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YUKON INDIAN HARVEST SURVEY PROGRESS REPORT 1987

by Ray Quock & Kent Jingfors, 1988.

Yukon Indian Harvest Survey

Progress Report

1987

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1988

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SUMMARY

Information on the Indian harvest of big game species in Yukon has been systematically collected in Pelly Crossing, Dawson City, Teslin, Watson Lake, Ross River, and Old Crow since January 1987 by the Department of Renewable Resources. Local fieldworkers contacted 97% of the known Indian households (n=429) and 96% of all known hunters (n=485) twice during 1987: in summer (June -July) and in mid winter (Dec.-Jan.). The high contact rate indicates excellent cooperation in the harvest survey by Indian hunters.

The average success rate of hunters who actually hunted in 1987 was 55% and varied from a high of 98% in Old Crow to a low of 29% in Dawson City. The total reported harvest of big game for the period January to December 1987 was 226 moose, 915 caribou, 17 black bears, 11 grizzly bears, 2 goats, and 1 sheep. The proportion of males in the reported harvest was 80% for moose, 81% for caribou, 85% for grizzly and black bears combined and 50% for wolves. These results suggest that Indian hunters predominantly take males and that the female harvest in comparison is small. The peak of the moose harvest coincided with the rut which is similar to the open season for non-native hunting.

Most hunters felt general game abundance is lower now than it was 10 years ago. Primary reasons given were predation (36%), over-hunting (34%), and movements (23%).

All communities except Old Crow consumed substantially more meat than they reported harvesting. The reported annual consumption of moose meat averaged 0.81 moose per household or 0.25 moose/person/year. For caribou, consumption rates in Old Crow were 9.7 caribou/household or 3.2

caribou/person/year. In the remaining communities, caribou consumption rates were considerably lower. The descrepancy between reported harvest and consumption of moose and caribou suggest the harvest is underreported and that the actual harvest of big game is probably closer to the reported figures on meat consumption.

We must develop ways to improve accuracy and we suggest this be done by fostering a better trust relationship and a more direct contact between wildlife managers and Indian hunters. Without their involvement and cooperation, wildlife populations in the Yukon cannot be managed effectively.

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ACKNOWLEDGEMENTS

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INTRODUCTION

Since 1979, the big game harvest in Yukon has been reported by licenced resident hunters through an annual hunter questionnaire survey. Over 70% of these questionnaires were filled out and returned, (Smith and Hare 1988), indicating good cooperation from licensed resident hunters. Guided non resident hunters are required by law to report their harvest of big game and this harvest since 1979 has also been summarized in Smith and Hare 1988.

The Indian harvest has not been well documented. Section 17(3) of the Yukon Act states that no territorial ordinance shall "restrict or prohibit Indians or Eskimos from hunting for food on unoccupied crown lands, game other than game declared by the Governor in Council to be game in danger of becoming extinct". This legislation enables Indians to hunt for food without a licence, therefore most Indian hunters did not receive a mailed questionnaire. Prior to 1987, no attempts had been made to systematically collect information on the game harvest by Yukon Indians, therefore the Indian harvest was largely unknown.

The need for harvest statistics to manage wildlife populations has become critical in recent years as declines in moose (Larson, Gauthier and Markel 1987) and caribou (Farnell and McDonald 1988, Davis et al. 1978) populations have occurred in several areas of Yukon. These population declines may require intensive management to stabilize or reverse the trend and therefore all limiting factors (including human hunting) must be well documented to give biologists the data they need to develop solutions to the problem. Sustainable harvest management of big game in Yukon will require continuous monitoring of the harvest by all the user groups (licenced

residents, non-residents and Indian hunters). There is also the broad area of social and economic needs which provide an impetus to collect harvest data. Specifically:

(a) input to land claims negotiations, which have often focused on the demand for, and value of, the wildlife resource and its habitat;

(b) an obligation to fairly allocate the wildlife resource between different user groups;

(c) a need to control and plan land developments; especially those which may have a negative impact on wildlife and wildlife habitat;

(d) the question of compensation for loss of or detriment to the wildlife resource;

(e) a need to document the significance of the subsistence economy in order to protect or enhance it;

In the spring of 1987, the Department of Renewable Resources (DRR) began a pilot project to collect harvest information from seven Yukon Indian Bands. The objectives of the pilot project were to:

1) establish a workable methodology for the collection, analysis, and interpretation, of Indian harvest information;

2) collect quantitative data on harvest characteristics (total kill, location, sex, and time of kill) of selected big game species as well as characteristics of the hunter population (size, harvest rates, meat consumption, and hunter perceptions of game abundance).

The pilot project was designed to include those Indian Bands where wildlife management projects were planned, underway, or had just been completed. These Bands included Vantat Gwich' in (Old Crow), Na-Cho Ny'a'k-Dun (Mayo), Champagne-Aishihik (Haines Junction), Selkirk Indian Band (Pelly Crossing), Liard Indian Band (Watson Lake), and Ross River Indian Band. After consultation with each Band Council, Champagne-Aishihik and Mayo decided not to participate in the study. Both Bands felt that given the current political climate, they were not prepared to enter into a harvest study administered by the DRR. Instead, cooperation was sought from the Dawson Indian Band whose Council agreed to be part of the study.

METHODS

Band Participation

In the spring of 1987 the senior author (Ray Quock) met with the Band Councils in each of the seven communities to present the harvest study objectives and design. The Band Council was asked if they wanted to become involved in the study and if they had any suggestions on the design of the survey. The Bands who agreed to participate in the study were given the task of selecting a suitable fieldworker of Indian ancestry and resident of the community. A service contract was then set up with the Band to pay for the fieldworker.

