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KAMINURIAK CARIBOU HERD: INTERJURISDICTIONAL MANAGEMENT PROBLEMS

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ᖃᒪᓂᕐ ᔦᐊᑉ ᑐᒃ ᑐᕐᑯᑎᖕᒋᑦ ᓈᕐᑐᖅᖕᒋᑦ ᑐᒥᐅᑕᐃᑦ ᑭᕙᑦᑕᕐᒥ ᑖᓂ ᓄᓇᑦᓯᐊᒥ, ᓄᖕᒍᑉ ᐸᑦᑕᐊᑕᕐᐳᑦ 4%ᒥᒃ (ᐳᓴᑦᓇ) ᐅᑭᐅᑖᑦ ᐋᓐᓂᐊᕐ ᓂᕐᒥᓄᑦᑐ ᐊᖕᒍᓇᓱᒃ ᑕᐅᓂᖕᓐᓄᑦᑐ. ᓄᖕᒍᑉ ᐸᑦᑕᐊᑕᕐᐳᑦᑐ ᐅᑭᐅᑦ ᖁᑖᑦ ᐊᑐᕐ ᓂᖕᓐᓂ. ᖃᒪᓂᕐ ᔦᐊᑉ ᑐᒃ ᑐᕐᑯᑎᖕᒋᑦ ᓂᕿᒃ ᓴᑎᔪᐅᑐᐊᕐᐸᒃᐳᑦ ᐃᓄᖕ ᓄᑦᑐ, ᐅᓇᑕᓄᑦᑐ ᐊᒻᒪᑐ ᐅᓇᑦᕐᑦᖕᓄᑦ ᒫᓇᑐᐸᒥᐅᓄᑦ, ᓴᓴ ᑲᑦᓯᕙᖕᒥᐅᑕᓄᑦᑐ, ᐊᒻᒪᑐ ᓄᓇᑦᓯᐊᒥᐅᓄᑦ, ᐅᑭᐅᑦ ᐊᒥᓱᑲᑦ ᑕᐅᑕᕐᑎᑦᑐᕆᑦ ᑕᒪᒃ ᑯᐊ ᒫᓇᑐᐸᒥᐅᑦ ᑐᒃ ᑐᖄᕈᓐ ᓅᕐᐸᑦᑕᐊᕗᑦ. ᑖᑕᒪᑦ ᐊᔾᔨᖕᒋᑦ ᑐᑦ ᓚᕙᒃ ᑯᑦ ᑕᒪᒃ ᑯᓂᖕ ᑐᒃ ᑐᓂᒃ ᑲᒪᒋᔭᖅᓯᒪᑕᕐᐳᑦ, ᑕᒪᕐ ᒥᒃᑐ ᐊᔾᔨᖕᒋᑦ ᑐᑦ ᑖᒃ ᑯᐊ ᓚᕙᒃ ᑯᑦ ᖃᐅᔨᓴᕐ ᓂᑐᒃ ᐸᒃ ᓯᑎᒃ ᐃᓗᐊᕐᔦᑎᖃᕐᓯᑎᓪ ᑐ ᓇᑦᑕᐊᑦ ᑲᒪᓂᐊᕐ ᓂᖕᓐᓄᑦ ᑖᐸ ᑯᓂᖕ ᑐᒃ ᑐᓂᒃ. ᑲᒪᒋᔭᐅᑦ ᓯᐊᕐ ᓂᐊᕐᐸᑕ ᓈᒻ ᒪᑦ ᓯᐊᕐᑐᒃ ᑯᑦ ᑖᐸ ᑯᐊ ᖃᒪᓂᕐ ᔦᐊᑉ ᑐᒃ ᑐᕐᑯᑎᖕᒋᑦ, ᐊᔾᔨᒃ ᑐᑯᑦ ᖃᐅᔨᓴᕈᑎᖅᕐ ᓗᑎᒃ ᖃᐅᔨᓴᕐᑕᐅᕙᓯᐊᖅᐳᑦ, ᐊᒻᒪᑐ ᑐᓴᕐᑎᑕᐅᑦ ᓯᐊᕐᐸᓪ ᓗᑎᒃ ᐃᓄᐃᑦ ᐊᖕᒍᓇᓱᒃ ᐸᒃ ᑐᑦ, ᐃᑦᑐᑎᑕᐅᑦ ᑕᕐ ᓗᑎᓪ ᑐ ᐊᖕᒍᓇᓱᒃ ᐸᒃ ᑐᑦ ᑲᒪᒋᔭᐅᒥᐊᖅᕐ ᓂᖕᓐ ᓄᑦ ᐱᑕᑎᐊᑎᔭᐅᑕᕋᓚᑕ. ᐅᑭᐅᑦ ᒪᕐ ᕿᒃ ᐊᑐᕐᓯᒪᑕᒃ ᑎᑦ ᓗᒋᑦ ᐋᕐᑭᒃ ᑕᐅᕙᑦᑕᐊᓯᒪᑕᕋᓗᐊᕐᐳᕐ ᑕᒪᓐᓇ. ᑭᓯᐊᓂ ᐱᑕᑎᐊᖅᑎᐊᖅᑕᕐᐳᒍᑦ ᐊᖕᒍᓇᓯᓗᐊᕐᑕᐃᑕᒥᐊᖅᑯᓗᒋᑦ ᐊᖕᒍᓇᓱᒃ ᐸᒃ ᑐᑦ ᑕᒪᒃ ᑯᓂᖕ ᐊᒻᒪᑐ ᐊᒪᕈᓄᑦᑐ ᑐᖅᑯᖅᑕᐅᓗᐊᕐ ᓂᖕᒋᑦ ᓯᕐᑲᕐᑎᓇᓯᓪ ᓗᒍ ᖃᒪᓂᕐ ᔦᐊᑉ ᑐᒃ ᑐᕐᒋᑦ ᓄᖕᒍᑉ ᐸᑦᑕᐊᑐᐃᓐᓇᕐ ᓂᐊᕐᑰᑕᕐ ᒪᑕ, ᐱᑕᖅᖕᒋᑕᒻ ᒪᑎᓪ ᓗᑎᓪ ᓘᓐ ᓃᑦ ᐱᓂᐊᑕᕐᑰᕐ ᒪᑕ.

