938	613	574	39	42	5,729.50	192,024.07	44,963.87
1939	547	526	21	21	4,776.50	193,170.53	49,187.00
1940	440	419	21	18	5,197.00	188,605.20	68,466.33
1941	446	430	16	9	4,977.50	213,267.67	63,125.30
1942	409	392	17	27	5,079.50	205,451.71	68,475.07
1943	356	342	14	18	5,554.50	207,661.72	58,354.03
1944	379	372	7	8	5,570.50	238,902.36	70,363.23
1945	652	632	20	30	8,381.50	352,228.85	104,250.95
1946	819	798	21	39	10,921.00	502,555.25	107,357.72
Totals	14,423	13,545	842	866	$199,387.07	$5,390,972.23	$1,507,388.47

SUMMARY OF TOTAL REVENUE DERIVED FROM SALE OF VARIOUS LICENCES, COLLECTIONS, ETC., JANUARY 1ST TO DECEMBER 31ST, 1946.

Revenue derived from—	Total.
Sale of resident firearms licences and deer-tags	$229,743.24
Sale of resident anglers', guides', free farmers', and prospectors' firearms licences	48,566.00
Sale of non-resident firearms and anglers' licences and outfitters' licences	145,621.00
Sale of non-resident ordinary firearms and anglers' (minors) licences	959.00
Sale of fur-traders', taxidermists', and tanners' licences, and royalty on fur	107,357.72
Sale of confiscated and surrendered fur	1,932.30
Sale of confiscated firearms	58.50
Collection of big-game trophy fees from non-residents	74,520.00
Sale of lists of various licence-holders (miscellaneous)	1,155.20
Total	$609,912.97

STATEMENT OF RESIDENT FIREARMS LICENCES AND DEER-TAGS, JANUARY 1ST TO DECEMBER 31ST, 1946.

Government Agency.	O.F.L.		G.F.L.		Extra G.F.L.		S.F.L.		Extra S.F.L.		Duplicates.		Game-tags.		Farmers' O.F.L.		Total.
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No	Amount.	No.	Amount.	
Alberni	1,386	$4,158.00	22	$96.00	3	$36.00	75	$738.00			8	$3.25	1,997	$499.25	31	$62.00	$5,592.50
Ashcroft	203	609.00	44	261.00			2	20.00			1	.50	165	41.25	25	50.00	981.75
Atlin	17	51.00	4	24.00			24	240.00	3	$7.50							322.50
Clinton	275	825.00	252	1,427.00	4	48.00	167	1,593.00			8	4.00	558	139.50	37	74.00	4,110.50
Cranbrook	855	2,565.00	611	3,520.00	4	48.00	49	460.00			13	5.75	2,338	584.50	39	78.00	7,261.25
Creston	401	1,203.00	107	602.00	2	24.00	23	230.00			4	2.00	924	231.00	339	678.00	2,970.00
Cumberland	2,533	7,599.00	10	57.00	10	120.00	163	1,602.00	67	167.50	21	9.50	4,277	1,069.25	52	104.00	10,728.25
Duncan	1,555	4,665.00	27	141.00	1	12.00	31	280.00			15	7.00	2,086	521.50	68	136.00	5,762.50
Fernie	479	1,437.00	267	1,575.00	1	12.00	72	687.00			13	5.25	1,210	302.50	20	40.00	4,058.75
Fort Fraser	218	654.00	195	1,134.00	2	24.00	249	2,336.00	44	110.00	3	1.50	226	56.50	136	272.00	4,588.00
Golden	125	375.00	230	1,360.00	2	24.00	72	714.00			2	1.00	604	151.00	25	50.00	2,675.00
Grand Forks	235	705.00	4	24.00	1	12.00	36	358.00					326	81.50	113	226.00	1,406.50
Greenwood	169	507.00	1	6.00	1	12.00							285	71.25	65	130.00	726.25
Kamloops	1,520	4,559.00	389	2,149.00	5	60.00	205	1,952.00			21	9.25	2,428	607.00	363	726.00	10,062.25
Kaslo	95	285.00	36	216.00	2	24.00	6	60.00			1	.50	152	38.00	5	10.00	633.50
Kelowna	1,293	3,879.00	148	792.00	2	24.00	28	275.00			16	7.75	1,808	452.00	290	580.00	6,009.75
Lillooet	280	840.00	64	369.00			43	427.00					420	105.00	32	64.00	1,805.00
Merritt	282	846.00	22	118.00			39	378.00	2	5.00	5	1.75	216	54.00	61	122.00	1,524.75
Nanaimo	2,129	6,387.00	35	186.00	6	72.00	34	328.00			19	9.25	3,393	848.25	162	324.00	8,154.50
Nelson	870	2,610.00	93	530.00	5	60.00	163	1,603.00			10	3.50	1,019	254.75	83	166.00	5,227.25
New Denver	200	600.00	30	180.00			9	90.00			2	.75	154	38.50	53	106.00	1,015.25
New Westminster	5,622	16,862.00	878	4,981.00	7	84.00	268	2,499.00			36	16.75	4,858	1,214.50	1,860	3,720.00	29,377.25
Oliver	309	927.00	38	206.00			2	18.00			6	3.00	800	200.00	282	564.00	1,918.00
Penticton	1,342	4,026.00	152	811.00	2	24.00	31	289.00			13	6.25	1,968	492.00	471	942.00	6,590.25
Pouce Coupe	415	1,245.00	480	2,815.00	13	156.00	421	4,145.00	47	117.50			791	197.75	207	414.00	9,090.25
Powell River	447	1,341.00	38	216.00	1	12.00	35	347.00			2	1.00	348	87.00	2	4.00	2,008.00
Prince George	457	1,371.00	561	3,294.00	8	96.00	318	3,070.00	5	12.50	8	4.00	691	172.75	81	162.00	8,182.25
Prince Rupert	882	2,646.00	209	1,197.00	5	60.00	275	2,700.00	38	95.00	3	1.50	1,125	281.25	6	12.00	6,992.75
Princeton	473	1,419.00	70	371.00	5	60.00	33	302.00			9	4.25	784	196.00	56	112.00	2,464.25
Quesnel	248	744.00	240	1,355.00	1	12.00	121	1,166.00	4	10.00	2	1.00	603	150.75	96	192.00	3,630.75
Revelstoke	211	633.00	88	501.00	1	12.00	53	530.00			3	1.00	175	43.75	8	16.00	1,736.75
Rossland	687	2,061.00	50	249.00	1	12.00	4	40.00			2	1.00	761	190.25	3	6.00	2,559.25
Salmon Arm	535	1,603.00	74	394.00	1	12.00	65	629.00			14	6.75	862	215.50	370	740.00	3,600.25
Smithers	202	606.00	162	943.00			100	958.00	131	327.50	2	1.00	194	48.50	43	86.00	2,970.00
Telegraph Creek	20	60.00	21	126.00			69	684.00	43	107.50							977.50
Vancouver	8,265	24,791.00	754	4,358.00	34	408.00	215	2,085.00	2	5.00	71	31.75	5,826	1,456.50	181	362.00	33,497.25
Vernon	1,664	4,992.00	155	952.00			62	577.00			24	10.75	2,072	518.00	584	1,168.00	8,217.75
Victoria	3,868	11,604.00	40	210.00	8	96.00	62	567.00			26	12.75	4,589	1,147.25	173	346.00	13,983.00
Williams Lake	268	804.00	209	1,177.00	4	48.00	260	2,429.00			3	1.50	727	181.75	107	214.00	4,855.25
Windermere	92	276.00	165	981.00	3	36.00	41	405.00			2	.50	464	116.00	9	18.00	1,832.50
Totals	41,127	$123,370.00	6,975	$39,904.00	145	$1,740.00	3,925	$37,811.00	386	$965.00	388	$177.25	52,224	$13,056.00	6,538	$13,076.00	$230,099.25
Less refunds																	356.00
																	$229,743.25

Revenue derived from Sale of Resident Anglers', Guides', Free Farmers', and Prospectors' Firearms Licences, January 1st to December 31st, 1946.

Government Agency.	Anglers.		Guides.		Free Farmers.	Prospectors.		Total.
	No.	Amount.	No.	Amount.	No.	No.	Amount.	
Alberni	1,026	$1,026.00	.....	.....	18	4	$2.00	$1,028.00
Ashcroft	241	241.00	.....	.....	8	11	.....	241.00
Atlin	.....	.....	2	$15.00	.....	4	.....	15.00
Clinton	555	555.00	186	1,050.00	13	10	.....	1,605.00
Cranbrook	1,591	1,591.00	18	125.00	26	26	.....	1,716.00
Creston	514	514.00	.....	.....	6	1	.....	514.00
Cumberland	1,809	1,809.00	5	25.00	42	3	.....	1,834.00
Duncan	1,057	1,057.00	10	42.00	76	3	.....	1,099.00
Fernie	854	854.00	37	245.00	6	.....	.....	1,099.00
Fort Fraser	.....	.....	52	285.00	23	28	1.00	286.00
Golden	200	200.00	45	271.00	21	8	.....	471.00
Grand Forks	297	297.00	35	175.00	11	8	.....	472.00
Greenwood	207	207.00	.....	.....	20	14	.....	207.00
Kamloops	2,263	2,263.00	110	618.00	94	23	3.00	2,884.00
Kaslo	234	234.00	.....	.....	10	17	.....	234.00
Kelowna	1,770	1,770.00	5	23.00	35	4	.....	1,793.00
Lillooet	244	244.00	19	100.00	11	82	1.00	345.00
Merritt	440	440.00	.....	.....	12	7	.....	440.00
Nanaimo	1,787	1,787.00	.....	.....	21	2	.....	1,787.00
Nelson	2,309	2,309.00	14	75.00	51	35	1.00	2,385.00
New Denver	417	417.00	.....	.....	8	6	.....	417.00
New Westminster	6,789	6,789.00	.....	.....	167	20	2.00	6,791.00
Oliver	374	374.00	.....	.....	14	1	.....	374.00
Penticton	1,751	1,751.00	9	53.00	9	8	.....	1,804.00
Pouce Coupe	.....	.....	61	395.00	40	25	1.00	396.00
Powell River	707	707.00	.....	.....	12	4	.....	707.00
Prince George	1	1.00	38	253.00	43	48	5.00	259.00
Prince Rupert	3	3.00	12	90.00	12	17	.....	93.00
Princeton	844	844.00	19	100.00	.....	61	.....	944.00
Quesnel	14	14.00	44	320.00	49	82	1.00	335.00
Revelstoke	350	350.00	9	80.00	8	11	.....	430.00
Rossland	1,484	1,484.00	.....	.....	2	20	.....	1,484.00
Salmon Arm	932	932.00	12	75.00	70	7	.....	1,007.00
Smithers	.....	.....	6	28.00	34	8	.....	28.00
Telegraph Creek	.....	.....	14	95.00	.....	9	.....	95.00
Vancouver	7,119	7,119.00	26	173.00	38	165	4.00	7,296.00
Vernon	1,723	1,723.00	2	10.00	149	19	.....	1,733.00
Victoria	2,321	2,321.00	5	17.00	133	15	.....	2,338.00
Williams Lake	111	111.00	148	800.00	30	45	2.00	913.00
Windermere	311	311.00	58	356.00	7	.....	.....	667.00
Totals	42,649	$42,649.00	1,001	$5,894.00	1,329	861	$23.00	$48,566.00

Revenue derived from Sale of Non-resident Firearms and Anglers' Licences and Outfitters' Licences, January 1st to December 31st, 1946.

Government Agency.	General Firearms and Anglers' Licences.		General Firearms and Anglers' Licences (Alternative).		General Firearms and Anglers' Licences (Special).		Anglers' Licences.		Outfitters' Licences.		Total.
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	
Alberni	1	$25.00	.....	.....	.....	.....	37	$207.50	.....	.....	$232.50
Ashcroft	.....	.....	.....	.....	.....	.....	37	241.50	.....	.....	241.50
Atlin	4	100.00	.....	.....	.....	.....	5	35.00	.....	.....	135.00
Clinton	39	968.00	.....	.....	.....	.....	163	1,102.50	.....	.....	2,070.50
Cranbrook	127	3,105.00	.....	.....	8	$120.00	211	1,179.50	.....	.....	4,404.50
Creston	68	1,700.00	.....	.....	.....	.....	309	1,939.00	.....	.....	3,639.00
Cumberland	18	443.00	.....	.....	1	15.00	222	1,470.00	.....	.....	1,928.00
Duncan	.....	.....	.....	.....	.....	.....	43	295.00	.....	.....	295.00
Fernie	103	2,568.00	.....	.....	8	120.00	571	1,872.50	.....	.....	4,560.50
Fort Fraser	9	225.00	.....	.....	1	15.00	18	119.00	.....	.....	359.00
Golden	76	1,900.00	.....	.....	2	30.00	125	591.50	.....	.....	2,521.50
Grand Forks	5	125.00	.....	.....	.....	.....	157	1,081.00	.....	.....	1,206.00
Greenwood	8	193.00	.....	.....	.....	.....	54	378.00	.....	.....	571.00
Kamloops	58	1,415.00	.....	.....	1	15.00	324	2,075.50	.....	.....	3,505.50
Kaslo	6	150.00	.....	.....	.....	.....	126	833.00	.....	.....	983.00
Kelowna	22	515.00	.....	.....	3	45.00	1,309	9,065.00	.....	.....	9,625.00
Lillooet	2	50.00	.....	.....	.....	.....	14	94.50	.....	.....	144.50
Merritt	3	75.00	.....	.....	.....	.....	63	434.00	.....	.....	509.00
Nanaimo	18	450.00	2	$100.00	.....	.....	134	875.00	.....	.....	1,425.00
Nelson	13	311.00	.....	.....	1	15.00	330	1,967.00	.....	.....	2,293.00
New Denver	1	25.00	.....	.....	.....	.....	25	176.00	.....	.....	201.00
New Westminster	1,561	38,842.50	2	75.00	.....	.....	4,551	30,996.00	.....	.....	69,913.50
Oliver	214	5,350.00	1	50.00	.....	.....	574	4,018.00	.....	.....	9,418.00
Penticton	57	1,425.00	.....	.....	.....	.....	285	1,914.50	.....	.....	3,339.50
Pouce Coupe	59	1,550.00	.....	.....	10	150.00	64	255.50	4	$200.00	2,155.50
Powell River	1	25.00	.....	.....	.....	.....	11	73.50	.....	.....	98.50
Prince George	30	750.00	.....	.....	7	105.00	21	140.00	1	50.00	1,045.00
Prince Rupert	12	300.00	.....	.....	.....	.....	21	147.00	.....	.....	447.00
Princeton	12	300.00	.....	.....	.....	.....	50	337.00	.....	.....	637.00
Quesnel	15	368.00	.....	.....	.....	.....	32	213.50	.....	.....	581.50
Revelstoke	7	175.00	.....	.....	.....	.....	53	322.00	.....	.....	497.00
Rossland	2	50.00	.....	.....	.....	.....	139	973.00	.....	.....	1,023.00
Salmon Arm	6	143.00	.....	.....	.....	.....	284	1,856.50	.....	.....	1,999.50
Smithers	3	75.00	.....	.....	.....	.....	4	28.00	.....	.....	103.00
Telegraph Creek	13	325.00	.....	.....	.....	.....	.....	.....	.....	.....	325.00
Vancouver	257	6,411.00	1	25.00	1	15.00	334	2,189.00	2	100.00	8,740.00
Vernon	11	254.00	2	100.00	2	30.00	191	1,228.50	.....	.....	1,612.50
Victoria	19	475.00	.....	.....	.....	.....	156	997.50	.....	.....	1,472.50
Williams Lake	13	325.00	.....	.....	1	15.00	18	119.00	.....	.....	459.00
Windermere	36	900.00	.....	.....	.....	.....	161	633.50	1	50.00	1,583.50
Totals	2,909	$72,386.50	8	$350.00	46	$690.00	11,226	$72,474.00	8	$400.00	$146,300.50
										Less refunds	679.50
											$145,621.00

Statement of Non-resident Ordinary Firearms and Anglers' (Minors) Licences, January 1st to December 31st, 1946.