Once selected, the fieldworkers attended a two day workshop in Whitehorse in May 1987. The fieldworkers were provided with a background on harvest studies and on the DRR and their need for reliable harvest information. A draft questionnaire, prepared in cooperation with the Bureau of Statistics, was critically reviewed by the fieldworkers. The questionnaire was revised to

better reflect Indian concepts. A training manual was provided as a take home overview of the harvest study and also provided an outline of the fieldworker's role as interviewers. It was important that the fieldworkers were given a clear understanding of why this data was being collected as they would be required to explain these reasons to the respondents.

Survey Design

The basic sampling unit was the Indian household. The population of hunters was identified by mapping all Indian households within a community. The fieldworker prepared this map from air photos and community reference maps. All Indian houses were assigned a unique number and recorded on a community coding sheet. An Indian household was defined as a house where people of Indian ancestry resided regardless of whether the individuals were registered in Ottawa as a status or non-status Indian.

It is presumed that all Indians living in the community were included in the total population estimate except Indian women who married non-Indian men (mixed families). The rationale for not including these women in the sample population was that non-Indian men report their harvest through the resident questionnaire survey. A problem in this approach is that children of these mixed families could receive Indian status through Bill-C 38 and their harvest would not be recorded by either the Indian harvest study or the resident questionnaire survey. Another problem is that the woman might hunt for big game and her harvest would not be recorded by either method. Hence, a portion of the Indian harvest would be missed by the survey.

Beginning in 1988, field workers will survey mixed households who are known to have children with Indian status. Those mixed families who do not have children will be excluded from the survey because 98% of caribou and 94% of all moose are taken by men. Therefore the big game harvest will not be seriously underestimated by excluding these women.

After mapping was completed, the fieldworker approached each house with a survey questionnaire (Appendix A). The questionnaire was divided into two parts; part one was designed to question the head of the household (preferably the mother and cook of the family). Through the head of the household, the following information for that particular household was determined: total number of people who lived there, number and names of each hunter who lived there, how often the hunter hunted and how much moose and caribou the household consumed versus required (demand) over the past year to satisfy the needs of all the people in that particular household.

In part two, each hunter was interviewed about their perceptions of game abundance and their total harvest over the past six months. In addition to the total number harvested by species, their sex, location and month of each kill was recorded. The location was recorded by Game Management Zones (GMZ) and Sub-zones (GMS) as pointed out by the hunter from 1:500,000 and 1:2,000,000 scale maps. The 1:500,000 scale maps became too unwieldily and 1:2,000,000 scale maps that are part of the Yukon Hunting Regulation Synopsis were used.

The species included in this pilot survey were limited to big game (moose, caribou, sheep, goat, grizzly bear, black bear and wolf) to minimize the response burden on hunters. It is easier for hunters to recall their big game

harvest than it is to recall their harvest of small game and fish. Hunters can also understand the need for intensive management of big game species more so than small game, such as rabbits or ptarmigan. Furthermore, the DRR does not yet have jurisdiction over fish and harvest of fur species are currently collected by game export and trapper declaration forms.

In an effort to avoid double reporting, each hunter was asked to recall only the animals that hunter shot and recovered*. For example, if three hunters were present when a moose was shot, only the hunter who actually shot the moose was asked to include the kill. It is assumed that double reporting was not a problem. To aid recall, a native harvest calendar was produced and distributed to all Indian households. The calendars allowed hunters to record their harvest on a monthly basis. The calendar was also a means to promote the idea of voluntary information exchange.

To ensure anonymity, each household was assigned a random number in addition to its map location number. Only the random number appeared on the survey questionnaire and this became the ID number for a particular household. A master coding sheet was kept by the fieldworker and the project manager to cross reference the ID number to the map location of the household and ultimately to the individual hunter. This coding sheet is kept confidential and is the only means to locate individual hunters for each survey period.

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* Harvest kill was defined as the number of animals actually retrieved and brought back to the community. It did not include crippling loss or any animals not retrieved.

The fieldworkers were encouraged through a bonus pay system to collect harvest information by personally interviewing as many Indian households and hunters in the community as possible.

The fieldworker contacted each hunter twice during the first year to gather harvest information for a six month period; once in June and again in December. The Dawson City Band Council was not approached to participate in the harvest study until July 1987 and harvest data was only collected from Dawson once (in December) for a full year period. Once a household and hunter had been contacted, further interviews were less detailed and included only characteristics of the harvest (species, location, sex and month of kill) assuming the hunter had been successful. The data reported here covers the period from 1 January to 31 December 1987 only.

Data Analysis and Verification

Once the fieldworker had completed the survey questionnaires for each period, the data were entered, edited, and analyzed on an IBM mainframe computer using SAS (Statistical Analysis System) software.

The fieldworkers were asked to, essentially, conduct a census by contacting all Indian households and hunters in each of the selected communities. Thus, the proportion of non-respondents were made up of incomplete or non-cooperative households/hunters (the proportion of non-respondents was only 4% and is considered insignificant). The census approach was preferred as it should allow us to stratify future efforts into active and not-so-active (occasional) hunters. No attempts have been made in this report to extrapolate a total community harvest by species because the proportion of hunters surveyed was high (96%). Instead, the reported harvest is given

together with the proportion of all known hunters that were contacted. Similarly, the meat consumption and demand data refer only to those households actually interviewed.