ABSTRACT

The Kaminuriak barren-ground caribou herd of the Keewatin Region, Northwest Territories, has declined at a rate exceeding 4% annually because natural mortality and mortality caused by hunting have exceeded annual increments. The decline has spanned at least a decade. Kaminuriak caribou have been an important food source to Inuit, Indians, and Metis of Manitoba, Saskatchewan, and the Northwest Territories, but in recent years a reduction in range size has deprived native hunters in Manitoba of caribou. Five government agencies have been involved in the management of this herd, and inconsistent research efforts and jurisdictional problems have resulted. The keys to proper management of Kaminuriak caribou are regular, effective, standardized programs of monitoring caribou population dynamics, improved communications with native hunters, and involvement of native hunters in caribou management efforts. Considerable progress has been made in all of these areas in the past two years. Action must be taken immediately to reduce the numbers of caribou killed by hunters and wolves, or the Kaminuriak herd will be condemned to continued decline, possibly to extinction.

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INTRODUCTION

The Kaminuriak caribou (Rangifer tarandus groenlandicus) herd is named after a lake in its traditional calving grounds in the east-central Keewatin Region of the Northwest Territories. The herd traditionally winters in the tundra of the south-eastern Keewatin and in the forests of northern Manitoba. Every year, residents of as many as eight Northwest Territories and Manitoba communities hunt this herd for food. Occasionally, native hunters from northeastern Saskatchewan who normally depend on caribou from the Beverly herd take caribou from the Kaminuriak herd (Fig. 1).

Management of the Kaminuriak caribou herd must involve the coordinated efforts of five government agencies. The herd spends time in Manitoba, Saskatchewan, and the Northwest Territories. Because the herd crosses provincial boundaries, the Canadian Wildlife Service has an interest in its welfare, and in the past has sponsored considerable research on these caribou. The Federal Department of Indian Affairs and Northern Development, which is the department entrusted with the welfare of the Indian and Inuit caribou eaters, and which, strangely enough, manages most of the habitat upon which caribou walk, has also involved itself in Kaminuriak caribou management.

Our ability to manage the Kaminuriak herd is presently strained by a decline of this caribou population to the point where its usefulness to Inuit (Eskimos) and Indians is in

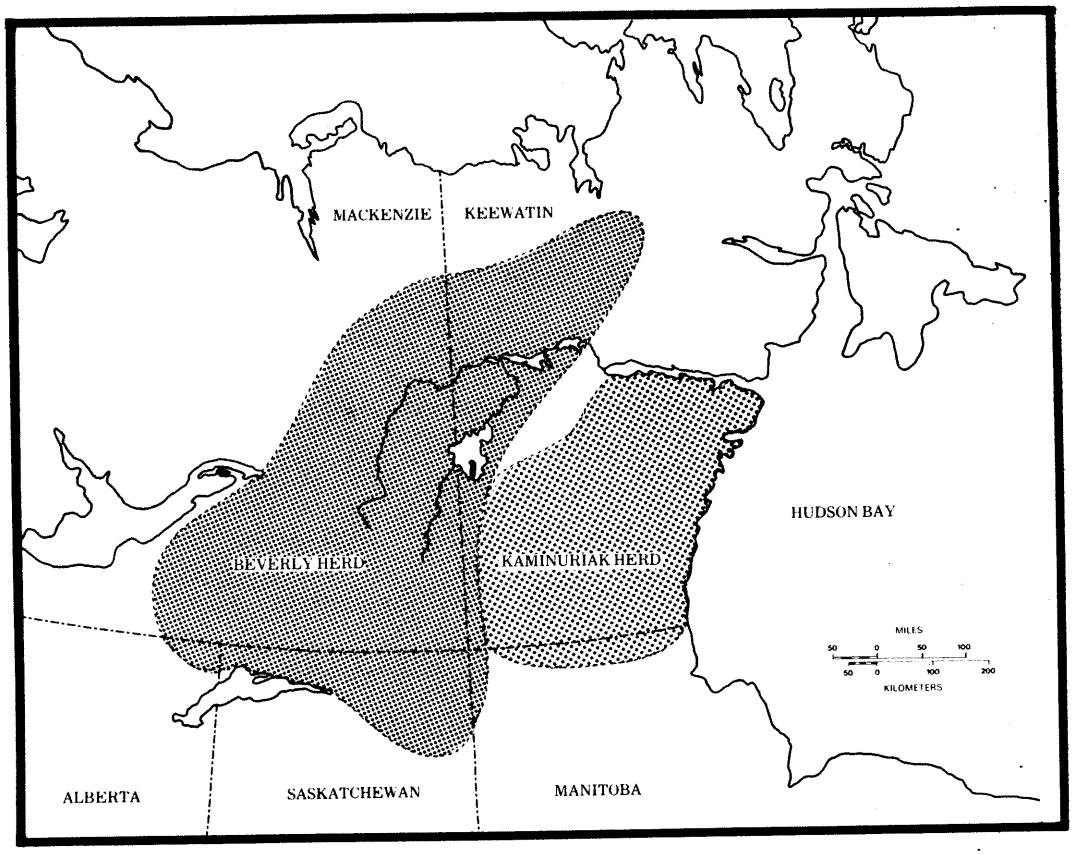

Figure 1. Present range of the Kaminuriak and Beverly caribou herds.

jeopardy, by the lure of rich mineral deposits in the Keewatin, and by the politics of native claims to land and wildlife. As a system under strain readily exhibits its strengths and weaknesses, this is an opportune time to examine interjurisdictional caribou management in Canada and to profit from lessons learned.