Government Agency.	Non-resident Ordinary Firearms Licences.		Anglers' Licences (Minors).		Total.
	No.	Amount.	No.	Amount.	
Alberni	....	.....	1	$1.00	$1.00
Ashcroft	....	.....	3	3.00	3.00
Clinton	....	.....	25	25.00	25.00
Cranbrook	1	$3.00	4	4.00	7.00
Cumberland	....	.....	21	21.00	21.00
Creston	....	.....	24	24.00	24.00
Fernie	2	6.00	16	16.00	22.00
Fort Fraser	1	3.00	1	1.00	4.00
Golden	....	.....	20	20.00	20.00
Grand Forks	....	.....	12	12.00	12.00
Kamloops	3	9.00	32	32.00	41.00
Kaslo	....	.....	5	5.00	5.00
Kelowna	1	3.00	139	139.00	142.00
Merritt	....	.....	6	6.00	6.00
Nanaimo	1	3.00	17	17.00	20.00
Nelson	1	3.00	24	24.00	27.00
New Denver	....	.....	2	2.00	2.00
New Westminster	....	.....	361	361.00	361.00
Oliver	....	.....	36	36.00	36.00
Penticton	....	.....	19	19.00	19.00
Pouce Coupe	2	6.00	.....	.....	6.00
Powell River	....	.....	1	1.00	1.00
Prince George	....	.....	1	1.00	1.00
Quesnel	....	.....	5	5.00	5.00
Revelstoke	....	.....	4	4.00	4.00
Rossland	....	.....	12	12.00	12.00
Salmon Arm	....	.....	28	28.00	28.00
Vancouver	6	18.00	40	40.00	58.00
Vernon	4	12.00	14	14.00	26.00
Victoria	....	.....	6	6.00	6.00
Windermere	1	3.00	11	11.00	14.00
Totals	23	$69.00	890	$890.00	$959.00

REVENUE DERIVED FROM SALE OF FUR TRADERS', TAXIDERMISTS', AND TANNERS' LICENCES AND ROYALTY ON FUR, JANUARY 1ST TO DECEMBER 31ST, 1946.

Government Agency.	Resident Fur-traders' Licences.		Resident Fur-traders' Licences (Transient).		Agent for Non-resident Fur-traders' Licences.		Royalty or Tax on Furs.		Taxidermists' or Tanners' Licences.		Total.
	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	No.	Amount.	
Atlin	3	$75.00					47	$656.13			$731.13
Clinton	5	125.00	2	$200.00			1	25.00			350.00
Cranbrook			1	100.00			7	39.50	1	$2.00	141.50
Creston							3	8.27			8.27
Cumberland							1	15.60			15.60
Duncan							1	54.25			54.25
Fernie							31	209.26			209.26
Fort Fraser	15	375.00	3	300.00			117	2,291.85			2,966.85
Golden							7	66.04			66.04
Grand Forks							2	2.15			2.15
Kamloops	3	75.00					6	29.27	1	2.00	106.27
Kaslo							1	1.00			1.00
Kelowna							10	38.73			38.73
Lillooet	2	50.00					2	31.00			81.00
Merritt	4	100.00					6	46.25			146.25
Nanaimo							1	6.40	1	2.00	8.40
Nelson	1	25.00	2	200.00			17	134.15			359.15
New Denver							2	27.20			27.20
New Westminster							19	93.00			93.00
Penticton	4	100.00									100.00
Pouce Coupe	20	500.00	7	700.00	3	$600.00	491	17,218.43	2	4.00	19,022.43
Prince George	10	250.00	2	200.00			78	5,199.52			5,649.52
Prince Rupert	7	175.00	1	100.00			37	2,385.91			2,660.91
Princeton							1	22.25			22.25
Quesnel	6	150.00	3	300.00			14	152.19			602.19
Rossland							10	46.02			46.02
Salmon Arm							6	72.50			72.50
Smithers	9	225.00					25	2,244.69			2,469.69
Telegraph Creek	5	125.00					78	5,304.71			5,429.71
Vancouver	62	1,550.00	7	700.00			467	61,869.60	1	2.00	64,121.60
Vernon	2	50.00					10	27.30			77.30
Victoria							51	228.35	2	4.00	232.35
Williams Lake	10	250.00	10	975.00			11	219.95			1,444.95
Windermere							1	.25			.25
Totals	168	$4,200.00	38	$3,775.00	3	$600.00	1,561	$98,766.72	8	$16.00	$107,357.72

Total Collections from Fur Trade, 1921 to 1946, inclusive.

Year.	Fur Royalty or Tax.	Fur-traders', Tanners', and Taxidermists' Licences.	Total.
1921	$24,595.80	$6,195.00	$30,790.80
1922	51,093.89	6,365.00	57,458.89
1923	60,594.18	6,930.00	67,524.18
1924	56,356.68	6,090.00	62,446.68
1925	48,737.78	7,550.00	56,287.78
1926	56,045.13	6,490.00	62,535.13
1927	61,629.96	9,695.00	71,324.96
1928	51,563.07	7,260.00	58,823.07
1929	40,769.89	6,560.00	47,329.89
1930	40,431.11	4,730.00	45,161.11
1931	41,056.08	4,925.00	45,981.08
1932	36,253.79	4,110.00	40,363.79
1933	39,592.48	4,575.00	44,167.48
1934	42,697.81	4,405.00	47,102.81
1935	44,986.95	4,845.00	49,831.95
1936	46,186.50	6,010.00	52,196.50
1937	47,257.48	6,440.00	53,697.48
1938	39,423.87	5,540.00	44,963.87
1939	44,238.00	4,949.00	49,187.00
1940	62,745.33	5,721.00	68,466.33
1941	56,755.30	6,370.00	63,125.30
1942	63,176.07	5,299.00	68,475.07
1943	52,122.03	6,232.00	58,354.03
1944	63,412.23	6,951.00	70,363.23
1945	93,793.40	10,559.00	104,352.40
1946	98,766.72	8,591.00	107,357.72
Totals	$1,364,281.53	$163,387.00	$1,527,668.53

COMPARATIVE STATEMENT SHOWING PELTS OF FUR-BEARING ANIMALS ON WHICH ROYALTY HAS BEEN COLLECTED DURING THE PERIOD 1921 TO 1946, INCLUSIVE.

Calendar Year.	Number and Kind of Pelts on which Royalty has been collected.																				Amount of Royalty collected.
	Bear.	Badger.	Beaver.	Fisher.	Fox, Silver.	Fox, Cross.	Fox, Red.	Fox, Blue (Farmed).	Fox, Black.	Fox, Platinum (Farmed).	Lynx.	Marten.	Mink.	Muskrat.	Otter.	Racoon.	Skunk.	Squirrel.	Weasel.	Wolverine.	
1921	2,489	.....	473	711	62	259	297	.....	.....	.....	1,240	11,128	10,693	75,185	666	2,651	361	.....	26,285	329	$24,595.80
1922	2,127	.....	26,359	536	88	356	443	.....	.....	.....	1,855	12,181	18,932	139,232	915	6,069	715	.....	24,603	298	51,093.89
1923	1,397	.....	32,212	575	114	422	650	.....	.....	.....	2,666	10,043	19,276	127,846	832	5,204	813	.....	37,408	216	60,594.18
1924	1,339	.....	24,619	627	210	920	1,281	.....	.....	.....	4,830	11,780	20,201	91,599	769	4,595	681	.....	29,878	251	56,356.68
1925	1,199	.....	18,231	524	248	1,145	1,592	.....	.....	.....	6,488	7,535	18,795	67,331	713	4,959	802	.....	25,210	208	48,737.78
1926	1,505	.....	18,478	1,038	419	2,226	2,881	.....	.....	.....	8,250	9,920	24,158	48,426	783	5,120	798	.....	30,952	325	56,045.13
1927	1,529	.....	24,418	1,149	674	2,342	2,590	.....	.....	.....	6,385	11,008	16,548	63,884	1,068	7,488	1,132	.....	38,337	502	61,629.96
1928	1,735	.....	20,662	887	573	910	1,031	.....	.....	.....	4,397	11,610	11,968	65,130	981	7,141	1,114	.....	46,782	487	51,563.07
1929	1,165	.....	14,787	749	226	1,056	1,028	.....	.....	.....	2,583	11,265	8,226	52,696	856	5,271	725	.....	67,619	323	40,769.89
1930	1,105	.....	17,137	681	150	601	579	.....	.....	.....	1,584	9,172	8,995	84,500	838	3,790	837	.....	62,630	354	40,431.11
1931	641	.....	18,123	663	267	532	539	.....	.....	.....	1,599	8,066	10,528	106,920	807	3,171	543	.....	42,893	206	41,056.08
1932	592	.....	12,624	558	917	583	644	102	.....	.....	1,273	8,750	12,977	100,509	662	3,555	640	.....	48,357	236	36,253.79
1933	281	.....	11,741	602	2,174	714	972	342	.....	.....	2,064	11,433	17,066	91,230	723	2,891	513	.....	43,321	233	39,592.48
1934	254	.....	10,826	709	2,769	1,249	1,532	232	.....	.....	3,543	9,747	21,408	127,111	770	2,419	562	.....	43,666	207	42,697.81
1935	118	.....	13,593	721	2,696	1,698	2,413	287	.....	.....	3,661	8,979	21,453	107,339	573	1,983	353	.....	34,910	227	44,986.95
1936	141	.....	14,269	760	2,910	2,165	2,662	336	.....	.....	3,507	10,071	20,362	91,591	754	2,856	408	.....	36,307	267	46,186.50
1937	472	.....	15,932	676	3,693	1,626	1,827	530	.....	.....	2,751	9,849	18,030	70,166	824	2,972	391	.....	48,043	279	47,257.48
1938	405	.....	15,291	502	3,016	672	840	560	.....	.....	1,582	8,461	20,146	76,516	596	2,278	475	.....	44,159	215	39,423.87
1939	456	.....	18,748	538	3,312	552	628	472	.....	.....	1,125	9,038	27,579	85,553	667	2,107	329	62,797	50,197	191	44,238.00
1940	200	.....	20,652	558	2,772	605	733	553	.....	.....	1,226	9,678	37,986	117,506	749	1,798	424	589,355	71,580	213	62,745.33
1941	94	.....	21,107	585	2,144	597	863	265	.....	.....	1,295	9,200	20,675	116,722	706	2,648	313	400,938	32,949	246	56,755.30
1942	92	44	18,266	1,289	2,351	1,083	1,447	354	.....	.....	1,373	8,351	43,424	89,759	485	2,125	477	672,415	57,299	196	63,176.07
1943	151	28	17,257	446	2,130	1,696	2,612	274	.....	.....	1,520	6,540	30,408	93,931	417	3,170	321	475,859	52,114	128	52,122.03
1944	234	21	18,147	685	1,902	3,234	4,688	223	2	1	2,419	11,077	39,307	88,182	721	3,546	582	379,299	32,236	209	63,412.23
1945	189	34	23,968	788	1,560	3,156	5,696	602	1	.....	3,235	11,345	35,805	88,146	685	3,238	427	471,854	34,239	260	93,793.40
1946	230	13	22,899	782	1,570	1,549	3,030	221	.....	.....	2,046	11,604	37,693	65,573	844	3,019	286	621,969	52,811	272	98,766.72
Totals	20,140	140	470,865	18,339	38,947	31,948	43,498	5,353	3	1	74,497	257,831	572,639	2,332,583	19,404	96,064	15,022	3,674,486	1,114,785	6,878	$1,364,281.53

NOTE.—Royalty first put into effect in July, 1921.

PARTICULARS OF VARIOUS PELTS OF FUR-BEARING ANIMALS ON WHICH ROYALTY HAS BEEN PAID, JANUARY 1ST TO DECEMBER 31ST, 1946.

Government Agency.	Number and Kind of Pelts on which Royalty has been paid.																	
	Badger.	Bear.	Beaver.	Fisher.	Fox, Silver.	Fox, Cross.	Fox, Red.	Fox, Blue (Farmed).	Lynx.	Marten.	Mink.	Muskrat.	Otter.	Racoon.	Skunk.	Squirrel.	Weasel.	Wolverine.
Atlin	.....	2	233	.....	.....	1	1	.....	57	36	113	365	4	.....	.....	2,449	164	4
Clinton	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	175	.....	.....	.....	.....	.....	.....
Cranbrook	.....	2	17	.....	.....	.....	.....	.....	.....	1	3	105	.....	.....	.....	.....	.....	.....
Creston	.....	.....	1	.....	27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....
Cumberland	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	106	.....	.....	.....	.....	.....	.....	.....
Duncan	.....	.....	.....	.....	.....	.....	.....	217	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Fernie	.....	.....	99	.....	.....	2	2	.....	.....	17	48	20	.....	.....	.....	153	129	.....
Fort Fraser	.....	1	395	31	57	55	49	.....	63	249	1,162	1,159	11	.....	17	26,670	1,961	1
Golden	.....	.....	4	.....	.....	.....	.....	.....	.....	1	101	434	.....	.....	.....	132	16	.....
Grand Forks	.....	1	.....	.....	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kamloops	.....	2	2	1	.....	2	4	3	.....	.....	1	40	.....	.....	.....	216	42	.....
Kaslo	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Kelowna	.....	.....	.....	.....	125	.....	.....	.....	.....	.....	25	37	.....	.....	.....	4	8	.....
Lillooet	.....	.....	5	.....	.....	.....	.....	.....	.....	7	.....	72	.....	.....	.....	90	40	.....
Merritt	.....	.....	.....	.....	185	.....	.....	.....	1	.....	5	.....	.....	.....	.....	.....	.....	.....
Nelson	.....	6	26	.....	.....	.....	1	.....	.....	19	5	565	.....	.....	2	100	32	.....
Nanaimo	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	64	.....	.....	.....	.....	.....	.....	.....
New Denver	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	272	.....	.....	.....	.....	.....	.....	.....
New Westminster	.....	.....	.....	.....	152	1	3	.....	.....	1	416	104	.....	.....	.....	.....	.....	.....
Pouce Coupe	.....	43	6,128	98	131	914	1,758	.....	565	1,590	317	2,815	17	.....	8	40,729	4,347	30
Prince George	.....	8	1,437	137	37	152	220	.....	217	498	445	1,763	17	.....	1	30,471	2,201	38
Prince Rupert	.....	.....	544	3	.....	2	1	.....	1	324	1,780	17	149	38	1	416	128	2
Princeton	.....	.....	.....	.....	89	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quesnel	.....	.....	10	3	4	5	3	.....	2	10	32	188	1	.....	1	2,592	97	.....
Rossland	.....	2	6	.....	.....	.....	.....	.....	3	7	10	116	.....	.....	.....	116	26	.....
Salmon Arm	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	725	.....	.....	.....	.....	.....	.....	.....
Smithers	.....	.....	329	35	5	29	31	.....	38	386	177	413	10	.....	12	31,297	1,995	9
Telegraph Creek	.....	1	1,662	89	6	58	60	.....	466	678	592	831	21	.....	.....	11,358	1,047	89
Vancouver	13	124	11,958	383	654	321	891	1	633	7,774	29,542	54,922	612	2,951	244	475,175	40,578	99
Vernon	.....	7	.....	.....	82	1	3	.....	.....	.....	10	3	.....	.....	.....	.....	.....	.....
Victoria	.....	28	.....	.....	9	5	2	.....	.....	2	1,742	1	1	30	.....	.....	.....	.....
Williams Lake	.....	2	38	.....	.....	1	1	.....	.....	3	.....	1,544	1	.....	.....	.....	.....	.....
Windermere	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	13	230	22,899	782	1,570	1,549	3,030	221	2,046	11,604	37,693	65,573	844	3,019	286	621,969	52,811	272

LIST OF FUR CONFISCATED UNDER "GAME ACT," JANUARY 1ST TO DECEMBER 31ST, 1946.

