PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF ATTORNEY-GENERAL

Provincial Game Commission

REPORT

For the Year Ended December 31st

1955

VICTORIA, B.C.
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1956

To His Honour FRANK MACKENZIE ROSS, C.M.G., M.C.,
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, 1955.

R. W. BONNER,
Attorney-General.

Attorney-General's Department,
Victoria, B.C., July, 1956.

OFFICE OF THE GAME COMMISSION,
VANCOUVER, B.C., July 1st, 1956.

The Honourable R. W. Bonner, Q.C.,
Attorney-General, Victoria, B.C.

SIR,—I have the honour to submit herewith the Report for the year ended December 31st, 1955.

I have the honour to be,
Sir,
Your obedient servant,
FRANK R. BUTLER,
Game Commissioner.

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Report of the Provincial Game Commission, 1955

It is always very pleasing to be in a position to report an increase in revenue, which, during the calendar year 1955, was $1,160,273.58, or $52,299.73 in excess of the revenue for 1954. Taking as an example of what has happened elsewhere on this continent, we may expect increased revenues from year to year because our population is growing at an exceedingly rapid rate, with a consequent increased hunting and fishing pressure on our very valuable wildlife resource.

As in other game management or conservation agencies, increased populations, the advent of large industrial developments, and increased hunters and fishermen make it of primary importance, after considering the effects of development, etc., in other countries, continually to press for and receive increased personnel, scientific and otherwise, in order that we may keep our wildlife populations intact so as to ensure continuous participation in the excellent hunting and fishing at present available, and in order that future generations may not point a finger at us and be able to say, " You wasted a resource which we would have enjoyed." Increased hunting and fishing pressures must be met by proper game-management techniques and adequately trained men to safely manage our wildlife.

It is very pleasing to be able to advise that through the fairly rapid progress made in game management in British Columbia, our Province has become known by other agencies for the conservation work being done. This has resulted in requests for the presentation of numerous papers on our wildlife work and problems before many of the best-known wildlife conservation organizations in Canada and the United States.

A very successful Ninth Annual Provincial Game Convention, attended by representatives of not only game associations, but farmers, ranchers, Indians, and many other delegates, was held in Nelson, B.C. Every person who attended the Convention was treated with the usual hospitality of the people of Nelson, and the utmost courtesy and kindness was extended to all delegates by the West and East Kootenay Game Zones and the Nelson District Rod and Gun Club members.

As reported previously, these annual game conventions provide the means of sitting down and frankly discussing game-management problems, and they furnish a very excellent opportunity of presenting to all the delegates and visitors assembled factual and important information on the condition of the wildlife resource of the Province. It is my thought that no better way could be devised where frank presentations and discussions can take place.

As in former years, the Cache Creek Checking-station operations provided very valuable data on the annual crop of game and fish taken by residents and non-residents. The officials operating this station were in a better position to do so as a permanent building has been constructed at Cache Creek. The general public, I can assure you, also appreciated the service provided as a result of this new building.

Spot checking-stations were operated in a number of sections of the Province during the hunting season with very wonderful success, and it is proposed to continue these worth-while checking-stations. Nine thousand four hundred and seventy-seven resident and 1,489 non-resident hunters and fishermen passed through the Cache Creek Checking-station from September 15th to December 10th, and the following game was examined and recorded: Bear, 82; caribou, 20; deer, 2,296; mountain-goat, 63; moose, 2,301; mountain-sheep, 8; migratory game birds, 6,568; upland game birds, 4,231.

Revenue collected in the form of licence and trophy fees was $55,862.

No comments are being made on our wildlife or predator-control programmes because these data are to be found in some detail elsewhere in this Report.

It would seem that, notwithstanding continual educational work, hunting accidents occur each year. It is proposed, however, whenever and wherever possible, to take every

step to cut down these accidents. Our educational work is undoubtedly having its effect, because even though the numbers of hunters and fishermen have considerably increased, there has been no increase in the number of accidents reported.

ACKNOWLEDGMENTS

The co-operation of all Governmental agencies, including wildlife organizations in the United States and Canada, has been very helpful and much appreciated. I am thankful also for the friendly relations existing among game associations, farmers, and other organizations, and sincerely hope that such cordial relations will continue in the future. I am most appreciative of the outstanding work which has been carried out by every employee of the Game Commission, and my personal thanks are extended to each and every one of them.

"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).

By G. C. Stevenson, Officer Commanding

I have the honour to submit my annual report covering game and fish conditions in "A" Division for the year ended December 31st, 1955.

Big Game

Wapiti (Elk).—This is the second year in succession that a short open season on these animals was declared, and again the harvest was very small. Not more than fifteen animals were taken on Vancouver Island. Most of the herds are in remote areas where access is difficult, and consequently practically all the elk were taken in the vicinity of Nanaimo Lakes, Cowichan, and Courtenay. In my opinion, the short open seasons have had little or no effect on the population.

Deer.—There continues to be much discussion over these animals, as the average hunter is slow to understand computations of harvest as announced by regional biologists. Certain areas that once carried heavy populations of deer are now deserted or else carry small numbers of substandard animals. This condition can definitely be attributed to the deterioration of browse.

The more recently logged-off areas are maintaining good stands of deer, but in most instances access is restricted owing to the necessity of having to traverse private logging-roads. This question of access to deer range looms as a major problem in the near future and will require much study by sportsmen. Many of these logging-roads are on privately owned land, while others are through forest management leased land. Seasonal fluctuations of deer population are inevitable and are regulated largely by winter survival and nutriment value of browse. Many heretofore lush deer ranges have, through the course of time, become overgrown by second growth which has smothered the deciduous vegetation.

Black Bear.—These animals are numerous, as few people hunt them. Most of those that are shot have generally been found in orchards or sheep ranges.

Grizzly Bear.—None of these animals are found on the islands, but are in good numbers in Knight, Bute, and Loughborough Inlets.

Fur-bearing Animals

Beaver.—It is gratifying to know that the continuity of these animals is well established. The regulations adopted to protect the beaver have borne good results, and a stage has been reached where this useful animal has to be controlled or become a nuisance.

In places where they have become too numerous, they have been live-trapped and shipped elsewhere.

Marten.—These animals are especially numerous in the south-western portion of Vancouver Island.

Mink.—Mink are plentiful on Vancouver Island and the adjacent islands. Mink-farming has considerably reduced trapping pressure on wild mink.

Otter.—Many schools of these animals are reported from the south and west coasts of Vancouver Island. Trapping pressure on otter has been comparatively light during the past few years, and consequently they show a substantial increase.

Muskrats.—These animals show every sign of increasing and in many cases have invaded farms and gardens.

Squirrels.—Except in certain localities, these fur-bearers are not numerous. Very few are trapped.

Upland Game Birds

Blue Grouse.—This game bird continues in abundance, notwithstanding the heavy hunting pressure. Changes in habitat have caused slight variations of numbers in certain districts, but where they have diminished in one area they have increased in another. Bag-limits of blue grouse were recorded from high country in the Cowichan area during the last two weeks of the open season. Fluctuations in population are bound to occur from adverse weather conditions during the nesting season, but with judicious management there should be good grouse-shooting for many years to come.

Willow Grouse.—There are very good showings of these birds throughout Vancouver Island. There is not much hunting pressure on these grouse as they are scattered over a large area.

California Quail.—On the lower part of Vancouver Island, and especially the Saanich Peninsula, quail are numerous. On Saltspring Island, where habitat is suitable, good coveys are building up. Where snow conditions have been moderate and stretches of broom are available, these birds have multiplied. The present hunting pressure has had very little effect on them as few hunters go quail-shooting.

Migratory Game Birds

Ducks and Geese.—There are few places in this Division where ducks and geese are numerous, except on the west coast of Vancouver Island and at times in the Comox area. A moderate number are encountered where stubble fields and marshes are available and where salt-water conditions around sand spits attract the birds. The population has been stable for a number of years.

Black Brant.—The open season on this migratory game bird causes considerable controversy among sportsmen in this Division. Brant do not usually show up in these regions until the end of February, when the season is about over, and then they appear in hundreds. Consequently few hunters obtain any shooting as only a few days remain before the season is closed. A suggested ten-day extension for brant-shooting has been requested from time to time, but without results from Ottawa.

Predator-control

One hundred and eighty-two cougars and seven wolves were destroyed in this Division during the past year. The wolves were all presented for bounty at the Courtenay agency. Sixteen of the cougars were destroyed in widely scattered areas by Departmental personnel who answered complaints from residents. Many dogs, cats, crows, eagles, foxes, hawks, racoons, and ravens were also accounted for by personnel of this Division. A complete list appears elsewhere in this Report.

The bonus paid to cougar-hunters in addition to the bounty does not appear to have any effect in increasing the kill of these animals, and I would suggest its abolition.

Game Protection

One hundred and seventeen informations were laid for infractions under the " Game Act " and Special Fishery Regulations. Convictions were obtained in all but one case.

Attention should again be called to the shortage of Game Wardens. The hunting pressure is increasing from year to year, and it is very necessary that we have an adequate enforcement staff to cope with the expanding spheres of hunting and fishing.

Game Propagation

Seven hundred and sixteen pheasants were released on Vancouver Island during the past year. Only selected farm lands were chosen for releases as it is becoming more and more difficult to get farmers to acquiecse to liberations with the understanding that they allow public shooting. These releases were made in the Duncan, Courtenay, and Nanaimo Detachments. On the Saanich Peninsula, where the carrying of firearms and hunting is restricted by local by-laws, pheasants have increased so greatly that they have become a serious nuisance to farmers and gardeners, who in turn complain to this Department. Beyond pointing out to the farmer the redress they have under the " Game Act," there is little we can do to alleviate the situation.

Game Reserves

Apart from Strathcona, Shaw Creek, and Bald Mountain Game Reserves and the bird sanctuaries, most of the so-called game reserves in this Division are in the nature of restricted areas for the safety of the public.

Fur Trade

Mink-ranching is a flourishing industry in this Division, and hundreds of pelts are shipped during the months of December and January; also there is a considerable volume of wild mink, marten, otter, and beaver taken. Owing to the poor market prices prevailing for other than mink, the trappers have not been active. Marten are quite plentiful, but few are taken, trappers concentrating more on mink, beaver, and muskrat. Although there are several chinchilla-ranches on Vancouver Island, there is little activity in the merchandising of these pelts.

Trap-lines

Due to the lucrative employment available, trappers have not been too active on their lines. A certain number of beaver are taken under the permit system, both on private property and Crown land, but until prices improve there will be no undue pressure.

Registration of Guides

The demand for guides is gradually increasing, especially for grizzly bear hunting; also there is a demand for guides for salmon-fishing in the Campbell River area.

Special Patrols

No special patrols were carried out in this Division, but several west coast patrols were made by the Alberni Detachment with the aid of the Royal Canadian Mounted Police launch. Logging-roads are gradually being extended westward, and in a few years it will be possible to patrol a number of west coast areas where game is abundant.

Hunting Accidents

There were no fatal hunting accidents during the year, but three hunters received injury in the hunting field. For further details please *see* report " Hunting and Fishing Accidents."

Game-fish Culture

A total of 201,920 hatchery trout were released in the lakes and streams in this Division during the year. Of these, 33,165 were steelhead, 17,205 cut-throat, and 151,550 Kamloops. The steelhead were of specially fine quality, weighing between ten and eighteen to the pound. This group of steelhead were all fin marked for future study.

Summary and General Remarks

The past year has been fairly successful for anglers and hunters. Fishing has been uniformly good throughout Vancouver Island and the adjacent islands. Very few, if any, complaints are received from anglers. The same cannot be said for hunters, who, it would appear, do not have the philosophic understanding of the disciples of Issac Walton. Where blue grouse and ducks are concerned, hunters do not indulge in much controversy, but the question of deer is a different matter. Much discussion centres around harvest figures as issued by game management and how they are arrived at. To the layman, the formula used to compute the deer harvest is somewhat involved, even though the equation may be simple to the biologist. May I suggest that a simple formula be used without undue stress on hypothesis and text-book terminology so that the average hunter may have a comprehensive idea of how harvest figures are made up. The deer harvest on Vancouver Island is extremely difficult to assess, owing to the diversified nature of the country and the limited checking-stations during the hunting season, which only contact a small percentage of hunters.

At this time I would like to record my thanks and appreciation to the personnel of this Division for their outstanding work, both as regards enforcement and their perspicuity in evaluating situations that may be detrimental to sport fishing or hunting.

To the Royal Canadian Mounted Police and departments of Government we have consulted during our work, I am deeply grateful for their courtesy and co-operation.

" B " DIVISION (KOOTENAY AND BOUNDARY DISTRICTS)

By C. F. Kearns, Officer Commanding

I beg to submit herewith my annual report for the year ended December 31st, 1955.

Big Game

Moose.—It would appear that moose in the East Kootenay are at the carrying capacity of their range. A persistent extrusion over the years has resulted in a resident population in the West Kootenay which could, before long, permit an open season.

Wapiti (Elk).—Elk are plentiful at present and reflect a consistent increase over a lengthy period, augmented by a succession of mild winters. Elk range the Kootenay-Columbia Valley from Golden to the United States border and continue to make a steady infiltration into the valley of the West Kootenay. A long open season with a temporary season on antlerless animals has done no harm.

Caribou.—The extension of the season was generally satisfactory, but much comment was occasioned by the dropping of horns in November, which made it difficult to distinguish the sexes. The normal caribou kill (West Kootenay) is light to negligible.

Mountain-Sheep (Bighorn).—These animals are gradually regaining something of their former abundance and wider distribution.

Mountain-goat.—The situation shows little change from previous reports. Goats are well distributed throughout the Division, but plentiful only in the East and West Kootenays. They are hunted very moderately.

Deer (Mule).—Still the prime game animal of the Division, in good numbers everywhere and heavily harvested during the latter part of the open season.

Deer (White-tailed).—Plentiful in the Kootenays and increasing in the Boundary and Similkameen.

Fur-bearing Animals

The unhealthy state of the fur market is reflected in the plentitude of some fur-bearers, particularly lynx and bobcats. These normally shy predators are almost as common as coyotes were a few years ago. The increasing beaver population continues to be a problem, but we have been able to cope with it by removing offending animals. With an appreciation in beaver prices, this situation should adjust itself.

Upland Game Birds

As was to be expected, a general lack of grouse of all species was noticed, although some areas produced good shooting. The number of pheasants and Hungarian partridge at Creston, Grand Forks, and Similkameen was fair and is a good illustration of how the lack of grouse-shooting may be balanced in suitable areas.

Migratory Game Birds

Shooting was generally good in the East Kootenay for northern birds that arrived in large numbers early in November. Waterfowl concentrations in the remainder of the Division are of a local nature by comparison.

Predatory Animals and Noxious Birds

All Game Wardens co-operated with the Predator Control staff in the disposition of baits, attention to complaints, and the hunting-down of destructive animals. For detailed information covering the destruction of predators, *see* report " Vermin Destroyed, 1953 and 1954."

Game Protection

There were 121 convictions and three dismissals under the " Game Act " and Special Fisheries Regulations.

Game Propagation

Fresh stocks of pheasants were introduced into the Creston, Grand Forks, and Penticton-Oliver-Keremeos areas.

Game Reserves

It would appear that some of our big-game reserves should be re-examined in the light of our present game regulations, as local or restricted open seasons have removed most of the reasons why they were originally established. This does not apply to migratory game-bird refuges.

Fur Trade

Practically all the pelts of animals trapped are shipped directly to dealers at Vancouver.

Registration of Trap-lines

These are in a good condition and are continually being adjusted or brought up to date. Due to the low prices of furs, there is not much activity or change in the trap-lines.

Registration of Guides

The present system of grading and registration appears to be generally satisfactory to the guiding industry.

Special Patrols

As the field staff in this Division are accustomed to getting around the country on snowshoes, horses, canoes, power-boats, jeeps, and occasionally aeroplanes, there are no patrols that would be termed other than routine.

Hunting Accidents

There was one fatal hunting accident in this Division during the past year. For detailed information covering the accident, *see* report " Hunting and Fishing Accidents, 1955."

Game-fish Culture

This phase of our work is embodied in the report of the Fisheries Management Division.

Summary and General Remarks

Every year we learn something new, and last season proved that an antlerless open season when the deer are concentrated may develop some unpleasant aspects. This was particularly noticeable in the Princeton area and to a lesser extent in the East Kootenay. At Princeton, due to the abundance of hunters from the Coast, the situation was somewhat out of hand. To quote from Game Warden Gill's report:—

" Deer were gang shot at distances of 600 or 700 yards. I watched several deer running on a bald slope until they were finally shot down by some of a hundred shots. Many persons shot over their limit, expecting their hunting partners to tag them, only to find their hunting partner had done the same. Many deer were thus left in the woods. One case authentically reported: a boy, out with his father, wounded four deer. None dropped so he shot another, then found two lying dead. He had shot six deer to get one. These were all does and fawns. Two cases of wounded deer escaping were reported to me by the men responsible. They expected me to find the wounded deer and kill them. The sight of a man carrying a recently shot fawn down the street under his arm enraged a woman to the point where she almost slapped the hunter. Others were accosted by non-hunters and disparaging remarks bandied about. Veteran hunters were sickened to the point where they stayed home rather than be a party to the orgy.

" Cars were parked all along the streets, some with several freshly killed deer on them with frozen blood streaked down the fenders; the passing dogs stopping to lap it off further sickened the viewers going about their normal business. One trailer from the Kettle River with seven deer piled on it didn't help much. Very few knew that some of them were white-tailed deer and not from here. Several deer were stolen from cars during this time, some in broad daylight."

Admittedly the situation at Princeton was unique due to the presence of a well-populated game area adjacent to a game reserve and within easy driving distance of Vancouver City.

Longer or earlier open season for antlerless animals would probably correct the objectionable features mentioned above.

The past hunting season has been a good one from the standpoint of a prolific harvest. This is an apt illustration of what Dr. Hatter and his staff have consistently stressed; that is, ample cropping to prevent overcrowding of winter ranges. This present winter has not been easy on members of the deer family. Snow arrived early in November and has lain deeply ever since. There have been one or two periods of very cold weather, but fortunately not too extensive. At the time of writing, March, 15th, 1956, the snow

still lies deeply, even in the valleys of the Kootenays, although the situation is somewhat better in the Boundary and Similkameen. If the weather continues its present moderating trend, we may hope for little more than normal winter losses. However, should we have an inclement spell even yet, it could be disastrous for game now at the tag-end of an unusually long winter.

ACKNOWLEDGMENTS

The usual cordial co-operation was received from the British Columbia Forest Service, the Department of Public Works, and the Royal Canadian Mounted Police, as well as various sportsmen's organizations throughout the Division.

It is appropriate to make some comment on the outstanding work of the first two resident biologists in the Division, who are receiving energetic co-operation from all the Divisional personnel.

Fisheries Biologist F. P. Maher has been exceedingly active since his arrival two years ago, and his practical efforts on behalf of game-fish culture projects have met with universal approval by sportsmen's groups. Game Biologist W. G. Smith, who came somewhat later, has been fully occupied in the game-management problems of the East and West Kootenays and has given the whole question a scientific appraisal, which is long overdue. Both of these capable young men are excellent public speakers, and their presence at sportsmen's meetings as well as various public gatherings has been much appreciated by attentive audiences.

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

BY L. R. LANE, OFFICER COMMANDING

I beg to submit herewith the annual report for " C " Game Division for the year ended December 31st, 1955.

BIG GAME

Moose.—In most parts of the Division, moose appeared to be on the increase. This was no doubt due to the past three winters, which were quite mild, the two wet summers, which assisted in browse production, and, in the areas where these animals are normally scarce, to the continued migration and influx from more populous areas. A good harvest of these animals was taken in most areas with access roads. Although there were fewer hunters than in 1954, hunter success was better. The early heavy snowfall and sub-zero temperatures experienced throughout most of the Division discouraged many hunters, but at the same time brought the moose down where those who did hunt had little difficulty in filling their bag-limits. In most areas there is little doubt that a heavier kill would have done no harm. In fact, this winter, which is said to be the most severe in sixty years, may be expected to take a heavy toll of moose. The Wells Detachment appears to be the only area where less moose were taken than last year, due mainly to an early rutting period which was over by the time the season opened. Although there was an open season on moose in the Vernon Detachment, as far as is known, none were taken. There was also a notable increase in the number of moose seen in the Merritt area, where about fifteen were taken. Hunter success was also very good in the Highland Valley area near Ashcroft, especially in the early part of the season. Moose were unknown in these areas a few years ago. Should a heavy winter kill be experienced, it is felt that we can look forward with some optimism to the continuation of good moose-hunting in this Division despite the fact.

Mule Deer.—The remarks concerning moose, except regarding migration, could also apply to mule deer, the game animal which supplies the most sport and recreation

in this Division. Mule deer were plentiful throughout most of the Division, and in the majority of cases appeared to be on the increase. In most areas the kill was rather light until the heavy snowfall and cold weather brought the animals down where they could be easily reached by the hunters. From that time until the end of the season a very heavy kill took place, but it is doubtful that any permanent harm was done as deer seemed to be plentiful after the close of the season, and, as in the case of moose, a heavy winter kill may be expected. There are, of course, several areas where deer are scarce, and where they will no doubt continue to be scarce because of lack of suitable food and habitat. The most notable of these is probably the Revelstoke Detachment. In many areas, notably the Alexis Creek Detachment, severe weather which brought the deer down where they could normally be well harvested prevented hunters from leaving the main roads and resulted in a poor kill. Unless there is an extremely heavy winter kill, it is felt that a longer open season on mule deer should be considered for 1956.

Columbia or Coast Deer.—These animals are found in this Division only in the Squamish Valley, Lillooet Detachment, where they are reported to be on the increase.

Caribou.—Caribou appear to be on the increase in some areas, notably in the Salmon Arm Detachment. Several were taken in Wells Gray Provincial Park, and ten at Anahim Lake. The early heavy snowfall prevented hunters from reaching the caribou near Sugar Lake in the Vernon Detachment. A new road being built into this area is being watched with a view to recommending curtailment or closure of the open season on caribou should easy access to a large number of hunters threaten extinction of this small band. There are small bands of caribou in several areas, such as in the Wells Detachment, Quesnel Lake and Horsefly River areas, Ahbau Lake, and Cariboo Mountains, north and east of Canim Lake, and north of Joe Rich Creek. Little is known of most of these bands, but most of them, from meagre reports received, appear to be holding their own. Possibly the efficient control of predators which we now have, particularly in the case of wolves, may have a beneficial effect on these animals. Should personnel and funds be available, a study of caribou, with a view to increasing their numbers and harvest, seems desirable.

Wapiti (Elk).—Elk are scarce in this Division. There are a few in the Salmon Arm, Vernon, Kelowna, and Lillooet Detachments, the latter being at Liza Lake in the Bridge River area. Two are known to have been taken in the Kelowna area and a few were bagged near Adams Lake. Elk cannot be considered as an important species in this Division, and are hunted very little even in those areas where there is an open season. They are said to be increasing in the Vernon district, and if this increase continues, a short open season might be warranted.

Mountain-sheep.—California bighorns are found in small bands in several portions of the Division. A short open season in the Kelowna and Vernon Detachments produced no trophies. Three were taken in 1955 near Squilax, and a few were taken in the Cariboo and Lillooet Electoral Districts. The open season on rams with three-quarter curls and better should do no harm, and the continuation of this restriction is recommended. In most areas the sheep appear to be holding their own, but very little, if any, increase in their numbers has been noted.

Mountain-goat.—Mountain-goat are fairly plentiful in many areas, notably in the Lillooet, Revelstoke, and Alexis Creek Detachments, with fair numbers wherever suitable terrain occurs. Few are taken, due to the fact that they occur almost exclusively in inaccessible areas. Reports indicate that these animals are holding their own, and there is little doubt that a much heavier harvest could be taken without ill effects. Goats make a fine trophy and their flesh is palatable. Both resident and non-resident sportsmen should be encouraged to exploit this resource more fully.

Grizzly Bear.—Grizzlies are found in many sections in limited numbers, and are fairly plentiful in some parts of the Division. They appear to be on the increase in the

Lillooet and Williams Lake Detachments. They are not heavily hunted, although a few are taken each year for stock protection and by non-resident hunters.

Black or Brown Bear.—These animals are fairly plentiful throughout the Division. In some areas their numbers seem to be decreasing, while in others they are increasing. Many were killed during the year, mostly for the protection of live stock and orchards. They are not heavily hunted, but a fair number are taken as incidental game by deer and moose hunters.

Fur-bearing Animals

There is a small amount of serious trapping; most trappers make only a token effort in order to retain their registered trap-lines. This situation has been brought about by low fur prices and high wages paid in logging operations, sawmills, and other industries, and has resulted in a definite increase in almost all fur-bearers throughout the Division. This increase, although general, is brought to our attention most frequently in the case of beaver. These animals are the subject of a large and increasing number of complaints. They have been blamed for cutting off the flow of water in streams and irrigation-ditches, flooding hay meadows and agricultural lands, and even of preventing the up-stream migration of salmon. Unless conditions change in the near future so that these animals are more heavily trapped, we may be forced to take steps to destroy them in some areas. On the other hand, there are areas where nature will do this for us as food-supplies are becoming scarce. Fall trapping of beaver and muskrat is being given serious consideration. Anything that could be done to encourage trappers to take a heavier harvest should be considered. Like other fur-bearers, muskrat are on the increase, but overpopulation of these animals causes little concern except on dyked lands. Lynx are plentiful throughout this Division, and in some cases have taken to killing deer, due no doubt to a decrease in rabbits, brought about by the large number of lynx.

Upland Game Birds

Grouse.—Blue, ruffed, and Franklin's grouse appear to have decreased noticeably throughout most of their ranges. In some sections the late spring and wet summer were blamed for this, but as the decrease appears to be quite general, it is felt that it is more likely due to cyclic conditions. Despite the scarcity of birds, good hunting was had in some areas, particularly of blue grouse, by those hunters willing to climb the more rugged mountains. Sharp-tailed grouse appear to be holding their own, with slight increases noted in some areas.

Ptarmigan.—There are a few of these birds in some areas, but they are not heavily hunted.

Pheasants.—Excellent pheasant-hunting was enjoyed by a large number of hunters, particularly in the Salmon Arm, Vernon, and Kelowna Detachments, with good bags taken in the Thompson Valley from Chase to Ashcroft. These birds were more plentiful than in 1954 in most of their range, and if the present severe winter does not take too large a toll, they should provide good hunting in 1956. Liberation of pheasants in the Merritt district does not appear to have benefited the area, and it is recommended that this practice be discontinued. In other areas where pheasants are found, with the exception of Lillooet, the wild hatch appears to be sufficient, and the liberation of farm-raised birds is not recommended. Pheasant-feeding has been necessary this winter in all areas where they occur in any great number.

California Quail.—Apparently these birds are on the increase in the Vernon and Kelowna Detachments. A few are also found along the Fraser benches, where their numbers seem to remain static.

Chukar Partridge.—The first open season in the Province on these birds was held in 1955 in the Kamloops area, where much sport was provided and a fair number bagged.

Despite this, a good number remained after the close of the season. There has been some winter kill observed in the Walhachin-Cache Creek area, but if a survey in the spring shows that chukar are surviving in fair numbers, an open season throughout their range is recommended. It is indeed gratifying to note how well chukar partridge have taken hold in their new environment. The results so far achieved indicate beyond a doubt that the money spent on the liberation of chukar, at least in the Thompson Valley, has produced more upland game-bird hunting than it would have had it been spent on pheasants.

European Partridge.—These birds appear to be holding their own in most areas, with a slight decrease in some and a slight increase in others. Snow-crusting conditions this winter may take a toll of these birds. A combination bag of chukar and Hungarian partridge has been suggested and might be a good idea.

Migratory Game Birds

The 1955 season on ducks and geese was very disappointing in almost all parts of the Division. This was caused mainly by the severe winter conditions, which set in very early, freezing all the pot-holes and many of the lakes and streams, thus driving the waterfowl south before many had been taken.

Predatory Animals and Noxious Birds

The poisoning programme carried out by the Predator Control Branch has resulted in a marked decrease in coyotes and wolves, and very few complaints are being received. Oddly enough, cougar complaints have also decreased, and it is wondered whether there is any connection between this and the poisoning programme.

Game Protection

Continuous patrols were carried out by all Game Wardens in " C " Division throughout the year whenever and wherever possible. One hundred and ninety-two informations were laid for infractions under the " Game Act " and Special Fishery Regulations. Convictions were obtained in all but two cases.

Game Propagation

Twenty-three California bighorn sheep were trapped near Riske Creek. Of these, eighteen were liberated at Westbranch and four at Vaseux Lake. One was killed in an automobile accident during transportation. Chukar partridge and pheasant liberations will be contained in the statistical report from headquarters.

Game Reserves

There are only three game reserves in this Division, namely, Bowron Lake in the Wells Detachment, Minnie Lake in the Merritt Detachment, and Yalakom in the Lillooet Detachment. Of these, the Bowron and Yalakom reserves no longer appear to serve any useful purpose, and their cancellation is recommended. There are numerous waterfowl sanctuaries and restricted areas, and it is felt that these are serving a very useful purpose.

Fur Trade

There were twenty-one licensed fur-traders in " C " Division in 1955. There was little activity in the fur trade for the reasons mentioned under " Fur-bearing Animals."

Registration of Trap-lines

The system of registration is a good one and appears to be operating very well in all areas, the only problem normally encountered being that of getting trappers to do any trapping while fur prices are so low.

Registration of Guides

There was a slight increase in the number of registered guides in this Division during 1955. The block system of registration appears to be operating with a minimum of friction. The large blocks now used in the Chilcotin district appear to be satisfactory. Many guides, however, are not co-operating fully in submitting their returns, and there is some friction among a few of the guides in connection with the hunting of mountain-sheep. These problems are receiving attention, and it is hoped they will soon be solved to the satisfaction of all concerned.

Special Patrols

As all Game Wardens carry on continuous patrols throughout their detachments by any and every means of transportation available, and as their work has so many different phases, each of which receives its share of attention, it is not felt that any patrols can be classed as special. Even searching for and locating lost hunters is now considered as routine.

Hunting Accidents

It is with regret that I report three serious hunting accidents in this Division during the year 1955. For detailed information, please *see* report " Hunting and Fishing Accidents, 1955."

Game-fish Culture

Game-fish cultural work was carried out in many parts of the Division during the year. Complete data on this work will be found in the report of the Fisheries Management Division. Fishing in " C " Division took place on an unprecedented scale during the year, with very good results in many areas, reflecting to some extent the good work being done by our Fisheries Division. Increased fishing will continue to place more responsibility on the shoulders of this Department for more and larger fish. Pollution and obstruction problems have received attention from the Fisheries Division and Game Wardens alike in several parts of this Division, and have in most instances been successfully controlled.

Summary and General Remarks

On the whole it may be said that satisfactory hunting and fishing seasons were enjoyed in " C " Division during 1955 by a large number of resident and non-resident sportsmen. The liberalized seasons were well accepted in most quarters and appear to have done no harm, and it is felt that possibly further liberalization should be given consideration. At the same time many problems exist, and the problem of channelling hunting pressure into the more remote areas is not the least of these. While more and more logging and mining roads are opening up vast sections to the hunter and fisherman, there still remain many areas that are practically inaccessible except with pack-horses. Areas adjacent to roads are heavily hunted by an ever-increasing number of hunters, while the hinterland goes untouched. The same applies to lakes. If we are to maintain the hunting and fishing success presently being enjoyed, some method of reducing pressures on some areas while increasing them on others will have to be evolved.

It is gratifying to note the increased attention being paid to public relations work by Game Wardens. Such work is extremely valuable and should be encouraged as much as possible.

In closing, I wish to express my sincere appreciation for the excellent assistance and co-operation received from all Game Department personnel both in " C " Division and headquarters since taking charge of this Division in September, 1955. Without this assistance, my task would have been difficult indeed. Excellent co-operation has also been received from the British Columbia Forest Service and other Provincial Government

departments, the Royal Canadian Mounted Police, the Dominion Fisheries Department, the Department of Indian Affairs, and fish and game clubs throughout the Province, and is much appreciated.

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

By W. A. H. Gill, Officer Commanding

Herewith I respectfully beg to submit my annual report covering game conditions in " D " Division for the year ended December 31st, 1955.

Big Game

Moose.—A larger kill was made by local residents throughout the southern two-thirds of this Division than in previous years. These animals appear to be in a very healthy condition. Very few reports were received compared to past years as to diseased animals.

Due to the early winter, a great many more moose moved down to the valleys earlier than in past years. However, these animals appear to be preparing to winter in different areas than in the past years.

