

PRACTICAL IMPORTANCE OF MOOSE AND OTHER WILD FOODS TO
NATIVES IN A REMOTE NORTHERN ONTARIO COMMUNITY

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Abstract: A detailed interview of all available trappers and hunters on the Cat Lake Reserve, northwestern Ontario, was conducted. Information was collected on numbers of moose and woodland caribou killed and relative importance of various classes of food items in the family diet. Hudson Bay Company records were used to evaluate the importance of store-bought meats. Moose meat provided over 25% of the estimated community protein intake. Woodland caribou were relatively unimportant. Other wild foods could not be precisely evaluated, but a crude estimation procedure indicated that wild food sources supplied nearly 60% of the community's protein.

A problem that has surfaced during the preceding decade is the question of native use of wildlife. This has happened primarily because the technological society continues to make inroads into hinterland areas, directly or indirectly putting additional demands on the resource. At the same time, the native people who are the majority now inhabiting such areas are themselves demanding the confirmation and entrenchment of aboriginal and treaty rights, one of the most important of which is the right to hunt, fish and trap on traditionally occupied lands.

Management entails identifying and evaluating all conflicting demands and finding acceptable methods of allocating the resource. To date, there have been far too few honest efforts made to measure the existing use of wildlife by natives. As Finney (1979:573)

said: "Lamentably, but also inevitably, to some, the Native harvest of wildlife is primarily sand in the wheels of a smooth running bureaucracy, an irritant which would best be appreciated by its absence." The evidence is growing that both the magnitude of native harvest and its importance to local communities are considerable (Usher 1978, Native Harvesting Research Committee 1978, Tanner 1979, Finney 1979).

This paper will deal with one aspect of native wildlife harvest, namely its subsistence value. The present work was actually an afterthought of a larger study and as such, relies partly on informed speculation. An effort has been made throughout to ensure that any error is on the conservative side.

STUDY AREA

Cat Lake is a village of about 350 residents, located some 400 km northwest of Thunder Bay, Ontario (51°44'N; 91°49'W). It has no road access, and one radio-telephone. The twice-weekly mail plane is the only scheduled air service.

Trapping is an important industry for the community. There are 49 active trappers, using the 17 registered traplines which make up the Cat Lake Band Area (approximately 11,600 km²).

Fly-in fishing and moose hunting are the major uses of the area by outsiders.

METHODS

A detailed interview program aimed primarily at the active trappers and hunters of Cat Lake was conducted in June, 1980. The survey reached

44 individuals, including 75% of the active trappers. The interview was carried out using the services of a local interpreter recommended by the band council. The interview included 2 items of particular interest. The first was a request for information regarding all moose (Alces alces) and woodland caribou (Rangifer tarandus caribou) killed during the previous year. The second asked for a ranking of 6 food items in the individual's family diet. These items were: moose, caribou, beaver (Castor canadensis), small game, fish, and store bought meat. An importance index was calculated by assigning 5 points to each first choice down to 0 points for each last choice.

Estimates of actual edible weights were then made for each category as described below:

Moose and Caribou

The numbers of moose and caribou brought into the community were estimated directly from the interview results. Information regarding animals killed by hunters who were not in town at the time was solicited from family members or hunting partners. All information was cross-checked for consistency. Assigned edible weights were 159 kg (350 lb.) per moose and 57 kg (125 lb.) per caribou. These figures were calculated as 40% of the estimated average live weights of harvested animals (Colinvaux and Barnett 1979, Peterson 1974).

Store Bought Meat

Weights of fresh and canned meats were tallied directly from Hudson Bay Company shipping records.

Since direct information regarding the other food items was not collected at the time, indirect estimates were made as follows:

Beaver

An average was taken of the number of trapped beaver registered between the 1976-77 and 1979-80 trapping seasons (unpubl. Ontario Ministry of Natural Resources data). The proportion used as food was assumed to be 80% of this. Although arbitrary, this did not seem unreasonable, since Novak's (1975) estimate of the number of beaver carcasses eaten by trappers in the Sioux Lookout District exceeds the number recorded on the official fur harvest statistics for that year (unpubl. Ontario Ministry of Natural Resources data, 1972-73 season). An average edible weight of 5.4 kg (12 lb.) per beaver was calculated as 45% of the average live weight (Novak 1975). The average live weight of harvested beaver was taken to be 12.1 kg (26.7 lb.), the value used by the Native Harvesting Research Committee (1976) for the James Bay territory.