Date of Confiscation.	Confiscated from	Confiscated at	Kind of Fur confiscated.							
			Beaver.	Fisher.	Mink.	Muskrat.	Otter.	Racoon.	Squirrel.	Weasel.
Jan. 14	S. Heimstad	Hixon	....	....	....	....	....	....	17	....
,, 23	W. S. Eckford	Nanaimo	9	....	....	....	....	....	....	....
Feb. 7	E. Falck	Stanley	....	....	....	....	....	....	....	3
,, 19	E. Meyers	Dawson Creek	....	....	....	....	....	....	11	....
,, 26	F. Newman	Parsons Bridge	....	....	1	....	2	1	3	....
,, 26	B. Griffiths	Metchosin	....	....	....	1	....	4	....	....
Mar. 11	H. Bayes and H. Fowkes	McBride	....	....	1	....	....	....	110	3
,, 21	R. Morris	Deroche	21	....	....	....	....	....	....	....
Apr. 1	A. Kilback	Creston	....	....	....	....	....	....	3	....
,, 8	A. Klein	Agassiz	....	....	2	....	....	....	12	1
May 9	J. San and R. Bouvette	Lillooet	....	....	....	25	....	....	....	....
,, 9	A. Dick and E. Paul	Williams Lake	....	....	....	2	....	....	....	....
,, 9	E. G. McCorkell	Vancouver	1	....	....	....	....	....	....	....
,, 9	E. G. McCorkell	Vancouver	1	....	....	....	....	....	....	....
,, 9	C. Ganske	Dashwood	1	....	....	....	....	....	....	....
,, 10	E. Frost	Canal Flats	....	....	....	....	....	....	4	....
June 18	M. Bright	Aujanish	2	....	....	....	....	....	....	....
,, 20	G. Reese	Sayward	4	....	....	....	....	....	....	....
,, 21	M. Nation	Vancouver	2	....	....	....	....	....	....	....
,, 21	A. R. Remington	Vancouver	2	....	1	....	....	....	....	....
July 2	C. Koska	Mile 408, Alaska Highway	....	....	....	....	2	....	....	....
,, 2	R. Godfrey and S. Brown	Lake Cowichan	....	....	....	....	....	1	....	....
,, 23	G. Guno	Aujanish	2	....	....	....	....	....	....	....
,, 25	S. Lincoln	Prince Rupert	....	1	....	....	....	....	....	....
Oct. 17	A. Willison and J. Clones	Alert Bay	1	....	....	....	....	....	....	....
,, 20	A. Young	Terrace	1	....	....	....	....	....	....	....
Dec. 16	S. Ciminelli	Lulu Island	....	....	....	6	....	....	....	....
,, 17	R. Egstrom	Vanderhoof	....	....	....	....	....	....	4	....
	Totals		47	1	5	34	4	6	164	7

NOTE.—The sum of $1,932.30 was received during 1946 from the sale of confiscated and surrendered fur.

List of Firearms confiscated under "Game Act," January 1st to December 31st, 1946.

Date of Confiscation.	Confiscated from.	Confiscated at.	Kind of Firearms confiscated.	
			Rifles.	Shotguns.
Jan. 4	D. Hammond	Kamloops	1	....
,, 9	R. Purser	Vancouver	1	....
,, 9	E. Smith	Vancouver	1	....
,, 14	A. Clement	Vancouver	....	1
,, 30	H. Nyquist	Elk Valley	1	....
Feb. 7	D. Ross	Port Hammond	1	....
,, 7	B. Lundgren	Port Hammond	....	1
,, 12	J. Pollard	Victoria	1	....
Mar. 11	L. Scoffins	Cultus Lake	1	....
,, 11	J. Zajic	Cultus Lake	1	....
,, 11	A. Jesperson	Chilliwack	1	....
,, 11	R. Laiterman	Cultus Lake	1	....
,, 12	T. Snowden	Vancouver	1	....
May 31	P. Durante	Kamloops	1	....
June 7	J. Salkeld	Kamloops	1	....
,, 7	T. Ballantyne	Westbridge	1	....
,, 20	S. Chiveldeff	Grand Forks	1	....
July 22	R. Rathbun	Eburne	1	....
Nov. 19	M. Maedel	Alberni	1	....
,, 19	R. Chamberland	Alberni	....	1
,, 19	L. Plaunt	Alberni	1	....
,, 19	D. Robertson	Alberni	1	....
,, 19	C. Smith	Victoria	1	....
,, 19	J. Planes	Sooke	....	1
,, 19	J. Hlookoff	Grand Forks	1	....
,, 19	G. Strukoff and H. Popoff	Grand Forks	1	....
,, 19	R. McNeil	Langley	1	....
,, 19	D. Jinkerson	New Westminster	1	....
,, 19	L. Ready	Surrey	....	1
,, 19	L. Dearlow	Vancouver	1	....
,, 19	D. Walker	Vancouver	1	....
,, 29	R. MacKinlay	Armstrong	1	....
,, 29	G. Sturt	Armstrong	1	....
,, 29	S. Nash	Armstrong	1	....
Dec. 9	C. Jonan	Campbell River	1	....
,, 13	R. Griffiths	Alberni	....	1
,, 13	G. Chapman	Alberni	....	1
,, 13	N. Wadams and C. Wadams	Alert Bay	....	1
,, 30	C. Hull	Vancouver	....	1
	Totals		30	9

Note.—The sum of $58.50 was received during 1946 from the sale of confiscated firearms.

BOUNTIES PAID DURING THE YEAR ENDED DECEMBER 31ST, 1946.

Government Agency.	Kind of Animals.				Totals.
	Wolves ($10).	Cougars ($15).	Coyotes ($2).	Coyotes ($5).	
Alberni	2	7	.....	.....	$125.00
Atlin	48	.....	7	.....	494.00
Barkerville	3	.....	3	.....	36.00
Clinton	21	13	143	2	701.00
Cranbrook	.....	10	134	23	533.00
Cumberland	6	21	.....	.....	375.00
Duncan	2	26	.....	.....	410.00
Fernie	.....	6	38	.....	166.00
Fort Fraser	92	6	303	4	1,636.00
Golden	.....	2	45	4	140.00
Grand Forks	.....	11	37	6	269.00
Greenwood	.....	4	19	5	123.00
Kamloops	29	20	239	4	1,088.00
Kaslo	.....	2	2	1	39.00
Kelowna	.....	7	23	.....	151.00
Lillooet	2	27	28	.....	481.00
Merritt	.....	13	135	6	495.00
Nanaimo	1	23	.....	.....	355.00
Nelson	.....	38	56	16	762.00
New Westminster	.....	4	3	.....	66.00
Penticton	.....	12	68	21	421.00
Pouce Coupe	130	12	58	15	1,671.00
Powell River	.....	6	.....	.....	90.00
Prince George	230	5	157	5	2,714.00
Prince Rupert	78	20	11	3	1,117.00
Princeton	.....	7	38	.....	181.00
Quesnel	37	18	127	3	909.00
Revelstoke	.....	5	9	5	118.00
Rossland	1	.....	4	.....	18.00
Smithers	25	7	64	12	543.00
Salmon Arm	1	6	55	1	215.00
Telegraph Creek	170	.....	30	11	1,815.00
Vancouver-Victoria	4	18	6	1	327.00
Vernon	.....	31	74	53	878.00
Williams Lake	50	67	524	16	2,633.00
Windermere	.....	7	41	22	297.00
Totals	932	461	2,481	239	$22,392.00

Comparative Statement of Bounties paid from 1922 to 1946, inclusive.

Calendar Year.	Wolves.	Cougars.	Coyotes.	Crows.	Magpies.	Eagles.	Owls.	Total.
1922	303	372	1,092	53,443	2,246	7,095	17,625	$60,494.80
1923	162	195	1,687	.....	70	20	172	14,840.00
1924	195	173	5,175	172	.....	89	.....	20,398.40
1925	291	137	7,276	.....	.....	.....	.....	24,397.00
1926	336	183	14,070	5,770	.....	.....	.....	41,077.00
1927	344	372	20,192	10,046	2,487	.....	.....	65,377.95
1928	452	444	3,672	.....	.....	.....	1,025	50,709.25
1929	411	530	1,881	.....	.....	.....	1,389	42,122.00
1930	312	491	1,544	.....	.....	.....	403	36,090.25
1931	310	701	2,864	.....	3,427	.....	1	42,036.15
1932	.....	8	.....	.....	.....	.....	.....	80.00
1933	1	628	.....	.....	.....	.....	.....	6,285.00
1934	221	572	.....	.....	.....	.....	.....	6,825.00
1935	561	430	1,877	.....	.....	.....	.....	12,374.00
1936	837	599	1,950	.....	.....	.....	.....	20,350.00
1937	828	423	1,400	.....	.....	.....	.....	19,540.00
1938	915	384	2,094	.....	.....	.....	.....	21,018.00
1939	1,159	366	1,971	.....	.....	.....	.....	26,399.00
1940	1,659	285	2,038	.....	.....	.....	.....	23,131.00
1941	1,002	196	1,924	.....	.....	.....	.....	16,868.00
1942	1,039	261	1,546	.....	.....	.....	.....	17,397.00
1943	1,017	265	1,221	.....	.....	.....	.....	16,587.00
1944	1,321	301	1,259	.....	.....	.....	.....	20,243.00
1945	1,202	472	5,506	.....	.....	.....	.....	46,627.00
1946	932	461	2,720	.....	.....	.....	.....	22,392.00
Totals	15,810	9,249	84,959	69,431	8,230	7,204	20,615	$673,658.80

Big-game Trophy Fees paid by Non-residents, January 1st to December 31st, 1946.

Name and Address (Government Agency).	Species.									Amount.
	Bear, Grizzly.	Bear, Black or Brown.	Caribou.	Deer, Mule and White-tailed.	Deer, Coast.	Mountain-goat.	Moose.	Mountain-sheep.	Wapiti (Elk).	
Atlin	3	2	.....	.....	.....	.....	.....	8	.....	$285.00
Ashcroft	.....	1	.....	16	.....	.....	44	.....	.....	2,155.00
Barkerville	3	.....	.....	.....	.....	1	4	.....	.....	250.00
Clinton	.....	5	.....	24	.....	.....	44	2	.....	2,190.00
Cranbrook	1	.....	.....	61	.....	23	12	4	19	2,140.00
Creston	.....	.....	.....	1	.....	.....	.....	.....	.....	15.00
Cumberland	.....	2	.....	.....	23	.....	.....	.....	.....	125.00
Duncan	.....	.....	.....	.....	4	.....	.....	.....	.....	20.00
Fernie	11	5	.....	15	.....	19	48	2	47	3,250.00
Fort Fraser	4	11	5	2	.....	5	39	.....	.....	1,360.00
Grand Forks	.....	.....	.....	31	.....	.....	.....	.....	.....	465.00
Golden	9	25	.....	65	.....	68	80	1	34	5,245.00
Kamloops	1	.....	.....	.....	.....	.....	7	.....	.....	305.00
Kaslo	1	1	.....	.....	.....	1	.....	.....	.....	45.00
Lillooet	.....	4	.....	10	.....	1	1	2	.....	275.00
Nanaimo	.....	.....	.....	.....	3	.....	.....	.....	.....	15.00
Nelson	.....	2	.....	.....	.....	.....	2	.....	2	75.00
New Westminster	9	20	1	342	31	12	697	8	.....	33,805.00
Penticton	4	9	.....	207	.....	7	145	.....	1	9,130.00
Pouce Coupe	35	15	35	8	.....	49	42	37	.....	4,665.00
Princeton	.....	.....	.....	6	.....	.....	1	.....	2	165.00
Prince George	6	13	6	5	.....	10	32	.....	.....	1,380.00
Prince Rupert	7	2	4	.....	.....	4	2	.....	.....	420.00
Quesnel	1	1	.....	8	.....	.....	61	.....	.....	2,515.00
Revelstoke	1	1	1	.....	.....	1	1	.....	.....	95.00
Salmon Arm	.....	.....	.....	.....	.....	.....	1	.....	.....	40.00
Smithers	.....	1	.....	.....	.....	.....	5	.....	.....	130.00
Telegraph Creek	13	6	16	.....	.....	18	7	15	.....	1,600.00
Vancouver	7	5	2	5	3	3	12	4	2	975.00
Vernon	.....	.....	.....	2	.....	.....	3	.....	.....	105.00
Victoria	.....	.....	.....	.....	19	.....	.....	.....	.....	95.00
Williams Lake	4	4	.....	13	.....	2	20	1	.....	1,210.00
Totals	119	135	60	821	83	224	1,310	84	107	$74,545.00
Less refunds										25.00
										$74,520.00

PROSECUTIONS (PROVINCIAL GAME DIVISIONS), JANUARY 1ST TO DECEMBER 31ST, 1946.

Description of Offence.	Divisions (*See* Foot-note).					Dismissals.	Convictions.	Total No. of Informations laid.	Fines or Penalties imposed.
	"A" Division.	"B" Division.	"C" Division.	"D" Division.	"E" Division.				
Game Animals.									
Allowing dogs to run after or hunt deer	1	.....	.....	.....	.....	.....	1	1	$10.00
Exceeding bag-limit on game animals	.....	.....	1	1	.....	.....	2	2	150.00
Hunting game animals during night	1	.....	.....	.....	2	.....	3	3	560.00
Killing, hunting game animals of female sex	2	.....	1	1	2	.....	6	6	335.00
Killing, hunting game animals under 1 year of age	4	4	3	.....	3	1	13	14	375.00
Killing, hunting or in possession of big game during close season	.....	1	9	2	.....	.....	12	12	515.00
Possession of deer from which evidence (sex) removed	.....	.....	2	.....	.....	.....	2	2	25.00
Possession of untagged deer	4	2	4	.....	1	.....	11	11	150.00
Firearms.									
Carrying firearms or hunting on game reserve	.....	.....	.....	.....	14	.....	14	14	460.00
Carrying firearms or discharging same in or from automobile	9	11	58	7	19	.....	104	104	1,006.00
Carrying or in possession of unplugged repeating shotgun	3	9	2	1	7	.....	22	22	200.00
Discharging firearms on or across highway in prohibited area	1	.....	.....	.....	5	.....	6	6	50.00
Minors carrying firearms unaccompanied by an adult	13	.....	7	.....	4	.....	24	24	30.50
Using .22 rim-fire rifle to hunt big game	.....	.....	1	.....	.....	.....	1	1	10.00
Fur Trade and Trapping.									
Allowing another person to trap his registered line	1	.....	.....	.....	.....	.....	1	1	20.00
Allowing traps to remain set after end of season	.....	.....	.....	3	.....	.....	3	3	55.00
Employing an assistant on line without a permit	.....	.....	1	1	.....	.....	2	2	50.00
Exporting fur without a permit	.....	1	.....	.....	.....	.....	1	1	10.00
Fur-trader failing to keep proper record-book	.....	1	2	.....	.....	.....	3	3	110.00
Fur-trader buying furs without transient trader's licence	.....	.....	3	.....	.....	.....	3	3	150.00
Fur-trader buying pelts during close season	.....	.....	1	.....	.....	.....	1	1	50.00
Interfering with registered trap-line	3	2	3	2	1	2	9	11	760.00
Non-resident trading in pelts of fur-bearers without a licence	.....	.....	.....	1	.....	1	.....	1	.....
Possession of furs during close season	.....	.....	.....	1	.....	.....	1	1	10.00
Possession of untagged beaver-pelts	2	.....	1	1	1	.....	5	5	60.00
Resident trading in pelts of fur-bearers without a licence	.....	.....	.....	6	.....	1	5	6	275.00
Setting poison for the taking of fur-bearing animals	.....	.....	1	.....	.....	.....	1	1	25.00
Snaring off his own trap-line	.....	.....	.....	1	.....	.....	1	1	150.00
Trapping furs during close season	.....	.....	.....	2	4	.....	6	6	175.00
Trapping on other than his own trapping area	1	.....	.....	8	.....	2	7	9	95.00
Trapping or carrying traps without a licence	2	6	6	7	3	.....	24	24	315.00
Using game meat during close season for trapping fur	.....	.....	2	.....	.....	.....	2	2	60.00
Licences.									
Furnishing false information to obtain licence	.....	.....	.....	1	2	.....	3	3	30.00
Guiding without a licence	.....	.....	2	4	.....	.....	6	6	30.00
Hunting big game without a proper licence	.....	.....	1	1	.....	.....	2	2	110.00
Non-resident carrying firearms without a licence	.....	2	2	2	2	1	7	8	245.00
Non-resident angling without a licence	.....	6	4	.....	.....	.....	10	10	100.00
Resident angling without a licence	18	24	19	.....	30	4	87	91	725.00
Resident carrying firearms without a licence	23	26	43	20	78	4	186	190	1,561.00
Using or loaning another person's licence (guiding or hunting)	.....	.....	.....	.....	2	1	1	2	50.00
Migratory Game Birds.									
Hunting migratory birds during prohibited hours	.....	.....	3	.....	40	.....	43	43	495.00
Hunting migratory birds from power-boat	2	.....	.....	.....	3	.....	5	5	65.00
Hunting migratory birds over baited area	.....	.....	.....	.....	4	.....	4	4	100.00
Hunting migratory birds with a rifle	.....	.....	.....	1	1	.....	2	2	.....
Hunting or in possession of migratory birds during close season	2	2	6	.....	2	2	10	12	161.00

NOTE.—"A" Division: Vancouver Island area and part of Mainland. "B" Division: Kootenay and Boundary areas. "C" Division: Kamloops, Yale, Okanagan, Cariboo, and Lillooet areas. "D" Division: Atlin, Skeena, Omineca, Fort George, Peace River, and Yukon Boundary areas. "E" Division: Vancouver, Coast, and Lower Mainland areas.

