SHEEP MANAGEMENT IN THE YUKON TERRITORY

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INTRODUCTION

This presentation consists of five sections:

a) In the first part, I will give you some background information on the state of wildlife management in the Yukon, the size and history of our Wildlife Branch, and about some of the political problems we are facing, which make wildlife management difficult.

b) The second section will consist of a brief review of the history of hunting regulations in the Yukon, with specific reference to non-resident sheep hunters.

c) Next will be a brief review of our management efforts in relation to sheep.

d) This will be followed by a status report on sheep and an assessment of trophy harvest.

e) The last section will deal with future considerations. It will outline the problems we are facing, that need to be rectified, if this valuable wildlife resource and hunting opportunities are to continue into the immediate future.

BACKGROUND INFORMATION

The "Art of Wildlife Management" is not very advanced in the Yukon compared to the Canadian provinces or the States, even though more progress has been made with sheep management than with that of other big game species.

To properly appreciate our activities in relation to sheep management, or the lack of them, it is necessary to briefly describe to you our Wildlife Branch in the Yukon -- its size, history and some of the jurisdictional and political problems it is confronted with.

Until 1972 the Yukon Wildlife Branch was an enforcement agency only. There was a staff of six or seven people consisting of the Director, several conservation officers and secretarial help. The functions consisted of administrative matters such as issuing of licences and permits and of enforcing the Game Ordinance and its regulations. Since there was no information base about Yukon's wildlife, the game laws were adopted from those of neighbouring jurisdictions, particularly Alberta, British Columbia, the Northwest Territories and Alaska.

Late in 1972, the Branch began to hire its own technical staff. A biologist and a technician were hired that year, and there has been a gradual increase in both professional as well as enforcement staff since that time. As of this year, 1980, we have ten technical staff members and the total permanent staff of our agency has risen to 27. My position as Assistant Director is largely administrative in scope, but I retained direct responsibility for all work we do on sheep and mountain goats and about 30% of my time is taken up with these matters.

In spite of the progress that has been made in the development of our Branch, we are not at par yet with the provinces or states in our capacity to manage wildlife, in particular we do not have the backlog of information about our wildlife that agencies in other jurisdictions have accumulated for several decades.

Besides these problems resulting from the fact that our Wildlife Branch as a wildlife management agency has only been in existence for a few years, there are two political realities we are confronted with, which have significant impact on any attempt to properly manage wildlife.

The first is the status of the Yukon as a territory. This means that we are enjoying essentially a colonial administration, with all important matters being decided in Ottawa. While responsibility over wildlife management has been handed over to the Yukon Territorial Government, jurisdiction over all other resources and issues affecting their management continues to be handled by the Federal Government. We are, therefore, faced with the problem of trying to manage wildlife while various activities effecting habitat, such as forestry and agricultural practices, mining and exploration work, and the building of roads, trails, and hydrolines are managed or licenced through another government. It is common knowledge that wildlife management and habitat management are inseparably linked.

The other problem I would like to make reference to is the special hunting privilege extended to Indians by federal statute. The Yukon Act allows status natives to hunt for meat on unoccupied Crown land, animals other than animals in danger of becoming extinct. Since 95% of the Yukon's surface area consists of unoccupied Crown land, and since perhaps 20% of the Yukon hunter population are natives, it will be appreciated that we have a problem. It will, in the long run, not be possible to manage wildlife if such a significant percentage of our hunters do not have to pay any attention to such regulations as bag limits or season lengths. Fortunately, as far as this audience is concerned, the target species have so far been moose and caribou. There is at this time very little impact on sheep.

It is with this background information in mind that you have to evaluate our management efforts or the lack of them.