The northern portion of this Division around Fort Nelson and Lower Post is not heavily populated with moose as a great deal of this country does not appear to be suitable to them. I feel that the population of moose in this particular area is very high according to the available winter feed.

Due to the wolf population being practically *nil* throughout this Division, the over-all population of moose has increased greatly, and no doubt if this condition remains the same, a far larger kill is warranted.

Deer.—These animals are still showing a slight increase. No disease has been reported and the fawn-crop is very satisfactory. A close watch will be kept on several small bands of deer to see what effect this winter and the coming spring will have on them, as from all indications this is going to be a severe winter.

Caribou.—Caribou are showing a good increase in most areas. In the Tweedsmuir Park area they have increased rapidly, and on an aerial survey 207 animals were counted this fall in half the flying-time that only forty-three could be observed in 1953. Nearly all cows were accompanied by calves. In view of this, I would suggest that the season be extended another fifteen days.

Black or Brown Bear.—These animals are not nearly as abundant as in past years. The decrease, I believe, is due to the year-round open season and the poison distributed by aeroplane for destruction of predators.

Several complaints were received from farmers that bears were destroying a considerable acreage of oat-crops, but such complaints were less numerous than in past years.

Grizzly Bear.—These animals are plentiful in outlying areas that have not been subjected to extensive aerial poisoning.

Mountain-sheep.—From reports received, this most-wanted big-game animal by trophy-hunters continues to remain about the same in numbers. This is no doubt due to the remote areas they inhabit.

With regard to Dahl sheep, these animals are in the extreme north-west corner of the Province, and as we have no Wardens within 400 miles, I do not believe that the closure on these animals in any way assists in building up the population. All we are doing is protecting them for poachers and for migration into the Yukon, where an open season is in effect.

Mountain-goat.—These animals are plentiful in all suitable terrain. The present hunting pressure has no effect on their numbers.

Wapiti (Elk).—The only open seasons on this big-game animal in this area are on the Queen Charlotte Islands and the vicinity of Red Pass. As far as is known, only one elk was taken on the Queen Charlotte Islands, and it is felt that a longer season is warranted in order to encourage hunters to go into this inaccessible area.

The elk in the vicinity of Red pass are believed to be stragglers from Jasper Park. Small bands are reported in the Narraway River and Moberly Lake areas.

Fur-bearing Animals

Marten.—These fur-bearers are plentiful in all areas, but very few are taken due to the low prices paid for their pelts.

Beaver.—These animals are numerous throughout the whole Division. Trappers are being encouraged to take more of these fur-bearers, as it is feared that unless the population is greatly reduced, their feed-supply will become exhausted and disease will set in. Numerous complaints are received from farmers, Department of Highways, and railways that beaver are causing damage. Considerable work has been carried out by Wardens installing pipes in the beaver dams and in opening dams that have caused flooding conditions.

Fox.—There is no market at present for this fur-bearer, and, therefore, they are only taken by accident. They are not plentiful at present.

Mink.—These animals have decreased greatly in all this Division, except along the coast, where they are reported to be holding their own. Prices for this fur-bearer are better than average and have remained so during the low market for nearly all other fur-bearers during the past few years.

Fisher.—These animals have shown a slight increase in population. Trappers are not making special sets for them, as they do not consider the market worth while.

Lynx.—These animals are on the decrease, no doubt due to the present scarcity of rabbits. They are of no market value at present.

Squirrels.—These fur-bearers have decreased greatly. This is believed due to disease and not overtrapping, as they have disappeared in areas which are not being trapped.

Muskrats.—Not many of these fur-bearers in this Division.

Upland Game Birds

Pheasants.—These birds have been raised and released in the Dawson Creek, Smithers, and Vanderhoof areas but have not survived in any of these localities. I believe that such practices should be discouraged as the country is not suitable to these birds due to the severe weather and scarcity of winter food.

Grouse (Willow).—These birds are plentiful in the southern portion of the Peace River Block around Dawson Creek and Fort St. John. In the remainder of the Division they are at a low cycle.

Grouse (Blue).—Blue grouse are only found on higher levels. Very few are taken by sportsmen.

Grouse (Franklin's).—These birds have decreased greatly and are also believed to be at their low cycle.

Grouse (Prairie-chicken or Sharp-tailed).—Large flocks of these birds were to be found at Fort St. John and Dawson Creek, especially during the latter part of the season. Good shooting was also obtainable at Vanderhoof. In the remainder of the Division they were scarce.

Migratory Game Birds

Ducks and Geese.—Exceptionally poor goose-hunting was had in the whole Division as, due to the early freeze-up, all geese migrating south did not stop. A few local geese and ducks were taken, but due to the earlier cold weather they did not remain in this Division after October 31st.

Destruction of Vermin

Timber-wolves.—Timber-wolves are no longer a major menace to our game, as they are scarce. Only odd packs are left, and these are mostly in areas that are seldom hunted. I do not believe that an extensive poison programme is required in 1956.

Coyotes.—These animals still remain fairly plentiful in most farming areas. A noticeable decline, however, has taken place in the Peace River Block, also the Smithers and McBride areas.

Cougars.—These animals are steadily increasing, and several complaints have been received regarding same.

Magpies.—These birds are not plentiful.

Eagles.—Only odd reports are received as to these birds causing damage to migratory birds.

Game Protection

The great increase in the population throughout this Division has greatly increased the work of the Wardens. A large number of displaced persons have settled in this Division due to the major construction programme being undertaken, and this in itself incurs a great deal of extra work for the Wardens in endeavouring to instruct such people in upholding and learning game conservation.

Two additional Wardens are necessary in this Division—one at Telegraph Creek and one at Atlin, as these areas are not and cannot be properly covered by the existing staff.

Game Propagation

The only game propagation carried out in this Division was undertaken by the Bulkley Valley Rod and Gun Club, which raised forty pheasants and released them in the Smithers area. A fair number of these birds are still doing well.

The Fort George, Lake Kathlyn, and Kaien Island Game Reserves are the only ones in this Division. These reserves cover small areas around cities and towns and are more for the protection of the public than game. A few ducks and the odd game animal seek refuge in these reserves and are quite interesting to the public.

We have one migratory game-bird sanctuary at Vanderhoof which, previous to the development by the Aluminum Company of Canada, worked very satisfactorily as a holding-ground for geese and ducks. While on their southern migration, these birds would make flights into the surrounding grain-fields in the morning and evening, and in this way fair shooting was obtained. Now, since the Aluminum Company of Canada has taken nearly all the water out of the Nechako River, the geese and ducks do not stay in the sanctuary as in previous years but migrate farther south.

The Buckhorn Lake sanctuary is declared a protected area for migratory game birds. This worked very well in 1954, but owing to the sudden and early freeze-up in 1955 practically no birds could use this resting-ground.

Fur Trade

The fur trade has been very poor owing to the low prices of pelts.

Registration of Trap-lines

Practically all trap-lines in this Division are registered. A few in the north-east corner of the Province are still pending due to the reason that the only mode of travel by the Wardens is by dog team, and many trips have to be made in order to get all bordering trappers together so that no disputes will arise at a later date regarding the borders. We have only one trap-line dispute pending in this Division, and this is caused by a river that goes underground at different points and then emerges again.

Registration of Guides

Very little difficulty has been experienced, although during 1955 a few complaints of overcrowding on certain waterways have come up. It is hoped that with the co-operation of guides this will be cleared up.

A few applications from new guides to extend their areas into older guiding areas have caused considerable work. This is especially true in the most northern portion of the Province where long hunts of twenty to forty days take place.

Special Patrols

There was only one special patrol undertaken in this Division during 1955. This patrol was made by Game Wardens J. A. McCabe and J. Dowsett into the Haines Road and Atlin area for the purpose of checking resident and non-resident hunters. The trip took ten days, and a distance of 2,036 miles was covered by car and 17 miles on foot.

Hunting Accidents

There were three hunting accidents in this Division during 1955, all of which were fatal. For details, please *see* report "Hunting and Fishing Accidents, 1955."

Game-fish Culture

Only one coarse-fish trap was kept in operation during 1955. This was in Cluculz Creek, the outlet of Cluculz Lake. This trap was installed by the Game Wardens and is operated and supervised by them with the assistance of C. Haines, mink-farmer, who uses the coarse fish for mink-feed.

All the other creeks flow into Cluculz Lake, and they were treated with fish tox as soon as the trout had returned to the lake from spawning and the coarse fish had moved into creeks. Fairly large kills of coarse fish were obtained, but a considerable reduction in the number of coarse fish inhabiting these streams is noted yearly. This would indicate that headway is being made toward reducing the population of coarse fish inhabiting the streams for spawning.

Approximately 150 trout were destroyed in poisoning operations in one of these creeks (Norman), which is an increase over the number of trout killed in 1954 (50) and in 1953 (11). This would indicate that trout are using these streams now in larger numbers for spawning.

Summary and General Remarks

I feel that every possible effort should be made to open game detachments at Telegraph Creek and Atlin, as at present it is absolutely impossible for any of the Wardens to even make a pretence at patrolling these areas. Trap-lines and guiding areas in these two very large sections of the Province cannot be handled by the Royal Canadian Mounted Police, as they have not the time to handle such matters now that new roads are being built and with the vastly increased population in this northern portion of the Province.

I wish to thank all the sportsmen who assisted us in our endeavours and also the Royal Canadian Mounted Police, who have co-operated with us in our work.

SUMMARY OF REPORTS SUBMITTED BY GAME WARDENS IN "E" DIVISION (MAINLAND COAST NORTH TO TOBA INLET AND LOWER MAINLAND AS FAR INLAND AS NORTH BEND).

Big Game

Deer (Coast or Columbian).—Coast deer are much smaller than mule and white-tailed deer which are found in the Interior. The eastward extremity of the range of Coast

deer is near Spuzzum, some 150 miles up the Fraser Canyon. There they overlap the mule deer range, and the two species are known to interbreed on occasion.

The mild winters which have been the rule in this Division for the last few years have caused favourable conditions for the deer, and they have increased. Excellent bags have been the rule. The antlerless (any sex, any age) open seasons have been also responsible for allowing larger numbers of deer to be brought to bag. It is interesting to note that more bucks than does were taken from the areas where the any-sex, any-age seasons were declared.

Wapiti (Elk).—The small herd found at McNab Creek (Howe Sound) appears to be static. These animals were first liberated in this region in 1933, when five were obtained from the Vancouver Parks Board. They have shown some increase but are now thought to have reached their peak population.

The open seasons which have been in effect for the past two years have had no effect upon them. Not a single animal has been taken by hunters. The band is not a large one and the terrain is difficult to hunt.

Black or Brown Bear.—Despite a continuous year-around open season, these animals are a nuisance in many areas, even invading residential districts in North and West Vancouver. Sportsmen show little interest in hunting black bear, and, unlike grizzlies, they are not in the least deterred by human activity.

Grizzly Bears.—Grizzlies are found throughout most of the mountainous sections of the Division and down as far as tidewater. Grave concern has recently been expressed regarding the gradual disappearance of these fine animals from their former range in other parts of the continent. Although no reasonable estimate of their numbers can be made in British Columbia, it is known that they are quite numerous. They are the least exploited of our game species, and very few are taken annually. Two or three are taken each year from some of the coastal inlets, but hunting pressure is light.

Mountain-goat.—These animals are numerous in this Division, being particularly abundant along the coastal mountains. They are also found in the mountainous areas near Chehalis, Harrison, and the Chilliwack country. Their habitat has been relatively undisturbed by sportsmen or by any other human activity, living as they do in remote regions. Very few are taken annually, and the hunting of mountain-goats is only undertaken by the most robust and skilful hunters.

Fur-bearing Animals

With the fur trade still in the doldrums and some traders actually going out of business because of the slump and lack of demand for furs, all of the fur-bearing animals have increased in numbers. Trappers are also able to find lucrative employment at good wages in other fields and are reluctant to face the arduous work attendant upon handling a trap-line when there is little return for their efforts. There seems to be little chance of any recovery in the fur trade at present.

Racoons and foxes are still a pest in many places, notably the Fraser Valley, where they take an annual toll of domestic fowl and game birds as well as their eggs.

Beavers have built up in numbers and cause considerable trouble with their damming activity.

In summary, fur-bearing animals in this Division can be considered as being practically unmolested by trappers at the present time.

Upland Game Birds

Blue Grouse.—Blue grouse have lost much of their former habitat to the industrial expansion that is currently taking place everywhere. There is no doubt that predators, especially house-cats gone wild, have some effect on their numbers. The main reasons for fluctuation in this species, however, are cyclic factors, weather, and changes in habitat.

Natural laws will continue to decide the population levels of blue grouse, which are not numerous here.

Willow (Ruffed) Grouse.—These birds are scarce in this Division. It is known that they are governed by a cycle which so affects them that their numbers build up to a peak then crash to a low level approximately every ten years. They are believed to be at the low level of the cycle at present, although scattered coveys can be found. It is not believed that hunting has any long-term effect upon cyclic species. Few were bagged during the year.

Pheasants.—Continued and increasing land development, together with a great increase in hunting pressure and changes in agricultural and orchard practices, has adversely affected pheasant habitat. They were scarce in the Lower Mainland during the season. We urge once more that every effort should be made to get pheasant-hunters to use a good retrieving dog. Many of these fine birds are lost annually because of failure to retrieve them after they have been shot.

Migratory Game Birds

Ducks and Canada Geese.—The first part of the season saw good bags of ducks and Canada geese being taken, but an early freeze-up which drove the birds south was responsible for poor hunting toward the end. Hunting pressure was heavy and will become increasingly so as time goes on.

The breeding season was favourable, and they can be said to have been present in goodly numbers. Waterfowl populations are controlled almost entirely by climatic and other conditions on the nesting-grounds in the spring of the year.

Black Brant.—These birds came in well toward the end of the season, but there was poor hunting as the season progressed. Weather conditions were probably responsible.

Snow Geese.—These birds were present in large numbers early in the season.

Band-tailed Pigeons.—These birds were numerous and provided good sport. They are lightly hunted. The usual spring complaints were received to the effect that these birds were responsible for damage to green fruit-trees and truck-gardens.

Wilson's Snipe.—As usual, Wilson's snipe were numerous. They are in little demand and few are shot.

Predatory Animals and Noxious Birds

A report on the over-all predator situation will be found in another section of this Report.

It should be stated that in this Division we are deeply concerned by the steady increase in the numbers of domestic cats and, to some extent, domestic dogs which are allowed to run wild. No less than 258 domestic cats were destroyed by Game Wardens. These animals are turned out by various individuals and cause a tremendous amount of destruction among song and game birds.

There are many thousands of these useless animals at large in the Lower Mainland.

Game Protection

The usual routine patrols were carried out by Game Wardens, and a list of violations and resultant prosecutions will be found elsewhere in this Report.

Game Reserves

Regular patrols of all game reserves are made. There is some concern being felt regarding the usefulness of some of these reserves. Changing conditions, such as increas-

ing populations and more extensive land, water, and timber use everywhere, accompanied by resultant changes in terrain and wildlife habitat, have made it necessary to examine our whole system of game reserves. Some changes may have to be made where it is found that reserves have outlived their original purpose.

Registration of Guides

There are only three registered guides in this Division. They operate along the coastal inlets, where a few grizzly bear and mountain-goat hunting parties were taken.

Special Patrols

Departmental launches stationed at Powell River, Alert Bay, and Vancouver carry out constant patrols along coastal waterways.

Corporal W. J. Mason and Game Warden F. Renton, Alert Bay; Corporal R. E. Allan, Vancouver; and Corporal B. E. Wilson, Powell River, undertake difficult and often dangerous trips in the performance of their duties.

Other patrols of a special nature are made by Game Wardens throughout the Province, sometimes in co-operation with Federal fisheries workers or forestry officials. Aircraft are sometimes used on a charter basis.

Registration of Trap-lines

Ever since its inception in 1926, the trap-line system has operated with a minimum of trouble.

Hunting Accidents

There were three hunting accidents in the Division in 1955. On October 10th, 1955, A. A. Christenson was shot and slightly wounded by George Driediger. Both men were from Langley. Driediger was later fined for carrying a firearm without a licence. Henry Stewart Smith, Gillis Bay, Texada Island, accidentally shot himself in the stomach while deer-hunting on Texada Island. He recovered after spending six weeks in hospital. Stuart Harrell, Powell River, was shot in the hand by Stuart Campbell. The accident occurred when Campbell was taking a loaded .22 rifle from the back of a car. Harrell lost two fingers. Cambell was charged under subsection (1) of section 13 of the " Game Act."

Game-fish Culture

A list of the fish plantings that took place during the year is to be found in another section of this Report.

Experiments and research are still being conducted at the Cleveland Dam (Capilano River) in efforts to discover methods by which fish can be assisted past dams, and to permit the return of down-stream migrants.

Details of coarse-fish eradication measures that have been taken are contained in a section of this Report submitted by the Fisheries Division.

Summary and General Remarks

With the ever-increasing expansion and development, especially in the Lower Mainland area, it is difficult to determine the future of wildlife. Each year there are more and more sportsmen afield, while the hunting areas are shrinking annually. There is a steady and increasing demand for water for industrial use. All this is bound to have a detrimental effect upon fish and other wildlife. Efforts are being made to secure land which may be set aside as public hunting-grounds.

REPORT OF THE GAME MANAGEMENT DIVISION

By Dr. J. Hatter, Chief Game Biologist

INTRODUCTION

In many respects the year 1955 was a progressive one for the Game Management Division. The general programme, begun in 1954 toward better utilization of the big-game resources through either-sex seasons, was again the major feature of our activities.

Following three mild winters and a long succession of seasons on the male sex only, many of our moose, deer, and elk ranges are carrying far more animals than desirable. The destructive effect of a sequence of severe winters has been noted in the past, and it is the purpose of the Game Management Division to ameliorate such losses in the future where possible. Controlled populations result in lighter losses during years of lower carrying capacity. The problems in this regard have been outlined in the Annual Report for 1954 and may be referred to for a fuller account of our objectives.

It is apparent that our either-sex seasons are becoming widely accepted, and I suspect that soon our Division will be asked for further liberalizations, which we cannot safely undertake with the present size of the Game Management staff. The situation is particularly acute in "D" Division, where big-game populations as large as those in the south are present. Our slow progress in this area is clearly attributable to the lack of a Regional Biologist at Prince George to undertake population studies, recommend proper seasons, and carry out an active public relations programme to inform the public and gain their support.

Along with the needs of management, of course, there also arises the question of more personnel for protection. It should be apparent to all concerned that increased public services, which are more than paying their way from the intake of revenue, necessitate additions to the staff of both the Game Management and Protection Divisions. A glance at trends in the budget for both these Divisions reveals that no significant increases have been forthcoming for the past three years. The situation will, if not corrected in the near future, cripple our programme, which has now gained momentum. The situation is precisely this: We have the game to utilize and the increased revenue will not only take care of staff requirements, but will bolster the total moneys applied to Consolidated Revenue and the Conservation Fund. It does not seem good economy to hinder progress that is capable of more than paying its way.

In concluding the above, the foremost problem before the Game Management Division is insufficient personnel. A survey by any competent wildlife authority would reveal this fact.

HUNTER SAMPLE

A revision of the hunter sample was made during the past year, and fiducial limits of 5 per cent apply to the game harvests of our major species. It was determined that the sample could be reduced from 12,000 to 9,000, and by applying a heavier sample to big-game licence (general firearms licence) holders a more accurate determination of kill could be made. Non-resident hunters were surveyed and treated as a group separate from small-game (ordinary firearms licence) and big-game (general firearms licence) holders. Special consideration was given the East Kootenay District for both resident and non-resident hunters in view of the importance of the area for big game.

Comparison of the species harvest reveals a sizeable reduction in the take of ducks and geese over the year 1954. The pheasant kill was also down in all districts, with 11,000 birds below the 1954 figure of 48,000. The reduction in the total grouse harvest was mainly the result of a fire closure on Vancouver Island, a poor hatching season, and the cyclic low point in populations in the Interior.

Summary of the Harvest of Major Game Species for 1954 and 1955

District	Ducks		Grouse		Pheasants		Deer		Moose	
	1954	1955	1954	1955	1954	1955	1954	1955	1954	1955
South of Quesnel	----------	----------	----------	----------	----------	----------	----------	----------	2,500	2,739
North of Quesnel	----------	----------	----------	----------	----------	----------	----------	----------	1,800	1,998
Vancouver Island	76,000	54,404	71,000	45,257	7,000	4,239	11,900	14,943	----------	----------
Mainland Coast	191,000	174,245	8,000	5,665	19,500	11,518	7,300	3,851	----------	----------
Interior	109,000	57,548	101,000	98,537	19,000	19,913	10,200	18,418	----------	----------
Kootenays	26,000	16,498	25,700	27,023	2,500	1,118	6,600	13,706	500	503
Peace River	17,000	2,663	11,300	10,072	----------	----------	----------	----------	300	608
Wells Gray Park	----------	----------	----------	----------	----------	----------	----------	----------	120	140
South of Thompson River	----------	----------	----------	----------	----------	----------	----------	----------	----------	49
Totals	419,000	305,358	217,000	186,554	48,000	36,788	36,000	50,918	5,220	6,037

Notable changes were experienced in the deer harvest, with an increase of 42 per cent over 1954. Twelve per cent of the increase in the deer kill over 1954 is attributable to the antlerless deer season. The moose kill was up in all districts, to give a Provincial increase of 20 per cent.

The greater moose and deer harvest is largely attributable to increased populations of these species over most of the Province. Three consecutive winters below average in severity have allowed for greater survival and increased population size. It is gratifying to see that more of the surplus is being converted to useful purposes rather than being permitted to perish during severe winters inevitably to come. The larger moose and deer harvests made possible by the liberalized season in 1955 represent undeniable values in terms of money expended, meat values derived, and recreational benefits.

SUMMARY OF A SURVEY OF EXPENDITURES BY HUNTERS FOR 1955

To verify and supplement the survey of expenditures made in pursuit of hunting in 1954, another survey was undertaken for the year under review. Inasmuch as data obtained in this and preceding surveys will be presented at a later date in a separate publication, details will not be included herein. Total expenditures made in pursuit of hunting in 1955 have been calculated at over $12,000,000. This figure is much higher than the previous total of $6,686,000 obtained in the preliminary survey discussed in last year's Annual Report. It is felt that the new figure is much closer to the true expenditures. Fiducial limits will be applied to the various sub-totals which comprise the over-all figure.

ACKNOWLEDGMENTS

The spirit of co-operation between the various branches of the Game Department has been most pronounced during the past year. Sincere thanks are extended to all those who have assisted in one way or another the Game Biologists and others engaged in the activities of the Game Management Division.

LOWER MAINLAND AND SIMILKAMEEN DISTRICTS

By E. W. Taylor, Game Management Biologist, Vancouver, B.C.

This report presents a summarization of game conditions and activities of major importance in the management of game throughout the South-west Coastal, Mainland, and Interior portions of the Province during 1955.

Deer and Elk Winter Range Survey, Princeton District

The annual spring survey of forage conditions on the Princeton deer and elk winter range was made June 7th to 10th, 1955. Table I shows a summary of the data collected from 16,100 feet of random line-intercept transects involving 1,011 forage units.

Table I.—Forage Classification according to Use Class, for Various Winter Range Areas about Princeton

(Data from survey of June 8th and 9th, 1955.)

Winter Range Area	Species	Percentage of Plants in—				
		Class 1	Class 2	Class 3	Class 4	Class 5
Coalmont Road (Rabbit's Mill to Peterson Flat)	*Ceonothus*	22.1	30.6	28.2	14.7	4.2
	Amelanchier	1.0	15.9	61.7	19.4	1.5
	Salix	------	------	50.0	43.0	7.0
Sandhill and McCormack Flat	*Ceonothus*	33.0	40.2	22.2	3.8	1.0
	Amelanchier	------	1.8	50.0	46.5	1.8
	Salix	------	------	42.5	53.2	4.3
Thomas Meadows and Wolfe Creek Hill	*Ceonothus*	19.3	29.3	33.1	17.9	1.3
	Amelanchier	------	2.4	48.8	48.8	------
	Salix	------	------	100.0	------	------
Winter range total	*Ceonothus*	26.2	34.3	26.5	10.5	2.2
	Amelanchier	0.4	10.0	57.1	31.1	1.3
	Salix	------	------	46.8	48.1	4.7
Totals	All species	18.8	26.7	34.7	17.6	11.7

The current forage survey was carried out on the same areas covered in 1954, and forage classification was made on the same basis as in that year (Class 1, zero to light use; Class 2, moderate; Class 3, heavy; Class 4, severe; Class 5, dead).

Browse conditions in the Princeton area as represented by the portions of the winter range sampled showed little or no improvement over the previous year. Approximately 90 per cent of the 228 available *Amelanchier* shrubs examined were overbrowsed, and almost all (99.6 per cent) of sixty-four willow shrubs in the sample were in a similar condition. Compared to last year, there is no improvement in the status of these two forage species. As a matter of fact, both willow and *Amelanchier* have deteriorated over much of the main wintering ground around Princeton.

Ceonothus, which is generally more abundant than both willow and *Amelanchier* in the sampled portion of the range, did show some evidence of slight improvement in condition over that of June, 1954. Of 7.9 units examined in June of the current year, some 39 per cent were overbrowsed as compared to 42 per cent in this state in 1954. A more scattered distribution of elk in this district during the winter has perhaps eased the strain on *Ceonothus,* particularly in the Thomas Meadows and Wolfe Creek sections.

Elk, Princeton District

Data obtained during the winter aerial survey made in February, 1955, showed little change in the number of elk in the Princeton district as compared to that noted during the previous winter census. It was apparent, however, that the distribution of this species was more scattered than has been observed on previous occasions. This dispersal was believed due to hunting and to the fact that existing snow conditions were less severe than usual and permitted a greater mobility of animals than in the winter of 1953–54.

Herd composition showed a substantial calf-fraction in the population at the time of survey. From the classified portion of the census data it was found that 30.7 per cent of the wintering elk herd consisted of calves of the previous spring.

Table II shows comparative population census data for the years in which aerial surveys have been made.

Table II.—Summary of Aerial Survey Census Data for Princeton Elk

Census Period	Number of Elk Counted		
	Bulls	Cows and Calves	Total
Feburary, 1953	16	86	102
January, 1954	16	97	113
February, 1955	13	96	109

A five-day open season (October 8th to 12th, 1955) on bulls only failed to attract the hunting pressure experienced in the 1954 season. This, combined with the more scattered distribution of elk, resulted in a known legal kill of only five bulls, as compared to eleven during the previous year. Since the closing of the recent elk season, an additional sixteen animals have been killed—eleven in mistake for deer during the antlerless deer season and five in the control of haystack damage due to elk depredations.

McNab Creek.—The five-day open season on bull elk in the Mackenzie Electoral District was held from November 19th to December 4th, 1955. Hunting, which was confined largely to the McNab Creek section, involved few parties and resulted in no known harvest.

Mule Deer, Princeton

The relatively open winter of 1954–55 was apparently favourable to the currently expanding deer population in this district. Counts made in the early spring of 1955 indicated a higher population density than that known for the last five years. The over-winter survival of fawns as evidenced by roadside counts was good. Of 369 deer seen in April, 1955, 112 (30.3 per cent) were fawns of the preceding spring.

Post-season mortality on deer continued to be substantial in the Princeton district. The total known kill in 1954–55 (55) was below that for the period 1953–54 (90), but the proportion of fatalities due to traffic increased from 58 to 82 per cent (for the months December to June) for 1953–54 and 1954–55 respectively. Known losses due to predation dropped from 29 to 13 per cent over the same periods.

The recent open season on deer in the Yale-Similkameen District extended from September 15th to December 4th, with a bag-limit of two bucks per hunter. During the last nine days (November 26th to December 4th) of the season it was permissible to take not more than one antlerless deer per hunter within the total season bag-limit of two animals. This option, combined with ideal conditions for hunting and an abundance of game, attracted considerable hunting pressure and resulted in the highest deer harvest yet known in this area. The trend in harvest success for the past six years, as determined from the number of deer placed in the Princeton cold-storage plant (Table III), shows the relatively high increase in kill in 1955.

Table III.—Princeton Locker-plant Record of Deer Stored, 1950–55

Season	Number of Deer	Season	Number of Deer
1950	130	1953	141
1951	118	1954	180
1952	63	1955	401

Further data on the deer harvest were obtained through a road check maintained at Flood on the week-end of December 3rd–4th, 1955, and appears in summary in Table IV.

Comparison of data for the final week-ends checked at Flood in 1954 and 1955 shows a general increase in hunter numbers and game taken during the past season. In the Princeton and Hope-Skagit districts, hunting pressure increased 305 and 388 per cent respectively over that of 1954. The Rock Creek-Grand Forks areas, which bore heavy hunting last year, showed a decline in this factor of 23 per cent.

Table IV.—Deer Harvest Data, Southern Interior

(From road check of December 3rd–4th, 1955, at Flood.)

Area Hunted	Number of Hunters	Number of Deer Harvested				
		Bucks	Does	Fawns	Unidentified	Total
Hope-Skagit	83	----	2	----	----	2
Princeton-Keremeos	645	74	137	62	6	279
Oliver-Osoyoos	13	----	1	----	----	1
Penticton-Peachland	42	7	14	6	----	27
Kelowna-Lumby	5	----	2	----	----	2
Rock Creek-Grand Forks	83	20	28	15	----	63
Kootenay	3	2	2	----	----	4
Mamit Lake-Merritt	10	----	----	----	----	----
Totals	884	103	186	83	6	378

In spite of the relatively heavy harvest in the Princeton section, the recent kill, according to all available data, was not in excess of that deemed adequate for the population.

It is doubtful that conditions contributing to such a successful harvest will occur for some time. The recent antlerless season in the Similkameen district provided a timely opportunity to take full advantage of an unusual set of circumstances favourable to an increased harvest of deer. In spite of this possible reduction or thinning out of the deer population, the impending severity of the current winter could result in abnormal losses of animals in this district by early spring.

Coast Deer.—Investigations carried out during March and April, 1955, on Galiano and Gambier Islands provided considerable evidence that, in spite of the favourable climatic character of the preceding winter, deer mortality due to malnutrition was the highest known for several years.

Sheep.—A three-day open season (September 23rd to 25th, 1955) on rams in the Ashnola drainage resulted in a harvest of eight animals by the participating thirty-five hunters. All heads conformed with the minimum requirements of three-quarter curl.

Hunters considered the short season most successful and felt that the three-quarter curl law was a satisfactory and practical instrument in the necessarily controlled harvest of this species.

Upland Game Birds

The spring and summer of 1955 was unusually cold and wet, and the effect of such adverse weather conditions on all upland game birds is believed largely responsible for the recent poor production by this group.

Grouse.—In spite of indications suggesting a good breeding population, both blue and willow grouse appeared to be much below their usual numbers in the Similkameen and South Okanagan districts during the past fall hunting season. Harvest of both species was down considerably from least year.

Pheasants.—Roadside census and crowing counts throughout the Fraser Valley during April and May, 1955, indicated a decline in the pheasant breeding population noticeably below that of the preceding spring. With the subsequent poor reproductive success, the fall harvest in this region was the lowest for many years. August, 1955, brood size (3.2) was below that (3.8) for this period in 1954 and only about half that (6.3) found in 1952.

Artificial stocking of pheasants was carried out during the early spring and in the late fall of 1955. The quantity and regional distribution of these plants are shown elsewhere in the Annual Report for this Department. An analysis of data obtained from studies made in connection with annual artificial stocking in the Province suggests that

this practice is both costly and relatively ineffective as a means of improving pheasant-hunting generally.

Chukar Partridge.—April, 1955, marked the end of the five-year programme of chukar partridge introductions in British Columbia. At this time, plants were made in the following areas:—

	Birds
April 5th, 1955—	
Keremeos-Cawston	125
White Lake	125
April 12th, 1955—	
Pritchard	128
Vernon	64
Kelowna	67
Total	509

The success of stocking in the South Okanagan and Similkameen districts does not appear to be as great as that obtained in the Kamloops-Ashcroft region. Birds are occasionally seen in the White Lake, Keremeos, and Vaseux Lake areas, and some broods have been noted. Establishment has been slow, but may improve should a more favourable rearing season occur in the near future.

Waterfowl

Crop Damage.—Following the closing of the 1954–55 season on ducks, large numbers of widgeon and pintail ducks became troublesome to certain winter crops under cultivation in the Delta Municipality. Sugar-beets suffered most heavily in the damage that occurred. In only one instance were their depredations serious enough to affect crop development.

