

C.1

VALUING TRADITIONAL ACTIVITIES IN THE
NORTHERN NATIVE ECONOMY:
THE CASE OF OLD CROW, YUKON TERRITORY

by

SHEILAGH C. MURPHY

H.B.A., WILFRID LAURIER UNIVERSITY, 1983

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS

in the Department
of
Geography

We accept this thesis as conforming
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

March 1986

© Sheilagh C. Murphy, 1986

In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the head of my department or by his or her representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of GEOGRAPHY

The University of British Columbia
1956 Main Mall
Vancouver, Canada
V6T 1Y3

Date MARCH 14, 1986

ABSTRACT

The purpose of the research is to develop a widely acceptable and more holistic method for valuing traditional activities in a northern native community. It does this by extending contemporary valuation methods to include native categories and perceptions of natural resources, both past and present. The community of Old Crow, Yukon Territory is used as the field site because it is a relatively stable community, closely linked to the land, and one for which historical material is available.

Any assessment of a contemporary native community, its people, and their relationships to the land and its bounty would not be complete without an examination of their history. Thus, the thesis recounts the history of the Kutchin Indians of Old Crow. By reviewing past situations, traditions and cultural beliefs, the present day place of the land and its resources in the lives of the Old Crow people is revealed.

Contemporary valuation methods are defined as those which emphasize valuing resources numerically using a specific type of quantitative information. The more holistic method, on the other hand, includes the examination of the 'value'¹ assigned traditional activities by the people themselves as exemplified through past and present situations. The ultimate goal of this work is to show that static quantitative analyses

Note 1: For the purposes of this paper 'value' means that which is worthy or desirable of esteem for its own sake; thing or quality having intrinsic worth. Conversely value means the worth of a good in money or other numerical terms at a certain point in time.

must be balanced with research into the more social side of native activities if their true value is to be found.

The thesis shows that contemporary valuation methods continually underestimate the 'value' of production from the land because they are usually limited in time and scope, and fail to deal with the non-market 'values' the land and its bountry hold for native northerners. It is discovered that comparing data collected at different points in time is a very effective means of precipitating out those 'values' which influence native people in making choices about the pursuit of traditional activities in the north.

Using this method the land and its resources as perceived by the Old Crow people are shown to still hold a paramount place in their day to day lives. As with other northern native groups, even though material opportunities and hunting strategies have changed, the people continue to value their traditional land and life for a variety of reasons.

While the thesis identifies the various 'values' associated with productive activities in Old Crow, it does not develop a scheme that quantifies or ranks the relative worth of these 'values'. It discusses the merit of the concept in the context of valuing activities in the traditional economy of the north, and concludes that much research is still required in this area.

TABLE OF CONTENTS

	Page
CHAPTER 1	
INTRODUCTION	1
THE STUDY: ITS PURPOSE AND ORGANIZATION	3
a) Purpose	3
b) Organization	4
GEOGRAPHICAL SETTING	6
a) Introduction	6
b) Physiography	8
c) The Kutchin People	12
METHOD	17
Data and Sample Size	19
CHAPTER 2	
INTRODUCTION	20
TRADITIONAL LAND AND LIFE	20
a) Seasonal Movements	20
b) Hunting and Fishing	21
c) Travel, Shelter, Dress	24
d) Social Organization	25
CONTACT HISTORY	27
a) The Fur Trade 1784-1904	28
b) Missionaries, Whalers, Gold Seekers and Police: 1860-1912	31
- Missionaries	31
- Whalers and Gold Seekers	32
- The Police	35
c) Changes to the Kutchin Way of Life	35
- Hunting, Fishing and Trapping	36
- Material Goods	39
- Social Organization	40
THE SETTLEMENT OF OLD CROW	42
PRESENT DAY OLD CROW	43
CHAPTER 3	
INTRODUCTION	50
1. Valuing Subsistence Production in the Developing World	50
2. The Use of Standard Equivalents	53
3. Valuing Traditional Activities Using Substitution Costs	56
4. Valuing Subsistence Production Using Production Costs	73
SUMMARY	76
CHAPTER 4	
INTRODUCTION	78
Resource Use In Contemporary Old Crow	79
i) Traditional Activities in Contemporary Old Crow	80

	Page
ii) Value Assigned to Traditional Activities by the Old Crow People	104
iii) The Social Relations of Production In Old Crow	120
Valuation in the absence of a historical record	131
1. Comparing Activities of Different Aged Informants	131
2. Patterns of Time Spent Engaging in Subsistence Activities	137
3. Production Activities in Old Crow vs. those in Ross River	139
4. Employed vs Unemployed Residents: Does Income Influence Participation?	148
5. Other Suggestions	151
SUMMARY	152
CHAPTER 5	
SUMMARY AND CONCLUSIONS	154
1. Contemporary Valuation Methods	155
2. New Holistic Method	157
3. Moving Beyond Identifying Social Values	159
CONCLUSION	162
REFERENCES	164
APPENDIX A	
APPENDIX B	
OLD CROW QUESTIONNAIRE	173
SUPPORTING TABLES	184

LIST OF TABLES

		Page
3.1	MUSKRAT HARVESTING ACTIVITIES IN OLD CROW 1960-1983	58
3.2	PERCEIVED PROPORTION OF FOOD OBTAINED FROM SUBSISTENCE ACTIVITIES, OLD CROW (1984)	61
3.3	AMOUNT OF COUNTRY FOOD IN THE DIET OF OLD CROW PEOPLE 1973 AND 1983	62
3.4	ESTIMATED VALUE OF ANNUAL MEAT HARVESTS OLD CROW, 1983	65
3.5	ANNUAL INCOME DISTRIBUTION IN OLD CROW, 1983	68
3.6	COST OF SUBSTITUTION VERSUS THE COST OF HUNTING AND FISHING FOR FOOD, OLD CROW, 1983	69
4.1	OLD CROW GAME RETURNS FOR 1963-1976, 1978, 1983	90
4.2	OLD CROW FISHERIES 1967-73, 1978, 1983	91
4.3	OLD CROW FUR RETURNS FOR MUSKRATS 1938-1984	93
4.4	MUSKRAT CAMP PRODUCTIVITY, OLD CROW, 1960-83	94
4.5	OLD CROW FUR RETURNS 1938-1973, 1974-1984	96
4.6	PRODUCTIVITY OF TRAPPING ACTIVITIES, OLD CROW 1960-1983	99
4.7	HOUSEHOLD BY TYPE OF ECONOMIC ACTIVITY (SOURCES OF TOTAL HSHLD INCOME)	105

		Page
4.8	\$ VALUE OF OLD CROW FUR RETURNS 1938-1973, 1974-1983	107
4.9	\$ VALUE OF OLD CROW MUSKRAT RETURNS 1938-1983	109
4.10	\$ VALUE FOR OLD CROW FOR RETURNS FOR SELECT YEARS	110
4.11	ESTIMATED \$ FOOD VALUE FOR GAME RETURNS IN OLD CROW FOR SELECT YEARS	113
4.12	INCOME CALCULATIONS FOR OLD CROW, 1983	114
4.13	SUMMARY OF HUNTING/FISHING/TRAPPING COSTS OLD CROW, 1983	116
4.14	TRADITIONAL SKILLS IN OLD CROW, 1973 AND 1984	124
4.15	HUNTING, TRAPPING AND FISHING ACTIVITIES IN OLD CROW - 1983	132
4.16	PATTERNS OF TIME SPENT ON SUBSISTENCE ACTIVITIES OLD CROW, 1983	138
4.17	TOTAL ESTIMATED VALUE OF THE DOMESTIC SECTOR OF THE ECONOMY OLD CROW VS ROSS RIVER	141
4.18	ESTIMATED TOTAL INCOME - OLD CROW VS ROSS RIVER	142
4.19	EMPLOYMENT DATA FOR OLD CROW (1983) AND ROSS RIVER (1982)	145
4.20	PARTICIPATION IN SUBSISTENCE ACTIVITIES AS A FUNCTION OF HOUSEHOLD INCOME, OLD CROW, 1983	149

		Page
B-1	FOOD WEIGHT VALUES USED TO CALCULATE OLD CROW COUNTRY FOOD HARVESTS	185
B-2	MEAT/FISH HARVEST DATA FOR OLD CROW 1973 AND 1983	186
B-3	SUMMARY OF HUNTING COSTS, OLD CROW, 1983	187
B-4	CPI INDEX	188
B-5	SUMMARY OF EMPLOYMENT DATA OLD CROW - 1983	189

LIST OF FIGURES

		Page
1.1	KUTCHIN TERRITORY IN THE NORTHERN YUKON	7
1.2	THE PHYSIOGRAPHY OF THE NORTHERN YUKON	8
1.3	ATHAPASKANS IN NORTHWEST AMERICA	12
2.1	CARIBOU MIGRATION ROUTES	22
2.2	CROW FLATS, YUKON	38
2.3	OLD CROW, YUKON, 1984	45
4.1	OLD CROW LAND USE, LONG AGO	81
4.2	OLD CROW LAND USE, 1960	82
4.3	OLD CROW LAND USE, 1973	83
4.4	OLD CROW LAND USE, 1978	85
4.5	OLD CROW LAND USE, 1983	86
4.6	ACTIVITIES LOCATED NEAR OLD CROW	88
4.7	ROSS RIVER AND VICINITY, YUKON	144

ACKNOWLEDGEMENTS

The completion of this thesis would not have been possible without the assistance, advice and support of the following people.

First, I owe a large thank you to the people of Old Crow who welcomed me into the community and their homes during the field portion of the research. Without their co-operation the thesis would not have been possible at all.

At the University of British Columbia I am indebted to Dr. John Stager whose northern experience and comments proved invaluable to both the field research and the final written product. Thanks must also go to my reader, Dr. Alfred Siemens, whose suggestions added to the more qualitative portions of the thesis.

I would also like to thank the Department of Indian and Northern Affairs Canada and the Association of Canadian Universities for Northern Studies whose financial assistance allowed me to spend the four months in Old Crow and a year of full time study at U.B.C.

Finally, a great deal of gratitude is owing to Nicole St-Denis who patiently typed and re-typed the numerous draft copies, and to my husband Gordon who remained extremely supportive of my work despite the long periods of separation.

Sheilagh Murphy
March, 1986

CHAPTER 1

INTRODUCTION

It cannot be denied that in the last 25 years there has been a diminishing interest in land-based activities by the majority of Native people in Canada's north. Faced with the reality that the commercial production of furs, hides and food can no longer afford them a living, at least with modern expectational standards, most native northerners have taken up permanent residence in settlements in order to take advantage of the wide range of services available there. Unlike other hunting societies¹ however, the transformation from a hunting and trapping society to an urban one has not been accompanied by a total abandonment of the traditional way of life. Rather, what has emerged in many groups is a dual allegiance to land and town (Wolforth, 1971:1). Some families have chosen careers in town, others have continued to hunt and trap, while still others shift between wage employment and land-based activities (Honigmann and Honnigmann, 1965:77).

Regrettably, because only a small part of the local renewable resource harvest actually enters the market economy today, the degree to which native northerners still depend on the land and on country food has repeatedly been underestimated by those involved in northern development planning and policy making (Freeman, 1981; and Usher, 1978). The result has been an overwhelming focus on large-scale, non renewable resource

Note 1: see for example, Murphy and Steward, 1965:77.

development and a neglect of the renewable resources central to the native domestic economy, especially in terms of their development potential (Wolfe, 1984, 1981 and 1979; Feit, 1983 and 1979; Usher, 1982, 1976 and 1971; Lonner, 1981; Tanner, 1979; Nowak, 1977; Stager, 1974; and Van Stone, 1960). Consequently, members of the research community, and native people through their land claim submissions, are now calling for a more balanced approach to development in the Canadian north. More specifically, they are looking for policies which provide for the maintenance and growth of both the modern and traditional sectors of the northern economy.

Unfortunately, a fundamental problem seems to be hindering the easy development of such policies. To date, no generally agreed upon method of measuring either the value of production from the land, or its exchange values, has been found. Increasing resistance by native people and some southern Canadians to the existing methods of valuation suggests that they are imperfect or inadequate when applied to those traditional activities separate from the economy of the outside market place. In particular, these methods fail to recognize that the resource needs of native people which arise out of tradition or custom are just as real as those that rise from physical and economic want; and that such needs also have claim on management policy and financial investment (Roots, 1981:250). The solution seems to be the development of a method which will account for the cultural, nutritional, psychological and political significance natural resources hold for the indigenous people; in addition to their economic importance.

THE STUDY: ITS PURPOSE AND ORGANIZATION

a) Purpose

The present study attempts to develop a widely acceptable and more holistic method for valuing traditional activities in a northern native community.

Using the community of Old Crow, Yukon Territory, the thesis develops a means of precipitating out those 'values' which influence the choices people make about traditional pursuits by centering on understanding native categories and perceptions of natural resources, both past and present. This approach sharply contrasts the current practice of defining the value of renewable resources numerically because it goes beyond merely analysing the quantifiable elements of native activities by employing methods aimed at understanding a groups's ethos. It does this by identifying:

- 1) those traditional activities a cultural group has chosen to preserve while undergoing complex social transformations;
- 2) the value assigned these activities by the people themselves: economic, cultural, historical and so forth; and
- 3) the social relations of production¹ operative in a society which cause the 'value' assigned an activity to fluctuate over time.

Note 1: the social relations of production: the social organization of productivity and the values and beliefs which serve to perpetuate it (Usher, 1981:57).

It will be maintained throughout the thesis that one of the most important 'values' associated with traditional activities is that their continued practice has provided the means by which northern native people have maintained their cultural identity while undergoing modernization. In the final analysis, it is apparent that while material opportunities and hunting strategies have changed, the fundamental linkage - the relation between the people and the land - has remained the same (Kemp, 1971). Hence, if policy makers concerned with the maintenance and growth of the traditional sector of the northern economy, only focus on the more quantifiable elements, they will miss what is truly 'valuable' about traditional activities.

b) Organization

Central to this thesis are two separate tasks. The first involves the examination and critique of the prevalent methods currently used to value traditional activities in subsistence-based economies. The objective here is to show how the use of such methods in the field can generate some interesting information, but continually fail to find a 'value' truly representative of the importance of the traditional sector to the native people.

The second task is to outline a more holistic means of identifying the 'values' which influence people's activities in Old Crow. While employing some of the techniques examined in task one, the objective here is to use data collected on the community in

1963, 1973 and 1984 to show how tracking attitudes and perceptions, as well as a group's activities, through time, can lead to a better evaluation of land-based renewable resources. In addition, other methods will be outlined, such as comparing the responses of different aged informants, in an attempt to show how this valuation approach can still be operationalized in cases where a reliable or comprehensive historical record is not readily available. While the thesis will not develop a scheme that quantifies or determines the relative significance of the 'values' identified, it does discuss whether such a scheme has merit in the overall question of valuing the resources used by native people.

Naturally, any assessment of a contemporary native community, its people, and their relationships to the land and its bounty, would not be complete without an examination of their history. It is only by reviewing past situations, traditions and cultural beliefs that one can arrive at some understanding of what has happened to social organization and the traditional way of life. Hence, the thesis includes a chapter on the history of the Old Crow people from pre-contact times to present day. In doing so, it will show that the land and its resources still maintain a paramount place in the lives of the Old Crow people.

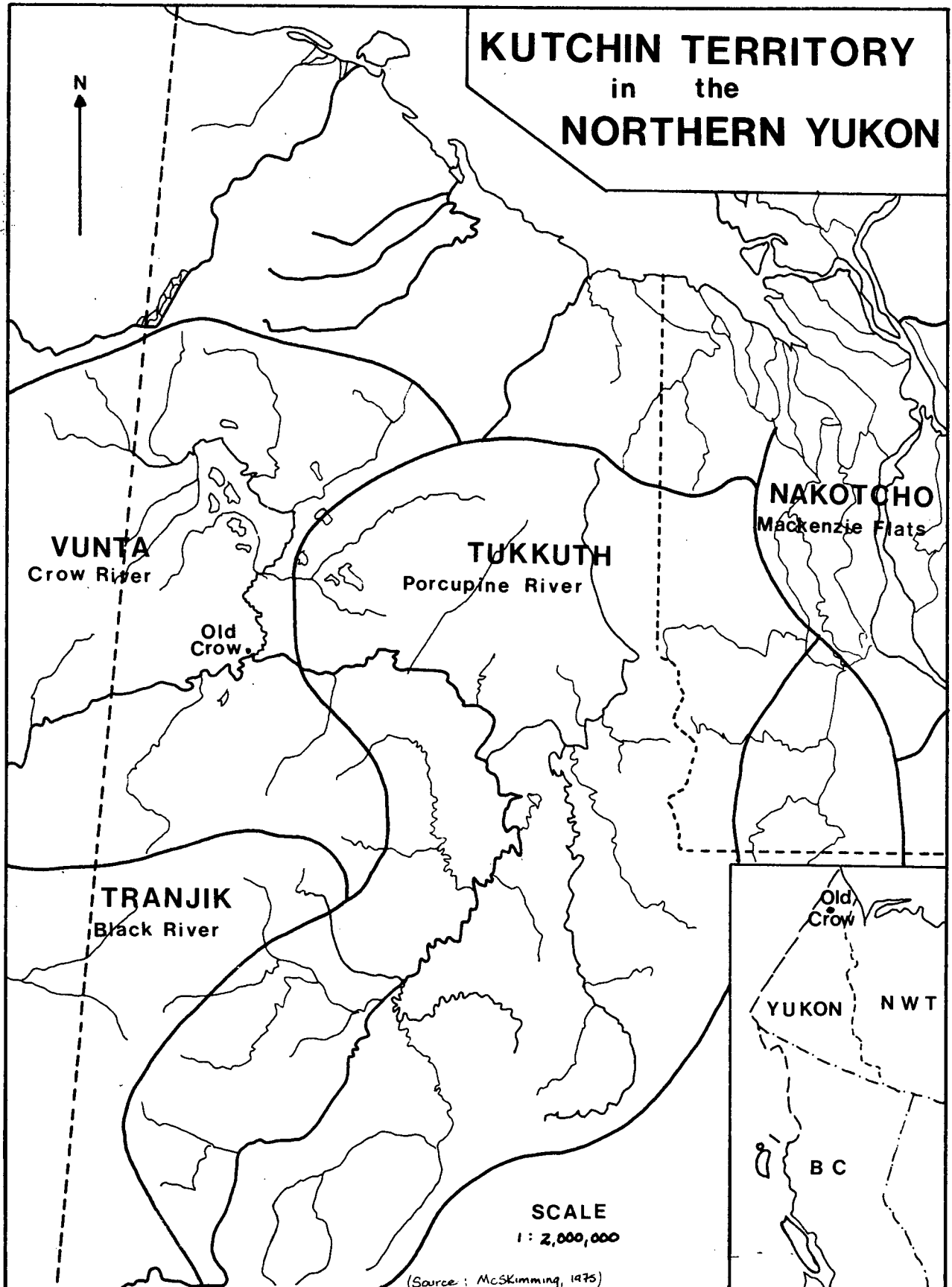
GEOGRAPHICAL SETTING

a) Introduction

The village of Old Crow is situated on the Porcupine River, one mile west of its junction with the Old Crow River (Old Crow Y.T.: 67°35'N, 139°45'W). It is the most northerly settlement in the Yukon, lying approximately 200 kilometers north of the Arctic circle, and is accessible by either plane or boat. The people of Old Crow are Loucheux Indians of the Vunta (Crow River) and Tukkuth (Upper Porcupine River) Kutchin tribes; a sub group of the Northern Athapaskan Indians (Welsh, 1970:20). According to local legend, the village derives its name from the nearby river; named after a man called Old Crow who had a fish camp near the mouth of the Crow River (Ibid:24). The 1983 population was approximately 236 people, of which 169 were Indian, 48 were Métis and 19 were white. There are fifty to one hundred Old Crow people residing outside the community on either a temporary or permanent basis.

Traditionally, the Vunta and Tukkuth Kutchin exploited a vast territory in the northern part of the Yukon Territory, including the relatively isolated Upper Porcupine drainage (Figure 1.1). Although occupancy has changed over time, many of the residents of Old Crow still perceive most of this vast land area collectively theirs (see Njootli, 1983; or McSkimming, 1975). Hence, in terms of initial description, the report will concern itself with the traditional habitat of the Old Crow people.

Figure 1.1



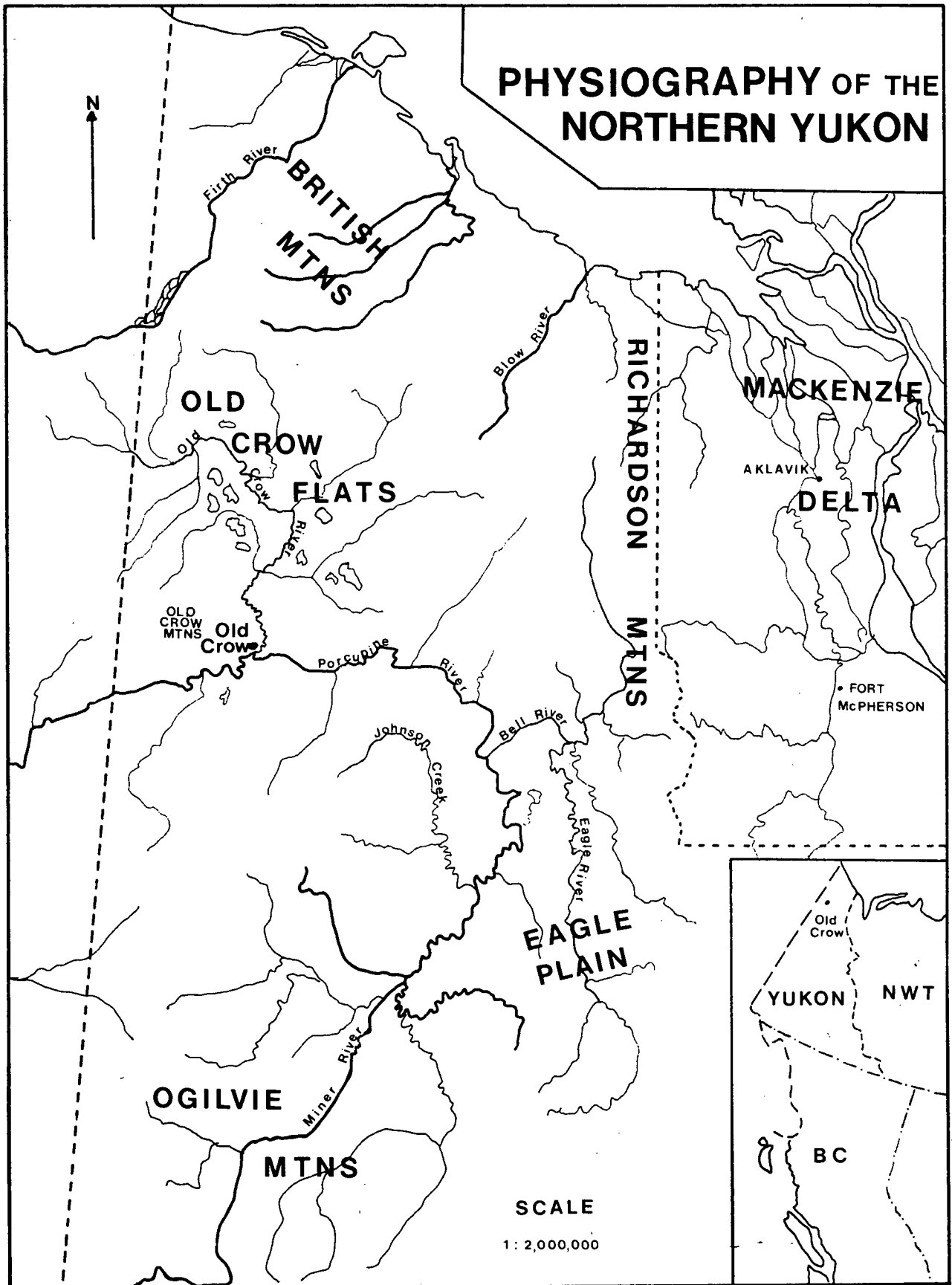
b) Physiography(Figure 1.2)

The study area lies at the northern end of the Cordilleran region's interior system (Balikci, 1963:3). In the flatter, central regions of this land (the Old Crow Plain and the Porcupine Plateau) large rivers, streams and numerous lakes abound. Conversely, the periphery is comprised of largely mountainous terrain.

In the north the area is separated from the Arctic Ocean by the British and Barns Mountains, while access to the Mackenzie Delta and the Northwest Territories to the east is made difficult by the Richardson Mountains. In more recent times, the area's western limit has been the Alaskan border (141°W), while the southern margin has always been the Ogilvie Mountains; home of the headwaters of the Porcupine River. In the vicinity of Old Crow itself, lies the Old Crow Range which separates the Old Crow Plain from the Porcupine River Valley. In the flat, isolated country directly south of the community stands Lone Mountain, an important land mark, especially for the winter traveller (Balikci, 1963:3).

The Porcupine River is the major water feature of the area, crossing the entire region in generally a westward direction and draining the lesser streams of the Porcupine Plateau before flowing into the Yukon River in Alaska (Ibid). The river has always played an important role in the lives of the Old Crow people. It is a highway for summer and winter movement, a major source of country food (fish), and central to native hunting and trapping strategies (Stager, 1974:14).

Figure 1.2



A very important tributary of the Porcupine River is the Old Crow River which drains the Old Crow Plain and connects the Porcupine with Crow Flats; a lake strewn plateau 80km north of the community is home to a large muskrat population which is harvested in the spring by the Old Crow people. Both the Porcupine and Old Crow Rivers have incised deep, rather broad valleys into the basin-fill sediments (Naysmith, 1971:20). The flood plains and terraces bordering these rivers have well developed meander-scar patterns, with stands of spruce on elevated ridges, and heavy willow growth in the depressions (Ibid:20).

The surface areas of the flatter plateaus the two rivers drain are characterized by a mosaic of lakes. The elevated areas which exist between these lakes have a thick cover of sphagnum peat, with dwarf birch and scattered stunted spruce. Of the numerous flat, marshy areas in the region, three are central to the Old Crow people's seasonal round: 1) The Flats, mentioned previously; 2) another area immediately south of the community; and 3) the northern portion of the Eagle Plain (see Figure 1.2). The Flats is the most important because it is rich in muskrats and waterfowl, and is close to town. The other two areas have become favoured winter and spring trapping areas for many residents over the years.

Going further, in the lower lying areas of these flat marshy areas one finds a polygonal network of ridges which suggests a moderate to high content of segregated ice in the form of ice wedges and ground ice (McSkimming, 1975:10). This is not surprising when

one considers that Old Crow lies just at the boundary between the discontinuous and continuous permafrost zone. Naysmith (1971) and Balikci (1963) both have noted that permafrost is usually within .61 meters of the ground surface throughout the area.

Finally, the area experiences a continental sub-arctic regime due to the high mountain barriers which protect it from moist Pacific air (Stager, 1974:15). Winters are generally long (October-April/May), with temperatures averaging -33.7°C (YTG, 1984d). Short, warm spells in the high 20's ($^{\circ}\text{C}$) often occur each summer, which generally lasts from late June to mid August.

Total precipitation of the region averages 212mm with just over half (108mm) falling as rain between late May and early October (Ibid). Snow can occur at any time but, usually begins in September and ends in May (Stager, 1974:16).