To verify the accuracy of our population data, the number of Indian households mapped by the fieldworker were compared to population characteristics from Census Canada.

RESULTS AND DISCUSSION

Indian Population Estimates

The total reported Indian population of the six communities surveyed in this study was 1,331 (Table 1). This compares to 1,375 recorded by Census Canada (1986). The reason for the different population estimates is likely due to the different definition for "Indian". Since the objective of our survey was to document the Indian harvest of big game, we did not include mixed households where the primary harvester (presumed to be the male) was a non-Indian. Thus, in some cases, Indian women were missed by our survey. However, we feel our coverage was adequate to include the majority of Indian hunters in the six communities. The women who were missed will not seriously underestimate the big game harvest because 98% of caribou and 94% of moose were taken by men. The Census Canada survey defined an Indian as any person who considered themselves to be aboriginal.

Table 1. A Comparison of Indian Population Estimates by Community

Community	Harvest Study[a]	Census Canada[b]
Pelly Crossing	191	155
Watson Lake	272	330
Ross River	239	250
Teslin	232	195
Old Crow	210	205
Dawson	187	240
Total	1331	1375

a 1987 questionnaire population estimate

b 1986 Canada Census

Household Coverage and Characteristics

There were a total of 429 Indian households mapped and 415 (97%) of these were contacted (Table 2). The proportion of households contacted by community ranged between 93% and 99%. We feel the fieldworkers did an excellent job in contacting as many as possible of the mapped households.

There were 14 households from all communities that were not contacted. In six of these cases, people within these households did not cooperate because they felt the information could be used against them in land claims negotiations or through hunting restrictions. In the other 8 cases no one was home at the time of the survey.

There was an average of 3.1 people residing in each household (Table 2). Over the total number of households, 76% had a hunter residing in the house and this ranged from a high of 87% in Ross River to a low of 59% in Watson Lake.

The proportion of hunters (who called themselves hunters) in the Yukon Indian population (40%-Table 2) was similar to that reported among Inuit in the Keewatin region, N.W.T. (35%; Gamble 1987) but considerably higher than found in the Kitikmeot Region N.W.T. (20%; Jingfors 1986) and in James Bay (21%; JBNQHRC 1982). Only 80% of the people who called themselves hunters in the Yukon study (Table 3) actually hunted in 1987. This is in contrast to the James Bay and Kitikmeot study where all hunters actually hunted.

Table 2. Indian Household Charactertistics by Community, 1987.

Community	Total Households (H.H.) Mapped	Total H.H. Contacted (%)	Average H.H. size	Total H.H. with Hunter (%)	Type of Hunter[a]		
					Active	Occasional	Total (%)
Pelly Crossing	57	56(98)	3.4	46(82)	11	62	73(38)
Watson Lake	88	82(93)	3.1	48(59)	8	54	62(23)
Ross River	71	70(99)	3.3	61(87)	10	91	101(42)
Teslin	80	77(96)	2.9	65(83)	21	72	93(40)
Old Crow	69	68(99)	3.0	56(82)	7	52	62(30)
Dawson	64	62(97)	2.9	40(65)	10	52	62(33)
Total	429	415(97)	3.1	316(76)	67	386	453(40)

a Individuals were asked if they hunted often ("active") of only once in a while ("occasional"). The proportion of all hunters to total population size is expressed as a percentage ("Total"). These figures only include hunters who answered question 6 of the questionnaire.

Hunter Coverage and Characteristics

The total number of Indian hunters 'mapped' (known) was 485, and the total number of hunters contacted was 467 (96%; Table 3). The reason 18 hunters were not contacted is that a number of these hunters were out of town in remote trapping locations at the time of the survey or were not available for other reasons. Five hunters did not cooperate with the study due to their suspicion on how the information was going to be used and the state of an outstanding land claims settlement. Nevertheless, the high contact rate suggests excellent cooperation in the survey on the part of the Indian population.

Of all hunters contacted, 374(80%) actually hunted in 1987 (Table 3). The proportion of hunters who hunted was highest in Old Crow (97%) and lowest in Teslin (71%). This can be partly explained by the different proportion of male versus female hunters in each community. Overall, males represented 78% (340/436) of all hunters (Table 4). In Old Crow, only one woman called herself a hunter (2%) while in Teslin there were 33 female hunters (40%). When the reported harvest is grouped by male versus female hunters, it is clear that the male hunters accounted for almost the entire harvest. For example, 94% of all moose and 98% of all caribou were taken by men (Table 4). Thus, it appears that excluding Indian women in mixed households from our "hunter" definition would not result in a serious underestimation of the big game harvest.

Of all individuals calling themselves "hunters", 15% (67/453) considered themselves "active" hunters and the remainder as "occasional" (once in a while) hunters (Table 2). There were 20 hunters who classified themselves

Table 3. Indian Hunter Characteristics by Community, 1987.

Community	Total Known Hunters	Total Hunters Contacted (%)	Total Hunters Who Hunted in 1987 (%)	Total Successful[a] Hunters (%)
Pelly Crossing	76	76 (100)	59 (78)	32 (54)
Watson Lake	68	62 (91)	48 (77)	28 (58)
Ross River	105	105 (100)	77 (73)	37 (48)
Teslin	106	97 (92)	69 (71)	31 (45)
Old Crow	68	65 (96)	63 (97)	62 (98)
Dawson	62	62(100)	58 (94)	17 (29)
Total	485	467 (96)	374 (80)	207 (55)

a Defined as the number (and proportion) of hunters that reported harvesting big game out of all hunters that hunted during 1987.