Small Game

This category is a catch-all made up mostly of waterfowl, grouse (spruce grouse: Canachites canadensis and ruffed grouse: Bonasa umbellus) and snowshoe hare (Lepus americanus). A wide variety of other birds and small mammals is included here as well.

Estimated goose and duck harvests were taken from unpublished Ontario Ministry of Natural Resources data on harvest by native trappers between 1956 and 1973 in the area of Sioux Lookout District (Brown and Melnyk 1979). The Cat Lake portion of this was simply pro-rated according to its proportion of the District's total Indian population. Edible weights per bird were

taken from the most conservative published estimates available (Tanner 1979).

The combined contributions of grouse and hare were estimated arbitrarily as 1% of the total wild food harvest, a figure which compares conservatively with the scanty literature available (Tanner 1979, Native Harvesting Research Committee 1978).

Fish

In the absence of any information whatever on fish harvest, a figure of 4.5 kg (10 lb.) per day for the whole community was used. This works out to 4.7 kg (10.4 lb.) per person per year, and compares with the national average of 5.7 kg (12.5 lb.) per person per year (Statistics Canada 1979).

RESULTS

The following importance index was calculated from the rankings of the 6 food items by 36 hunters and trappers (Table 1).

Table 1. Importance indices of 6 protein sources in the family diets of 37 Cat Lake trappers.

Item	Score	Item	Score
beaver	127	store-bought	93
moose	123	small game	71
fish	111	caribou	20

The estimated edible weights of food items have been summarized in Table 2.

Table 2. Estimated weights of animal protein utilized as food by Cat Lake residents, July 1979-June 1980.

Item	Weight (kg)	% of sub-total	% of total
Wild food			
50 moose	7,950.0	47.9	28.2
10 caribou	570.0	3.4	2.0
1094 beaver	5,907.6	35.6	20.9
small game	516.5	3.1	1.8
fish	1,642.5	9.9	5.8
sub-total	16,586.6		58.8
Store food			
fresh meat	9,237.7	79.4	32.7
canned meat	2,391.4	20.6	8.5
sub-total	11,629.1		41.2
Grand total	28,215.7		

DISCUSSION

The calculated relative importance index was not based on a random sample, but rather constructed of subjective rankings supplied by trappers. As such, it probably exaggerates the contribution of wild foods, particularly beaver. However, it does provide a basis for checking certain assumptions made for the estimation of actual edible weights.

Each item will be discussed in detail.

Moose and Caribou

The estimates of moose and caribou harvest are probably quite reasonable. All information received was cross-checked and generally found to be consistent. In any case, any errors are probably due to information missed or withheld and will result in an underestimate. The relative amounts of moose and caribou meat available are confirmed by their importance index values (Table 1).

The edible weights used are near the minimums reported in the literature and substantially lower than those used for the James Bay study (Native Harvesting Research Committee 1976), which were supposedly conservative.

Beaver

No direct estimate of the subsistence value of furbearer meat was obtained. While the calculated weight is substantial, it may well be conservative for five reasons:

- 1) the registered harvest always underestimates the actual harvest to some degree. For example, pelts may be damaged or used for domestic purposes and are not recorded as part of the commercial harvest. In the James Bay native harvesting study (Native Harvesting Research Committee 1976), it was a fairly consistent finding that actual beaver harvest was 1.4 times that registered by the Quebec government. If the same factor applied at Cat Lake, the amount used as food would represent only 57% of the actual harvest.

- 2) a 1975 Ontario Ministry of Natural Resources study (Novak 1975) of the use of furbearers as meat indicated that trappers in the Sioux Look-out District consumed a number of beaver carcasses approximating the recorded harvest.