Lastly, lying north of the Arctic circle, Old Crow experiences long periods of both daylight and darkness. Late May to mid August is the typical season for the former, while November to January is the common time frame for the latter.

c) The Kutchin People

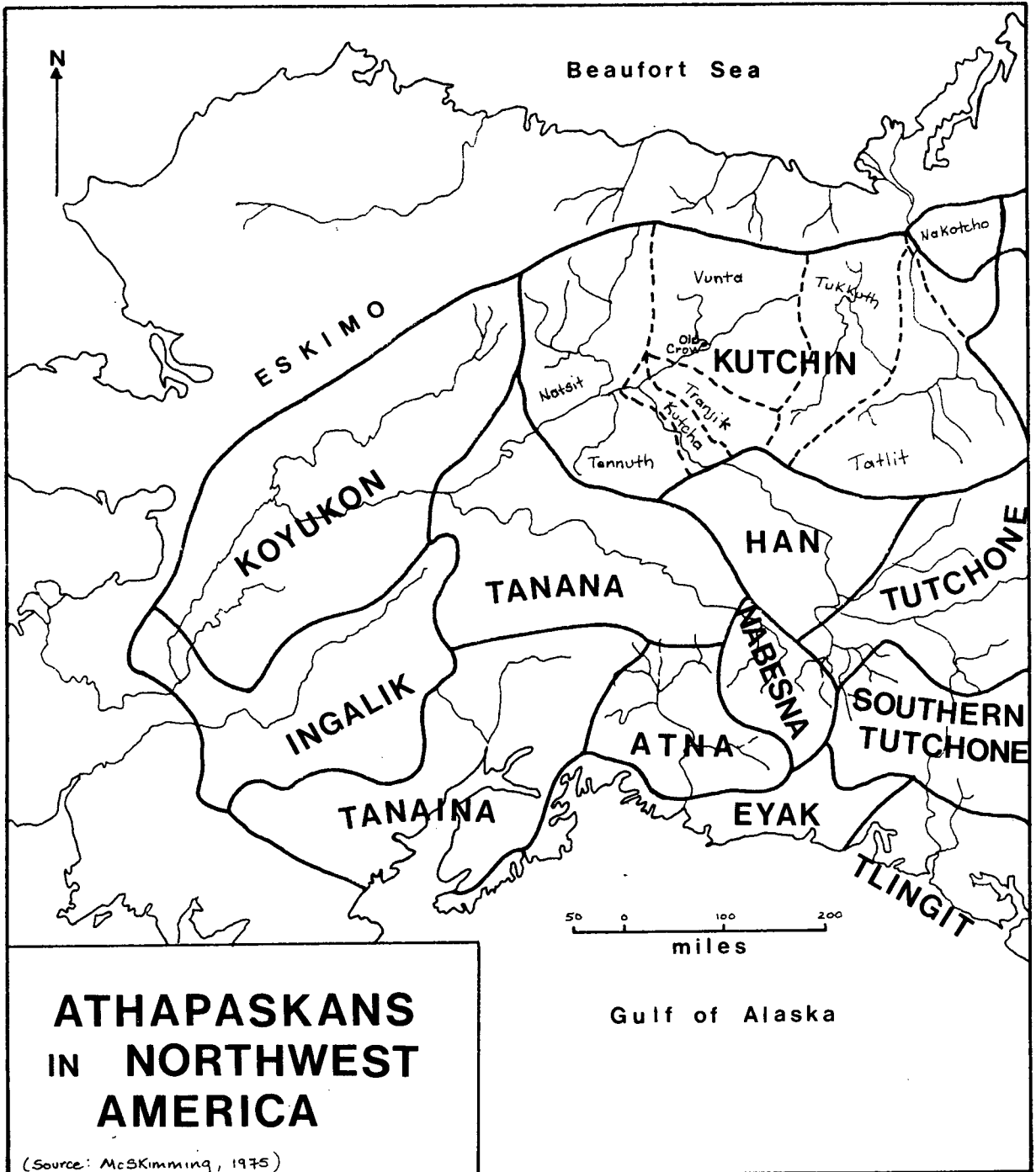
The people of Old Crow are decedents of a distinctive group of Northern Athapaskans known as Kutchin, or "dwellers"¹ (Figure 1.3). McSkimming notes that many modern studies have reconstructed the traditional ethnography of the Kutchin Indians (1975:4).

The first by Osgood (1936) dealt largely with the territory (1936A) and synonymy (1934) of the eight "tribes" which comprised the "true Kutchin" (Slobodin, 1976:532; and Welsh, 1970:20). Although later research on the specific bands (Slobodin:1960 and 1962 among the Tatlit for example) contradicted some of Osgood's early findings,² this ethnographical work on the Kutchin remains the basic and most important modern monograph on this people (Slobodin, 1976:532).

Note 1: the word Kutchin translates as dwellers, and when coupled with a geographical term, it designated a particular regional band (9 in total). eg: Vunta Kutchin meant "dwellers of the lakes" (Welsh, 1970:20).

2: McSkimming (1975:4) notes that Slobodin (1960 and 1962) and Leechman (1954) found numerous examples of inter-tribal commerce and warfare among the Tatlit and Vunta Kutchin, which contradicted Osgood's (1936A and 1934) assertion that each tribe lived in relative isolation in one section of country. Going further, Balikci (1963) said that the social clan system described by Osgood was not necessarily true among the Vunta Kutchin, while McKennan (1965) and Welsh (1970) disagreed that summer camps were located primarily for fishing.

Figure 1.3



Of great aid to both Osgood and later researchers have been the recorded observations of the early explorers, Mackenzie (1801), and Franklin (1828), and the journal by Murray (1847-1848) on the western Kutchin before almost any acculturation (Slobodin, 1976:532).

Observations by early Hudson's Bay Company post managers (Hardisty, 1872; and Jones, 1872), and missionaries (eg. Kirkby, 1865), as well as Petitot's extensive writings on folklore and language (1876-1877), have also proved extremely valuable in examinations of Kutchin kinship and social organization (Slobodin, 1976; and McSkimming, 1975).

All the modern ethnographical works agree that the Kutchin people existed in groups called "tribes" (McKenna, 1965; and Osgood, 1936A and 1936), "communities" (Slobodin, 1962), and "bands" (Ibid). In 1970, Welsh added the term "regional band" after Helm's work (1964) among the Arctic Drainage Athapaskans where individual bands were linked to other small hunting groups by kinship and marriages, and a shared orientation to an extensive resource hinterland (Welsh, 1970:20). This term seems appropriate when one considers that the Kutchin did not form a tribal entity in a social or political sense, and that only rarely did one or two of the individual regional bands come together for social occasions such as feasts (Ibid).

The main body of literature on the Kutchin has centred on acculturation and social organization. Leechman (1954) concentrated on the material changes to contemporary Vunta Kutchin society, while Slobodin (1962), Balikci (1963), and McKennan (1965) all examined changes in the social organization of the Tatlit (Peel River), Vunta (Crow River), and Natsit (Chandalar River) Kutchin respectively.

Additionally, Slobodin has examined: Eastern Kutchin warfare (1960); the effect of the Klondike Gold Rush on the Peel River Kutchin (1963); and Kutchin folklore (1976) and belief systems (1970). Work by Krech in the 1970's dealt largely with Kutchin involvement in the fur trade (1976), the aboriginal population of the Kutchin (1978), and interethnic relations (1979). Finally, Welsh's study of Old Crow in 1970 dealt with how changes in social organization were manifesting themselves in the settlement patterns of the community.

Research has also been carried out in the fields of pre-history migration (Hall, 1969), archaeology (Irving, 1968), and paleontology (Harington, 1971). Hall contended that evidence on the late pre-history of Kutchin placed them in the mountainous and forested regions of Alaska and the Yukon, and not along the river valleys known to them historically (1969:327). Conversely, Irving's work uncovered Kutchin campsites along the riverbanks of the Porcupine, while Harington and Irving's (1967) controversial find of a caribou forelong bone shaped into a hide scraper in Crow Flats, dated human occupation of the lake areas of the northern Yukon as early as

25,000 years B.P. (the beginning of the 10,000 year period when the Bering land bridge was repeatedly exposed). Because the Kutchin of pre-contact times were largely a nomadic hunting and fishing people, occupying an area rich in resources, habitation of both upland and river sites seems entirely possible.

A third body of literature has dealt with the contemporary socio-economic conditions in Old Crow; namely: the present day social effects of modernization (Marshall, 1970; Balikci, 1968; and Honigmann, 1965); the future of the traditional and wage sectors of the Old Crow economy (Bissett and Meldrum, 1973; and Naysmith, 1971); and the potential effects of oil and gas development in the northern Yukon (Berger, 1977; and Stager, 1974). On a slightly different note was the 1975 work of Robert McSkimming, which attempted to outline the Old Crow people's affinity to their environment by examining the relationship between the physical land-use around Old Crow, and the community's spatial image of its territory. All of these latter studies have included an examination of the role of traditional activities in modern day Old Crow, and by implication, harvest data.

It is obvious that an extensive body of historical and contemporary literature is available on Old Crow. This data is invaluable to the current study because it allows for a comprehensive examination of not only the past and current social

organization of the community, including native attitudes and beliefs, but the place that subsistence production has held in the lives of the people through time.

METHOD

In order to obtain data relevant to determining the value of northern renewable resources, four approaches were used:

- 1) examining the existing literature on the research topic and interviewing persons engaged in similar research;
- 2) engaging in participant observation throughout the study period;
- 3) administering a comprehensive questionnaire on community life (Appendix A); and
- 4) conducting ethnographic interviews to complement the questionnaire.

The first approach provided valuable background material and introduced a variety of methods and concepts previously not considered. These were tried in the field so that their advantages and limitations could be identified.

The remaining three approaches were carried out in the field. Participant observation was an ongoing activity throughout the field season, while the latter two activities were conducted in the final month and a half. This time period was chosen because it coincided with the fall hunting and trapping season. The thoughts and

feelings of the Old Crow people concerning the value of natural resources are strong during this season for this is when they tend to feel closest to the land and content with their way of life.

More specifically, the questionnaire was designed to elicit facts and the quantifiable elements of the people's economic activities and general life rhythm in Old Crow, both past and present. The questionnaire format was similar to the one used by Dr. J.K. Stager in Old Crow in the early 1970's. It was decided to use a similar questionnaire because it was thought that the best means of determining the "value" of traditional activities would be to see how much activities and attitudes in Old Crow had changed over time.

Ethnographic interviews were used to complement the questionnaire. The nature of the data required dictated the need for conducting the questionnaire within the larger framework of an ethnographic interview. This approach allowed for flexibility when pursuing a line of questioning, and became invaluable when interviewing individuals who did not easily understand the questions. All interview results were validated by cross-checking information with either another member of the community, or existing sources of published data.

Data and Sample Size

The interview population was chosen on the basis of age and place of residence. At least one adult member from each occupied household was approached, as well as other family members. The age of 20 was used as the lower boundary for interviews because anyone younger was usually in school for eight months of the year and dependent on their parents. The constant inflow and outflow of community members throughout the summer months meant that not everyone of interview age could be questioned. Quota sampling for the three age groups established was used to guarantee that all the diverse elements within the population were represented. Seventy-five people (62% of the adult population) were interviewed, representing fifty-four of the seventy households in Old Crow. Many of the households not interviewed were occupied by elders and others who were unable to actively participate in the traditional sector. Fortunately, because of the share ethic within the community, information on the amount of country food utilized by these individuals, and their economic activities, was easily obtained through interviews with those who provided for them.

Informants were never asked directly to "value" the traditional way of life. Rather, the importance of a life on the land was determined indirectly by measuring changes in: the people's economic activities; the intensity of land-use (temporally and spatially); and attitudes toward such things as wage employment, community social organization, and life outside the community.

CHAPTER 2

INTRODUCTION

Prior to the contact the Kutchin subsistence pattern was based on the seasonal and regional acquisition of fish and game over a large territory rich in these resources. The coming of the white man altered annual subsistence activities and gradually led to the establishment of several permanent settlements like Old Crow. The resulting increased dependence on white goods, and the white economy, brought tremendous changes to the traditional way of life. However, unlike other northern communities the Kutchin of Old Crow have continued to utilize most of the territory and resources known to them traditionally.

TRADITIONAL LAND AND LIFE

a) Seasonal Movements

During traditional times the seasons conditioned the lives of the Kutchin. The small nomadic family groups moved throughout their lands in order to take advantage of the spring and fall migration of the caribou. Summers were passed at fish camps along the riverbanks, while the winter months were spent in the hills following the caribou and capturing other game like moose or rabbit. Despite the relative abundance of country food, the quest for foodstuffs was often uncertain or made difficult by harsh weather, disease, or altered migration patterns (McSkimming, 1975:27).

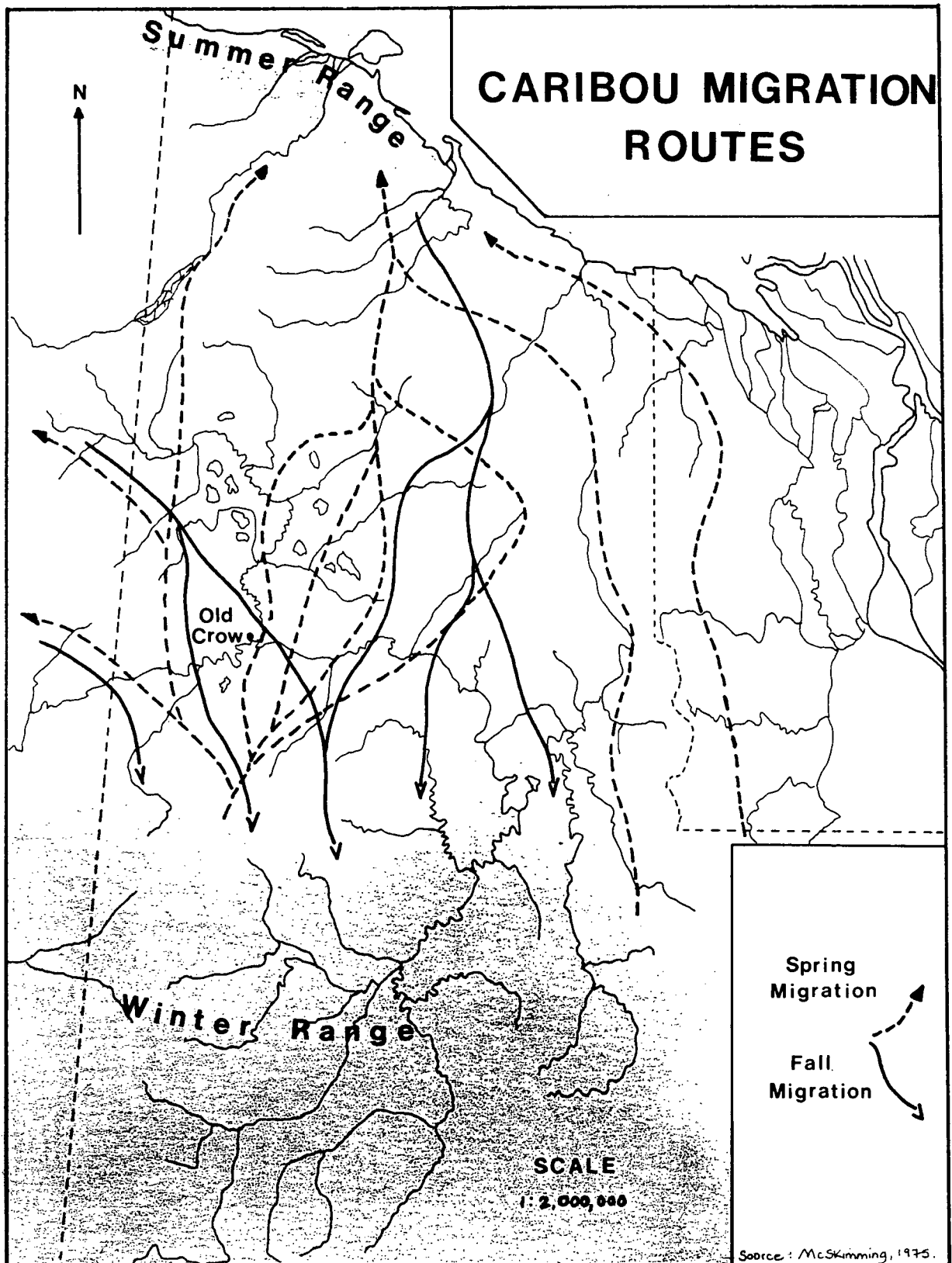
b) Hunting and Fishing

The caribou herds of the northern Yukon and Alaska have always been the mainstay of the Kutchin people. These animals spend the winter months dispersed throughout the slopes of the Ogilvie and Richardson Mountains (Figure 2.1). In spring, they move northward to their staging grounds along the Yukon Coastal Plain before proceeding eastward to their summer ranges in Alaska. In late summer the route is reversed as the herd, with new young, head south to winter in the forests once again (Stager, 1974:22).

Depending upon the terrain, the season or the grouping of the caribou, the Kutchin pursued the animals either individually or as a small group. In the spring the Kutchin would congregate in local bands along major river arteries to await spring breakup and the annual northern migration of the caribou (McSkimming, 1975:29). Leechman (1954:6) noted that the caribou were usually speared from canoes as they crossed various rivers at traditional crossing points. This activity, is still practiced today by the people of Old Crow, although guns have replaced spears.

The major hunt for caribou occurred in the fall when the stockpiling of meat was a priority. The Kutchin would gather together in larger groups in the foothills of the various mountain ranges to herd the caribou into large surrounds or corrals constructed among the trees. Everyone participated and immediately after the group hunt the many

Figure 2.1



animals taken were butchered or cached by drying or freezing (McSkimming, 1975:30). Participants in each surround would then form a large "meat camp" which stayed together until the game was depleted (mid winter). The people then dispersed to various points in the caribou wintering grounds until the spring hunt when the cycle would repeat itself once again. For the Vunta Kutchin the traditional caribou surrounds were located along the hills immediately north of Crow Flats. The principal surround was situated near the Firth River and was used as late as 1900 (Balikci, 1963:15).

Moose, mountain sheep, rabbits and other small mammals were usually captured by the individual hunter at different times during the year depending on need and availability. For the Vunta Kutchin, moose and mountain sheep were the second and third most important food sources after caribou (Ibid:17).

Moose hunting was most fruitful in the summer when either snares or ambush were used around the lakes favoured by them. Great skill and endurance were always required in order for the hunt to be successful (Ibid). Conversely, mountain sheep were hunted during all seasons. A bow and arrow or snares tied securely to boulders were the favoured methods here. Finally, winter ptarmigan, rabbits, porcupine, beaver and other small mammals were primarily snared or speared near the camp throughout the year. All of these species are still eaten by the Kutchin in Old Crow today.

Fishing was the central summer activity for most Kutchin families. After the spring caribou hunt, people would establish fish camps along the various rivers. The V-shaped weirs of stakes and willow poles that were built across the smaller tributary streams of the Porcupine, were used to capture salmon, whitefish, jackfish and suckers (McSkimming, 1975:32 and Bakikci, 1963:18). With many groups gathered along the riverbanks, summer was also used as a time for inter tribal trade and ceremonies.

c) Travel, Shelter, Dress

During traditional times transport in the summer consisted of canoes which were poled or tracked (Slobodin, 1962:21). The Vunta Kutchin relied mostly on the birch bark canoe which was modelled after the Eskimo umiak, flat bottomed with almost straight sides. The lack of birch bark in Crow Flats and along the northern Porcupine River however, usually meant that the Vunta Kutchin obtained their canoes from other groups in the Yukon Flats area (Balikci, 1963:20; and Leechman, 1954:26). When these were not available, the Vunta Kutchin covered their canoes with moose hide.

Snowshoes, sleds and dog packs were used for land travel (Balikci, 1963:21). Two types of snowshoes were employed. A large shoe was used for hunting, while smaller shoes were used for packing down a trail (Ibid). Sleds were usually pulled by the women and were small and narrow (McSkimming, 1975:33). The low carrying capacity of the sleds meant that dog packs were employed as well as human packs (Balikci, 1963:21).

The dwellings of the Kutchin were quite original. The almost universal domes sweat house found throughout the upper half of North America was enlarged by the Kutchin, and an opening was left in the roof for a smoke hole. McKennan (1965) and Osgood (1936) both mention several variations of this house in traditional time; skin covered, moss covered and some with lean tos. The material used depended on camp location and time of year. In the winter for instance, added insulation was provided by covering the outside wall with snow and placing fir boughs on the floor (Jenness, 1932:402). During the summer, most Kutchin bands used a tent of caribou because of its lightness and semi-permanence.

The traditional dress of the Kutchin, like their tools and boats, reflected Eskimo influence. Clothes were made from finely tanned white caribou skin or fur depending on the season. Both sexes wore a pull over shirt that was short waisted and had long tails before and behind (Slobodin, 1976 and Jenness, 1932). Trousers and footwear of the same material were connected in one piece with moose skin forming the soles. In the winter men wore a fur cap instead of a hood and those of higher ranking wore marten coats decorated with porcupine quills instead of skin fringes (Balikci, 1963:21). Today marten and wolverine are the furs most prized for trimming winter parkas.

d) Social Organization

The social organization of the Kutchin in traditional times was rather unusual in that it adopted a system of matrilineal clans, uncommon among the eastern Athapaskans (Slobodin, 1976:523). Jenness (1932:402)

noted that this phenomenon was "obviously connected with the system present along the Pacific Coast". Two exogamous matrilineal clans existed across all Kutchin groups, termed Crow and Wolf. Because exogamy was not religiously observed a third category represented by a gull was created to classify the children of endogamous marriages. This clan was primarily used for marriage regulation and ceremonies with other groups although, Balikci noted (1963:27) that among the Vunta the system also provided the social framework for the exercise of chieftanship.

A second cross-cutting type of status relationship was wealth ranking. Although the range of variation in material possessions among households was not great, some households lived in considerable comfort. Sharp distinction was made between those classified as wealthy and those regarded as poor (Slobodin, 1976:524).

A third status relationship was age-grading. The periods of youth and old age were the most clearly distinguishable because they involved social and physical segregation from the band. Girls at menarche were sequestered from the group while boys entering puberty lived away from the family lodge until marriage. Elders also lived away from the main house, but were respected and remained in contact with the local group (Slobodin, 1976:525).

There were several categories of chiefs among the Kutchin. Each tribal unit had a chief from the wealthy class. This man had both organizational abilities and other superior qualities and held directive

powers in the activities of the group (Balikci, 1963:26). In addition to the tribal chief were four other classes of chiefs: economic chiefs, who were wealthy individual owners of a caribou corrals or fish traps, war chiefs; clan chiefs, who were concerned with the clan social organization; and shamans, who led the spiritual activities of the group and who were often more powerful than any of the other chiefs (McSkimming, 1975:34; and Balikci, 1963:27).

Finally, in terms of ceremonies, there were only a few times when the Kutchin would gather together to celebrate as a group larger than the local band: in spring after the caribou hunt; at a memorial feast to mark a birth; and at either the end of a girl's manarche or a boy's first kill. Much eating, visiting, and dancing characterized the festivities. At other times, in-gathering occurred regionally among the different local bands for the purpose of hunting, or building a corral or fishtrap.

CONTACT HISTORY

The time during which the Kutchin of the northern Yukon were seeing their first foreigners, the contact period, lasted about 100 years. It began through trade with the Russians along the south coast of Alaska and ended with the establishment of a fur trading post at New Ramparts in 1904. During this time fur traders, missionaries, whalers, gold seekers and police all acted as agents of change. Through their activities they introduced a way of life that was more sedentary and which increasingly bound the people to the outside world.

a) The Fur Trade 1784-1904

The fur trader had the most profound influence on the Kutchin traditional way of life (McSkimming, 1975:35). The first imported item, the iron spear, was of Russian origin and came from Alaska.

Both the Russians and Americans had penetrated the south coast of Alaska by the 1700's, and through Indian middlemen their goods diffused to inland bands like the Vunta Kutchin (McClellan, 1964:5). This arrangement persisted until the arrival of permanent European trading posts in the Mackenzie Region in the mid 1800's. Up until this time, the native middlemen ensured their monopolistic position by establishing blockades which prevented the advancement of permanent Russian trade posts eastward into native inland territories (Ibid).

The fur trade first penetrated the northern Mackenzie region in the late 1700's with the historic journey of Alexander Mackenzie in 1789. In the beginning the fur trade, as elsewhere, was entirely dependent on native middlemen to access and gain control of the more remote areas. Even after the establishment of a post at Fort Good Hope in 1804, middlemen continued to dominate trade primarily because the post was too far from most traditional hunting grounds (Wolforth, 1971:18). In fact, for the more peripheral groups like the Vunta Kutchin, trade continued to focus to the west with the Russians in Alaska (Ibid).

In an attempt to tap the northern lands and divert the Russian trade, the Hudson's Bay Company built the Peel River Post, later Fort

McPherson, in 1840 (Stager, 1974:28). McSkimming (1975) noted that the fort was unsuccessful at first because it had been located north of the Kutchin customary hunting and fishing grounds, and south of the areas used by Eskimos: dangerous neutral territory. Additionally, the fort was difficult to resupply and hence, usually short of food and other tradable goods (Wolforth, 1971:19). Only the Kutchin of the Mackenzie Flats, and a few Kutchin from the Porcupine River frequented the fort on a regular basis.

The relative lack of success during the early years of the Peel River Post encouraged the Hudson's Bay Company to try and establish a chain of satellite forts closer to the sources of fur and meat. In 1843 John Bell set out to find a route across the mountains into the Yukon and beyond. By 1845 Bell had established a portage route from the Peel River Post to the Bell River and had opened up a second fort, La Pierre House. This was the first northern fort that could be resupplied during the winter as well as the summer (Wolforth, 1971:19).

In 1846, Bell continued his portage to intercept the Yukon drainage at the junction of the Yukon and Porcupine Rivers (Stager, 1962). This resulted in the setting up of a third fort, Ft. Yukon, and the first direct European contact in the territory of the Vunta Kutchin. For the first time since the establishment of the fur trade in the north, the monopolistic position of the native middlemen was broken. The local Indian population now had two trading posts that were accessible year round.

The trade divide between Fort Yukon and the Peel River Post was midway along the Porcupine (Stager, 1874:29). The Kutchin of Crow Flats (Vunta) and the Chandalar River (Natsit) went to Fort Yukon, while the Peel River (Tatlit), Upper Porcupine (Takkuth) and Mackenzie Flats (Nakotcho) Kutchin continued to frequent the Peel River Post - Fort McPherson. La Pierre House was relatively inactive as a fort. Instead, it was used as a transshipment point for goods travelling between the other two northern forts (Balikci, 1963:35).

When the United States purchased Alaska in 1867, the Hudson's Bay Company moved its Ft. Yukon post some 200 miles upriver to Howling Dog and then to Old Ramparts in 1869 (Stager, 1974:29). When the international boundary was surveyed the post moved once more to New Ramparts on the Canadian side (Balikci, 1963:35).

These moves however did not improve trade for the Hudson's Bay Company. As in the early years of the Peel River Post, the difficulties of supplying as well as shipping out furs from the western Yukon were immense (Wolforth, 1971:21). Muskrat and other more valuable furs were refused at Fort Yukon, which had an enormous effect on trade. These factors, coupled by the competitive Russian trade to the west and the presence of wintering whalers near Herschel Island to the north, led to the withdrawal of the Hudson's Bay Company from the northern Yukon in 1893 (Ibid). Ten years passed before another fur trading post was established in the area. Dan Cadzow, a private trader, opened a store at Rampart House in 1904 (Harrington, 1961:5).

b) Missionaries, Whalers, Gold Seekers and Police: 1860-1912

As in the other parts of Canada, the fur traders opened the way for other agents of change, particularly missionaries of the Anglican and Roman Catholic faiths (Wolforth, 1971:31). Missionaries brought cultural change to the area as well as easing relations between Indian and Inuit. Whalers and gold seekers diverted Native attention away from the fur trade and created a more complex set of needs, while the RCMP represented the arrival of the Canadian Government in the north.

Missionaries

Missionary activity began in 1860 and depended heavily on the transportation networks and posts of the fur traders (McSkimming, 1975:41). While the traders recognized the potential for inter tribal peace brought by the missionaries, the two groups barely tolerated each other. Missionaries accused the traders of exploiting human beings, while the traders regarded the missionaries as a distraction from trapping (Ibid).

Anglican interest in the northern Mackenzie region began in 1857 and in 1860 both Anglican and Catholic missionaries arrived at Ft. McPherson. Gradually however, the Anglicans came to dominate the region and by the end of the 1860's the Catholics had abandoned the area.

Perhaps one of the relative-strengths of the Anglican Church was the personality of Archdeacon Robert McDonald, whose missionary activity out

of Ft. McPherson and across to Ft. Yukon acted as a unifying force for those Kutchin bands segregated by fur trading activities. McDonald, part Cree and married to a Peel River woman, enhanced his influence by becoming fluent in the Tukkuth and Tatlit Loucheux dialects, and successfully guiding several Kutchin leaders to become catechists (McSkimming, 1975:42).

The presence of Anglican missions at the various trading posts furthered the processes of cultural convergence started by the fur trade (Wolforth, 1971:31). The introduction of Christian feast days increased the number of trips made by most Kutchin families to the local trading post. This not only angered fur traders, but served to disrupt the native seasonal round even more. Secondly, the old patterns of leadership and social cohesion were gradually replaced as the missionaries began assuming the role previously held by Shamens (Ibid). Finally, the various rituals associated with Christianity were thought to be a source of power. This increased the Kutchin acceptance of Christianity and led to the establishment of permanent mission schools at the various trading posts. This move only served to further reinforce the gradual development of these sites into permanently settled communities (Welsh, 1970:24).

Whalers and Gold Seekers

Late in the nineteenth Century, two developments occurred which brought radical cultural change to the Kutchin of the northern Yukon.

The appearance of whaling ships in the late 1880's attracted both Indian and Eskimo to the Arctic coast. Meat, driftwood and furs were exchanged for wages. The availability of a wider range of goods at lower prices was the added incentive many Kutchin people needed to draw them away from the fur trade.