Harvest.—Waterfowl-hunting in the Lower Fraser Valley compared favourably with that of the previous season until mid-November. At that time a severe and prolonged period of cold weather ensued, resulting in the movement of large numbers of birds from the area.

Public Shooting-grounds

The problem of public access to shooting-grounds in the Lower Fraser Valley has not improved during the past year. Numerous applications for the lease of foreshore areas in and about Steveston were investigated and found to be not inimical to game interests in that area. However, foreseeable trends in industrial development in the Fraser River delta section may create situations which conflict materially with waterfowl habitat and hunting in the not too distant future.

In an effort to ensure the future welfare of the large wintering population of ducks and geese and to provide hunting-grounds for public use, title to some 1,027 acres of unalienated insular lands in the Fraser River estuary has been applied for by this Department.

The possible effect of sewage-disposal on the wildlife potential of the delta region has received attention, and such proposals will be held under constant and critical surveillance.

Acknowledgments

I wish again to extend my thanks to the Game Wardens and other persons both within and without the ranks of the Game Department for the generous assistance rendered me in connection with work undertaken in the past year.

SOUTH CENTRAL INTERIOR

By P. W. Martin, Game Management Biologist, Kamloops, B.C.

During 1955, activities were largely centred about problems dealing with moose and deer management. A six weeks' period was spent in conjunction with a combined fish and game survey in the Atlin area. This survey was conducted to ascertain the probable habitat changes that would be the result of the implementation of development of the power resource by Frobisher Limited.

Big Game

Moose.—The moose harvest in the South Central Interior was the largest since 1952. This was the result of three mild winters, during which the survival of yearling animals was relatively high, of an early onset of winter that caused the animals to move into areas where they were available to hunters, and of the continued open season on both sexes of moose. The average success of all moose-hunters was higher than for several seasons past, but the actual number of moose-hunters was slightly lower.

Table I.—Comparative Harvest and Success in Areas I and II

(Compiled from records of the Cache Creek Checking-station.)

(*a*) MOOSE HARVESTED BY AREAS, 1950 TO 1955, INCLUSIVE

	1950	1951	1952	1953	1954	1955
Area I	144	228	395	133	420	620
Area II	38	38	67	49	99	171
Total of all areas	1,597	2,270	1,255	1,561	1,769	2,385

(*b*) PERCENTAGE OF HUNTERS SUCCESSFUL BY AREAS, 1950 TO 1955, INCLUSIVE

Area I	27.1	25.5	15.7	22.1	22.5	32.8
Area II	31.0	32.7	18.2	29.7	30.1	47.3
All areas	34.8	36.7	19.0	32.5	29.6	40.9

Spring range appraisals were undertaken during April and May. Upland willow is used as a key species to indicate relative browsing intensities. Forty-three sample plots were assessed in widely dispersed areas of moose winter range in Area I. The percentage of plants browsed to varying degrees was then calculated on each plot and an over-all assessment of range use calculated from totals.

Table II.—Range Assessments in Area I, Using Upland Willow as Indicator Species

	Nil	Light	Moderate	Heavy	Severe	Total
Number of samples	201	308	464	673	1,800	3,446
Per cent of use	6	9	14	19	52	100
Dominant class by plots	2	------	4	6	31	43

Browsing of other species of shrubbery was comparatively intense in almost all areas. A marked decrease in the vigour of swamp willow (*Salix* sp.) and arctic birch (*Betula glandulosa*) was apparent in Area I. The sum total of samples browsed beyond the yearly regenerative powers of the plant—namely, "heavy" and "severe"—was 71 per cent in thirty-seven out of forty-three plots. This continuing trend in the deterioration of the ranges is disappointing, especially in view of the cow season of 1954. It is hoped that the heavier kill of the current year will result in a reduction in range use that will permit some degree of rehabilitation of the range plants.

Mandibles of moose were collected from hunters at Cache Creek and on all other occasions when the opportunity occurred. These were classified as to age, and the age composition of the herds calculated from this sample.

Table III.—Age Structure of 1955 Moose Populations

Area of Sample	Percentage Compositions by Age-classes				
	1½ Years	2½ Years	3½ Years	Mature	Aged
Area I (Lone Butte-Bridge Lake-Jesmond)	48.2	31.7	7.0	13.1	—
Area II (100 Mile House-Canim-Lac la Hache)	30.0	45.0	10.0	15.0	—
Area III (150 Mile to Quesnel and Horsefly)	37.1	14.3	14.3	34.3	—
Areas V and VI (west of Fraser to Blackwater)	13.5	28.4	12.2	44.9	4.0
North of Quesnel	25.0	25.0	14.6	28.2	7.2
All bulls, 1955	31.8	28.5	10.8	26.9	2.0
All cows, 1955	9.6	11.2	16.1	58.3	4.8

The age structure of the moose populations differs very little from that of 1954. In the bull population young animals of the first three classes rose by 6.7 per cent in 1955, and in the over-all cow kill young animals decreased 2.3 per cent from 1954 figures. Such small differences are within the expected limits of sampling errors, and no significant change in the age structure of the moose population is indicated.

A brief aerial survey of moose in Area I was undertaken in December of 1954 immediately following the hunting season. The sample was small, but no significant change in the density of moose from that of the 1954 winter counts was noted.

Mule Deer.—The harvest of mule deer was greater during the 1955 season than for several years previous. The cold spell in mid-November initiated an early movement of deer to virtually all winter ranges. As a result, they became available to hunters and an abnormally heavy kill ensued in accessible areas. Post-season observations indicate that this kill was not excessive. Some relief was afforded the low, arid, and heavily used winter ranges, and a greater percentage survival of deer will result.

Sheep.—A three-day season on California bighorns resulted in four sheep being taken from the Vaseux Lake herd. None were taken at Shorts Creek. This was unfortunate, for there are several excess rams of trophy size in the Shorts Creek herd.

The season on Rocky Mountain bighorns in the vicinity of Chase was limited to one week on rams bearing horns of three-quarter curl or better. The ruling was well received by sportsmen, and only three trophies were secured.

Upland Game Birds

Pheasants.—Pheasant-shooting in the Okanagan Valley was slightly better than that of the previous years. No appreciable change was noted in the Thompson Valley.

Chukar Partridge.—Chukar partridge experienced a most successful hatching season in the Thompson River valley. Shooting resulted in no appreciable reductions in the stock of birds, and at the year's end winter losses were light in spite of sub-zero weather. Chukar do not appear to have established themselves successfully at Vernon or Kelowna. The small population at Vaseux Lake is doing well, but no expansion of range is apparent.

Grouse.—Ruffed grouse are passing through a low phase of their cycle of abundance. They are very scarce in the Cariboo, and few hunters seek them assiduously, hence they have little effect upon the grouse population as a whole. Blue grouse are scarce in the Thompson River valley, but fair populations are to be found in the Okanagan.

Public Relations

Sixteen meetings of sportsmen's organizations were attended during the year. Several papers were written for distribution to the public. Every opportunity was taken to acquaint members of the public of the aims and practices of game management.

ACKNOWLEDGMENTS

I would like to acknowledge the co-operation of all Departmental personnel during the past year, and also the many members of the general public who co-operate by assisting in the collection of moose mandibles and in many other ways.

CARIBOO AND CHILCOTIN DISTRICTS

By L. G. Sugden, Range Management Biologist, Williams Lake, B.C.

The information given in the following report represents an abstract of the major activities during the year 1955. Three weeks of June were spent in connection with a wildlife survey of the Atlin region to determine the probable effect upon wildlife of the proposed hydro-electric development by Frobisher Limited. Otherwise, work related to big-game management in the Cariboo District occupied most of the year.

Moose.—Moose management in the Southern Interior continues along a progressive trend, and major herds are gaining productiveness as a result of extension of liberal seasons. It is through such management that the herds eventually will reach a healthy state and provide a maximum amount of recreation and meat for moose-hunters. Fig. 1 illustrates the trend of moose-hunting by guided hunters in the region during the past three years. Moose-hunting in the Alexis Creek, Williams Lake, and Quesnel Game Detachments showed improvement during the 1955 season, as indicated by the data in the following table:—

Area	1954			1955		
	Hunters	Moose	Per Cent Success	Hunters	Moose	Per Cent Success
Alexis Creek	404	268	66	347	270	78
Williams Lake	190	94	50	221	153	69
Quesnel	99	51	51	92	66	72
Totals	693	413	60	660	489	74

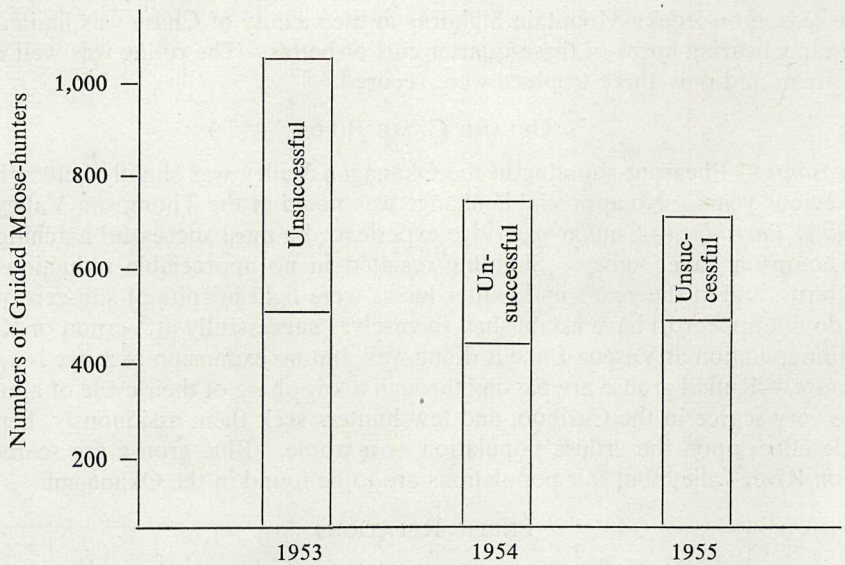

Fig. 1. Bar graph illustrating the trend of moose-hunting by guided hunters for three years in the Central Cariboo and Chilcotin regions.

Moose Range Surveys.—Using the method described in the corresponding report for 1954, range-use appraisals were again made in the Williams Lake-Horsefly area and the Eastern Chilcotin. The following table summarizes the resulting data:—

Summary of Observations on Upland Willow Condition, April-May, 1955

NUMBER OF OBSERVATIONS

Area	*Nil*	Light	Moderate	Heavy	Severe	Totals
Williams Lake-Horsefly	15	123	587	894	363	1,982
Eastern Chilcotin	2	23	60	128	81	294

PERCENTAGE OF OBSERVATIONS

Williams Lake-Horsefly	0.7	6.2	29.6	45.0	18.5	100.0
Eastern Chilcotin	0.7	7.8	20.4	43.5	27.6	100.0

The percentage of misused browse plants in the Williams Lake-Horsefly region increased from 39 per cent in 1954 to 64 per cent in 1955. In the Big Creek-Chilcotin River area there was an estimated 70-per-cent overuse during both years. With such chronic misuse the moose winter ranges will continue to gradually deteriorate.

Aerial Moose Surveys.—During 533 miles of January aerial moose-counting in the Williams Lake-Horsefly district, an index of 5.5 moose per square mile was obtained, which, for practical purposes, is unchanged from that of 1954. Of 167 moose classified, 31 or 19 per cent were calves. During four hours (280 miles) of selected flying in mid-May in the Gang Ranch-Big Creek area, 642 moose were tallied. The moose were concentrated on open swamps and meadows behind the receding snows.

California Bighorn Sheep.—Under the three-quarter curl regulation in effect west of the Fraser River, it is known that five rams were taken, all from the Yalakom band. This new regulation prevents the killing of young rams, thus providing a constant supply of trophy rams and at the same time an adequate breeding stock.

By means of live-trapping, eighteen sheep (ten rams, three ewes, and five lambs) were removed from the Riske Creek band in November. Greater efficiency in handling and loading the animals was achieved by the use of a small catch-pen and loading-chute. Five rams were destined for the Vaseux Lake band, two rams to the Whitewater band, and the balance made up a new plant in the Westbranch Valley near Bluff Lake. This represents an individual attempt in British Columbia to restore this species of bighorn on its former range.

Mule Deer.—A survey of the winter range of the Westbranch deer herd revealed a situation which is common to moose of the Interior deer ranges. The primary browse plants have been severely misused, and current food production is considerably below its potential. In this case, service-berry (*Amelanchier alnifolia*), mountain maple (*Acer glabrum*), silver willow (*Shepherdia argentea*), Douglas fir (*Pseudotsugo taxifolia*), and Rocky Mountain juniper (*Juniperus scopulorum*) are the principal browse species and show hedging by wintering deer.

The area is remote and experiences light hunting pressure, and the short seasons on antlerless deer have had no material effect on the population.

Public Relations

At every opportunity public meetings concerned with wildlife management were attended, and during the course of a year the principles of game management are discussed with many individuals.

ACKNOWLEDGMENTS

I wish to acknowledge the co-operation of Departmental personnel and many individuals of the general public who assisted in many ways during the year.

VANCOUVER ISLAND

By D. J. Robinson, Game Management Biologist, Nanaimo, B.C.

The accumulation of data relating to game species was accelerated during 1955. The increased number of Game Department checking-stations, plus active participation by logging companies and the organized sportsmen in gathering facts, has enabled the Commission to better understand current problems. The 1954 trend toward better access, a more informed public, and greater interest of logging companies in management of game showed new impetus. Co-operation among the Game Commission, the public, and forest industry is of paramount importance, for the bulk of Vancouver Island's game is a product of logging. Land to produce game and people to use it are the basis of our game programme. This past year has witnessed co-operation at all levels, concerning the utilization of the game resource.

BIG GAME

Black-tailed Deer.—The mild winter of 1954–55 allowed an excellent carry-over of yearlings. The pattern of survival, however, varies for each range, depending upon the relationship of the population to the environment. It is becoming apparent that the summer range may be as important as the winter range, for it largely determines the quality of animals while the winter range determines the quantity. Table I shows that the 1955 fall harvest should have consisted mainly of 1½- and 2½-year-old deer. Age-class data from studies made subsequently agrees with this, as 75 to 80 per cent of all deer over 1 year of age were in these categories. Heavy mortality in the fawn age-class can reduce the male harvest by 40 to 50 per cent in one year.

Table I.—Spring Counts on Three Vancouver Island Deer Ranges, Showing the Contribution of Short Yearlings to the Total Population

Area	Adults	Yearlings	Percentage of Yearlings in Population	
			1954	1955
Sayward	23	18	42.2	31.6
Courtenay	178	79	30.6	35.7
Northwest Bay	86	51	37.2	45.4[1]

[1] Small sample in 1954.

Although the trend from year to year may be up or down, depending upon the winter, each deer herd on Vancouver Island depends basically upon the nature of its range. Initially the range is highly productive and large animals are present, although the population may be quite small. While the deer population builds up the maximum for the area, the range deteriorates. This change takes place regardless of deer numbers, but they may speed up the process. The next phase is one of increased population but smaller individuals, which in turn gives way to a relatively small herd of small size. This basic pattern is complicated by recurring severe winters and by current forestry practices which dampen the population trends.

The hunting season of 1955 was unusual, for snow cover was general from early November. Due to this condition, deer were frequently hunted on restricted winter range and a marked increase in the harvest was obtained (Table II). Preliminary information indicates that the take of deer is up at least 25 per cent over 1954, giving an Island-wide harvest of 15,000 or more.

Table II.—Success of Deer-hunters during the "Any Deer" Seasons of 1954 and 1955

Area	1955			1954	
	Number of Hunters	Number of Deer	Per Cent Successful	Number of Hunters	Per Cent Successful
Nanaimo	548	286	52.2	386	28
Port Alberni	121	34	28.1	324	11.1
Courtenay	440	253	57.5	304	25.0
Campbell River	400	124	31.0	929	24.0

The importance of the last two weeks of the season is illustrated in Table III. September and October supply sport and recreation, but few deer. Better than 75 per cent of the deer were shot during November, with well over 60 per cent in the last two weeks. Irrespective of deer numbers, it appears the harvest necessary for management can only be taken when the rut and winter weather combine to make deer available. This situation results in a short, intense period of high hunter success, with perhaps lowered æsthetic value. Nevertheless, pre-winter thinning of big-game herds is a necessity if these animals are to be kept in good quality for future hunting seasons. The harvest picture should not be judged on the unproductive period of September and October or on the highly productive period at the end of November. Both must be considered, for the initial period furnishes much recreation, while the latter period allows the kill so necessary for the management of big game.

Table III.—Monthly Trends in the Deer Harvest Based on Road Checks at Courtenay and at Northwest Bay, 1955

Date	Per Cent of Total Harvest
September	9
October	8
November 1st to 25th	16
November 26th to December 4th	67

Elk.—The second successive season on Roosevelt elk produced twelve bulls. There exist herds at Courtenay, Upper Campbell Lake, and Salmon River which did not yield a single animal. It is suggested that next year a more liberal season be initiated to give a reasonable harvest.

Upland Game Birds

Blue Grouse.—For the second consecutive year, blue grouse production was down. This, coupled with a period of hot, dry weather preceding and during the initial week-end, limited the harvest. The annual migration, apparently triggered by this hot weather, removed many birds from the accessible ranges. A forest closure for the eight days after the opening week-end allowed a further escapement. The brightest part of the blue grouse season was the fine hunting in October at Port Alberni, Courtenay, and Nanaimo. These areas have high slashings and adjacent standing timber, a combination which permits shooting of the best quality until the season ends. It is predicted that with the loss of the large tracts of lowlands which produced former harvests, increasing attention will be paid to following the fall migration into the timbered winter ranges.

The stand of blue grouse is changing with the impact of new forestry methods. Patch logging, efficient reforestation, and logging at all altitudes will probably end the bumper crops of the late 1930's and 1940's. However, while it is predicted that the population in any one year will be lower than in former peak periods, the harvest realized throughout the complete forest rotation will be larger. Increased efficiency of harvest, especially on adult males, will probably keep the hunting bag similar to the past five years.

Waterfowl

Black Brant.—The harvest of black brant was poor—perhaps the lowest of the past decade. The local wintering group of birds supplied its usual limited quota, but the migrant flocks did not appear until mid-March (Table IV). Shooting to supply sport to the brant-hunter is only possible when these migrants arrive before the end of February.

Table IV.—Black Brant Observed along the East Coast of Vancouver Island during Spring Migration

Date	Number of Birds		
	1953	1954	1955
February (early)	.....	50	30
February 17th	.....	125	4
March 7th to 9th	723	373	507
March 21st	1,587	1,923	3,555
April 4th	2,950	3,135	4,075
April 18th	2,505	4,340	5,215
May 2nd	.....	1,625	2,160

Public Relations

Dissemination of information as to the work of the Game Commission and other conservation agencies constituted a major portion of the year's work. Talks, discussions, and forums were held at all Vancouver Island fish and game clubs at various times. A total of forty-six such meetings, with over 1,600 sportsmen present, were addressed. Many service clubs and high schools requested informative talks on the wildlife of the Province, and over 700 persons were contacted in this manner. Conservation of natural resources is a subject of interest to all people.

EAST AND WEST KOOTENAY DISTRICTS

By W. G. Smith, Game Management Biologist, Cranbrook, B.C.

The major game-management activities carried out in the Kootenays during 1955 were directed at obtaining an understanding of some of the problems of major importance to management. An aerial census of winter ranges was carried out to determine the extent of some of the winter ranges and to obtain an idea of the size of the game populations. Organized hunter checks were carried out in the hunting season to get data on the hunting pressures and successes in the region and to obtain data on the species taken. Investigations were conducted into crop damage problems and range problems. Numerous game club meetings were attended and several talks were given at other functions.

Aerial Census

An aerial census was conducted during the early spring period on several of the important winter ranges in the East Kootenay, which provided a good picture of the distribution and relative abundance of deer, elk, and moose. Deer were found in very heavy numbers on some of the ranges, and large populations of elk were found. The total estimated game populations of big game on the ranges sampled were 13,873 deer, 4,389 elk, and 517 moose.

The ranges supporting the heavier game populations were found on the relatively high benches along the Selkirk and Rocky Mountains. Very few animals were found wintering in the lower elevations in the Rocky Mountain Trench.

Hunter Checks

During the 1955 hunting season a total of seventeen hunter checks were held in the East Kootenay. Checks were held on the main highways, where an optimum number of hunters were contacted returning from a day's hunt. Two thousand two hundred and twenty-eight hunters were checked, with a total bag of 805 deer, 43 elk, 5 moose, 5 goats, 2 black bears, 2 mountain caribou, 19 grouse, and 12 ducks.

A record was made of the occurrence of the spinous ear-tick in the big-game mammals examined, and a total of eight cases were found. Of the eight cases discovered, seven occurred in the Elko area and one in the Premier Lake area.

Hunter success ranged from an average of 7 per cent in the early part of the hunting season to 14 per cent following a cold snap, and with the opening of the antlerless deer season leapt to an average of 54 per cent per day's hunting. The highest hunting success recorded was in the Elko area, where 174 hunters checked had taken 121 deer and 5 elk.

A record was kept of the place of residence of all hunters that were checked, giving a picture of the distribution of hunting pressures by place of residence. It was found that the hunters tended to concentrate within a relatively small radius from their place of residence. Thus the Kimberley hunters tended to concentrate in the area north of Kimberley, the Skookumchuck, Island Pond, Springbrook, and Canal Flats areas. Cranbrook hunters concentrated in the Fort Steele, Bull River, Wardner, Galloway, and Cranbrook areas. Fernie hunters hunted the Elko, Gold Creek, Sheep Mountain, Plumbob, and Newgate areas.

Hunters resident in the East Kootenay comprised 92 per cent of the total checked, and West Kootenay hunters comprised 5 per cent of the total. The remaining 3 per cent of the hunters checked were residents of other areas of the Province.

Crop-damage Investigations

Several cases of crop damage were investigated in both the East and West Kootenays during 1955. In the West Kootenay, elk were found to be causing severe damage to grain-crops in the Lardeau area. A herd of about thirty elk summered adjacent to farm lands, and in the fall these animals invaded the stooked grain and destroyed a large percentage of the crop. Several complaints of deer doing damage to crops in the East Kootenay were investigated, and it was found that in almost all cases the damage was being caused by white-tailed deer invading alfalfa-crops. This type of damage seems severe early in the year, but later growth of the plants tends to mask the damage, resulting in a general cessation of complaints. Orchard damage by white-tailed deer in the Creston area was found to be severe, and a special season was held as a control measure. The total kill approximated 100 animals and resulted in cessation of the damage complaints. Damage to haystacks is a perennial complaint, and numerous complaints of this sort arose in the East Kootenay this winter. Wherever possible the complainants were encouraged to build adequate fences. Damage of this type generally arises in areas of subsistence level farming where small farms are located on winter ranges.

Game Ranges

During the summer of 1955 a herd of domestic sheep were ranging from private lands on to bighorn sheep range in the Bull River area, and a move was made to prevent this situation from recurring. The domestic sheep were finally removed, and it is hoped that this situation will not arise again. In certain areas, range is being badly overused by both domestic and wild animals, and it is felt that game should be given a place in the scheme of range use, thus reducing the chance of severe overuse of the ranges.

Big Game

Moose.—Moose have been found to range extensively in the East Kootenay, much more extensively than was anticipated on the basis of reports. This species was found to occupy relatively high range in the winter period, and, as a result, moose are not commonly encountered. In the Dunbar Lakes area, where a closed season had been in effect, a population of at least 450 moose was found on about 200 square miles. This population of moose was opened to hunting in 1955, and about fifteen bulls were believed to have been taken by hunters.

Deer.—Deer populations during 1955 were very high, and with the advent of an early winter during the hunting season an excellent crop was taken. The species, sex, and age distribution of the deer kill in the any-sex season was as follows:—

Species	Age								
	Fawns	Year-lings	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8+ Years
Whitetail deer—									
Male	13	9	7	3	5	1	0	1	3
Female	16	26	8	5	3	7	5	4	6
Mule deer—									
Male	8	13	8	4	5	3	1	1	0
Female	4	7	2	5	2	1	2	2	7

The above table illustrates the tendency of hunters to select the animals killed. Thus the mule deer buck kill exceeded the doe kill, and in the case of whitetail deer almost twice as many yearling does as fawns were taken. The effect of weather conditions on the species distribution of the deer kill was remarkably contrasted in the last two hunting seasons. During the road checks held in 1954, it was found that 80 per cent of the deer kill consisted of white-tailed deer, which was the result of the very mild and open fall experienced during the hunting season. The 1955 hunter checks revealed a deer kill composed of 49 per cent white-tailed deer and 51 per cent mule deer. Thus the 1955 deer kill reflects the effect of the early onset of winter, which drove the mule deer down from their mountainous ranges within reach of the hunters. The deer kill this past season also suggests that the hunters are not particularly selective in their deer-hunting, which was formerly believed. The effect of the weather on the species kill of deer provides good reason for holding the antlerless season late in the year, thus ensuring a crop of both species.

Elk.—The hunter success on elk was only fair as determined from the hunter checks. The early snowfall of up to 12 inches tended to impede the hunters but not the elk. The cow season resulted in a very small kill, without doubt not adequate. Elk appear to be extending their range in some areas, especially into the Selkirk Mountains. In the future, elk seasons must be experimented with to determine the best cropping methods.

Mountain-caribou.—Little is known about the numbers or distribution of this species. The range of the caribou in the East Kootenay is limited to the Selkirk Mountains, largely in inaccessible areas. A total known kill of five animals occurred in the Cranbrook-Kimberley area, three from the St. Mary River, and two from the Lamb Creek-Moyie area. The caribou ranges become inaccessible with the early snowfalls; thus the season on this species should be advanced to permit access to the caribou ranges while weather permits.

Grizzly Bear.—As yet little is known about this species in the East Kootenay. The animal is reputedly not as common as it was, and the decrease is attributed to excessive hunting. The non-resident hunting parties probably take more bear than do the residents by hunting over baits.

Goat and Sheep.—The crop of these species remains relatively small. The sheep kill this past fall was exceptionally small, due to an early snowfall on the alpine ranges. Two known legal kills were made in the Bull River range, which could probably support an annual kill of fifteen to twenty animals.

Upland Game Birds

Upland bird populations remain low at present throughout much of the East Kootenay. The Golden area appeared to have reasonable densities. Blue grouse are seldom taken by hunters, except where they have access by road to alpine country. For this reason, ultimate changes should be made in our grouse seasons if this species is to be cropped. Ptarmigan present the same problem in management as blue grouse. Road checks held in the past two years show the grouse kill to be small, and in fact grouse appear to be taken incidentally to deer or other big game. Sharp-tailed grouse populations remain small, and comprise a small part of the grouse kill. Probably heavy grazing of the ranges tends to depress this species in certain areas.

Waterfowl

Utilization of the waterfowl resource in the Kootenays remains small, but will develop with increases in the hunter population. The Columbia River marshes and Duck Lake contribute the bulk of the waterfowl kill. Good pot-hole shooting is available in certain areas, but appears to contribute a small part of the waterfowl kill. As in most Interior areas, the advent of fall freeze-up closes the season with the withdrawal of the birds. Local populations of ducks provide only a fraction of the kill; however, there is a large breeding population of Canada geese which provides some excellent hunting.

Public Relations

During the year numerous rod and gun club meetings were attended, and every opportunity was made to familiarize the sportsmen with the activities of the Game Commission. Several talks were given to schools and service clubs.

REPORT OF THE FISHERIES MANAGEMENT DIVISION

By R. G. McMynn, Chief Fisheries Biologist

GENERAL

Industrial development and population growth have placed an increasing demand on the sport-fish resources of the Province. It is hoped, however, that the growing realization of the tremendous value of this resource (some 120,000 anglers spent a total of over $20,000,000 in 1954) will eventually lead to a more liberal allotment of funds for fisheries research and management.

The year 1955 has been a most interesting one and, as the reports of the various branches which follow will indicate, much has been accomplished. Research and evaluation have clearly indicated the fallacy of planting small trout in those lakes that contain populations of coarse fish. In these lakes, competition and predation have been shown to be so severe that stockings with small fish have been of little or no value. However, when larger fish, such as spring fingerlings or yearling trout, are stocked, the results are most gratifying (these larger fish are more capable of fending for themselves). Experimental plantings of migrant steelhead were conducted for the third consecutive year on a limited number of Vancouver Island and Lower Mainland streams.

The first returns of adult steelhead originating from the 1954 plantings have shown up in the Vedder and Alouette Rivers. Although it is a little early to evaluate the results

of the plantings, the returns to date have been rather disappointing. The appraisal of the steelhead plantings is complicated by the lack of a suitable means of checking on the number of steelhead migrants; in this regard a punch-card system, such as that used in Washington and Oregon, may be attempted in the future. Although this system is not 100 per cent effectual, it certainly produces a clearer picture of the steelhead-fishery than that provided by the voluntary returns of creel-census data.

Hatchery facilities are becoming more overcrowded each year due to the space requirements of the larger-sized fish used in our lake stockings, together with the additional burden created by the raising of steelhead migrants. The construction of at least one more permanent hatchery is urgently required.

In 1955 a few small lakes were cleaned out of coarse fish and rehabilitated with trout by the use of a rather expensive chemical known as "rotenone." The results were spectacular in the treated lakes, and these lakes are now producing large populations of rapid-growing trout yielding excellent sport fishing to the general public. However, the treatment was expensive, and only small lakes could be treated. The recent development of a new chemical suitable for the economical removal of coarse-fish populations may open up a tremendous field of fisheries management in British Columbia. This new chemical, known commercially as "toxaphene," shows promise of being effective at a price of one-quarter to one-tenth that of rotenone. Experiments will be carried out in a series of lakes in 1956 to test the effectiveness of the toxicant and the concentration required to kill the different species of fish in lakes of various chemical types.

Hydro-electric and water-storage schemes consumed a great deal of time and effort of the Branch during 1955. In the majority of cases, early liaison with the companies involved has insured a spillage of adequate minimum flows together with the installation of fish-protective facilities. In at least two cases, distinct advantages to sport-fish values have been achieved; that is, the assurance of greater than minimum recorded flows at all times. Discussions are currently taking place regarding fish problems which must be overcome before a dam on the Fraser can be built. For the time being at least, plans for the early utilization of certain lakes of the Yukon River system have been tabled, but the Mica Creek and Kaiser development are still in the discussion stage and no definite plans have been received.

Pollution abatement is proceeding satisfactorily, particularly with respect to mining activities in the Kootenay and Boundary Districts. In some cases, negotiations are protracted and token efforts by the offenders to clean up complicate proceedings. The need of a fresh-water pollution-control agency armed with appropriate legislation is necessary in order to integrate the various interests involved.

The fishing regulations proposed for 1956 have been further simplified and the booklet reduced in size by the elimination of the synopsis. Two major changes include the legalization of spear-fishing for fish other than those defined as game fish and the establishment of a daily catch-limit of fifteen being placed on kokanee. Continued demands on the sport-fish resource indicate the need for increased funds and staff. Without this aid, the scientific management of this valuable resource cannot proceed along the lines demanded as a result of increased utilization by the public together with the serious competition from increased water use.

HATCHERY DIVISION

By I. Barrett, Division Fisheries Biologist

Continued modernization of equipment and a critical self-evaluation of hatchery procedures have key-noted the activities of the Hatchery Division during 1955. There has been an increase in the numbers and pounds of yearling trout released. The steelhead programme on the Lower Mainland has been continued and improved. Survival experi-

ments have been conducted to determine the immediate effect of hatchery plantings on the fish themselves. A large number of the trout liberated from our hatcheries in 1955 were marked by the removal of one or a combination of fins, to aid in the evaluation of the hatchery contribution to sport fishing. Adjustments and improvements were also effected to the stocking lists, in co-operation with the various Regional Biologists.

Personnel retirements and transfers have resulted in the loss of one man from the Hatchery Division. In January, 1955, Fishery Officer J. D. Inverarity retired after twenty-two years of service with the Fisheries Division. Fishery Officer D. R. Hurn, Officer in Charge of the Summerland Hatchery, was promoted in June, 1955, to the position of Regional Fisheries Biologist. Only one replacement has been made to date to the strength of the Division. The present permanent staff of the Hatchery Division is thirteen men, including the Division Chief. The strength last year was fourteen permanent men.

The in-service training programme was deferred for one year because of the change of supervisors at the Summerland Hatchery, where the programme was in operation.

In 1955, 241 lakes and streams in the Province were artificially stocked by the Hatcheries Branch from its four permanent and five seasonal hatcheries. These liberations were made with the aid of two 400-gallon dual-pump tank-trucks, one 200-gallon single-pump tank-truck, and fry-cans. The break-down of egg productions, liberations, sales, and exchanges are given in Tables I to VIII. Table I shows the trout eggs handled in 1955 and their source. It should be noted that 7,786,000 eggs of seven species of fish were involved in the 1955 fish-cultural programme, of which only 398,000 were not taken by Departmental personnel.