HISTORICAL REVIEW OF HUNTING REGULATIONS AS THEY AFFECT NON-RESIDENT SHEEP HUNTERS

In 1894 Ottawa began preparing legislation to protect the game resources in the Northwest Territories, which at that time included the Yukon as well as all areas west and north of Manitoba. These deliberations resulted in the passing of the "Northwest Game Act of 1894". The Act provided the legal base of wildlife protection during the goldrush days of 1897 and the following years when some 30-40,000 miners invaded the Klondike region of the Yukon.

An amendment to the Yukon Act in 1900 granted the Yukon Territory power to make ordinances for the preservation of game. The first Territorial Game Ordinance was passed by the Territorial Council in 1901. The latest version came into being in 1979. No other piece of territorial legislation has been subject to amendments as frequently and has been the topic of heated debates in the Council as often as the Yukon Game Ordinance.

These first game laws concerned themselves with such issues as commercial meat hunting, sale of meat and fur, season lengths and generous bag limits; they did not specifically deal with outfitters, guides or non-resident hunters.

The first amendment relevant to sheep hunting came into being in 1908, when all females of big game animals were protected. In the same year the existence of non-resident hunters was recognized and a $100.00 licence fee was imposed on them. During that early period to 1920 only about a dozen non-resident hunters came to the Yukon per year; and they went on long six to eight week expeditions. Even though guides were officially licensed as early as 1920, it was not until 1933 when all non-resident hunters were required to hunt with guides. During those years until the beginning of the war about 20 to 30 non-resident hunters came to the Yukon. There was

little activity during the war years as far as guided trophy hunts were concerned; however, great impact on wildlife came into being through meat hunting. Special hunting privileges were granted to army personnel involved in the building of the Alaska Highway and the Canol Road and the Canol Oil pipeline. Game was the only source of fresh meat for many thousands of construction workers and highway maintenance personnel and great efforts were made in obtaining it. The alarming declines of wildlife observed in the vicinity of these roads resulted in the creation of the Kluane Game Sanctuary in December of 1942, and in the prohibition of hunting within one mile of roads.

After the war there was a great upsurge in non-resident hunting, and the number of hunters rose from 60 in 1950 to about 400 during the last decade. In 1951 amendments to the Game Ordinance created the office of the Director of Game, and thereby the first Yukon Game Branch. Prior to this date, enforcement of the game requlation was carried out by the Royal Canadian Mounted Police which continues to assist with enforcement to this date as ex-officio conservation officers. In 1952, the concept of "guiding territory" was officially recognized. This meant that exclusive rights for guiding were granted to individuals in certain regions of the Yukon. This concept was formalized with detailed boundary descriptions and outfitting area certificates in 1958 when most of the southern and central Yukon was divided into 22 outfitting regions. Twenty of these are still in existence today.

The last decade brought a number of changes which partly reflected the government's desire to properly manage sheep on the one hand, and a recognition of the economic importance of wildlife as a source of revenue on the other. The following regulation changes reflect the first objective:

Since 1972 rams could only be taken if their horns were 3/4 curl. Prior to that date half curl rams or three year old rams were legal. Since 1974 it is compulsory for all hunters to submit the trophy to the Wildlife Branch for measurements. In 1975 the Yukon Territory was divided into 11 Game Management Zones, and the full-curl ram hunting rul came into effect for all non-resident hunters as well as for resident hunters who hunted in G.M.Z. 7. Game Management Zone 7 is the most heavily hunted area in the

Yukon and our statistics had shown a steady decline in the trophy quality of the rams taken in that area. Last year, 1979, the 11 Game Management Zones were further sub-divided into 424 sub-zones. While these sub-zones are not used for regulation purposes yet, we want hunters to get used to the concept and to report the kill location as to specific sub-zones. This allows us to determine specific areas of high hunting pressur as well as assigning horn growth characteristics, tooth wear rates and occurrence of "lumpy jaw", to specific populations.

On the revenue side of sheep hunting, there was an increase in trophy fee for sheep from $25.00 to $150.00 in 1975, while the non-resident licence fee remained at $100.00, a rate already charged in 1908. Another significant increase on all trophy fees and licences came into being in 1979. Non-resident hunting licences now cost $150.00 while the sheep trophy fee was increased to $250.00. As already mentioned, no increase is contemplated for 1980 or 1981, as far as I am informed.