- 3) Novak's (1975) study showed a similar picture for muskrat (Ondatra zibethica) and substantial use of lynx (Lynx lynx). A Cat Lake trapper referred to human use of otters (Lutra canadensis). Allowances have not been made for other furbearers here.

- 4) the interviewed trappers ranked beaver as the most important single protein item in their families' diet. While it must be emphasized that this is a subjective rating based on a non-random sample, it is a clear indication that substantial amounts of beaver meat are consumed. The estimation procedure used here puts beaver (including any contribution from other furbearers) in third place, behind store bought and moose meat.

- 5) the average edible weight of harvested beaver used in this analysis (5.4 kg or 12 lb.) corresponds to the lowest reported in the literature (Tanner 1979).

Small Game

Although there was some basis for estimating the contribution of waterfowl, the overall estimate for small game is clearly arbitrary. Usher (1976) stated, in regard to making estimates from government native harvest statistics, that the only things one can be fairly sure of are that the data underestimate the true situation and that they are likely of the same order of magnitude.

There are 3 additional comments that should be made regarding the

small game estimates.

1) The corresponding estimate made for two inland Cree communities in the James Bay study (Native Harvesting Research Committee 1978) represented almost 9% of the total wild food harvest.

2) Small game received a higher importance index than caribou.

3) Since the assigned value represents less than 2% of the total, an overestimation of even 100% would not affect the overall conclusions.

Fish

The value used to represent the contribution made by fish was purely arbitrary. It was deliberately chosen to be conservative, while recognizing that it is not insignificant. The assigned value for fish represents per capita consumption which is slightly below the national average (Statistics Canada 1979). Residents accorded fish a higher importance index than store meat.

Store Bought Meat

Although these estimates were directly measurable from shipping records, there are two counteracting biases involved which must be considered.

First, there was one other locally-owned outlet which did a small business in canned goods. It was a tiny operation which kept irregular hours and was said to be more expensive than 'the Bay'. No attempt was made to obtain data from this source.

Second, there are usually 6 'outsiders' associated with the reserve. These include 4 teachers and 2 Hudson Bay Company employees. This

small group can safely be assumed to account for a very disproportionate amount of the fresh meat brought into the community for 3 reasons:

1) their eating habits are representative of North Americans in general, with a high demand for fresh, not canned meat.

2) they can afford the very high cost of fresh meat on a regular basis.

3) since they are employed full time and usually non-native, they do not have the same access to wild food as permanent residents.

General

Obviously, this estimation procedure is not rigorous and any of the values used could have been altered by using different but plausible assumptions. Unfortunately, as Usher (1976:108) has said, "The data on which exact calculations can be based are not only unavailable at present, but will never become available."

In every case estimates were designed to stay on the conservative side. The very large-scale study of wildlife use by the James Bay Cree (Native Harvesting Research Committee 1976, 1978) also claimed to yield minimal values and was purportedly criticized for underestimating. The assumptions used in the present analysis are generally even more conservative.

Accordingly, it is concluded that wild foods contributed over 55% of the community's protein intake and that moose represented almost half of this.

You may well be wondering what is the significance of this speculative analysis. It is simply that native subsistence harvesting should be assumed to be an important existing use of wildlife resources in many hinterland areas. The wildlife manager who ignores this risks

double allocation of the resource and its consequent decline.

A change in basic attitude may be required in some cases. Where subsistence hunting is a fact that is not likely to simply go away, the wildlife manager may find himself increasingly making the attempt to deal directly with native groups in order to evaluate and advise. Co-operation and communication on both sides are of course essential for this and both are long overdue.

ACKNOWLEDGEMENTS

I thank Drs. A. B. Chen (Department of Sociology) and H.G. Cumming (School of Forestry) of Lakehead University for their invaluable assistance in organizing the interview program. Mr. D. McNab, manager of the Hudson Bay Company store in Cat Lake, kindly gave me access to the store records. Mr. G. Wesley was my interpreter and went to considerable lengths to facilitate the interview procedure. Many members of the Ontario Ministry of Natural Resources provided advice, information and support for this study.

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