THE PROBLEM

The Caribou

The results of Canadian Wildlife Service research in the 1950's and 1960's indicated that the Kaminuriak population was declining rapidly from a 1950 level of 120,000. The 1968 estimate was 63,000; in 1977 it was 44,000. The average rate of decline was at least 4% per year (Fig.2).

As the Kaminuriak population decreased, the herd's range also decreased. Before 1955, the Kaminuriak caribou regularly wintered in a large area extending from the extreme southeastern Keewatin Region to a point in Manitoba not far north of Lake Winnipeg (Banfield 1954). Constriction of winter range had begun by the late 1960's and continues to this day. Since 1973/74, the herd has seldom wintered south of the Manitoba border and then only in relatively small numbers (Fig.3 Heard and Calef in press). During 1975/76 and 1976/77, a large part of the herd wintered on the tundra near Baker Lake, Keewatin Region. This is the first time winter use of this range by more than a few small bands from this herd has been reported (Heard and Calef in press).

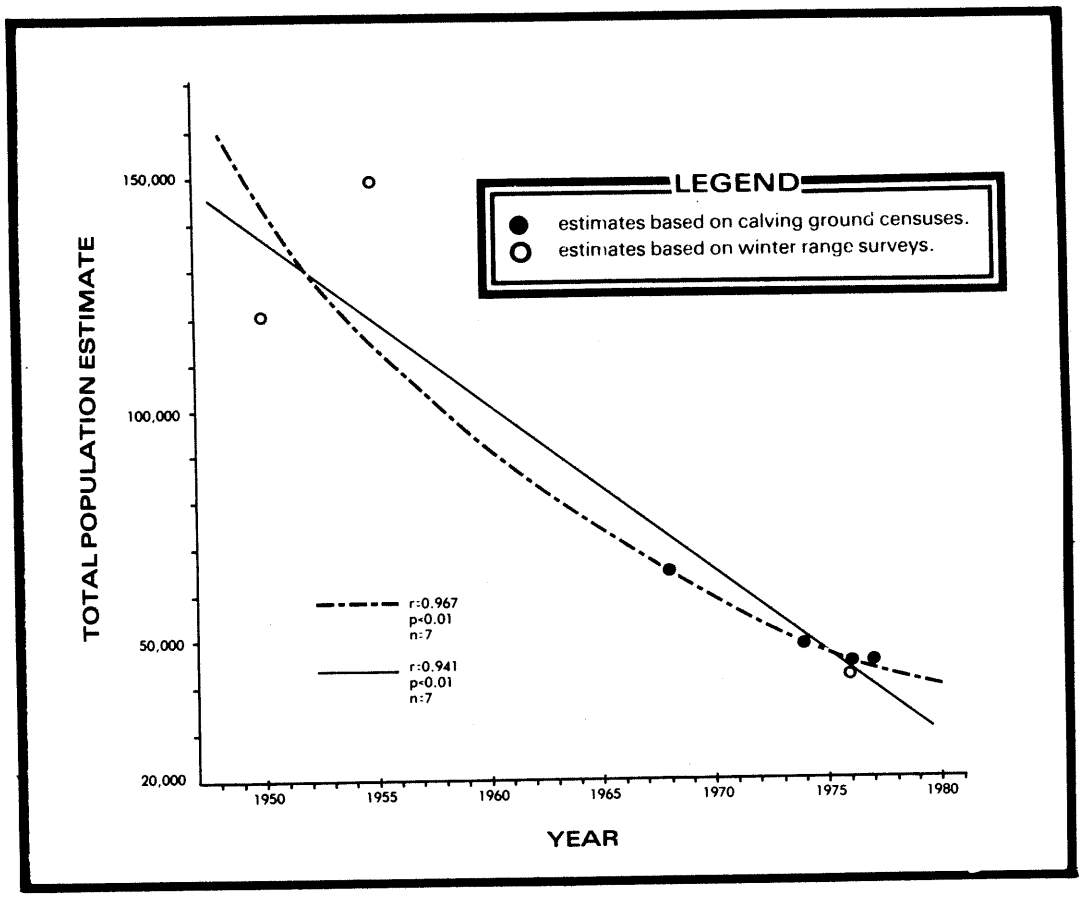

Figure 2. Total population estimates of the Kaminuriak herd.

Although the use of winter range has not been constant since 1955, fidelity to calving areas has been relatively high, at least since 1968 (Fig.4) and probably since the late 1940's (Banfield 1954). The Kaminuriak caribou calve southeast of Baker Lake in an 8,000 km^2 (3,000 sq. mi.) area.

Calef (1974) noted that most caribou populations in North America have maintained a relatively constant density over the past three decades by altering range size when herd sizes fluctuated. Thus, constriction in total range can be used as evidence of population decline.

Heard and Calef suggest a simple explanation for the decline. Since 1968 natural mortality and hunter kill have exceeded recruitment. Natural mortality is estimated at 8.5% per year. The average recorded hunter kill over the past nine years has been 3,000 per year, or about 7% of the present herd size. Since the average annual recruitment is 10%, the herd may now be declining at a rate greater than that shown in Fig.2 (Heard and Calef in press).