The Vunta and Natsit traded with the whalers at Herschel and Barter Islands using established routes along the Firth and Blow Rivers (McSkimming, 1975:43). Because this trade took place primarily in the winter months, the number of furs being traded by the Kutchin in the summer at Ft. Yukon and La Pierre House decreased dramatically. This reduction, plus the resupply problems to the two northern posts, forced the Hudson's Bay Company to withdraw from its Yukon operations in the 1890's. Consequently the Vunta Kutchin were left with no other choice but to trade with the whalers, head south to Dawson City and the gold rush, or make the long, hard journey to Ft. McPherson (Ibid).

Fortunately, for the Hudson's Bay Company and others involved in the fur trade, the 1906 fall in the price of baleen meant a resurgence of the fur trade in the northern Yukon and Mackenzie area. For Dan Cadzow, the opening of his store at New Ramparts in 1904 could not have been better timed. In 1918 business would get even better with the rise in the price and muskrat and the subsequent increase in the number of Indians participating in the fur trade. The fur industry would once again rise to the significant position it had held prior to 1890 (Slobodin, 1963:29).

For those Kutchin not involved in whaling, the Klondike gold rush of 1898-99 provided a second distraction away from the established fur trade. The Peel River, Rat River and Black River Kutchin learned of the gold rush from white fortune hunters passing through their territory en route to Dawson City (Slobodin, 1962:30). Gradually many members of these bands became guides, accompanying groups of white fortune seekers to the Klondike gold.

Although the gold rush was short lived, it dramatically affected many of the Kutchin who had moved to Dawson City. Slobodin (1963) made mention of the "Dawson Boys" who emerged during the gold rush period. These were predominantly Peel River Kutchin who had picked up urban attributes and sophistication, as well as innovative technology. Upon arrival back home in the early 1900's, the Peel society became more closely identified with the institutions of Ft. McPherson and its fur trade activity (Slobodin, 1962:35). It is likely that similar changes occurred among the other bands, especially the Vunta Kutchin who actively participated in both the whaling period and the gold rush.

By 1912, the fur trade had absorbed those who had been occupied by whaling and the gold rush. Complex needs had been created over the previous twenty years and most northern natives had become irrevocably bound to the fur trade. The next twenty years would see the development of a highly efficient and complex hunting and trapping economy where most participants were interested in trade and/or settlement life (Wolforth, 1971:43).

The Police

Both the gold rush and the whaling boom resulted in the appearance of yet another institution - the Royal Northwest Mounted Police. In the Yukon the major concern was to maintain sovereignty and prevent lawlessness from spreading into the Canadian territory from Alaska. The first Mountie arrived at Forty Mile in 1894 (Stager, 1974:32). By the time the gold rush started, several members of the force were in place in the Yukon including New Ramparts. At the end of the whaling and gold rush periods the police remained as a sign of sovereignty and government involvement in the area (Wolforth, 1971:40).

Although the police were accompanied by an administrative structure headed by an appointed Commissioner and council, government involvement in development, and economic and social processes remained insubstantial for many years. For the most part, activities operated as they had previously, with the added feature that local police frequently contributed towards the welfare of the native peoples (Ibid:41).

c) Changes to the Kutchin Way of Life

The introduction of white goods, white institutions and white technology had a profound effect on the Kutchin way of life (Welsh, 1970:23). However, even though there were many changes, the Kutchin, unlike other groups, continued to occupy and exploit most of the territory known to them traditionally after years of contact. The lack

of both concentrated settlements and white men during the contact period seemed to act as a safeguard against rapid cultural change, and the complete breakdown of the traditional way of life.

Hunting, Fishing and Trapping

Prior to the 1820's trade with the Kutchin of the northern Yukon was infrequent. The lack of permanence of anyone post near traditional hunting grounds, combined with the monopolistic control of the Indian middlemen in the region, meant white contact with native groups was irregular and unpredictable (J. Helm, 1976:291). Additionally, there was the reality that the goods being offered in trade were either not useful, or needed by the Kutchin people.

Once the Hudson's Bay Posts in the Mackenzie Delta and northern Yukon were established however, the fur trade took a stronger hold and Kutchin activities became increasingly channelled. Trapping was best done by small family groups over a wider territory. Hence, dispersal became the rule for most of the year with emphasis on the nuclear family. Meat and fish camps disappeared, and communal in-gathering occurred at the trading post during the summer and at Christmas. Camps were located along the rivers for travel and trade purposes, as well as for easy acquisition of fish in the summer and caribou in the fall. The introduction of better fish nets and repeating rifles meant that both fish and caribou could be taken in sufficient numbers by an individual rather than a small group.

As mobility increased and trade intensified, trapping for furs became the major Kutchin occupation rather than subsistence hunting (McSkimming, 1975:47). However, as McSkimming (1975) and Balikci (1963) noted, the Kutchin did not engage in any sort of systematic method of trapping. Rather, trappers shifted extensively within a region, and did not claim ownership of trapping areas or lines. It was not until the early 1900's, when white trappers began exploiting individual areas that the Kutchin trappers realized the advantages of ownership, and that greater productivity came when trap lines were long and systematically checked (McSkimming, 1975:49).

With the increase in the price of muskrat in 1918, muskrat trapping became a major springtime activity for the Kutchin. Muskrats were abundant in the many lakes and streams located to the north and the south of modern day Old Crow. Because "ratting" required help, it quickly became a family based activity, where entire families would move north to Crow Flats for two to three months beginning in the early spring (Figure 2.2). Prior to this, muskrat houses would be staked by the individual trapper in early winter so that they could be easily relocated at the beginning of the trapping season in March. Up until breakup muskrats would be trapped; afterwards they were shot with a .22 rifle.

Stager (1974) noted that ratting camps were located close together which helped increase the feeling of sociability usually connected with spring ratting. In spring, temperatures are no longer cold, daylight is back and the snow and ice conditions are perfect for travelling. All in all, "ratting (had) a festive air about it" (Stager, 1974:43).

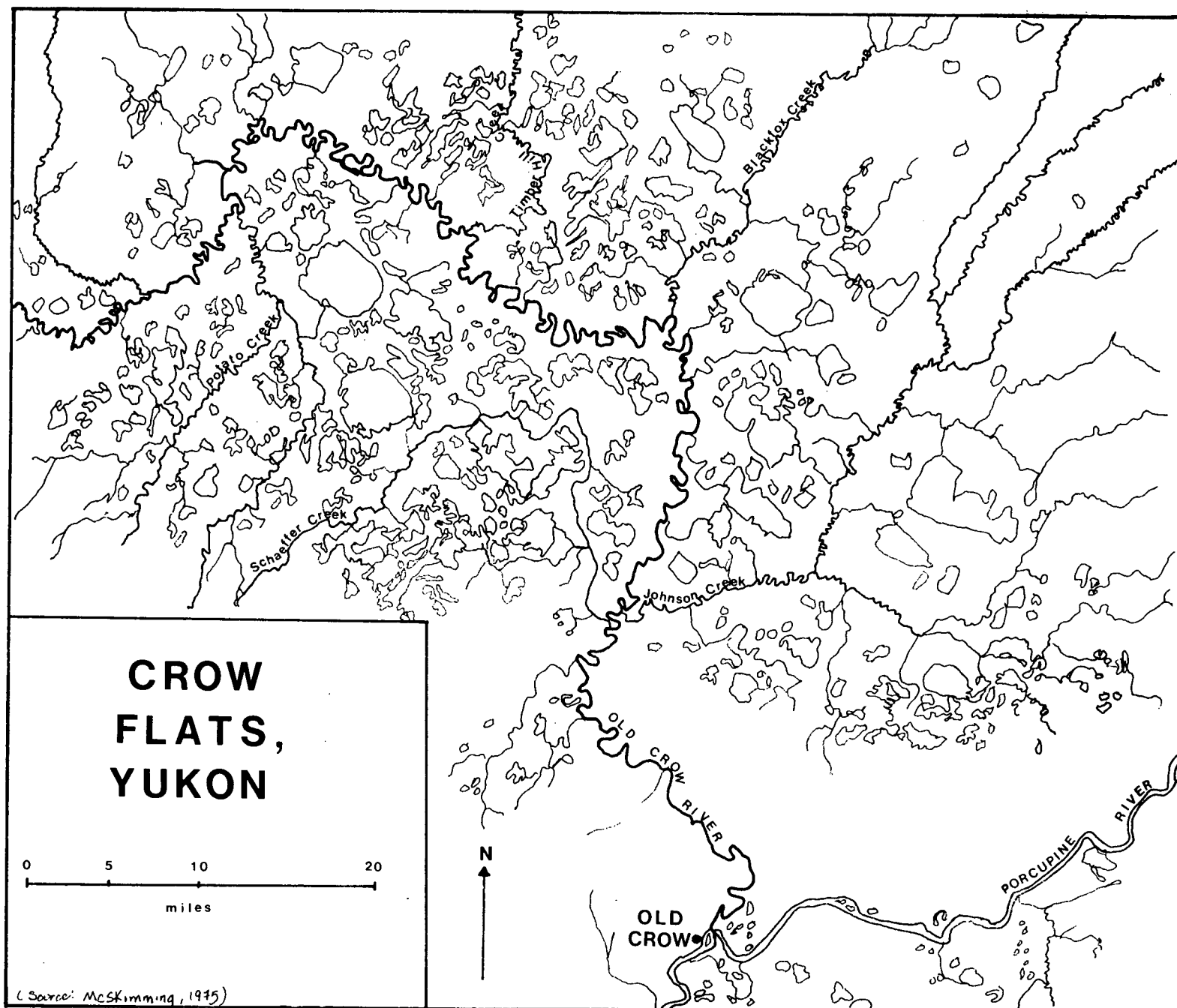


Figure 2.2

Material Goods

Early staples of the fur trade were tobacco, guns, ammunition, cloth, axes, knives, needles and other metal goods (Ibid:34). The movement away from full-time subsistence hunting meant that many Kutchin became dependent on guns and ammunition in order to capture large amounts of food in a short period of time. As life began to increasingly revolve around the trade post, items such as flour, tea, sugar, canvas, twine, wire, and fish nets became indispensable. Most Kutchin eventually fell into a credit/debt relationship which only furthered their dependence on white goods.

Traditional clothing was quickly replaced after contact by woolen shirts, trousers and other clothing made from manufactured cloth. Stager (1974), noted that the only traditional garment to survive into this century was the winter parka made of caribou skin. Obviously, as activities came to require only short periods of time outside, the need for traditional clothing disappeared (Ibid:35).

The fur trade introduced canvas tents which were more versatile than the traditional skin covered dwellings. Although log cabins were being built in the early 1900's at most fish camps and traplines, the canvas tent remained indispensable during the winter when travelling, at spring ratting camps, and in the summer at the trading post.

With the introduction of trapping, transportation requirements changed. Travel distances became longer and loads requiring hauling became heavier. Toboggan-sleds were introduced to carry both furs and food, and dogs became work animals, pulling the sled in winter and packing food in summer. "These two changes, trapping and dog team travel, made winter the time to cover great distances. This was in direct contrast to the precontact travel pattern, when summer movement by water was most extensive" (Stager, 1974:37). The introduction of dogs for work purposes meant an increase in their numbers and in the amount of country food required by each Kutchin family unit. Fortunately, the introduction of rifles and fishing nets made such food gathering relatively easy. The use of dog teams peaked in the 1940's and 1950's (McSkimming, 1975:51).

In addition to using canvas for tents, it was also substituted for the moose skin or birch bark used in the construction of traditional Kutchin water craft. However, Kutchin soon came to prefer the long, narrow, flat-bottomed, plywood boat introduced by white trappers because it could carry people, game and furs easily. Canvas canoes remained in use for spring ratting until the mid-1970's.

Social Organization

White contact brought several changes to Kutchin society. As more native families became involved in the fur trade communal hunting and fishing activities were replaced by individualistic techniques over a

more extensive land base. As the fur trade intensified, native dependence on white goods increased to the point where the trading post altered the Kutchin economic position to one of subordination.

Both the fur trade and missionary activities were responsible for the destruction of traditional Kutchin leadership forms. Meat and fish camps were replaced by individualistic food gathering methods thereby eliminating the need for the economic chief. Similarly, the role of the tribal chief was changed to that of trading chief. Once a permanent trading post was established at New Ramparts in 1904, the already eroding position of the tribal chief disappeared completely (McSkimming, 1975:53).

Missionary activity was responsible for the disappearance of the war chief, and the modification of the Shamen's role. Archdeacon McDonald and others have been credited with playing the lead role in bringing Eskimo-Kutchin hostilities to a close in the late 1800's. This peace ended the role of the war chief, and the potlatch, thereby knocking out one of the prime reasons for the existence of the clan (McSkimming, 1975:52; and Welsh, 1970:24). As a result, sub-endogamous marriages became common and the clan system gradually lost much of its significance.

In terms of Shamenism, McSkimming (1975) noted that the Shamen continued to be active in Kutchin society. The Kutchin readily adopted Christian beliefs because they believed them to be the probable source of white man's power. In most bands the Shamen was trained to be a catechist by the Anglican missionaries. Thus, not only did the Shamen

not lose power, he also became the medium through which the church established power among the people (Ibid).

Finally, the presence of the police, trading post and mission at one small nodal centre "reinforced the importance of community as a magnet" for the Kutchin (Welsh, 1970:25). Gradually, more and more people began to spend longer periods of time in the vicinity of these centres.

THE SETTLEMENT OF OLD CROW

The site of Old Crow had been a gathering point for the Vunta Kutchin long before white contact. Not only had fishing always been good in the area, but the southern migration of the caribou in late August could be easily observed from the banks of the Porcupine. This made Old Crow the ideal spot for informal gathering, trading and inter-tribal feasting. When a fur trading post was established downstream at Ft. Yukon, Kutchin gathered at Old Crow to organize fur trading parties (McSkimming, 1975:54). By the time Dan Cadzow opened his fort upstream at New Ramparts in 1904, the first permanent dwelling had already been built at Old Crow.

In 1912 two independent traders, Schultz and Johnson, built a store at Old Crow (Balikci, 1963:35). Shortly afterwards it would become the trading point for the Vunta, Tukkuth and Natsit Kutchin bands instead of New Ramparts. The latter fort had always been poorly located with respect to traditional hunting, fishing and trapping areas. When a small

pox epidemic led to the burning of most of the post's houses, Old Crow became the logical alternative.

Gradually native log houses were built at Old Crow especially after an Anglican Church was built in 1926 and an RCMP barracks in 1928 (Welsh 1970:25). At the height of the fur trade, 1920-1950, life for most Old Crow Kutchin involved in-gathering during the summer months and dispersal to traplines throughout the winter. The opening of a school and nursing station in 1961 saw a change in the Kutchin seasonal round once again as more people settled permanently in Old Crow for the entire year.

PRESENT DAY OLD CROW

Old Crow today presents a different picture than it did during the height of the fur trade period, or even 10 years ago. Life has become far more complex with the introduction of such things as wage employment, government assistance, imported foods, outside schooling and television. The presence of these in the lives of the Old Crow people have undeniably expanded wants and aspirations as well as lifestyle choices.

With the establishment of a day school in 1961, most families moved permanently to Old Crow. The decline in fur prices during the 1950's and the increasing opportunities for wage employment in town, only served to reinforce this shift to community life. Currently several men continue to trap, but do so on a part time basis from town. Not only are the fur returns insufficient to maintain several household economies, but few

residents possess the skills necessary to make a trapping career profitable. There are only two or three community members who still actually move out of town to maintain winter traplines on a regular basis. These residents tend to be older and not interested in full-time wage employment.¹

Physically the town remains divided into two distinct sections, the Whites and Métis living "downtown", and the Indians living "uptown" (Figure 2.3). Although all homes now have electricity, stoves, freezers and televisions, the modern, well equipped buildings of the RCMP, nursing station and school still stand out.² Additions to the community in recent years have been: a new community hall, a Band Office, a sawmill and equipment garage, and a school.

Welsh (1970) noted that, "relations between Indians and Whites have become increasingly specific and impersonalized", and that the gap between the two ways of life seems to widen with every new, modern

-
- Note 1: It is interesting to note that McSkimming (1975), Stager (1974), and Welsh (1970) all stated that "almost no one maintains traplines in the bush". The fur returns for both 1978 and 1983 (Table 4.5) show relatively large fur takes. It seems that due to the lack of wage employment in town, some residents have shifted back to winter trapping in order to supplement other income sources.
- 2: These buildings are still the only ones with indoor plumbing. All native households must have water delivered weekly and use the showers at the school.

MAP OF OLD CROW 1984

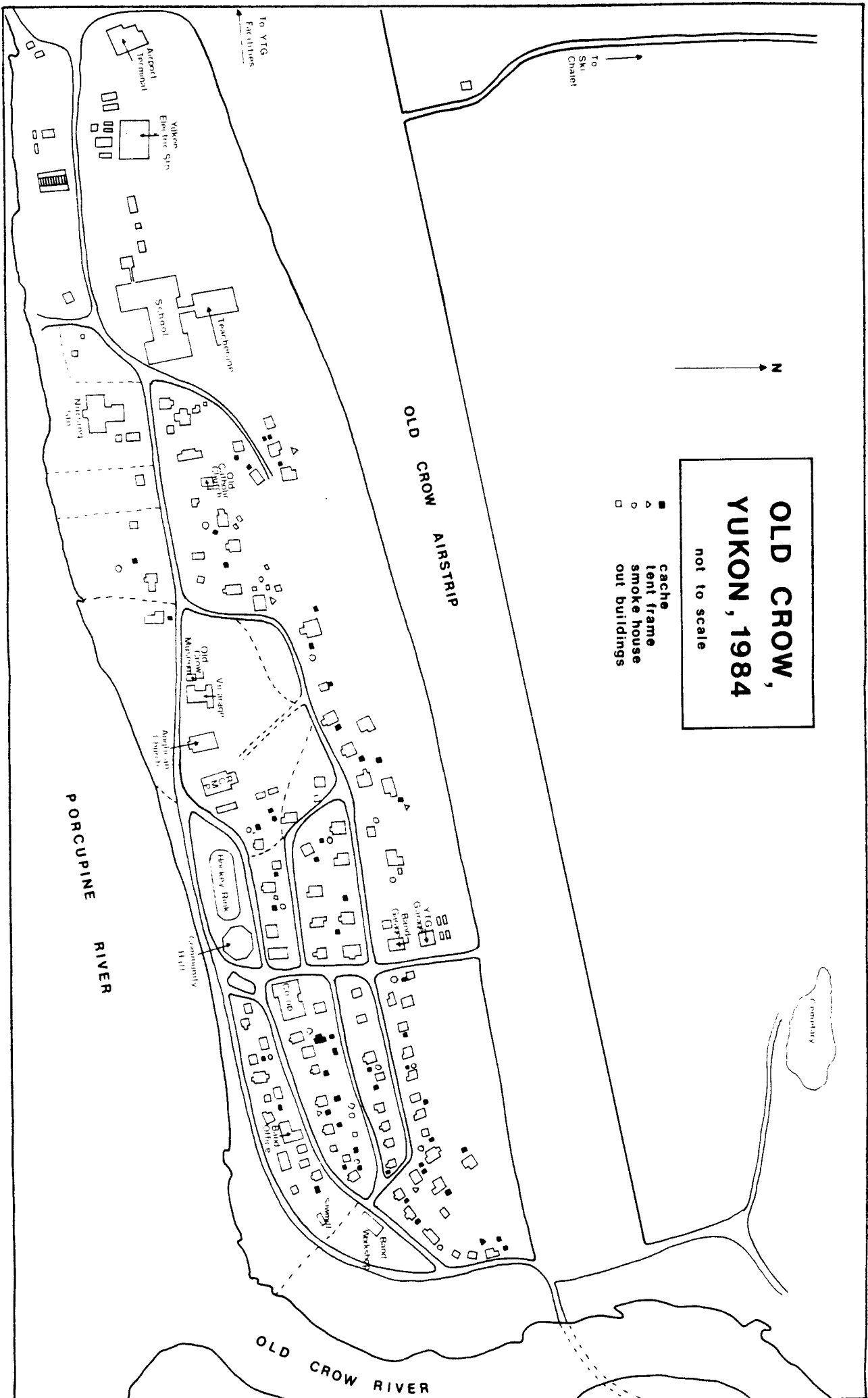


Figure 2.3

building built. Today the validity of this statement is questionable. Even though most whites were on short-term northern appointments, some opted to stay longer than their allotted time.

Furthermore, most interacted within the community socially, as well as professionally. There is the additional reality that government transfer payments have increased Old Crow's standard of living, and that housing conditions have been greatly improved in recent years. Gradually the older log cabins are being replaced by new, more modern homes through the federal government's Native Housing Program.

A Co-operative store operates in Old Crow, providing residents with a wide range of foodstuffs, equipment and dry goods. Water is now delivered weekly by the Band Office to each home for a nominal fee, while honey bags are now picked up and taken to the sewage lagoon east of town. Hauling services about town are provided by two pick up trucks, one which is privately owned. Additionally, both the Yukon Territorial Government (YTG) and the RCMP have motor vehicles which are used for various activities around town.

Skidoos and boats remain the major sources of transportation for most residents. The boats are made from local wood and have a flat bottom and steep sides. In recent years, charter plane has become an alternative means of getting to Crow Flats in the spring, especially among the elders.

Since the early 1960's the Canadian government has played an increasing role in most people's lives through social benefit programs like welfare, old age pension and mothers' allowance. Since the mid 1970's, the lack of full-time employment in town for both males and females has furthered the community's reliance on massive government assistance. Today, the only alternative for most young people not interested in the more traditional pursuits is to move away from home to either Inuvik, Whitehorse or another centre. This outmigration is becoming commonplace now that most young people finish their schooling in Whitehorse and come to enjoy "city life".

Within Old Crow jobs are available with the YTG and the Band office, but most of these tend to be seasonal in nature. For many residents not able or willing to move, the only way to supplement income from government assistance or seasonal work has been to shift back to the land and its resources. Today many families engage in spring ratting as a way to offset the debt they have accumulated over the winter at the Co-op. Going further, many males trap from town in the winter, and/or gather wood for sale to the Band Office, the school or various community members.

The land around Old Crow continues to supply much of the needs of the people, although the land area actually used has greatly decreased since traditional times. Almost all the houses are made from local logs and are heated with wood fuel. Caribou, moose and smaller mammals are still taken at levels similar to those of 25 years ago. Fish are still consumed by the people during the summer months, but have decreased with

respect to total amount caught now that dog teams have been replaced by skidoos in all but two households.

Muskrat hunting is still an activity central to the Kutchin seasonal round, fulfilling both a cultural and economic need. Similarly trapping continues to fulfill a cultural need for many of the older male residents, although the lack of employment opportunities in more recent years has also resulted in a shift back to trapping for some younger families.

It cannot be denied that imported foods have come to play a major role in the diet of the Old Crow people. Television, and increased opportunities to travel, have heightened most people's awareness of alternate foods. Today store bought food comprises 50% or more of the average residents' diet, especially for those living in households where the hunter/trapper works full-time or is young. Nevertheless, the land and its bounty is still important to many residents. Caribou and other mammals are still the major protein sources for the community and represent substantial savings in terms of food dollars.

In terms of the social organization of the group, there have been many changes. First, aboriginal forms of leadership have completely broken down and have been replaced by a government administration imposed from outside. Although there is an elected chief and band council, they are essentially powerless with respect to most community matters (Welsh, 1970:28).

Secondly, the flexible settlement arrangement that existed in pre-contact times is no longer possible. Today, community life is fixed which means inter-personal conflict cannot be solved by simply moving away. Consequently people begin to feel hemmed in by the town, releasing the tensions they feel through gossip, drunken aggression or just generalized hostility. Perhaps this is why so many residents look forward to spring ratting; it represents a way to get out on the land and away from town life.

Welsh (1970) noted that there were positive social forces at work as well. It is indeed true that the physical isolation of the village, and the relative lack of exploitation by whites has contributed to community solidarity. Today, even though the isolation has been somewhat broken by daily air service and television, the community remains strongly committed to maintaining their image as a "nice place". Community meetings, and feasts are still important social activities and are carried out in the same way they always have been. There is also a very deep concern today among the adult population about the behavior of some of the young people in town, as well as their movement to larger towns. Whether anything can be done to provide more direction to the community's youth in terms of lifestyle choices remains to be seen. It seems that this will be the biggest test to date of the community's solidarity.

CHAPTER 3

INTRODUCTION

Attaching numerical values to human activities has been the focus of much research over the years. To date the most significant gains made seem to be in the area of economics, where economists have "developed sophisticated means of measuring the volume and value of production and exchange" (Usher, 1971:106). However, even for economists, evaluating human activities which occur outside the market system, and for which no cash values exist, remains a particularly troublesome problem.

The following chapter examines the various methods that have been proposed by economists and other social scientists for valuing traditional activities separate from the outside market place. Using data collected on Old Crow in 1984, it will be shown that, while many of these methods can elicit some interesting and potentially significant information, they fail to completely 'value' the production and exchange of goods produced and consumed domestically.

1. Valuing Subsistence Production in the Developing World

In the field of Economics there is a large body of literature available on the value of subsistence agricultural production in developing countries, and the place that these activities hold in a

country's national accounts¹ (See for example: Chibnik, 1978; Blades, 1975; Webster, 1974; and Clark and Haswell, 1964). Of the various valuation methods presented, two seem quite appropriate for similar research in the north; 1) converting all domestically produced goods to one standard equivalent (Clark and Haswell, 1964), and 2) valuing crops consumed at home according to some sort of market price (Chibnik, 1978; and Webster, 1974). In fact, one catches glimpses of these concepts in some of the Canadian valuation research completed to date (See for example: Usher, 1983 and 1976; Feit, 1979; Muller-Wille, 1978; and Kemp, 1971). However, because these concepts favour the use of quantitative economic analysis, they fail for two reasons at completely 'valuing' northern traditional activities.

First, the nature of subsistence agricultural activities in most developing countries is such that, if they do occur outside the market place, they usually have cash equivalents which can be substituted into valuation research. This stems from the fact that most households engaged in subsistence agriculture grow crops which are both sold at market, and consumed domestically. The same situation exists for the majority of hand-crafted items, livestock, and to a certain extent, labour. This sharply contrasts the northern situation where most

Note 1: There does not appear to be a large body of literature in Economics on the value of subsistence production in hunting and gathering societies. This stems primarily from the absence of cash values and a market place - a problem also characteristic of Canada's north.

products are consumed domestically, and where there is a complete absence of cash equivalents for most goods, including labour inputs.¹

Secondly, in the developing world, agricultural production is largely carried out for economic reasons; livelihood and the provision of inexpensive household food. Consequently, the valuation methods applied to subsistence agricultural activities in developing countries have focussed largely on the quantifiable elements of the domestic economy. Economists have either not sought, or have not felt the need to provide a means for evaluating the role that attitudes, tradition, or social organization may play in the maintenance of the traditional sector of the economy. While these factors may not be considered "important" in the context of the developing world, quite the opposite holds true in the Canadian north. Here, recent research findings, and the increased articulation by native people themselves of the importance of their traditional land and life, have proven that, in addition to economic and nutritional gain, considerable social 'value' resides in the use of local resources.

Given the above it is understandable why the valuation methods developed by economists for use in an agricultural context would have limited success when applied to the north. In fact, the adoption of such methods in their conventional form by Canadian researchers has failed to

Note 1: Lonner (1981) notes that there is rarely any opportunity cost experienced by those involved in subsistence production. Wage employment is such that domestic activities rarely conflict in terms of time available.

completely 'value' traditional activities. However, when variations of these concepts were applied in Old Crow some interesting information and ideas were generated. For this reason, an examination of the relevant studies and their drawbacks seems in order.

2. The Use of Standard Equivalents

The notion of converting domestically produced goods to one standard equivalent was tested in the Canadian Arctic by William Kemp in 1971. Kemp was attempting to gain insight into the process of adaptation by modern Eskimos to a non-hunting system of livelihood and social organization, through the use of energy flows (1971:105). While this research was not an attempt at valuation, its observations and conclusions suggest that the use of such measures for this purpose would prove inadequate.

For a period of one year Kemp monitored the patterns of energy use by both a "modern" and a "traditional" household to see if modernization had altered the allocation of available energy to those activities deemed essential for survival. Predictably, Kemp found that when more modern ways were adopted, energy inputs increased and took several new forms such as: fuel, technology, and imported food products. Surprisingly however, while time spent hunting decreased, the frequency of harvest did not increase (Kemp, 1971:110). Kemp concluded that with the introduction of a cash economy the maintenance of a hunting way of life had taken on a different strategy, but that the fundamental linkage - the relation between hunter and land - had remained the same (Ibid:115).