PROSECUTIONS (PROVINCIAL GAME DIVISIONS), JANUARY 1ST TO DECEMBER 31ST, 1946—*Continued.*

Description of Offence.	Divisions (*See* Foot-note). "A" Division.	"B" Division.	"C" Division.	"D" Division.	"E" Division.	Dismissals.	Convictions.	Total No. of Informations laid.	Fines or Penalties. imposed.
Special Fishery Regulations.									
Angling for trout during close season	.....	4	3	.....	13	.....	20	20	$59.00
Fishing otherwise than by angling	.....	2	.....	.....	.....	.....	2	2	15.00
Possession or use of salmon roe in prohibited area	6	.....	.....	.....	.....	1	5	6	45.00
Possession over limit of trout	.....	.....	3	.....	.....	.....	3	3	30.00
Possession of undersized trout	.....	1	2	.....	.....	.....	3	3	35.00
Taking trout or salmon on spawning-grounds	.....	.....	3	.....	3	.....	6	6	52.50
Using gear designed to catch more than one fish	.....	.....	.....	.....	1	.....	1	1	10.00
Using more than one rod while angling	.....	.....	4	.....	.....	.....	4	4	31.00
Upland Game Birds.									
Allowing dogs to hunt game birds during nesting season	.....	.....	2	.....	6	.....	8	8	70.00
Exceeding bag-limit on upland birds	.....	.....	.....	.....	4	.....	4	4	125.00
Hunting certain game birds with rifle	.....	.....	3	.....	1	.....	4	4	45.00
Hunting, killing, or possession of upland birds during close season	7	1	7	.....	12	.....	27	27	445.00
Hunting upland game birds during prohibited hours	.....	.....	2	.....	.....	.....	2	2	10.00
Miscellaneous.									
Canning game before taking to place of consumption	.....	.....	.....	1	.....	1	.....	1	.....
Failing to stop car to be searched by Game Warden	.....	.....	2	.....	.....	.....	2	2	20.00
Furnishing false information to Game Warden	.....	1	1	.....	1	.....	3	3	30.00
Guide submitting false report	.....	.....	1	.....	.....	.....	1	1	10.00
Killing game with spitzer-type bullets	1	.....	.....	.....	.....	.....	1	1	10.00
Non-resident hunting without a guide	.....	1	3	2	.....	.....	6	6	120.00
Possession of embryo of deer	.....	1	.....	.....	.....	.....	1	1	10.00
Possession of game on premises of logging camp	1	.....	1	1	.....	.....	3	3	45.00
Possession of more than one deer on Vancouver Island	1	.....	.....	.....	.....	.....	1	1	25.00
Refusing to be searched by Game Warden	.....	.....	2	.....	.....	.....	2	2	20.00
Trespassing upon enclosed land	7	.....	1	.....	12	.....	20	20	200.00
									$10,921.00
Gaol Sentences.									
Carrying unplugged repeating shotgun	1	.....	.....	.....	.....	.....	1	1	.....
Interfering with registered trap-line	.....	.....	.....	.....	1	.....	1	1	.....
Loaded firearms in automobile	.....	.....	2	.....	.....	.....	2	2	.....
Possession of furs during close season	.....	.....	.....	.....	1	.....	1	1	.....
Trapping without a licence	.....	.....	2	.....	.....	.....	2	2	.....
Totals	116	108	232	79	284	21	798	819	.....

NOTE.—"A" Division: Vancouver Island area and part of Mainland. "B" Division: Kootenay and Boundary areas. "C" Division: Kamloops, Yale, Okanagan, Cariboo, and Lillooet areas. "D" Division: Atlin, Skeena, Omineca, Fort George, Peace River, and Yukon Boundary areas. "E" Division: Vancouver, Coast, and Lower Mainland areas.

Gaol sentences ranged from seven days to ninety days.

HUNTING AND FISHING ACCIDENTS, 1946.

Date.	Name of Wounded Person.	Name of Person responsible for Accident.	District.	Cause of Accident.	Nature of Injuries.	Result of Injuries.
June 19	Orville Thomas		Golden	Mauled by a grizzly bear	Right hand, forearm, and leg chewed	Serious.
Sept. 15	Fred G. McDonald	Otto Quast	Prince Rupert	As a result of faulty firing-pin or use of faulty ammunition	Shot in calf of left leg	Not serious.
,, 15	Walter Yeo	Self	Parksville	Careless handling of a rifle	Flesh wound in right leg and arm	Not serious.
,, 21	Desmond Carrier	Self	Victoria	Tripping over a log while carrying a loaded shotgun	Wounded in right ankle	Not serious.
Oct. 2	William Hershey	Roger Eakin	Kamloops	Careless handling of a rifle	Wounded in leg	Not serious.
,, 6	Charles Frank Boyd	Self	Vanderhoof	Careless handling of a shotgun	Wounded in left arm	Serious.
,, 12	Gerald Thompson	David Rozzano	Nanaimo	Careless handling of a shotgun	Wounded in right thigh	Not serious.
,, 20	Stephen Auchinachie	Self	Duncan	Careless handling of a shotgun	Hit in the leg and groin	Not serious.
Nov. 3	Robert Lester Clayton	Henry Gartland	Creston	Shooting at a moving object in bush	Shot in left and right legs	Died.
,, 11	Julian Oliver Doucette	Self	Alberni	Careless handling of a shotgun	Wounded in upper abdomen	Died.
,, 11	James Craig	George Entwhistle	Hope	Careless handling of a .22 rifle	Flesh wound in left hip	Not serious.
,, 27	Mrs. Irene J. West	Fred Spitzl	Hazelton	Mistaken for a wounded moose	Shot in abdomen	Died.

NOTE.—Wherever, after careful investigation, circumstances warranted action being taken against the parties responsible for hunting accidents, firearms licences held by such parties have been cancelled by the Game Commission, and in various cases other action has been taken.

Summary of Game-fish Distributions, showing Eggs, Fry, and Fingerlings, 1946.

Kind of Game Fish.	Eggs.	Fry.	Fingerlings.
Cut-throat	1,422,125	314,095	.....
Eastern brook	.....	289,888	.....
Hybrids	10,855	7,510	.....
Kamloops trout	4,868,416	3,500,013	728,061
Kokanee	1,340,000	157,788	.....
Steelhead	5,000	.....	.....
Totals	7,646,396	4,269,294	728,061

Summary of Game-fish Eggs, Fry, and Fingerlings at Departmental Hatcheries, December 31st, 1946.

Hatchery.	Eastern Brook.	Kamloops.	Kokanee.
	Eggs or Fry.	Fingerlings or Fry.	Eggs or Fry.
Cultus Lake	.....	134,700	.....
Kaslo	.....	157,609	116,210
Kelowna	.....	148,120	.....
Nelson	136,155	117,281	353,834
Qualicum Beach	.....	101,075	.....
Smiths Falls	.....	135,404	.....
Veitch Creek	.....	149,419	.....
Totals	136,155	943,608	470,044

Summary.

Eggs	7,646,396
Fry	4,269,294
Fingerlings	728,061
Total distributions	12,643,751
On hand at hatcheries, December 31st, 1946	1,549,807
Total	14,193,558

Game-fish Culture Branch—Summary of Trout Plantings, 1946.

Hatchery or Station. (Particulars of Plantings or Liberations.)	Kind of Fish or Eggs.												
	Cut-throat.		Eastern Brook.		Kamloops.			Kokanee.		Steelhead.		Hatcheries.	
	Eggs.	Fry.	Eggs.	Fry.	Eggs.	Fry.	Fingerlings.	Eggs.	Fry.	Eggs.	Fingerlings.	Eggs.	Fingerlings or Fry.
Vancouver Island.													
Qualicum Hatchery.													
Beach Creek Hatchery							325						
Black Creek							1,000						
Boomerang Lake							4,000						
Boot Lake							3,500						
Brannen Lake							4,000						
Cameron Lake							8,000						
Comox Lake							8,000						
Echo Lake							2,000						
First Nanaimo Lake							8,000						
French Creek							2,000						
Great Central Lake							10,000						
Holdon Lake							4,000						
Horne Lake							6,000						
Lizard Lake							1,000						
Long Lake							4,000						
Lower Campbell Lake							6,000						
Lower Quinsam Lake							4,000						
Mirror Lake							2,000						
Morrison Creek							500						
O.K. Lake							4,000						
Oyster River							4,000						
Quesnel Lake							4,000						
Rhododendron Lake							4,000						
Rosewall Creek							1,000						
Sconnell Lake							4,000						
Spencer Creek							2,500						
Sproat Lake							14,000						
Swayne Creek							1,000						
Tsable River							2,000						
Tsolum River							4,000						
Unnamed lake							5,000						
Upper Quinsam Lake							4,000						
Westwood Lake							8,000						

Whiskey Creek							2,500						
Totals							142,325						
Veitch Creek Hatchery.													
Dugans Lake							10,449						
Glintz Lake							8,161						
Matheson Lake							5,468						
Quamichan Lake							6,394						
Shawnigan Lake							49,572						
Thetis Lake							25,840						
Wolf Lake							5,000						
Totals							110,884						
LOWER MAINLAND.													
Cultus Lake Hatchery.													
Campbell River							4,000						
Cultus Lake							8,795						
Hatzic Lake							4,000						
Lake of the Woods							18,000						
Little Sumas Creek							4,000						
Mill Lake							4,000						
Nicomekl River							8,000						
Salmon River							9,000						
Serpentine River							9,000						
Silver Creek							18,000						
Smiths Falls Creek										5,000			
Totals							86,795			5,000			
Smiths Falls Hatchery.													
Cultus Lake							88,205						
Dunville Creek						400,000							
Cultus Lake Hatchery													135,000*
Totals						400,000	88,205						135,000*
Stanley Park Hatchery.													
Seymour River							22,517						
Totals							22,517						

* Kamloops.

GAME-FISH CULTURE BRANCH—SUMMARY OF TROUT PLANTINGS, 1946—*Continued.*

HATCHERY OR STATION. (Particulars of Plantings or Liberations.)	KIND OF FISH OR EGGS.												
	CUT-THROAT.		EASTERN BROOK.		KAMLOOPS.			KOKANEE.		STEELHEAD.		HATCHERIES.	
	Eggs.	Fry.	Eggs.	Fry.	Eggs.	Fry.	Finger-lings.	Eggs.	Fry.	Eggs.	Finger-lings.	Eggs.	Fingerlings or Fry.
OKANAGAN DISTRICT.													
Lloyds Creek Hatchery.													
Abel Lake					10,000								
Alta Lake					50,000								
Beaver Dam Lake					15,000								
Beaver Lake (Devick)						10,000							
Big Lake					30,000								
Bouchie Lake					10,000								
Bridge Lake					75,000								
Canim Lake					200,000								
Cheakamus River					100,000								
China Lake					20,000								
Crown Lake						10,000							
Crystal Lake					10,000								
Daisy Lake						5,000							
Deka Lake					50,000								
Eightythree Lake					30,000								
Harper Lake						15,000							
Horse Lake					50,000								
Kamloops Lake						100,000							
Kelly Lake					30,000								
Knouff Lake						75,000							
Kwotlenemo Lake					20,000								
Lac des Roche					30,000								
Lac le Jeune					50,000	25,000							
Laluwissin Lake					20,000								
Levitt Lake					30,000								
Lucerne Lake					70,000								
Lucille Lake					10,000								
Mara Lake					100,000								
Melburn Lake					10,000								
Moira Lake					20,000								
Monte Lake						10,000							
McConnell Lake						10,000							
Nita Lake					10,000								

Palmer Creek					200,000								
Pass Lake						10,000							
Paul Lake						200,000							
Pavilion Lake						30,000							
Pillar Lake						50,000							
Pinantan Lake						60,000							
Puntchesakut Lake					10,000								
Reineckers Creek					20,000								
Rose Lake					30,000								
Salmon River					200,000								
Scotch Creek					115,000								
Shuswap Lake					100,000	150,000							
Stake Lake						10,000							
Tad Lake					10,000								
Tunkwa Lake						30,000							
Turquoise Lake						10,000							
Watch Lake					30,000								
Williams Lake					30,000								
Wendel Lake					10,000								
Wright Lake					10,000								
Cranbrook Hatchery												200,000*	
Qualicum Beach Hatchery												200,000*	
Smiths Falls Hatchery												300,000*	
Veitch Creek Hatchery												200,000*	
Bulkley Valley Rod and Gun Club					70,000								
Malaspina Rod and Gun Club					50,000								
McBride Rod and Gun Club					100,000								
Ocean Falls Rod and Gun Club					50,000								
Prince George Rod and Gun Club					100,000								
Pacific Biological Station					200,000								
Totals					2,385,000	810,000						900,000*	
Beaver Lake Hatchery.													
Barclay Creek					70,000								
Coldstream Creek					180,000								
Crooked Lake						20,000							
Dee Lake						20,000							
Deer Lake						20,000							
Doreen Lake						15,000							
Echo Lake						26,000							
Eight Mile Creek					50,000								
Hidden Lake						40,000							
Island Lake						20,000							

* Kamloops.