Table 4. Sex Specific Differences in Harvesting Rates Among Indian Hunters, 1987.

	Total Hunters[a] (%)		No. (and %) of Moose Taken by Hunter sex		No. (and %)of Caribou Taken by Hunter Sex	
Community	Male	Female	Male	Female	Male	Female
Pelly Crossing	54(75)	18(25)	41(89)	5(11)	20(100)	0(0)
Watson Lake	48(83)	10(17)	40(93)	3(7)	23(92)	2(8)
Ross River	78(78)	22(22)	35(100)	0(0)	47(87)	7(13)
Teslin	49(60)	33(40)	44(94)	3(6)	7(100)	0(0)
Old Crow	60(98)	1(2)	29(97)	1(3)	748(99)	11(1)
Dawson	51(82)	11(8)	17(89)	2(11)	10(100)	0(0)
Total	340(78)	95(22)	206(94)	14(6)	855(98)	20(2)

a Only includes those hunters who responded to part C of the questionnaire.

as "active" hunters but did not hunt at all in 1987. This suggests that our criteria for classifying hunters did not work well. Instead, we recommend hunters be classified based on their actual harvest over a period of years.

The average success rate (successful in killing a big game animal) of hunters who hunted was 55% (Table 3). Old Crow had the highest success rate (98%) and Dawson City had the lowest success rate (29%) of all communities. The difference in hunter success rates between communities such as Old Crow and Dawson City is likely related to factors such as availability and consumption of big game. The Porcupine Caribou Herd usually migrates through the Old Crow area in the spring and fall each year and sometimes winters there as well. As a result the people of Old Crow are by far the largest consumers of caribou meat in the Yukon. The low success rate reported from Dawson is likely a function of under-reporting because the fieldworker did not contact three of the main hunters in this community.

Harvest Characteristics

The total reported harvest of big game for the period January to December 1987 was 226 moose, 915 caribou, 11 grizzly bears, 17 black bears, 1 sheep, 2 goats and 22 wolves (Table 5). The mean harvest of moose per successful household was 1.8, and is very similar between communities which ranged from a high in Pelly Crossing of 2.2 to a low in Old Crow of 1.4. The average harvest of caribou per successful household is similar in all communities except Old Crow. In Old Crow, due to the accessibility of the Porcupine Caribou Herd, the average caribou harvest per successful household is 15.2. In all other communities the mean caribou per successful household ranged between 2.5 in Pelly Crossing to 1.4 in Teslin.

Table 5. Reported Harvest by Species and Community, 1987.

Community	Moose	Caribou	Black Bear	Grizzly Bear	Wolf	Sheep	Goat
Pelly Crossing	48	20	0	0	3	0	0
Watson Lake	43	25	2	0	0	0	2
Ross River	37	54	3	2	4	1	0
Teslin	47	7	8	5	14	0	0
Old Crow	32	799	1	3	1	0	0
Dawson	19	10	3	1	0	0	0
Total	226	915	17	11	22	1	2

The reported harvest of moose and caribou appear to be very low for Dawson City, and is likely underreported due to the fieldworker not contacting three 'key' hunters. However, this does not fully explain the low hunter success rate and the fact that 90% of households reported that they did not have enough moose or caribou meat to satisfy their needs. These facts suggest that the reported harvest may be a real situation and Dawson hunters either have a hard time finding game or just do not hunt to the same extent as hunters in other communities.

It appears that Teslin hunters hunt a significantly higher number of bears and wolves than other communities as 46% of the bears and 64% of the wolves were harvested by Teslin hunters.

The reported harvest of sheep and goats is only 1 and 2 respectively for the six communities combined. The Indian harvest of sheep is probably low but is likely underestimated here. The goat harvest is likely very minimal in Yukon as goats are very inaccessible and are not thought of as a good food source. However, goat hides are sometimes used to make blankets.

The location of harvest for each species is presented by Game Management Zone in Appendix B. Participation in the harvest of Porcupine Caribou from the Dempster Highway included Indian hunters from Dawson, Pelly, Whitehorse and Teslin.

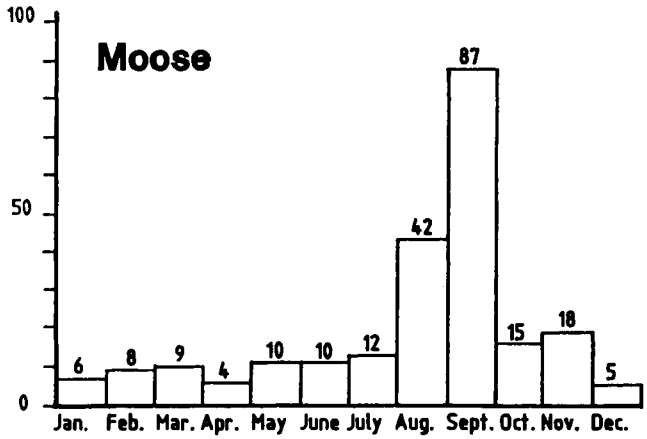
The proportion of males in the reported harvest for each species was: moose 80% (178/223); caribou 81% (729/907); grizzly bear 82% (9/11); black bear 88% (14/16); and wolves 50% (11/22). These results suggest that Indian hunters select for males when hunting big game.