Biologists and Managers

Banfield (1954) and Kelsall (1968) were among the first to alert managers to a widespread decline in Northwest Territories caribou populations. Their warnings led to the designation of barren-ground caribou as an endangered species under the Norhtwest Territories Act. An intensive wolf control program was implemented during the winter of 1951/52. Although

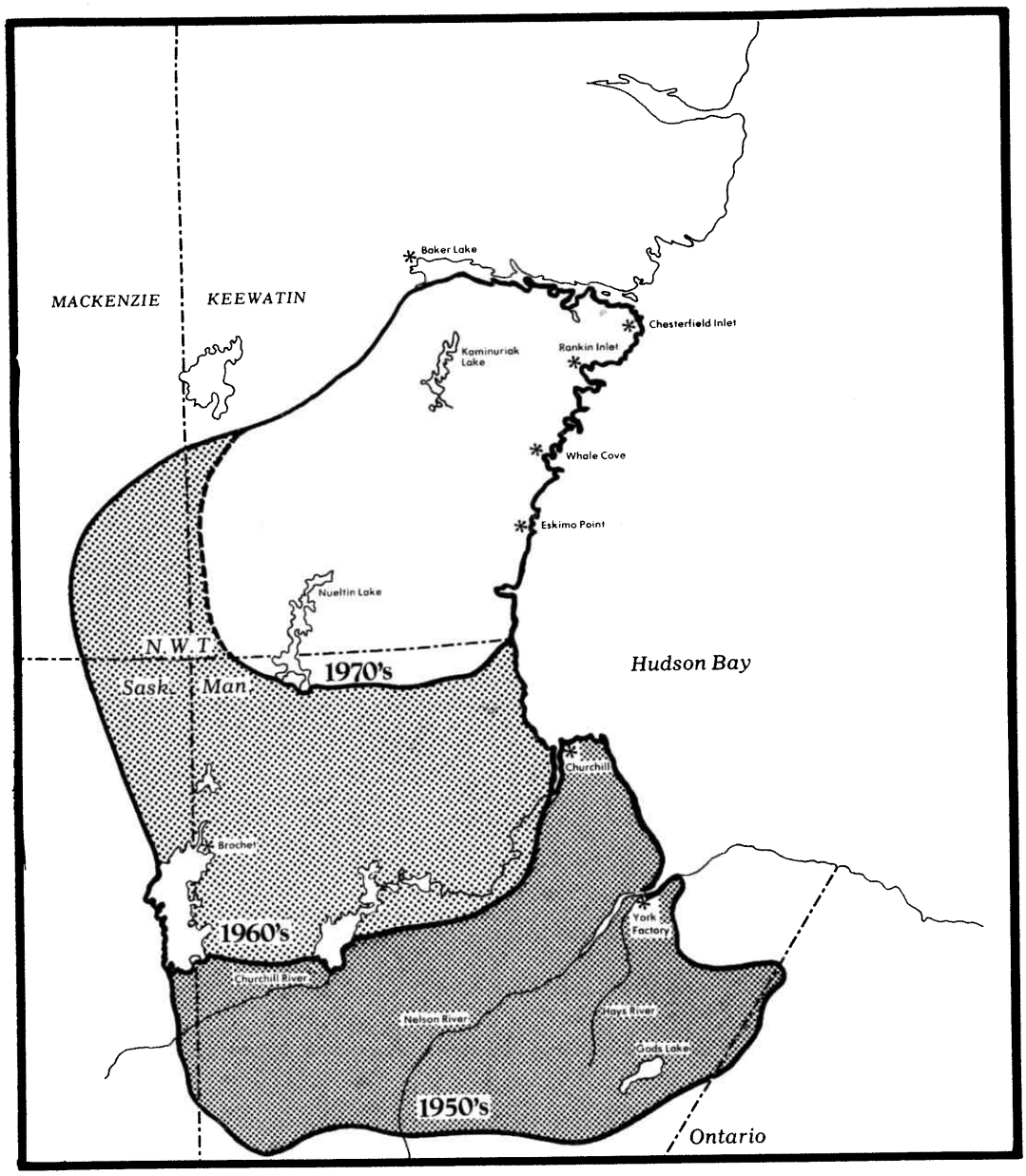

Figure 3. Range of the Kaminuriak herd in the 1950's, 1960's and 1970's.