GAME-FISH CULTURE BRANCH—SUMMARY OF TROUT PLANTINGS, 1946—*Continued.*

Hatchery or Station. (Particulars of Plantings or Liberations.)	Kind of Fish or Eggs.												
	Cut-throat.		Eastern Brook.		Kamloops.			Kokanee.		Steelhead.		Hatcheries.	
	Eggs.	Fry.	Eggs.	Fry.	Eggs.	Fry.	Finger-lings.	Eggs.	Fry.	Eggs.	Finger-lings.	Eggs.	Fingerlings or Fry.
Okanagan District—*Continued.*													
Beaver Lake Hatchery—Continued.													
Kalamalka Lake						100,000							
Lost Lake						10,000							
Mabel Lake						25,000							
Oyama Lake						8,815							
Pats Lake						18,000							
Reiswig Creek					105,000								
Trapper Lake						10,000							
Vance Creek					100,000								
Wilma Lake					10,000								
Woods Lake					25,000	25,000							
Kelowna rearing-ponds					410,000								
Kelowna Hatchery												100,000*	
Revelstoke Rod and Gun Club					100,000								
Summerland Hatchery					300,000							300,000*	
Totals					1,350,000	357,815						400,000*	
Penask Lake Hatchery.													
Alleyne Lake						10,000							
Boss Lake						5,000							
Crater Lake						5,000							
Davis Lake						5,000							
Gillis Lake						7,000							
Glimpse Creek					5,000								
Glimpse Lake						5,000							
Hornet Lake						7,500							
Kane Valley Lake						15,000							
Kentucky Lake						10,000							
Loosemore Lake						7,500							
Lost Creek					20,000								
Lost Lake						8,000							
Ludwig Lake						10,000							
Menzies Lake						2,500							
Moore Creek					100,000								
Otter Creek					50,000								
Stoney Lake						10,000							

Thalia Lake						10,000							
Trout Lake						2,500							
Cranbrook Hatchery												350,000*	
Lloyds Creek Hatchery												670,000*	
Nelson Hatchery												1,200,000*	
Smiths Falls Hatchery												400,000*	
Summerland Hatchery												200,000*	
Totals					175,000	120,000						2,820,000*	
Summerland Hatchery.													
Agur Lake						5,000							
Baker Lake						5,000							
Bear Lake						10,000							
Brenda Lake						6,000							
Chain Lake						5,000							
Coquihalla Lake						10,000							
Emerald Lake						5,000							
Garnett Lake						10,000							
Glen Lake						5,000							
Link Lake						5,000							
Missezula Lake						5,000							
Monro Lake						5,000							
Norman Lake						5,000							
Okanagan Lake						335,355							
Osoyoos Lake						50,000							
Osprey Lake						10,000							
Peachland Reservoir						20,000							
Princeton ponds						5,000							
Ratnip Lake						5,000							
Richter Lake						9,000							
Silver Lake						5,000							
Similkameen River						55,000							
Skaha Lake						150,000							
Spring Lake						5,000							
Tulameen River						20,000							
Twin Lakes						5,000							
Allandale Lake (private sale)						5,000							
Brent Lake (Mr. Burch, private sale)						5,000							
Totals						765,355							
Kelowna Hatchery and Ponds.													
Bryce Creek						40,000							
Deep Creek						35,000							
Mill Creek						35,000							
O'Keefe's Creek						30,000							
Totals						140,000							

* Kamloops.

GAME-FISH CULTURE BRANCH—SUMMARY OF TROUT PLANTINGS, 1946—*Continued.*

Hatchery or Station. (Particulars of Plantings or Liberations.)	Kind of Fish or Eggs.												
	Cut-throat.		Eastern Brook.		Kamloops.			Kokanee.		Steelhead.		Hatcheries.	
	Eggs.	Fry.	Eggs.	Fry.	Eggs.	Fry.	Fingerlings.	Eggs.	Fry.	Eggs.	Fingerlings.	Eggs.	Fingerlings or Fry.
Kootenay District.													
Nelson Hatchery.													
Beaver Creek				30,000									
Big Sheep Creek				20,000									
Bonanza Creek								250,000					
Boundary Creek						19,424							
Boundary Lake				40,000									
Box Lake						25,000							
Bush Lake								50,000					
Cahill Lake								30,000					
Canim Lake								100,000					
Cariboo and Rear Lakes				20,000									
Cayuse Creek					24,280								
Champion Lake							2,090						
Christina Lake					145,680								
Clearwater Lake								25,000					
Columbia River						50,000							
Conkle Lake						10,000							
Cottonwood Lake						10,000			15,000				
Crawford Creek					14,568			50,000					
Echo Lake				20,000									
Endako Lake								60,000					
Eric Lake				10,000									
Fish Lake				10,000									
Goat Creek								50,000					
Granby River						35,000							
Grave Lake									20,000				
Hansen (Masa) Lake				20,000									
Hill Creek					9,712								
Jewel Lake						30,000							
Kettle River (Westbridge)					48,560								
Kettle River (West Fork)					19,424								
Kokanee Creek									30,000				
Kootenay Lake (Crawford Bay)						15,000	52,295						
Kootenay Lake (above Brilliant Dam)						45,000							
Kootenay Lake (West Arm)							23,931		62,788				
La France Creek								50,000					
Little Slocan Lake				40,000									
Lockhart Creek								50,000					
Loon Lake				25,000									

Lush Lake				5,000									
Madden Lake				10,000									
Meadow Creek				15,000									
Mill Creek								25,000					
Mission Creek								100,000					
Moyie Lake								100,000					
MacKenzie Creek					9,712								
McDonald Creek					19,424								
Nakusp Creek					19,424								
Okanagan Lake (South End)								100,000					
Pass Creek						45,000							
Porcupine Creek						10,000							
Redfish Creek									30,000				
Rosebud Lake				19,888									
Salmon River						45,000							
Salmon River (South Fork)						10,000							
Sanca Creek					24,280								
Shuswap Lake								100,000					
Six Mile Lakes						20,000							
Slocan Lake					48,560	40,000							
Slocan Pool							11,959						
Slocan River					38,848	50,000							
Smelter Lake					48,560								
Sproule Creek						4,396							
Squaw Creek					38,848								
St. Mary Lake								100,000					
Summit Creek					14,568								
Summit Lake						25,000							
Sunshine Creek					48,560								
Whatshan Lake					58,272								
Wilgress (Loon) Lake						10,000							
Wilson Lake					29,136								
Windermere Lake								100,000					
Mrs. L. Chase (private sale)				3,000									
Mrs. D. McWhinnie (private sale)				2,000									
Totals				289,888	660,416	498,820	90,275	1,340,000	157,788				
Kaslo Hatchery and Ponds.													
Kootenay Lake						51,475	187,060						
Grand Forks Nursery						3,000							
Totals						54,475	187,060						
Gerrard Hatchery.													
Cranbrook Hatchery												120,000*	
Kaslo Hatchery												240,410*	
Nelson Hatchery												120,000*	
Totals												480,410*	

* Kamloops.

GAME-FISH CULTURE BRANCH—SUMMARY OF TROUT PLANTINGS, 1946—*Continued.*

Hatchery or Station. (Particulars of Plantings or Liberations.)	Kind of Fish or Eggs.												
	Cut-throat.		Eastern Brook.		Kamloops.			Kokanee.		Steelhead.		Hatcheries.	
	Eggs.	Fry.	Eggs.	Fry.	Eggs.	Fry.	Finger-lings.	Eggs.	Fry.	Eggs.	Finger-lings.	Eggs.	Fingerlings or Fry.
Kootenay District—*Continued.*													
Cranbrook Hatchery.													
Backwater Lakes						20,000							
Baptiste Lake		15,000											
Bartholemews Lake		15,000											
Bull River (between dams)	26,230											10,855†	
Burton Lake						3,000							
Bush Lakes					49,500								
Cartwright Lake						8,000							
Cedar Creek	16,090												
Cedar Lakes						10,000							
Columbia Lake					99,000								
Cotton Creek	35,725												
Deer Lake						20,000							
Doyles Lake		6,340											
Dunbar, Twin, and Bott Lakes	47,810												
Edwards Lake					24,500								
Elk River		38,645											
Elk River (Fernie)	207,365												
Fish Lake (above Monro Lake)		10,000											
Garbuts Lake					25,000								
Goat River	128,550												
Grave Lake						30,000							
Hail Lakes		5,000											
Heart Lake		5,000											
Holgrave Lake	7,500												
Horseshoe Lake						5,000							
Jeffery Lakes		11,000											
Johnson Lake						10,000							
Lead Queen Lake		10,000											
Lillian Lake						15,000							
Little Sand Creek	24,540												
Long Lake						10,000							
Loon Lake						9,500							
Lunds Lake						5,000							
Manistee Lake						14,000							
Meecham Creek	75,815												
Michel Creek	47,980												

Mineral Lake						4,579							
Monro Lake		76,285											
Moyie Lake (backwater)		41,825				12,537							7,510†
Moyie Lake						1,500							
Moyie River	44,290												
McBain's Lake						20,000							
McNair Lakes		10,000											
New Lake						6,000							
North Star Lake						7,500							
Paddy Ryan Lakes		30,000											
Peavine Creek	35,965					17,500							
Peckhams Lake						10,000							
Premier Lake						24,365							
Quartz Lake						5,000							
Rock Lake						9,000							
Rothel Lake						5,000							
Silver Springs						10,215							
Skookumchuck (Copper) Creek	50,000												
Smith Lake						25,307							
St. Mary Lake						10,000							
Surveyors Lake						8,000							
Tamarac Lake						7,500							
Tie Lake						5,045							
Twin Lakes						5,000							
Windermere Lake					100,000								
Wiseman Creek	20,860												
Zwick, Danziel,and Rothel Creeks	199,050												
Banff National Parks	200,715												
Waterton Lakes Park	83,640												
Revelstoke Rod and Gun Club	170,000												
Fernie rearing-ponds		10,000											
Matthew rearing-ponds		30,000											
Totals	1,422,125	314,095			298,000	353,548						10,885†	7,510†

† Hybrids.

Returns from 2,751 Holders of Special Firearms Licences, showing Big Game, Fur-bearing Animals, and Predatory Animals killed, Season 1945–46.

Big Game.

Bear	503	Mountain-goat	86
Caribou	54	Mountain-sheep	15
Deer	1,154	Wapiti (elk)	27
Moose	396		

Fur-bearing Animals.

Beaver	11,648	Otter	311
Fisher	659	Racoon	2,352
Fox	3,969	Skunk	159
Lynx	1,147	Squirrels	182,674
Marten	7,558	Weasel	37,888
Mink	6,539	Wildcat	424
Muskrats	36,258	Wolverine	197

Predatory Animals.

Cougar	115	Wolves	337
Coyotes	2,984		

Fur-farm Returns, 1946.

Kind of Animals.	Adult and Young (Reared) Animals.	Animals purchased or received by Trade.	Died or killed.	Animals sold or traded Alive.	Pelts sold (including all Pelts sold in 1946).	Total Animals on Hand as at December 31st, 1946.	
						Males.	Females.
Beaver	7	4	1	.....	1	6	4
Fisher	49	13	23	6	5	21	12
Fitch	2	.....	2	.....	.....	.....	.....
Foxes	3,054	30	1,879	24	1,014	332	849
Marten	202	22	25	37	5	72	90
Mink	48,888	2,402	27,652	2,871	11,348	4,816	15,951
Muskrats	.....	3	.....	.....	.....	2	1
Nutria	115	2	90	.....	.....	14	13
Racoon	27	.....	2	.....	.....	14	11

Cancelled permits, 47.
Eleven licensed fur-farmers have not submitted their returns.
There were eight *nil* returns.

STATEMENT OF VERMIN DESTROYED BY GAME WARDENS DURING THE YEAR 1946.

Kind of Animals or Birds destroyed.	Game Divisions.					Total.
	"A."	"B."	"C."	"D."	"E."	
Animals.						
Bear	.....	1	33	.....	1	35
Cougar	5	18	18	.....	14	55
Coyotes	.....	71	158	94	4	327
Ground-hogs	.....	35	33	.....	.....	68
Wolves	.....	.....	11	15	.....	26
Wild (domestic) cats	246	122	189	5	392	954
Wild (domestic) dogs	73	28	15	6	56	178
Fox	.....	.....	.....	.....	38	38
Bobcats	.....	.....	2	.....	.....	2
Skunk	.....	2	.....	.....	.....	2
Birds.						
Crows	158	414	504	53	1,155	2,284
Eagles	8	11	21	22	80	142
Hawks	33	121	204	9	97	464
Magpies	30	139	417	.....	2	588
Owls	2	31	145	11	45	234
Ravens	8	8	44	43	1	104
Mergansers	17	16	.....	.....	5	38

Summary of Liberation of Game Birds, 1946.

Area.	Pheasants.
Vancouver Island—	
Alberni	180
Courtenay	200
Nanaimo-Parksville	180
Victoria (North and South Saanich)	452
Total	1,012
Lower Mainland—	
Agassiz	220
Chilliwack	680
Delta	900
Lulu Island	1,333
Mission (Hatzic, etc.)	893
Matsqui	340
Pitt Meadows	1,279
Sumas Prairie	842
Surrey	1,107
Total	7,594
Interior—	
Castlegar	12
Creston	121
Grand Forks	100
Kamloops	100
Nakusp	12
Peace River	48
Penticton	164
Salmon Arm	60
Total	617

Summary.

District.	
Vancouver Island	1,012
Lower Mainland	7,594
Interior	617
Total	9,223

STATEMENT OF GAME-BIRD FARMERS, 1946.

Number and Kind of Birds on Hand as at January 1st, 1946.

Pheasants	2,349	Ducks	2
Quail	27	Partridge	50

Number and Kind of Birds raised, 1946.

Pheasants	12,384	Partridge	18
Quail	11		

Number and Kind of Birds purchased, 1946.

Pheasants	514	Quail	16

Number and Kind of Birds sold, 1946.

Pheasants	10,628	Partridge	31
Quail	5		

Number and Kind of Birds killed or died, 1946.

Pheasants	1,805	Partridge	3
Quail	22		

Number and Kind of Birds on Hand as at December 31st, 1946.

Pheasants	2,814	Ducks	2
Quail	27	Partridge	34

NOTE.—During the year 1946 there were 120 licensed game-bird farmers in the Province, but during the year 1946 twenty-six of these farmers discontinued operations. There was one *nil* return. Two game-bird farmers have not submitted returns. Game-bird bands sold to licensed game-bird farmers during the year 1946 amounted to $83.20 (832 bands at 10 cents each).

MISCELLANEOUS REVENUE, 1946.

Sale of Lists of Various Licence-holders, etc.

8 fur-farmers' at $3.50 per copy	$28.00
1 fur-trader's at $1.50 per copy	1.50
5 trappers'	80.00
385 trap-line transfer fees at $2.50 each	962.50
832 game-bird bands at 10 cents each	83.20
Total	$1,155.20

LIST OF GUIDES AND NON-RESIDENT OUTFITTERS, 1946.

Definitions of Guide Licence Grades.

Grade "A" Guide is one who has been acting as a guide for at least three years, and who has suitable equipment for outfitting any person desiring to hunt game.

Grade " B " Guide is a person who cannot qualify as a Grade "A" Guide, but who acts as an assistant to a Grade "A" Guide, or whose activities as a guide are confined to guiding in areas where, by reason of local conditions, there is no necessity to use extensive equipment.

Grade " C " Guide is one who guides a person hunting, taking, or killing game birds or angling for trout.

East Kootenay "A" (Cranbrook-Invermere-Golden Districts).