Table I.—Egg Production

Species	Eggs from Wild Fish	Eggs from Brood Fish	Eggs Received on Exchange	Adult Brood Stock Held
Steelhead	----------	----------	250,000	12
Kamloops	5,915,000	35,000	----------	480
Cut-throat	438,000	250,000	----------	960
Eastern brook	225,000	----------	----------	----
Kokanee	525,000	----------	----------	----
Fall spawn rainbow	----------	----------	11,000	----
Montana grayling	----------	----------	137,000	----
Totals	7,103,000	285,000	398,000	1,452

The egg plants made by the various hatcheries and rod and gun clubs are given in Table II. Of the 1,313,000 eggs planted, 460,000 were kokanee eggs. These were planted into four streams in the Kootenay area in an attempt to establish kokanee runs after a successful pollution-control programme in these streams.

Table II.—Egg Plantings

Source	Kamloops Trout	Kokanee Trout
Beaver Lake Hatchery	325,000	----------
Penask Lake Hatchery	165,000	----------
Lloyds Creek Hatchery	33,000	----------
Loon Creek Hatchery	30,000	----------
Smithers Rod and Gun Club	60,000	----------
Vanderhoof Rod and Gun Club	90,000	----------
Prince George Rod and Gun Club	150,000	----------
Nelson Hatchery	----------	460,000
Totals	853,000	460,000

A tabulation of the number of eggs which have been sold, exchanged, or used for experimental purposes during 1955 is presented in Table III. It will be seen that no sales of eggs were made to private individuals in 1955, in line with a stricter control policy of the Game Commission.

Table III.—Egg Sales and Exchanges

Recipients	Species		
	Kamloops	Kokanee	Cut-throat
Greek Ministry of Industry	200,000	.....	.....
Government of Canada (Whitehorse)	10,000	.....	.....
University of British Columbia	3,000	5,000	.....
Government of Canada (Waterton Park)	50,000	.....	50,000
Alberta Department of Lands and Forests	.....	.....	100,000
Oregon State Game Commission	400,000	.....	.....
Government of Canada (Jasper Park)	200,000	.....	.....
Nevada State Game Commission	250,000	.....	.....
Washington State Game Commission	100,000	.....	.....
Totals	1,213,000	5,000	150,000

Fry liberations were made from six of the nine hatcheries during 1955. Liberations of these unfed trout were discontinued from the Smiths Falls Hatchery (into Lower Mainland lakes), from the Puntledge Park Hatchery (into Vancouver Island lakes), and from the Nelson Hatchery (into lakes of the West Kootenay area). A total of 1,677,000 fry of three species were liberated during 1955. The weight of these fish was 437 pounds. The releases for each hatchery are given in Table IV.

Table IV.—Fry Liberations

Hatchery	Species					
	Kamloops		Grayling		Cut-throat	
	Number	Pounds	Number	Pounds	Number	Pounds
Beaver Lake	273,000	82	.....	.....	.....	.....
Lloyds Creek	336,000	101	.....	.....	.....	.....
Loon Creek	178,000	51	.....	.....	.....	.....
Penask Lake	90,000	29	.....	.....	.....	.....
Cranbrook	231,000	58	100,000	11	254,000	46
Summerland	215,000	59	.....	.....	.....	.....
Totals	1,323,000	380	100,000	11	254,000	46

All the permanent hatcheries except Summerland effected fall fingerling liberations, as did the Loon Creek and Cranbrook Hatcheries of the seasonal establishments. A severe epidemic at the Summerland Hatchery reduced the stock of trout there to the point where it was considered advisable to eliminate the fall liberations and retain the trout on hand for 1956 yearling liberations. Eight hundred and eighty pounds of fall fingerlings of three species, totaling 915,000 trout in all, were liberated from five hatcheries during 1955. The figures are given in Table V.

Table V.—Fall Fingerling Liberations

Hatchery	Species					
	Kamloops		Eastern Brook		Cut-throat	
	Number	Pounds	Number	Pounds	Number	Pounds
Puntledge	150,000	216	.....	.....	17,000	56
Nelson	.....	.....	114,000	117	.....	.....
Smiths Falls	9,000	10	.....	.....	.....	.....
Loon Creek	374,000	353	.....	.....	.....	.....
Cranbrook	251,000	128	.....	.....	.....	.....
Totals	784,000	707	114,000	117	17,000	56

Liberations of yearling trout were made from the four permanent hatcheries only, during 1955. Kamloops, cut-throat, and steelhead trout and cohoe salmon were the species involved. The total number of yearlings released was 453,800, which weighed 15,000 pounds. Table VI gives the breakdown for each hatchery of the 1955 yearling liberations. In addition to the below-noted liberations, 13,150 trout, weighing 430 pounds, were used for experimental display and children's fishing purposes. The details are given in Table VII.

Table VI.—Yearling Liberations

Hatchery	Species							
	Kamloops		Steelhead		Cut-throat		Cohoe	
	Number	Pounds	Number	Pounds	Number	Pounds	Number	Pounds
Puntledge	.....	.....	33,000	2,580	.....	.....	.....	.....
Nelson	11,000	310	.....	.....	.....	.....	.....	.....
Smiths Falls	800	170	71,000	6,660	32,000	863	13,000	432
Summerland	293,000	3,985	.....	.....	.....	.....	.....	.....
Totals	304,800	4,465	104,000	9,240	32,000	863	13,000	432

In total, 3,058,950 fish, weighing 16,147 pounds, were liberated during 1955. This represents a drop from 1954 of 406,550 trout and 2,423 pounds. This can be explained on the basis of two facts: the circumstance that the Nelson Hatchery operated on a sustaining basis only during 1955 and the circumstance that no fall fingerling liberations were made from the Summerland Hatchery.

Table VII.—Miscellaneous Trout Distributions

Species	Number	Pounds	Purpose
Steelhead	5,000	217	Penstock survival experiments.
Kamloops	7,000	51	Puntledge River.
Kamloops	4	1	Vancouver Public Aquarium Association.
Steelhead	25	1	Vancouver Public Aquarium Association.
Cut-throat	11	15	Vancouver Public Aquarium Association.
Cohoe	50	1	Vancouver Public Aquarium Association.
Kamloops	260	65	Fisheries Institute, U.B.C.
Cut-throat	100	2	Fisheries Institute, U.B.C.
Cohoe	100	2	Fisheries Institute, U.B.C.
Kamloops	600	75	Children's Fishing Pond, Vernon.
Totals	13,150	430	

Of the total number of trout released, 331,000 were marked by the removal of one or more fins and were liberated in thirty-three lakes or streams. Ninety-nine thousand two hundred of these marked fish were migrant-size steelhead. Since the steelhead pro-

gramme is of some interest, and a considerable amount of time and man-power is going into it, the following specific data concerning liberations and marks are given in Table VIII. The first eight liberations noted in the table were made into Sweltzer Creek at different times of the year and with two different sizes of fish. These liberations were part of an experimental programme set up to determine the best times and sizes of release.

Table VIII.—Steelhead Liberations

Date	Number per Pound	Number	Water Stocked	Fin(s) Clipped Off
March 16	10	2,500	Sweltzer Creek	Dorsal.
March 16	15	2,500	Sweltzer Creek	Right ventral.
April 15	10	2,500	Sweltzer Creek	Left ventral and adipose.
April 15	15	2,500	Sweltzer Creek	Left ventral.
May 15	10	2,500	Sweltzer Creek	Right ventral and adipose.
May 15	15	2,500	Sweltzer Creek	Both ventrals.
June 15	10	2,500	Sweltzer Creek	Adipose.
June 15	15	2,500	Sweltzer Creek	Adipose and dorsal.
May 26	10	7,000	Nicomekl River	Left ventral.
June 2	10	7,000	Serpentine River	Right ventral.
June 9–14	10	7,300	Alouette River (South)	Right ventral and adipose.
June 16–21	10	7,500	Alouette River (North)	Left ventral and adipose.
June 23	10	15,000	Capilano River	Adipose.
June 27	13	5,300	Capilano River	Adipose.
June 30	14	2,000	Capilano River	Adipose.
June 16–17	10	5,000	Englishman River, V.I.	Adipose.
June 16	10	5,000	Oyster River, V.I.	Right ventral.
June 24	10	4,000	Tsolum River, V.I.	Left ventral and adipose.
July 28	15	1,000	Tsolum River, V.I.	Left ventral and adipose.
June 24	10	2,500	French Creek, V.I.	Left ventral.
July 28	15	5,000	Tsable River, V.I.	Right ventral and adipose.
July 28	18	2,000	Browns River, V.I.	Adipose.
July 31	18	3,600	Sooke River, V.I.	Both ventrals.

Also included in the liberation programme were a number of post-liberation survival tests. A growing body of data from other organizations tends to indicate that the mortality of hatchery trout immediately after liberation is rather high. To test this in British Columbia, at least 100 trout were placed in live boxes at the time of liberation into each of eleven widely scattered lakes, and then examined for mortality forty-eight hours after the liberation. Only one of the twelve tests showed a total mortality, and that was in the outlet end of Jack of Clubs Lake, where a very definite mining pollution problem exists. The results of these survival tests are given in Table IX.

Table IX.—Survival Experiments

Lake	Species	Number per Pound	Per Cent Mortality after 48 Hours
Kawkawa	Cut-throat	44	----
Lake of the Woods	Cut-throat	44	----
Kalamalka	Kamloops	68	----
Osoyoos	Kamloops	68	----
Woods	Kamloops	75	----
Crown	Kamloops	3,500	2
Beaverdam	Kamloops	3,500	----
Watch	Kamloops	3,500	2
Chimney	Kamloops	3,500	3
Jack of Clubs (inlet)	Kamloops	1,000	----
Jack of Clubs (outlet)	Kamloops	1,000	100
Island pond	Kamloops	1,960	----

Some improvements were made during the past year to various facilities, both for fish and employees, at several of the hatcheries. The water-supply at the Puntledge Hatchery now comes from the British Columbia Power Commission penstock, with a great improvement in water temperatures in the hatchery.

The old meat-grinder has been replaced. The living-quarters at the Puntledge Hatchery were refurnished and an electrical hot-water system was installed. At the Smiths Falls Hatchery a new large-capacity meat-grinder unit was installed and the feedroom renovated. A new refrigerator was installed at the hatchery to serve as a coldroom. The hatchery interior was lined and painted, effecting a considerable improvement in appearance. A new steelhead-trap was installed at Sweltzer Creek, near the Smiths Falls Hatchery. The water rights to the creek supplying the Summerland Hatchery, which had been the subject of negotiation with the District of Summerland, were divided to the mutual satisfaction of both groups. The remaining old troughs at the hatchery were replaced with new plywood ones. Also, a new type of perforated pond screen is being tested at the Summerland Hatchery. The water-supply at the Nelson Hatchery has been completely rebuilt, except for a minor section to be completed in 1956. The interior of the hatchery has been lined and painted. Telephone services have now been provided to the Nelson Hatchery and a new oil heater has been installed. In addition, the brood-stock ponds were renovated in anticipation of the maintenance of Kamloops brood stock at the hatchery.

Major changes in the living facilities were made at the Beaver Lake Seasonal Hatchery. A complete hot-water and plumbing system was installed, including sinks, a shower and toilet, necessary septic tanks, and a separate wash-house. The capacity for raising fall fingerlings at the Loon Creek Seasonal Hatchery was doubled by the construction of three new plywood rearing-ponds. The three older ponds were roofed in during the summer, in preparation for the trial winter operation of the hatchery. At the Cranbrook Seasonal Hatchery, the fall fingerling production capacity was doubled by the construction of two new plywood rearing-ponds. All four ponds were moved to one area alongside the hatchery building, and were housed in a partly sided, roofed-in enclosure.

The living-quarters at the Lloyds Creek Hatchery were repainted, and routine general maintenance was carried out. No specific capital improvements were made at the Penask Lake Hatchery, although the hatchery was maintained in good shape during the season.

Generally 1955 was a busy year for the Hatchery Division. The eight vehicles of the Division covered 128,000 miles in pursuit of their varied duties. Over 55 tons of food were ground and fed at the seven hatcheries feeding trout. Experimental feedings were initiated with manufactured trout-food pellets, both floating and non-floating. These trials are still being conducted. Disease outbreaks occurred at four hatcheries—Loon Creek, Summerland, Puntledge, and Smiths Falls. It was controlled with complete success only at the Loon Creek and Smiths Falls Hatcheries, with the use of the drug P.M.A. The use of P.M.A. at Summerland and Puntledge proved fatal to the trout treated. The second annual meeting of the Hatchery Division was held in conjunction with the meeting of the Fisheries Division on November 4th and 5th at Summerland. The meetings were characterized by a critical approach to hatchery problems and by a solid appreciation of the many facets of fisheries management problems.

The Loon Creek Hatchery is being operated throughout the winter of 1955–56 to test the feasibility of a year-round operation there. At Nelson the first-year class of fall spawning Kamloops trout brood stock has been established.

The past year has brought encouraging changes to the Hatchery Division. There has been a continued replacement of outdated equipment and an increased awareness on the part of the hatchery personnel of the more up-to-date techniques of game-fish culture. The outlook for 1956, however, is not so optimistic. Monetary and personnel cuts will reduce or strain the facilities available from the hatcheries to the fisheries management branch of the Division. Liberations will be hampered by the lack of a suitably sized trout-liberating tank-truck, for which funds are not available. It will be necessary to considerably slow down the process of modernization which the Branch has been

undergoing during the past three years. On the credit side of the sheet, however, the Hatchery Division will increase its programme of liberating marked trout, and will continue its survival experiments and the experimental steelhead programme. It also intends to initiate an experimental programme of sea-run cut-throat culture at the Puntledge Hatchery. Given the funds and personnel, the Hatchery Division can effectively contribute to the sport-fish management programme of the Fisheries Management Division of the British Columbia Game Commission; it is its sincere wish to do so.

PROTECTION DIVISION

By E. H. Vernon, Division Fisheries Biologist

The work of the Protection Division, which is mainly concerned with evaluating the effects of industrial development on stocks of game fish, continues to increase in magnitude, complexity, and also in geographical area. Some very large industrial water-use proposals, such as the Columbia-Fraser River hydro plan and the Frobisher proposals for the Atlin-Taku area, have been under investigation. Many smaller but important water-use projects have required evaluation, particularly in the Lower Mainland and Vancouver Island areas. In the Interior and Kootenay areas a major share of the work has been done by the respective Regional Biologists with some assistance from headquarters.

I. L. Withler, with two assistants, was engaged during the summer in an extensive survey of Atlin and Tagish Lakes. Inspection of all water-licence applications continues to be a source of useful information regarding water-use proposals, particularly in the case of smaller projects. Some of the major projects requiring evaluation are listed below.

Capilano River.—In co-operation with the Federal Department of Fisheries, preliminary tests on the spillway of 290-foot-high Cleveland Dam indicated mortalities of young descending fish to be from 65 to 73 per cent. Liaison has continued with the Federal Department of Fisheries and Greater Vancouver Water District to resolve problems associated with the up-stream movement of fish in the facilities provided.

Puntledge River.—In co-operation with the Federal Department of Fisheries, a series of tests was conducted to establish mortality rates of young fish passing through a turbine installed by the British Columbia Power Commission. Ten thousand five hundred young fish of various sizes were supplied by the Hatcheries Branch to establish mortality rates, varying from 27.5 to 41.9 per cent.

Cowichan River.—In connection with plans of the British Columbia Forest Products Limited for a low storage dam at the outlet of Cowichan Lake, co-operative negotiations with the Federal Department of Fisheries and the company resulted in changes of the structure to provide additional water in the river vitally needed by game fish during the summer low-flow periods.

Somass River System.—Proposals for extensive storage and power development by MacMillan & Bloedel Limited and the British Columbia Power Commission were placed under study.

Columbia-Fraser Systems.—Information on sport fish was incorporated in a report by fisheries organizations on the effects on fish of a proposed diversion of Columbia River water into the Fraser system and development of power at a series of ten dams on the Thompson and Lower Fraser.

Cheakamus River.—In connection with the diversion of water from the Cheakamus River to the Squamish River by the British Columbia Electric Company for the development of power, an evaluation of fisheries problems is being carried out by the Federal Department of Fisheries with assistance from the British Columbia Game Commission.

Bass Creek.—In connection with a proposed hydro-electric development by Cassiar Asbestos Corporation, requirements of sport fish were made known to the company.

Eastern Creek.—To prevent access of coarse fish from Ootsa Lake reservoir to the eastern lake chain, a concrete barrier was constructed. This structure was largely paid for by the Aluminum Company of Canada.

Achelitz Creek.—As a result of representations by the Protection Division, a cannery cleared up a long-standing pollution by screening wastes and utilizing liquids for irrigation.

Brunette River.—Negotiations with a brewery resulted in some improvement in the effluent discharge into this stream. Negotiations to the same end with a slaughter-house are continuing.

Coquitlam River.—Representations to the Lands Department were successful in preventing removal of gravel from certain sections of the stream-bed.

Stave River.—Plans for removal of gravel from the stream-bed were modified after recommendations to protect fish.

Salmon River.—This stream declared fully recorded by the Water Rights Branch following recommendations for protection of fish.

Fishway Plans.—Provided for low diversion dams on Lac la Hache, Brunson Lake, and Criss Creek.

Logging Operations.—Liaison was established with the Lands Department for inspection of all applications for booming-ground rights.

Frobisher Survey.—In the spring of 1955 Northwest Power Industries Limited began the survey of a proposed hydro-electric development near Whitehorse, Y.T. This project, known as the Frobisher Development, will affect, by flooding, large bodies of water in both Yukon Territory and British Columbia; therefore, the Protection Division outlined a survey which would correspond to a similar survey by the Federal Department of Fisheries of Marsh Lake, one part of the Yukon waters affected.

The objective of these surveys during the summer of 1955 was to evaluate the present and future sport and commercial fisheries of this region and to attempt to determine the effect of the proposed development on these fisheries. The survey included:—

(*a*) A limnological survey to determine the productive capacity of these lakes. This included a complete survey of lake depth, and sampling of plankton, bottom organisms, light penetration, and water temperatures.

(*b*) A stream survey programme wherein each tributary stream was surveyed for its present spawning area, and the area remaining after lake flooding. Each stream was also sampled for bottom organisms, temperatures, and water-flows.

(*c*) Fish were sampled to determine the species, composition, and abundance.

(*d*) Observations were made to determine the morphological features of the proposed flood area. This survey was completed in September, and at present the data which were collected are being analysed in preparation for a report to the Game Commission.

Cheakamus River.—Early in 1955 the British Columbia Electric Company began construction of a dam on the Cheakamus River near Squamish to divert part of its water by tunnel to a power-generating station on the Squamish River. Construction of this dam was viewed as a threat to runs of commercial and sport fishes to the Cheakamus River.

During the months of October, November, and December of 1954 and 1955, the Protection Division has been working with the biologists of the Federal Department of Fisheries to assist in tagging surveys to determine the size of the present runs of pink, chum, and cohoe salmon and steelhead trout, and with their engineering branch to locate and evaluate the present spawning areas of these species. The purpose of these surveys was to assist in making sound recommendations as to the design of the dam to avoid blocking of fish movement to the existing spawning-grounds, to locate sites for artificially

prepared spawning-grounds, and to determine the minimum water-flow requirements in the channel below the dam.

RESEARCH DIVISION

By Dr. C. C. Lindsey, Division Fisheries Biologist

The investigations of Kamloops trout spawning at Loon Lake, near Clinton, has been the main project of the Research Division since 1953. Two-way fish-traps were maintained at several points in inlet and outlet spawning-streams, and movements of clipped and tagged trout were recorded.

By 1955 many of the trout marked earlier as fry or fingerlings had reached sexual maturity and were recaptured as adults in the spawning runs or by anglers on Loon Lake. A large body of information has now been accumulated, and results valuable to the management of trout sport fisheries are appearing. It will be necessary to wait for at least one more year's returns of marked fish in the spawning runs before the project can be finalized; in the meantime certain tentative conclusions have been reached which are summarized below.

The Loon Lake trout-fishery is characterized by production of a large number of small fish. Over fifteen fish per acre are removed yearly by anglers, averaging about 9½ inches and seldom exceeding 12 inches in length. Spawning facilities are fairly extensive, but must serve roughly 26,000 spawning fish yearly, about three-quarters of which use the inlet stream and one-quarter the outlet. Survival of eggs is low, probably due in part to destruction of deposited eggs by late spawners and in part to cannibalism by fingerlings and large fry on small fry within the streams, and to predation by mink, birds, and leeches. Cannibalism within the lake by larger trout on fry and fingerlings might be expected where food is evidently in short supply, but stomach samples of angled and gill-netted fish have contained only plankton and invertebrates.

A striking difference exists between the sexes in the age of first spawning. About one-third of the males in the spawning run are age 2, while virtually none of the females mature until at least one year later at age 3. Mortality amongst spawners is high, and probably only a very small proportion of fish over the age of 4 occur in either the spawning runs or the anglers' catches.

The over-all proportion of males to females is close to 1:1 in the spawning runs and also in the anglers' catch. Spawning mortality is somewhat greater amongst males than females; within each sex there is a more marked difference in mortality between young and old spawners. For example, in the outlet creek, survival of 2-year-old males (all spawning for the first time) was over three times as great as that of males 3 and older (some of them second spawners). The same holds for females, in which smaller fish have a better chance of survival than large fish. This increased spawning mortality amongst older fish undoubtedly contributes to the scarcity of old fish in Loon Lake.

Judging from present figures available, over-all survival of spawning fish up to the time they return to the lake is roughly 12 per cent. Of 1,175 spent fish returning to the lake from the outlet in 1954, 257 returned to spawn a second time in 1955. This 22 per cent return, coupled with estimates of 12 per cent survival between entering and leaving the spawning-stream, indicates that the over-all survival between one spawning and the next is less than 3 per cent. These figures may require alteration when data on the 1956 spawning runs become available.

In 1955 a total of 386 fish were artificially stripped of eggs or milt in the outlet trap by officers of the Loon Creek Hatchery. These fish were fin-clipped and placed below the trap. Their subsequent behaviour was similar to that of unstripped fish; some passed down-stream a considerable distance, and after a period comparable to that spent in the creek by natural spawners, thirty-five stripped individuals swam back up-stream into the lake. Survival of stripped females (11 per cent) compared favourably with survival of natural spawners, but only 3.5 per cent of the stripped males were recovered.

As part of the study of the homing of Loon Lake trout to inlet or outlet streams, a number of transfers of ripe adults between the two streams were conducted in 1955, using fry-cans. On two occasions fifty fish were captured in the outlet spawning-stream and transferred in the reverse direction. Transferred fish were distinctively clipped and their subsequent movements through various two-way fish-traps were recorded.

A few of these transferred fish behaved in their new environment in the same fashion as the fish naturally occurring there, moving in the appropriate direction up-stream or down-stream before spawning, and eventually regaining the lake after spawning. Many transferred fish, however, completely failed to conform to their new surroundings, and instead continued, in varying degrees, to carry out their previous behaviour. Most striking was the behaviour of twenty-two fish which returned a distance of 13 miles, through the lake, to the stream from which they had been removed. These individuals included both fish which returned from the inlet to the outlet creek and vice versa. Other individuals, while remaining in the stream to which they had been transplanted, either headed toward the lake before they had spawned or away from the lake after they had spawned. Their subsequent fate is unknown.

Another indication of the fixity of the behaviour of adult trout concerned the homing of second spawners. Of 258 adults clipped in the outlet spawning run in 1954 and recaptured while spawning a second time in 1955, 257 of these had returned to the outlet. Only a single stray was recovered in inlet stream, out of over 9,000 fish examined there.

These experiments have shown that in Loon Lake certain fish appear to prefer one or other of the spawning-streams. The relation between this preference and where the fish were hatched can be studied from the recoveries in 1955, as adult spawners, of fish which were earlier marked in the inlet or outlet as fry or fingerlings.

In 1953 and 1954 over 12,000 fry and fingerlings were clipped as they ascended from the outlet stream into the lake. It is estimated that about 230 of these spawned in 1955 (almost all of them males). Of these, 93 per cent returned to their home stream and only 7 per cent strayed to the inlet, despite the fact that over five times as many 2-year-old fish spawned in the inlet as in the outlet. Of a smaller number of fish which had been clipped as fry leaving the inlet, about 130 spawned in 1955; these were distributed in the two spawning localities roughly in the same proportion as the total numbers of 2-year-olds present, so that no strong homing of fish hatched in the inlet is indicated.

Checks of tag recoveries by anglers show that fish from the two ends mix freely within the lake. As would be expected, fish entering from one end were more often taken by anglers in that half of the lake closest to their point of entry, but over a third of clip and tag recoveries from the lake were taken in the opposite half of the lake from their home stream. Therefore, the homing to the parent stream, which has been demonstrated at least for outlet-hatched fish, cannot be due solely to the fish entering the stream which happens to be closest when it is ready to spawn.

Studies of the factors directing young trout toward the lake from either inlet or outlet were switched in 1955 from the Loon Lake field investigation to the laboratory of the Institute of Fisheries at the University of British Columbia. During the summer an indoor artificial stream was constructed, in which current, depth, temperature, and light are all controllable. Assistant Biologist T. G. Northcote, who is in charge of this phase of the investigation, left in September, 1955, on one year's leave of absence; he is currently studying the effect of light and temperature on the behaviour of newly hatched rainbow trout fry in Cambridge, England.

A new research project was started in August, 1955, at Baker Lake near Quesnel. This study will cover the spawning habits and life-histories of various species of coarse fish and their effects on the production of Kamloops trout. Two-way traps were constructed on spawning-streams at Baker Lake, and a number of marked Kamloops trout fall fingerlings were released. Preliminary to this programme, some fifty lakes were

visited during the summer of 1955; observations were recorded on spawning times and habits of coarse fish. This information is valuable in the planning and assessment of control of coarse fish by poisoning or other means.

An experimental programme to assess the use of Toxaphene as a cheap coarse-fish eradicant has been drawn up. Data on lake volumes, dissolved solids, species present, etc., were collected by Regional Biologists, and from this a series of experimental Toxaphene poisonings was planned. Money has been applied for from the Conservation Fund to conduct these experiments in 1956. Several investigations carried out in co-operation with the University were successfully completed during the year. Collections of fishes deposited in the Institute of Fisheries further increased the knowledge of British Columbia forms. The known range of several species was considerably expanded.

At least one new species was taken in the Province. Study was completed on the distribution and taxonomy of fishes in the Peace and Liard River systems, and a scientific paper was submitted for publication. Studies were conducted on the growth and food habits of squawfish. Samples of hybrid cutthroat-Kamloops trout reared at Cultus Lake Hatchery were preserved and are being studied in detail. A study of the comparative behaviour of various Salmonid fishes was completed.

The relationship between trout and redside shiners in Paul Lake was studied throughout the summer of 1955 and also by winter fishing. Periodic samples were taken by minnow-trapping and netting, and angled fish were sampled regularly. Experiments were also conducted on fish held in enclosures both at Paul Lake and the University.

Chemical analysis of scales was tried as a means of distinguishing sea-run steelhead from non-migratory Kamloops trout. Chloride analyses by the British Columbia Research Council showed that the scales of fish known to have been to sea had on the average a higher chloride content than fresh-water fish. Unfortunately there was a fair degree of overlap in measurements of samples from the two types; scales of Thompson River trout whose seaward migration was in question lay within the zone of overlap and so could not be assigned with certainty to one or other group. The method will evidently be useful in detecting sea growth only in samples having either a quite high or quite low chloride content. Experiments involving chemical analysis of scales continue.

Dr. Peter Ford, of the University of British Columbia, completed a comparison of the internal anatomy of hatchery-reared and wild trout. This was undertaken to determine whether or not dietary deficiencies amongst hatchery fish might produce detectable abnormalities which would lower their chances of survival. Microscopic examination of sections of various parts of the viscera and measurements on sizes of different structures gave no evidence of such deficiency. The only difference detected between the two samples was that hatchery-raised trout had a much heavier deposit of fat in the viscera than had wild fish.

During 1955 a fifteen-minute colour film on lake poisoning was completed. A film showing the operation of Game Commission hatcheries is in preparation.

REGIONAL MANAGEMENT, LOWER MAINLAND DISTRICT

By S. B. Smith, Regional Fisheries Biologist

Activities during the year were varied, but the largest amount of time was spent on three major programmes. These were: (1) Resort operators' creel-census records, (2) economic survey of the British Columbia sport fishery, and (3) steelhead investigations. In addition to the three programmes dealing with catch records, lake and stream surveys were carried out and work was continued on research previously started. A brief résumé of these activities follows.

Resort Operators' Catch Records.—The past year saw continuation of the creel-census programme initiated in 1953. Coverage was expanded, mostly by the efforts of F. P. Maher and G. Hartman in the Kootenay region and by G. E. Stringer in the Okana-

gan region. Resort operators keeping catch records now total about 150 persons. Data for three years' sport fishing is now available for more than 100 lakes. Catch success was about 25 per cent higher on the average for the Province as a whole in 1955 (0.75 fish per hour) than in 1953 and 1954 (0.61 fish per hour). This indicates that stocks of fish are still available in equal or greater numbers than in the previous two years. Weather appears to be highly important, since we had a warm dry summer for the first time in these years. Resident angler's licence sales rose 9.4 per cent in 1955, while non-resident angler's licence sales increased 9.3 per cent. Result of increase in total angling pressure and better catch success resulted in a large increase in total catch of sport fish in the Province. It is conservatively estimated that 10,000,000 fish were taken by licensed anglers in 1955.

Economic Survey of British Columbia Sport Fishery.—Analysis of returns of the postal questionnaire used to survey the 1954 sport fishery were completed in July, 1955. About 120,000 licensed anglers in British Columbia in 1954 spent slightly more than $20,000,000 on sport fishing. Some indication of the importance of this industry may be seen in a partial breakdown of the totals. For instance, transportation accounted for $4,450,000; food and lodging, $4,430,000; fishing-tackle, $2,500,000; and boats and motors, $4,620,000. A paper covering this project will be available in the near future as " Management Publication No. 4 of the B.C. Game Commission."

Steelhead Investigations.—Steelhead investigations consisted mainly of attempting to evaluate steelhead-catches and distributions of anglers by a voluntary record-card system. Lack of co-operation by anglers and difficulty in contacting many steelhead fishermen contributed to almost total failure of this phase of the investigation. Later in the year (November and December), extensive checking of the Vedder River for marked steelheads was commenced and will continue until April, 1956. Data supplied by the State of Washington Department of Game on its steelhead programme were examined and may be valuable in directing the steelhead programme in this Province.

Research.—A paper dealing with the relation between scale diameter and body length of trout was published in the Journal of the Fisheries Research Board of Canada. Method of calculating size of fish from scales is now used extensively in the Game Commission fish laboratory at the University of British Columbia.

A paper concerning the survival and growth of wild and hatchery trout in Corbett Lake, near Merritt, has been completed and will be submitted for publication to the Canadian Fish Culturist. This paper provides worth-while information of interest particularly to the Hatchery Division.

General.—Killarney Lake on Bowen Island, Deer Lake near Ioco, and Buntzen Lake near the north end of Burrard Inlet were surveyed. Killarney Lake will be treated to remove the squawfish. Work was continued on Deer Lake in Burnaby. This lake also will be treated and restocked with trout. Preliminary surveys of the Vedder River were carried out to determine whether the river can be effectively diverted around a large mud-slide which adversely affects fishing during high water. Upper Seymour River has been mapped, and it appears to hold good possibilities for increased production of steelhead and cohoe if eggs were planted or a fishway installed on the dam about 4 miles from its mouth. Following results of the economic survey, it was recommended to the Federal Department of Fisheries that Sechelt Inlet, Howe Sound, and Burrard Inlet be closed to commercial fishing. The recommendation for Burrard Inlet may be implemented for 1956.

VANCOUVER ISLAND DISTRICT

Our Regional Fisheries Biologist for Vancouver Island was not placed until October 1st, 1955. Thus there is little to report from this area at this time. Considerable time has been spent in a review of the problems which confront the sport fishery of the area. In addition, much profitable time was spent with the various Game Wardens gaining an

appreciation of the local problems in each detachment and in visiting fish and game associations on the Island.