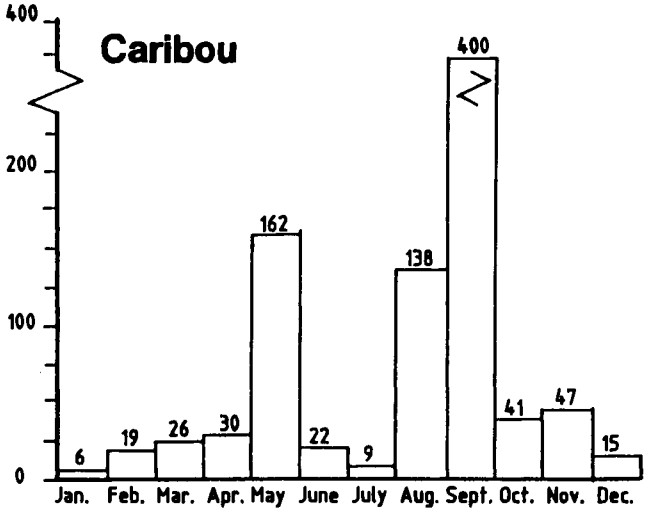
The month of harvest for each species, except sheep and goats, is presented in Fig. 1. The 1 sheep and 2 goats were harvested in July of 1987. The peak of the moose harvest coincides with the rut and the open season for non-native hunters (Smith and Hare 1988). Since most caribou were taken by Old Crow hunters, that harvest coincides with the migration of the Porcupine Caribou Herd past Old Crow.

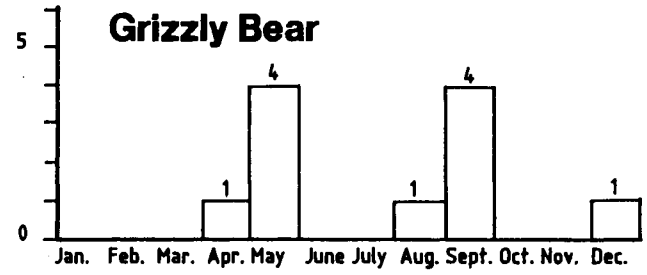
Moose and Caribou Consumption and Demand

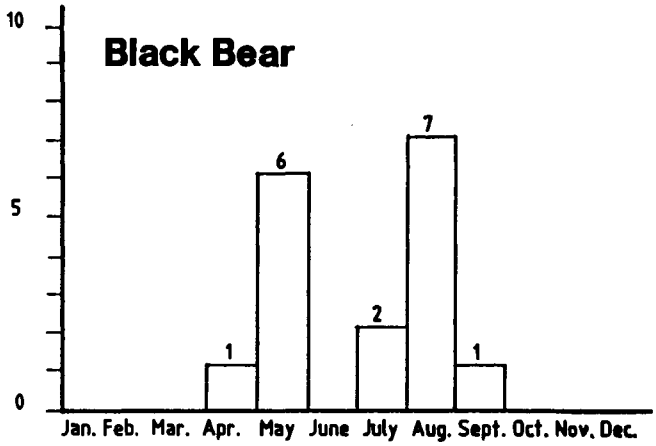
All communities except Old Crow consumed substantially more meat than they reported harvesting (Table 6). Old Crow is the only community that reported harvesting enough meat to satisfy their current demand. In all other communities this was not the case; the number of households who reported not having enough moose and caribou to satisfy their needs ranged from 90% in Dawson City to 50% in Teslin. The current consumption is consistently higher than the reported harvest. The actual harvest in all communities except Old Crow is probably closer to the reported consumption of moose and caribou than the reported harvest. The discrepancy between the reported harvest and current meat consumption suggest that most Yukon Indian hunters with the exception of Old Crow tend to underreport their actual harvest. We believe this to be the case particularly in Dawson, Watson Lake, Ross River, and Teslin. There are likely several reasons for this.

Fig. 1: Species Harvest by Month, 1987.









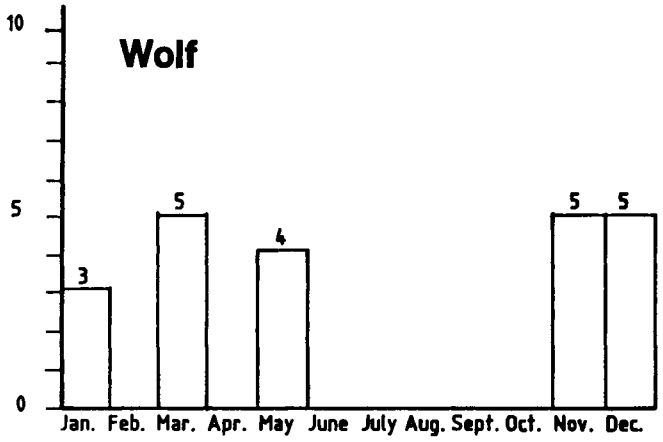


Table 6. Summary of Reported Harvest, Current Consumption and Demand for Moose and Caribou by Community, 1987.

Community	Total Households	Total Persons	Moose Harvest	Moose Consumption	Moose Demand	Caribou Harvest	Caribou Consumption	Caribou Demand
Pelly Crossing	56	191	48	52	99	20	6[a]	102
Watson Lake	63	217	43	65	116	25	60	96
Ross River	68	235	37	70	167	54	65	194
Teslin	75	230	47	75	114	7	16	62
Old Crow	67	207	32	29	47	799	651	830
Dawson	62	183	19	25	71	10	41	138
Total	391	1263	226	315	613	915	839	1420

[a] The consumption rate is low because 3 households with 'Key' hunters did not answer the consumption question.