Name and Address of Guide.	Licence Grade.
Anderson, Charles D., Windermere	A
Appleby, Gordon, Invermere	A
Asimont, Horst, Athalmer	B
Avery, Williams, Golden	B
Baldry, Alfred C., Windermere	B
Ball, James, Windermere	B
Barbour, George G., Wilmer	A
Bechthold, Richard, Golden	B
Bergenham, Peter, Beaver	A
Bjorn, Henry M., Fort Steele	B
Bond, Allan K., Kimberley	B
Bradford, Barron, Skookumchuck	B
Brogan, Alex., Canal Flats	B
Brogan, Joseph, Kingsgate	B
Canning, Lester, Skookumchuck	B
Capilo, Louis, Golden	B
Cooper, Albert, Invermere	B
Cretney, C. S., Fort Steele	A
Crookes, Harold C., Ta Ta Creek	B
Dahl, Emil, Golden	B
Danniken, Joseph, Edgewater	B
Davies, Montie D., Fairmont	B
Desimore, Samuel H., Cranbrook	A
Dilworth, James, Athalmer	B
Dobbie, Alex. J., Invermere	B
Dubois, Jack V., Windermere	B
Eady, Clark, Golden	B
Edlund, John S., Golden	B
Engstrom, Sven F., Canal Flats	B
Fisher, Tony, Fairmont	B
Foyston, Fred, Invermere	B
Galbraith, Arthur, Spillimacheen	B
Galbraith, Edward, Spillimacheen	B
Gilbert, Frank, Field	B
Goodwin, Cecil R., Invermere	B
Goodwin, Elwood, Invermere	B
Gold, Percy, Canal Flats	A
Hagen, Frank, Wynndel	B
Hamilton, Tom J., Ta Ta Creek	B
Hammond, Lyle, Golden	B
Harrison, William, Edgewater	A
Hart, Clayton J., Kimberley	B
Hogan, Charles, Spillimacheen	B
Hogan, Morley, Parson	B
Hynes, Ben, Spillimacheen	C
Hynes, Telford, Spillimacheen	C
Johnson, Alex., Invermere	B
Jones, Ken, Golden	A
Joseph, Jerome, Fairmont	B
Kain, Isider, Wilmer	B
King, Norman, Golden	B
Lawrence, Charles, Golden	A
Lindberg, Axel, Golden	B
Lloyd, Garth K., Windermere	B
Lum, George, Fort Steele	B
Lum, Peter, Fort Steele	A
McClain, Jess I., Spillimacheen	A
McIntosh, Ewen M., Invermere	B
McKay, Gordon, Invermere	A
McKeeman, Robert, Parson	B
Markuson, Levi, Canal Flats	A
Michael, David C., Invermere	A
Mitchell, Robert, Brisco	B
Morigeau, Martin, Fairmont	B
Nattrass, R. B., Golden	B
Nicol, Arthur H., Fort Steele	A
Nixon, David, Invermere	B
Nixon, Fred, Golden	B
Nixon, John H., Invermere	B
Nixon, Walter (Jr.), Invermere	A
Nixon, Wilbert, Parson	A
O'Loughlin, Edward, Spillimacheen	B
Pagliaro, D., Golden	B
Palmer, Howard, Wilmer	B
Pelton, R. B., Cranbrook	A
Petrie, Robert M., Cranbrook	B
Phillips, Eclus, Windermere	B
Phillips, Frank A., 1551 St. Andrews Street, North Vancouver	A
Philipps, Olwyn P., North Vancouver	B
Pommier, Emile, Skookumchuck	B
Rae, Drapper M., Windermere	B
Reay, Charles D., Jaffray	B
Richer, Lionel, Windermere	C
Richter, Frank, Invermere	B
Rutherford, Melville, Invermere	A
Scofield, Bernard, Canal Flats	B
Seward, Arvid, Golden	B
Sheek, Wesley P., Parson	A
Sinclair, Alex., Canal Flats	B
Stewart, Charles, Spillimacheen	A
Stewart, David, Spillimacheen	B
Stewart, Douglas, Spillimacheen	B
Strain, George, Spillimacheen	B

EAST KOOTENAY "A" (CRANBROOK-INVERMERE-GOLDEN DISTRICTS)—*Continued.*

Name and Address of Guide.	Licence Grade.
Sykes, Harry, Galena	A
Tegart, George, Edgewater	A
Tegart, Hiram W., Brisco	B
Tegart, James, Brisco	A
Tegart, Monte, Brisco	B
Thomas, Guy, Parson	A
Thomas, Orville, Parson	A
Thomas, Robert G., Parson	B
Thompson, James C., Brisco	A
Thompson, Lionel, Edgewater	B
Tyler, Graham, Invermere	B
Van Hoeren, Joe, Golden	B
Washburn, Frank L., Flathead	A
Webber, Sidney, Golden	A
Weeden, Fredrick, Wilmer	B
White, James F., Fort Steele	A
Wiedeman, Otto, Golden	A
Wilson, John, Spillimacheen	B
Wolfenden, Winston, Brisco	B
Wood, Nello V., Brisco	A

EAST KOOTENAY "B" (FERNIE-NATAL DISTRICTS).

Anderson, Fred, Wardner	B
Arbuckle, John, Coal Creek	B
Baher, Brian, Natal	B
Baher, Martin C., Natal	A
Baher, Mathias, Natal	A
Baher, William, Natal	A
Barnes, Alfred, Corbin	B
Barnes, J. N., Fernie	A
Dvorak, Frank, Fernie	B
Dvorak, Wenzel, Fernie	B
Eberts, Max, Natal	B
Eftoda, Gordon, Natal	B
Fisher, Frank, Natal	B
Gravelle, Nick, Flagstone	B
Heitman, John H., Natal	B
Hicks, Frank, Fernie	A
Hicks, Philip, Fernie	B
Hyttsten, John, Natal	B
Kaisner, George, Natal	B
Kaisner, Harry (Jr.), Natal	A
Larson, Charles A., Natal	B
McGinnis, Earl, Natal	A
McKim, Philip A., Fernie	B
Philips, Frank C., Flagstone	B
Phillips, Douglas, Flagstone	B
Phillips, George, Flagstone	B
Porco, Albert, Michel	A
Porco, Ralph, Michel	A
Rosicky, Anton, Wardner	B
Rothel, Malcolm, Natal	A
Rothel, Robert A., Natal	B
Siple, Alfred, Fernie	A
Smolik, Rudolph, Fernie	B
Volpatti, Benjamin J., Natal	A
Whiting, Renal, Natal	B

WEST KOOTENAY (NELSON-SLOCAN-KOOTENAY-ARROW AND TROUT LAKES DISTRICTS).

Brett, Artley, Wynndel	C
Cummings, Arnold, Boswell	C
Cummings, R., Boswell	C
Fletcher, C. C., Ainsworth	C
Gates, E. B., St. Leon via Nakusp	B
Hornseth, J. H., Sirdar	B
Kachuk, John, Trout Lake	B
Law, Ian W., Nakusp	B
Oliver, George L., Gray Creek	B
Rorick, Clifford C., Upper Arrow Lakes	A
Varney, C. E., Vallican	A
Varney, Roy, Vallican	A

REVELSTOKE-SALMON ARM AND OKANAGAN DISTRICT.

Bailey, Bruce G., Revelstoke	A
Bischoff, Fred, Magna Bay	B
Bowman, John A., Three Valley	A
Churchill, J. D., Falkland	B
Churchill, Thomas, Falkland	B
Coles, Henry, Revelstoke	B
Daney, Seldon, Ferguson	A
Hanson, Charles E., Cherryville	B
Johanson, J. A., Craigellachie	A
Krimmer, Nichols, Box 1375, Kelowna	B
Laforme, George A., Revelstoke	A
Leslie, John F., Eagle Bay	B
Mobley, Howard, Salmon Arm	A
Nelson, Howard, Revelstoke	A
Ocean, Frank, Eagle Bay	A
Reid, Thomas, Ferguson	B
Ritchie, Kenneth G., Box 686, Kelowna	C
Smith, Lewis, Seymour Arm	A
Stewart, Edwin, R.R. 3, Armstrong	B

SIMILKAMEEN (PENTICTON-PRINCETON-KEREMEOS).

Armstrong, Henry G., Keremeos	B
Burr, Gerald, Princeton	B
Davis, William E., Box 282, Penticton	B
Forbes, Arthur, Princeton	B
Foster, William C., Keremeos	B
Garrett, Frank L., Naramata	A
Garrison, Stanley, Princeton	B
Gold, Robie B., Mazama	B
Hugo, A. M., Penticton	B
Henry, Thomas W., Penticton	B
Henry, Walter J., Peachland	B
Ibbotson, Harry, Peachland	B
Ivens, Lawrence W., Okanagan Mission	B
Lacey, Edward (Jr.), Osoyoos	B

SIMILKAMEEN (PENTICTON-PRINCETON-KEREMEOS)—*Continued.*

Name and Address of Guide.	Licence Grade.
LaLievre, B. C., Penticton	B
Lewis, James W., Princeton	A
MacGawne, Mr., Naramata	B
Manion, William, Tulameen	B
Reese, Richard, Penticton	B
Richter, John, Keremeos	B
Saunier, E., Naramata	B
Thomas, Charles W., Princeton	B
Tower, Stanley, Princeton	B
Wright, Brian, Princeton	B

KAMLOOPS DISTRICT.

Name and Address of Guide.	Licence Grade.
Allen, Howard, Kamloops	B
Anderson, Dave, Clearwater	B
Archibald, David A., Clearwater	B
Avery, Walter O., Criss Creek	B
Bagg, John W., Savona	B
Bergeron, Gordon A., Barriere	B
Boule, James E., Savona	B
Boychuck, John, Douglas Lake	B
Brousseau, Clifford E., Savona	B
Burdett, George, Savona	A
Burdett, Loretta F., Savona	A
Cahoon, Charles R., Kamloops	B
Cameron, James B., Savona	B
Casey, Fred R., Kamloops	B
Chester, Bertrand, Red Lake	B
Chester, Horman, Red Lake	B
Christian, Douglas W., Savona	B
Clearwaters, Ralph, Westsyde	B
Cochran, W. P., Darfield	B
Cooper, Norman E., Savona	B
Cooper, Philip T., Westsyde	B
Cornwall, Gilbert, Kamloops	B
Deaver, James, Savona	B
Dever, Dolly, Vidette Lake, Savona	B
Dexheimer, John, Savona	B
Dick, Bruce A., Barriere	B
Douthwaite, P. L., McLure	B
Eakin, James, Little Fort	B
Felker, Norman H., Clearwater	B
Gourlay, James R., Barriere	B
Grant, Charles, McLure	B
Grant, Gordon, McLure	A
Hagen, Harry O., Barriere	B
Harding, Leonard, Savona	B
Hardie, Alex. W., Red Lake	B
Helset, Torbjorn, Clearwater	A
Heyworth, Ted, Red Lake	B
Hogue, Henry A., Clearwater	B
Hogue, John S., Clearwater	B
Hoover, Eldred, McLure	A
Inskip, Harry G., Kamloops	B
Irving, F. H., McLure	B
Jameson, Clarence, Clearwater	C
Johnson, Jack, Savona	B
Johnson, Leonard C., Heffley Creek	B
Johnson, Stewart, Criss Creek	A
Kipling, John R., Black Pines	B
LaFave, Everett, Barriere	B
LaFave, G. E., Louis Creek	B
LaFave, J. N., Agate Bay	B
Langdon, Frank, Little Fort	B
Latremouille, J. L., Little Fort	A
Lean, Theodore, B., Clearwater	B
Ludtke, Lawrence, Clearwater	A
Ludtke, Charles D., Clearwater	B
MacDougall, Harold D., Darfield	B
MacDougall, Roy, Barriere	B
MacDougall, Wallace I., Darfield	B
Majerus, Mike, Clearwater	B
McConnel, Kenneth R., Barriere	B
McDiarmid, Garfield, Clearwater	B
McDonell, Gordon D., Sorrento	B
McGarrigle, W. J., Little Fort	B
McLean, C. W., McLure,	A
Mitchell, John, Barriere	B
Morton, Alfred, Kamloops	A
Murray, George E., Savona	B
Nelson, Gerald, Black Pines	B
Nelson, William L., Criss Creek	B
Nord, Olaf L., McMurphy	B
Palmer, William F., Darfield	B
Peel, Murril A., Pritchard	B
Philip, William P., Savona	B
Potts, Bill, Sorrento	B
Rainer, Karl J., Darfield	B
Rawson, John C., Squilax	B
Reaugh, William H., Criss Creek	B
Riesterer, Charles A., Magna Bay	B
Sandiford, George, Kamloops	C
Schmidt, Ernest, Barriere	B
Schreibus, Charles C., Darfield	B
Scott, Duncan, Barriere	A
Shook, Charles, Clearwater	B
Shopshire, L. W., Aspen Grove	B
Shopshire, V. H., Aspen Grove	B
Small, Reg, Clearwater	B
Sleeth, Edward, Savona	B
Smith, Allan E., Criss Creek	B
Smith, Heber, Kamloops	B
Smith, John W., Red Lake	B
Smith, William, North Kamloops	B
Sproule, Osbin, Sorrento	B
Taylor, Stanley A., Clearwater	B
Toop, Earl K., Savona	B
Thompson, Miles, Kamloops	B
Threlkeld, Harold, Savona	B
Threlkeld, Richard, Savona	B
Tupper, James J., Savona	B
Turner, Harold A., Criss Creek	B
Vinnie, Alexander, Kamloops	B
Walters, Jack, Sorrento	B
Walters, June, Savona	B
Welland, John, Red Lake	B
Wilson, Frank W., Spences Bridge	B
Woodward, Frank, Little Fort	B
Woodward, John, Little Fort	B

GRAND FORKS-GREENWOOD (INCLUDING KETTLE VALLEY).

Name and Address of Guide.	Licence Grade.
Abel, Cummine, Kettle Valley	B
Abel, W. Simpson, Westbridge	B
Ackerman, Alfred W., Westbridge	B
Acland, John V., Rock Creek	B
Anschetz, Chris, Rock Creek	B
Bohnett, James, Rock Creek	B
Carey, Bertram C., Rock Creek	B
Carey, Joseph, Westbridge	B
Carpenter, Walter E., Westbridge	B
Cochran, Flynn, Westbridge	B
Cochran, Freddie M., Westbridge	B
Fernstrom, John, Kettle Valley	B
From, Gus W., Westbridge	B
From, Helge, Westbridge	B
From, Ingvall N., Westbridge	B
From, Oliver, Westbridge	B
Halcrow, Edward G., Beaverdell	B
Hall, David E., Westbridge	B
Jupp, William H., Westbridge	B
Lockhart, Fred, Beaverdell	B
Lutner, Edwin C., Beaverdell	B
McKay, John R., Westbridge	B
Noren, Arthur A., Westbridge	B
Noren, Carl F., Westbridge	B
Noren, Carl S., Westbridge	B
Noren, Clarence W., Westbridge	B
Peterson, Frank O., Westbridge	B
Peterson, Morris, Westbridge	B
Peterson, Stanley G., Grand Forks	B
Silk, Bernard W., Rock Creek	B
Smith, Howard J., Westbridge	B
Sommers, Marvin L., Westbridge	B
Wells, Kenneth B., Beaverdell	B
Wolstenhome, Ronald, Westbridge	B
Wornock, Richard A., Westbridge	B

LOWER MAINLAND COAST AND FRASER VALLEY.

Name and Address of Guide.	Licence Grade.
Hyde, Kenneth E., Abbotsford	B
McGregor, Charles, 277 1st Street, East, North Vancouver	B
Siebert, John, Sardis	B
Sing, Isaac, 1795 Beach Avenue, Vancouver	B
Wells, Gordon E., R.R. 2, Sardis	A
Wells, Ray E., R.R. 2, Sardis	A
Welmer, Wilfred A., Hope	B
Munro, James W., 1363 Kingsway, Vancouver	B

VANCOUVER ISLAND.

Name and Address of Guide.	Licence Grade.
Boyles, Thomas J., Cobble Hill	B
Gillespie, G. K., Lake Cowichan	C
Gower, Terrance, Courtenay	A
Hancock, Art, Lake Cowichan	B
Hancock, Joseph A., Lake Cowichan	B
Handlen, Edward, Courtenay	B
Kay-Nichols, Cæsar, Sayward	B
Martin, Patrick, Courtenay	B
Pallisser, Charles H., Lake Cowichan	B
Pallisser, Verne, Lake Cowichan	B
Pallisser, William, Lake Cowichan	B
Parkin, Alvin, Campbell River	B
Pegler, Harry H., c/o R. Andrews, Maxwell House, Cowichan Bay	C
Rossignol, Philias, Campbell River	B
Sacht, Arthur, Sayward	B
Salmon, George E., R.R. 1, Langford	B
Smith, Cecil, Campbell River	B
Vanstone, John, Campbell River	B
Walsh, Phil, Campbell River	B

CARIBOO DISTRICT "A" (100-MILE HOUSE SOUTH TO ASHCROFT AND INCLUDING CANIM LAKE AND LILLOOET).