Considerable public relations work has been carried out along the line of explaining the fishing regulations and outlining the approach of the Commission to industrial problems. Practical field work has been somewhat limited by adverse weather conditions and a lack of knowledge of the area. However, in spite of this, examinations of several lakes were made and numerous water-licence applications were investigated. In addition, general angler checks were made on some of the Island streams in the interest of the steelhead study.

At the present time, preliminary investigation is being made in the setting-up of a cut-throat trout experiment.

OKANAGAN-CARIBOO DISTRICTS

By G. E. Stringer, Regional Fisheries Biologist

During the months of January and February, much of the time was spent attending rod and gun club meetings. The latter month was particularly noteworthy, with sixteen meetings attended. In addition, the steelhead survey on the Thompson River was continued, with scale samples collected and voluntary cards handed out to the anglers.

Stocking lists were drawn up for the Interior and submitted for approval. A brief trip was made to Vancouver for library research. During this period the writer attended the Pacific Northwest biologists' meeting in Oregon and took part in a panel discussion on size-limits. Only one general survey was made in the above period, and that on the extent of the early spring fishery in Adams River and the Little Shuswap Lake. Some assistance was given to the hatchery at Summerland in grading fish so they would be ready for marking prior to liberation. Because of a controversy over the alleged steelhead run in the Eagle River, a check was made and a report sent to the Revelstoke Club, in which it was pointed out that many of the samples were non-anadromous types, but some were uncertain. It was concluded that the fish were likely large rainbow from Shuswap Lake rather than sea-run fish of the same species.

Pollution of the Similkameen River occurred, which was traced to the Hedley mine. Improvements in the impounding system were recommended and eventually adopted by the company.

Fyke nets were set in Mission Creek for fry evaluation and continued at irregular intervals throughout the summer. A winter kill in Kilpoola Lake, in the Osoyoos area, was recorded and a rough count of the dead fish made.

The usual investigations of pollution, water-licence applications, and complaints constituted much of the activity of this period, but only a few of the more important will be mentioned. At Deka Lake a complaint arose over the installation of a culvert by the Department of Highways at the outlet of the lake which created an obstacle to small trout. A number of letters and a discussion with the local engineer resulted in a few large boulders being placed near the down-stream end of the culvert. It was felt that these should reduce the velocities and create a pool, thereby giving the small trout a better chance. Our suggestion that the culvert be removed and the bridge replaced could not be carried out, since the culvert had created a 4-foot head of water which would flood the farmers below if let out suddenly. At present all parties are happy with the arrangement except the Game Department.

Operations of the Blackwater Timber Company at Lac la Hache resulted in numerous complaints from a few locals in the area. E. H. Vernon was instrumental in having the company install a proper burner to eliminate the sawdust pollution. Complaints regarding the erection of a booming-site on the only kokanee-spawning site in the lake instigated a complete survey of the lake-shore for spawning-sites. It was the writer's

opinion that the 50-yard strip affected would have little or no effect on the kokanee population.

Pollution of Jack of Clubs Lake at Wells has not been cleared up as yet, but will receive further attention in the spring. The complaints dealt with silting resulting from failure of an old placer-mining dam on one of the tributary streams. The silt soon settled out. However, test-cages placed in the lake when the fish were planted revealed high pollution at the outlet end.

Relocation of the road to Loon Lake reduced a natural barrier to coarse fish, causing considerable concern. It was recommended to the Department of Highways that large boulders be placed at strategic points; this was done.

A number of surveys were made. Heffley Lake and its tributaries were carefully checked with the view of poisoning the lake. A dam-site was located for the erection of a fish-barrier and was later surveyed by J. Dyson, consulting engineer from Vancouver, B.C. It is planned to build the dam in 1956 and possibly poison the lake the same year. A complete report on the findings was submitted.

The Allison Lake poisoning plan was set up and markers made, but the poison did not arrive in time, and the poisoning is planned for August, 1956. A fish-barrier has been constructed by a Princeton contractor.

Numerous resort operators were visited and encouraged to keep the fishing-record books which were issued. Local problems, if any existed, were discussed. A number of other lakes were checked in the Interior during the summer. Creeks tributary to the Pimainus Lakes were poisoned and the trout sampled. This operation is designed to determine the effect of eliminating the spawning component of an overpopulated lake. Bear and Madden Lakes, in the Oliver area, were tested on three occasions to ascertain whether or not the toxicity had dissipated.

Lakes were last checked in October and found to be toxic to trout after a period of sixteen months.

Remainder of the year's activity consisted of meetings, reports, general correspondence, and working up the lake evaluation data. The latter will take many months to finalize. Tenders were called and the contract let for the construction of the Mission Creek fishway. Gill-netting of Paul Lake was started in December. A file on the important or potentially important lakes was started, outlining the public reserves existing. This has been done in conjunction with the Parks and Recreation Division of the Forestry Service, in the hope that reserves will be established on all the fishing-lakes. Results to date indicate that many lakes had no reserves and access was taken for granted. In these cases, reserves were promptly recommended by the Parks Division.

Summary

In retrospect, 1955 was marked by many investigations and reports, but little actual improvement to the sport fishery. However, 1956 will see the completion of many operations inaugurated in 1955, which will improve the sport fishing in terms of better catches. The lake-poisoning programme will have tangible results which can be pointed to as actual accomplishments. Also, our change in policy with regard to the stocking of large lakes in the Interior should not go unmentioned. Deletion of these large unproductive lakes marks an advance in efficiency and has been recognized by the clubs in the area affected as such.

KOOTENAY AND BOUNDARY DISTRICTS

By F. P. Maher, Regional Fisheries Biologist

All phases of fisheries management in the Kootenay and Boundary Districts during 1955 showed increase in activity over the preceding year. The resort-operator survey was increased in scope, and many investigations were made of pollutions, fishing regula-

tions, and stocking requirements. In co-operation with the Game Commission, many worth-while rod and gun club projects were carried out. These and other activities are discussed briefly below.

Investigation into Fishing Regulations

The sweeping regulation changes that came into effect in 1955, particularly with regard to stream closures, met with the general approval of the public. A maze of confusing closures were replaced by a single April, May, and June closure for all streams, with the exception of a few streams managed for eastern brook trout and Dolly Varden trout, where an August, September, and October closure was in effect.

It became evident during the year that the April closure on the streams was largely unnecessary, and sportsmen's organizations asked that this month be left open. In 1956 the closure will be for May and June only for most streams. The widely differing spawning times of the eastern brook trout and Dolly Varden trout made the single fall closure on the streams managed for these fish ineffective. For 1956, therefore, Dolly Varden streams will have an August, September, and October closure, while the eastern brook trout streams will have a September, October, and November closure.

Other regulation changes investigated and recommended during the year included the legalization of spears for taking coarse fish, a year-around open season on certain major rivers, and a separate and increased catch-limit for kokanee. Sportsmen's organizations and the general public appear to be well satisfied with the simplified regulations.

Resort-operator Survey

The appointment of a summer assistant who made the resort-operator survey his sole responsibility resulted in greatly increased coverage of resort operators. By the end of the season approximately 100 operators were keeping records of the angling success of their guests. This number will not likely be increased in the near future, since few new resorts are being developed, and nearly all of the operators willing to keep records have been contacted.

Sport-fishing Survey

It is difficult to assess sport-fishing activity in areas not covered by resort operators. The fishing area is so large that creel-census work is nearly impossible. To obtain information needed for proper management of various waters, two different techniques were tried. Road checks were set up with the co-operation of local Game Wardens in places where a single road gave access to a large fishing area. These checks were highly successful, and a good volume of useful information was gathered. Scale-sample collecting was more successful at the road checks than in any other way.

In places where the road checks were not practical, interested anglers were sought out and asked to keep records of their angling success. Returns from the 150 anglers contacted are most promising, and it is expected that this programme will be expanded in 1956.

With the notable exception of Kootenay Lake, which experienced a poor fishing year, angling throughout the district was highly successful in 1955, particularly in the East Kootenay, where one of the best seasons in years was enjoyed. Winter sport-fishing activity is increasing, with the best catches being made in eastern brook trout waters. Catches of these fish so far exceed other species for winter angling that it is probable that fish will be planted in suitable waters throughout the district for this purpose.

Coarse fish are becoming increasingly popular for sport. Night fishing for ling in midwinter with spear and lantern is attracting more sportsmen every year in the Spillimacheen and Creston regions. On Lake Windermere, cars are driven on to the ice, where holes are cut over the ling-spawning areas, where the fish are taken by gaff and spear. Spear-fishing for carp in Christina Lake has indications of becoming popular.

The over-all fishing picture is good in the Kootenay and Boundary Districts, with the sportsmen enjoying their fishing resources more fully with the advent of liberal fishing regulations.

Lake Rehabilitation

The first lake to be treated to remove unwanted coarse-fish populations in this district was Peckhams Lake, near Cranbrook. The lake was treated in June of 1954, and restocked with Kamloops trout fingerlings in October of the same year. In mid-August of this year, limit catches of trout 8 to 10 inches in length were taken from the lake. This growth is excellent and indicates that the lake has been successfully rehabilitated.

Erie Lake, near Salmo, was treated in October, 1954, with an experimental poison concentration of one-quarter that usually used, in an attempt to kill off the fish population of squawfish, suckers, and shiners without leaving the lake toxic for a long period. The lake was found to be non-toxic the following spring and was restocked with Montana grayling in June. It was subsequently discovered that eastern brook trout and shiners had been reintroduced, or had escaped the effects of the poison in a swamp area. Approximately 4,000 eastern brook trout were then salvaged from Big Sheep Creek and liberated in the lake, in an attempt to establish this fish while the shiner population was low. The results of this work are closely followed.

Survey of Stocking Needs

A continuing survey has been conducted to gather information needed to prepare lists of the kind, number, and size of fish needed in various waters. In addition to these surveys, an alternate stocking programme is being carried out in waters where hatchery plantings are of doubtful value. Using this system, fish available to the angler should be more plentiful every second year if the plantings are of value. If little difference is noted in successive years, then the plantings are unnecessary.

It is hoped that a continuing programme of lake rehabilitation to remove coarse fish will enable the wider use of fry rather than fingerlings and yearlings, which are expensive to produce. However, some of the larger lakes with serious coarse-fish problems are impractical to poison, and will likely need heavy plantings of yearling trout where it can be shown that such plantings materially add to the anglers' catch.

Pollution-control

Pollution-control is well in hand in the Kootenay and Boundary Districts, with industry now well aware of its responsibility to protect our waters for the use and enjoyment of the public. Repeated contacts with company officials and the constant inspection of pollution danger points are needed to keep abreast of rapidly growing industrial developments. The principal activities in this field during 1955 are listed below:—

(1) *Arrow Lakes (Cusick Lumber Company).* — A sawdust-burner was installed after the company had been warned about the danger of a sawdust pollution.

(2) *Arrow Lakes (Urban Sawmill).*—Cribbing was carried out to prevent the entry of sawdust into the lake after warnings had been given.

(3) *Big Sheep Creek (D. B. Merry Lumber Company).* — A burner was installed after complaints that sawdust was entering the creek. This company also removed logs which had caused jams in the creek, after being requested to do so.

(4) *Findlay Creek.*—An investigation was carried out to determine the effects of a proposed placer-mining operation and gold-leaching plant adjacent to this creek. This development is still under study.

(5) *Kootenay Lake (Bluebell Mine).* — A temporary surface-water pollution was caused while the pipe carrying tailings beneath the surface was under repair. The work was expedited at the request of the Game Commission and the pollution ceased.

(6) *Kootenay Lake (Kaslo Lumber Company).*—A sawdust pollution of the lake was imminent because of the proximity of a large sawdust-pile at the water-edge. After a meeting with city officials and the company, permission was arranged for the company to burn the pile.

(7) *Kootenay River (Interior Breweries).* — An investigation was conducted into the effects of waste materials from a new brewery on the Kootenay River. This matter is still under study.

(8) *Kootenay River (Walmac Planing Mills).*—The operations of a new mill at Taghum threatened a serious sawdust pollution of the river. After negotiations with company officials, a retaining-wall was built and later an efficient burner.

(9) *Lost Creek (Canadian Exploration Company Limited).*—The operations of the company's tungsten mill caused a pollution of Lost Creek. After negotiating with company officials an impoundment was built, which will be modernized in 1956 to retain all tailings. At the present time there is a slight escapage of fine materials.

(10) *Michel Creek (Crows Nest Pass Coal Company).*—Operations of the coal-washing plant caused a coal-dust pollution of this creek. The situation was corrected after talks with company officials.

(11) *Motherlode Creek (Apex Gold Mines).*—The site of a proposed new mill was investigated to assess the danger of a pollution in this creek, which flows into Boundary Creek near Greenwood. The construction of an impoundment was recommended, and negotiations with the company are now being conducted.

(12) *Pend d'Oreille River (Remac Mine).*—This mill, which started operations in late autumn, is polluting the river. However, the company is now carrying out surveys for an adequate impoundment area, after being advised that the pollution could not continue.

(13) *Salmo River (Canadian Exploration Company Limited).*—This year saw the completion of the modern $75,000 impoundment built by this company to prevent a pollution of the Salmo River. The river, which parallels the highway to the United States Border at Nelway, is no longer offensive to visitors and residents alike.

(14) *Sheep Creek (H. B. Mine).*—This mine started operations this year, and caused a pollution because of broken flumes carrying the tailings. The flumes have been repaired, and the pollution is under control.

(15) *Slocan River (Passmore Lumber Company).*—A proposed log-driving operation was investigated. It was proposed to channelize the river for 18 miles from Slocan Lake to the mill. This scheme has been dropped.

(16) *Slocan Lake (Roseberry Lumber Company).*—The operations of this company caused a minor pollution of the lake. No burner has been installed as yet, but sawdust is now being kept back from the lake.

(17) *Sulphur Creek (East Kootenay Lumber Company).*—A pollution was caused by a sawdust-pile on the river-edge. The pile was moved back, and the company plans to build a burner.

(18) *Spillimacheen River (Giant Mascot Mine).*—Although impounding its tailings from the mill operation, the impoundment has not been adequate to prevent occasional pollutions in the winter months. After discussions

with company officials it is anticipated that a better impoundment will be constructed.

(19) *St. Mary Lake (McGuiness Logging Company).*—The company applied for permission to boom logs at the outlet of the lake. An investigation was made, after which it was considered that the booming would not be harmful provided certain conditions were met.

(20) *St. Mary River (Marysville Fertilizer Plant).*—The impoundment on the banks of the river was destroyed by flood-water this summer. A new impoundment of stronger design is being built, and is expected to resist future flooding. A temporary impoundment has been built to handle the tailings until the new impoundment is ready in June, 1956.

(21) *Toby Creek (Mineral King Mine).*—Operations of the mill caused a serious pollution of Toby Creek. After negotiations with the company a small impoundment was built at the mill-site as a temporary measure. The company has applied for a large flat area of land down-stream on which to build a suitable impoundment. The Game Commission has assisted company officials in expediting the acquisition of this land. It is hoped that the new impoundment will be in operation in 1956.

(22) *Wildhorse Creek.*—A proposed placer-mining operation was investigated here. Discussions with the promoters of the scheme were held to ensure that adequate precautions to prevent pollutions were taken. The operation subsequently fell through.

In addition to the above, routine inspections were carried out on many operations, most of which were carrying out satisfactory pollution-control measures.

Rod and Gun Club Activity in Fisheries Work

The willingness of rod and gun clubs to assist the Game Commission wherever they can has been a continuing source of gratification to the Game Commission employees. Some of their projects, which have been supervised by the Game Commission, are listed briefly below.

Greenwood and District Rod and Gun Club.—Constructed spawning-grounds at the outlet of Jewel Lake by filling in silty area with gravel. This work will be completed in 1956. Trout were observed spawning in the new beds.

Trail Rod and Gun Club.—Rebuilt the fish-barrier it constructed in 1954 at the outlet of Erie Lake.

Salmo Rod and Gun Club.—Cleared trails into two alpine lakes near Salmo. Maintained the fish-barrier at the outlet of Erie Lake by periodic visits to remove debris.

Nelson Rod and Gun Club.—Continued development of a picnic-site and children's fishing area on Cottonwood Lake.

Kokanee Rod and Gun Club.—Cleared slash and other debris out of Sitkum Creek which was blocking stream. Under supervision of the Game Warden, broke beaver dams on Kokanee Creek to allow the passage of spawning kokanee. This last necessitated daily visits for almost a month.

New Denver Rod and Gun Club.—Operated a rearing-pond for Kamloops trout.

Creston Rod and Gun Club.—Assisted in a bass-salvaging programme at Duck Lake.

Cranbrook Rod and Gun Club.—Operated a sucker-trap on the Little Bull River, which removed several thousand suckers.

Fernie Rod and Gun Club.—Operated rearing-ponds for the release of fish into the Elk River.

Kimberley Rod and Gun Club.—Operated a rearing-pond at Premier Lake. Constructed a fish-ladder on the inlet stream to Premier Lake, which had been blocked. This

ladder passed spawning trout into the creek shortly after construction. The club also ran a netting programme to remove surplus kokanee from Premier Lake and repaired the road in to Echo Lake.

Canal Flats Rod and Gun Club.—Constructed a road giving access to the south end of Columbia Lake, a body of water almost inaccessible over most of its shore-line.

REPORT OF PREDATOR CONTROL DIVISION

By G. A. West, Supervisor of Predator Control

The operations of this Division during 1955 are felt to have been of a satisfactory nature, as, in general, complaints of predators and damage by same were at a very low mark. As a direct result of activities and this negligible damage, it was possible to eliminate the payment of wolf bounties as of September 1st, 1955. This step will influence our field of operations tremendously, as now the wolf populations can be treated on their merit instead of on their bounty value. In addition to their regular year-around duties, the personnel of this Division, aided by Game Wardens, established 2,101 major poison stations during the winter months of 1955 for the control of wolves and coyotes. This procedure met with considerable success according to reports from guides and trappers, especially north of Prince George. The use of aircraft for the majority (1,568) of these stations is the only means by which a tremendous area can be treated in an adequate manner. This type of aerial control will continue as our main source of operations if circumstances will permit.

The destruction of predators, from a numerical point of view, fell rather sharply below the figures shown for 1954. This is partially explained by the fact that personnel are spending less time looking for carcasses. This procedure is extremely time-consuming in most cases, and as our success against the major mammalian predators is measured by the lack of complaints and apparent scarcity of the animals themselves, it is felt that figures do not show the true value of operations or their results. The attached table shows the vermin destroyed and accounted for by Game Branch personnel during the year.

The major mammalian predators and their impact on game and domestic stocks are as follows:—

Bears.—After three years of many complaints of damage, these animals did not cause too much concern during 1955. It is felt that the population of black bears has reached its peak and is actually on the decline. A total of 237 bears were destroyed during 1955, as against 321 in 1954. This represents a decrease of about 29 per cent and corresponds very well with the decrease in numbers of complaints of bears destroying live stock, game animals, and field crops. In any case, the use of poison and traps will take care of most dangerous or nuisance bears. There has been much experimentation in our operations against bears, and consequently techniques have been stream-lined accordingly.

Cougars.—An over-all reduction in cougar bounties was realized during 1955. However, this situation is rather misleading, as the Interior of the Province experienced an increase in numbers of bounties paid. Vancouver Island had a reduction of 27.5 per cent over 1954, possibly as a direct result of heavy hunting pressure on these cats over the past three years or since the introduction of the registered bonus hunter system. Of the total of 358 cougars bountied within the Province, 153 were taken by the registered bonus cougar-hunters. An additional eighty-seven cougars were destroyed by Game Branch personnel.

The control of cougars presents an expensive, intangible problem, as the use of dogs is the only fairly reliable method of control. It is known that numbers (unknown) of cougars have been destroyed by coyote or wolf baits, but these are believed to be young or otherwise subnormal animals.

An experiment using cyanide guns was carried out during 1955 on Vancouver Island, but the results were disappointing, although possibly one cougar was destroyed by a cyanide gun. Possibly someone may arrive at a practical method of mass control sometime in the future, but until then our cougar-control will continue to be weak on a Province-wide basis.

Coyotes.—Complaints of damage by coyotes remained low in numbers during 1955. The controls used by personnel have apparently reduced the coyote population by a large degree and have held them at that point. During the past year we have had requests not to poison in many local Interior areas. This was brought about by ranchers and farmers who believe the coyote population was too low. This is an exact reversal of a few years ago and indicates the efficiency of control measures.

The losses of live stock during the past two years have been very low and could possibly apply to our game stocks as well. Here we have an added complication to our game management, as the game animals saved from predation must be harvested by the hunter or they may be lost to other causes of mortality.

Foxes.—These animals are of importance only on the Lower Mainland areas of the Province. We are faced with exerting control measures within a highly populated area; consequently we cannot use any means of mass destruction. This has resulted in a never-ending stream of complaints, but the damage has been reduced considerably and should remain at that or a drop to a lower level. A total of 319 foxes were accounted for in the Fraser Valley, but many more were not located but probably destroyed.

Wolves.—As mentioned previously, the wolf bounty payments were eliminated during 1955; consequently we have no numerical values for comparison with that of previous years. However, in the months of 1955 preceding the elimination, the figures available showed a very large drop in bounty payments as compared to a corresponding period of 1954.

Wolves are almost non-existent over much of their former range in the Interior areas of British Columbia. This applies particularly to the stock-raising regions, where the wolves were a very serious problem only a few years ago. They are present in fair numbers in the coastal area and in some sections of the northern portion of the Province. In these areas they are not of any particular importance and are largely only a nuisance when they migrate to a more accessible or settled area.

Reports are encountered from time to time from guides and trappers who state that the stands of game animals, such as moose and caribou, are increasing and have been doing so since heavy pressure was first taken against the wolves. It is not known whether the mild winters, our poisoning operations, or a combination of both are responsible or not. The Game Branch is receiving the credit from these same people, regardless of the actual cause.

There will be no reduction in wolf-control measures, except where the populations have been reduced to the point where the depredations are negligible, and the wolf population in these instances will be kept at a low level through reduced intensity of controls.

Other Predators.—Racoons and bobcats have again been a source of annoyance and damage in the Fraser Valley. Game Branch personnel have accounted for 157 racoons and 23 bobcats in this area during the past year and have thus kept the damage to various domestic and game stocks at a fairly low level. Here we also have the problem of controls being governed by human population. This results in taking only the actual culprits, which has no effect in lowering the predator population as a whole.

Lynx have continued to cause damage in some Interior areas due to lack of natural food. As the lynx population appears to be on the decline, this source of trouble will take care of itself.

Special Projects.—In addition to protecting on a general basis, we have made special efforts to keep our controls at a high level for the protection of special game animals such as California bighorn sheep. These animals are relatively scarce and very valuable and are well worth while to protect from predators. This operation will continue in the future.

Another special project attempted during 1955 was our entry into the field of rodent-control. This was started in the Cranbrook area on an experimental basis during the months of July and August. The results are not conclusive but are encouraging, and it is hoped that we will enter that field on a permanent basis in the spring of 1956. The controls, if carried out, will be in the form of Compound 1080 treated grain. The first objective will be to reduce and control the populations of the Columbia ground-squirrel. From there we will tackle the problems presented by pocket-gophers and mice. There will be many unknowns encountered at first, so that the results may well be obscured for the first season or two, but with our experience and the aid offered by the United States Fish and Wildlife Service, we should make a sizeable impression in the rodent populations and their associated problems.

I wish to extend my sincere thanks to all members of the enforcement division for their invaluable aid that they have given so freely during the past year.

Vermin Destroyed, 1955

Species	Division					Totals
	"A"	"B"	"C"	"D"	"E"	
Bears	7	57	71	82	20	237
Bobcats	.....	35	24	6	28	93
Cats (wild)	82	94	174	85	576	1,011
Cougars	22	51	13	1	.....	87
Coyotes	.....	185	241	112	20	558
Dogs (wild)	47	17	40	50	64	218
Foxes	.....	.....	6	8	319	333
Gophers	.....	27	183	3	.....	213
Racoons	8	.....	.....	.....	157	165
Skunks	.....	.....	5	6	59	70
Wolves	.....	.....	9	51	.....	60
Wolverines	.....	.....	.....	.....	.....	.....
Totals	166	466	766	404	1,243	3,045
Crows	118	234	567	262	988	2,169
Eagles	.....	34	10	23	48	115
Hawks	3	28	69	44	71	215
Owls	.....	13	49	117	7	186
Magpies	.....	43	716	104	.....	863
Mergansers	.....	19	12	3	4	38
Ravens	34	51	203	87	34	409
Starlings	.....	21	4	.....	8	33
Totals	155	443	1,630	640	1,160	4,028
Grand totals	321	909	2,396	1,044	2,403	7,073

STATISTICAL STATEMENTS

COMPARATIVE STATISTICS, 1913 TO 1955, 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
1947	895	878	17	56	11,837.50	597,529.30	99,344.14
1948	1,142	1,117	25	74	17,537.00	610,383.56	73,392.08
1949	1,115	1,099	16	86	18,148.50	656,997.38	61,543.26
1950	1,359	1,337	22	69	22,923.00	706,591.06	71,335.44
1951	1,489	1,468	21	83	24,087.50	830,178.59	76,454.56
1952	1,504	1,476	28	87	25,755.00	856,971.22	58,713.48
1953	1,519	1,500	19	67	23,663.50	1,032,264.31	56,788.19
1954	1,241	1,158	83	48	22,540.50	1,029,903.83	55,529.52
1955	1,136	1,065	71	57	20,479.00	1,081,135.24	58,659.34
Totals	25,823	24,643	1,160	1,493	$386,358.57	$12,792,926.72	$2,119,148.48

SUMMARY OF TOTAL REVENUE DERIVED FROM SALE OF VARIOUS LICENSES, COLLECTIONS, ETC., JANUARY 1ST TO DECEMBER 31ST, 1955

Revenue derived from—	
Sale of resident firearms licences	$423,665.00
Sale of deer, moose-elk, goat, and pheasant tags	109,713.50
Sale of resident anglers', guides', and prospectors' firearms licences	205,657.00
Sale of non-resident firearms licences and outfitters' licences	65,478.00
Sale of non-resident anglers' licences	174,846.50
Sale of fur-traders', taxidermists', and tanners' licences, and royalty on fur	58,659.34
Sale of confiscated firearms	209.75
Sale of confiscated fishing-tackle	27.30
Sale of confiscated fur	595.87
Collection of big-game trophy fees from non-residents	98,960.00
Prosecutions—fines imposed under the "Game Act"	20,479.00
Miscellaneous revenue	1,982.32
Total	$1,160,273.58

Statement of Resident Firearms Licences, January 1st to December 31st, 1955

Government Agency	O.F.L.		G.F.L.		Extra-G.F.L.		S.F.L.		Extra-S.F.L.		Duplicates		Total
	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	
Alberni	1,849	$7,396.00	100	$700.00	53	$636.00	50	$500.00	.....	.....	21	$10.50	$9,242.50
Ashcroft	448	1,792.00	217	1,519.00	5	60.00	.....	.....	.....	.....	5	2.50	3,373.50
Atlin	34	136.00	108	756.00	18	216.00	14	140.00	1	2.50	1	.50	1,251.00
Burns Lake	147	588.00	356	2,492.00	5	60.00	69	690.00	3	7.50	4	2.00	3,839.50
Clinton	457	1,828.00	353	2,471.00	4	48.00	84	840.00	.....	.....	4	2.00	5,189.00
Courtenay	3,660	14,640.00	131	917.00	19	228.00	188	1,880.00	36	90.00	32	16.00	17,771.00
Cranbrook	1,198	4,792.00	1,512	10,584.00	27	324.00	45	450.00	.....	.....	21	10.50	16,160.50
Creston	668	2,672.00	247	1,729.00	3	36.00	24	240.00	.....	.....	13	6.50	4,683.50
Duncan	1,449	5,796.00	74	518.00	3	36.00	14	140.00	.....	.....	13	6.50	6,496.50
Fernie	366	1,464.00	614	4,298.00	49	588.00	64	640.00	.....	.....	18	9.00	6,999.00
Golden	464	1,856.00	704	4,928.00	49	588.00	86	860.00	.....	.....	6	3.00	8,235.00
Grand Forks	764	3,056.00	44	308.00	2	24.00	32	320.00	.....	.....	8	4.00	3,712.00
Kamloops	2,540	10,160.00	921	6,447.00	39	468.00	123	1,230.00	.....	.....	21	10.50	18,315.50
Kaslo	129	516.00	83	581.00	4	48.00	.....	.....	.....	.....	4	2.00	1,147.00
Kelowna	1,820	7,280.00	224	1,568.00	7	84.00	20	200.00	.....	.....	18	9.00	9,141.00
Lillooet	380	1,520.00	163	1,141.00	10	120.00	37	370.00	.....	.....	3	1.50	3,152.50
Merritt	444	1,776.00	82	574.00	11	132.00	29	290.00	.....	.....	4	2.00	2,774.00
Nanaimo	2,689	10,756.00	171	1,197.00	18	216.00	29	290.00	.....	.....	25	12.50	12,471.50
Nelson	1,143	4,572.00	298	2,086.00	3	36.00	108	1,080.00	.....	.....	17	8.50	7,782.50
New Denver	293	1,172.00	79	553.00	2	24.00	3	30.00	.....	.....	3	1.50	1,780.50
New Westminster	10,288	41,152.00	2,111	14,777.00	54	648.00	201	2,010.00	.....	.....	57	28.50	58,615.50
Oliver	831	3,324.00	94	658.00	9	108.00	.....	.....	.....	.....	4	2.00	4,092.00
Penticton	1,907	7,628.00	264	1,848.00	15	180.00	17	170.00	.....	.....	7	3.50	9,829.50
Pouce Coupe	1,082	4,328.00	1,761	12,327.00	38	456.00	297	2,970.00	17	42.50	19	9.50	20,133.00
Powell River	748	2,992.00	47	329.00	16	192.00	42	420.00	.....	.....	9	4.50	3,937.50
Prince George	1,060	4,240.00	1,847	12,929.00	151	1,812.00	214	2,126.00	9	22.50	30	15.00	21,144.50
Prince Rupert	1,608	6,432.00	491	3,437.00	93	1,116.00	201	2,010.00	14	35.00	9	4.50	13,034.50
Princeton	834	3,336.00	182	1,274.00	16	192.00	21	210.00	.....	.....	7	3.50	5,015.50
Quesnel	880	3,520.00	696	4,872.00	57	684.00	114	1,140.00	.....	.....	9	4.50	10,220.50
Revelstoke	267	1,068.00	141	987.00	5	60.00	59	590.00	.....	.....	5	2.50	2,707.50
Rossland	1,620	6,480.00	333	2,331.00	29	348.00	16	160.00	.....	.....	6	3.00	9,322.00
Salmon Arm	885	3,540.00	262	1,834.00	2	24.00	43	430.00	.....	.....	2	1.00	5,829.00
Smithers	312	1,248.00	448	3,136.00	30	360.00	47	470.00	73	182.50	1	.50	5,397.00
Terrace	144	576.00	360	2,520.00	16	192.00	49	490.00	9	22.50	5	2.50	3,803.00
Vancouver	11,096	44,384.00	2,504	16,270.00	167	1,983.00	143	1,230.00	.....	.....	137	68.50	63,935.50
Vanderhoof	240	960.00	430	3,010.00	4	48.00	58	580.00	7	17.50	1	.50	4,616.00
Vernon	2,037	8,148.00	459	3,213.00	1	12.00	28	280.00	.....	.....	15	7.50	11,660.50
Victoria	5,067	20,268.00	215	1,505.00	25	300.00	30	300.00	.....	.....	47	23.50	22,396.50
Williams Lake	887	3,548.00	598	4,186.00	82	984.00	199	1,990.00	11	27.50	11	5.50	10,741.00
Totals	62,735	$250,940.00	19,724	$136,810.00	1,141	$13,671.00	2,798	$27,766.00	180	$450.00	622	$311.00	$429.948.00
Less refunds	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	6,283.00
Total	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	$423,665.00

Revenue Derived from the Sale of Moose-Elk, Deer, Goat, and Pheasant Tags, January 1st to December 31st, 1955