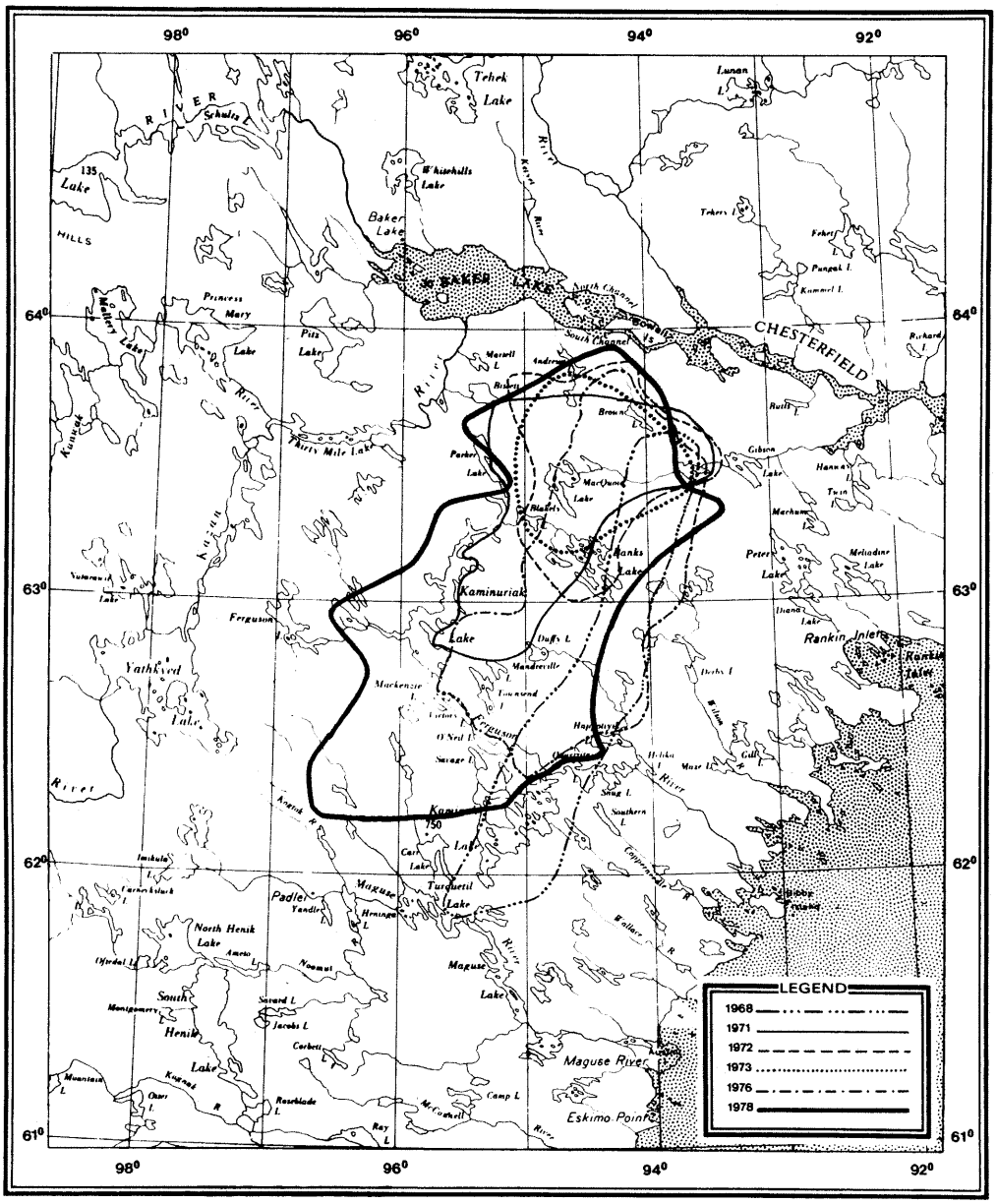

Figure 4. Representative locations of the Kaminuriak herd calving grounds.

it lasted until 1963, there were no caribou censuses done to measure the program's success.

Despite the fact that no censuses had been done, a biologist publicized an opinion in the mid-1960's that some Northwest Territories caribou populations were approaching such high densities that overuse of their ranges seemed imminent (Ruttan 1965 and 1967). This opinion, plus strong pressure from non-native sport hunters significantly influenced the caribou management program of the NWT government. There was no evident concern about declining caribou populations in 1971. The resident sport hunter bag limit remained unchanged at five, and legislation was enacted by the NWT government permitting commercial sale of caribou meat from some herds.[1]

In 1971, a Canadian Wildlife Service Biologist published his thesis that the numbers of barren-ground caribou in northern Canada had changed only slightly between 1955 and 1967, and had not declined rapidly as others had reported (Parker 1971). But it was not until provincial and territorial biologists analysed the 1976 and 1977 population estimates that they were able to refute this evidence of herd stability, at least as far as the Kaminuriak herd was concerned. Disagreement about the causes of the decline of the herd continues to this day.

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[1]No commercial sale of meat from the Kaminuriak herd has ever been permitted.

Such disagreement among biologists would shake the faith of managers, politicians, and hunters alike. Management decisions have been delayed. Councillors and ministers were not well advised of the need to fund long-term research and continuous monitoring of caribou populations.

The NWT government did not have a biologist on staff specializing in barren-ground caribou until 1976. In fact, until 1972 when the field staff was increased to two, the NWT government had only one field officer to manage wildlife in the entire Keewatin. Regional headquarters were in Churchill, Manitoba. Until 1973, this situation permitted neither adequate participation by the NWT government in Kaminuriak caribou research and management, nor effective communication about caribou management between wildlife managers and Keewatin hunters.

Manitoba had an active caribou research and management program in the 1950's. A 1959-64 caribou tagging program at Duck Lake is still useful to caribou managers (Miller and Robertson 1967). However in 1961, the caribou management program suffered from loss of continuity when the wildlife branch was swept into a new departmental organization. Caribou management in the early 1970's "was directed at meeting 'minimum management requirements' determined from the Canadian Wildlife Service" research in the late 1960's (Robertson 1977). Perhaps this attitude was fostered by the belief of Manitoba officials that they could not manage the harvest of the Kaminuriak herd because most of it took place in the Northwest Territories.

In Saskatchewan, caribou come under the decentralized jurisdiction of the Department of Northern Saskatchewan. In the mid-1960's, Saskatchewan provided a biologist to work with the Canadian Wildlife Service and Manitoba on research and marking caribou. Throughout most of the 1970's however, Saskatchewan's involvement with coordinated interjurisdictional caribou research and monitoring decreased. Attention focussed on the Beverly rather than the Kaminuriak caribou which were rarely seen in Saskatchewan. Concern for the Beverly herd was understandable as a shrinkage of its winter range similar to that of the Kaminuriak caribou has been documented.