Name and Address of Guide.	Licence Grade.
Agnew, Harlow, Clinton	B
Archie, Cassian, Canim Lake	A
Archie, Charles A., Buffalo Creek	B
Archie, George, Canim Lake	A
Archie, Jacob, Canim Lake	A
Archie, Johnny, Buffalo Creek	B
Archie, Sam, Canim Lake	B
Baker, James A., Ashcroft	B
Baker, J. C., Loon Lake,	B
Baker, R. M., Loon Lake	B
Bates, Murray, Clinton	B
Bell, Darwin, 70-Mile House	B
Bishop, H. R., Clinton	B
Bishop, James A., Cinton	A
Birdsell, S. O., Cinton	B
Bob, Edward, Forest Grove	A
Bob, Henry, Forest Grove	B
Bones, Alex., Clinton	A
Bones, F., Cinton	B
Bones, Pete, Clinton	B
Borthwick, Hector, Forest Grove	B
Bowden, George R., Clinton	B
Bowden, Ronald L., Clinton	B
Boyce, J. A., Canim Lake	A
Boyce, Julian, Forest Grove	B
Bradford, A. N., Bridge Lake	B
Bradford, H. J., Bridge Lake	B
Bradford, Robert, Bridge Lake	B
Brandley, E., 83-Mile House	B
Burgess, Ted, Deka Lake	A

Cariboo District "A" (100-Mile House South to Ashcroft and including Canim Lake and Lillooet)—*Continued.*

Name and Address of Guide.	Licence Grade.
Camille, F., 83-Mile House	B
Candy, N., 70-Mile House	B
Carnegie, Albert, Forest Grove	B
Collin, Arthur, 100-Mile House	B
Chabara, Anna, 70-Mile House	B
Charlie, Jimmie, Forest Grove	B
Christopher, Peter, Canim Lake	B
Christy, Frank R., Moha	B
Cleveland, J. G., Eagan Lake	B
Cleveland, L. C., Eagan Lake	A
Cleveland, R. M., Eagan Lake	B
Cleveland, W. L., Eagan Lake	B
Coldwell, H. W., Jesmond	A
Collins, B., Cache Creek	B
Collins, E. M., Cache Creek	A
Cox, Leslie J., Loon Lake	B
Craig, N. F., Bridge Lake	B
Cromer, Ben, Shalalth	B
Cruickshank, George, Canim Lake	B
Cunningham, Charles, Bralorne	B
Currie, William D., Bridge Lake	B
Dahlgren, C. H., Bridge Lake	B
Daniels, George, Canim Lake	B
Day, W. A., 100-Mile House	B
Dean, James C., Bridge Lake	B
Decker, English, Canim Lake	B
Donald, William J., Savona	B
Dougherty, Chris, Clinton	B
Dougherty, T. H., Clinton	B
Dougherty, E. G., Loon Lake	A
Dyer, Guy H., 70-Mile House	B
Edall, I. K., Lone Butte	B
Edall, Lute, Fawn	B
Eden, Donald, Lone Butte	B
Erickson, S. W., Canim Lake	B
Faessler, Charles J. (Jr.), Fawn	B
Fenton, H., Jesmond	B
Fenton, Walter, Jesmond	B
Ferguson, James B., 16-Mile, Cariboo Lake	B
Flaherty, R. J., 93-Mile House	A
Forde, H. A., Clinton	B
Fraser, Donald, Lillooet	B
Froste, F. T., Ashcroft	B
Gaines, Clinton, Lone Butte	B
George, Charlie, Clinton	B
George, Henry, Cache Creek	B
George, Steven, Moha	B
Gibbons, Mil, Horsefly	B
Graham, Robert, Horsefly	B
Graham, W. J., Horsefly	B
Greenlee, E., Canim Lake	B
Grice, Percy, Young's Lake	B
Grinder, Eddie, Jesmond	B
Grinder, Isidore, Clinton	A
Grinder, J., Jesmond	A
Grinder, R., Clinton	B
Grinder, William, Jesmond	B
Gunn, John M., Horsefly	B
Gunn, Joseph, Horsefly	B
Hansen, J. F., Bridge Lake	A
Hansen, R. Lee, Heffley Creek	A
Hansen, Wesley B., Bridge Lake	B
Hendricks, Ike, Clinton	B
Higginbottom, A., Jesmond	B
Higgins, C., Bridge Lake	B
Higgins, Ed., Fawn	B
Higgins, Marion, Bridge Lake	A
Higgins, R., Bridge Lake	B
Hill, W. C., 70-Mile House	B
Hodges, E. W., Fawn	B
Hodgson, W. A., Jesmond	B
Holgate, L., Cache Creek	B
Hooke, John C., Clinton	B
Horn, W. A., Fawn	B
Houseman, J. J., Buffalo Creek	B
Huckvale, A. J., Fawn	B
Illingworth, J. W., Kelly Lake	B
Johnson, J. A., 100-Mile House	B
Johnson, Claude, Bridge Lake	B
Johnson, O. M., 70-Mile House	B
Johnson, Zale A., Bridge Lake	B
Johnston, Vincent T., Bridge Lake	B
Julseud, E. E., Fawn	B
Keary, Charles, Minto	B
Kent, Arthur G., Lytton	B
Kerp, A. H., Clinton	B
King, C. J., Fawn	B
King, Gordon B., Fawn	B
Knauf, H. G., Fawn	B
Knudson, William, Lytton	B
Koster, Henry, Canoe Creek	B
Kostering, C., Clinton	B
Krebs, Len, 100-Mile House	B
Labordie, Eddy, Clinton	A
Labordie, Joe, Clinton	B
Land, Robert R., Moha	A
Larson, Jack O., Bridge Lake	A
Larson, Karel, Roe Lake	B
Larson, Leonard, Roe Lake	B
Larum, Sigurd, Horse Lake	B
Leavitt, F. W. (Jr.), Fawn	B
Lehman, Albert, Lillooet	B
Levick, J. S., Fawn	B
Lord, E., Buffalo Creek	B
Loring, Edwin, Clinton	B
Louis, Freddy, Canoe Creek	B
Lowe, Francis J., Loon Lake	B
Mackie, James C., Horse Lake	B
MacLean, Donald, Fawn	A
Madden, E. E., Cache Creek	B
Maddocks, Frank, 70-Mile House	B
Marriott, R., Clinton	B
Matier, H., Clinton	B
McNeil, B. H., Canim Lake	B
McNeil, Donald, Goldridge	B
McNeil, Herbert M., Fawn	A
McNeil, Spencer B., Fawn	A

Cariboo District "A" (100-Mile House South to Ashcroft and including Canim Lake and Lillooet)—*Continued.*

Name and Address of Guide.	Licence Grade.
Michel, Thomas, Lillooet	B
Miller, John C., Roe Lake	B
Miller, Wayne, Fawn	B
Mobbs, A. J., Watch Lake	B
Mobbs, Ben H., Watch Lake	B
Morrical, L., Clinton	B
Morris, L., Forest Grove	B
Mulvihill, M., Jesmond	B
Murray, G. J., Loon Lake	B
Nath, Carl G., Lone Butte	B
Nicholson, J. D., Fawn	B
Odian, E. J., Lone Butte	B
O'Keeffe, Wallace, Bralorne	B
Olafson, H. J., Lone Butte	B
Parent, S. J., Sulphurous Lake	B
Park, Arlie H., Pressy Lake	B
Park, Jack, 70-Mile House	B
Paul, Louis, Canoe Creek	B
Perrault, Joseph, Jesmond	B
Peters, Jacob, Shalalth	B
Peters, Michell, Clinton	B
Piarro, John, Cache Creek	B
Pigeon, A., Clinton	B
Pigeon, C. L., Clinton	B
Pigeon, J. R., Clinton	B
Pigeon, P. F., Clinton	B
Pinchbeck, C., Cache Creek	B
Pollard, J. H., Clinton	A
Powell, Henry, Fawn	B
Powell, Thomas G., Fawn	A
Prydatok, S., 70-Mile House	B
Reichmuth, M., Fawn	B
Reinertsen, R. J., 70-Mile House	B
Reynolds, A. J., Big Bar	B
Reynolds, H. D., Big Bar	B
Roper, A. H., Forest Grove	B
Rosette, Augustine, Gang Ranch	B
Roy, Harold C., Fawn	B
Russell, Leonard J., Lillooet	B
Scheepbouwer, John C., 70-Mile House	A
Scheepbouwer, William, 70-Mile House	B
Scott, Douglas, 100-Mile House	A
Sedman, Jack E., Sheridan Lake	B
Smith, C., Fawn	B
Sporring, John, Bridge Lake	B
Stanislaus, P., Forest Grove	B
Striegler, Robert, Clinton	B
Thomason, David, Bridge Lake	B
Thorsteinson, Charles, Fawn	B
Tubbs, Clifford S., Forest Grove	B
Turney, R. J., Lone Butte	A
Umphrey, Sam, Fawn	B
Van Horlick, Buster, 59-Mile Chasm	B
Walsh, F. C., 70-Mile House	B
Watkinson, Robert, Lillooet	B
Wayne, D. T., Fawn	B
Watt, James D., Kelly Lake	B
Welyk, Hector, Fawn	B
Westman, H., Forest Grove	B
Wilkinson, Charles, Green Lake	B
Wrigley, E. W., 70-Mile House	B
Young, William, Clinton	B
Zimmerlee, E., Jesmond	B

Cariboo District "B" (from 100-Mile House North to Marguerite, including Chilcotin).

Abram, Ernest, Lac la Hache	B
Adams, Gustave, Big Lake	B
Alexander, Jack, Lac la Hache	B
Allen, Charles A., Likely	B
Ash, Chris, Big Lake	B
Barker, Peter, Big Lake	B
Barton, Thomas, Lac la Hache	B
Bathgate, John, Lac la Hache	B
Bliss, William, Alexis Creek	B
Bourelle, Philip B., Ochiltree	B
Bourelle, W., Williams Lake	A
Boyle, Frank, Williams Lake	B
Bradley, A., Williams Lake	B
Bryce, John, Big Lake	B
Carson, Jack, Horsefly	B
Church, R. H., Big Creek	A
Collier, Eric, Riske Creek	B
Cowan, Kenneth E., 150-Mile House	B
Cropley, R. H., Williams Lake	B
Crosina, William W., Williams Lake	B
Curtis, Rae, Williams Lake	B
Davis, John, Hanceville	B
Dester, Batese, Kleena Kleene	B
Dick, Matthews, Alkali Lake	B
Diehl, Leo, Big Creek	B
Dixon, E. F., Lac la Hache	B
Dorsey, Lester, Anahim Lake	B
Eagle, Clifford B., Lac la Hache	A
Eagle, John W., Lac la Hache	B
Elkin, Thomas, Alexis Creek	B
Ellison, Creighton, Hanceville	B
Ewart, Dan, Lac la Hache	B
Felker, W. R., 150-Mile House	B
Forbes, Cameron, Horsefly	B
Ford, Clair H., Horsefly	B
Forsterm, Hubert, Likely	A
Haller, August, Lac la Hache	B
Haller, Clarence, Lac la Hache	B
Haller, Lester, Lac la Hache	B
Halskov, Eric, Big Lake	B
Hamilton, G. G., Williams Lake	B
Hamilton, H. M., Lac la Hache	B
Hamilton, J., Lac la Hache	A
Hamilton, John R., Williams Lake	B
Hamilton, Peter, Williams Lake	B
Hamilton, Rae M., Williams Lake	B
Hamilton, Thomas, Williams Lake	B
Henderson, John, Tatlayoko	B

Cariboo District "B" (from 100-Mile House North to Marguerite, including Chilcotin)—*Continued.*

Name and Address of Guide.	Licence Grade.
Henry, Eagle Lake, Redstone	B
Henry, O. C., Big Creek	B
Herber, A., 150-Mile House	B
Hinschy, Fred, Lac la Hache	B
Hockley, George, Horsefly	B
Holt, James, Hanceville	B
Hooker, F. C., Horsefly	A
Hooker, G. B., Horsefly	B
Hubbard, I. H., Horsefly	B
Hulme, A. W., Likely	B
Hunison, Joy H., Williams Lake	B
Jacobson, Alfred, Williams Lake	B
Jacobson, John, Williams Lake	B
Jefferson, Jesse, Big Lake	B
Jefferson, Lawrence, Big Lake	B
Jefferson, Theodore, Big Lake	B
Jenner, Ernest, Horsefly	A
Jensen, Pete, Likely	B
Johnson, Floyd, Lac la Hache	B
Johnson, James E., Bridge Lake	B
Johnson, J. W., Riske Creek	B
Jones, Fred, Horsefly	B
Jones, Lawrence, Horsefly	B
Kelly, James, Soda Creek	B
Kelly, John, Soda Creek	B
Kennedy, William H., Horsefly	B
Kiny, E. S., Horsefly	B
Lee, T. C., Alexis Creek	B
Lutz, George, Williams Lake	B
MacKenzie, William, 150-Mile House	B
MacKill, Clarence, Kleena Kleene	A
Manley, D. V., Horsefly	B
Matheson, A. G., Soda Creek	B
Mayfield, Marvin, Lac la Hache	B
McDonald, Harold, Big Lake	B
McDougall, Archie, Lac la Hache	B
McDougall, Robert D., Big Lake	B
McMinds, B. O., Likely	B
Mikkelson, Claus, Horsefly	B
Mills, Thomas W., Horsefly	B
Moore, George, Ochiltree	B
Moore, John, Ochiltree	B
Moore, Thomas A., Ochiltree	B
Morgan, Ballas, Likely	B
Mulvahill, R., Redstone	A
Neilson, Herman, Likely	B
Nicol, A., Horsefly	B
Nicol, Shelly, Horsefly	B
Oak, Ernest, Horsefly	B
Otson, James A., Horsefly	B
Pillver, George, 150-Mile House	B
Quilt, Francis, Hanceville	B
Rachen, Wilfred, Horsefly	B
Rafferty, Arthur, Riske Creek	A
Rankin, Robert F., Soda Creek	B
Rawling, Arden L., Quesnel	A
Roberts, Charles F., Riske Creek	B
Robertson, Irene (Mrs.), Miocene	B
Robertson, K. H., Miocene	B
Sandy, Frank, Williams Lake	B
Sellers, Albert, Soda Creek	B
Sharp, William, Ochiltree	B
Sharp, William A., Ochiltree	B
Speed, Russel, Likely	B
Sundman, John, 100-Mile House	B
Sutherland, Eagle H., Hanceville	B
Thygesen, Julius, Horsefly	B
Timothy, Kleena Kleene	B
Turner, George, Kleena Kleene	B
Veness, John, Horsefly	B
Walters, Glen, Horsefly	A
Walters, Harry L., Horsefly	B
Walters, Leonard, Horsefly	B
Weber, James L., Williams Lake	B

Cariboo District "C" (Quesnel-Barkerville from Marguerite North).