SHEEP MANAGEMENT PROJECTS CARRIED OUT BY THE WILDLIFE BRANCH

Sheep management projects can be divided into four types, the first three of which are routine procedures carried out every year, the fourth type are short term, specific investigations.

On an individual basis we are involved with:

1. inventories of ungulates;
2. monitoring of certain "critical" sheep populations;
3. assessment of harvest by inspecting hunter-killed ram skulls, conducting interviews and circulating questionnaires;
4. In relation to specific, short term projects we have been involved with:
   a) investigation on the potential affects of proposed pipelines on sheep populations;
   b) investigation on the potential impact of the Dempster Highway a recently built 400 mile road to the Canadian Arctic - on sheep populations in its vicinity;
   c) we have initiated an investigation into the distribution and incidence of a disease which caused deformed horns in Dall sheep.

I will briefly elaborate on these various projects.

Inventories - are aerial surveys, supplemented by ground investigations, of certain regions of the Yukon, whose ungulate populations have not been assessed previously. They were begun in 1973 and have so far covered about 65% of the Yukon's known sheep ranges. If the present level of funding continues we will have done the entire Yukon in about five years. These inventories give us information on sheep distribution, abundance, density, lamb production, percentage of young rams and legal rams, sex ratios and type of colouration of local populations.

Annual monitoring - is restricted to a few sheep populations which are "critical" because they may be exposed to great hunting pressure, they may be threatened by industrial developments or they may be of specific value for biological reasons. This monitoring is presently restricted to only six populations. These surveys give us information on fluctuations in lamb production, recruitment rates, winter mortality, population stability and

the impact of hunting and other types of distrubance.

Assessment - A number of methods are used to assess harvest and the distribution of hunting pressure. It has been compulsory since 1974 for hunters to submit their sheep trophy to the government. The information retrieved includes a number of biological measurements from the trophies and lower jaws as well as specifics on location and date of kill and type of habitat used. This direct information obtained by interviewing successful hunters is supplemented by questionnaires sent to all resident hunters. Analyses of these questionnaires give us information on distribution of hunting pressure, the attitudes and objectives of resident sheep hunters toward such management issues as trophy vs meat hunting or full curl vs 3/4 curl regulations.

Reconnaissance work in relation to the proposed Alaska Highway gas pipeline and the recently completed Dempster Highway consisted of an assessment of the distribution and abundance of sheep within five miles on either side of these transportation corridors and the locating and mapping of these critical areas as winter ranges, lambing areas and mineral licks.

The investigation of horn deformities so far consisted of an aerial survey of part of the affected area to get an idea of the severity of infection, the collection of a few rams with deformed horns, and the interviewing of outfitters and hunters in the area who have observed such rams in the past.

We are grateful to this foundation for providing financial assistance for 1980 to continue this project. We hope to complete a census of the entire affected area and have pathological investigations done to determine the cause of this disease.

PRESENT STATUS OF YUKON'S SHEEP POPULATIONS AND ASSESSMENT OF HARVEST

In 1974 our Branch estimated the Yukon sheep population at 22,500. At that time only about 25% of the sheep ranges had been covered by inventories, the remaining information came from hunters and outfitters. At the present time (1979) about 65% of our sheep ranges have been surveyed, and our estimates are somewhat lower than those of 1974.

We are confident in having about 20,000, of which about 17,000 are Dall sheep and 3,000 are coloured sheep, formerly referred to as fannin sheep and now lumped with Stone sheep. 5,000 of these sheep are protected in Kluane Park , the Kluane and McArthur Sanctuaries, the Fishing Branch Preserve and a few closed areas; the remaining 15,000 are subject to hunting to varying degrees.