The Canadian Wildlife Service played the role of advisor to the governments of the Northwest Territories and the provinces until 1974 when they withdrew in favour of the Caribou Management Group. Until that time their biologists shaped caribou management in northern Canada.

The Department of Indian Affairs and Northern Development, Indian Affairs Branch, played a significant part in efforts to curtail caribou harvests in the 1950's and 1960's by providing fish nets and meat to affected communities, and sharing in the provincial program to convince Indians to limit their caribou harvests. Funds and staff were also contributed for the Duck Lake tagging operation. In the 1970's however, as program emphases shifted, participation in caribou harvest management decreased.

Politician and Hunter

The legislation pertaining to Kaminuriak caribou reflects the legislator's perception of caribou management and the needs of citizens who benefit from the herd. The Northwest Territories Act, for example, enshrines Indian and Inuit rights to hunt for food for themselves and their families all species except those listed as in danger of extinction. Barren-ground caribou were placed on the endangered list in 1960. Animals on the endangered species list are the only species which the NWT government can effectively manage through harvest control. The same NWT Act, however, places the responsibility of caribou habitat management in the hands of the Department of Indian Affairs and Northern Development, the department that also manages industrial development in the north.

The Department manages caribou habitat largely through Land Use Regulations in Land Management Zones. In 1975, the Department responded to an increase in the intensity of mineral exploration activities by including the Keewatin in its Management Zone scheme and assigning a Land Use Inspector to the region.

The Department of Indian Affairs and Northern Development, which administers the overriding legislation in the Territories, also shares responsibility with the NWT government for the well being of the Inuit. Therefore, its Minister wields considerable influence in discussions about harvest quotas which may be imposed under NWT Wildlife Regulations.

Neither Manitoba nor Saskatchewan have any legislation to limit caribou harvest by Indians whose right to hunt for food on unoccupied Crown Land is protected by treaties and by the British North American Act. Persuasion rather than legislation must be used to control harvest by Indians in these provinces.

The Department of the Environment recently determined that it is relatively powerless to act to protect caribou against hunting by Indians and Inuit without the concurrence of the Department of Indian Affairs and Northern Development. The Department of the Environment cannot serve the role played by the United States Fish and Wildlife Service; ultimate guardian of the nation's wildlife.

In Manitoba, Saskatchewan, and the NWT, recreational hunting of Kaminuriak caribou is insignificant because there are few sport hunters. Nevertheless, in 1978 the NWT quota under the sport hunting licence was reduced from five to two caribou per hunter. In Manitoba, sport hunting of caribou is prohibited. In Saskatchewan, resident sport hunters can kill two caribou per year north of 58^{o} N latitude. Metis and non-status Indians (not covered by treaty) are issued a maximum of six caribou permits per family per year, depending on their food requirements.

Thus for all practical purposes, caribou are harvested only by Metis, Treaty and non-status Indians living in or near Indian communities, and Inuit. Because of native hunting rights protected by treaties and the Northwest Territories Act, and because native

land claims and aboriginal rights are salient political issues of the 1970's in Canada, the control of hunting automatically becomes an important threat to the welfare of any politician. This is particularly true in the Northwest Territories where the Inuit Tapirisat of Canada (I.T.C.), the national Inuit political institution, is negotiating a claim of aboriginal rights to land and wildlife north of the treeline. One of its affiliates, the Keewatin Inuit Association (K.I.A.), represents those in the NWT who would be affected by Kaminuriak caribou harvest restrictions. Their executive understandably presses for lengthy consultation with native hunters before laws are changed, and encourages government managers to allow Inuit to manage their own game in their own traditional way. At this point in history, Federal and Territorial legislators are bound to listen to Inuit voices.

Restrictions on industry are more politically palatable than restrictions on hunters. The Keewatin Inuit Association and the Baker Lake Hunters' and Trappers' Association flexed their muscles in 1977, forcing the suspension of mineral exploration activities in a vast area around Baker Lake when caribou are present. Responding to K.I.A.'s claim that such activities threaten the welfare of caribou, the Minister of Indian Affairs and Northern Development stopped issuing land use permits in the late winter of 1977 in the 78,000 km^2 (30,000 $mi.^2$) area. This freeze was extended to the spring of 1978 when the Hamlet of Baker Lake obtained an interim injunction against the issuance

of prospecting and land use permits in the Baker Lake area (Darby 1979). Further court action is pending.

In defence of the beleaguered caribou, there resulted from K.I.A.'a intervention a flood of money and manpower, the like of which has rarely resulted from a wildlife manager's plea. Literature was searched, and caribou movements were monitored as the animals moved in and out of the land-freeze area. Only in the absence of caribou were prospectors allowed into the area. Monitoring and research will continue at least through the summer of 1979.

This flurry of activity overshadowed the main problem with caribou - their decline for reasons unrelated to the activities of the mineral industry. Nevertheless, the K.I.A. spawned a new policy of special land management zones and land use permit conditions designed to protect Kaminuriak and Beverly caribou. The policy was announced in April 1978, and is applauded by wildlife managers as a step that should be taken in favour of all caribou herds.

The situation in Manitoba differs markedly. The Indians of northern Manitoba have been without the caribou they used to kill at the average rate of 200 per family per year (Robertson 1977, Miller and Robertson, 1967). They and the Manitoba government are more receptive to a quota on caribou harvest to effect the recovery of the population. The Indians of northern

Saskatchewan, as well as the Saskatchewan government, seem to be bystanders to the political scene. The Indians now hunt caribou of the Beverly herd almost exclusively, and cannot be further affected by the decline of the Kaminuriak population. Their contribution to discussions and activities surrounding the Kaminuriak herd have, until this year, been minimal. The wildlife managers of Saskatchewan do, however, have cause for concern as people eye the Beverly caribou as an alternate source of food to the troubled Kaminuriak herd.