Aiken, Edward F., Marguerite	B
Aitken, Leslie J., Marguerite	B
Allen, George H., Quesnel	A
Armstrong, Brazier, Quesnel	A
Armstrong, Wilfred, Quesnel	A
Becker, Fred W., Barkerville	A
Boyd, Ambert, Marguerite	B
Cochran, James D., Barkerville	A
Coldwell, Reg, Punchaw	B
Cooper, Thomas, Quesnel	B
Dolvin, Edward, Quesnel	A
Evans, Charles, Quesnel	A
Fleury, Alfred, Wells	B
Gerwien, Joseph, Quesnel	B
Greig, Ian, Quesnel	B
Hagen, Roy, Quesnel	B
Harrington, Alex. G., Quesnel	B
Hayward, Arthur M., Alexandria	B
Hoffman, Peter, Cinema	A
Kirkendall, Floyd, Quesnel	A
Lavington, Harold A., Quesnel	B
Lyngas, Hans, Quesnel	B
McCort, Clarence, Alexandria	A
McKenzie, Frank, Cinema	A
McKenzie, James, Cinema	A
McKitrich, Arnold, Wells	B
McKitrich, Roy, Wells	B
Marsh, Ruric L., Quesnel	A
Miller, Isaac E., Punchaw	B
Moffat, Ronald H., Alexandria	A
Moffat, Roddy R., Quesnel	B
Monkman, Erastus N., Narcosli Creek	B
Nelson, Olaf, Wells	B
O'Leary, Arthur, Quesnel	B
Paxton, H. E., Macalister	B
Pease, C. A., Quesnel	B
Perry, Hugh H., Quesnel	B
Quanstrom, Carl, Quesnel	A
Quanstrom, Harry, Quesnel	B
Robertson, A., Macalister	B

CARIBOO DISTRICT "C" (QUESNEL-BARKERVILLE FROM MARGUERITE NORTH)—*Continued.*

Name and Address of Guide.	Licence Grade.
Robertson, A. H., Macalister	B
Simrose, Martin, Cinema	B
Tibbles, Fred, Quesnel	A
Tibbles, James, Quesnel	A
Twan, Allan, Marguerite	B
Twan, Dave, Marguerite	A
Webster, Jim, Narcosli Creek	A

PRINCE GEORGE DISTRICT "A" (EAST TO MOUNT ROBSON).

Name and Address of Guide.	Licence Grade.
Bell, Irving W., Prince George	B
Bergstrom, John, Hansard	A
Bricker, William, South Fort George	A
Brooks, George, South Fort George	A
Carr, Stanley J., Tête Jaune Cache	A
Chesser, Charles A., Mount Robson	B
Corless, John D., Prince George	B
Corless, Richard F. (Jr.), Prince George	A
Cornell, Horace L., Prince George	B
Felton, E. M., Dunster	B
Gagne, Joe C., Hansard	B
Giles, Charles J., Prince George	B
Hansen, Anund (Sr.), Hansard	A
Hargreaves, Roy F., Mount Robson	A
Hinkelman, Clifford, McBride	C
Hooker, Glen B., Dome Creek	B
Hooker, James B., Dome Creek	A
Hooker, Kenneth N., Dome Creek	B
Huble, Sam E., Prince George	B
Jensen, Arne, Dome Creek	A
Johnson, Howard T., South Fort George	B
Long, Fabian, McBride	B
Miller, Delmar N., Ware	A
Mills, Marshall, Tête Jaune Cache	B
Mintz, Carl, Tête Jaune Cache	B
Monroe, Everett, McBride	B
Neighbor, Herschel, Tête Jaune Cache	B
Nevin, J., Croydon	B
Persing, H. B., Prince George	B
Sande, Walter J., Sinclair Mills	A
Smith, James M., Loos	A
Yargeau, Jack, South Fort George	A

PRINCE GEORGE DISTRICT "B" (WEST TO HAZELTON).

Name and Address of Guide.	Licence Grade.
Beaver, Albert E., Ootsa Lake	A
Bennett, Clifford, Ootsa Lake	B
Bennett, Vernon, Southbank	B
Blackburn, Thomas H., Fort St. John	A
Campbell, Ronald B., Vanderhoof	B
Colons, Litta, Topley	B
Conlon, Henry R., Topley	B
Cook, Ted, Vanderhoof	B
Davidson, Charles B., Vanderhoof	A
Donald, Jimmy, Burns Lake	B
Eakin, Samuel, Burns Lake	B
Gainger, Barry, Noralee	B
George, Leonard W., Telkwa	B
George, Thomas S., Telkwa	B
Harrison, B. R., Wistaria	A
Harrison, Orald A., Wistaria	B
Henderson, George W., Colleymount	B
Henry, Stanley, Ootsa Lake	B
Henson, Frank E., Marilla	B
Hindmarch, Floyd E., Vanderhoof	B
Hoy, David H., Fort St. James	C
Hoy, Robert D., Fort St. James	B
Johnson, G. M., Vanderhoof	B
Jones, David L., Fort St. James	C
Knox, John, Ootsa Lake	B
Leon, Paddy, Topley Landing	B
Lord, Walter H., Tchesinkut Lake	B
Loss, Helmar F., Topley	B
Malgunas, Costo, Mud River	B
McKinley, Thomas, Ootsa Lake	B
McNeill, Clifford, Ootsa Lake	A
McNeill, John W., Ootsa Lake	A
Michell, Gabriel, Babine Lake	B
Miller, San Louis, Lake Pierre	B
Morgan, James E., Wistaria	A
Munger, F. W., Walcott	B
Nelson, John W., Noralee	B
Neurauter, Frank, Burns Lake	B
Nichols, Edmund B., Marilla	B
O'Brien, Walter, Vanderhoof	B
Plowman, C., Endaka	B
Prince, John, Fort St. James	B
Prince, Teddy, Fort St. James	B
Rasmussen, Johnny, Fort St. James	B
Rasmussen, Peter, Mapes	B
Ray, Harvey L., Nithi River	B
Ross, Arthur, Marilla	B
Schorder, Ray L., Tatalrose	B
Seyfarth, J. N., Fort St. James	B
Shea, J. B., Telkwa	B
Smedley, John D., Fort St. James	C
Smith, Craig, Fort St. James	B
Smith, Richard, Fort St. James	C
Van Tine, Charles, Ootsa Lake	B
Van Tine, Edward, Ootsa Lake	B
Van Tine, George, Ootsa Lake	B
Tourand, Peter, Wistaria	B
Winsor, William J., Isle Pierre	B

Peace River (including Fort Nelson and Lower Post).

Name and Address of Guide.	Licence Grade.
Bedell, Richard I., Arras	B
Belcourt, Adolphus, Mount Valley P.O., Alta.	B
Belcourt, Clarence, Mount Valley P.O., Alta.	B
Belcourt, Francis, Goodfare, Alta.	B
Belcourt, Magloire, Mount Valley P.O., Alta.	B
Brown, Wesley J., Mile 175, Alaska Highway	A
Calliou, John, Kelly Lake	A
Calliou, Sam, Moberly Lake	B
Callison, Fred, Fort St. John	B
Callison, Lynch, Rose Prairie	A
Cameron, Patrick, Moberly Lake	B
Campbell, Harry, Kelly Lake	B
Chatlar, Alfred, Kelly Lake	B
Courvoisier, Henry, Fort St. John	A
Couterrille, Fred, Moberly Lake	A
Dahl, Joel O., East Pine	B
Davidson, J. A., Fort Ware	A
Desterlais, Louie, Moberly Lake	B
Dhenin, Rene, Fort St. John	A
Dopp, Edgar, Fort St. John	A
Durney, Laviral, East Pine	A
Durney, Milo, East Pine	B
Garbitt, Theophile, Moberly Lake	A
Gauthier, Alexie, Moberly Lake	B
Gauthier, Eugene, Kelly Lake-Goodfare, Alta.	B
Gibson, Harry B., Dawson Creek	A
Gladu, Isadore, Kelly Lake-Goodfare, Alta.	B
Golata, Frank W., Dawson Creek	A
Gray, George D., Kelly Lake	B
Groat, Allen H., Sunset Prairie	B
Hambler, Albert, Kelly Lake	B
Hambler, George, Kelly Lake	B
Hambler, Joe, Kelly Lake	B
Houle, Joseph, Arras	B
Houle, Walter, Bessborough	B
Jardine, Leonard J., East Pine	B
Johnson, Harold, Dawson Creek	B
Lamont, Alexander, Dawson Creek	B
Langerud, Brede, Dawson Creek	B
Letendre, Fred, Moberly Lake	B
Letendre, Roland, Mount Valley P.O., Alta.	B
Longhurst, William J., Fort St. John	A
McCusker, Knox, Fort St. John	A
McDonald, Charles, Mile 442, Alaska Highway	A
McGarvey, Morris M., Taylor Flat	B
McLean, William, Little Prairie	B
McRae, Gordon C., East Pine	B
Millar, William E., Fort St. John	B
Napoleon, Felix, Moberly Lake	B
Neilson, Gordon, Fort St. John	B
Noskey, Narcisse, Kelly Lake	B
Oxford, Arthur, East Pine	A
Peck, Donald, Hudson Hope	B
Pitts, Ray, Hudson Hope	B
Powell, Gary, Hudson Hope	B
Ross, James, Dawson Creek	A
Rutledge, Leo, Hudson Hope	A
Stubley, Claude E., Sunset Prairie	B
Thomas, John, Arras	B
Wananie, Paul, Kelly Lake	B
Watson, James H., Bear Flat	B

Cassiar (Telegraph Creek-Atlin District).

Callbreath, John, Telegraph Creek	B
Campbell, Richard, Telegraph Creek	B
Carlick, Walter, Telegraph Creek	B
Carlick, Tom D., Telegraph Creek	B
Day, Alfred, Telegraph Creek	B
Decker, Lou, Telegraph Creek	A
Dennis, Alex., Telegraph Creek	B
Dennis, John C., Telegraph Creek	A
Dennis, Tommy, Telegraph Creek	B
Frank, Benjamin, Atlin	B
Gleason, Henry, Telegraph Creek	A
Jack, Henry T., Atlin	A
Pete, Jack, Telegraph Creek	A
Pete, Frank, Telegraph Creek	B
Williams, Johnny, Telegraph Creek	B

Coastal Mainland to Prince Rupert.

Carter, Harold W., Bella Coola	A
Meacham, Nello M., Hagensborg	A
Mick, Clayton, Bella Coola	A
Nygaard, Martin, Bella Coola	B
Oaks, George, Bella Coola	B
Pierce, Albert H., Bella Coola	A
Skuce, Herb, Ocean Falls	A
Stanton, James R., Knight Inlet	A
Ten Brocke, Lt.-Col. M., Bella Coola	B
Walker, Thomas A., Bella Coola	A
Williams, Frank, Tulsequah	B
Wright, William C., Hagensborg	A

Non-resident Outfitters.

Callison, E. P., Carcross, Y.T.
Cowpar, Joseph, Mount Valley, B.C.
McBride, Raymond, Canmore, Alta.
Peinier, Abe, Wembley, Alta.
Phillips, Frank A., 1551 St. Andrews Street, North Vancouver, B.C.
Pinkerton, C. R., Kintta Ranch, Trail Creek, Montana.
Sunderman, Sidney, Hythe, Alta.

PERSONNEL OF GAME COMMISSION AS AT DECEMBER 31ST, 1946.

Attorney-General (Minister)	Hon. Gordon S. Wismer, K.C.	Victoria.
Game Commission (members)	Frank R. Butler	Vancouver.
	James G. Cunningham	Vancouver.

HEADQUARTERS.

Sergeant Game Warden	R. E. Allan	Vancouver.
Senior Clerk	H. D. Simpson	Vancouver.
Senior Clerk-Stenographer	Miss I. Lawson	Vancouver.
Intermediate Clerk	F. R. Lobb	Vancouver.
Senior Stenographer	Miss N. Munkley	Vancouver.
Stenographer	Miss J. Smith	Vancouver.

GAME-FISH CULTURE BRANCH.

Fishery Supervisor	C. H. Robinson	Nelson.
Fishery Officer	E. Hunter	Nelson.
Fishery Officer	R. A. McRae	Kaslo.
Fishery Officer	F. Pells	Cultus Lake.
Hatchery Officer	A. Higgs	Qualicum Beach.
Hatchery Officer	J. D. S. Inverarity	Victoria.
Hatchery Officer	C. O. Mellor	Vancouver.
Hatchery Officer	F. H. Martin	Cultus Lake.

"A" DIVISION (VANCOUVER ISLAND AND PORTIONS OF LOWER MAINLAND).

Game Warden	G. C. Stevenson	Victoria.
Game Warden	S. H. McCall	Victoria.
Game Warden	J. W. Jones	Victoria.
Game Warden	W. A. R. Lawley	Alberni.
Game Warden	F. H. Greenfield	Nanaimo.
Game Warden	R. S. Hayes	Courtenay.
Game Warden	A. L. Frost	Courtenay.
Game Warden	F. P. Weir	Duncan.

"B" DIVISION (KOOTENAY AND BOUNDARY DISTRICTS).

Inspector	C. F. Kearns	Nelson.
Clerk-Stenographer	Mrs. E. H. Edgar	Nelson.
Corporal Game Warden	A. F. Sinclair	Grand Forks.
Game Warden	G. Haskell	Nelson.
Game Warden	N. Cameron	Golden.
Game Warden	G. A. Lines	Creston.
Game Warden	A. F. Gill	Princeton.
Game Warden	W. H. McLean	Revelstoke.
Game Warden	A. Monks	Penticton.
Game Warden	J. J. Osman	Fernie.
Game Warden	B. Rauch	Cranbrook.
Game Warden	J. W. Bayley	Cranbrook.
Game Warden	H. Tyler	Invermere.
Game Warden	P. D. Ewart	Castlegar.

"C" Division (Kamloops, Yale, Okanagan, and Cariboo Districts).

Game Warden	W. J. Hillen	Quesnel.
Game Warden	O. Mottishaw	Quesnel.
Inspector	R. M. Robertson	Kamloops.
Clerk-Stenographer	Miss H. Swadling	Kamloops.
Game Warden	J. S. Hodgson (deceased)	Kamloops.
Game Warden	W. J. Ward	Kamloops.
Game Warden	D. D. Ellis	Kamloops.
Game Warden	E. Holmes	Wells.
Game Warden	J. P. C. Atwood	Vernon.
Game Warden	D. Cameron	Salmon Arm.
Game Warden	W. A. H. Gill	Lillooet.
Game Warden	L. Jobin	Williams Lake.
Game Warden	E. M. Martin	Merritt.
Game Warden	W. R. Maxson	Kelowna.
Game Warden	R. S. Welsman	Clinton.

"D" Division (Atlin, Skeena, Omineca, Fort George, Peace River, and Yukon Boundary Districts).

Inspector	T. Van Dyk	Prince George.
Clerk	R. J. Guay	Prince George.
Game Warden	H. C. Milum	Prince George.
Corporal Game Warden	K. O. Alexander	Fort Nelson.
Corporal Game Warden	E. Martin	Prince Rupert.
Clerk-Stenographer	Miss E. Foster	Prince Rupert.
Game Warden	R. O. Anderson	Vanderhoof.
Game Warden	A. J. Jank	Prince George.
Game Warden	A. W. Vinson	Smithers.
Game Warden	W. O. Quesnel	Dawson Creek.
Game Warden	D. Roumieu	Burns Lake.
Game Warden	J. W. Stewart	Lower Post.
Game Warden	J. D. Williams	Fort St. John.
Game Warden (Special)	B. Villeneuve	Fort Nelson.

"E" Division (Vancouver, Coast, and Lower Fraser Valley Districts).

Inspector	W. Kier	Vancouver.
Game Warden	W. I. Fenton	Vancouver.
Game Warden	R. S. King	Vancouver.
Game Warden	H. L. Rose	Vancouver.
Game Warden	C. E. Stevens	Vancouver.
Game Warden	A. J. Butler	Chilliwack.
Game Warden	W. H. Cameron	Ladner.
Game Warden	P. M. Cliffe	Mission.
Game Warden	H. P. Hughes	Cloverdale.
Game Warden	F. Urquhart	Port Coquitlam.

Predatory-animal Hunter and Special Game Wardens.

C. Shuttleworth ..... Kamloops. J. Dewar ..... Alberni.

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