While the majority of people were very cooperative and responded willingly to the questionnaire, a number of individuals questioned why the government was collecting harvest data. Many hunters, that the senior author spoke with were not aware of their rights and thought they were only allowed (by law) to hunt during the non-native hunting season. They therefore thought they were poaching when hunting outside of this period. They felt that if they told the truth about their hunting practices they could be prosecuted.

Another common feeling was that if the DRR learned the number of animals the Indians were taking, the DRR would respond by establishing a quota system or otherwise regulate their harvest. Most hunters said they hunted whenever they ran low on meat and only killed what they needed to feed their family.

Others simply do not trust the Government (possibly due to land claims negotiations which are currently in progress) and feel Government has no business prying into their affairs and therefore they may not have answered questions correctly.

The per capita consumption of moose averaged 0.25 (or 0.81 moose per household) and ranged between a high of 0.30 (1.0 moose/household) in Ross River to a low of 0.14 (0.43 moose/household) in Old Crow. The per capita consumption of caribou in all communities except Old Crow averaged .18 (0.58 caribou per household) and ranged from a high of .28 (1.0 caribou/household) in Ross River to a low of .03 (0.11 caribou/household) in

Pelly Crossing* . Old Crow had a per capita consumption of 3.2 caribou (9.7 caribou/household). The Old Crow consumption rate of caribou is similar to estimated harvest levels found in the NWT where harvest studies in the Kitikmeot Region (Jingfors 1986) and Keewatin Region (Gamble 1987) have documented an average harvest of 2-4 caribou per person per year. Like Old Crow hunters, Inuit hunters from these regions also utilize large barren-ground caribou herds.

Hunter Perceptions

Each hunter was asked for their perceptions of general abundance now versus 10 years ago. Forty two percent (188/444) felt that overall, there are fewer big game animals now than 10 years ago. The reasons for lower numbers given by a majority of hunters were predators 36% (120/332), overhunting 34% (113/332), and emigration 23% (76/332).

In contrast to other Yukon communities, approximately 60% of hunters in Ross River felt that moose and caribou numbers have increased and wolf numbers have declined. The DRR has conducted wolf control in the area for the last 6 years (Farnell and McDonald 1988) in an effort to enhance the Finlayson Lake Caribou herd. In contrast, about 70% of hunters in Teslin feel that moose numbers have declined and wolf and bear numbers have increased. The most common comments given by hunters was that big game hunting by both natives and non-natives should be more regulated (seasons shortened etc.) and enforcement for wildlife regulations should be increased

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* This consumption figure is low because 3 households with 'key' hunters did not answer the consumption question.

49% (71/144; Table 7). The second most prevalent comment was that predators should be regulated (26%; 38/144) and the third was the need to preserve Indian culture (14%; 20/144).

CONCLUSIONS AND RECOMMENDATIONS

The survey design chosen for this pilot project has been successful in meeting some , but not all, of the study objectives. The use of Indian fieldworkers and the questionnaire format appear to work well, except in Dawson. Fieldworkers generally had good cooperation from respondents. The mapping exercise to define Indian households was useful but becomes more difficult as the size of the community and non-Indian population increases.

The information presented here represents only one year of data and more information is needed in order to determine trends and to place confidence on reported harvest.

There is a distinct difference between the harvest activities in Old Crow and other communities. Old Crow is unique in that the community is very reliant on the migration of the Porcupine Caribou Herd. Other communities appear to be more dependant on moose and at the numbers reported here, most families probably need to supplement their diets with store bought meat, while Old Crow people can apparently subsist on game meat.

Table 7. The Number of Responses to Each Category of Hunter Comments by Community

	# of Responses (%)					
Community	Regulate[a] Hunting	Regulate[b] Predators	Questionaire[c] Not Acceptable	Indian[d] Culture	Misc.	Total
PellyCrossing	11(39)	5(18)	3(11)	6(21)	3(11)	28(100)
Watson Lake	13(52)	7(28)	0(0)	4(16)	1(4)	25(100)
Ross River	4(29)	7(50)	2(14)	0(0)	1(7)	14(100)
Teslin	28(52)	17(31)	2(4)	5(9)	2(4)	54(100)
Old Crow	10(91)	1(9)	0(0)	0(0)	0(0)	11(100)
Dawson	5(42)	1(3)	0(0)	5(42)	1(3)	12(100)
Total	71(49)	38(26)	7(5)	20(14)	8(6)	144(100)

a Shorten hunting season on big game; more enforcement.

b Start predator (bears & wolves) control to enhance moose and caribou populations.

c Too many questions-leave us alone, etc.

d Indians need to hunt year round to live our traditional lifestyle; Preserve our right to hunt and fish, etc.

The perception of hunters confirm trends of wildlife population levels such as the Ross River example where moose and caribou populations are increasing and wolf numbers are decreasing. Traditional knowledge of wildlife populations can be useful to guide wildlife management.

The reported consumption of moose and caribou suggest that harvest is underreported and we must develop ways to improve accuracy. The best way to improve the accuracy of the harvest data is to develop a better trust relationship between Indian hunters and the Wildlife Branch. We must develop a more direct and informal contact between wildlife managers and the native community. This could include participation in local wildlife programs (game surveys, game check stations, etc.), consultations with elders to guide major management actions, and joint wildlife management boards. Given the important influence that Indians have on game populations through harvesting, wildlife management in Yukon will not proceed effectively without their involvement or cooperation. Similarly, along with the hunting rights enjoyed by the Indian people comes the responsibility to report their harvest so that wildlife populations can be managed responsibly under the principles of conservation.