Over the past ten years the sheep harvest in the Yukon has remained relatively stable. The annual average reported kill was 288, of which usually 70 to 75% are taken by non-resident hunters. Not all hunters report their kills to us and there is also a small, undetermined harvest by natives; but we are confident that these two factors will not inflate the reported kill by more than 5% (Table I). It is, therefore, reasonable to say that our estimated 15,000 sheep are exposed to a harvest rate of about 300 per year of 2%. Such a low harvest rate should assure that only old rams are taken, but unfortunately sheep hunting by resident hunters is not evenly distributed, and many local hunters are not specifically concerned about trophy quality.

As far as non-resident sheep hunting is concerned we are satisfied with the development, since sheep management actually started in the Yukon only six years ago. There has been a steady increase in the size of the trophyies taken in most areas and i n the average age of the rams shot. From 1974 to 1979 average horn length has increased by 1.5" (from 34.0" to 35.5") and average age has increased from 8.7 years to 9.6 years (Table II). Our management goal is an average age of 10.3 years, which has already been reached in a number of outfitting areas. At the age of 10.3 years we have reached the best compromise between trophy quality and

trophy quantity (Figure I). To reach this goal on a Yukon wide scale necessitates that not only non-resident hunters but also resident hunters are subject to full-curl regulations.

TABLE I

SHEEP HARVEST IN THE YUKON TERRITORY

Year	Harvest by Residents and Trappers	Harvest by Non-Residents	Total Harvest
1970	78	183	261
1971	100	225	325
1972	78	210	288
1973	73	207	280
1974	101	241	342
1975	71	194	265
1976	66	197	263
1977	81	199	278
1978	91	225	316
1979	71	214	285
$\bar{x}$	78.5	209.5	288
%	27%	73%	100%