Could Kemp have said more about the 'value' of traditional activities if he had used the data collected differently, or if some other standard equivalent had been chosen? The answer to this inevitably transgresses into a discussion on the many problems which plague most quantitative research in the north.

First, there is the question of data scope. If one were to use Kemp's concept of energy flows, how would one successfully follow the energy inputs and yields of ten families, let alone an entire community or a region the size of the eastern Arctic? In Old Crow for example, it was found that native harvesting took place whenever the opportunity presented itself. With the resulting products being quickly distributed through customary channels, it was more than once that the researcher missed recording incoming harvests.

Closely affiliated with this problem of scope is the whole question of time. Patterns of resource dependency are constantly fluctuating from year to year in the north as individual households respond differently to changes in species availability, fur prices, job opportunities and so on. How can a study carried out intensively for only a short period of time possibly capture the wide range of economic strategies a community might adopt for a year, or a period of years in response to these changes? If a time dimension is not incorporated, the study results may not be truly indicative of the actual place that traditional activities hold in a community's domestic economy.

Compounding the problems of scope and time is a lack of recorded data that is both reliable and extensive. Comprehensive historical profiles for every northern community do not exist. Furthermore, quantitative data collected at the regional and territorial levels has limited use due to wide variations in; collection approaches, activities or species studied, and time periods covered (Usher, 1983 and 1982). This deficiency of a reliable and comparable data base has made it difficult for quantitative research projects to span long periods of time, or go beyond analyzing at the household or community level: restrictions that can hinder the ability to make general statements about 'value' that are truly accurate and applicable on a wider scale.

Finally, even if the researcher could incorporate some scope or a time dimension, there remains the whole question of the social 'value' that subsistence activities hold for native people. This 'value' is both qualitative and often subjective in nature, and is therefore very difficult, if not impossible to fully capture through quantitative analyses (Lonner, 1981). This is not to say that the information gathered through such methods is totally incorrect, or that the insight gained is not useful. Quite the contrary is true, these methods can be one of many tools a researcher might employ when conducting research that concerns valuing activities. However, it must also be recognized that while it may be useful to measure certain activities by assigning uniform units, be they calories or seal skins, assigning similar units to opportunity costs, social interaction, avoidance of risk, and so on will fail to produce truly accurate results (Lonner, 1981:47).

In conclusion, maybe we should not expect more than just general conclusions about 'value' from most quantitative research. Perhaps Kemp's conclusion that, although material opportunities and hunting strategies have changed, native people have continued to 'value' the traditional way of life, is all we really should be expecting from quantitative valuation research.

3. Valuing Traditional Activities Using Substitution Costs

In 1976 Peter Usher formally introduced the idea of imputing values to country food consumed by humans, as a means of valuing production from the land (p. 112). Usher selected food consumption because "the use of country produce other than for food, or furs for sale, was limited" (Ibid:107).

Imputing cash values to country produce was by no means an untested concept in 1976. Earlier research by: Gourdeau, 1974; Palmer, 1973; Bissett, 1973; and Usher, 1971, had revealed some interesting figures on the economic value of food. However, in 1976 it was Usher's contention that substitution costs rather than local exchange rates or opportunity costs, was the most appropriate means for imputing these values (p. 111). This stemmed from the observation that the aim of northern valuation research was to measure the welfare of native people participating in the traditional sector and not their contribution to the national economy (Ibid: 112-113). Only the idea of substitution costs asks what it would cost the individual to achieve the same level of well being if he had to purchase the commodities he currently produced himself.

In discussing this approach to valuation Usher corrected what he felt were problems with previous investigations. In order to capture as wide a range of value as possible, Usher made provisions for incorporating, regional differences in the cost and type of food to be substituted, the nutritional variation between country food and imported substitutes, and the production costs foregone by purchasing rather than hunting food. Despite these changes however, many problems remain with this type of valuation approach, problems that Usher himself has acknowledged (1984, 1983 and 1976).

To begin with, assigning retail prices to subsistence products, through substitution costs or any other method, immediately treats the 'value' of the product according to use. Research has shown however, that people often 'value' products produced and consumed at home as being higher than their market price based on objective/subjective measures (Chibnik, 1978). In the case of the north, production is for both use and exchange and is governed largely by non-economic goals like, security, and the distributor of social forms between households (Lonner, 1981:46).

In Old Crow for instance, participation in spring ratting has changed little in the last 10-15 years despite higher production costs and a general decline in the price of furs (see Table 3.1).¹ As in 1973,

Note 1: The low 1960 figure is probably due to the cyclical nature of muskrat populations and not low participation rates. The lower per capita figures for 1978 and 1983 are because not just the adult population figure was utilized. Children also participate in muskrat production and are considered a valuable labour input at a camp.

Table 3.1

MUSKRAT HARVESTING ACTIVITIES IN OLD CROW 1960 - 1983

	1960	1973	1978	1983
A) <u>MUSKRAT HARVEST</u>				
Total	8,950	13,725	15,983	12,349 ¹
Per Camp	448	521	639	618
Per Trapper/Hunter	389	320	246	238
B) <u>CAMP PRODUCTIVITY</u>				
# Camps	20	27	25	20
# People as % of Total Pop. ²	56.6%	69.2%	32.9%	23.6%
# People at Camps	23	43	65	52

Source: 1960 + 1973 - J.K. Stager (1974)
 1978 + 1983 - field data (1984)

Notes 1: The figure for 1983 was actually closer to 12,500 but 185 or so were taken by trapping outside the flats.

2: 1960 and 1973 figures include just adult trappers and not their families (% figures are for adult population only).

1978 and 1983 figures include all who participated in ratting camps including children who were productive (>6 years of age)

spring ratting is still viewed by most residents as a source of pocket money and food, as well as a way to pay off debts at the Co-op (Stager, 1973:57). It is also a chance for families to get out on the land after the long, cold and dark days of winter. Several informants emphasized the social and cultural rejuvenation they experienced by briefly retreating to the land in May and June. Others stressed the importance of ratting camp as a chance for teaching children traditional skills.

Going further, it is still commonplace in Old Crow for the freezers and caches of the older residents, the luckless or the unskilled to be filled with meat before the fall hunt is even complete. All the households interviewed (73% of all households) acknowledged sharing all or most of the products gathered from the land with family and friends. On at least three occasions meat was seen leaving the community for friends and relatives in the southern Yukon. Clearly, traditional activities hold more than just economic value for the people of Old Crow. Besides multiple nutritional and economic products, there are also social, cultural and other non-monetary personal rewards. All of these non-market 'values' are defined by individuals or by the community as a whole, and not by the forces of supply and demand. Given this, it must be acknowledged that monetary valuations can never "indicate the 'value' of hunting as a social or cultural activity, or as a way of life" (Usher, 1976:117).

A second problem with assigning substitution costs to local food is the whole question of what constitutes an appropriate substitute. While Usher and others have chosen imported meat as the closest possible

substitute, data from Old Crow indicates that the native people find country food far superior in terms of taste and nutrition, and that they do not even attempt to replace it with imported food products.

Imported meat products were occasionally purchased as a means of adding variety to the daily diet, but for the most part: eggs, flour, sugar, macaroni, candy and convenience foods were the most popular imported food items (Murphy, 1984). Furthermore, 55% of all households interviewed (51) believed that 50% or more of their food needs were met by the land. Only 11.7% of the households stated that less than 25% of their food needs were satisfied by local food, while 6% did not know at all (see Table 3.2). All interviewees admitted that they preferred the taste of caribou, rabbit, muskrat and so on to that of imported meat products.

Table 3.3 outlines the amount of country food consumed by the people of Old Crow in 1973 and 1983. Although the 1983 data do not represent the total food consumed in Old Crow in that year, comparisons with 1973 can still be made, especially given the total population represented by each data set. Of most significance here is the fact that while increased emphasis has been placed on the cash economy by the residents of Old Crow in the past decade, their consumption of country food has not decreased at all. In fact, it is relatively safe to conclude that consumption has increased in response to the increase in population¹.

Note 1: The population in 1973 was 183 while it was 220 in 1983. The fact that harvest statistics for 73.6% of the population in 1983 produced comparable consumption figures to 1973 means that consumption figures are probably higher for 100% of the population.

Table 3.2

PERCEIVED PROPORTION OF FOOD OBTAINED FROM
SUBSISTENCE ACTIVITIES OLD CROW (1984)

Perceived Proportion ¹	# of Households (51)	% of Total
< 25%	6	11.7
25%	11	21.6
26 - 49%	3	5.9
50%	21	41.2
51 - 74%	2	3.9
75%	3	5.9
76 - 99%	2	3.9
?	3	5.9
	<u>51</u>	<u>100%</u>

(168 people or 76.3% of Total Population)

Note 1: The question read, "How much of all the food you and your family eat would you say comes from hunting, fishing, trapping and so on?"

Source: field data, 1984.

Table 3.3

AMOUNT OF COUNTRY FOOD IN THE DIET OF OLD CROW
PEOPLE 1973 AND 1983

	<u>1973</u> ¹	<u>1983A</u> ²	<u>1983B</u> ³
Total Harvest (kgs)	50,455.43	40,968.26	62,761.26
kg/person/yr	275.7	252.89	387.42
kg/person/day	.75	.69	1.06
Population	183	162	162
% Pop. of total pop.	100%	73.6%	73.6%

Note 1: Figures for 1973 were derived from data presented in J. Stager's study of Old Crow (1974). All weights were converted to match the 1983 data which was based on the edible weights of country food presented in Berger, 1977. (See Table 3.4)

2: Figures here are from the field and represent the amount of country food consumed by 47 out of 70 households in Old Crow in 1983.

3: Figures here are based on YTG harvest records for caribou (1983/84) and field data for all other products. Although they do not represent total kilograms consumed they are closer than the data presented under 1983A.

4: For a complete breakdown of harvest data/edible weights derived from this data and so forth see Tables B-1 and B-2 in Appendix B.

It is interesting to note that the per capita country food consumption levels correspond to findings by Dimitrov & Weinstein in Ross River, Yukon (1984)¹; Usher (1982:442)²; and Berger (1977:33)³. Furthermore, that they are also substantially higher than the national average for consumption of meat and fish⁴. Finally, both sets of figures are similar to those found in several Alaskan communities by, the Division of Subsistence for the Federal Department of Fish and Game (1984), Kruse (1981), Feit (1979), and Tanner (1979).

This being the case, the question arises - is it realistic to even talk of using substitution or replacement costs when there is currently no need or desire among the majority of native people to replace their present use of country food with imported food products? Before this question can be answered, one more factor needs to be considered.

Up until this point the economic value of country food has not been mentioned. The argument against the use of monetary valuation has focussed largely on the non-economic significance of country food. It has been shown that wildlife harvesting is important to community

Note 1: Dimitrov & Weinstein calculated 285.1 kg/person/yr in Ross River for 1981/1982.

2: Usher found a variety of consumption figures for the north based on existing research (see 1982:442)

3: Berger found the average consumption for the central Mackenzie & Western Arctic was 109 kg/person/year.

4: 79 kg/person/year.(Usher 1982:442, based on the avg for 1970-74).

solidarity, the traditional system of mutual aid and sharing, the socialization of children, and psychological satisfaction (taste preference). However, it cannot be denied that extreme economic value is attached to the production of goods from the land by native northerners.

Contemporary economic circumstances in the north dictate that most native households participate in both the cash and subsistence sectors of the economy. The community of Old Crow does not escape this condition. Employment opportunities are limited and often seasonal in nature, while government transfer payments can only partially subsidize the cost of living in this remote community.

Table 3.4 presents the estimated value of the annual meat harvest in Old Crow (1983), according to the cost of imported meats.¹ These figures were derived from harvest data collected in the field (Tables B-1 and B-2 in Appendix B). It is important to note that a correction factor for nutritional differences was not applied to the average price per kilogram used, nor were production costs subtracted from the final figure. Widely accepted methods for incorporating the former are difficult to find in the literature, while collecting data for the latter can be complicated. This is especially true when one considers that most households have at least two hunter/trappers owning their own equipment, equipment and labour is often shared between households, and the use of barter rather

Note 1: As noted in Table 3.4 valuation was done using 1984 prices. However, because prices and harvest levels changed little between 1983 + 1984, the total value figures are probably fairly indicative of the contemporary situation in Old Crow.

Table 3.4

ESTIMATED VALUE OF ANNUAL MEAT HARVESTS OLD CROW 1983¹

SPECIES	FOOD WEIGHT (KG)	TOTAL VALUE
Caribou	32,700.00	\$301,167.00
Moose	4,378.00	40,321.38
Rabbits	263.84	2,176.68
Birds	231.81	1,678.30
Muskrats	1,529.18	12,615.73
Fish	<u>1,865.43</u>	<u>15,352.49</u>
	40,968.26 (kgs)	\$373,311.58

Avg \$ value/household = \$7,777.32
(48)

Note 1: Values were based on prices at the Co-op in 1984.

	Substitute	\$/kg
Caribou	beef	9.21 ²
Moose	beef	9.21
Rabbits	pork chops (loin)	8.25
Birds	chicken	7.24 ³
Muskrat	pork chops (loin)	8.25
Fish	beef/chicken/pork	8.23 ⁴

- 2: Average price for all beef products available.
- 3: Average price for all chicken products available (whole chickens were not used only because not popular)
- 4: Average of beef/pork/chicken because no fish sold locally. The probability that residents would substitute beef etc was equal so the average was used.

For more information see Murphy, 1984.

Source: Field data

than cash exchange plays a major role both economically and socially in the subsistence system. Consequently, in the case of Old Crow, value was imputed by simply using direct substitution. While this did not give precise value, the values derived were believed suitable for the purposes of this discussion.

The estimates presented suggest that it would have taken approximately \$373,000.00 (1984 prices) to replace the meat and fish currently consumed by 48 households in Old Crow. If we were to use the harvest figures from the 1983B column of Table 3.3, the total figure would increase to \$574,089.58. This is probably a more accurate approximation, and does not seem out of line when one compares it to figures for Ross River; namely, \$416,062.05 (1983 prices) for 90% of the population (243) (Dimitrov and Weinstein, 1984).

Going further, the average annual cost for replacement incurred by each household in Old Crow would be somewhere in the order of \$7,700.00 (Table 3.4). This would represent a substantial increase in the cost of living, especially when one considers that the average cost of obtaining country food in Old Crow for all of 1983 was only \$366.00 per household¹. This figure is significantly lower than Usher's 1982 figure

Note 1: The figure \$366.00 is based only on the gasoline, oil and food costs incurred by 44 households in 1983 for hunting etc. This costs does not include the cost of ratting because only 50% of those who hunted or trapped rats admitted to eating them, and all households recovered the costs of ratting through the commercial sale of the pelts. (See Table B-3 for hunting cost data)

of \$800/household for the Inuit of Northern Labrador or Feit's 1979 figure of \$1045/household for the James Bay Cree. This is probably due to the location of Old Crow's resource hinterland. The major food sources for the community's inhabitants - caribou, moose, and fish, can all be harvested within 20 miles of Old Crow. As such time spent either travelling or, out on the land, may be far less than in some other northern communities where resources are not located close to town.

Table 3.6 summarizes the cost of substitution versus the actual cost of hunting and fishing as a proportion of total income for 40 households in Old Crow.¹ Even if we take into account the fact that total income and harvesting costs were often derived from crude estimates because of the private nature of income and expenditures, the sizeable difference between the two percentage figures for most households cannot be overlooked. In the case of these 40 households the average cost per year for substituting with imported foods was \$7,228.79. This is quite significant when one considers that the average income of these 40 households was \$15,636.92 or that the median income was \$11,429.29 (Table 3.5).

Without a doubt then, the production of food from the land represents a very real source of income in kind for most households in Old Crow. In fact, the land and its bounty continue to offer a material and social security at a time when there are insufficient alternative

Note 1: Only complete harvest, income, and cost data existed for 40 of the 51 households interviewed, and therefore only these 40 were used.

Table 3.5

ANNUAL INCOME DISTRIBUTION IN OLD CROW, 1983

Income Range	No. of Households	Income Class
\$ 3,000 - 5,999	7	1
\$ 6,000 - 8,999	9	2
\$ 9,000 - 11,999	8	3
\$12,000 - 19,999	9	4
\$20,000 - 29,999	9	5
\$30,000 - 39,999	3	6
\$ 40,000	2	7
	<u>47</u>	

Median Annual Income From All Sources¹ \$11,429.29

Average Annual Income From All Sources \$15,461.51

Note 1: All sources means wages/transfer payments and income from
 fur harvesting and handicrafts. It does
 not include substituted costs for local
 food production and the like.

Source: Field data

Table 3.6

COST OF SUBSTITUTION VERSUS THE COST OF HUNTING
AND FISHING FOR FOOD, OLD CROW, 1983¹

Household	Income Class ¹	Substitution costs as a % of Total Income ²	Harvesting Costs as a % of Total Income ³
1	5	62	3
2	2	137	0
3	4	116	2
4	1	28	0
5	4	64	5
6	2	7	0
7	1	98	5
8	4	104	4
9	1	25	0
10	3	12	2
11	2	6	0
12	3	45	3
13	6	38	2
14	1	10	0
15	2	27	0
16	2	46	2
17	5	54	0
18	2	19	0
19	5	74	4
20	4	59	2
21	5	3	0
22	4	50	2
23	5	47	2
24	5	85	3
25	3	170	4
26	4	12	0
27	3	139	35
28	5	25	1
29	4	44	8
30	6	31	2
31	1	37	0
32	3	22	1
33	5	63	22
34	7	7	2
35	7	6	1
36	2	16	2
37	3	95	2
38	5	41	0
39	1	42	0
40	4	60	1

Table 3.6 cont'd

	\$ VALUE	% OF TOTAL INCOME
Total Income (40 Hshlds)	625,476.97	-
Total Cost of Substitution (40 Hshlds)	289,151.85	46%
Total Cost of Hunting (40 Hshlds)	13,475.00	2%

Source: Field data

Note 1: See Table 3.5 for categories of income.

2: % of total income spent on substitution was derived by substituting costs of imported food products to known consumption levels/household (see Table B-1 and 3.4 for weights used and \$ values assigned).

3: % of total income spent on harvesting was derived from the cost of gasoline, oil and food incurred by each household while hunting etc - No other production costs like skidoo parts are included here. (See Table B-3).

sources of livelihood, and when numerous internal and external forces of a change are active in the community.

Having said this we can now answer the question posed on page 63. Before doing so however, the question must be revised so that it now reads: is it realistic to even talk of substitution or replacement costs when there is currently no need, desire, or practical economic means among the majority of native people to replace their present use of country food with imported food products?

To suddenly replace country food with imported meat products would in all likelihood seriously undermine the economic resources of most households in Old Crow, and by implication lead to an extreme dependence on state assistance. Usher (1983:33) suggests that in the long run this leads to the eventual loss of community solidarity and the traditional system of mutual aid and sharing - those relations of production which have been responsible for the perpetuation of the man-land relationship for most native northerners. Given the current distress over declining community solidarity by many residents in Old Crow, it is doubtful if the community would embrace the idea of substitution costs, and all that it implies.

It is acknowledged that most advocates of the idea of substitution costs recognize the important social 'value' that subsistence production serves, and that they are merely using substitution costs to theoretically impart value to the quantifiable elements of the

traditional economy. According to Usher for example:

"a consideration of nutritional and economic well-being alone is somewhat reductionist. The relationship between traditional resources and social organization is also important" (1981:61).

If this is indeed the belief of most researchers, why do they continue to reduce the relative worth of subsistence production to one generalized medium of exchange? - a medium that is unrealistic because native people currently have neither the means nor the need to buy imported food products, let alone the desire.

The use of substitution costs not only excludes all the non-market 'values' of subsistence production, it ignores all the other mediums of exchange operative in a subsistence economy: food, clothing, gas, equipment, labour and so on (Lonner, 1981:60). By applying monetized measures of the market economy researchers in essence fail to treat the subsistence economy as a distinctly different social and economic form which interacts with the wage economy (Lonner, 1981; and Tanner, 1979). This has very serious implications when one considers that administrators and policy makers often make decisions based on research findings, and not after extensive personal examination of a situation. If a researcher has failed to include the very important social 'values', there is the danger that policies and development strategies will, in the end, undermine the traditional economy he/she originally sought to preserve.

4. Valuing Subsistence Production Using Production Costs

The use of production costs as a means of valuation began appearing in the literature in the 1970's as a means of giving added accuracy to the values obtained through the use of straight substitution or replacement costs (See for example: Feit, 1979; Muller-Wille, 1978; Nowak, 1977; and Usher, 1971). This stemmed largely from the observation that in order for any assessment of the savings realizable through the use of traditional foods to be correct, it had to include both the total amount of edible food obtained and the cost of basic equipment, including operation costs (Nowak, 1977). While this method of valuation is, for the most part, just an extension of replacement costs, it has some unique problems which warrant its separate investigation.

Immediately one can see that, as with substitution costs, this method will in no way account for the social or non market 'values' of production. Secondly, it suffers from the problem of time and scope mentioned earlier.

The normal method for determining production costs is to conduct a census of gear, and to determine its average cost and depreciation rate along with typical operating costs (Usher, 1983:25). Unfortunately this data has never been collected on a systematic basis in northern Canada, and to do so would require exhaustive surveys at the local level (Ibid:29). While the collecting of such data may be feasible with respect to time for one community, it is impractical at the more useful regional or territorial levels.

A third problem with the use of production costs is that in most communities harvesting of wildlife is carried out for both commercial and subsistence purposes, and therefore production costs often overlap. It is also not uncommon to find most hunters engaging in multipurpose trips out on the land, or for game to be taken simply when the opportunity presents itself. Given this, how does one assign depreciation and operating costs to each activity, and in what quantity?

Assigning an appropriate depreciation rate can be a difficult task in the north. Research in Old Crow for example, revealed that:

- equipment was often shared or even owned collectively;
- certain pieces of equipment received less use than others;
- some residents took very good care of their equipment which increased its lifespan; and
- the terrain and weather was such that it did not drastically reduce the lifespan of rifles, skidoos etc.¹

All of these, either individually or in combination, have a bearing on the depreciation rate used. They also introduce such questions as; which piece of equipment should receive more depreciation than another, and should a rate be chosen on a household basis? In the case of the latter, if one does opt for the individual household one may gain accuracy at the community level, but may do so at the expense of comparability at a larger scale.

Note 1: In 1978 Muller-Wille noted that snowmobiles and other equipment had a short lifespan in the Central Arctic due to both the environment and use

Another practical problem noted by Usher (1983) is that of determining what is an essential productive input - that which would not have been purchased if the individual ceased production. In most northern communities, snowmobiles, rifles, chainsaws and even boats are used in day to day life outside of hunting and trapping activities.

Going further, there is the whole question of shared equipment and labour. Often quick partnerships are formed for a certain harvesting activity. In Old Crow, many of these partnerships arose out of convenient time scheduling, age compatibility or a favour owed, rather than the more traditional reasons of family or Kinship ties. This made it extremely difficult to sort out exactly whose equipment was responsible for the production of goods, and therefore who should be assigned the depreciation and harvesting costs. Furthermore, many mediums of exchange existed in Old Crow which meant that production "costs" were often not neatly definable. Many residents bought gas in exchange for meat while others provided labour, beadwork, sewing, chopping wood, or hunting in exchange for products from the land.

Informant recall is another problem which plagues this type of research. While the number of gallons purchased may be remembered by an individual, the number of shells used, the food bought for a trip and so on are not so easily recalled. By implication then, in order to be accurate, production cost studies are best carried out while a community is actually engaged in traditional activities. Unfortunately, this is both time intensive and extensive in scope.

Finally, there is the problem of social status. Unless a researcher can observe every single hunter/trapper, it is quite possible that many trips out on the land will remain unrecorded because the hunter was unsuccessful. Even though no production actually occurred, the cost of such an endeavour is part of the annual total cost of traditional activities for a household. However, in many communities a certain amount of social status is gained through a person's success as a hunter. Thus, unsuccessful trips can be costly not only economically, but socially. While everyone in town will probably be aware of a hunter's bad luck, the hunter himself may not wish to advertise how much was lost economically, especially to an outsider.

The above are the major problems which plague the collection of production cost data and its use in valuation research. While such a method is useful in helping to assess the actual and potential savings possible through the use of country food, it cannot generate an accurate overall 'value'. As with the other quantitative analysis, the social realm of production is ignored - the realm which plays a major role in the lives of native northerners.

SUMMARY

Although several economic and/or quantitative measures apparently exist for 'valuing' human activities, methods which actually identify all the 'values' associated with traditional activities separate from the northern market economy are noticeably lacking. The four approaches examined here are useful to the researcher in that their application can

provide beneficial information and insight. However, they are still imperfect in fully 'valuing' the place of traditional activities for five major reasons:

- 1) the lack of reliable and comprehensive data at regional and territorial levels which could help fill in information gaps;
- 2) their time and scope biases;
- 3) their failure to incorporate the non-market 'values' of a subsistence system;
- 4) their emphasis on the use of monetized measures of exchange; namely cash, whose basis is in the market economy; and
- 5) their attempt to make generalizations about very unique and different socio-economic systems for the sake of regional or state analyses.

All four approaches were applied in the study of the community of Old Crow, Yukon. Although the information gained revealed some significant conditions; like the unaltered consumption of country food, they were all found to fail at producing a comprehensive value. What was missing in all four approaches was the realization that the subsistence system in northern hunting societies is a separate and distinct socio-economic form where people make rational decisions based on tradition and custom, in addition to their contemporary socio-economic circumstances.

CHAPTER 4

INTRODUCTION

The simple fact that the Old Crow people continue to harvest local resources at levels comparable, or even greater than those of twenty-five years ago, is in itself an indication of 'value'. Admittedly, certain traditional activities have either been abandoned or become anomalous, but others have been consciously preserved or even intensified out of contemporary socio-economic circumstance. The persistence of hunting, trapping and fishing activities, however modified, represents the rational adaptation by a group of marginalized people to several forces of change. They are activities the people of Old Crow strongly identify with, and therefore 'value'.

Chapter 3 examined the existing methods of valuation. Regrettably, non quantifiable values like tradition, social status and the share ethic could not be accounted for through economic or quantitative analysis. In order to be complete, the valuation of the land and its resources must include other factors like the cultural, psychological and nutritional significance these elements hold for native people. This chapter outlines an approach that extends existing methods and concepts to a point where they do identify the social 'values' of traditional pursuits.

Before continuing it should be noted that the field site, Old Crow, is unique in terms of resource availability. Unlike many other northern native communities, Old Crow enjoys a hinterland rich in food and fur resources which can be accessed in less than a day's travel time. This, coupled by Old Crow's relative isolation has created a situation whereby the Old Crow people have been able to continue practicing traditional pursuits without having to forfeit the amenities of town life.

Resource Use In Contemporary Old Crow

At the outset it was stated that in order to establish a more holistic means of identifying 'values', native attitudes and perceptions toward the land, both past and present, needed to be identified. Three general categories of data were listed in connection with this exercise:

- 1) those traditional activities a cultural group has chosen to preserve while undergoing complex social transformations;
 - 2) the 'value' assigned these activities by the people themselves: economic, cultural, historical and so forth;
- and 3) the social relations of production operative in a society which cause the 'value' assigned an activity to fluctuate over time.

If the data relevant to each category could be identified successfully, then one could infer from this the 'values' that resources held for the group in question. In the case of Old Crow, this task was made easy by the fact that extensive historical data pertaining to the three categories already existed. This was integrated with the 1984 data. The results are presented below.

i) Traditional Activities in Contemporary Old Crow

In 1974, J.K. Stager presented information on the spatial land use around Old Crow for three separate time periods. He noted that "Long Ago" (1930's and 1940's) native land use was extensive (Figure 4.1). "Traplines and hunting camps covered nearly 25,000 square miles of land" (Stager, 1974:48). In the spring, nineteen trapping camps were operative at Crow Flats north of Old Crow.

By 1960 the land use area had decreased to 15,000 square miles (Figure 4.2). All but two traplines originated at Old Crow. The presence of a mission school and wage employment encouraged most people to take up permanent settlement in town. This in turn resulted in a reduction in extensive land/water travel for hunting, trapping and fishing activities. Surprisingly though, the number of fishing locations increased, perhaps due to the availability of better, more efficient nets. Dog team was still the primary form of winter transportation and therefore gathering fish remained a major summertime activity.