The Hunter's Viewpoint

Imbedded in the rhetoric of northern politics is a description of the Indian and Inuit as natural conservationists who are proper custodians of their own wildlife resources. According to this scenario, the southern-trained wildlife manager is an unnecessary and frequently unwanted obstacle. The wildlife manager, on the other hand, commonly sketches the northern native as the myopic, selfish cause of wildlife population declines, and he cites a number of authors as witnesses (Banfield 1954, Kelsall, 1968). This clash of viewpoints is symptomatic of the fact that our conservation ethic, founded in Europe in the 16th century, is relatively new to the barren-ground caribou hunter. In the Keewatin, exposure to the European concept of wildlife conservation has been confined to the latter half of this century. Hunters who, until recently, could not significantly influence the future of a caribou population have difficulty

accepting the suggestion that suddenly they have become poor stewards of a resource with which they have been living harmoniously for many centuries. Science is not a part of the Indian or Inuit tradition.

The Inuit of the Northwest Territories are still largely dependent on caribou for food and sleeping skins. For Indians too, caribou are still an important source of food although they no longer use skins for bedding and clothing as a common practice. A decline in a caribou population or a shift in range is a matter of serious concern to these people. Camps and villages became established in locations which permitted easy access to migrating caribou. When caribou have failed to appear, these settlements were abandoned or their residents suffered. Inuit living in the Garry Lake area of the Back River did not move when caribou failed to appear in the winter of 1957-58, and people starved. The dependence of native hunters on caribou is a fact that will shape whatever management schemes we may devise to bring about the recovery of the Kaminuriak caribou population.

The population of caribou hunters is increasing as a result of high birth rate and infant survival. Also, since the late 1960's the native Keewatin hunter has become so mobile with motor toboggans and aircraft that game can no longer elude him and his high-powered rifle. However, attitudes and laws have not changed to accommodate population growth and the

hunter's new ability to dictate the welfare of wildlife.

The northern Canadian wildlife researchers and managers have done relatively little to change native viewpoints. The biologist usually arrives in the North, conducts his surveys and research with little or no involvement with the native hunter, then he returns south and publishes data in English for the converted to read. A wildlife crisis may bring on a burst of communications effort aimed at native hunters, but the effort is not sustained.

Manitoba and the Canadian Wildlife Service pioneered education about proper management of eastern caribou in the 1950's with publications for the layman and, more effectively, a user-manager dialogue. The results of Manitoba's efforts clearly showed in voluntary reduction of caribou harvest and less wastage of caribou meat by the Chipewyan hunters. The chiefs and band councillors took active roles in harvest management in the mid-1950's (Robertson 1977), and this responsible attitude is evident today.

Until recently, no major effort had been made by wildlife managers to engage in a dialogue on caribou research and management with the Inuktitut speaking hunters of the Keewatin. Now, exposed to a flood of information about their caribou and other wildlife, and compelled to respond to the managers with whom they have demanded consultation, Keewatin Inuit seem confused by the clash of new and old beliefs. They protest

against prophesies of doom for caribou when thousands of the gregarious beasts swirl around the villages. They blame prospectors, biologists, geologists, Manitoba Indians, fires and major shifts in caribou range. They are suspicious of efforts to collect harvest data, thinking it might be used against them through imposition of quotas and seasons. These views, echoed in the chambers of the Territorial Council by the native majority, are amplified by the government's new-found sensitivity to native concerns.

THE SOLUTION

The Caribou Management Group

The Canadian Wildlife Service and the governments of Saskatchewan, Manitoba and the Northwest Territories formed the Caribou Management Group in 1971 for the purpose of coordinating research on, and management of, the Kaminuriak and Beverly caribou herds. Recently, the Department of Indian Affairs and Northern Development became a Group member because of its interest in Indian and Inuit welfare and in caribou habitat. The members are program managers or division heads. They, in turn, formed a Technical Committee of research biologists to advise the Group. The Group and Technical Committee meet irregularly as required, but usually several times a year. Research and management proposals are discussed by the Group, and budgets are formulated and approved by the members.

The most severe test the Group has faced is the current Kaminuriak caribou problem. Once the Technical Committee presented its recent confirmation of the population decline and gave its projection of a continued decline due largely to over-hunting, the Group designed and implemented a short-term response.

For the following reasons, an information and education program was to be the major line of attack:

1. If the reasons for laws are not recognized or are poorly understood by native hunters, they will be difficult and expensive to enforce. Hunting restrictions championed by the hunters themselves are most effective.

2. The Canadian Wildlife Service and the governments of Manitoba and Saskatchewan have no legislation in place which they can employ to restrict hunting. They cannot complement season and quota restrictions imposed by the Northwest Territories. Inuit from the Keewatin would feel unfairly fettered in view of the freedom of Indian hunters to take Kaminuriak caribou south of 60^{o}.

3. The support of legislators is essential, and of native political organizations desirable, before regulations on caribou hunting can be changed.

The announced goals of the information and education program are simply to inform native hunters and their political representatives about recent research results, to interpret these results for them, and then to solicit suggestions from them about how to properly manage the herd. Seasons or quotas would not be discussed, but genuine efforts would be made to obtain the hunter's viewpoint. The ideal result would be voluntary curtailment of harvest. There is precedent for such self-imposed restrictions among the Inuit of the Belcher Islands and Southampton Island, NWT, and the Indians of northern Manitoba.