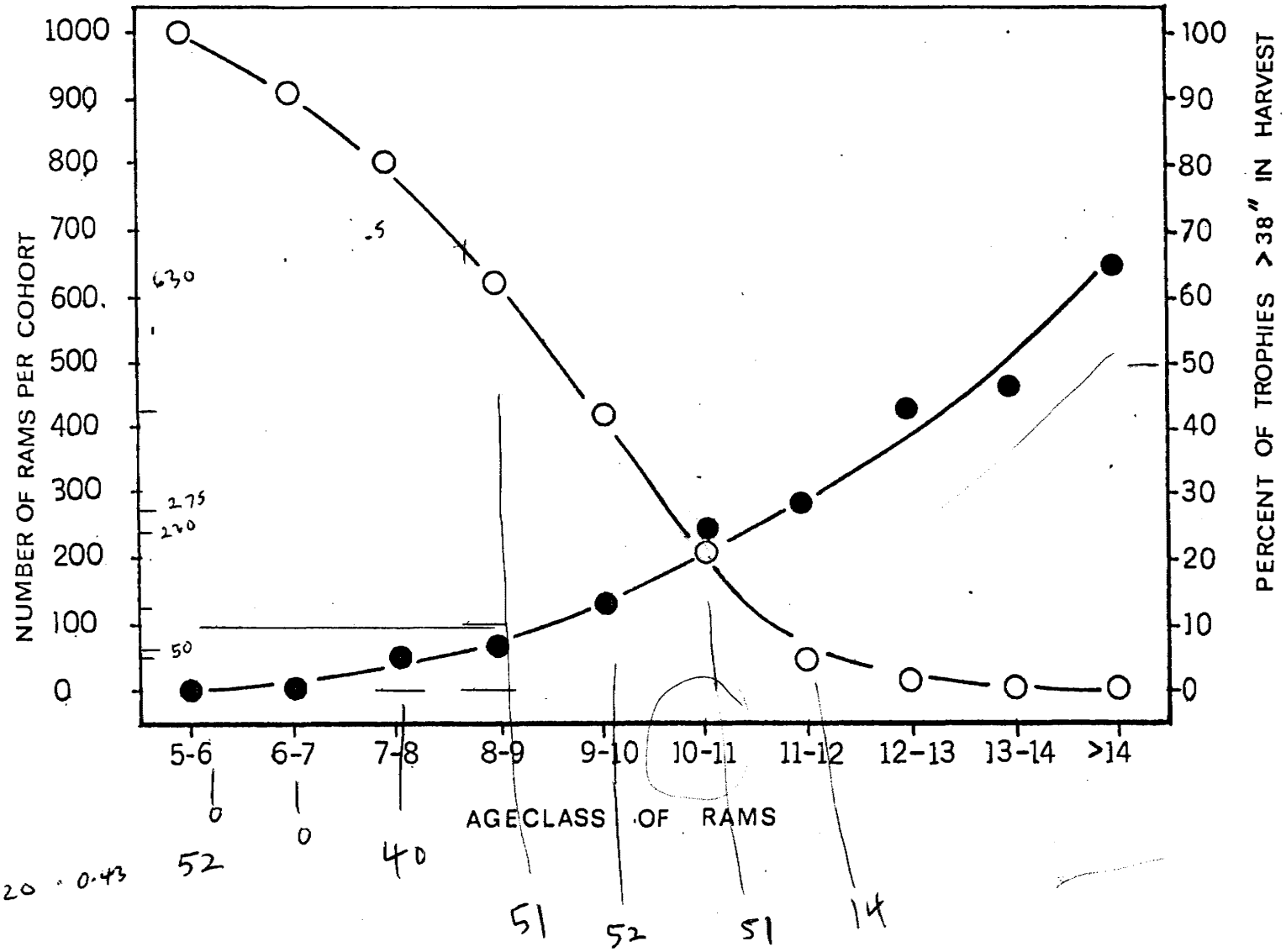
TABLE II

TREND IN TROPHY QUALITY OF DALL RAMS TAKEN BY NON-RESIDENT HUNTERS IN THE YUKON TERRITORY

Year	1974	1975	1976	1977	1978	1979
Number of trophies measured	235	192	197	199	231	208
Average horn length in inches	34.0	34.1	34.1	34.9	35.2	35.5
Average age	8.7	8.5	8.5	8.9	9.2	9.6

FIGURE 1

RELATION BETWEEN AGE, ABUNDANCE, AND TROPHY QUALITY IN DALL RAMS



FUTURE CONSIDERATIONS

It was pointed out earlier, the Yukon's sheep populations are still in relatively good shape, and hunting opportunities - as far as numbers of hunters accommodated and qualities of trophies obtained - are perhaps better than anywhere.

However, we are not too optimistic that these things will continue, unless a number of management-directed measures are implemented in the near future, and a number of studies are carried out to provide the base line data.

I want to make it clear, that I am talking only about the immediate future, the next 10, perhaps 20 years.

If we are concerned about long-term conservation, the probability of people being able to hunt or even observe sheep 50 or 100 years from now, that problem is a different issue, entirely.

In relation to long-term conservation of wilderness values, of which sheep are an important component, my boss, Dr. Hartman, refers to the steps I will be discussing here as activities comparable to the "rearranging of deck chairs on the Titanic". It is beyond the scope of this presentation to deal with this fundamental problem, and it involves not only people interested in wild sheep, but affects the goals and philosophy of society as a whole.

I will limit myself to mention immediate concerns only.

There can be no doubt that the native people in the Yukon will get exclusive rights to wildlife in certain regions of our Territory. Claim settlements in northern Quebec, Alaska and the recent COPE Agreement have set the precedence. We hope, however, that management of wildlife will remain the responsibility of government Yukon-wide, regardless of who is the beneficiary in a given area. We also hope, that subsequent to the settlement all hunters will be subject to the same game laws.