In view of the above, we recommend the following:

1. Encourage a more direct involvement of Indians in Wildlife management programs and decisions. Better communications will improve the general interest in wildlife management and develop the trust relationship necessary to gather reliable harvest data.

2. Expand the harvest study to the remaining Yukon communities. This will require an increase of six fieldworkers and one casual

technician with an accompanying operating budget of $63,000 dollars. The involvement of additional communities will depend on their desire to cooperate with the study. Each of these communities will be provided with a copy of this progress report.

3. Collect harvest information once annually in December and January of each year in all communities except Old Crow where the higher harvesting levels will require semi-annual surveys in June and December each year.

4. Continue the census, rather than sampling, approach when contacting hunters because the contact rate is very high and hunters seem to cooperate with the study. Ensure fieldworkers contact all the active hunters in each community and as many as possible of the occasional hunters.

5. Continue current interview format but exclude question 11, that relates to the relative difficulty of hunting now versus 10 years ago. This question can easily be misinterpreted as can the results.

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Appendix A. Harvest Study Questionnaire

ID:

NATIVE HARVEST SURVEY

Confidential When Completed

July to December 1987

PART ONE HOUSEHOLD INFORMATION

Visit	Complete yes	Complete no	Date month / day	Comments
1st	[ ]	[ ]	_____ / _____	_____
2nd	[ ]	[ ]	_____ / _____	_____
3rd	[ ]	[ ]	_____ / _____	_____
4th	[ ]	[ ]	_____ / _____	_____

Reason for incomplete survey form:

_____

_____

A. INTRODUCTION

Hello my name is_____*and some appropriate greeting. Use background sheet for introduction.*

B. HEAD OF HOUSEHOLD

Identify someone who can speak on behalf of all people in this house.

(If there are no persons over the age of eighteen (18) home at the time, END SURVEY and request a time that would be suitable for a follow up visit).

1. **How many persons "usually" live in this house. This includes all family and non family members who live in this house on a ongoing basis.**

[ ] number of persons

2. **For all persons you have just mentioned (including those under eighteen *(18)*, how many:** *(read list a,b,c, at this point)*

a. [ ] **hunt often (Hunt on an ongoing basis)**
b. [ ] **hunt once in a while**
c. [ ] **are non hunters**

d. [ ] ***ENTER TOTAL PERSONS***

Surveyor to sum a,b, and c and ensure it totals the values recorded in question #1.

3. ***If no hunters*** *THEN GO TO QUESTION 4 and 5 and then end the survey*
If hunters *THEN proceed*

Could you give me the name of all the hunters in this house. This includes all those people who have hunted at least once over the past year. One does not have to be successful to be a hunter.

Hunter Number	Hunter name	Hunter Number	Hunter name
#1	_____	#5	_____
#2	_____	#6	_____
#3	_____	#7	_____
#4	_____	#8	_____

I would like you to answer the following questions on behalf of all the people who reside in this house.

4. **How many moose and caribou did this household eat over the past year (an estimate of how many were eaten or consumed by the people in this household regardless of where the animal came from)?**

a. Moose		b. Caribou	
[ ]	whole animals	[ ]	whole animals
[ ]	halves	[ ]	halves
[ ]	quarters	[ ]	quarters
[ ]	pounds	[ ]	pounds

5. **Was this enough Moose for your needs?** 1 Yes 2 No

Was this enough Caribou for your needs? 1 Yes 2 No

If NO to either of the above Then ask

How many moose and caribou would you feel are needed for this household to have enough food for a year?

a. Moose		b. Caribou	
[ ]	whole animals	[ ]	whole animals
[ ]	halves	[ ]	halves
[ ]	quarters	[ ]	quarters
[ ]	pounds	[ ]	pounds

PART TWO **HUNTER INFORMATION**

Fill out one for each hunter identified in question three (3)

C. PERSONAL

I would like to ask you, as a hunter, a few questions regarding your own opinions about hunting.

6. **Do you hunt often or do you hunt once in a while?**

1 hunt often
2 hunt once in a while

7. *(surveyor to fill in the sex of the hunter)*

1 male
2 female

8. **Into which of the following age groups do you fit?** *(read each group at this point)*

1 under 18 years
2 18 to 34 years
3 35 to 64 years
4 65 years and older

D. PERCEPTIONS

Could you please give me your opinion to the following questions? Remember these are to be you own personal views.

	More	Same	Fewer	Do not know
9. **Overall would you say there are more, the same or fewer animals present this year than ten years ago?**	1	2	3	4

IF FEWER, then is this because of : *(read list at this point and check off as many as apply)*

1 over hunting
2 predators such as wolves, bears or other animals
3 the movement of the animals away from your area
4 other reasons: (specify) _____
_____
5 or you do not know

10. Would you say there are more, the same or fewer of the following animals present this year than ten years ago. (read list at this point)

	More	Same	Fewer	Do not know
a. moose	1	2	3	4
b. caribou	1	2	3	4
c. black bears	1	2	3	4
d. grizzly bears	1	2	3	4
e. wolves	1	2	3	4
f. sheep	1	2	3	4
g. goats	1	2	3	4

11. In your opinion would you say it is more difficult, the same or less difficult to hunt and be successful this year than ten years ago.

More	Same	Less	Do not know
1	2	3	4

Why do you think this is so?