In 1973 (Figure 4.3), all the people were permanently settled in Old Crow. "Winter trapping and traplines all originated in Old Crow and were of weekend travel length" (Ibid:51). Hunting had become almost exclusive to the Porcupine River with few hunters engaging in trips lasting more than a couple of days. Dogteam was still a common enough form of winter transportation, and therefore summer fishing continued to be important for some households. In terms of muskrat harvests, although 1973 saw the

81
Figure 4.1

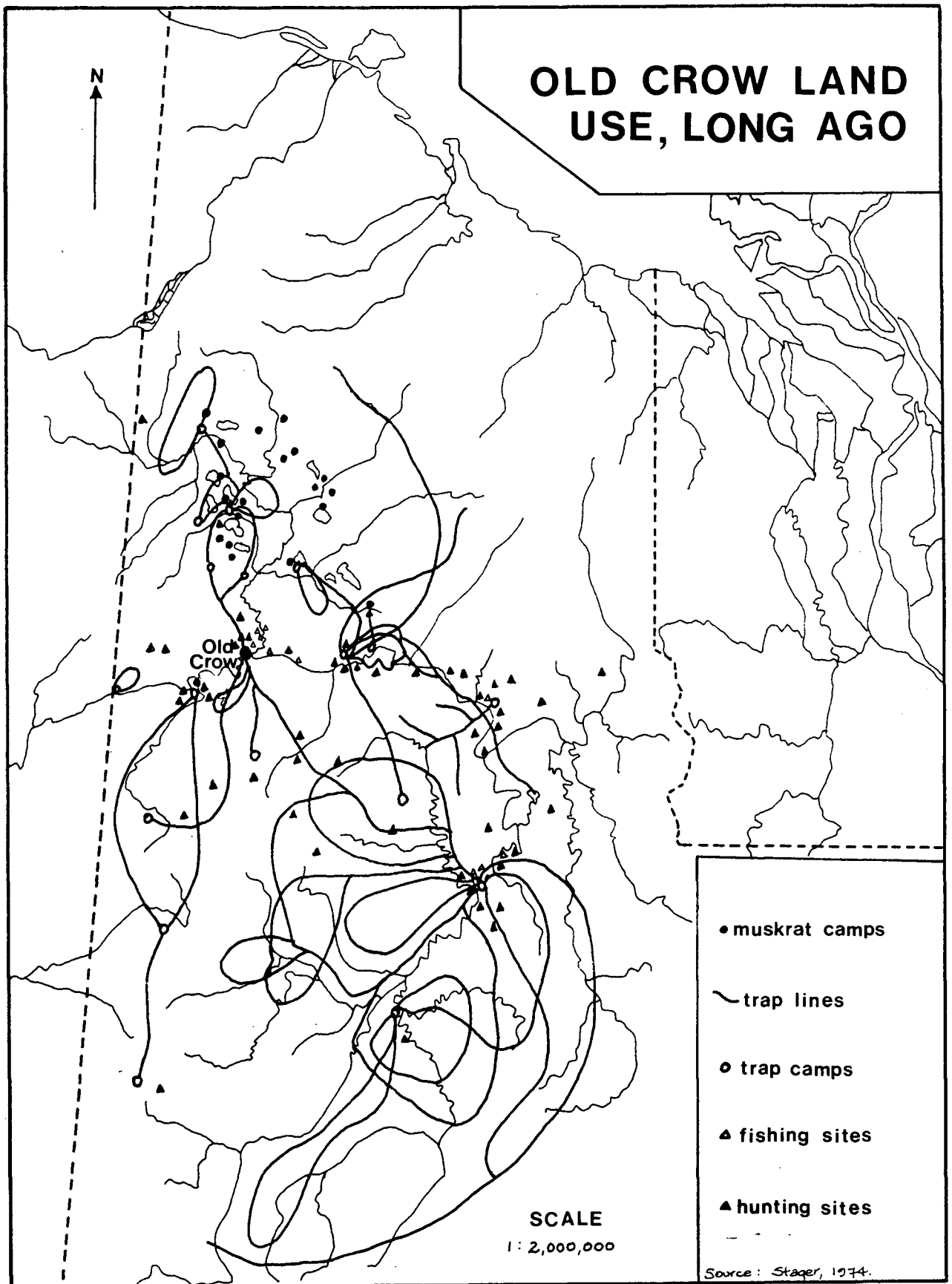


Figure 4.2

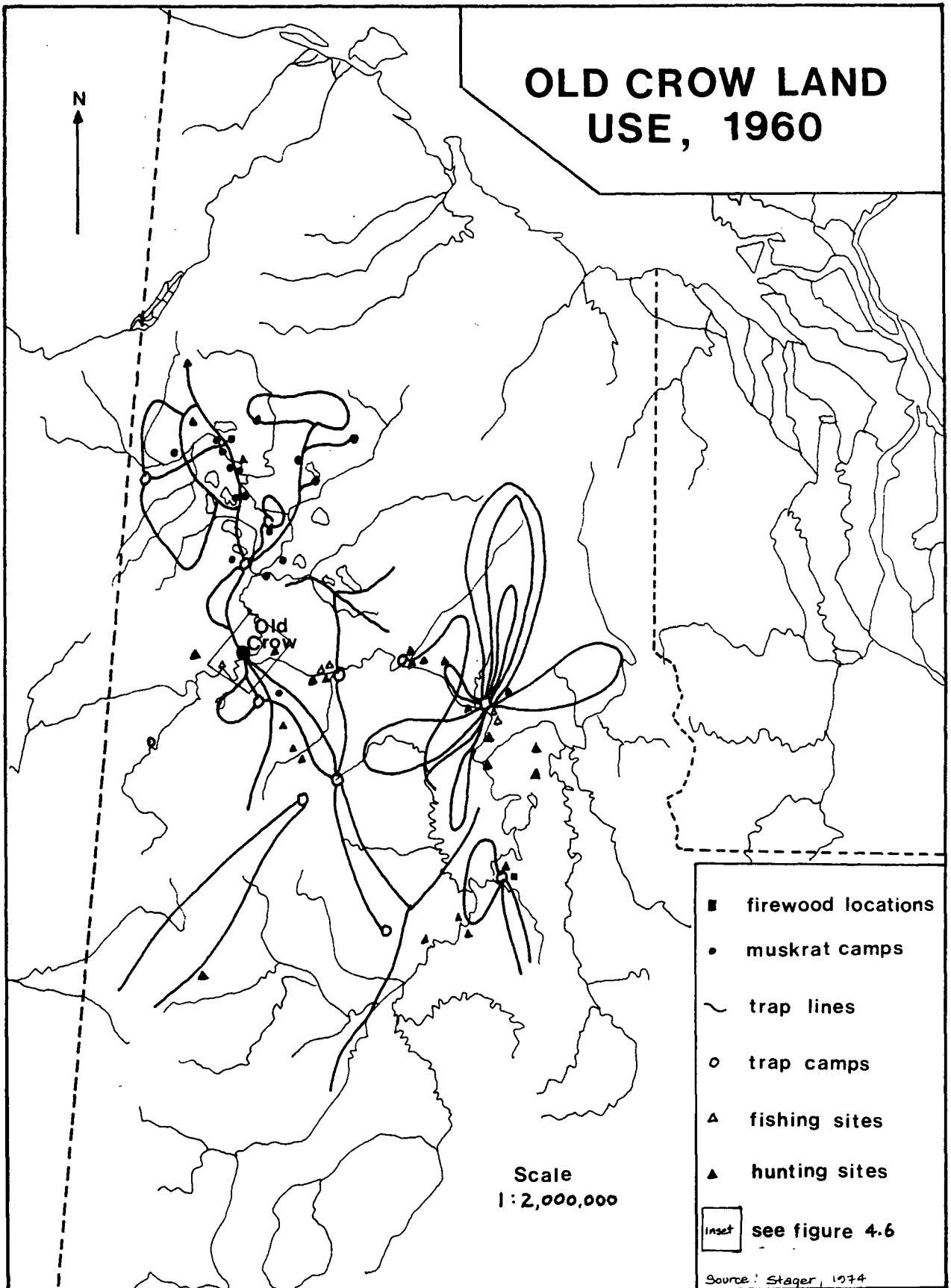
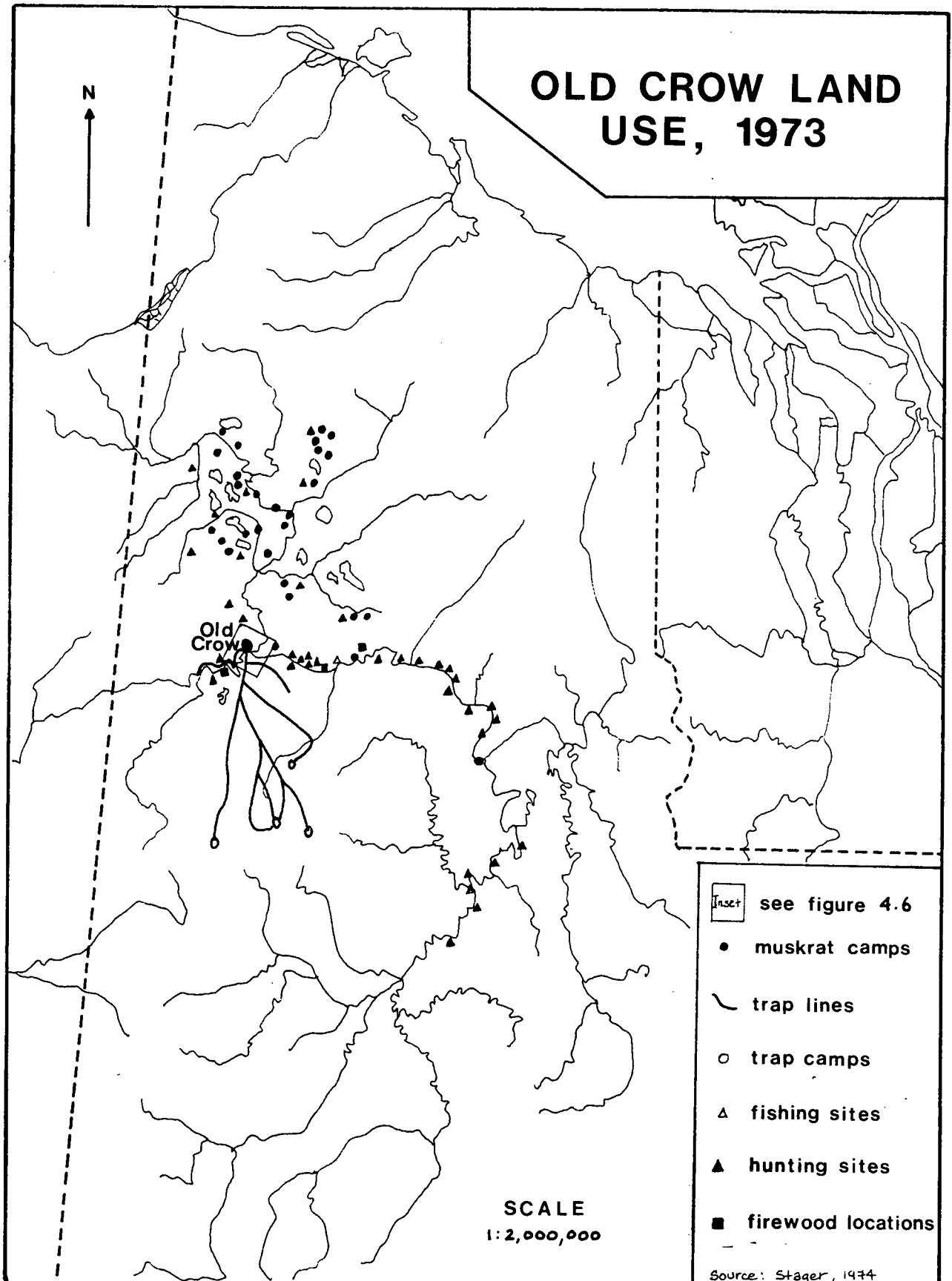


Figure 4.3

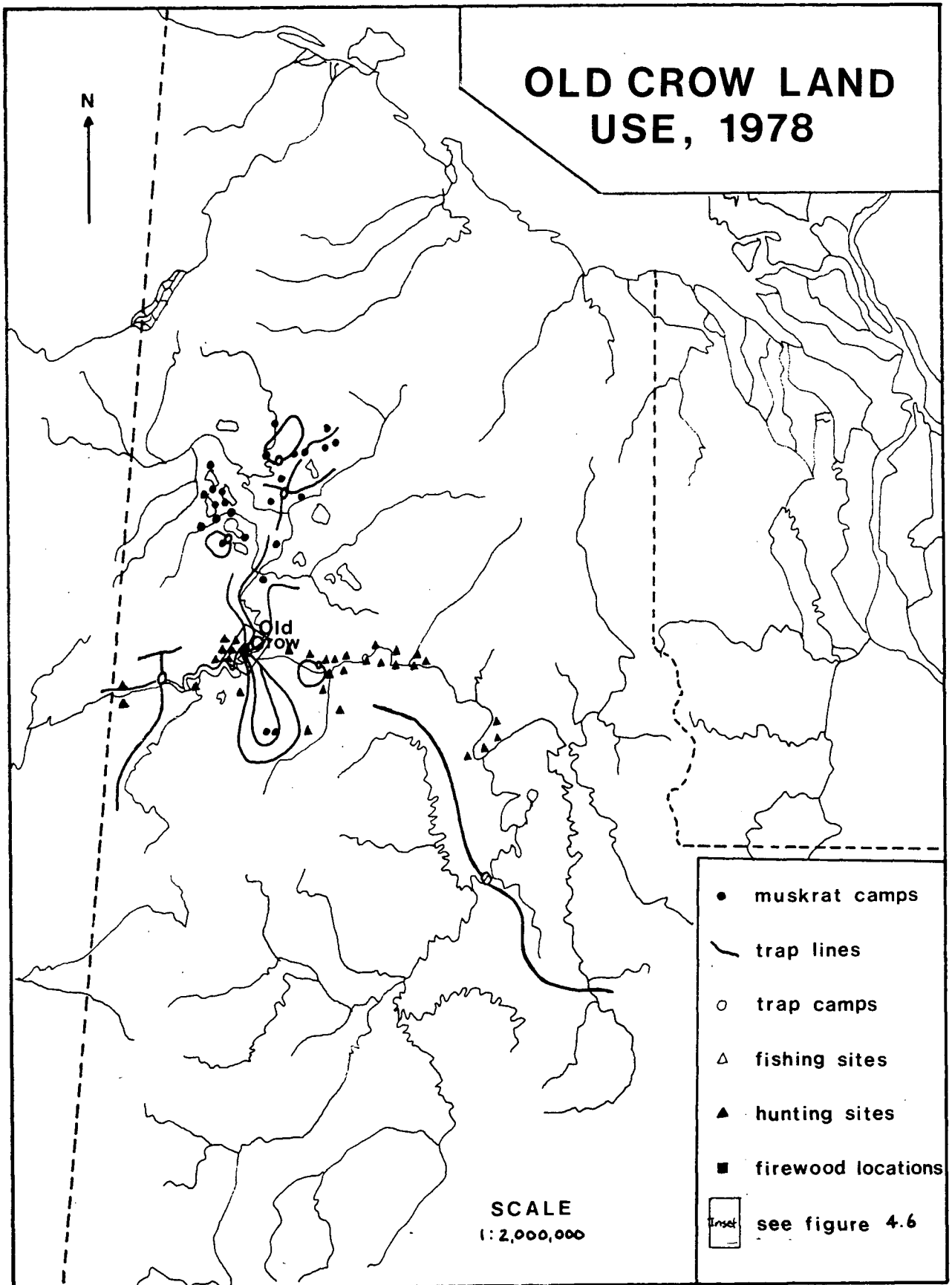


number of families participating increase, the shorter amount of time being spent ratting, meant that harvest levels remained the same as those of previous years.

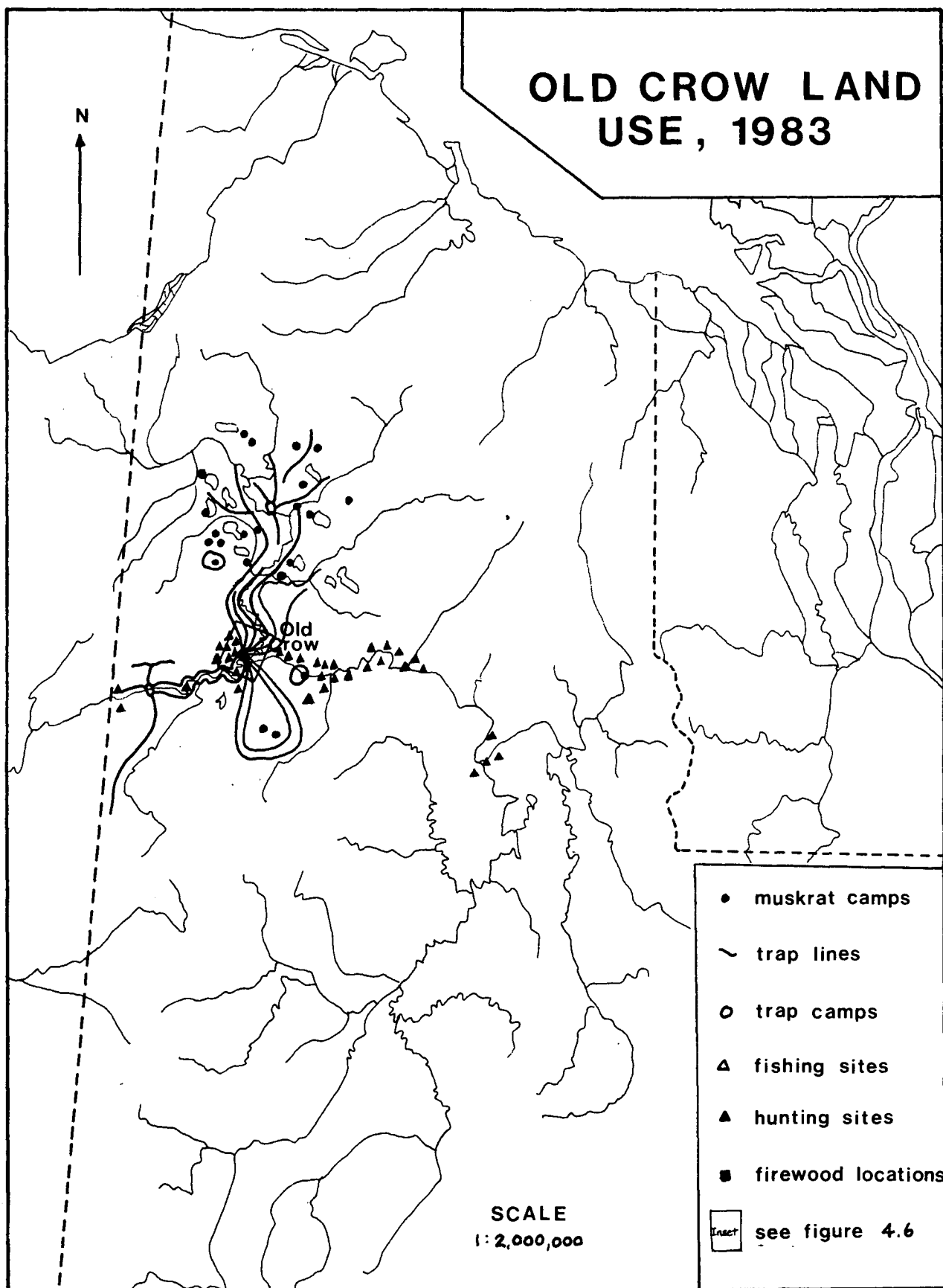
The data collected during the summer of 1984 revealed some interesting similarities and differences to that presented by Stager in 1974. In both 1978 and 1983 hunting patterns were similar to those of 1973 (Figures 4.4 and 4.5). As in 1973, hunting for food was largely an autumn activity and tended to be concentrated along the Porcupine River within a days travel distance from town. Conversely though, the number of winter traplines increased. It seems that the lack of winter employment opportunities in both 1978 and 1983 resulted in more men spending time trapping from town. Also important to note here is that, the average trapline length increased from 1973, and was closer to the 1960 length (see Table 4.6). According to several informants, the reason for low trapping rates in 1973 was because of the availability of wage employment at the oil exploration camps located near Eagle Plains, Yukon. The change in traditional activities between 1973 and more recent years only reinforces the argument that valuation research must incorporate a time dimension in order to be accurate.

By 1978, most households possessed a skidoo, thereby virtually eliminating the need for several dogs, and by implication dog food. This change is reflected in contemporary fishing patterns (Figure 4.6). Fishing activities are now carried out very close to town with some nets being operated by two or more households. These households take turns

Figure 4.4



86
Figure 4.5



checking the nets every other day or so, which decreases both the cost and time spent fishing by any one household.

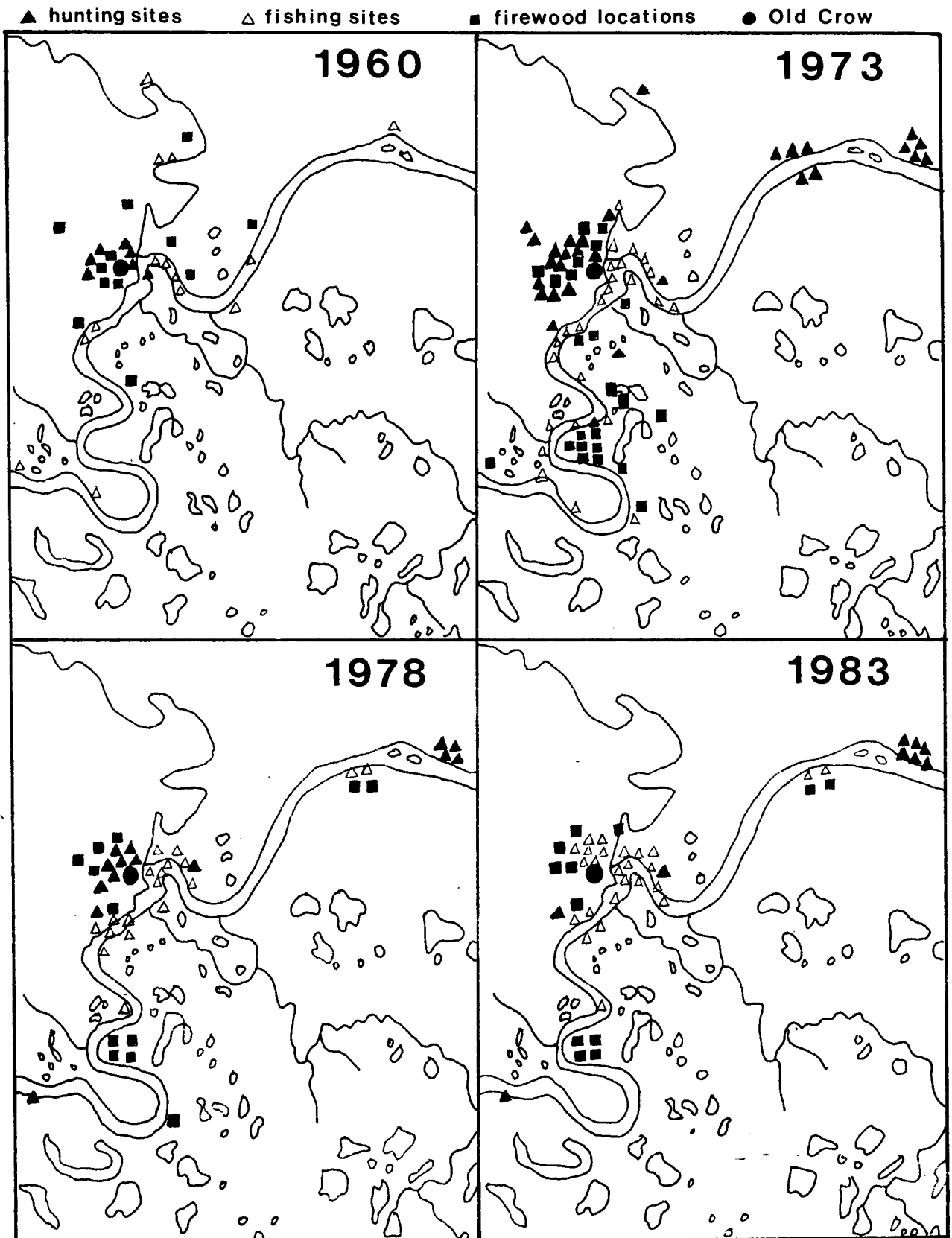
Going further, the number of families who actually go to fish camps now is very small. Those who did go admitted that today fish camp was as much an opportunity to get away from town, gather wood and hunt for meat, as it was for gathering fish for food. Intense fishing activity still occurs in the fall before and after freeze-up when dog (chum) salmon are available. Several fish can be caught within a short period of time and nets can be checked from town in one or two hours. Additionally, the fish freezes outside easily at this time. Dog salmon is still the major source of food for the one or two dogs now owned by each household.

Wood for fuel is still collected and used by every native household. The 1978 and 1983 sites were similar to those of 1973; twelve miles downriver, six miles upriver and behind town on Crow Mountain. The sites for all three years differ from those shown for 1960 and long ago because during these earlier years wood gathering was carried out along the trapline, far away from town (Figure 4.6).. The decreased number of sites shown in 1978 and 1983 is due to poor questionnaire response, and/or the fact that now many people obtain wood from the Band wood program instead of gathering their own. It in no way represents a decrease in the number of households using wood heat.

The number of families travelling to Crow Flats in the spring has remained relatively stable since 1973. Ratting is still a very important

Figure 4.6

ACTIVITIES LOCATED NEAR OLD CROW



Source: McSkimming, 1975 and Field Data

social event and provides extra income for many households. The only differences worth noting between 1978/1983 and the earlier years are that; the time actually spent in the Flats has decreased, and a charter plane is now used as a means of getting to the Flats.

The mapping of land use for different points in time has identified spatial land-use changes. However, it has said nothing about participation or harvest levels. This type of information is also required if the identification of those traditional activities a cultural group has chosen to preserve is to be complete.

Table 4.1 outlines Old Crow's game returns for a twenty year period. Most of the data is from the Yukon Territorial Government's Game Branch records. Because these are usually collected through a mailed questionnaire, figures presented here may be less than the actual amount harvested in any one year. Despite this, harvest levels for almost all species have changed little in twenty years. Only the fish and caribou returns show any appreciable differences.

Table 4.2 breaks fish harvests down by species. Major declines have occurred for those species traditionally used for dog food; chum, whitefish and "other". The period between 1973 and 1978 saw most households discontinue the use of a dogteam thereby eliminating the need for large amounts of fish. Today most households keep one or two dogs, primarily for the purpose of a watchdog while out on the land.

Table 4.1

OLD CROW GAME RETURNS FOR 1963 - 1976, 1978, 1983

Species	1963 -64	1964 -65	1965 -66	1966 -67	1967 -68	1968 -69	1969 -70	1970 -71	1971 -72	1972 -73	1973 -74	1974 -75	1975 -76	1 1978 -79	2 1983 -84
Caribou*	706	769	-	592	590	557	478	503	573	751	607	382	765	900	1000
Moose	10	7	-	22	17	24	18	11	26	22	I	15	27	24	22
Bear	1	1	-	4	3	1	5	1	2	0	N C O M P L E T E	4	5	?	?
Geese	15	3	-	4	11	25	5	0	12			4	10		
Ducks	155	110	-	28	77	50	16	20	44	342		30	41	313	255
Ptarmigan	196	12	-	15	10	27	50	100	43			6	10		
Rabbits	-	-	-	-	-	-	-	-	-	202		-	-	502	388
Total edible Weight in '000's kgs ³	41.0	43.62	-	37.52	36.25	35.43	30.74	29.92	36.91	45.76	33.1	24.67	48.2	54.45	59.37
Fish	?	?	-	14,936	15,300	4,829	1,191	13,000	9,426	10,895	?	?	?	8,588	6,246
Total Native Population	?	?	?	218 ⁴	?	?	242	206	182	183	?	?	224	197	162

* Caribou Harvest Records are available for all years and are as follows:

1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84
?	537	900	800	558	1000	500	1000

Notes 1 + 2: Data here are from YTG Game Branch for Caribou and the field

Caribou and the field for all others

3: Weights are from Berger, 1977:24

4: The population figures for 1966-67, 1970-71 and 1975-76 are total population figures. The 162 figure for 1983-86 represents the 162 of 220 native people interviewed.