The present land use regulations pay little attention to wildlife concerns. This is partly due to the fact that they are administered by the federal government, which has no jurisdiction over wildlife; but more importantly they reflect the overpowering importance mining has always had in the Yukon. This is particularly relevent during the last few years, when we are experiencing the second "goldrush". Besides our basic problem of not being involved in habitat management and habitat manipulation, our agency has a number of specific concerns.

1. The disturbance created by helipcoter supported exploration activity in Wilderness areas.

   We know that low flying aircraft, particularly helicopters, create considerable disturbance in sheep populations. If continued over long periods at high frequency they can lead to abandonment of ranges, and there may be other less obvious results, such as resorption and abortion of fetuses or higher winter mortalities because sheep enter their critical period in poorer physical shape. Research is needed to determine "safe" overflight distances, which should then become conditions on land use permits.

2. Tote Trails - into wilderness areas to support exploration activity ~~initially~~ usually result in a decline of local wildlife populations. This is specifically the case, if tote trails go onto sheep and goat ranges, making areas more accessible to large numbers of people. We have in the Yukon over 180 such trails, that were built with government subsidy. The building of tote trails should be discouraged, and those that are built should be made inaccessible once exploration activity has ceased.

3. The use of all terrain vehicles - has increased greatly the last few years. Much of the Yukon consists of sub-alpine and alpine areas, since tree line is very low in our latitudes. Therefore, most of the country is accessible to these modern toys. They affect wildlife through the disturbance they create, their sounds and smell, the increased hunting pressure and hunter success rates, and the damage they do to the fragile alpine vegetation cover. Our agency has repeatedly tried to restrict their use, but a strong business lobby as well as that of many local hunters, have so fare prevented appropriate legislation from being passed.

4. Input into habitat management - specifically forestry practices such as Forest Fire Prevention plans. There are very few areas in the Yukon were the local forests have commercial value. This fact should present opportunities to use fire as a tool for wildlife habitat enhancement. Beneficial results have been reported from many areas, particularly in relation to moose, elk and deer, but recent observations in northeastern B.C. have also indicated a positive response to habitat burning by Stone sheep.

Besides these major concerns, which are Yukon wide in scope, and largely in the hands of the federal government to rectify, there are a few specific problems, much smaller in scale, which the wildlife branch likes to address in the next few years.

1. Reference has already been made to a disease which affects the horn growth of rams. So far we know to date, it is restricted to an area on the northeast side of Kluane Lake, affecting a population of about 1500 sheep and two outfitting areas.

2. In at least two areas of the Yukon, a high frequency of the mandibular disease commonly referred to as "lumpy jaw" has been reported to us. Last season we have begun to inspect lower jaws submitted to us by hunters. We will continue this project to determine the distribution and incidence of this disease, as well as at the same time assessing tooth wear rates in various Yukon sheep populations and thereby indirectly life expectancy.

3. There is some evidence of coloured sheep, formerly referred to as "Fannins" expanding their traditional ranges and invading areas which were in the past occupied only by pure white Dall sheep. This phenomenon has been documented in our surveys, it has been reported to us by several outfitters and it has even been observed in the N.W.T. and Alaska. While this may not be of any importance to sheep management for trophies, it certainly has theoretical implications. If the trend continued unchecked, the pure white sub-species of the Thinhorn sheep (Ovis dalli dalli) may become endangered as a genetic and taxonomic entitv.

4. Lastlv. we like to formalize a sheep management plan for the Yukon in the next few years. This plan will consider the various biological characteristics of Yukon sheep populations on the one hand, and the various types of user demands for them on the other.

   User demands consist of trophy hunters, meat hunters and non-consumptive users. Characteristics of sheep populations and their ranges relevant in this context, would include: population quality as exemplified in horn growth rates, population density, colouration of local sheep populations, location of sheep ranges in relation to much travelled tourist routes and sites suitable for sheep introductions.

We hope to have such a plan proposed by 1982. Its implementation will no doubt be influenced by the Indian Claim settlement, as well as other social and economic considerations.