The ministers of the five jurisdictions and the Northwest Territories Executive Committee were thoroughly briefed about the Kaminuriak situation in late 1978. During its February 1979 session, the Territorial Council received a comprehensive briefing about all NWT caribou herds and particulary the Kaminuriak herd. By September 1978, all eight communities which hunt the Kaminuriak caribou had been appraised of the problem by biologists and wildlife officers. The Territorial Wildlife Service used brochures and a synchronized sound and slide show, as well as officers familiar to the hunters, to deliver the message. Hunters' and Trappers' Associations in the NWT facilitate delivery of such information. These associations, and Manitoba and Saskatchewan hunters, were asked to select delegates to a government sponsored meeting of representatives from all user communities.

The initial meetings certainly achieved the intended result. Hunters began talking with each other about the caribou problem to the point where the topic donimated meetings convened for other purposes. Despite strong opposition from suspicious politicians, delegates travelled to a conference of hunters in Thompson, Manitoba.

The Thompson conference was between hunters and biologists only. No one from agency headquarters and no politicians were invited. Once delegates accepted the fact that they would not be expected to make decisions on behalf of their home communities, they relaxed and gave frank appraisals of the Kaminuriak situation. Discussions were in five languages, consecutively translated, so proceedings were slow. The biologists present were shaken by the reluctance with which Inuit hunters acknowledged that there even was a problem. Most delegates refused to accept the statement that overhunting was a cause of population decline, and they gave varied and imaginative reasons for the problem. Nevertheless, the hunters left the meeting with a broadened perspective of caribou harvest and the nature of dependence of other communities on the shared caribou herd. They all called for a second meeting to focus on the major issues of caribou management.

The proceedings of the conference were analysed by the Caribou Management Group, and plans were made for the second stage of the information and education program. Tape recordings and minutes of the Thompson conference were distributed to the

communities. They were discussed on radio broadcasts and during meetings. Manitoba and the NWT produced slide talks about the Thompson meeting to be shown in each community by wildlife officers. A team of Manitoba and Northwest Territories biologists was formed to carry the message of the caribou problem to each community. Exchange visits to the Keewatin and Manitoba have been planned to help hunters understand the issue. A second hunter/biologist meeting was scheduled for Baker Lake in April 1979. A Management Group meeting was slated for Ottawa in late February to which senior federal government officials and leaders of native political organizations were invited for a briefing and discussion on progress to date and plans for future action.

A third and final user-manager conference will be held in the fall of 1979. Final recommendations will be aired and management decisions will be made shortly after the end of the meeting. Decisions may involve new legislation and alternative food sources for caribou hunters. Final decisions will, no doubt, be political responses to recommendations of managers.

CONCLUSIONS

The Kaminuriak situation warns us not only about the pitfalls of managing a caribou herd which migrates across our arbitrary political boundaries, but also about caribou management throughout Canada. Programs of caribou population monitoring and research have been inadequately designed and funded.

Jurisdictional problems have crippled concerted research and management efforts and the methods of collecting kill statistics have been inconsistent and ineffective.

The recent briefings of councillors and ministers about the Kaminuriak problem and caribou management in general may help gain financial support. Management agencies are now exploring new techniques in population monitoring. Monitoring of NWT caribou herds is now part of a budget base and will be done on a regular schedule. The NWT Wildlife Service is making an effort to improve its hunter kill statistics. The success of this effort will be directly related to the success of our new public information program. We are beginning to make conservation education materials about caribou available to schools and to the general public, and research and management data in Inuktitut and popular English is now being published for use in the communities.

These improvements will benefit caribou management in the years ahead, but the Kaminuriak problem is too serious for us to await the results of these long-term solutions. Action is needed now. If we do not act together immediately to effectively reduce the numbers of caribou killed by hunters and wolves, we are condemning this herd to continued decline and possible extinction.

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LITERATURE CITED

Banfield, A.W.F. 1954. Preliminary investigations of the barren-ground caribou. Can. Wildl. Serv. Wildl. Manage. Bull, Ser. 1, No. 10A and 10B. 79pp.

Calef, G.W. 1974. The predicted impact of the Canadian Arctic Gas pipeline project on the Porcupine caribou herd. In: Research reports of environmental impact assessment of the portion of the Mackenzie gas pipeline from Alaska to Alberta. Bol. IV. Environ. Protection Board, Winnipeg. 307 pp.

Darby, W. R. 1979. Beverly and Kaminuriak caribou monitoring and land use controls, 1978. NWT Wildlife Service Completion Report (in press).

Heard, D.C., and G.W. Calef. 1979. The decline of the Kaminuriak caribou herd. NWT Wildlife Service Report (in press).

Kelsall, J.P. 1968. The migratory barren-ground caribou of Canada. Can. Wildl. Serv. Monogr. No. 3. Queen's Printer, Ottawa. 340 pp.

Miller, D.R., and J.D. Robertson. 1967. Results of tagging caribou at Little Duck Lake, Manitoba. J. Wildl. Manage. 31: 150-159.

Parker, G.R. 1971. Trends in the population of barren-ground caribou of mainland Canada over the last two decades: a re-evaluation of the evidence. Can. Wildl. Serv. Occas. Paper No. 10. 11pp.

Robertson, J.D. 1977. Disappearance of the barren-ground caribou from Manitoba. Unpubl. report. in files of Manitoba Wildl. Manage. Branch, Winnipeg. 23 pp.

Ruttan, R.A. 1965. Manitoba barren-ground caribou. Unpubl. rept. in Can. Wildl. Serv. files, Ottawa. 17 pp.

_____. 1967. Seasonal distribution and population estimates of barren-ground caribou herds 1955/67. Unpubl. rept. in Can. Wildl. Serv. files, Ottawa. 12 pp.