Sources: 1963 - 1973 = McSkimming, 1975:92

1973/74 - 1975/76 = YTG Game Branch, Whitehorse

1978 - 1984 = Field data and YTG Game Branch, Whitehorse

Table 4.2

OLD CROW FISHERIES
1967 - 73, 1978, 1983

<u>TYPE</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1978</u>	<u>1983</u>
Chinook	43	38	27	8	-	81	13	70	42
Chum	11,768	10,000	3,377	620	10,000	4,570	5,780	6,540	3,936
Coho	-	261	34	-	-	25	-	-	-
Whitefish	1,124	2,550	734	195	-	650	870	198	328
Other*	2,001	2,451	657	368	3,000	4,100	4,232	1,780	1,940
Total	14,936	15,300	4,829	1,191	13,000	9,426	10,895	8,588	6,246

* = grayling, sucker, jackfish, hump whitefish, losch, inconnu

Source: Stager 1974:67
field data

Returning to Table 4.1, caribou takes remained relatively stable between 1963 and the mid 1970's. After this however, there was a steady increase. Reasons for this can only be hypothesized:

- 1) people have now become familiar with the Game Branch's questionnaire and participate more willingly. Hence, figures for those later years are more accurate;
- 2) the demographic characteristics of the community are such that now there are more adults than in previous years and therefore more meat is required annually; or
- 3) the occurrence of freezers in every household has increased the amount of caribou that can be stored year round, but especially after the spring hunt.

Whatever the case may be, the figures represent the continued importance of caribou to the people of Old Crow, despite their increased affinity to community life.

Muskrat returns for a forty-five year period are shown in Table 4.3. The low returns that occur in certain years may reflect the cyclical nature of the muskrat population and not reduced effort. However, as noted by Stager (1974:81) the low returns for both 1969 and 1970 were due to decreased effort resulting from employment opportunities in town on the airstrip and in connection with oil exploration. Since 1970 there has been a trend toward lower returns, but not too significantly.

The biggest change in muskrat harvesting has been in the area of production intensity, both with respect to time spent and the number of

Table 4.3

OLD CROW FUR RETURNS FOR MUSKRATS
1938 - 1984

<u>Year</u>	<u>Amount</u>	<u>Year</u>	<u>Amount</u>	<u>Year</u>	<u>Amount</u>	<u>Year</u>	<u>Amount</u>
1938-39	30,084	1957-58	36,311	1968-69	9,461	1978-79	15,277
1939-40	19,688	-		1969-70	753	1979-80	9,489
1940-41	13,858	1960-61	21,017	1970-71	5,225	1980-81	10,499
1941-42	11,120	1961-62	12,361	1971-72	9,798	1981-82	10,852
1942-43	10,965	1962-63	17,411	1972-73	13,725	1982-83	16,470
1943-44	15,137	1963-64	14,000	1973-74	-	1983-84	11,416
1944-45	15,920	1964-65	7,860	1974-75	19,878		
1945-46	22,405	1965-66	9,688	1975-76	15,018		
1946-47	18,940	1966-67	13,324	1976-77	12,728		
1947-48	14,946	1967-68	11,273	1977-78	9,192		

Source: Bakikci, 1963:93
 Naysmith, 1971:21
 McSkimming, 1975:95
 YTG Dept of Renewable Resources, Whitehorse

Table 4.4

MUSKRAT CAMP PRODUCTIVITY,
OLD CROW 1960 - 1983

	<u>1960</u>	<u>1973</u>	<u>1978*</u>	<u>1983</u>
# camps	20	27	25	20
# people	23	43	65	52
# people as % of native pop.	56.6%	69.2%	32.9%	23.63% ¹ (37.1%)
<u>MUSKRAT HARVESTING</u>				
Total	8,950	13,725	15,983	12,3492
Per Camp	448	508	639	617
Per hunter/trapper	389	319	246	237
Total pelt value	Unknown	\$34,312.50	\$65,370.47	\$40,134.25
Avg value/camp	Unknown	\$ 1,270.83	\$ 2,614.82	\$ 2,006.71

* data for 1978 + 1983 incomplete - only 76.3% of pop interviewed.

Note 1: 23.63% is from total population of 220 while 37.1% is just for the adult population.

it should be noted that population figures for 1978 and 1983 include children > 6 years who helped at camp while the 1960 + 1973 figures are just for trappers/hunters and not their families.

2: this figure and the one for 1978 are based on interview data, and therefore do not include all muskrats harvested. The figures also do not include those 185 muskrats harvested through trapping south of Old Crow.

Source: 1960 + 1973 - McSkimming 1975
1978 + 1983 - field data
fur prices - from Statistics Canada Catalogue 23:207

hunter/trappers involved. Table 4.4 outlines muskrat camp productivity for 1960, 1973, 1978 and 1983. Although the number of camps has not changed significantly, the percentage of the adult population participating in spring ratting has declined. This seems to be largely a function of four factors:

- 1) children are no longer released from school for spring ratting and therefore many families no longer make the trip to the Flats;
- 2) many of the adults who would like to go ratting also hold a wage position in town. Often the cost of getting to the Flats plus the risk of poor returns deters them from leaving their jobs for any length of time;
- 3) many of the young adults perceive ratting as hard work and not worth the monetary return one gets for one's efforts; and
- 4) going to the Flats has become a very expensive endeavour for many families, and one they cannot afford every year.

In spite of all this, productivity per camp has remained relatively stable, if not increased slightly. Today most rats are shot with a .22 after break-up, rather than being trapped between March and the end of April. Less time needs to be spent using a rifle, returns are usually quite high and the work is a lot easier. In 1983, only one person mentioned staking rat houses for spring trapping in early January. It seems that most people go to the Flats before break-up and trap a little because skidoo travel is easy at this time. After break-up ratting activities intensify. Around mid June people return from the Flats by boat or plane. The round trip has taken them approximately one and half months.

Winter trapping, like hunting and fishing has been operating over shrinking space since 1960. Surprisingly however, more traplines and

Table 4.5

OLD CROW FUR RETURNS
1938 - 1973, 1974 - 1984

	1938 -39	1939 -40	1940 -41	1941 -42	1942 -43	1943 -44	1944 -45	1945 -46	1946 -47	1947 -48	1948 -49	1957 -58
Marten	97	97	234	272	199	205	183	113	132	200	-	218
Mink	21	54	83	173	65	68	123	176	70	117	-	5
Beaver	21	5	36	146	94	40	50	-	2	-	-	47
Lynx												
Fox												
Other												
Weasel												
Wolverine												
Wolf												
Squirrel												
	1960 -61	1961 -62	1962 -63	1963 -64	1964 -65	1965 -66	1966 -67	1967 -68	1968 -69	1969 -70	1970 -71	1971 -72
Marten	110	4	475	248	142	84	34	104	98	13	33	76
Mink	247	19	165	70	14	18	4	8	29	4	25	23
Beaver	48	26	13	37	19	45	98	47	13	11	13	12
Lynx		2	4	17	17	19	12	3	11	1	26	24
Fox			15	22	2	3	4	1	2	0	0	3
Otter			0	0	0	0	1	1	0	0	0	3
Weasel			159	138	38	10	46	49	30	20	3	17
Wolverine			0	0	1	1	0	0	0	1	0	2
Wolf		0	0	1	0	0	2	2	1	0	1	4
Squirrel			31	7	0	4	0	2	7	19	0	0

Table 4.5 (cond'd)

	1972 -73	1973 -74	1974 -75	1975 -76	1976 -77	1977 -78	1978 -79	1979 -80	1980 -81	1981 -82	1982 -83	1983 -84
Marten	103	-	16	72	249	393	655	1,095	1,243	57	366	159
Mink	47	-	8	20	34	30	53	123	61	4	35	13
Beaver	10	-	22	27	4	1	1	24	14	2	2	1
Lynx	19	-	18	5	6	5	13	7	-	9	76	73
Fox	3	-	8	13	33	12	20	46	20	8	61	50
Otter	0	-	0	0	0	0	0	2	0	0	0	0
Weasel	10	-	24	21	34	17	0	47	24	0	2	4
Wolverine	0	-	5	10	12	3	8	5	1	3	2	1
Wolf	0	-	4	5	1	0	3	4	7	1	0	1
Squirrel	0	-	2	0	3	0	1	15	0	114	0	3

Source: Balikci, 1963:93
 Naysmith, 1971:21
 McSkimming, 1975:87-88
 YTG Game Branch (Dept of Renewable Resources)

trappers were operating in 1978 and 1983 than in 1973. Table 4.5 lists Old Crow's fur returns from 1938 on. It is difficult to determine how accurate the figures are for the early years, especially when one considers Stager's 1974 figure for returns from 1960 (Table 4.6). Stager's total catch was 962 while the official records only indicated 405 for 1960-61 (Table 4.5). Given the number of trappers, Stager's figure is probably closer to the actual total.

A better indication of the amount of change that has occurred within the trapping sector is productivity. Table 4.6 clearly shows that both catch per kilometer and catch per trapper has decreased since 1960. Of note however, is the overall evenness of the catch per trapper between 1973, 1978 and 1983. Perhaps production levels have reached an equilibrium point. The same men trapping in the early 1970's are the same ones trapping today. Of the eighteen¹ trappers involved in the enterprise in 1983, only five were younger than 35, while ten were over 50. It seems that several of the young people are either not interested in trapping at all, or do not possess the skills necessary to make them highly effective on the trapline. If this trend continues it is likely that once the older generations stop trapping, the trapping industry in Old Crow will be a thing of the past.

Note 1: Although Table 4.6 states that only 13 men trapped in 1983, 18 men were actually found to be involved in the industry. However, records could only be obtained for 13.

Table 4.6

PRODUCTIVITY OF TRAPPING ACTIVITIES, OLD CROW 1960 - 1983

	<u>1960</u>	<u>1973</u>	<u>1978</u> ¹	<u>1983</u> ²
# Trappers	23	7	12	13
# Trappers as % Adult Pop.	63.2%	10.7%	Unknown	9.28%
# Traplines	21	6	13	16
Avg length (km)	31.25	18.75	13.0	16.85

<u>Catch</u>	<u>1960</u>	<u>Catch/ Trapper</u>	<u>1973</u>	<u>Catch/ Trapper</u>	<u>1978</u>	<u>Catch/ Trapper</u>	<u>1983</u>	<u>Catch/ Trapper</u>
Marten	319	13.9	103	14.7	154	12.80	196	15.10
Mink	262	11.4	47	6.7	59	4.91	19	1.46
Weasel	225	9.8	9	1.3	8	.66	6	.46
Lynx	48	2.1	19	2.7	18	1.50	52	4.00
Fox	43	1.9	4	.6	24	2.00	50	3.80
Beaver	25	1.1	10	1.4	0	0	2	.15
Wolverine	36	1.6	0	0	19	1.58	5	.38
Wolf	4	.2	0	0	5	.41	10	.76
Total	962	41.82	192	27.43	287	23.92	340	26.15
Total Catch/km ³		1.34		1.46		1.84		1.55

Notes 1 & 2: This information is based on interview data and is therefore incomplete - see Table 4.5 for Fur Game Statistics (Official) and the total amount of fur returns - although field data had only complete records for 12 (1978) + 13 (1983) trappers it was known that at least 19 (1978) and 18 (1983) trappers were actually involved in this enterprise.

3: This figure was derived by dividing the total catch/trapper by the average trapline length.

Source: Stager 1974:55 and field data

Harvesting food and trapping furs from the land are not the only traditional activities which are still practiced in Old Crow. Woodcutting and handicrafts continue to play an important role in the household economy. The use of local logs for the heating of homes in Old Crow saves the community thousands of dollars each year. Because of Old Crow's location, home heating oil would have to be flown in in bulk by Hercules at great expense. Based on statistics from the Department of Energy, Mines and Resources it was estimated that, to replace the cords used by the community in 1983 with heating oil would have cost \$325,607.55 (Table 4.13). Another important value of wood is the income woodcutting generates through its sale to either the school or the Band wood program. Of the 1,000 or so cords used during the winter of 1983/84, 600-700 cords were cut and hauled for \$120.00 per cord (200 cords were for the school). This provides a substantial amount of annual income for some households.

Handicrafts do not generate as much total income as woodcutting does, but for some households the sale of such products is a principal source of income. In the summer of 1984 an Arts and Crafts Co-operative was opened in the community. This was made possible through the efforts of several women in the community who believed that an arts and crafts industry could prosper in Old Crow if materials could be made available locally, and markets could be found for the sale of finished products. This Co-operative will fill a very important employment function in Old Crow given that wage employment opportunities for women are few.

The discussion thus far has established that the people of Old Crow have indeed continued to engage in almost all traditional activities, with some modifications. Game is still taken at levels similar to thirty or forty years ago¹, even though time spent hunting has decreased significantly.

The autumn hunt is most important and people now possess the means to capture large quantities in a short time. Stager (1974) correctly noted that often trips out on the land are for a special purpose like hunting caribou. This has reduced the amount of time spent on the land engaged in any one activity. It has also created the situation where the land is perceived to have high utility (Ibid:57). However, trips that often begin as single purpose, become multi-purpose because, as in the past, residents do not hesitate to gather wood, shoot a moose and so forth when the opportunity presents itself.

Fishing activities have declined due to the replacement of dogteams by skidoos. It is not unrealistic to conclude that the presence of freezers in every household has also led to the decreased role of fishing. Today, caribou from the spring hunt, as well as store bought

Note 1: no harvest records exist for traditional times so it is impossible to compare to the years prior to 1930 or so. It is quite likely that levels were quite similar to those of the twentieth century.

meat, can be stored for long periods of time; thereby reducing the dependence on fish that had previously existed during the summer months. Nonetheless, the seventy odd dogs currently found in Old Crow, eat primarily fish and scraps throughout the year.

Muskratting continues to be carried out at historical levels, although the number of people participating in any one year has become a function of the availability of wage employment and/or the financial position of the household. Similarly, the number of people participating in winter trapping in any given year is determined by the same economic factors. The substitution of skidoos for dogteams has meant that lines can now be checked more efficiently, thereby increasing the number of returns per line. Thus, although participation levels have become prone to economic change, returns have remained relatively stable over the past fifteen years. By implication then, if more people began to participate in trapping, returns would increase.

Wood remains the major winter heating source for the community. If the consumption of cords has decreased over the years it is due to the construction of more energy efficient housing and better wood stoves, and not a decline in the number of users. Unlike most communities in the Northwest Territories, the presence of 'forested' areas near Old Crow has meant that homes can be built and heated using local resources.

Finally, handicrafts are still made by the Old Crow women. In fact, it has only been recently that parkas, Crow Boots and similar items have

been sold outside the community on a regular basis. In 1963, Balikci noted that several women in town would make clothing for relatives and friends for a small fee. Today this still occurs, but now visitors and relatives living elsewhere also request handicraft items. Many younger women in town possess the skills necessary to make the various items and are increasingly putting them to use in the absence of adequate female wage employment opportunities in town.

The traditional activities that continue to play a role in Old Crow's economy have been identified. Although all have undergone some modification, the fact that they are still practiced is, in itself, an indication of value. Obviously, as in other communities, the people of Old Crow have a "dual allegiance"¹ to land and town. While certain traditional activities have either been abandoned or become anomalous, others have been consciously preserved and even intensified. Hunting, fishing, trapping and so on, have persisted because of choices made by the Old Crow people in their adaptation to forces of change operative both from within their own social system and from the outside.

Note 1: dual allegiance - a term used by several researchers to describe the resistance to change as it related to:

- a) livelihoods; town-life vs. bush-life (Honigmann and Honnigmann, 1965; and Fried, 1964);
- b) community social organization; the adoption of white values and social forms over traditional ones (Vallee, 1962); and
- c) the spatial extent of resource utilization; the intensification of land-based activities in the resource hinterland close to town (McSkimming, 1975; and Wolforth, 1970).

ii) 'Value' Assigned to Traditional Activities by the Old Crow People

Research has proven that traditional activities hold considerable economic value for most northern societies (see for example: Feit, 1979; Wolfe, 1979; Nowak, 1975; Stager, 1974; Usher, 1971; and Van Stone, 1960). Much of this stems from the fact that wage employment opportunities are still not great enough in most communities to provide the sole economic base. Hence, food and other products from the land enable most northern native households to lead a modern lifestyle, with an adequate standard of living (Kruse, 1981:332).

The evidence for Old Crow indicates that most households greatly depend on a diversity of income sources including; handicrafts, trapping, wage employment, and transfer payments. Added to this is the income in kind generated by the use of wood heat and country food.

Table 4.7 breaks down the sources of income for 51 Old Crow households. Because all households utilize wood heat and country food, and most receive family allowance payments, these common 'sources' of income have not been included to prevent the negation of all the other income categories. Sixty-nine percent of all the households represented, fall into three categories; C,E, and F. Although "Simple Commodity Production" contributes the least amount of income to the total income of most of these households, participation in fur harvesting, handicrafts and woodcutting is still an important household activity.

Table 4.7

HOUSEHOLD BY TYPE OF ECONOMIC ACTIVITY (SOURCES OF TOTAL HSHLD INCOME)¹

	A <u>Simple Commodity Production</u>	B <u>Wage Empl only</u>	C <u>Wage Empl + Simple Commodity</u>	D <u>Gov't only</u>	E <u>Gov't & Simple Commodity</u>	F <u>Other</u>
# hshlds	1	8	15	7	8	12
% of total	1.9%	15.6%	29.4%	13.7%	15.6%	23.5%

Notes: 1: does not include family allowance payments

A: includes: commercial fur harvesting/bead work/wood cutting & other cottage crafts

B: only wages from market sector

C: a mixture of A & B - within this group are 2 subclassifications

I: more than 50% income from wages

II: more than 50% income from simple commodity production

25.4% (13) households fall into I while 3.9% (2) fall under II

D: all income is derived from gov't sources. Within this group are 2 classifications

I: primary source Old Age Security/CYI elders fund

II: primary source soc assistance

7.8% (4) households fall into I while 5.8% (3) fall into the latter

E: income is from A&D with D being the larger contributor. 2 classifications here match those of D. In I = 13.7% (7) hshlds while in II 1.9% (1) hshld.

F: income is for AB&D - 3 classifications here:

I mostly wages - 4 hshlds (7.8%)

II mostly gov't - 7 hshlds (13.7%)

III mostly simple commodity production - 1 hshld (1.9%)

Tables 4.8 and 4.9 present information on the dollar values of fur harvesting efforts in Old Crow from 1938 to 1983. Taking into account the possibility of inaccurate record keeping prior to the 1960's, and the volatility of fur prices, it still seems safe to conclude that the income being generated through fur harvesting has not declined, despite decreased participation levels. In fact, according to the summary information presented in Table 4.10, income levels have increased over the past twenty years. It is believed that much of this is due to a renewed interest in trapping in Old Crow, and the use of more efficient trapping methods, like the snowmobile.

According to the Band Office records, wages paid for the cutting of winter wood were approximately \$48,000 in 1983/84. It was impossible to determine how many men received wages from this activity, but it is believed that for several households, this is a major source of income during the fall and winter months.

Similarly, income earned through the sale of handicrafts, both locally and outside the community, is an important contribution to the total annual income of many households, especially those headed by older women. Once again though, the actual dollar amount received by each resident for this activity could not be accurately identified, primarily due to poor informant recall. Based on the data collected it has been estimated that at least \$7,000.00 was generated through the sale of Old Crow handicrafts in 1983.

Table 4.8

\$ VALUE OF OLD CROW FUR RETURNS 1938 - 1973, 1974 - 1983

<u>Species</u>	<u>1938</u> <u>-39</u>	<u>1939</u> <u>-40</u>	<u>1940</u> <u>-41</u>	<u>1941</u> <u>-42</u>	<u>1942</u> <u>-43</u>	<u>1943</u> <u>-44</u>	<u>1944</u> <u>-45</u>	<u>1945</u> <u>-46</u>	<u>1946</u> <u>-47</u>	<u>1947</u> <u>-48</u>	<u>1957</u> <u>-58</u>	<u>1960</u> <u>-61</u>
Marten	2,443	2,574	8,857	11,554	8,358	10,865	9,516	5,424	5,940	6,400	2,616	990
Mink	201	449	920	1,946	780	1,445	3,321	5,808	1,960	3,510	90	4,075
Beaver	323	89	829	3,775	3,008	1,370	2,100	-	60	-	564	600
Lynx												
Fox												
Other												
Weasel												
Wolverine												
Wolf												
Squirrel												
\$ Total	2,967	3,112	10,606	6,875	12,146	13,680	14,937	11,232	7,960	9,910	3,270	5,665
<u>Species</u>	<u>1961</u> <u>-62</u>	<u>1962</u> <u>-63</u>	<u>1963</u> <u>-64</u>	<u>1964</u> <u>-65</u>	<u>1965</u> <u>-66</u>	<u>1966</u> <u>-67</u>	<u>1967</u> <u>-68</u>	<u>1968</u> <u>-69</u>	<u>1969</u> <u>-70</u>	<u>1970</u> <u>-71</u>	<u>1971</u> <u>-72</u>	<u>1972</u> <u>-73</u>
Marten	32	4,835	2,728	1,575	1,064	306	979	867	124	460	1,368	2,266
Mink	2,432	3,452	2,100	286	240	36	75	357	25	337	276	752
Beaver	312	186	514	247	580	1,960	629	173	139	178	216	250
Lynx	26	41	204	207	636	324	94	340	24	503	1,080	1,520
Fox		148	388	13	34	42	11	23			76	105
Otter						11	10				90	
Weasel												
Wolverine				13	17				47		90	
Wolf			6			26	36	21		26	100	
Squirrel		15	3		2		1	3	6			
\$ Total	2,802	8,677	5,943	2,341	2,573	2,705	1,835	1,784	365	1,504	3,296	4,893

Table 4.8 (cont'd)

Species	1974 -75	1975 -76	1976 -77	1977 -78	1978 -79	1979 -80	1980 -81	1981 -82	1982 -83
Marten	362	2,028	5,127	9,746	23,383	39,639	46,849	2,544	18,757
Mink	108	278	640	384	1,453	3,252	2,092	1,376	816
Beaver	328	373	96	16	39	874	454	41	37
Lynx	2,358	1,104	1,636	1,253	4,471	1,471		2,895	23,222
Fox	291	931	1,724	660	1,633	2,576	1,432	641	3,670
Otter						117			
Weasel									
Wolverine	511	1,249	2,042	383	1,374	703	190	636	416
Wolf	438	434	84		365	348	623	119	
Squirrel	1		2		2	25		191	
\$Total	4,397	6,397	11,351	12,442	32,720	48,005	51,640	8,443	46,918

Sources: Balikci, 1963
Stager, 1974

YTG Renewable Resources, 1984
Statistics Canada: 23-207

Table 4.9

VALUE OF OLD CROW MUSKRAT RETURNS
1938 - 1983

<u>Year</u>	<u>Amount</u>	<u>Year</u>	<u>Amount</u>	<u>Year</u>	<u>Amount</u>	<u>Year</u>	<u>Amount</u>
1938-39	35,499.12	1957-58	26,507.03	1968-69	10,880.15	1978-79	87,995.52
1939-40	16,931.68			1969-70	640.05	1979-80	59,116.47
1940-41	28,547.48	1960-61	11,559.35	1970-71	3,553.00	1980-81	65,093.80
1941-42	21,906.40	1961-62	11,124.90	1971-72	18,616.20	1981-82	30,494.12
1942-43	24,123.00	1962-63	17,236.89	1972-73	27,450.00	1982-83	53,527.50
1943-44	28,457.56	1963-64	17,500.00	1973-74	-		
1944-45	35,820.00	1964-65	8,488.80	1974-75	63,212.04		
1945-46	61,613.75	1965-66	13,175.68	1975-76	74,489.28		
1946-47	30,304.00	1966-67	5,329.60	1976-77	63,385.44		
1947-48	35,870.40	1967-68	8,454.75	1977-78	37,595.28		

\$ figures from Statistics Canada 23-207

Table 4.10

\$ VALUE FOR OLD CROW FUR RETURNS FOR
SELECT YEARS¹ (All figures in constant 1981 dollars)²

<u>Year</u>	<u>Total 1981 Dollar Value</u>
1940-41 ³	\$ 1,707.51
1944-45	\$ 2,733.47
1960-61	\$ 1,767.63
1965-66	\$ 875.06
1970-71	\$ 617.40
1975-76	\$ 3,742.47
1980-81	\$45,907.65
1982-83	\$51,984.51

Notes 1: information derived from data presented in Table 4.8 - does not include muskrat returns

2: All dollar figures were calculated based on information presented in the Consumer Price Index - Annual Averages, April 1985 (Stats Canada Catalogue 62-001)

3: for this year, 1940 CPI figure was used (see Table B-4 in Appendix B for figure)

Sources: Balikci 1963
Stager 1974
YTG Game Returns + Value figures
Field data 1984
Statistics Canada Catalogues 62-001 and 23-207

If sixty-nine percent of the 51 households are reliant on two or more sources of income, this leaves about thirty percent who rely on one income source. It must be remembered however, that even those households deriving all their income from just wage employment or transfer payments, still draw income in kind from the land through their use of country food, wood heat and so on.

According to the perceptions of those interviewed, country food constitutes a large portion of all food eaten (Table 3.2). Fifty-five percent of the 51 households interviewed perceived that half or more of their food came from the land. Reactions to the question suggested that these perceptions more accurately described the proportion of meat consumed which came from the land, rather than the proportion of all household food. Nonetheless, because the Old Crow diet contains high amounts of protein, it is likely that country food comprises a substantial portion of food consumed. The fact that 40 of the 51 households interviewed (78%) believed that caribou or other wild meat was eaten at least once a day confirms this observation.

The actual economic value of country food is not easily determined, as evidenced in the discussion on substitution costs in Chapter 3. However, the cash values generated by such an approach can help in understanding the role of food from the land in the local economy.

The analysis in Chapter 3 revealed that the replacement of all country food consumed by 41 Old Crow households in 1983 would have cost

somewhere in the order of \$373,000.00, or \$7,700.00 per household.¹ If one were to combine the field data with YTG Game Branch records, and then try to infer a similar value for all Old Crow households, the total value figure would work out to approximately \$574,000.00, while the per household figure (70 households) would be \$8,200.00 (Table 4.11). When one considers that the median household income in Old Crow is roughly \$11,500.00, expenditures on food in the order of \$8,000.00 more per year would be economically impossible. An important consideration here too is the fact that these figures are an underestimation of country food's true 'value' because they in no way account for the more social 'values' associated with its harvesting.

Table 4.12 presents the economic value of country food in relation to other income sources in Old Crow. Some thirty-six percent of all income generated in Old Crow in 1983 came from the traditional sector. Of this, eighty-nine percent was income in kind generated through the use of country food and wood heat. Clearly traditional activities continue to play a significant role in the Old Crow economy. In fact, the second set of "Total Value" figures shown in Table 4.11 seem to suggest that country food is now even more economically significant than in years past. It is believed that this is due to; a slight increase in population, the levelling off of wage employment opportunities, and the ever increasing price of imported foods.

Note 1: these figures were derived using straight substitution costs (beef for caribou etc.). No other factors, such as differences in protein content, were included. If these had been included the total cost figures would have, in all likelihood, increased (Table 3.4).

Table 4.11

ESTIMATED \$ FOOD VALUE FOR GAME RETURNS IN
OLD CROW FOR SELECT YEARS¹

<u>Species</u>	<u>1963/64</u>	<u>1966/67</u>	<u>1969/70</u>	<u>1972/73</u>	<u>1975/76</u>	<u>1978/79</u>	<u>1983/84</u>
Caribou	\$354,373.17	\$297,151.44	\$239,929.71	\$376,960.70	\$383,987.93	\$451,750.50	\$501,945.00
Moose	18,327.90	31,157.43	32,990.22	40,321.38	49,485.33	43,986.96	40,321.38
Bear	1,913.84	7,655.35	9,569.19	-	9,569.19	-	-
Geese							
Ducks	2,411.64	309.65	467.77	2,244.40	401.82	2,062.17	1,678.30
Ptarmigan							
Rabbits	-	-	-	1,133.22	-	2,816.22	2,176.68
Fish	-	38,209.75	11,746.35	23,665.94	-	59,386.93	15,352.49
Muskrats	?	?	?	15,056.25	-	28,357.56	12,615.73
Total Value	\$377,026.55	\$374,483.62	\$294,703.24	\$459,381.89	\$443,444.27	\$588,360.34	\$574,089.58
Total Value ² (1981 \$)	\$122,910.66	\$131,818.23	\$116,997.19	\$203,046.80	\$259,414.90	\$434,798.29	\$672,832.99

Notes 1: All food \$ values were derived using various harvest statistics and the 1984 meat prices at the Co-op (beef, pork or chicken - see Table 3.4 for more complete breakdown).

2: These figures were derived from the Consumer Price Index Annual Averages Table where 1981 = 100 (Statistics Canada Catalogue: 62-001).