_____

_____

_____

E. GAME

12. Over the last six months have you hunted for moose, caribou, bears, sheep, goats or wolves?

1	NO	***If NO***	*GO TO QUESTION 15 (Comments)*
2	YES	***if YES***	*PROCEED with survey.*

13. During the last six months how many of the following animals did you shoot (I am requesting the number of animals you killed rather than the total number of animals killed by any group of hunters you may have been with during a hunt)? *(read list at this point)*

	number
a. moose	_____
b. caribou	_____
c. black bears	_____
d. grizzly bears	_____
e. wolves	_____
f. sheep	_____
g. goats	_____

F.DETAIL

I would like to ask you more specific information about the animals that you killed. To get an accurate number please remember we are only talking about animals <u>you</u> killed.

I will discuss each type of animal and ask you where you killed them by referring to this map (*show map*). I do not want to know exactly where but only which game zone area on the map best describes where the kill occurred. I would also ask you to recall, if you can, whether the animal was male or female and approximately when the kill occurred.

(SURVEYOR: before you start ,check off as many lines as needed for each of the species identified from Part E - question 13)

14. Now, for each one of these animals, where on the map was it killed? Was it male or female and when was it killed? *(repeat for as many animals as checked off)*

SPECIES							ZONE	SEX	MONTH
		BEAR							
Moose	Caribou	Black	Grizzly	Wolves	Sheep	Goat		1 = male 2 = female ? = do not know	1 = Jan, 2 = Feb, 3 = Mar, 4 = Apr, 5 = May, 6 =June, 7 = July, 8 = Aug, 9 = Sept, 10 = Oct, 11= Nov, 12 = Dec, ? = do not know
1	2	3	4	5	6	7	______	1 2 ?	1 2 3 4 5 6 7 8 9 10 11 12 ?
1	2	3	4	5	6	7	______	1 2 ?	1 2 3 4 5 6 7 8 9 10 11 12 ?
1	2	3	4	5	6	7	______	1 2 ?	1 2 3 4 5 6 7 8 9 10 11 12 ?
1	2	3	4	5	6	7	______	1 2 ?	1 2 3 4 5 6 7 8 9 10 11 12 ?
1	2	3	4	5	6	7	______	1 2 ?	1 2 3 4 5 6 7 8 9 10 11 12 ?
1	2	3	4	5	6	7	______	1 2 ?	1 2 3 4 5 6 7 8 9 10 11 12 ?
1	2	3	4	5	6	7	______	1 2 ?	1 2 3 4 5 6 7 8 9 10 11 12 ?
1	2	3	4	5	6	7	______	1 2 ?	1 2 3 4 5 6 7 8 9 10 11 12 ?
1	2	3	4	5	6	7	______	1 2 ?	1 2 3 4 5 6 7 8 9 10 11 12 ?
1	2	3	4	5	6	7	______	1 2 ?	1 2 3 4 5 6 7 8 9 10 11 12 ?

Hunter # 2

SPECIES							ZONE	SEX			MONTH												
Moose	Caribou	BEAR Black	Grizzly	Wolves	Sheep	Goat		1 = male 2 = female ? = do not know			1 = Jan 2 = Feb 3 = Mar 4 = Apr 5 = May 6 =June 7 = July 8 = Aug 9 = Sept 10 = Oct 11= Nov 12 = Dec ? = do not know												
1	2	3	4	5	6	7	______	1	2	?	1	2	3	4	5	6	7	8	9	10	11	12	?
1	2	3	4	5	6	7	______	1	2	?	1	2	3	4	5	6	7	8	9	10	11	12	?
1	2	3	4	5	6	7	______	1	2	?	1	2	3	4	5	6	7	8	9	10	11	12	?
1	2	3	4	5	6	7	______	1	2	?	1	2	3	4	5	6	7	8	9	10	11	12	?
1	2	3	4	5	6	7	______	1	2	?	1	2	3	4	5	6	7	8	9	10	11	12	?
1	2	3	4	5	6	7	______	1	2	?	1	2	3	4	5	6	7	8	9	10	11	12	?
1	2	3	4	5	6	7	______	1	2	?	1	2	3	4	5	6	7	8	9	10	11	12	?
1	2	3	4	5	6	7	______	1	2	?	1	2	3	4	5	6	7	8	9	10	11	12	?
1	2	3	4	5	6	7	______	1	2	?	1	2	3	4	5	6	7	8	9	10	11	12	?
1	2	3	4	5	6	7	______	1	2	?	1	2	3	4	5	6	7	8	9	10	11	12	?
1	2	3	4	5	6	7	______	1	2	?	1	2	3	4	5	6	7	8	9	10	11	12	?
1	2	3	4	5	6	7	______	1	2	?	1	2	3	4	5	6	7	8	9	10	11	12	?
1	2	3	4	5	6	7	______	1	2	?	1	2	3	4	5	6	7	8	9	10	11	12	?
1	2	3	4	5	6	7	______	1	2	?	1	2	3	4	5	6	7	8	9	10	11	12	?

G. COMMENTS

15. Do you have anything you would like to tell the Game Branch? Do you have any observations about the animals we have just discussed? *(use back of sheet if necessary)*

____

____

____

____

____

____

____

____

Appendix B. Location of Harvest by Game Management Zone, 1987.

Game Management Zone	Moose	Caribou	Grizzly Bear	Black Bear	Wolf	Sheep	Goat
1	36	810	3	.	3	.	.
2	15	22	1	.	.	.	.
3	16	.	.	3	1	.	.
4	55	28	2	3	4	1	.
5	1	.	.	.	.	.	.
7	1	.	.	.	.	.	.
8	10	2	4	3	3	.	.
9	4	.	.	1	3	.	.
10	55	24	1	6	8	.	.
11	32	29	.	.	.	.	2
Total	225	915	11	16	22	1	2