Government Agency	Deer Tags		Moose-Elk Tags		Goat Tags		Pheasant Tags		Total
	No.	Amount	No.	Amount	No.	Amount	No.	Amount	
Alberni	3,115	$1,557.50	77	$154.00	1	$2.00	75	$37.50	$1,751.00
Ashcroft	896	448.00	325	650.00	25	50.00	206	103.00	1,251.00
Atlin	7	3.50	77	154.00	45	90.00	.....	.....	247.50
Burns Lake	312	156.00	362	724.00	21	42.00	.....	.....	922.00
Clinton	1,164	582.00	444	888.00	19	38.00	6	3.00	1,511.00
Courtenay	5,897	2,948.50	72	144.00	13	26.00	206	103.00	3,221.50
Cranbrook	4,742	2,371.00	1,664	3,328.00	366	732.00	3	1.50	6,432.50
Creston	1,178	589.00	218	436.00	29	58.00	375	187.50	1,270.50
Duncan	2,325	1,162.50	61	122.00	4	8.00	388	194.00	1,486.50
Fernie	2,032	1,016.00	794	1,588.00	228	456.00	.....	.....	3,060.00
Golden	2,133	1,066.50	828	1,656.00	322	644.00	.....	.....	3,366.50
Grand Forks	1,412	706.00	23	46.00	3	6.00	149	74.50	832.50
Kamloops	5,246	2,623.00	1,060	2,120.00	31	62.00	1,337	668.50	5,473.50
Kaslo	245	122.50	70	140.00	31	62.00	.....	.....	324.50
Kelowna	2,727	1,363.50	195	390.00	2	4.00	975	487.50	2,245.00
Lillooet	916	458.00	112	224.00	113	226.00	4	2.00	910.00
Merritt	505	252.50	72	144.00	7	14.00	81	40.50	451.00
Nanaimo	5,053	2,526.50	157	314.00	2	4.00	367	183.50	3,028.00
Nelson	1,985	992.50	196	392.00	80	160.00	29	14.50	1,559.00
New Denver	539	269.50	39	78.00	27	54.00	.....	.....	401.50
New Westminster	12,722	6,361.00	2,889	5,778.00	155	310.00	6,440	3,220.00	15,669.00
Oliver	1,673	836.50	313	626.00	40	80.00	171	85.50	1,628.00
Penticton	3,284	1,642.00	191	382.00	6	12.00	443	221.50	2,257.50
Pouce Coupe	2,418	1,209.00	1,915	3,830.00	91	182.00	.....	.....	5,221.00
Powell River	1,150	575.00	22	44.00	27	54.00	11	5.50	678.50
Prince George	2,795	1,397.50	1,912	3,824.00	87	174.00	.....	.....	5,395.50
Prince Rupert	2,024	1,012.00	417	834.00	111	222.00	13	6.50	2,074.50
Princeton	1,678	839.00	161	322.00	8	16.00	94	47.00	1,224.00
Quesnel	2,087	1,043.50	752	1,504.00	5	10.00	.....	.....	2,557.50
Revelstoke	367	183.50	113	226.00	24	48.00	87	43.50	501.00
Rossland	2,897	1,448.50	278	556.00	39	78.00	86	43.00	2,125.50
Salmon Arm	1,272	636.00	211	422.00	5	10.00	497	248.50	1,316.50
Smithers	467	233.50	450	900.00	90	180.00	.....	.....	1,313.50
Terrace	191	95.50	351	702.00	182	364.00	.....	.....	1,161.50
Vancouver	13,163	6,581.50	2,339	4,678.00	178	356.00	5,577	2,788.50	14,404.00
Vanderhoof	566	283.00	525	1,050.00	8	16.00	.....	.....	1,349.00
Vernon	3,067	1,533.50	340	680.00	25	50.00	1,620	810.00	3,073.50
Victoria	8,813	4,406.50	198	396.00	12	24.00	1,296	648.00	5,474.50
Williams Lake	2,388	1,194.00	736	1,472.00	74	148.00	9	4.50	2,818.50
Totals	105,451	$52,725.50	20,959	$41,918.00	2,536	$5,072.00	20,545	$10,272.50	$109,988.00
Less refunds	.....	.....	.....	.....	.....	.....	.....	.....	274.50
Total	.....	.....	.....	.....	.....	.....	.....	.....	$109,713.50

REVENUE DERIVED FROM SALE OF RESIDENT ANGLERS', GUIDES', FREE FARMERS', AND PROSPECTORS' FIREARMS LICENCES, JANUARY 1ST TO DECEMBER 31ST, 1955

Government Agency	Anglers		Guides		Free Farmers	Prospectors		Total
	No.	Amount	No.	Amount	No.	No.	Amount	
Alberni	1,842	$3,684.00	1	$5.00	8	2		$3,689.00
Ashcroft	998	1,996.00			8	7		1,996.00
Atlin	156	312.00	6	60.00		19		372.00
Burns Lake	657	1,314.00	33	315.00	15	20		1,629.00
Clinton	725	1,450.00	91	1,005.00		2		2,455.00
Courtenay	3,860	7,720.00	19	140.00	22	2		7,860.00
Cranbrook	2,637	5,274.00	18	160.00	16	31		5,434.00
Creston	972	1,944.00	1	10.00	24	13		1,954.00
Duncan	1,260	2,520.00	2	20.00	51	1		2,540.00
Fernie	1,316	2,632.00	48	485.00	2			3,117.00
Golden	929	1,858.00	58	600.00	18	21		2,458.00
Grand Forks	787	1,574.00	10	90.00	25	14		1,664.00
Kamloops	4,410	8,820.00	69	705.00	66	40		9,525.00
Kaslo	318	636.00			6	22		636.00
Kelowna	3,104	6,208.00			32	20	$6.00	6,214.00
Lillooet	889	1,778.00	17	140.00	1	41		1,918.00
Merritt	594	1,188.00			2	1		1,188.00
Nanaimo	2,709	5,418.00			75	5		5,418.00
Nelson	2,876	5,752.00	6	60.00	27	42		5,812.00
New Denver	600	1,200.00			1	9		1,200.00
New Westminster	18,472	36,944.00			87	55	2.00	36,946.00
Oliver	767	1,534.00				4		1,534.00
Penticton	2,884	5,768.00	4	35.00	5	7		5,803.00
Pouce Coupe	1,991	3,982.00	88	765.00	52	45		4,747.00
Powell River	1,161	2,322.00	1	10.00	18			2,332.00
Prince George	2,961	5,922.00	94	835.00	44	58		6,757.00
Prince Rupert	2,489	4,978.00	38	340.00	2	32		5,318.00
Princeton	1,367	2,734.00	5	50.00	3	29		2,784.00
Quesnel	1,199	2,398.00	56	555.00	30	78		2,953.00
Revelstoke	655	1,310.00	8	75.00	2	16		1,385.00
Rossland	2,450	4,900.00			1	10		4,900.00
Salmon Arm	1,725	3,450.00	7	60.00	43	6		3,510.00
Smithers	982	1,964.00	19	155.00	33	27		2,119.00
Terrace	835	1,670.00			1	19		1,670.00
Vancouver	18,200	36,400.00	1	10.00		205		36,410.00
Vanderhoof	561	1,122.00	18	110.00	7	12		1,232.00
Vernon	2,606	5,212.00	2	20.00	156	21		5,232.00
Victoria	4,289	8,578.00	1	10.00	67	20		8,588.00
Williams Lake	1,284	2,568.00	199	1,870.00	8	19		4,438.00
Totals	98,517	$197,034.00	920	$8,695.00	958	975	$8.00	$205,737.00
Less refunds								80.00
Total								$205,657.00

Revenue Derived from Sale of Non-resident General Firearms, Non-resident General Firearms (Special), Non-resident Ordinary Firearms, and Outfitters' Licences, January 1st to December 31st, 1955.

Government Agency	General Firearms Licences		General Firearms Licences (Special)		Ordinary Firearms Licences		Outfitters' Licences		Total
	No.	Amount	No.	Amount	No.	Amount	No.	Amount	
Alberni	1	$25.00							$25.00
Ashcroft	67	1,675.00	3	$45.00					1,720.00
Atlin	11	275.00	5	75.00	16	$48.00			398.00
Burns Lake	5	125.00	1	15.00					140.00
Clinton	30	750.00	1	15.00					765.00
Courtenay	8	200.00	1	15.00					215.00
Cranbrook	116	2,900.00	5	75.00					2,975.00
Creston	49	1,225.00			2	6.00			1,231.00
Fernie	123	3,075.00	8	120.00					3,195.00
Golden	54	1,350.00	14	210.00	8	24.00			1,584.00
Grand Forks	3	75.00	1	15.00					90.00
Kamloops	80	2,000.00	2	30.00	2	6.00			2,036.00
Kaslo	1	25.00							25.00
Kelowna	16	400.00							400.00
Lillooet	3	75.00							75.00
Merritt	3	75.00							75.00
Nanaimo	13	325.00	1	15.00					340.00
Nelson	3	75.00			1	3.00			78.00
New Westminster	1,216	30,400.00	7	105.00					30,505.00
Oliver	293	7,325.00	1	15.00					7,340.00
Penticton	25	625.00							625.00
Pouce Coupe	75	1,875.00	4	60.00	24	72.00			2,007.00
Powell River	1	25.00							25.00
Prince George	31	775.00	8	120.00	6	18.00			913.00
Prince Rupert	39	975.00			2	6.00			981.00
Princeton	2	50.00							50.00
Quesnel	10	250.00							250.00
Revelstoke	5	125.00							125.00
Rossland			1	15.00					15.00
Salmon Arm	3	75.00	1	15.00					90.00
Smithers	4	100.00	2	30.00					130.00
Terrace	1	25.00							25.00
Vancouver	200	5,000.00	3	45.00	4	12.00			5,057.00
Vanderhoof	14	350.00	1	15.00					365.00
Vernon	8	200.00			1	3.00			203.00
Victoria	8	200.00	2	30.00					230.00
Williams Lake	46	1,150.00					1	$50.00	1,200.00
Totals	2,567	$64,175.00	72	$1,080.00	66	$198.00	1	$50.00	$65,503.00
Less refunds									25.00
Total									$65,478.00

REVENUE DERIVED FROM SALE OF AMERICAN NON-RESIDENT ANGLERS', CANADIAN NON-RESIDENT ANGLERS', AND MINOR NON-RESIDENT ANGLERS' LICENCES, JANUARY 1ST TO DECEMBER 31ST, 1955.

Government Agency	Anglers' Licences (American)		Anglers' Licences (Canadian)		Anglers' Licences (Minor)		Total
	No.	Amount	No.	Amount	No.	Amount	
Alberni	98	$686.00	11	$38.50	24	$24.00	$748.50
Ashcroft	166	1,162.00	19	66.50	50	50.00	1,278.50
Atlin	39	273.00	8	28.00	------	------	301.00
Burns Lake	30	210.00	10	35.00	2	2.00	247.00
Clinton	192	1,344.00	5	17.50	62	62.00	1,423.50
Courtenay	653	4,571.00	55	192.50	121	121.00	4,884.50
Cranbrook	425	2,975.00	257	899.50	115	115.00	3,989.50
Creston	559	3,913.00	142	497.00	69	69.00	4,479.00
Duncan	60	420.00	20	70.00	1	1.00	491.00
Fernie	216	1,512.00	928	3,248.00	80	80.00	4,840.00
Golden	153	1,071.00	828	2,898.00	180	180.00	4,149.00
Grand Forks	451	3,157.00	15	52.50	100	100.00	3,309.50
Kamloops	930	6,510.00	112	392.00	168	168.00	7,070.00
Kaslo	94	658.00	20	70.00	14	14.00	742.00
Kelowna	851	5,957.00	118	413.00	206	206.00	6,576.00
Lillooet	30	210.00	10	35.00	4	4.00	249.00
Merritt	51	357.00	7	24.50	8	8.00	389.50
Nanaimo	193	1,351.00	34	119.00	29	29.00	1,499.00
Nelson	835	5,845.00	166	581.00	99	99.00	6,525.00
New Denver	15	105.00	7	24.50	2	2.00	131.50
New Westminster	10,184	71,288.00	161	565.00	2,549	2,549.00	74,402.00
Oliver	1,791	12,537.00	35	122.50	420	420.00	13,079.50
Penticton	502	3,514.00	113	395.50	108	108.00	4,017.50
Pouce Coupe	362	2,534.00	845	2,957.50	130	130.00	5,621.50
Powell River	163	1,141.00	3	10.50	5	5.00	1,156.50
Prince George	129	903.00	129	451.50	33	33.00	1,387.50
Prince Rupert	79	553.00	15	52.50	------	------	605.50
Princeton	128	896.00	12	42.00	46	46.00	984.00
Quesnel	39	273.00	8	28.00	12	12.00	313.00
Revelstoke	50	350.00	31	108.50	12	12.00	470.50
Rossland	186	1,302.00	12	42.00	39	39.00	1,383.00
Salmon Arm	565	3,955.00	83	290.50	79	79.00	4,324.50
Smithers	28	196.00	9	31.50	------	------	227.50
Terrace	5	35.00	17	59.50	------	------	94.50
Vancouver	976	6,830.00	93	325.50	111	111.00	7,266.50
Vanderhoof	73	511.00	38	133.00	18	18.00	662.00
Vernon	319	2,233.00	51	178.50	53	53.00	2,464.50
Victoria	268	1,876.00	27	94.50	45	45.00	2,015.50
Williams Lake	144	1,008.00	12	42.00	26	26.00	1,076.00
Totals	22,032	$154,222.00	4,466	$15,632.50	5,020	$5,020.00	$174,874.50
Less refunds	------	------	------	------	------	------	28.00
Total	------	------	------	------	------	------	$174,846.50

Revenue Derived from Sale of Fur-traders', Taxidermists', and Tanners' Licences and Royalty on Fur, January 1st to December 31st, 1955

Government Agency	Resident Fur-traders' Licences		Resident Fur-traders' Licences (Transient)		Agent for Non-resident Fur-traders' Licences		Royalty or Tax on Fur	Taxidermists' or Tanners' Licences		Total
	No.	Amount	No.	Amount	No.	Amount	Amount	No.	Amount	
Alberni	1	$25.00	—	—	—	—	$3.00	—	—	$28.00
Atlin	—	—	—	—	—	—	73.63	—	—	73.63
Burns Lake	2	50.00	—	—	—	—	1,010.05	—	—	1,060.05
Clinton	—	—	—	—	—	—	15.00	—	—	15.00
Courtenay	3	75.00	—	—	—	—	13.50	—	—	88.50
Cranbrook	—	—	2	$200.00	—	—	—	—	—	200.00
Fernie	—	—	—	—	—	—	—	1	$2.00	2.00
Golden	1	25.00	—	—	—	—	235.14	—	—	260.14
Kamloops	1	25.00	—	—	—	—	33.00	—	—	58.00
Kelowna	—	—	—	—	—	—	29.40	—	—	29.40
Lillooet	1	25.00	—	—	—	—	—	—	—	25.00
Merritt	1	25.00	—	—	—	—	—	—	—	25.00
Nanaimo	—	—	—	—	—	—	—	1	2.00	2.00
Nelson	—	—	1	100.00	—	—	17.40	—	—	117.40
New Westminster	—	—	—	—	—	—	3.00	—	—	3.00
Pouce Coupe	15	375.00	1	100.00	2	$400.00	12,631.97	1	2.00	13,508.97
Prince George	3	75.00	1	100.00	—	—	2,420.14	—	—	2,595.14
Prince Rupert	4	100.00	3	300.00	—	—	1,479.77	1	2.00	1,881.77
Quesnel	2	50.00	1	100.00	—	—	370.13	—	—	520.13
Revelstoke	—	—	—	—	—	—	3.00	—	—	3.00
Smithers	6	150.00	—	—	—	—	1,507.10	—	—	1,657.10
Terrace	—	—	—	—	—	—	6.90	—	—	6.90
Vancouver	52	1,300.00	7	700.00	—	—	33,502.58	9	18.00	35,520.58
Vanderhoof	5	125.00	—	—	—	—	42.38	—	—	167.38
Victoria	—	—	—	—	—	—	56.25	2	4.00	60.25
Williams Lake	20	500.00	3	300.00	—	—	26.00	—	—	826.00
Totals	117	$2,925.00	19	$1,900.00	2	$400.00	$53,479.34	15	$30.00	$58,734.34
Less refunds	—	—	—	—	—	—	—	—	—	75.00
Total	—	—	—	—	—	—	—	—	—	$58,659.34

Total Collections from Fur Trade, 1921 to 1955, 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
1947	92,637.14	6,707.00	99,344.14
1948	66,939.08	6,453.00	73,392.08
1949	56,563.26	4,980.00	61,543.26
1950	65,205.44	6,255.00	71,460.44
1951	70,799.56	5,655.00	76,454.56
1952	54,256.48	4,457.00	58,713.48
1953	52,565.19	4,223.00	56,788.19
1954	52,199.52	3,330.00	55,529.52
1955	53,429.34	5,230.00	58,659.34
Totals	$1,928,876.54	$210,737.00	$2,139,553.54

Comparative Statement Showing Pelts of Fur-bearing Animals on Which Royalty Has Been Collected during the Period 1921 to 1955, 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	3,061	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
1947	209	15	20,427	814	1,599	790	993	707	.....	47	1,992	11,971	41,275	60,433	724	2,647	142	553,812	52,402	164	92,637.14
1948	173	3	15,892	731	296	327	374	22	.....	5	1,194	7,798	33,451	73,432	653	1,796	31	345,444	28,135	209	66,939.08
1949	159	.....	15,120	482	39	114	165	.....	.....	.....	580	5,950	9,249	80,678	450	1,577	11	351,598	20,769	182	56,563.26
1950	136	.....	14,822	572	39	105	120	.....	.....	.....	848	7,454	14,311	103,890	657	594	9	349,152	36,270	158	65,205.44
1951	58	.....	12,769	846	54	164	211	.....	.....	.....	1,153	12,453	17,958	86,794	807	595	4	357,733	31,402	287	70,808.06
1952	83	1	11,073	543	28	84	107	.....	.....	.....	910	7,364	13,194	53,328	548	499	13	479,139	15,911	185	54,256.48
1953	39	2	10,327	734	29	98	225	.....	.....	.....	2,163	6,231	17,316	51,614	740	212	5	344,909	15,327	146	52,565.19
1954	.....	.....	9,874	793	13	53	95	.....	.....	.....	2,351	6,856	17,102	56,264	838	.....	.....	350,794	14,237	141	52,226.92
1955	.....	.....	14,351	644	11	49	46	.....	.....	.....	2,660	5,820	4,547	68,533	778	.....	.....	242,867	11,894	165	53,479.34
Totals	20,997	161	595,474	24,498	41,055	33,732	45,834	6,082	3	53	88,348	329,728	748,042	2,967,549	25,599	103,984	15,237	7,049,934	1,341,222	8,515	$1,928,962.44

Particulars of Various Pelts of Fur-bearing Animals on Which Royalty Has Been Paid, January 1st to December 31st, 1955

Government Agency	Number and Kind of Pelts on Which Royalty Has Been Paid												
	Beaver	Fisher	Fox, Silver	Fox, Cross	Fox, Red	Lynx	Marten	Mink	Muskrat	Otter	Squirrel	Weasel	Wolverine
Alberni	----	----	----	----	----	----	2	----	----	----	----	----	----
Atlin	16	----	----	----	----	21	5	8	58	----	414	32	6
Burns Lake	90	17	----	7	----	111	318	80	1,267	2	1,930	485	2
Clinton	9	----	----	----	----	1	----	1	----	----	----	----	----
Cranbrook	9	----	----	----	----	----	----	----	----	----	----	----	----
Golden	11	----	----	----	----	2	23	7	1,754	----	42	24	----
Kamloops	----	----	----	----	----	----	22	----	----	----	----	----	----
Kelowna	1	----	----	----	----	----	----	1	272	----	----	2	----
Nelson	----	----	----	----	----	1	10	1	----	----	15	6	----
New Westminster	----	----	----	4	----	----	----	----	----	----	----	----	----
Pouce Coupe	5,785	250	5	15	17	932	649	279	3,534	34	47,056	1,732	60
Prince George	1,204	34	2	5	7	84	180	63	882	26	1,302	264	16
Prince Rupert	701	13	2	1	2	69	106	140	457	16	1,641	85	19
Quesnel	83	6	----	----	3	43	9	23	1,100	6	2,179	83	----
Revelstoke	----	----	----	----	----	----	2	----	----	----	----	----	----
Smithers	172	16	----	3	1	22	612	169	530	7	4,265	518	4
Terrace	----	2	----	----	----	----	2	----	----	----	20	5	----
Vancouver	6,245	304	----	12	12	1,363	3,851	10,742	58,679	686	183,959	8,593	57
Vanderhoof	----	1	1	----	----	9	6	29	----	----	44	65	1
Victoria	9	1	1	2	4	----	23	4	----	1	----	----	----
Williams Lake	16	----	----	----	----	2	----	----	----	----	----	----	----
Totals	14,351	644	11	49	46	2,660	5,820	11,547	68,533	778	242,867	11,894	165

Statements Showing Firearms, Fishing-tackle, and Fur Confiscated under the "Game Act," January 1st to December 31st, 1955

Confiscated Firearms

The following firearms were confiscated under the "Game Act," January 1st to December 31st, 1955: 50 rifles and 7 shotguns. The sum of $209.75 was received during 1955 from the sale of confiscated firearms.

Confiscated Fishing-tackle

The following fishing-tackle was confiscated under the "Game Act," January 1st to December 31st, 1955: 1 rod and 1 reel. The sum of $27.30 was received during 1955 from the sale of confiscated fishing-tackle.

Confiscated Fur

The following fur was confiscated under the "Game Act," January 1st to December 31st, 1955: 1 beaver-pelt, 1 cross-fox pelt, 1 lynx-pelt, 9 marten-pelts, 2 mink-pelts, 15 muskrat-pelts, 157 squirrel-pelts, and 13 weasel-pelts. The sum of $595.87 was received during 1955 from the sale of confiscated and surrendered fur.

Bounties Paid during the Year Ended December 31st, 1955

Government Agency	Wolves		Cougars		Total
	$40	$25	Bounty, $20	Bonus, $20	
Alberni	-----	-----	27	16	$860.00
Atlin	-----	5	-----	-----	125.00
Burns Lake	-----	21	-----	-----	525.00
Clinton	-----	-----	22	10	640.00
Courtenay	-----	7	70	53	2,635.00
Cranbrook	-----	-----	11	8	380.00
Duncan	-----	-----	10	7	340.00
Golden	-----	-----	6	4	200.00
Grand Forks	-----	-----	7	6	260.00
Kamloops	3	1	29	8	885.00
Kelowna	-----	-----	3	-----	60.00
Lillooet	1	-----	10	-----	240.00
Nanaimo	-----	-----	14	10	480.00
Nelson	-----	-----	17	-----	340.00
New Westminster	-----	-----	6	-----	120.00
Pouce Coupe	-----	30	1	-----	770.00
Powell River	-----	-----	1	-----	20.00
Prince George	-----	91	4	-----	2,355.00
Prince Rupert	-----	25	1	-----	645.00
Princeton	-----	-----	4	-----	80.00
Quesnel	1	-----	14	6	440.00
Revelstoke	-----	-----	1	-----	20.00
Rossland	-----	-----	1	-----	20.00
Smithers	-----	4	1	-----	120.00
Salmon Arm	-----	-----	2	-----	40.00
Vancouver	-----	3	8	-----	235.00
Vanderhoof	-----	8	-----	-----	200.00
Vernon	-----	-----	3	2	100.00
Victoria	-----	1	34	11	925.00
Williams Lake	1	-----	52	13	1,340.00
Totals	6	196	359	154	$15,400.00

Note.—Coyote bounty discontinued, effective August 1st, 1954. Wolf bounty discontinued, effective September 1st, 1955.

COMPARATIVE STATEMENT OF BOUNTIES PAID FROM 1922 TO 1955, INCLUSIVE

Calendar Year	Wolves	Cougars	Bonus Cougars	Coyotes	Crows	Magpies	Eagles	Owls	Amount
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
1947	1,102	519	.....	2,976	.....	.....	.....	.....	36,386.00
1948	1,156	725	.....	3,911	.....	.....	.....	.....	58,344.00
1949	1,180	524	.....	6,847	.....	.....	.....	.....	70,501.00
1950	991	395	.....	9,822	.....	.....	.....	.....	73,688.00
1951	753	488	.....	5,202	.....	.....	.....	.....	51,133.00
1952	728	465	59	4,769	.....	.....	.....	.....	48,551.00
1953	544	500	185	4,425	.....	.....	.....	.....	45,645.00
1954	415	400	156	2,343	.....	.....	.....	.....	31,497.00
1955	202	359	154	.....	.....	.....	.....	.....	15,400.00
Totals	22,881	13,624	554	125,254	69,431	8,230	7,204	20,615	$1,104,803.80

NOTE.—Bonus cougars are included in the number of cougars presented for bounty.

Big-game Trophy Fees Paid by Non-residents, January 1st to December 31st, 1955

Government Agency	Species									Amount
	Bear, Grizzly	Bear, Black or Brown	Caribou	Deer, Coast	Deer, Mule or White-tailed	Mountain-goat	Mountain-sheep	Moose	Wapiti (Elk)	
Atlin	4	-----	-----	-----	-----	-----	4	1	-----	$240.00
Burns Lake	2	2	1	-----	1	4	-----	16	-----	1,245.00
Clinton	10	27	6	-----	176	49	1	819	-----	55,695.00
Courtenay	2	-----	-----	2	-----	-----	-----	-----	-----	130.00
Cranbrook	12	8	-----	-----	28	12	-----	6	38	3,900.00
Creston	-----	-----	-----	-----	5	-----	-----	-----	4	325.00
Fernie	14	8	-----	-----	9	33	8	18	42	5,360.00
Golden	12	8	-----	-----	26	46	4	27	27	5,610.00
Kamloops	-----	-----	-----	-----	-----	-----	-----	3	-----	180.00
Lillooet	-----	-----	-----	-----	5	3	-----	4	-----	440.00
Nanaimo	-----	-----	-----	1	-----	-----	-----	-----	-----	15.00
New Westminster	5	22	4	2	31	3	4	26	-----	3,155.00
Oliver	-----	8	4	-----	56	8	-----	48	-----	4,720.00
Pouce Coupe	14	14	44	-----	1	31	50	24	-----	4,430.00
Prince George	3	16	13	-----	-----	23	7	53	-----	4,185.00
Prince Rupert	12	7	3	-----	-----	7	4	7	-----	1,045.00
Quesnel	-----	-----	-----	-----	-----	-----	-----	11	-----	660.00
Revelstoke	2	-----	-----	-----	-----	-----	-----	-----	-----	100.00
Smithers	-----	-----	-----	-----	-----	-----	-----	2	-----	120.00
Vancouver	7	6	3	2	-----	7	3	6	-----	1,110.00
Vanderhoof	-----	3	7	-----	-----	4	-----	36	-----	2,370.00
Williams Lake	5	7	2	-----	8	5	-----	57	-----	4,070.00
Totals	104	136	87	7	346	235	85	1,164	111	$99,105.00
Less refunds	-----	-----	-----	-----	-----	-----	-----	-----	-----	145.00
Total	-----	-----	-----	-----	-----	-----	-----	-----	-----	$98,960.00

PROSECUTIONS (PROVINCIAL GAME DIVISIONS), JANUARY 1ST TO DECEMBER 31ST, 1955

Description of Offence	Divisions (*See* Foot-note) "A"	"B"	"C"	"D"	"E"	Dismissals	Convictions	Total No. of Informations Laid	Fines or Penalties Imposed
Game Animals									
Allowing dog to run deer	----	----	----	----	1	----	1	1	$10.00
Buying or selling game animals illegally	----	----	----	4	----	----	4	4	80.00
Exceeding bag-limit on game animals	----	----	1	----	3	----	4	4	135.00
Hunting or killing game animals with rim-fire shells or metal-cased bullets	----	2	1	1	2	1	5	6	85.00
Hunting, killing, or possession of game animals under 1 year of age	3	1	1	5	----	----	10	10	470.00
Hunting, killing, or possession of game animals or parts thereof during close season	2	12	8	13	3	3	34	38	1,415.00
Hunting, killing, or possession of game animals of female sex	----	6	10	10	4	6	24	30	1,645.00
Hunting big game from power-boat	1	----	----	1	----	1	1	2	10.00
Keeping big-game animals in captivity without a permit	----	----	----	1	----	----	1	1	10.00
Pit-lamping or hunting game animals at night	----	3	----	----	5	5	3	8	1,025.00
Possession of game animals in logging camp, hotel, etc.	----	----	----	2	----	----	2	2	25.00
Possession of untagged moose, elk, goat, or deer	6	11	5	3	1	3	23	26	305.00
Possession of game animals with sex removed	4	----	5	----	----	1	8	9	100.00
Firearms									
Carrying firearms on game reserve	----	----	----	----	6	2	4	6	85.00
Carrying loaded firearms or discharging same from automobile	28	21	41	47	31	----	168	168	2,632.00
Carrying or possession of unplugged shotgun	7	----	----	2	3	----	12	12	145.00
Discharging firearms on or across highway	----	----	3	7	3	2	11	13	160.00
Minors carrying firearms unaccompanied by an adult	4	1	2	1	----	3	5	8	50.00
Non-residents in possession of unsealed firearms	----	----	----	3	----	1	2	3	20.00
Licences									
Non-resident carrying firearms or hunting without a licence	2	7	4	10	7	1	29	30	1,060.00
Non-resident carrying tackle or fishing without a licence	1	24	9	19	10	----	63	63	785.00
Resident carrying firearms or hunting without a licence	17	7	28	26	69	8	140	148	1,652.00
Resident carrying tackle or fishing without a licence	20	4	31	33	98	2	184	186	1,907.00
Fur Trade and Trapping									
Interfering or trapping on another person's trap-line	----	----	4	3	1	----	8	9	650.00
Trading in fur without a licence	----	----	4	----	----	----	4	4	335.00
Trapping or carrying traps without a licence	----	----	----	3	4	1	6	7	75.00
Trapping or possession of fur during closed season	----	----	1	1	----	1	1	2	25.00
Trapping beyond the bounds of his registered trap-line	----	----	1	----	----	----	1	1	25.00
Tanner or trader did fail to keep a record in English language of all fur-bearing animals purchased	----	----	1	2	----	2	1	3	10.00
Upland Game Birds									
Allowing dogs to run during prohibited time	1	----	----	----	----	----	1	1	15.00
Hunting pheasants during prohibited hours	----	----	5	----	----	----	5	5	65.00
Hunting or possession of upland game birds during close season	3	1	3	5	6	----	18	18	810.00
Possession of untagged pheasants	2	----	1	----	----	----	3	3	35.00
Migratory Game and Non-game Birds									
Hunting migratory game birds from power-boat	----	----	1	----	9	2	8	10	120.00
Hunting migratory game birds during the night	7	----	2	----	54	2	61	63	779.00
Hunting migratory game birds with a rifle	----	----	1	----	----	----	1	1	10.00
Hunting migratory game birds during close season	1	----	1	4	23	2	32	34	420.00
Hunting migratory game birds in closed area	----	----	----	----	2	1	1	2	10.00
Possession of migratory game birds with plumage removed	1	----	----	----	----	----	1	1	10.00

PROSECUTIONS (PROVINCIAL GAME DIVISIONS), JANUARY 1ST TO DECEMBER 31ST, 1955—*Continued*

Description of Offence	Divisions (*See* Foot-note) "A"	"B"	"C"	"D"	"E"	Dismissals	Convictions	Total No. of Informations Laid	Fines or Penalties Imposed
Special Fishery Regulations									
Angling for trout during close season	-----	-----	-----	-----	45	7	38	45	$395.00
Allowing sawdust, etc., to pollute stream	-----	-----	-----	5	-----	2	3	5	410.00
Commercial fishing for salmon without required licence	-----	-----	1	-----	-----	-----	1	1	10.00
Exceeding bag or possession limit on trout	-----	3	-----	-----	2	-----	5	5	70.00
Fishing in closed area	-----	6	2	1	29	-----	38	38	394.00
Jigging or molesting fish on spawning-grounds	1	-----	-----	-----	-----	-----	1	1	5.00
Possession or using salmon roe in prohibited area	-----	-----	-----	-----	1	-----	1	1	10.00
Taking or possession of undersized trout	-----	-----	-----	-----	7	-----	7	7	120.00
Taking trout otherwise than by angling	-----	-----	-----	2	-----	-----	2	2	20.00
Using more than one rod or line	1	-----	8	2	1	2	10	12	105.00
Using gear designed to catch more than one fish	-----	1	-----	1	2	-----	4	4	40.00
Miscellaneous									
Allowing another person to use his licence	-----	-----	1	-----	1	-----	2	2	100.00
Giving false information to obtain a licence	1	4	-----	3	3	4	7	11	145.00
Guide failing to make returns	-----	1	-----	-----	-----	-----	1	1	10.00
Guiding without a licence or permit	-----	1	-----	1	-----	-----	2	2	100.00
Guiding on other than his own area	-----	-----	-----	1	-----	-----	1	1	10.00
Non-resident hunting big game without a guide	-----	-----	1	1	-----	1	1	2	50.00
Obstructing Game Warden and giving false information	2	-----	-----	2	8	1	11	12	270.00
Trespassing on private property	-----	-----	-----	-----	16	2	14	16	160.00
Transferring game seals and beaver tags	1	1	-----	-----	-----	-----	2	2	35.00
Using another person's licence	-----	-----	1	-----	1	-----	2	2	55.00
Failing to produce a firearms licence when so requested	1	4	-----	-----	3	1	7	8	80.00
Using another person's game tag	-----	3	-----	-----	-----	-----	3	3	30.00
Molesting game birds	-----	-----	2	-----	-----	-----	2	2	35.00
Did carry on business of tanner or fur-trader without a licence	-----	-----	1	-----	1	-----	2	2	85.00
Did attach an elk tag to an elk he himself did not kill	-----	-----	1	-----	-----	-----	1	1	10.00
Did guide more than two persons at one time	-----	-----	1	-----	-----	-----	1	1	25.00
Did leave traps out after close of season	-----	-----	-----	1	-----	-----	1	1	25.00
Did fail to report fur-bearers killed under section 5 of "Game Act"	-----	-----	-----	1	-----	-----	1	1	10.00
Unlawfully did carry a pistol without a permit	-----	-----	-----	1	-----	-----	1	1	10.00
Did export big game without a permit	-----	-----	-----	-----	1	-----	1	1	150.00
Did operate an aircraft for purpose of hunting without a permit	-----	-----	-----	-----	1	-----	1	1	300.00
Totals	117	124	192	229	467	71	1,065	1,136	$20,479.00

Gaol Sentences

Killing moose under 1 year of age—1, thirty days.
Trapping when not in possession of a licence so to do—1, ten days.
Killing moose of female sex during close season—2, total of sixty days.
Killing moose under 1 year of age during close season—1, thirty days.
Possession of game animal with sex removed—1, ten days.
Possession of untagged deer—1, ten days.
Hunting when not in possession of a licence—1, ten days.