Sources: Stager, 1974; YTG Dept of Renewable Resources; Field Data; Statistics Canada Catalogue: 62-001 and 23-207 (April, 1985)

Table 4.12

INCOME CALCULATIONS FOR OLD CROW, 1983

<u>ITEM</u>	<u>Total Value¹</u> <u>(field data)</u>	<u>Average Value</u> <u>per hshld (51)</u>	<u>Estimated Total</u> <u>Value for</u> <u>Community (70)</u>
Wood Heat ² (avg crds/hshld= 11.5	\$ 223,273.75	\$ 4,651.54	\$ 325,607.55
Country food ³	373,311.58	7,777.32	544,412.40
Fur Harvest	71,260.58	1,397.26	97,808.20
Handicrafts	7,000.00	137.32	9,607.84
sub total	\$ 674,845.91	\$ 13,963.37	\$ 977,435.99
Wages ⁴	\$ 499,765.00	\$ 10,633.32	\$ 744,332.40
Trans. Payments ⁵	169,682.26	3,610.26	249,470.07 ⁶
Other Gov't contributions	530,692.23 ⁷	10,405.73	728,401.00
total	<u>\$1,874,985.40</u>	<u>\$38,612.68</u>	<u>\$2,699,639.44</u>

% Income from:	Field Data (51)	Estimated Total (70)
Traditional Sector	36%	36.2%
Wages	26.6%	27.5%
Government Sources	37.3%	36.2%

- Notes 1: Field data was based on interviews with 51 households out of 70 (72.8%)
- 2: Wood Heat was derived from the cost of replacing 1 cord of dry spruce with heating oil; \$403.75 (EMR, Ottawa, 1985 and W. Attwood, DIAND, Whitehorse)
- 3: Country food totals are based on 48 households and the average adjusted accordingly.
- 4 & 5: The same applies here as in note 3 (48 not 51 households).
- 6: The transfer payment total here is based on calculations for the entire community from information from Health and Welfare and is not the extension of the average figure.
- 7: The data here was derived from the average figure, which was derived from the total figure, this figure came from Band records.

Source: field data and Health and Welfare Canada

An alternate way of viewing the economic value of country food is to compare the cost of hunting and so forth with the price one would have to pay to buy similar quantities of food at the local store. Table 4.13 summarizes the costs incurred by various households in Old Crow while engaged in traditional activities. Although only the cost of gasoline, oil and food were used to calculate total costs, the difference is so great between the price per kilogram for local versus imported meats, that even if fixed capital costs were included (equipment etc.) traditional activities would still remain more 'economical'. A similar conclusion was reached in Chapter 3 (pg 67), when the cost of substitution versus the actual cost of hunting and fishing were shown as a proportion of total income.

The discussion thus far should not be taken to suggest that the most important 'value' of traditional activities is the 'income' they generate. On the contrary, the fact that all Old Crow households derive income from both the modern and traditional sectors seems to indicate that it may be the material security found in the combination of cash and subsistence resources which is even more important. The reality that most wage employment opportunities are unpredictable, seasonal in nature, and fail to provide sufficient income, has perhaps been one of the major factors contributing to the Old Crow people's decision to pursue traditional activities at levels similar to earlier times. As Lonner (1981) so accurately noted, "what appears to be maximized in subsistence economies is not profit or wealth, but security."

Table 4.13

SUMMARY OF HUNTING/FISHING/TRAPPING COSTS
OLD CROW, 1983¹

Species	# Households Participating	Harvest Quantity	Total Cost	Avg Cost/ Hshld	Avg Landed Cost/Animal	\$/kg ²
Caribou	37	542	\$10,275	\$277.70	\$18.95	\$.35 (9.21)
Moose	13	21	2,045	157.31 ³	97.38	.49 (9.21)
Rabbit	13	388	500	38.46 ⁴	1.29	1.89 (8.25)
Birds	17	255	FREE	FREE ⁵	FREE	FREE (7.24)
Fish	16	4,895	3,055	190.94	.62	.56 (8.23)
Fur Harvests	13	340	10,645	818.85 ⁶	31.38	- -
Muskrats	23	12,534	18,400	800.00 ⁷	1.47	- -
			<u>\$44,920⁸</u>			

- Notes 1: These costs are based only on gasoline, oil and food costs incurred by individual households. No other production costs are represented here due to the difficulty in allocating the cost of a skidoo etc. whose uses are many.
- 2: The first figure shows the landed cost in \$/kg based on animal weights (Table 3.7) while the second figure in brackets is the price /kg of the appropriate imported substitute (Table 3.4).
- 3: 4 households obtained moose free while engaged in some other activity. Therefore, cost/household does not totally reflect the situation.
- 4: 10 out of 13 families here got their rabbits free. However, because 1 household incurred gasoline costs of \$400.00 the avg cost/household is distorted (also the \$/kg figure is distorted).
- 5: All birds were obtained in May at the Flats or along rabbit traplines in Oct/Nov.
- 6: Although \$818.85 was the cost/household, returns equalled \$30,525.00 or \$2348.08/household. Therefore, most houses gained on trapping.
- 7: Although \$800 was the cost/household, returns equalled \$40,735.50 or \$1771.12/household, therefore the net return was \$971.12/household.
- 8: This cost would be reduced to \$26,340.58 if one were to include revenue from fur sales.

Source: field data, 1984

The economic contribution that hunting, fishing, trapping and the like make to a household is just one of several 'values' the local people place on traditional activities. Unfortunately, accounting for the more social 'values' can be difficult because they are often not readily observable, and they vary from household to household and year to year.

Research carried out among several of the traditional societies in northern Alaska has revealed that subsistence activities serve as a socially binding force (Kruse, 1981:372). Communal hunting efforts and the sharing or trading of food, equipment and labour all involve social interactions between people. This fosters interdependence among households and in turn binds people together socially.

In the case of Old Crow subsistence activities do indeed create a socially binding force. The sharing of food remains a strong custom within the community. The freezers of the old, the luckless or the unskilled are always amply full of caribou and other wild meat, contributions from both family and friends. Similarly, at feasts large quantities of food magically appear from kitchens throughout town. Very little has been said, rather, well-defined social rules have determined who will produce what. "It is not possible to articulate the precise pattern of the behavior, but it is observed and understood by the people of Old Crow" (Stager, 1974:133).

Both the sharing of food and feasts continue to fulfill an important community need. The social products generated by these activities help

reinforce community solidarity at a time when modern transportation and communications, the increased availability of cash and liquor, and an increase in alcohol related crimes serves to undermine the quality of life in Old Crow.

The sharing of food still gives many a sense of self worth, helps pay off debts or obligations, and can build, renew or maintain relationships. Feasts, especially those associated with funerals or a Christian feast day, are one of the few occasions when the whole town gathers together and celebrates as a community. Food, conversation, and opinions are exchanged as in the old days. Many people seem to gain renewed hope that Old Crow is indeed a "nice place".

Getting out on the land and away from town, even for a day, is another very important benefit associated with traditional pursuits. This is no better observed than during spring ratting. People like to get out on the land and enjoy the warmer days of spring after a long, cold, community-bound winter. One informant stated that spring ratting brought out the best in people; "they don't drink or anything, they just work real hard". A similar occurrence was observed during the fall caribou hunt. When people went out on the land, they worked. Drinking was reserved for the idle hours spent in town. It seemed that for many people getting away from town represented a chance to retreat from the irritations often associated with small-town living.

Ratting, hunting and fishing offer another very important benefit. Family trips out onto the land serve the purpose of teaching children the

basic skills necessary to successfully carry out various traditional activities. While changes in technology and material needs have reduced the number of traditional skills and attitudes currently being practiced, and by implication, taught in Old Crow, there is still the effort being made to instruct all children. Cultural programs are offered throughout the year which teach children trapping, beadwork, fishing and Kutchin culture (including the Loucheux dialect). Whether this effort will lead to the continuation of Old Crow's traditional economy, however modified, will depend on a wide variety of factors including, the range of lifestyle choices available to these children as young adults.

There are other social benefits or 'values' associated with traditional pursuits. Unfortunately, accounting for such things as the cultural 'need' to eat caribou, or the psychological satisfaction gained from a successful hunt cannot easily be accomplished when one is not a member of the cultural group. In most of these cases the researcher may only be able to acknowledge that they, in all likelihood, exist.

Fortunately in the case of Old Crow, several informants both male and female, readily admitted that they received personal benefits from hunting, fishing and trapping. Such benefits were best explained by those part-time trappers who held year-round wage positions in town. Being able to successfully operate a trapline from town, relaxing, putting to use learned skills, and being able to get on the land, were the more popular benefits cited. With most of the households involved having relatively moderate to high incomes, it is quite probable that

part-time trapping was indeed pursued primarily for these non-economic benefits. This conclusion seems to be further supported by the fact that the average net return for the twelve part-time trappers interviewed was only \$560.00 for the entire 1983 trapping season (November-March)¹.

It is obvious that only a limited amount of substantive data can be brought to bear on the question of what is the social 'value'(s) of traditional activities to native people. The information gathered in Old Crow suggests that the traditional sector is very important in maintaining community solidarity at a time when cultural, social and economic changes abound. Additionally, there are numerous other benefits like material security, the socialization of children, and a person's general well-being. These are important to the Old Crow people and are the rewards of living a life close to the land.

iii) The Social Relations of Production In Old Crow

The third and final category of data required to help determine native attitudes and perceptions toward the land deals with the

Note 1: The figure \$560.00 was derived from known production costs and fur returns for the part-time trappers interviewed. Because several trappers could only estimate both their costs and the value of their returns, the figure should be viewed as an approximation. Where need be, the 1983 Average Raw Fur Price was used to derive the value of fur returns.

The trapping season runs from November to March in Old Crow. While some part-time trappers did not trap all season, none worked less than 100 hours. Most commuted on weekends throughout the season.

identification of the 'values', beliefs and social forms existent within a group that play a formative role in structuring the processes of productive activity. Both Canadian and Alaskan researchers have been more fruitful in their analyses of modern native hunting societies when they have explained the maintenance of the traditional sector of the economy in terms of the social relations of production. Producing for use rather than exchange value, engaging only in seasonal wage employment, distributing products according to socially defined rules, and using a barter rather than cash system, have all been identified as strategies (social forms) created by native people to ensure the maintenance of the traditional sector (See for example: Feit, 1983; Kruse, 1981; Wolfe, 1979; Usher, 1973; or Van Stone, 1960).

The evidence for Old Crow presented thus far proves that certain traditional activities have remained central to the native way of life, despite the increased presence of the market system. The distribution of food, community feasts, cultural programs for children, financial aid for elders wishing to go ratting in spring, and community meetings are just a few of the social arrangements created by the people themselves in an effort to preserve their relationship with the land and its bounty.

This is not to say that the relationship has not changed over the years. While harvest levels for some animal species have remained at levels similar to 25 years ago other species like; squirrel, dall sheep and grizzly bear, are rarely eaten. Changes in harvests and harvesting patterns are two of the by-products of overall social change in Old Crow. Increased wage employment opportunities, high production costs, a

wider selection of imported foods, the instability of fur prices, and changes in technology have all acted singly, or in combination, to alter native harvesting activities. Those engaged in wage employment often do not have the time to travel great distances or stay out on the land in order to acquire games or furs. Lower income households often cannot afford to make expensive trips far away from town, especially if the probability of a fair return is perceived as being low.¹ The advent of the snowmobile has decreased the need for dogs, and by implication, large quantities of fish. Conversely, freezers have increased the average household's capacity to store meat, thus more game can be taken at one time.

What has been occurring in effect then, is a contraction of traditional activities to those deemed most central and necessary to the maintenance of the Old Crow people's cultural identity and economic well being. While some activities are no longer practiced, a small core have been intensified and will likely remain in this position as long as the community is peripheral to the modern industrial sector.

Note 1: There are two very good examples in Old Crow where this rationalization occurs. 1) Moose are not widely available in the northern Yukon. One must travel 150-250 km away from town in order to be assured of capturing a moose. The effort and expense involved is often enough to deter most people from setting out specifically to hunt moose. 2) This example involves trapping on a full-time basis. Few men possess the skills necessary to make a winter out trapping highly prosperous. Going further, few people want to spend the long winter living out on the land when they cannot be assured of a good return.

Changes to traditional activities have also brought change to the people themselves. Table 4.14 presents information on the traditional skills of Old Crow adults in 1973 and 1984. The two years are difficult to compare because 1973 had a smaller sample and quite a number of "no response" to the questions asked. It is interesting to note however, that of the 16 items, more had respondents saying "no" to the skill than "yes" for both years. It is obvious that the skills which continue to be practiced are ones that relate to the small core of traditional activities that remain central to the native economy.¹ These skills have either not been easily replaced by imported technology/products, or have been consciously preserved for cultural reasons.

It is important to note that it was found in both 1973 and 1984 that it was primarily the younger residents, especially females, who did not possess the traditional skills listed. What this means for the future is unpredictable at this time. Realistically speaking however, it would be wrong to expect the Old Crow people to preserve all the material culture and skills associated with traditional times; especially given the increased influence the market system is having.

Note 1: It is important to note that the 1984 figures for "items made" is really the figure for the number of items made between 1981 and 1984. Viewed in this way, levels for any one year are probably quite comparable to the 1973 figures.

Table 4.14

TRADITIONAL SKILLS IN OLD CROW,
1973 AND 1984¹

	<u>YES</u>		<u>NO</u>		<u>NO RESPONSE</u>		<u>ITEMS MADE²</u>	
	1973	1984	1973	1984	1973	1984	1973	1984
Toboggan	27	36	28	35	10	4	6	27
Dog Whip	11	17	41	54	13	4	3	3
Dog Harness	37	46	19	25	9	4	15	143
Snowshoes	10	13	45	58	10	4	3	4
Rat Canoe	24	37	31	34	10	4	11	8
Rabbit Blanket	5	7	45	64	15	4	1	1
River Boat	14	31	35	40	16	4	3	17
Canvas Scow	30	34	24	37	11	4	11	2
Log Cabin	27	33	26	38	12	4	5	18
Dog Packs	21	31	32	40	12	4	4	7
Babiche	19	27	32	44	14	4	7	12
Tan Hides	14	25	37	46	14	4	9	14
Sew Boats	30	9	21	62	14	4	18	1
Dry Meat	37	63	15	8	13	4	21	61
Bone Grease	19	46	32	25	14	4	8	37
Pemican	22	48	29	23	14	4	12	44

1973 N = 65 respondents

1984 N = 75 respondents

Notes 1: All interviewees were asked if they had the skill to make the above and if they had made the item in 1973 or between 1981 and 1984.

2: Items made for 1984 are really a cumulative figure from 1981-1984. People were asked what they had made in the past three years.

3: It is doubtful that 14 harnesses made, as most people used store bought ones.

Source: Stager, 1974:116
field data 1984

Modern technology has provided most native hunters and trappers with the ability to obtain resources in adequate quantities with less skills and with a shorter time commitment. While some might interpret this as a declining interest in traditional pursuits, for the people themselves it represents the conscious preservation of those activities important to their cultural identity. They have effectively managed to integrate the traditional with the modern industrial sector.

In connection with this preservation are a number of social forms which help maintain the central importance of traditional activities in Old Crow. At the community level exist such things as; the distribution of food to those unable to hunt, community feasts to celebrate various events, and community chastisement for poor stewardship with respect to the land and its resources.¹ These have been in place for years and are unlikely to be altered in the foreseeable future.

At the household level numerous social relations of production have been created. Because of the lack of economic uniformity, these differ from household to household as individuals pursue traditional activities for different reasons and using different strategies.

Note 1: In recent years community members who have been found guilty of overharvesting or poor conduct on the land, have been either sent out on the land to live for a period of time; or assigned work within the community helping elders and so on. Similar sentences are now being given to younger residents in town found guilty of illegal activities like assault. It is the contention of both the Yukon Court System and the community itself, that community service or banishment to the bush may be more constructive and beneficial to the offender and the community than serving time in the Whitehorse jail. How effective these efforts have or will be, remains to be seen.

For most Old Crow households production strategies were carefully thought out and were based on such things as; income level, family membership, and kinship ties. It was noticed for instance, that in those households where the principal hunter was also engaged in full-time wage employment, income was often used to invest in efficient, less demanding subsistence technology. In this way the hunter was able to offset the reduced amount of time he actually had available to get out on the land. This was best observed in the weekend activities of these trappers who also worked full-time. Fortunately for the residents of Old Crow, the abundance of resources relatively close to town and the lack of competition from another community, has served in helping land-based activities complement rather than conflict with wage employment.

Another strategy employed by individual households, or between households, was the division of labour. Labour for the production of food from the land or the trapping of furs was quite often pooled among households or among members of one household in order to take advantage of production opportunities without foregoing wage income. In some households it was the unemployed son who was responsible for providing food. In others, those members who could afford to take the time off work, or who worked shift work, went out on the land when it was known that caribou and so on were available. Often products were obtained for other households at this time in exchange for gas, or in return for a previous hunting favour shown. Usually the households involved were related in some way.

Maintaining a summer fish camp was another way many households kept in contact with a more traditional way of life. With the warm days of summer, and town just a few miles away, living out on the land was quite relaxing. People used this time to; take refuge from town, teach children some traditional skills, gather wood, fish for food, and hunt a little. It was discovered that most of the households involved in this activity were not participants in any form of wage activity in town at the time. Going further, many camps involved members of more than one household. This was often done for companionship as well as the pooling of equipment and labour. Those who held wage positions also fished, but did so from town. This was greatly facilitated by the twenty-four hours of daylight experienced during the summer months.

A similar pooling of household labour and equipment characterized many spring ratting camps. For many families a trip to the Flats represented an expensive undertaking, especially if the principal wage earner had to leave his job. Hence, it was quite commonplace to find representatives from various related households combining resources at one camp, leaving the wage earners in town. Thus, not only was income still being earned in town, but at the Flats as well. Those family members holding wage positions usually visited the Flats near the end of the season and then brought everyone back by boat. It is interesting to note that although Crow Flats is registered as a group trapping sector, the lakes and camps associated with families for generations are still

perceived as being "owned" by that family.¹ Perhaps this is just one more way the community maintains its cultural identity.

Directly connected with the social relations of production are the 'values' and beliefs a group holds towards local resources. Both Canadian and Alaskan researchers have found that it is often because of the persistence of certain 'values' and beliefs that modern productive activity still occurs (Usher, 1981). 'Values' range from economic and nutritional to social and psychological, depending on both personal and household characteristics. People's perceptions of 'value' have been influenced by such things as age, income, family membership and skill level. Furthermore, the number of activities a household chooses to pursue, as well as the effort to be exerted, represents the combination of a variety of considerations:

- 1) the economic costs of productive activity;
- 2) the returns anticipated;
- 3) the 'value' that production holds; and
- 4) the time involved.

Note 1: When interviewees were asked to show where their trapping camps had been located reference was made frequently to a group of lakes being "my lakes".

These elements were examined in the preceeding sections.

What was not mentioned earlier, but which is equally important to understanding the traditional sector, is how the significance of a resource can change in response to alterations in income levels, household composition, production costs, age and so on. These can directly affect the social relations of production, and by implication, the 'value' a resource holds at a particular point in time. A good example here is the decision by a wage-earning son to take up employment in another town. This can greatly affect the annual income level of the household concerned. Suddenly, facing a decrease in household income, the harvesting of country food may become more of an economic necessity than it was in previous years.

This in no way means that the other 'values' commonly associated with harvesting no longer exist for the remaining members of the household. Rather, the economic value of production has merely taken on a more prominent position than it did previously. It is rare that the other 'values' connected with production will disappear. Instead, they will continue to exist, some more visible than others, and may at a later date increase in importance in response to some other change. Given this, it is critical that valuation researchers try and identify the range of 'values' that exist for a cultural group in connection with their productive activities. Because 'values', and their levels of significance, fluctuate over time and between households,

concentrating on the place of one particular 'value' at one particular point in time, would bias the research results. If a 'value' has remained in tact with the passage of time for one, or a group of individuals, it is obviously important.

In the previous pages the native attitudes and perceptions toward the land that are operative in Old Crow have been identified. It has become evident that numerous 'values' exist in connection with resource use in the community. These different 'values' have arisen over time from differences in such things as: age, income levels, and life experiences. Clearly, dividing both the historical and recent data collected on Old Crow into the three categories¹ outlined at the outset has greatly facilitated in the identification of 'values'. However, one task remains, identifying 'values' in the absence of a reliable and comprehensive historical record.

Note 1: briefly: 1) the traditional activities a group has chosen to preserve;

2) the 'value' assigned these activities by the people;

and 3) the social relations of production which affect the 'value' assigned over time.

Valuation In The Absence Of A Historical Record

In order to track the attitudes, perceptions and activities of a group over time so that 'values' can be identified the researcher still has a variety of methods at his disposal. Valuing renewable resources need not be confined to collecting data pertaining only to the quantifiable elements of production activities. Rather, processes of socio-economic change can be inferred and included in valuation research by comparing such things as: the activities of different aged informants; the patterns of time spent engaged in subsistence activities; production activities of two communities at roughly the same stage of economic development; or the differences between employed and unemployed native residents. These and other techniques have been used by Alaskan researchers in recent years, and have produced some interesting and valuable results.

1. Comparing Activities of Different Aged Informants

Table 4.15 presents data by age group on the number of Old Crow households which participated in hunting, trapping and fishing during 1983. In two of the three cases, trapping and fishing, more young households did not participate compared to the medium and old households. In the third case, hunting, although 82% of all young households participated, most of the effort was concentrated on harvesting just caribou. Going further, it is interesting to note that

Table 4.15

A. HUNTING ACTIVITIES IN OLD CROW - 1983¹

% OF TOTAL INTERVIEW POPULATION WHICH PARTICIPATED
(51 HOUSEHOLDS)

<u>Age</u>	<u>Caribou</u>	<u>Moose</u>	<u>Rabbit</u>	<u>Muskrat</u>	<u>Birds</u>	<u>% That did not participate at all</u>
Young	29 (82)*	4 (12)	4 (12)	4 (12)	6 (18)	6 (18)
Medium	27 (88)	10 (31)	10 (31)	12 (44)	12 (44)	4 (12)
Old	20 (55)	12 (33)	12 (33)	14 (39)	14 (39)	12 (33)

* The numbers in brackets represents the % of the total Age Group population which participated

% OF CATCH CAUGHT BY THOSE HOUSEHOLDS PARTICIPATING

<u>Age</u>	<u>Caribou</u>	<u>Moose</u>	<u>Rabbit</u>	<u>Muskrat</u>	<u>Birds</u>
Young	38	18	39	3	51
Medium	33	46	12	48	26
Old	$\frac{29}{100}$	$\frac{36}{100}$	$\frac{49}{100}$	$\frac{49}{100}$	$\frac{23}{100}$

Note 1: Household Breakdown - 17 Young/16 Medium/18 Old

Table 4.15 (cont'd)

B. TRAPPING ACTIVITIES IN OLD CROW - 1983²

% OF TOTAL INTERVIEW POPULATION WHICH PARTICIPATED (50 HOUSEHOLDS)			
<u>Age</u>	<u>Muskrat</u>	<u>Other Furbearers³</u>	<u>% That did not participate at all</u>
Young	2 (6)	2 (6)	28 (94)
Medium	8 (25) ⁴	16 (50)	12 (38)
Old	6 (17)	12 (33)	24 (66)

% OF CATCH CAUGHT BY THOSE HOUSEHOLDS PARTICIPATING ⁵									
<u>Age</u>	<u>Muskrat</u>	<u>Beaver</u>	<u>Marten</u>	<u>Weasel</u>	<u>Mink</u>	<u>Lynx</u>	<u>Fox</u>	<u>Wolverine</u>	<u>Other</u>
Young	39	0	3	0	26	0	18	0	0
Medium	34	0	21	0	32	71	58	40	90
Old	$\frac{27}{100}$	$\frac{100}{100}$	$\frac{76}{100}$	$\frac{100}{100}$	$\frac{42}{100}$	$\frac{29}{100}$	$\frac{24}{100}$	$\frac{60}{100}$	10

Note 2: Household breakdown - 16 Young/16 Medium/18 Old

3: This is a combination figure for all furbearers based on the interview data

4: % Figures here do not add up to 100 because some people who trapped rats did not trap other furbearers and vice versa.

5: Harvest figures used here were taken from interview data and therefore included furs not sold. The figures used are not the same ones that appear in Table 4.5.

Table 4.15 (cond'd)

C. FISHING ACTIVITIES IN OLD CROW - 1983⁶

% OF TOTAL INTERVIEW POPULATION WHICH PARTICIPATED
(50 HOUSEHOLDS)

<u>Age</u>	<u>Chum Salmon</u>	<u>King Salmon</u>	<u>Whitefish</u>	<u>Other</u>	<u>% That did not participate at all</u>
Young	10 (29)	4 (12)	0	4 (12)	24 (71)
Medium	14 (44)	4 (13)	4 (13)	12 (38)	16 (50)
Old	14 (41)	4 (12)	8 (24)	12 (35)	20 (59)

% OF TOTAL CATCH BY THOSE HOUSEHOLDS PARTICIPATING

<u>Age</u>	<u>Chum Salmon</u>	<u>King Salmon</u>	<u>Whitefish</u>	<u>Other</u>
Young	4	14	0	8
Medium	62	53	19	45
Old	<u>34</u> 100	<u>33</u> 100	<u>81</u> 100	<u>47</u> 100

Note 6: Household Breakdown - 17 Young/16 Medium/17 Old

overall participation by all three age groups was high for hunting, and much lower for both fishing and trapping. This indicates that more emphasis is placed by the community on hunting than on fishing or trapping. This is not unreasonable given the high cost of imported foods in Old Crow, the replacement of dogs with skidoos, and the steady decline of the fur industry in Canada.

The lower participation rates by younger households for all three activities is not easily explained. In all likelihood a wide variety of factors contribute to the low figures shown; for example, wage employment, lack of skills, lack of interest, no family to support, or no dogs to feed. In terms of wage employment, figures for the community (Table B-5) indicate that 100% of all males in both the young and medium age categories were employed at some time during 1983; 80% of them for more than three months. Thus, employment probably infringed on the production activities of medium aged males just as much as it would for young males¹. Given the nature of employment in Old Crow, very few long-term jobs, it is unlikely that wage employment even factored into most peoples' decision to engage in hunting, fishing or trapping.

Note 1: We are only considering males here because the participation rates by both young and medium female households were quite low:

	Hunting	Trapping	Fishing
Young	50% (2)*	0%	0%
Medium	60% (3)	0%	40% (2)

* # of households represented by the % figure

Participant observation revealed that it was such things as; lack of skills, no family responsibilities, and no need for additional income, which affected most young males' decision not to participate in hunting, trapping or fishing, rather than a preoccupation with wage employment. It is interesting however, that young households exhibited high rates of productivity in those activities in which they did participate. The reason for this is easily explained. Today in Old Crow there are some young residents who enjoy trapping and fishing and who are also responsible for providing country food for more than themselves and/or their immediate family. It is the activities of these residents which have influenced the final productivity figures shown.

For the most part however, it seems that the medium and old aged residents are the ones who maintain an interest in traditional activities for reasons other than economic necessity. Perhaps this is due to the fact that they remember past times when traditional activities formed the basis of community economic life. They have also been exposed to fewer conditions in their lifetime which force an individual to choose between wage and subsistence activities. Whether younger residents will fall into a similar lifestyle as they assume more family responsibilities and settle permanently in town, is unknown. For the time being though, it is obvious from the participation rates shown that caribou remains highly valuable to all residents. Other products from the land are 'valued' by various individuals with the overall interest in a more traditional lifestyle increasing as one moves from younger to older residents. Any declining interest among older residents is the result of the physical aging process and not a lack of interest.

2. Patterns Of Time Spent Engaging In Subsistence Activities

Kruse's study of the North Slope Inupiat (1981) concluded that current subsistence activity patterns reflected the dependency on time-saving subsistence technology and the presence of employment opportunities. The data for Old Crow lends itself to a similar conclusion. Twenty percent of all subsistence activities in Old Crow were performed on weekends or after work (Table 4.16). Another 29.7% were carried out over a few days, usually on vacation or leave time. Most of the residents falling into these two categories held wage positions in town. This fact is reflected in the large percentage of trapping that was carried out on weekends or after work (64.3%). Most Old Crow trappers held wage positions and therefore arranged their lines so that they could be checked every 5-6 days or so.

Time patterns varied by activity. Spring ratting seemed to consume most people's time during the 1-3 months they engaged in the activity. Fishing also took up a lot of people's time, but most of the residents who did fish for 1-3 months were older, female or unemployed. Those involved in wage activities fished on weekends or after work, especially during the fall.