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.

HUNTING AND FISHING ACCIDENTS, 1955

Date	Name of Wounded Person	Name of Person Responsible for Accident	District	Cause of Accident	Nature of Injuries	Result of Injuries
Jan. 29	Donald Aldis	Jack Henderson	Chase River	Accidental discharge of rifle when hunter turned to observe a deer	Bullet entered back, by-passed lung, and lodged in right side of lower chest	Serious.
Mar. 6	Stuart Harrell	Stuart C. McAlpine	Powell River	Accidental discharge of rifle	Wounded in hand and lost two fingers	Serious.
Aug. 11	Whitney Moutray	Robert Bell	Pritchard	Accidental discharge of shotgun	Pellets entered legs above the knees	Not serious.
Sept. 18	Herbert McConnell	Self	Terrace	Boat overturned when it hit a sunken snag when party were hunting bear	Hunter swept away by swift water	Drowned.
,, 18	George Studer	Self	Terrace	Boat overturned when it hit a sunken snag when party were hunting bear	Hunter swept away by swift water	Drowned.
,, 18	John Ferretti	Self	Terrace	Boat overturned when it hit a sunken snag when party were hunting bear	Saved	Not serious.
,, 20	Frederick W. Stuart	George Ward	Rock Creek	In line of fire while shooting deer	Wounded in left and right sides	Died.
Oct. 1	Harry S. Smith	Self	Texada Island	Accidental discharge of rifle	Wounded in abdomen and chest	Serious.
,, 3	Mrs. A. Danley	E. S. Anderson	Armstrong	Accidental discharge of loaded rifle in a car	Bullet injured spine and lodged in left lung	Serious.
,, 10	A. A. Christenson	George Driediger	Langley	In line of fire while shooting deer	Wounded in left shoulder	Serious.
,, 29	John H. Dawson	Self	Vanderhoof	Accidental discharge of rifle	Bullet entered temple	Died.
Nov. 11	David R. Ferguson	Self	Victoria	Accidental discharge of gun	Wounded in right and left arms	Serious.
,, 13	Albert Scott	Edwin Morris	Nanoose	Accidental discharge of shotgun when hunter tripped and fell	Pellets entered leg	Serious.
,, 29	S. D. Buzzelle	Self	70 Mile House	Accidental discharge of rifle	Bullet in face	Not serious.
Dec. 4	Fred Morrison	Earl Morrison	Lumby	Accidental discharge of rifle	Bullet entered left shoulder	Serious.
,, 11	Paul M. Loring	Stewart Laitinen	Prince George	Mistaken for moose	Bullet entered right chest	Died.

Fisheries Management Division

Summary of Trout Plantings, 1955

Hatchery or Station (Particulars of Plantings or Liberations)	Kind of Fish or Eggs												
	Cut-throat				Eastern Brook		Kamloops				Kokanee	Hatcheries	
	Eggs	Fry	Finger-lings	Year-lings	Fry	Finger-lings	Eggs	Fry	Finger-lings	Year-lings	Eggs	Eggs	Finger-lings
Vancouver Island													
Puntledge Park Hatchery													
Dougans Lake	----	----	2,790	----	----	----	----	----	----	----	----	----	----
Durrance Lake	----	----	----	----	----	----	----	----	4,550	----	----	----	----
Elk Lake	----	----	----	----	----	----	----	----	30,100	----	----	----	----
Florence Lake	----	----	----	----	----	----	----	----	7,000	----	----	----	----
Glen Lake	----	----	----	----	----	----	----	----	7,000	----	----	----	----
Kemp Lake	----	----	----	----	----	----	----	----	14,000	----	----	----	----
Langford Lake	----	----	----	----	----	----	----	----	14,000	----	----	----	----
Long Lake (Cedar District)	----	----	3,100	----	----	----	----	----	----	----	----	----	----
Long Lake (Wellington District)	----	----	3,565	----	----	----	----	----	----	----	----	----	----
Michael Lake	----	----	3,100	----	----	----	----	----	----	----	----	----	----
Prospect Lake	----	----	----	----	----	----	----	----	15,400	----	----	----	----
Quamichan Lake	----	----	4,650	----	----	----	----	----	----	----	----	----	----
Somenos Lake	----	----	----	----	----	----	----	----	14,000	----	----	----	----
Thetis Lake	----	----	----	----	----	----	----	----	35,000	----	----	----	----
Wolf Lake	----	----	----	----	----	----	----	----	10,500	----	----	----	----
Totals	----	----	17,205	----	----	----	----	----	151,550	----	----	----	----
Lower Mainland													
Smiths Falls Hatchery													
Como Lake	----	----	----	2,000	----	----	----	----	----	----	----	----	----
Cultus Lake	----	----	----	1,200	----	----	----	----	----	----	----	----	----
Deer Lake (Ioco)	----	----	----	4,000	----	----	----	----	----	----	----	----	----
Goldie Lake	----	----	----	----	----	----	----	----	2,700	----	----	----	----
Hicks Lake	----	----	----	2,000	----	----	----	----	----	----	----	----	----
Hope Slough	----	----	----	4,000	----	----	----	----	----	----	----	----	----
Kawkawa Lake	----	----	----	6,000	----	----	----	----	----	----	----	----	----
Lake of the Woods	----	----	----	5,000	----	----	----	----	----	----	----	----	----
Loch Erroch	----	----	----	3,000	----	----	----	----	----	----	----	----	----
Mill Lake	----	----	----	----	----	----	----	----	6,000	----	----	----	----
Morris Lake	----	----	----	3,000	----	----	----	----	----	----	----	----	----
Upper Shuswap River	----	----	----	4,000	----	----	----	----	----	----	----	----	----
Puntledge Park Hatchery	----	----	----	----	----	----	----	----	----	----	----	----	110,000[1]
Totals	----	----	----	34,200	----	----	----	----	8,700	----	----	----	110,000[1]

OKANAGAN DISTRICT													
Beaver Lake Hatchery													
Ahrens Lake								5,000					
Aileen Lake								5,000					
Bear Creek (Okanagan Lake)							75,000						
Beaver Lake								65,000					
Brunette Lake								5,000					
Canyon Creek (Okanagan Lake)							50,000						
Doreen Lake								9,000					
Echo Lake (Lumby)								15,000					
Echo Lake (near Beaver Lake)								5,000					
Esperon Lake								15,000					
Evelyn Lake								5,000					
Flyfish Lake								5,000					
Glenmore Reservoir								10,000					
Heron Lake								4,500					
Hidden Lake (Enderby)								29,000					
Hidden Lake (Dee Lake chain)								5,000					
June Lake								5,000					
Loon Lake								5,000					
Lost Lake								5,000					
McCulloch Lake								13,000					
Meadow Lake								4,500					
Okanagan Lake								38,700					
Pat Lake								6,000					
Rod Lake								5,000					
Shorts Creek							80,000						
Spence Lake								5,000					
Sugar Lake							100,000						
Whiteman Creek							20,000						
Wilma Lake								3,500					
Government of Canada (Yukon Territory)							10,000						
Greek Ministry of Industry (private sale)							200,000						
Loon Lake Hatchery												550,000[2]	
Puntledge Park Hatchery												150,000[2]	
Summerland Hatchery												1,143,000[2]	
Totals							535,000	237,200				1,843,000[2]	
Lloyds Creek Hatchery													
Aylmer Lake								15,000					
Beaver Lake (Revelstoke district)								3,000					
Begbie Lake (Revelstoke district)								3,000					
Butterball Lake (Revelstoke district)								3,000					
Chuwhels Lake								5,000					
Duffy Lake								5,000					
East Barriere Lake							33,000						

[1] Cut-throat trout. [2] Kamloops trout.

FISHERIES MANAGEMENT DIVISION—*Continued*

Summary of Trout Plantings, 1955—Continued

HATCHERY OR STATION (Particulars of Plantings or Liberations)	KIND OF FISH OR EGGS												
	Cut-throat				Eastern Brook		Kamloops				Kokanee	Hatcheries	
	Eggs	Fry	Finger-lings	Year-lings	Fry	Finger-lings	Eggs	Fry	Finger-lings	Year-lings	Eggs	Eggs	Finger-lings
OKANAGAN DISTRICT—*Continued*													
Lloyds Creek Hatchery—Continued													
Friendly Lake	----	----	----	----	----	----	----	11,500	----	----	----	----	----
Harper Lake	----	----	----	----	----	----	----	24,000	----	----	----	----	----
Jacko Lake	----	----	----	----	----	----	----	55,000	----	----	----	----	----
Little Knouff Lake	----	----	----	----	----	----	----	5,000	----	----	----	----	----
Lodgepole Lake	----	----	----	----	----	----	----	5,000	----	----	----	----	----
Lynn Lake (Little Fort area)	----	----	----	----	----	----	----	8,000	----	----	----	----	----
Mount Begbie Lake (Revelstoke District)	----	----	----	----	----	----	----	3,000	----	----	----	----	----
Noble Lake	----	----	----	----	----	----	----	6,000	----	----	----	----	----
Norman Lake	----	----	----	----	----	----	----	8,000	----	----	----	----	----
Pass Lake	----	----	----	----	----	----	----	6,000	----	----	----	----	----
Placid Lake (Wells Gray Park)	----	----	----	----	----	----	----	7,000	----	----	----	----	----
Spa Lake	----	----	----	----	----	----	----	3,000	----	----	----	----	----
Spillimacheen Lake	----	----	----	----	----	----	----	10,000	----	----	----	----	----
Square Lake	----	----	----	----	----	----	----	14,000	----	----	----	----	----
Stake Lake	----	----	----	----	----	----	----	60,000	----	----	----	----	----
Stump Lake	----	----	----	----	----	----	----	10,000	----	----	----	----	----
Tunkwa Lake	----	----	----	----	----	----	----	46,500	----	----	----	----	----
Woods Lake (Westwold)	----	----	----	----	----	----	----	5,000	----	----	----	----	----
X Lake (Little Fort district)	----	----	----	----	----	----	----	15,000	----	----	----	----	----
Bulkley Valley Rod and Gun Club	----	----	----	----	----	----	----	65,000	----	----	----	----	----
Prince George Rod and Gun Club	----	----	----	----	----	----	150,000	----	----	----	----	----	----
Smithers Rod and Gun Club	----	----	----	----	----	----	60,000	----	----	----	----	----	----
Vanderhoof Rod and Gun Club	----	----	----	----	----	----	90,000	----	----	----	----	----	----
Totals	----	----	----	----	----	----	333,000	401,000	----	----	----	----	----
Penask Lake Hatchery													
Cowan Lake	----	----	----	----	----	----	----	5,000	----	----	----	----	----
Crater Lake	----	----	----	----	----	----	----	10,000	----	----	----	----	----
Deadman Lake	----	----	----	----	----	----	----	10,000	----	----	----	----	----
Dot Lake	----	----	----	----	----	----	15,000	----	----	----	----	----	----
Green Lake	----	----	----	----	----	----	----	25,000	----	----	----	----	----
Harvey Hall Lake	----	----	----	----	----	----	----	15,000	----	----	----	----	----
Hornet Lake	----	----	----	----	----	----	----	8,000	----	----	----	----	----

Loosemore Lake								7,000					
Nicola Lake							150,000						
Rey Lake								10,000					
Government of Canada (Jasper)							200,000						
Government of Canada (Waterton)							50,000						
Nevada Fish and Game Commission							250,000						
Oregon State Game Commission							400,000						
Washington State Game Commission							100,000						
Cranbrook Hatchery												575,000[2]	
Lloyds Creek Hatchery												775,000[2]	
Nelson Hatchery												300,000[2]	
Totals							1,165,000	90,000				1,650,000[2]	
Summerland Hatchery													
Agur Lake								5,000					
Alleyne Lake										13,000			
Brown (Island) Lake										2,500			
Chain Lake								15,000					
Coquihalla Lake									10,000				
Corbett Lake										4,000			
Crater Lake								5,000					
Dutch Lake										5,000			
Eneas Lake								5,000					
Eastmere Lake								5,000					
Fish (Dark) Lake										5,000			
Gallagher Lake										2,000			
Gardom Lake										8,000			
Glen Lake								10,000					
Goose Lake									5,000				
Illecillewaet River										4,500			
Jewel Lake										10,000			
Joe's Lake								5,000					
Kalamalka Lake										20,000			
Kentucky Lake										10,000			
Kilpoola Lake								15,000					
McDonald Lake								5,000					
Mill Lake (Abbotsford)										1,000			
Missezula Lake										12,000			
Monte Lake										15,000			
Munro Lake								5,000					
Murray Lake									5,000				
Nickel Plate Lake								10,000					
Okanagan Lake										70,000			
Osoyoos Lake										20,000			
Osprey Lake								12,500					
Paul Lake										10,000			
Pinantan Lake										8,000			
Pinaus Lake										10,000			
Pollocks Lake								25,000					

[2] Kamloops trout.

FISHERIES MANAGEMENT DIVISION—*Continued*

Summary of Trout Plantings, 1955—Continued

HATCHERY OR STATION (Particulars of Plantings or Liberations)	KIND OF FISH OR EGGS												
	Cut-throat				Eastern Brook		Kamloops				Kokanee	Hatcheries	
	Eggs	Fry	Finger-lings	Year-lings	Fry	Finger-lings	Eggs	Fry	Finger-lings	Year-lings	Eggs	Eggs	Finger-lings
OKANAGAN DISTRICT—*Continued*													
Summerland Hatchery—Continued													
Puntledge River										7,000			
Richter Lake								15,000					
Sawmill Lake								10,000					
Silver Lake								7,000					
Skaha Lake										30,000			
Smelter Lake								20,000					
Stringer Lake									5,000				
Sunday Lake								5,500					
Twin Lake (Penticton)										7,000			
Westmere Lake								5,000					
Wilgress Lake										3,000			
Woods Lake										20,000			
Xenia Lake								5,000					
H. Corbitt (private sale)										200			
L. J. Le Lievre (private sale)										2,000			
Children's pond (Vernon)										611			
Totals								190,000	25,000	299,811			
KOOTENAY DISTRICT													
Nelson Hatchery													
Boundary Lake						28,000							
Baynes Lake						19,000							
Carpenter Creek (Slocan Lake)											100,000		
Loon Lake						10,000							
Matthew Lake (Midway)					1,250								
Rosebud Lake										5,600			
Slocan Pool										5,500			
Tie Lake						55,400							
Wilson Creek (Slocan Lake)											354,500		
Totals					1,250	112,700				11,100	454,500		

Cranbrook Hatchery													
Bartholomews Lake		11,500											
Ben Teed Lake		9,000											
Bott Lake		9,000											
Bush Lake									9,300				
Cartwright Lake									24,750				
Cedar Lake									10,000				
Deer Lake									13,850				
Dianna Lake		4,500											
Dunbar Lake		30,000											
Echo Lake									5,400				
Edwards Lake									12,650				
Eileen Lake								20,000					
Enid Lake								20,000					
Gartside Lake		4,500											
Grave Lake									20,000				
Gray Creek		5,800											
Hall Lakes		9,000											
Island Pond									15,000				
Jeffery Lakes		6,300											
Lake Lillian								51,800					
Lead Queen Lake		10,000											
Long Lake									7,800				
McBains Lake									18,000				
Manistee Lake								35,800					
Mirror Lake									8,500				
Monroe Lake		74,800											
Mud Lake		9,000											
North Star Lake									12,300				
One Isle Lake		9,000											
Peckhams Lake								30,000					
Pickering Lake									1,500				
Premier Lake									52,300				
Quartz Lake									4,500				
Seven Mile Lake		17,000											
Silver Springs Lake									9,000				
Smith Lake								18,400					
St. Joseph's Creek		15,700											
Surveyor's Lake									8,100				
Tamarac Lake									4,500				
Twin Lakes		9,000											
Wapiti Lake								13,500					
F. Fox (private sale)								5,000					
Ben Able rearing-ponds (Invermere)								50,000					
Trites-Wood ponds (Fernie)		20,000											
Department of Lands and Forests (Calgary, Alta.)	101,500												
Government of Canada (Waterton)	50,500												
Totals	152,000	254,100						244,500	237,450				

FISHERIES MANAGEMENT DIVISION—*Continued*

Summary of Trout Plantings, 1955—Continued

HATCHERY OR STATION (Particulars of Plantings or Liberations)	KIND OF FISH OR EGGS												
	Cut-throat				Eastern Brook		Kamloops				Kokanee	Hatcheries	
	Eggs	Fry	Finger-lings	Year-lings	Fry	Finger-lings	Eggs	Fry	Finger-lings	Year-lings	Eggs	Eggs	Finger-lings
CARIBOO DISTRICT													
Loon Creek Hatchery													
Baker Lake									5,000				
Beaverdam Lake								23,000					
Bridge Lake									53,000				
Canim Lake									91,000				
Chimney Lake								13,000					
Crown Lake								9,000					
Crystal Lake									8,000				
Deka Lake									21,500				
Egan Lake									8,000				
Fawn Lake								35,000					
George Lake								8,000					
Horse Lake									41,500				
Jack of Clubs Lake									10,000				
Kelly Lake								9,000					
Lac la Hache									20,000				
McLeese Lake									6,500				
Machete Lake							30,000						
Mowitch Lake									6,500				
Pavilion Lake									25,000				
Sharpes Lake									4,000				
Sheridan Lake									52,000				
Spout Lake									8,500				
Sulphurous Lake									8,000				
Turquoise Lake								5,500					
Vidette Lake									5,000				
Watch Lake								66,000					
Youngs Lake								9,000					
Summerland Hatchery												20,000[2]	
Totals							30,000	177,500	373,500			20,000[2]	

[2] Kamloops trout.

FISHERIES MANAGEMENT DIVISION—*Continued*

Summary of Plantings of Other Species, 1955

HATCHERY OR STATION (Particulars of Plantings or Liberations)	KIND OF FISH OR EGGS				
	Arctic Grayling	Cohoe	Steelhead		Hatcheries
	Fry	Yearlings	Fingerlings	Yearlings	Fingerlings
VANCOUVER ISLAND					
Puntledge Park Hatchery					
Browns River	----------	----------	----------	2,000	----------
Englishman River	----------	----------	----------	5,000	----------
French Creek	----------	----------	----------	2,500	----------
Oyster River	----------	----------	----------	5,000	----------
Puntledge River	----------	----------	----------	5,065	----------
Sooke River	----------	----------	----------	3,600	----------
Tsable River	----------	----------	----------	5,000	----------
Tsolum River	----------	----------	----------	5,000	----------
Totals	----------	----------	----------	33,165	----------
LOWER MAINLAND					
Smiths Falls Hatchery					
Capilano River	----------	11,000	----------	22,316	----------
Nicomekl River	----------	----------	----------	7,000	----------
North Alouette River	----------	----------	----------	7,500	----------
Serpentine River	----------	----------	----------	7,000	----------
South Alouette River	----------	----------	----------	7,200	----------
Sweltzer Creek	----------	2,000	----------	20,000	----------
Totals	----------	13,000	----------	71,016	----------
OKANAGAN DISTRICT					
Summerland Hatchery					
Puntledge Park Hatchery	----------	----------	----------	----------	67,350[2]
Smiths Falls Hatchery	----------	----------	----------	----------	81,600[2]
Totals	----------	----------	----------	----------	148,950[2]
KOOTENAY DISTRICT					
Cranbrook Hatchery					
Erie Lake (Salmo)	100,000	----------	----------	----------	----------
Totals	100,000	----------	----------	----------	----------

[2] Kamloops trout.

Returns from 2,275 Holders of Special Firearms Licences Showing Big Game, Fur-bearing Animals, and Predatory Animals Killed, Season 1955–56

Big Game

Bear	433	Mountain-goat	30
Caribou	21	Mountain-sheep	6
Deer	524	Wapiti (elk)	40
Moose	401		

Fur-bearing Animals

Beaver	8,070	Otter	456
Fisher	443	Racoon	479
Fox	308	Skunk	119
Lynx	1,918	Squirrels	125,571
Marten	4,410	Weasels	12,270
Mink	12,245	Wildcat	133
Muskrats	31,108	Wolverine	128

Predatory Animals

Cougar	93	Wolves	136
Coyotes	1,226		

Summary of Liberation of Game Birds, 1955

Area	Pheasants	Chukar Partridges
Vancouver Island—		
Alberni	-----	-----
Courtenay	308	-----
Cowichan	-----	-----
Duncan	204	-----
Galiano Island	-----	-----
Ladysmith	-----	-----
Nanaimo-Parksville	204	-----
Victoria (North and South Saanich)	-----	-----
Saltspring Island	-----	-----
Totals	716	-----

SUMMARY OF LIBERATION OF GAME BIRDS, 1955—*Continued*

Area	Pheasants	Chukar Partridges
Lower Mainland—		
Abbotsford	85	-----
Agassiz	350	-----
Bradner	100	-----
Burnaby	------	-----
Chilliwack	763	-----
Delta	1,212	-----
Dewdney	------	-----
Essondale	------	-----
Harrison Bay	------	-----
Hatzic	344	-----
Lulu Island	1,118	-----
Langley	60	-----
Matsqui	460	-----
Mission	------	-----
Nicomen Island	330	-----
Pitt Meadows	910	-----
Port Coquitlam	------	-----
Sumas Prairie	625	-----
Surrey	548	-----
Squamish	------	-----
Vancouver	------	-----
Totals	6,905	-----
Interior—		
Armstrong	------	-----
Cache Creek	------	-----
Chase	25	-----
Creston	410	-----
Dawson Creek	------	-----
Grand Forks	262	-----
Kamloops	165	-----
Kelowna	------	67
Keremeos	240	125
Merritt	200	-----
Pritchard	------	128
Peace River	25	-----
Vernon	------	64
Westwold	50	-----
White Lake	------	125
Totals	1,377	509

NOTE.—Total cost covering purchase of all game birds listed was $9,507.

Statement of Game-bird Farmers, 1955

Number and Kind of Birds on Hand as at January 1st, 1955

Pheasants	7,689	Ducks	8
Quail	40	Partridge	698

Number and Kind of Birds Raised, 1955

Pheasants	15,935	Partridge	601
Quail	63		

Number and Kind of Birds Purchased, 1955

Pheasants	1,517	Ducks	2
Quail	18	Partridge	14

Number and Kind of Birds Sold, 1955

Pheasants	14,194	Partridge	1,000
Quail	34		

Number and Kind of Birds Killed, 1955

Pheasants	4,203	Ducks	8
Quail	27	Partridge	46

Number and Kind of Birds on Hand as at December 31st, 1955

Pheasants	6,738	Ducks	16
Quail	52	Partridge	267

Note.—During the year there were 144 licensed game-bird farmers in the Province, but during the year 1955 thirty-two of these farmers discontinued business. Game-bird bands sold to licensed game-bird farmers during the year 1955 amounted to $475.80 (4,758 bands at 10 cents each).

Miscellaneous Revenue, 1955

Sale of Lists to Various Licence-holders, etc.

11 Game Convention minutes at 75 cents per copy	$8.25
4,758 game-bird bands at 10 cents each	475.80
191 trap-line transfer fees ($2.50 each)	477.50
Proceeds, sale of live fur-bearing animals	35.00
Proceeds, permits to export game meat	109.00
Proceeds, fee for tagging deer and moose hides	177.75
Proceeds, sale of three fur-traders' lists	4.50
Proceeds, sale of one game-bird farmer list	1.50
Proceeds, sale of trout eggs	693.02

LIST OF GUIDES AND NON-RESIDENT OUTFITTERS

Definition of Guide Licence Classifications

A First-class Guide shall be one who has acted as a guide in the Province for a period of at least three years in the ten years immediately preceding his application for a guide's licence and who has suitable equipment for outfitting any person desiring to hunt game.

A Second-class Guide shall be one who has acted as a guide in the Province for a period of at least three years in the ten years immediately preceding his application for a guide's licence but who cannot qualify as a First-class Guide.

An Assistant Guide shall be one who cannot qualify as either a First-class or Second-class Guide, and shall be entitled to act as a guide in the hunting of game birds or in angling for trout, and after securing a permit so to do from the Game Commission, when employed by or under the supervision of a First- or Second-class Guide, to guide big-game hunters.

Block A—Vancouver Island and Mainland Coast North to North End of Vancouver Island

	Class of Licence
Flesher, Eric Reed, Phillips Arm	2nd
Hancock, Arthur, Lake Cowichan	1st
Kirkman, Jack, Harrison Hot Springs	2nd
Marshall, Don, Campbell River	2nd
Parkin, Alvin, Campbell River	2nd
Patrick, Walter, Westview	2nd
Robertson, George R., 2329 Blanshard St., Victoria	2nd
Ryan, J., Campbell River	2nd
Stanton, James R., P.O. Box 3400, Vancouver	1st
Vanstone, Edward R., Campbell River	2nd
Williamson, David, Oyster Bay	2nd

Block B—Mainland Coast (Stewart South, Including Bella Coola)

	Class of Licence
Brynildsen, G. A., Bella Coola	1st
Bugnella, Angelo, Stewart	2nd
Edwards, Ralph A., Bella Coola	2nd
Fraser, J. G., Sandspit	2nd
Mack, Clayton, Bella Coola	1st
Nygaard, Martin, Bella Coola	1st
Nygaard, Wilfred T., Bella Coola	2nd
Saugstad, Stener O., Bella Coola	2nd
Siwallace, Andrew S., Bella Coola	2nd

Block C—Cassiar District (Atlin-Telegraph Creek District)

	Class of Licence
Asp, Phillip, Atlin	2nd
Ball, Robert E. A., Telegraph Creek	1st
Campbell, Richard S., Telegraph Creek	2nd
Carlick, John E., Telegraph Creek	2nd
Carlick, Tom Dunstan, Telegraph Creek	2nd
Carlick, Walter, Telegraph Creek	2nd
Dalziel, George C. F., Dease Lake	1st
Davidson, John Ogilvie, Lower Post	1st
Day, Alfred George, Telegraph Creek	2nd
Delmonico, Henry A., 1475 Trimble St., Vancouver	2nd
Dennis, Alec, Telegraph Creek	2nd
Dennis, John Creyke, Telegraph Creek	1st
Dennis, Thomas, Telegraph Creek	2nd
Edzerza, George, Atlin	1st
Frank, Benny, Telegraph Creek	2nd
Gaugh, Allen H., Box 233, Prince George	1st
Gleason, Henry, Telegraph Creek	1st
Groat, Allen Henry, Lower Post	1st
Hall, Cyril A., Prince George	2nd
Jack, Henry Taku, Atlin	2nd
Jackson, Dick, Telegraph Creek	2nd
Johnston, Freddie, Mile 747 Alaska Highway, Teslin, Y.T.	2nd
Longhurst, William James, Lower Post	1st
Nelson, William, Atlin	2nd
Nole, Loveman, Telegraph Creek	2nd
Nyman, Robert, Atlin	2nd
Simpson, Walter S., Telegraph Creek	2nd
Tashoots, Frank Pete, Telegraph Creek	2nd
Williams, Mike, Telegraph Creek	2nd

Block D—Peace River District and Lower Post District

	Class of Licence
Beattie, Robert, Gold Bar	2nd
Behn, George, Fort Nelson	2nd
Belcourt, Dolphus, Kelly Lake	1st
Brown, Wesley J., Mile 175, Alaska Highway	1st
Calliou, John, Kelly Lake	1st
Callison, Dennis W., Fort Nelson	1st
Callison, Elisha O., Fort Nelson	1st
Cameron, Pat, Moberly Lake	1st
Cameron, Ralph, Moberly Lake	2nd
Dahl, Joel O., Mile 300, Fort Nelson	1st
Dhenin, Rene G., Fort St. John	1st
Durney, Lavirl, Groundbirch	2nd
Durney, Milo, East Pine	1st
Elden, Otto, Little Prairie	1st
Golata, Frank, Dawson Creek	1st
Larson, Albin O., Fort Nelson	1st
Letendre, James, Kelly Lake	2nd
McDonald, Charlie, Mile 442, Fort Nelson	2nd
McGarvey, George, Farrell Creek	2nd
McGarvey, Morris M., Taylor	1st
McGuire, Colum, Rolla	2nd
McLean, William, Little Prairie	1st
Mould, Thomas J., Mile 496, Alaska Highway, Lower Liard	1st
Paquette, Morris, Moberly Lake	1st
Peck, Donald, Trutch	1st
Peck, O. Keith, Hudson Hope	2nd
Peterson, Adolf Fred, Muncho Lake, Mile 462, Alaska Highway	1st
Powell, Gary, Hudson Hope	1st
Powell, Jack, Fort St. John	2nd
Ross, James A., Pink Mountain	1st
Ross, Lynn, Pink Mountain	2nd
Rutledge, Leo, Hudson Hope	1st
Southwick, Tullie O., Fort Nelson	2nd
Watson, James Henry, Fort St. John	2nd
Young, Andrew, Dawson Creek	2nd

Block E—Prince George District (Prince George East to Jasper, Alta.)

	Class of Licence
Bergenhammer, Joe, Fort McLeod	2nd
Bricker, William, South Fort George	1st
Brooks, George, South Fort George	1st
Cannon, Walter L., 893 Burden St., Prince George	2nd
Copperthwaite, Harry B., McLeod Lake	2nd
Corless (Jr.), Richard F., 2358 McBride Crescent, Prince George	1st
Hansen (Sr.), Anund, Hansard	1st
Hansen (Jr.), Anund, Hansard	2nd
Hargreaves, Roy F., Mount Robson	1st
Henry, Malcolm G., 730 Third Ave., Prince George	1st
Henry, Walter J., Prince George Hotel, Prince George	1st
Hooker, Kenneth, Dome Creek	2nd
Jensen, Arne, Dome Creek	2nd
Monroe, Everett A., McBride	2nd
Simmons, Herbert, Box 128, Prince George	1st
Van Somer, Art, Summit Lake	2nd
Zlot, Martha, Summit Lake	2nd
Zlotucha, Antoni, Prince George	2nd

Block F—Prince George District (Prince George West to Terrace)

	Class of Licence
Anderson, Duncan MacC., Babine	2nd
Blackwell, Allan E., Wistaria	2nd
Buchanan, Curtis A., Vanderhoof	2nd
Campbell, Theodore Blair, Hazelton	2nd
Cooke, Ted, Vanderhoof	1st
Cowan (Jr.), Hugh S., Clemretta	2nd
Craker, Ronald J., Box 83, Houston	2nd
Davidson, Charles B., Vanderhoof	1st
Easter, Calvin, Fort St. James	1st
Fisher, Edward, General Delivery, Vanderhoof	2nd
Gale, Herwyne Peter, Babine Lake, via Topley	2nd
Gilliland, Donald W., Germansen Landing	1st
Grainger, Barry H., Noralee	2nd
Grasser, Wm. Harold, Tatalrose	2nd
Hall, Gordon A., Southbank	2nd
Harrison, Alford J., Burns Lake	2nd
Haugen, Karl, Manson Creek	2nd
Henson, Frank E., Marilla	1st
Hobson, Richard, Vanderhoof	2nd
Hoff, Wm. M., Box 305, Prince George	2nd
Johnson, George M., Vanderhoof	2nd
Johnson, John H., 1735 Ingledew St., Prince George	2nd
Knox, John, Ootsa Lake	1st
Kohse, Louis, Vanderhoof	1st
Lee, John Thomas, Hazelton	1st
Leon, Paddy, Topley	2nd
Loback, Wes L., Marilla	1st
Loper, Howard A., Vanderhoof	2nd
Lord, Roy E., Burns Lake	2nd
Loss, Helmar Fredrick, Topley	2nd
McKenzie, George, Box 8, Fort Fraser	2nd
McNeill, Cliff, Ootsa Lake	1st
McNeill, John Wm., Ootsa Lake	1st
Meier, John, Vanderhoof	2nd
Menard, Gerry, Nithi River	2nd
Mesich, Emil, P.O. Box 545, Smithers	2nd
Moran, Thomas E., Vanderhoof	2nd
Munger, Francis W. R., Noralee	2nd
Nelson, George Wm., Vanderhoof	1st
Nelson, John N., Clemretta	1st
Pease, Clarence A., Nithi River	1st
Plowman, Clarence, Nithi River	2nd
Plowman, Enid A., Endako	2nd
Prince, Alex., Fort St. James	2nd
Prince, Dixon, Fort St. James	2nd
Prince, John, Fort St. James	1st
Prince, Norman, Fort St. James	2nd
Prince, Teddy, Fort St. James	2nd
Reid, William, Box 673, Prince George	2nd
Rowland, E. F., Decker Lake	2nd
Smith, Harold Craig, Fort St. James	1st
Smith, Richard H., Fort St. James	1st
Van Tine, Doug, Ootsa Lake	2nd
Van Tine, James, Ootsa Lake	1st
Van Zanten, James, Francois Lake	2nd
Watson, Paul Eugene, Telkwa	2nd
Westgard, Edward Victor, Box 102, Houston	2nd
Wheeler, William A., Burns Lake	2nd
Winsor, William J., Prince George	2nd

Block G—Cariboo District (100 Mile House South, Including Ashcroft)

	Class of Licence
Abbs, R., Fawn P.O.	2nd
Baker, James A., Clinton	2nd
Bara, Peter, Ashcroft	2nd
Black, Jack P., Bridge Lake	1st
Boule, James, Savona	1st
Burdett, George, Savona	1st
Burdett, Loretta, Savona	2nd
Chabara, Anna, 70 Mile House	2nd
Choate, Ted, Clinton	2nd
Christy, Frank, Lillooet	1st
Christy, Thomas G., Lillooet	1st
Cleveland, J. G., Bridge Lake	1st
Cleveland, R. C., Bridge Lake	1st
Cleveland, Weston L., Bridge Lake	1st
Coldwell, H. W., Jesmond	1st
Comeau, W. R., Savona	1st
Cooper, Norman, Savona	2nd
Cunningham, C. B., Bralorne	1st
Dougherty, C., Clinton	1st
Dougherty, E. G., Clinton	1st
Dyer, G. H., 70 Mile House	2nd
Eden, Donald D., 70 Mile House	2nd
Ellis, Douglas K., Kamloops	1st
Faessler, C. J., R.R. 1, Fawn	1st
Fenton, Charlie, Clinton	1st
Fenton, Walter, Big Bar Creek	1st
Flaherty, R. J., Fawn P.O.	2nd
Forde, H. D. W., Clinton	2nd
Fowler, Norman, Clinton	2nd
Gaines, Clinton, Fawn P.O.	2nd
Gammie, H. G., 70 Mile House	1st
Graf, Mike, R.R. 1, Fawn	1st

Block G—Cariboo District (100 Mile House South, Including Ashcroft)—*Continued*

	Class of Licence
Grandberg, Norman, Fawn P.O.	2nd
Grice, Percy, 70 Mile House	2nd
Grinder, Albert W. (Bert), Clinton	2nd
Grinder, Isidore, Clinton	2nd
Grinder, Louisa, Big Bar Creek	2nd
Grinder, Louise, Clinton	2nd
Grinder, Walter, Big Bar Creek	1st
Hansen, John F., Bridge Lake	1st
Hansen, R. L., Bridge Lake	1st
Hansen, Wesley B., Bridge Lake	2nd
Higginbottom, Alfred, Jesmond	1st
Higgins, Cecil, Fawn P.O.	1st
Higgins, Marion, Bridge Lake	1st
Hodges, E. W., R.R. 1, Fawn	1st
Horn, Walter A., 70 Mile House	2nd
Huckvale, A. J., R.R. 1, Fawn	1st
Hunter, M. T., Ashcroft	2nd
Johnson, Oren M., Bridge Lake	2nd
Johnson, Zale A., Clinton P.O.	1st
Kent, A. G., Lytton	2nd
Kent, W. R., Lytton	2nd
King, C. J., R.R. 1, Fawn	2nd
King, Gordon B., R.R. 1, Fawn	2nd
Koster, Frances, Empire Valley	2nd
Koster, Henry, Empire Valley	2nd
Krebs, L. B., Lac la Hache	2nd
Land, Robert, Ashcroft	1st
Larson, Jack O., Bridge Lake	1st
Larson, K. J., R.R. 1, Fawn	1st
Leavitt, F. W., Fawn P.O.	2nd
Levick, J. S., R.R. 1, Fawn	1st
Long, C., Fawn P.O.	2nd
Loring, Edwin, Clinton	2nd
McFaul, S. F., 70 Mile House	2nd
McMahon, J. C., 70 Mile House	1st
McNeil, B. S., Fawn P.O.	1st
Matier, Muriel, Ashcroft	2nd
Minnabarriet, Percy, Cache Creek	2nd
Mooring, Alex., Fawn P.O.	1st
Murray, George E., Savona	1st
O'Keefe, W., Bridge River	1st
Osterlund, Ed, Moha	2nd
Park, Arlie H., 70 Mile House	2nd
Park, Jack P., 70 Mile House	1st
Parkes, L. G., 70 Mile House	2nd
Petersen, Ross, Savona	2nd
Pierro, John, Cache Creek	2nd
Pigeon, Clarence, Clinton	2nd
Pigeon, J. R., Clinton	1st
Pigeon, Norman, Clinton	2nd
Pollard, J. H., Clinton	1st
Powell, Henry J., Fawn P.O.	1st
Powell, T. G., Fawn P.O.	1st
Reynolds, A. J., Big Bar Creek	1st
Reynolds, H. D., Big Bar Creek	1st
Rideout, Robert L., Ashcroft	2nd
Rosette, Augustine, Gang Ranch	1st
Sarver, Lyle, Cache Creek	2nd
Scheepbower, J. A., 70 Mile House	2nd
Scheepbower, William, 70 Mile House	2nd
Sedman, John E., R.R. 1 Fawn	2nd
Shuldes, Bruce, Clinton	2nd
Singleton, W., Fawn P.O.	1st
Smith, J. T., Clinton	2nd
Umphrey, S. T., Fawn P.O.	2nd
Van Horlick, Buster H., Clinton	1st
Vequeray, A. E., Clinton	2nd
Vequeray, R. J., Clinton	1st
Winteringham, Frank, R.R. 1 Fawn	2nd
Womack, C. B., Fawn	1st

Block H—Cariboo District (100 Mile House North to Marguerite and Williams Lake, East of Fraser River)

	Class of Licence
Abram, Arthur E., Lac la Hache	2nd
Archie, Jacob, Canim Lake	1st
Ash, Christopher, Big Lake	2nd
Atkins, Daniel F., Horsefly	2nd
Bob, Edward, Canim Lake	1st
Camille, Francis, Canoe Creek	2nd
Christopher, David, Canim Lake	1st
Decker, English, Canim Lake	2nd
Dodd, John E., Williams Lake	2nd
Eagle, Clifford B., Lac la Hache	1st
Goetjen, Charles E., Horsefly	1st
Graham, James, Horsefly	2nd
Graham, John, Horsefly	2nd
Greenlee, E. L., Canim Lake	1st
Hamilton, Gavin G., Williams Lake	2nd
Hamilton, Herbert M., Lac la Hache	1st
Hamilton, Peter, Williams Lake	2nd
Hamilton, Ray M., Williams Lake	2nd
Hamilton, Tom, Williams Lake	2nd
Higgins, Edward, Mahood Falls P.O.	1st
Higgins, K. E., Mahood Falls	1st
Hockley, George, Horsefly	1st
Hooker, Fred C., Horsefly	1st
Hooker, S. B., Horsefly	2nd
Hubbard, Isaac H., Horsefly	1st
Jacobson, John, Big Lake	2nd
Jefferson, Jesse T., Big Lake	2nd
Jenner, Ernest, Horsefly	2nd
Jones, Fred E., Horsefly	1st
Jones, Lawrence, Horsefly	1st
Louie, Fred, Canoe Creek	1st
McDougall, Robert, Big Lake	1st
McKenzie, Kenneth James, Big Lake	1st
McNeil, H. M., Fawn P.O.	1st
Morris, D. L., Forest Grove	1st
Nicol, Alex., Horsefly	1st
Nicol, Shelley, Horsefly	1st
Oak, Ernest, Horsefly	2nd
Paxton, Hubert E., Williams Lake	2nd
Pickering, Leonard H., Williams Lake	2nd
Poirier, J. E., Hydraulic	2nd
Racher, Wilfred J., Horsefly	1st
Reid, William R., Horsefly	2nd
Robertson, William, Soda Creek	2nd
Roper, Alfred, Canim Lake	1st
Sharp, William M., Ochiltree	2nd
Thygasen, Julius, Horsefly	1st
Vaness, John, Horsefly	1st
Webster, Alister J., Horsefly	2nd
Westwick, Burton, Williams Lake	2nd
Westwick, Lawrence, Williams Lake	2nd
Williams, Aubrey, Horsefly	1st
Williams, Thelma V., Horsefly	2nd
Wotzke, Herbert, Williams Lake	2nd
Wynstra, Jack, Horsefly	2nd

Block I—Chilcotin District (Cariboo West of Fraser River)

	Class of Licence
Allen, George H., Quesnel	1st
Armstrong, Thomas B., Bouchie Lake P.O.	2nd
Armstrong, Wilfred, Quesnel	2nd
Auchinachie, J. W., Alexis Creek	2nd
Blatchford, Bob, Alexis Creek	2nd
Blatchford, John A., Alexis Creek	1st
Bliss, Bill, Alexis Creek	1st
Bliss, Jack, Alexis Creek	2nd
Bowe, Alfred, Alkali Lake	2nd
Bracewell, Gerry, Tatlayoko Lake	1st
Bryant, A. L., Anahim Lake	1st
Bullion, Sammy, Hanceville	2nd
Buttler, Lenard, Tatla Lake	2nd
Cahoose, Gus, Anahim Lake	2nd
Capoose, Oggie, Anahim Lake	2nd
Church, Dick, Big Creek	1st
Coldwell, Reg, Quesnel (Punchaw)	2nd
Collier, Eric, Riske Creek	2nd
Dester, Baptiste, Kleena Kleene	1st
Dick, Matthew, Alkali Lake	2nd
Dorsey, Lester, Anahim Lake	1st
Elkins, Joe, Alexis Creek	2nd
Elkins, Thomas, Alexis Creek	1st
Fraser, Tommy, Penticton,	2nd
Garner, Tom, Alexis Creek	1st
Gilbert, Wilfred G., Quesnel	2nd
Gregg, Frank, Kleena Kleene	2nd
Hamilton, Theodore, Lac la Hache	1st
Hance, Grover, Hanceville	1st
Hansen, Fred, Kleena Kleene	1st
Harrington, A. G., Box 578, Quesnel	1st
Haynes, Harry, Tatlayoko Lake	1st
Haynes, Kenneth, Tatlayoko Lake	1st
Heaton, William F., Buck Ridge	2nd
Henderson, Johnny, Tatlayoko Lake	1st
Henry, Cecil, Big Creek	1st
Henry, Eagle Lake, Tatlayoko Lake	1st
Holte, James, Anahim Lake	1st
Holtry, Lewis, Anahim Lake	1st
Hudson, E. R., Kleena Kleene	2nd
Jack, Johnny, Alexis Creek	2nd
Johnson, Lames A., 100 Mile House	1st
Johnson, W. T., Riske Creek	1st
Kellogg, Bruce, Kleena Kleene	2nd
Knauf, Mrs. Cathrine E., General Delivery, Quesnel	2nd
Knauf, Harold, General Delivery, Quesnel	1st
Knoll, Alvis, Redstone	2nd
Lavington, Arthur C., Quesnel (Nazko)	1st
Lavington, Harold (Dude), Quesnel	1st
Lavoie, George, Quesnel (Nazko)	2nd
Leake, Bill, Quesnel (Nazko)	2nd
Leake, Clarence, Quesnel (Nazko)	2nd
Le Levre, Lind, Penticton	1st
Lloyd, David, Kleena Kleene	2nd
McKenzie, James Henry, Cinema	1st
Maindley, John, Alexis Creek	2nd
Max, Maxine, Alexis Creek	2nd
Maxted, William, Big Creek	1st
Miller, I. E., Quesnel (Punchaw)	1st
Mitchell, Samuel, Williams Lake	1st
Mullen, B. A., Tatla Lake	2nd
Mulvahill, Bill, Redstone	2nd
Mulvahill, Randolph, Redstone	1st
Nelson, R. C., Big Creek	2nd
Nicholson, Donald, Tatla Lake	2nd
Nicholson, Terry, Tatla Lake	2nd
Paley, Robert G., Quesnel	1st
Paxton, Alex., Alexis Creek	1st
Paxton, Ann, Alexis Creek	2nd
Petal, Henry, Alexis Creek	2nd
Petrowitz, Arthur, Williams Lake	2nd
Phillips, Floyd, Anahim Lake	1st
Potvin, A., Redstone	2nd
Quanstrom, Carl, Quesnel	2nd
Quanstrom, Harry, Quesnel	1st
Rafferty, A. T., Riske Creek	2nd
Rawling, Arden, Box 977, Quesnel	2nd
Reinertson, R. J., 100 Mile House	1st
Robson, Bert, Atnarko	2nd
Schuk, E. A., Tatlayoko Lake	2nd
Scott, Douglas, 100 Mile House	1st
Scott, Bob, Riske Creek	2nd
Siebert, John, Jesmond	1st
Smith, Bert J., Batnuni (Quesnel)	2nd
Snow, Shannon, Penticton	2nd
Stephenson, Donald, Alexis Creek	2nd
Squinas, Thomas, Anahim Lake	1st
Stowell, Orvel, Meldrum Creek	2nd
Sulin, Willy, Anahim Lake	2nd
Tibbles, Fred C., Quesnel	1st
Ulm, R. C., Soda Creek	2nd
Vogellaar, P. W., Alexis Creek	2nd
Watson, Art, Alexis Creek	1st
Wilkinson, Hugh J., Quesnel	2nd
Wilson, David, Tatla Lake	1st
Wilson, Gordon, Anahim Lake	2nd
Wilson, Tom, Big Creek	2nd
Witte, Duane, Big Creek	1st
Witte, Frank, Big Creek	1st

Non-resident Outfitters' Licence

White Water Lodge (Ed Gunsolley), Hanceville.

Block J—Cariboo District (Quesnel-Barkerville North from Marguerite)

	Class of Licence
Asserlind, Hillyerd C., Keithley Creek	2nd
Barrett, Stanley N., Horsefly	2nd
Bowden, Ted, Box 99, Quesnel	2nd
Bowers, Robert W., Marguerite	2nd
Conn, Robert Hanley, Keithley Creek	2nd
Crittenden, John Stanley, Keithley Creek	2nd
Ellison, Ray, Box 323, Quesnel	2nd
Fowlie, Albert, Box 339, Quesnel	2nd
Gibbons, Melvin L., Horsefly	1st
Hooker, Fred P., Horsefly	1st
Kellogg, Earl J., Wells	2nd
Kinvig, Tom, Keithley Creek	2nd
Larrent, Louie, Quesnel (Nazko)	2nd
McBurney, Aubrey, Keithley Creek	2nd
McBurney, Gordon, Likely	2nd
MacInnes, John, Barkerville	2nd
McKitrick, Roy D., Wells	1st
McKitrick, William, Wells	2nd
Moffat, Ronald H., R.R. 1, Quesnel	1st
Moore, Bill S., Quesnel	2nd
Morgan, Dallas J., Likely	1st
O'Leary, Arthur, Quesnel	1st
Redlack, Wilfred Louis, Hixon Creek	2nd
Sorum, Erick, Quesnel	2nd
Twan, Clarence, R.R. 1, Box 9, Quesnel	2nd
Walters, Glenn H., Horsefly	1st
Walters, Leonard F., Horsefly	1st

Block K—Kamloops District (Savona-North Thompson-Clearwater-Spences Bridge-Merritt)

	Class of Licence
Archibald, David A., Clearwater	2nd
Blackman, William, Valemount	2nd
Blair, Percy, Little Fort	2nd
Brousseau, Cliff, Savona	1st
Brown, A. Starr, Little Fort	2nd
Carter, Cecil, Black Pool	2nd
Charlton, June, Pritchard	2nd
Cochran, Glen, Darfield	2nd
Crate, Lloyd, Lucerne	2nd
De Vooght, Roger P., Vavenby	2nd
Farquharson, James, Kamloops	2nd
Grant, Gordon, McLure	1st
Helset, Ted, Clearwater	1st
Hogue, John S., Clearwater	1st
Hoover, Eldred, Westsyde	1st
King, Marvin L., East Black Pool	2nd
Korsvick, George Emil, Valemount	2nd
Lafave, Everett, Louis Creek	2nd
Lafave, George E., Louis Creek	2nd
Lafave, John W., Louis Creek	1st
Latremouille, Joseph L., Little Fort	1st
Lean, Theodore, Clearwater	1st
Loveway, Thomas, Little Fort	2nd
Ludtke, Laurence, Clearwater	1st
McDiarmid, Garfield G., Clearwater	1st
McGarrigle, William J., Little Fort	2nd
Modrall, Thomas Franklin, East Black Pool	2nd
Marriot, Robert W., Heffley Creek	2nd
Marshall, James, 717 Pine St., Kamloops	2nd
Nelson, Gerald, Black Pines	2nd
Owens, John H., Ashcroft	1st
Peacock, Colin, Box 537, Kamloops	2nd
Phillips, Roy, Red Lake	2nd
Pringle, Joseph, Westwold	2nd
Rainer, Karl, Darfield	2nd
Rorison, William, Savona	2nd
Sand, Martin J., Vavenby	2nd
Scott, Duncan, Barriere	1st
Stadnyk, Mural, Falkland	2nd
Turner, John, Criss Creek	2nd
Tuson, Clifford, Copper Creek	1st
Wagner, Martin, Kamloops	2nd
Watson, Charles, Merritt	2nd
Wharton, Francis, Little Fort	2nd
Whittaker, John, Kamloops	2nd

Block L—Boundary Districts (Grand Forks West to Princeton, Including Kettle Valley and Ashnola)

	Class of Licence
Anschetz, Chris, Rock Creek	2nd
Bradshaw, George A., Westbridge	2nd
Carey, Bertram Chas., Westbridge	2nd
Clark, Herbert G., Box A38, Keremeos	1st
Cochran, Fred M., Westbridge	2nd
From, Oliver, Westbridge	2nd
Hall, D. Elmer, Westbridge	2nd
Holding, Richard, Princeton	2nd
Lawrence, George V., Hedley	2nd
Lutner, E. C., Beaverdell	2nd
McLean, Robert Donald, Box 12, Okanagan Falls	2nd
Manion, William B., Tulameen	2nd
Smith, Howard J., Westbridge	2nd
Wright, Brian (Pat), Princeton	1st

Block M—Adams Lake-Salmon Arm-Revelstoke-Vernon Areas

	Class of Licence
DeSimone, Samuel H., Revelstoke	1st
Daney, Seldon M., Ferguson	2nd
Donnelly, C. W., Salmon Arm	2nd
Harrison, Robert Owen, Adams Lake	2nd
Hurstfield, Frances, Scotch Creek	2nd
Kachuk, John, Trout Lake	2nd
Laforme, George W., Revelstoke	1st
May, Arthur W., Celista	2nd
Potts, William, Chase	2nd
Robertson, Douglas F., Squilax	2nd
Upper, Clarence F., Revelstoke	2nd
Werner, Carl L., R.R. 1, Lumby	2nd

Block N—East Kootenay (Cranbrook-Invermere-Golden Districts)

	Class of Licence
Anderson, Charles, D., Windermere	1st
Barbour, J. A., Wilmer	2nd
Bjorn, Henry Manning, Fort Steele	1st
Bower, L. G., Bull River	2nd
Brewer, Carl, Canal Flats	1st
Canning, Lester, Skookumchuck	2nd
Capilo, Louis, Athalmer	1st
Cooper, Albert, Invermere	1st
Ellis, Camille, Skookumchuck	2nd
Fisher, Tony, Invermere	2nd
Gabry, Mike, Brisco	2nd
Goodwin, Dave, Invermere	2nd
Goodwin, Elwood, Edgewater	1st
Goodwin, Lester, Invermere	2nd
Gould, Percy, Canal Flats	1st
Hammond, Lyle, Golden	2nd
Hansen, T., Wilmer	1st
Harrison, William O., Edgewater	1st
Jimmie, Joe, Fairmont	2nd
Keir, Eugene, Maryville	2nd
Kohorst, Charles, Edgewater	2nd
Lindborg, Axel, Golden	1st
Lum, Peter, Skookumchuck	1st
McClain, Jesse I., Spillimacheen	1st
McKay, Gordon, Invermere	1st
McKay, James, Invermere	2nd
Michel, Abraham, Windermere	2nd
Mitchell, Robin A., Brisco	1st
Morigeau, Martin, Fairmont	1st
Nicholas, Dominic, Windermere	1st
Pommier, Emile, Skookumchuck	2nd
Rande, Eugene W., Field	2nd
Rauch, Harold C., Golden	2nd
Romane, W. H. (Bill), Golden	2nd
Seward, Arvid, Golden	1st
Seward, Roy S., Golden	2nd
Sheek, Pat, Golden	2nd
Tegart, George, Edgewater	1st
Tegart, Hiram W., Brisco	1st
Tegart, James, Brisco	1st
Tegart, Raymond, Invermere	2nd
Thompson, Jim, Edgewater	1st
Thompson, John, Edgewater	2nd
Thompson, Lioel, Edgewater	1st
Wallin, Dawson, Invermere	2nd
White, James Freeman, Fort Steele	1st
Wolfenden, Winston, Brisco	1st
Zinkan, E. J., Invermere	2nd

Block O—East Kootenay (Cranbrook East to Crowsnest, Including Fernie and Natal)

	Class of Licence
Baher, Frederick, Natal	1st
Baher, Martin C., Natal	1st
Baher, Mathias, Natal	1st
Barnes, Alfred, Corbin	1st
Barnes, James Norman, Nelson	1st
Bossio, William, Fernie	1st
Bush, William, Ta Ta Creek	2nd
Crossorini, Louis, Natal	2nd
Cutts, Jack, Fernie	1st
Dvorak, Frank, Fernie	1st
Dvorak, Wenzel, Fernie	2nd
Eftoda, Gordon, Fernie,	1st
Gorrie (Jr.), Methden, Flagstone	2nd
Gorrie (Sr.), Methden, Flagstone	1st
Gravelle, Alex., Flagstone	1st
Gravelle, Nick, Flagstone	2nd
Hicks, Frank, Fernie	1st
Hicks, Phillip, Fernie	1st
Kubinec, Peter, Fernie	1st
Logan, Doris May, Wardner	2nd
McDougall, Joe, Flathead, via Polebridge, Mont., U.S.A.	2nd
McGinnis, Earl, Natal	1st
McKenzie, Fergus, Fernie	1st
Phillips, Frank, Flagstone	1st
Porco, Albert, Natal	1st
Riddell, Harry Scott, Wardner	2nd
Rosicky, Anton, Wardner	1st
Rothel, Malcolm, Natal	1st
Travis, Frank, Natal	1st
Volpatti, Ben, Drawer 10, Natal	1st

Non-resident Outfitters' Licence

Russell, Andy, Twin Butte, Alta.

Block P—West Kootenay (Including Nelson-Creston, Kootenay Lake, and Lardeau)

	Class of Licence
Bennett, Arthur, Box 482, Kaslo	2nd
Blakeman, Clare F., Nelson	2nd
Cummings, Arnold, Boswell	2nd
Lewis, Jack D., Box 389, Nelson	2nd
MacNicol, J. W., Johnsons Landing	2nd
Oliver, George, Gray Creek	2nd
Schwartzenhauer, Carl, Deer Park	2nd
Simmons, R. Thomas, Lardeau	2nd

PERSONNEL OF GAME COMMISSION AS AT DECEMBER 31ST, 1955

Attorney-General (Minister)	Hon. R. W. Bonner, Q.C.	Victoria.
Game Commission (member)	Frank R. Butler	Vancouver.
Scientific Advisors	Dr. W. A. Clemens	Vancouver.
	Dr. Ian McTaggart Cowan	Vancouver.

HEADQUARTERS

Administrative Assistant	H. D. Simpson	Vancouver.
Senior Clerk	J. McLellan	Vancouver.
Intermediate Clerk	W. Fowkes	Vancouver.
Intermediate Clerk	Miss I. Lawson	Vancouver.
Secretarial Stenographer	Miss J. Smith	Vancouver.
Senior Clerk-Stenographer	Miss P. Golder	Vancouver.
Senior Clerk-Stenographer	Miss R. McKay	Vancouver.
Clerk-Stenographer	Miss T. Hayes	Vancouver.
Clerk-Stenographer	Miss P. Kalenchuk	Vancouver.
Clerk-Stenographer	Mrs. J. Whitfield	Vancouver.
Clerk	Miss J. Hine	Vancouver.

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

Inspector	G. C. Stevenson	Victoria.
Intermediate Clerk	D. Keirs	Victoria.
Stenographer	Miss J. Bull	Victoria.
Game Warden	R. W. Sinclair	Victoria.
Game Warden	E. Martin	Alberni.
Game Warden	R. S. Hayes	Campbell River.
Game Warden	C. E. Estlin	Courtenay.
Game Warden	W. S. Webb	Duncan.
Game Warden	F. H. Greenfield	Nanaimo.

"B" DIVISION (KOOTENAY AND BOUNDARY DISTRICTS)

Inspector	C. F. Kearns	Nelson.
Clerk-Stenographer	Miss L. Hickey	Nelson.
Game Warden	R. A. Rutherglen	Nelson.
Corporal Game Warden	A. F. Sinclair	Grand Forks.
Game Warden	P. D. Ewart	Castlegar.
Game Warden	J. W. Bayley	Cranbrook.
Game Warden	R. R. Farquharson	Cranbrook.
Game Warden	B. Rauch	Creston.
Game Warden	J. J. Osman	Fernie.
Game Warden	W. A. McKay	Golden.
Game Warden	J. V. Mackill	Invermere.
Game Warden	A. Monks	Penticton.
Game Warden	A. F. Gill	Princeton.

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

Inspector	L. R. Lane	Kamloops.
Intermediate Clerk	G. Ferguson	Kamloops.
Stenographer	Mrs. S. D. Bertoli	Kamloops.
Game Warden	L. G. Smith	Kamloops.
Game Warden	H. Tyler	Kamloops.
Game Warden	K. R. Walmsley	Alexis Creek.
Game Warden	W. I. Fenton	Clinton.
Game Warden	D. D. Ellis	Kelowna.
Game Warden	R. S. Welsman	Lillooet.
Game Warden	E. M. Martin	Merritt.
Game Warden	H. J. Lorance	Quesnel.
Game Warden	G. A. Lines	Revelstoke.
Game Warden	D. Cameron	Salmon Arm.
Game Warden	A. S. Frisby	Vernon.
Game Warden	E. Holmes	Wells.
Game Warden	J. P. Gibault	Williams Lake.

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

Inspector	W. A. H. Gill	Prince George.
Intermediate Clerk	R. J. Guay	Prince George.
Stenographer	Miss C. Sieben	Prince George.
Game Warden	A. J. Jank	Prince George.
Game Warden	R. A. Seaton	Prince George.
Corporal Game Warden	C. J. Walker	Prince Rupert.
Stenographer	Mrs. M. Richardson	Prince Rupert.
Game Warden	W. H. Richmond	Burns Lake.
Game Warden	J. A. McCabe	Fort Nelson.
Game Warden	B. Villeneuve	Fort Nelson.
Game Warden	H. O. Jamieson	Fort St. John.
Game Warden	J. Dowsett	Lower Post.
Game Warden	J. M. Hicks	McBride.
Game Warden	G. R. Taylor	Pouce Coupe.
Game Warden	L. J. Cox	Smithers.
Game Warden	J. D. Williams	Terrace.

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

Corporal Game Warden	R. E. Allan	Vancouver.
Game Warden	R. S. King	Vancouver.
Game Warden	R. K. Leighton	Vancouver.
Game Warden	F. R. Lobb	Vancouver.
Game Warden	H. D. Mulligan	Vancouver.
Game Warden	W. T. Ward	Vancouver.
Corporal Game Warden	W. J. Mason	Alert Bay.
Game Warden	F. J. Renton	Alert Bay.
Game Warden	A. J. Butler	Chilliwack.
Game Warden	H. P. Hughes	Cloverdale.
Game Warden	W. H. Cameron	Ladner.
Game Warden	P. M. Cliffe	Mission.
Game Warden	F. Urquhart	Port Coquitlam.
Game Warden	B. E. Wilson	Powell River.

Game Management Division

Chief Game Biologist	Dr. J. Hatter	Vancouver.
Regional Game Biologist	E. W. Taylor	Vancouver.
Regional Game Biologist	W. G. Smith	Cranbrook.
Regional Game Biologist	P. W. Martin	Kamloops.
Regional Game Biologist	D. J. Robinson	Nanaimo.
Regional Game Biologist	L. G. Sugden	Williams Lake.

Fisheries Management Division

Chief Fisheries Biologist	R. G. McMynn	Vancouver.
Division Fisheries Biologist	I. Barrett	Vancouver.
Division Fisheries Biologist	Dr. C. C. Lindsey	Vancouver.
Division Fisheries Biologist	E. H. Vernon	Vancouver.
Regional Fisheries Biologist	D. Hurn	Nanaimo.
Regional Fisheries Biologist	F. P. Maher	Cranbrook.
Regional Fisheries Biologist	S. B. Smith	Vancouver.
Regional Fisheries Biologist	G. E. Stringer	Kelowna.
Assistant Fisheries Biologist	G. E. Northcote	Vancouver.
Assistant Fisheries Biologist	J. G. Terpenning	Vancouver.
Assistant Fisheries Biologist	I. L. Withler	Vancouver.
Fishery Supervisor	F. Pells	Cultus Lake.
Fishery Officer	F. H. Martin	Courtenay.
Fishery Officer	J. J. Phelps	Courtenay.
Fishery Officer	E. Hunter	Nelson.
Fishery Officer	R. A. McRae	Summerland.
Fishery Officer	J. C. Lyons	Summerland.
Fishery Officer	N. W. Green	Nelson.
Hatchery Officer	J. C. Chatwin	Summerland.
Hatchery Officer	G. Dibblee	Vancouver.
Hatchery Officer	L. E. Hunter	Cultus Lake.
Hatchery Officer	R. A. H. Sparrow	Clinton.
Hatchery Officer	J. D. Varty	Cranbrook.
Stenographer	Miss M. Jurkela	Vancouver.

Predator Control Division

Supervisor of Predator Control	G. A. West	Vancouver.
Assistant Supervisor of Predator Control	E. H. Samann	Kamloops.
Predatory-animal Hunter	W. J. Hillen	Kamloops.
Predatory-animal Hunter	N. Lingford	Abbotsford.
Predatory-animal Hunter	G. Haskell	Cranbrook.
Predatory-animal Hunter	J. Kandal	Castlegar.
Predatory-animal Hunter	J. Dewar	Nanaimo.
Predatory-animal Hunter	A. M. Hames	Merville.
Predatory-animal Hunter	C. G. Ellis	Pouce Coupe.
Predatory-animal Hunter	M. W. Warren	Prince George.
Predatory-animal Hunter	A. E. Fletcher	Smithers.
Predatory-animal Hunter	M. Mortensen	Williams Lake.
Predatory-animal Hunter	J. T. Lay	Williams Lake.

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