From the interviews, there did not appear to be a conflict between subsistence and employment opportunities. Fortunately, most resources are located within a days travel time from town which facilitates the ability of those engaged in full-time employment to access resources

Table 4.16

PATTERNS OF TIME SPENT ON SUBSISTENCE ACTIVITIES
OLD CROW, 1983
(% of total activities)

Subsistence Activity	All Year off and on	Wkds/ After Work	Nov - Mar	1 wk	1 wk 2 wk	2 wk	1 - 3 mos	Total Hshld
Spring caribou	-	6.6	-	8	-	-	13.3	15
Fall caribou	-	13.8	-	58.6	24.1	3.4	-	29
Other caribou	37.5	-	-	50	12.5	-	-	8
Fishing summer	-	26.6	-	-	20	-	53.3	15
Fishing fall	-	90	-	10	-	-	-	10
Moose	-	13.3	-	53.3	26.6	6.6	-	15
Rabbit	-	-	7.1	14.3	7.1	7.1	64.3	14
Birds (spring)	-	6.6	-	33.3	6.6	-	53.3	15
Birds (other)	-	-	50	-	-	-	50	2
Ratting (flats)	-	-	-	-	31.25	-	68.75	16
Ratting (other)	-	33.3	-	-	33.3	33.3	-	3
Trapping	-	64.3	7.1	-	-	21.4	7.1	14
Handicrafts	77.7	22.2	-	-	-	-	-	9
Totals	6%	20%	1.8%	29.7%	13.9%	4.2%	24.2%	165

Source: field data, modelled after Kruse 1981.

after work. The long periods of daylight throughout the summer are an added benefit especially because it is during this time of year that employment opportunities in town are greatest. From the data presented it is obvious that Old Crow residents make time to engage in subsistence activities. It is likely that much of this is due to the time-saving technology currently available to the modern hunter/trapper.

3. Production Activities in Old Crow vs those in Ross River

The purpose of this entire final section is to show how the values associated with renewable resources or the "traditional lifestyle" can be identified in the absence of a historical record. Where such circumstances exist it seems appropriate to track change using cross-sectional analysis. Such an analysis relies on variations present in a population at a single point in time (Kruse, 1981:318). Thus far, this type of analysis has revealed that variations in activities do exist between different generations in Old Crow, while time saving technology has allowed all residents to pursue hunting, trapping and fishing with minimal conflicts. A third method of identifying change, and by implication what is still 'valued', is to compare the activities of two populations at one particular point in time. While any measures of the 'value' of subsistence activity proposed here are subject to error because they do not capture the absolute differences in activity, it is contended that comparing communities or groups can still reliably test for relative differences in subsistence activities. These relative differences in turn can be important indicators of 'value'.

In 1982 the Ross River Indian Band, Yukon, hired a consultant to examine the subsistence and wage activities of the Ross River residents in an effort to document the importance of both the traditional and modern sectors of the community, as well as identify people's aspirations for the future. Much of the data collected corresponded with the 1984 Old Crow data. Although the Ross River data covered 1982 and the Old Crow data 1983, the data sets are still comparable because very little change occurred in Old Crow between 1982 and 1983.¹ The only major difference between the two communities is that Ross River is located on a highway and is near new mining activity. Conversely, Old Crow remains isolated both economically and geographically.

Table 4.17 shows the total estimated value of the domestic sector in the economies of both communities. Table 4.18 theoretically extends this value to cover the entire native population and examines the contribution the domestic sector makes to the total annual cash income of each community. From the two tables it is apparent that country food contributes a large percentage of the total value of traditional activities in both communities. In Ross River, fur sales are another very important source of cash income. This stems from the fact that Ross River residents are far more active trappers than Old Crow residents. Surprisingly, wages comprise a larger percentage of total income in Old Crow than they do in Ross River, even though Ross River is located quite

Note 1: change here is meant to include changes in employment opportunities, traditional activities etc.

Table 4.17

TOTAL ESTIMATED VALUE OF THE DOMESTIC SECTOR OF THE ECONOMY
OLD CROW VS ROSS RIVER¹

% of Pop represented ITEM	<u>OLD CROW</u>		<u>ROSS RIVER</u>	
	73.6		90	
	WEIGHT (KG)	TOTAL VALUE (\$)	WEIGHT (KG)	TOTAL VALUE (\$)
Game ²	37,573.65	345,343.36	46,236.82	344,669.46 ⁵
Fur Mammals ³	1,529.18	12,615.73	1,560.91	11,572.58
Fish ⁴	1,865.43	15,352.49	15,190.45	59,820.01
Sub total:	40,968.26	373,311.58	62,988.18	416,062.05
Fur Sales		71,260.58		211,786.00
Handicrafts		7,000.00		10,866.00
Total:		451,572.16 ⁶		680,320.00

Notes 1: Data is from 1983 for Old Crow and 1982 for Ross River

- 2: Game includes - Old Crow Ross River
 caribou/moose caribou/moose/sheep
 rabbit/birds bears/waterfowl
- 3: Fur mammals muskrats beaver/lynx/rabbits/porcupine
include: gophers/groundhogs/grouse &
 ptarmigan
- 4: Fish dog salmon/king salmon trout/whitefish/salmon
include: whitefish/grayling/losch grayling/jackfish/sucker
 sucker/jackfish/inconnu lingcod
- 5: the dollar values used for substitution costs are listed in Table 3.4 for Old Crow and Table B-5 for Ross River.
- 6: This total value is not the total imputed value for the Old Crow traditional sector because wood heat is not included. This was because wood heat was not included in the Ross River data. Also, this figure is less than the figure shown in Table 4.18 because it is for 73.6% of the population and not 100%.

Source: Field data, 1984
Dimitrov & Weinstein, 1984:180

Table 4.18

ESTIMATED TOTAL INCOME - OLD CROW VS ROSS RIVER¹
(all sources)

<u>ITEM</u>	<u>OLD CROW</u> (220) ²	<u>ROSS RIVER</u> (243)
Traditional Activities ³	651,828.40	680,320.00
Wages ⁴	744,332.40	602,879.00
Transfer Payments ⁵		
Family Allowance	22,416.43	33,612.00
Federal Pension	64,403.43	36,000.00
CYI Elders	61,513.92	42,408.00
Social Assistance	<u>101,136.00</u>	<u>124,116.00</u>
Total	\$1,645,630.90	\$1,519,335.00
% Income From -		
Traditional Activ	39.6%	44.7 %
Wages	45.2%	39.68%
Transfer Payments	15.1%	15.54%

Notes 1: data for Old Crow was taken from Table 4.12 and is the derived value for the entire community (100%), rather than just the field data. Ross River data is from Dimitrov & Weinstein, 1984 and is also derived from the actual field data.

2: the numbers in brackets represent the total native population.

3: Traditional Activities for Old Crow do not include the value of wood heat.

4: The wage figures don't include money derived from pensions as this data is confidential.

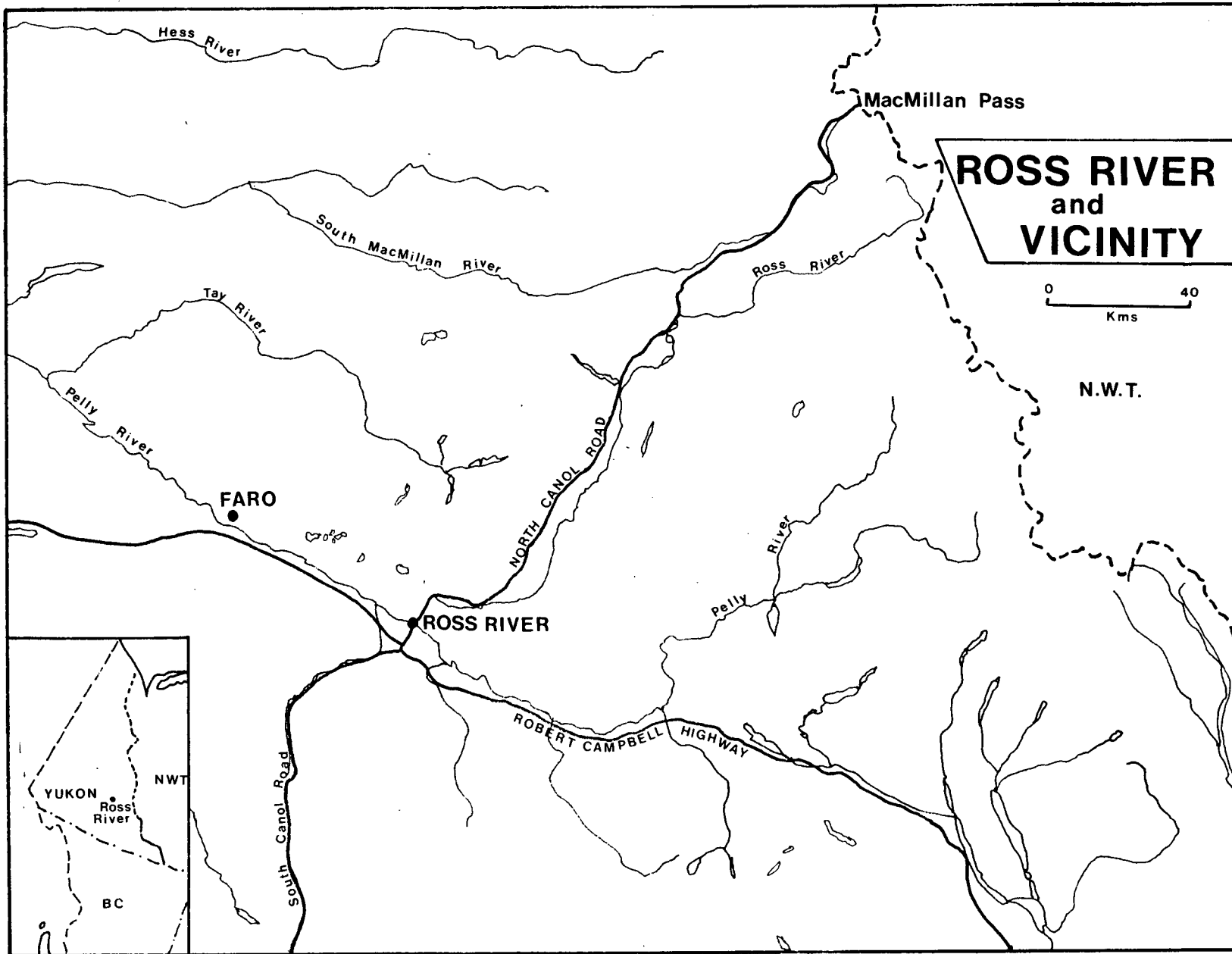
5: Transfer payments here are incomplete. Not included here are UIC, Child Tax Credits, YTG supplement and Guardians Allowance. These would add \$142,140.00 to the Ross River figure. It is unknown how much would be added to the Old Crow figure.

close to mining and tourist activity (see Figure 4.7). Calculations reveal that the average total wage per household figures for Old Crow and Ross River are quite comparable; \$10,633.32 and \$10,394.47 respectively. However, because there are 70 households in Old Crow and only 58 in Ross River, total income in Old Crow is actually higher than indicated. Lastly, transfer payments only make up about 15% of total income in both communities.

In terms of wage employment, 47 of the 76 people interviewed¹ in Old Crow held wage positions during 1983, 7 of them outside the community² (see Table 4.19). Twenty-six of the 47 positions were full-time with the rest being part-time or seasonal in nature. Conversely, in Ross River 78 jobs were available to residents of which only 13 were full-time. The rest were part-time averaging 2 1/2 months in duration. In both communities unlike male workers, the majority of females who were employed held full-time positions. Going further, the Band and YTG were the largest employers in both Old Crow and Ross River. Surprisingly only 2 people in Ross River were employed by the local mining companies.

Note 1: of the 76 people interviewed 19 were too old to qualify for work and therefore, only 10 people were actually unemployed. All of these were females, many who were not actively seeking work because of small children at home.

Note 2: 5 people commuted to the Beaufort Sea Region for 2 week shift periods. 3 of the 5 were employed all year while the remaining 2 worked 5 months each. The remaining 2 of the 7 people worked elsewhere in Yukon full-time.



144
Figure 4.7

Table 4.19

EMPLOYMENT DATA FOR OLD CROW (1983) AND ROSS RIVER (1982)

1. <u>DURATION OF EMPLOYMENT</u>	<u>NUMBER OF JOBS</u>			
	Old Crow		Ross River	
	M	F	M	F
1 month or less	4	2	19	2
2 - 3 months	2	0	19	3
4 - 9 months	10	3	20	2
10 - 12 months	15	11	3	10
	31	16	61	17

2. <u>TYPES OF EMPLOYERS</u>	<u>NUMBER OF JOBS</u>		<u>PERCENT OF JOBS</u>	
	Old Crow	Ross River	Old Crow	Ross River
Community Indian Band	18	39	38%	50%
Government (YTG or Federal)	14	18	30%	23%
Local Native Business	4	4	9%	5%
Local Non-Native Business	3	6	6%	8%
Church	0	2	0%	3%
Mining Companies	0	2	0%	3%
Oil and Gas Industry	7	0	15%	0%
CYI and other non-profit institutions	1	2	2%	3%
Outfitters	0	5	0%	6%
	47	78	100%	100%

Source: Field data
Dimitrov and Weinstein 1984

From the work by Dimitrov and Weinstein it is quite clear that Ross River residents are hesitant to take wage positions outside the community. Most residents want wage employment in town which is compatible to the community's seasonal round, thereby allowing them to get out on the land (Dimitrov and Weinstein, 1984:233-254). The amount of community "income" derived from fur sales and other traditional activities seems to indicate the importance of the land to the Ross River people (Table 4.17).

While there is no denying that the land holds a similar place in the lives of the people of Old Crow, it was found that residents of Old Crow were more willing to travel outside for employment. Of 50 people interviewed¹, 32 had worked outside the community at some point in time. Twenty-six of the 50 people stated that they would be willing to take employment outside if it was both necessary and available. Given Old Crow's isolation the people realize that there is little chance that in-town employment opportunities will increase in the future. As such they are more willing to travel to employment, although most indicated a preference for shift work so that they would not have to move their families from the community permanently.

Note 1: only 50 of the 76 people responded to the question regarding outside employment, of the 26 who did not respond, 19 were old age pensioners while 7 were not interested in employment at all.

In Ross River, there exists the potential for much economic growth locally because of increased mining activities and the upgrading of the North Canol Road. Realizing this, the Ross River people have stated that they want to be given the chance to take advantage of business opportunities as they present themselves (Ibid:248-254). Unfortunately because many of the Ross River residents still lack the skills and initiative needed to really take advantage of such opportunities, few native residents have benefitted from the economic development to date.¹

There are several other comparisons that could be made between Old Crow and Ross River; the proportion of total diet made up of country food, the spatial use of surrounding lands, the difference between older and younger peoples' activities, the number of residents possessing certain employment skills, or the difference in subsistence time patterns. All would tell one a little more about the 'value' that traditional activities hold in the lives of the two different groups of people. Such comparisons would also give some indication as to whether the study community was more or less traditional than a neighbouring community, and possibly the reasons for its position. Although not included here, because the data for Old Crow was sufficient, such comparisons could have been made if this had not been the case.

Note 1: This conclusion was reached by a DIAND employee after carrying out a survey of Ross River businesses and the effects of the reconstruction of the North Canol Road in 1984. This document is not publically available.

4. Employed vs Unemployed Residents: Does Income Influence Participation?

It has already been shown that traditional activities are economically important to most Old Crow people. It has also been shown that many of those households which have a high annual income often engage in trapping and ratting for the non-economic benefits they believe such activities generate. However, these conclusions were reached after close personal observation and extensive interviewing. If such access to information is not available one can still gather evidence to support the idea that interest in subsistence is not solely determined by economic conditions.

Table 4.20 presents data on the number of subsistence activities 47 households participated in during 1983. The data shows that most households participated in 2 to 4 activities. The lack of participation by lower income households was a function of either age or marital status rather than the absence of adequate income to finance trips out on the land. Older residents, as well as single mothers, had country food given to them by family and friends, while wood was supplied by the Band.

One of the principal conclusions that can be drawn from the table is that, as household income increases in Old Crow, residents do not reduce their use of subsistence products. Because higher income households continue to engage in several traditional activities, it is quite likely that they are deriving some non-economic benefits from their endeavours. The same can probably be said about lower income households, but it

Table 4.20

PARTICIPATION IN SUBSISTENCE ACTIVITIES AS A FUNCTION OF
HOUSEHOLD INCOME, OLD CROW, 1983

INCOME ¹ (ANNUAL-1983)	# OF HOUSEHOLDS PARTICIPATING IN A GIVEN NUMBER OF SUBSISTENCE ACTIVITIES ²					
	0	1	2	3	4	5 or more
\$ 3,000 - 5,999	3	1	1	2	-	-
\$ 6,000 - 8,999	2	1	2	1	3	-
\$ 9,000 - 11,999	1	-	1	3	3	-
\$12,000 - 19,999	1	-	7	1	-	-
\$20,000 - 29,999	1	-	3	2	3	-
\$30,000 - 39,999	-	-	-	1	2	-
\$ over 40,000	-	-	-	-	1	1

TOTAL HOUSEHOLDS REPRESENTED - 47

Note 1: Income figures for each household were approximations.

2: Subsistence activities here include: hunting, fishing, trapping,
ratting, hauling wood and
beadwork (handicrafts)

Source: field data 1984

should be noted that for many of these latter cases it is the economic value of products from the land which make a more vital contribution to the household economy.

Other tests can also be performed with employment and income data to see if larger amounts of monetary income lead to such things as: reduced participation in traditional activities; higher harvesting expenditures; or high levels of cash being spent on imported food items. Wolfe (1981) for example, used Spearman's rank correlation coefficient to see what types of relationships existed between income levels and subsistence activities, and income levels and harvesting costs among Alaskan Inupiat. Wolfe was able to conclude that participation in subsistence activities did increase with income, and that households with larger monetary incomes spent more on carrying out subsistence activities than households with smaller incomes (1981:294). These findings are similar to others that have been made about northern hunting societies. Most notably; higher income households often invest more money in time-saving equipment which allows them to get out on the land and be quite productive while continuing to participate in full-time wage employment (Kruse, 1981; Lonner, 1981; and Wolfe 1981).

Wolfe's idea of using rank correlation coefficient could quite easily be extended to test the relationships of a variety of different variables like age and subsistence activities or income levels and age. Such tests, depending on the results, can help a researcher make

qualitative statements about the 'value' of subsistence activities using quantitative analysis, statements that might not have been possible otherwise.

In Old Crow for instance, income was compared to both subsistence activities and harvesting costs. Both tests revealed "no relationship" between the variables. It was concluded that people participated in a variety of traditional activities no matter what their income level or the final cost of harvesting. By implication then, there must have existed other non-economic factors which also motivated the Old Crow people to engage in traditional activities. While Old Crow may be a unique case, one can see how quantitative analysis can generate qualitative conclusions.

5. Other Suggestions

In no way are the previous methods the only ones available to the valuation researcher. Depending on the data collected, many analyses can be done. McSkimming's (1975) research into territory and territoriality is a very good example here. Through a series of questions and a mapping exercise, McSkimming was able to identify the lands that were important to both the young and old residents of Old Crow. One of the more interesting results of the study was that although the spatial extent of land use had been reduced significantly over the years, the land was still a part of the people (1975:150). The people saw the surrounding land as collectively theirs and its control by them as the key for their involvement into a unified northern society (IBID).

Such conclusions imply that the land, and its resources are 'valuable' to the Old Crow people. McSkimming realized this and made no attempt to try and define those 'values' numerically. To do so would have under-estimated the true relationship between the people and the land. This attitude is in keeping with one of the major themes of this thesis; it is more important to establish that 'value'(s) exists at all, than to become preoccupied with trying to define 'value'(s) in quantitative terms. After all, the fact that most native northerners continue to engage in traditional activities, especially those also employed full-time, is in itself an indication that some 'value' exists. The fact that research has proven that monetary income, wage employment and market occupations seem to increase subsistence harvests only reinforces this viewpoint.

SUMMARY

When a researcher restricts him/herself to finding quantitative values only, there is a risk that the resulting 'values' will be inaccurate. Traditional activities in the north continue to be associated with a larger cultural framework of 'values', self images, and social functions that may perpetuate them, even if they themselves become "uneconomic" (Wolfe, 1981:306). Research has proven that some or all of these non-economic factors also influence the choices that individuals make in their attempt to find a balance between the traditional and modern way of life. Therefore, what the valuation

researcher should be aiming for is utilizing both quantitative and qualitative analysis to get at the non-quantifiable elements of northern native life.

When such an approach was used in Old Crow it became evident that numerous values existed in connection with resource use in the community. Caribou, moose, muskrats, fish, furbearers and wood resources are all important to modern life in Old Crow. It is unlikely that this situation will change in the coming years given the community's location; peripheral to modern industrial economic activities.

This chapter also showed how, in the absence of a historical record, 'values' could still be identified. The examples discussed proved that quantitative analysis using static field data can still lead to conclusions about 'value' similar to those generated through the use of historical data; for it is when quantitative analysis produces results that hint at the existence of hidden, influential factors that the researcher is finally getting at the non-quantifiable elements he originally sought.

CHAPTER 5

SUMMARY AND CONCLUSIONS

The previous chapters have attempted to show that in order to begin 'valuing' traditional activities in the northern economy an effort must be made to understand native categories and perceptions of natural resources. It has become increasingly evident that, despite the influence of the outside market place, traditional activities are still important economically, socially and culturally to native northerners. With this in mind data collected in the community of Old Crow in 1963, 1973 and 1984, was used to record the people's attitudes and perceptions toward the land and its bounty, and to identify the 'values' these elements held for them.

The primary thrust of the thesis was to develop a means of precipitating out those 'values' which are important to the traditional pursuits of the Old Crow people. This chapter discusses whether the thesis has been successful in meeting this goal by determining whether the proposed 'holistic' method identified 'values' that contemporary valuation methods could not. The chapter closes with a discussion on whether in the future researchers will be able to move beyond merely identifying 'values' to a scheme that actually allows for some level of significance to be assigned to each 'value' active in the traditional economy.

1. Contemporary Valuation Methods

Attaching numerical values to human activities has been the focus of much research over the years. More specifically, those employing economic means of measuring the volume and 'value' of production and exchange have come to the forefront in the context of the Canadian north. Those ideas receiving most attention have been:

- 1) converting all domestically produced goods to one standard equivalent - preferably with economic value in the market place;
- 2) valuing foods consumed at home according to some sort of market price, usually substitution or replacement costs; and
- 3) valuing domestically produced goods according to both replacement costs and production costs.

The thesis examined each of the above using data from Old Crow to see the types of 'values' that could be generated. In general, all three were found to suffer from the problems of: the absence of reliable historical records, inappropriate time frames, limited scope, and the failure to deal with the non-market 'values' of traditional activities.

The research showed that the absence of reliable and comprehensive historical records in the north has meant that in order to apply contemporary valuation methods, exhaustive surveys have usually been

required at the local level. With the three above methods requiring extensive individual household data, their applications to date were found to deal with only a limited number of households in a community, and with activities for a single year. This holds serious implications when one considers that most households employ unique economic strategies or participate in the traditional sector for very different reasons than a neighbour. By limiting a study to the examination of only a few households the ability to make general statements about 'value' that are accurate, is really not possible.

A second criticism was that all three methods failed to acknowledge that patterns of resource dependency constantly fluctuate from year to year in the north as individuals respond differently to changes in species availability, new technology, fur prices, job opportunities and so on. Because a time dimension was absent in all three approaches, the resulting 'value' was never found to be truly indicative of the actual place that traditional activities held in a native community.

The final general criticism discussed in the thesis was the failure of all three methods to deal with the non-market 'values' of domestic production and exchange. Suffice to say, monetary or other quantitative evaluations can never indicate the 'value' of hunting, trapping and fishing as a social or cultural activity, or as a way of life.

What emerged from the application of the Old Crow field data to the various methods was that the various economic analyses fell short of precipitating out the often more important social 'values'. Neither substitution costs or production costs captured the cultural and spiritual rejuvenation that many Old Crow residents experienced in their annual trek to the Flats for ratting. Nor did they convey the important social role that the distribution of food to the Elders or the luckless played in the community. While these methods did increase the researcher's knowledge of the place that traditional activities held in the lives of the Old Crow people, their ability to fully identify the wide range of 'values' associated with traditional activities was noticeably lacking. What was missing in all three accounts was the realization that the subsistence system in place in most northern hunting societies is a separate and distinct socio-economic form where people make rational decisions based on tradition and custom, and not simply their contemporary socio-economic circumstances.

2. New Holistic Method

The primary focus of the latter half of the thesis was to develop a valuation scheme which revealed the variety of 'values' associated with traditional pursuits in Old Crow. It did this by analyzing the quantifiable elements of native economic activities, and by identifying native categories and perceptions of renewable resources both past and present. Both of these tasks were carried out using a historical approach.

The research revealed that hunting, fishing and trapping in Old Crow have been operating over shrinking space in the last 25 years. However, there has been little change in harvest levels and household participation since the early 1970's. In fact, trapping activities have increased slightly in recent years due to a lack of winter wage employment opportunities. Going further, 94% of the households interviewed still rely on country food, with 55% of them believing that over 50% of their food needs are met by the land. New time-saving technology, as well as a close proximity to resources are the most obvious reasons why the Old Crow people have been able to successfully integrate the traditional with the modern industrial sector.

It cannot be denied that great economic value is now attached to traditional activities in Old Crow. However, material security, the socially binding force created by the sharing of subsistence products, relaxation, getting away from town, psychological satisfaction, and the socialization of children are also important 'values' associated with these pursuits. It is readily apparent that numerous strategies (social forms) have been created by the Old Crow people to ensure the maintenance of the traditional sector when social changes occur.

What emerged through the analysis in Chapter 4 was that land-based renewable resources were not just an economic necessity, but also very important culturally, socially, nutritionally, politically and psychologically to the community of Old Crow. They have not only helped to maintain community solidarity in the face of major social change, they

have enabled the Old Crow people to remain closely linked to the land; to affirm their cultural identity.

The final section of Chapter 4 was devoted to operationalizing the "new approach" in the absence of a historical record. It was shown that a time dimension can be incorporated into valuation research simply by examining the activities of different age groups within a community. The various research methods discussed demonstrated that non-economic values associated with the traditional activities can still be elicited from data that is limited in time and/or scope. While native attitudes and perceptions towards the land may not be as readily discernable as they are when historical data is used, they can still be identified to a certain extent. Time spent out on the land, the existence of training programs for children, and the geographic territory used by a group, all tell the researcher something about the importance of the land to the modern northern native. By including some of these more qualitative elements in a valuation research project, the researcher can capture some of the more important 'values' associated with traditional activities, 'values' frequently missed by the more quantitative approaches.

3. Moving Beyond Identifying Social Values

It has been shown that in order to get at those 'values' which are truly important to a group in their traditional pursuits, the researcher must go beyond merely using numerical analysis. However, once the researcher has done this, and has generated a list of the more

qualitative 'values' associated with hunting, trapping and so on, can he/she go one step further in order to satisfy policy makers, and actually begin assigning a comprehensive value to each activity?

Such an exercise would require a scheme that could grasp qualitative information and present it in a form that either quantified, ranked, or assigned a level of significance to the 'values' identified previously. Unfortunately it is not simply a question of having members of a cultural group rank a list of 'values' in their order of importance, or having a researcher assign a relative level of significance to each 'value' based on the number of times a 'value' was mentioned by his/her informants. A large cultural gap exists between these schemes in their conceptual form and the desired end product, a comprehensive value. Bridging this gap requires evaluation researchers to find a means of "quantifying" qualitative information in a way that recognizes the vast differences in the beliefs and values associated with production & consumption activities which exist between western industrial society and more traditional societies like Old Crow.

Given this, the idea of having a cultural group rank a list of qualitative 'values' in their order of importance would involve, identifying all the 'values' that the cultural group associated with each traditional activity, and then polling every individual to get his/her response. For both tasks the researcher would have to make sure that each person clearly understood what was being asked of them. Even with adequate time and human and financial resources, the researcher would

still not be guaranteed complete success. So much of this kind of research requires co-operation from a group of people who often do not share the same conviction to 'valuing' production and consumption activities as people in the modern industrial economy do. It is quite likely that the second idea of having a researcher assign a relative level of significance to each 'value' identified, is subject to a similar set of problems.

This is not to say that either idea should not be tried. Both sharply contrast the prevalent methods of valuation used today by many western researchers; namely, resorting to economic analysis of those elements in a traditional society which have some sort of a numerical value. Hence, both ideas need to be tested in some way to see if they can indeed better approximate the true 'value' of traditional activities.

It is time that valuation research moved toward trying to incorporate the cultural beliefs and values of those groups who live close to the land. This thesis has proposed a means of identifying the 'values' which are important to people who have a different way of life than our own. The next step is to take these 'values' and try and find a means of valuing them that is acceptable to all interested parties.

CONCLUSION

The research has shown that when trying identify all the 'values' associated with northern renewable resources it is possible to incorporate the resource needs of native people which arise out of such things as tradition or custom. To focus solely on numerical values like, the economic worth of hunting, in most cases misses what is truly 'valuable' about traditional activities. The data collected on Old Crow indicates that the people 'value' their way of life for several reasons and that they have a continuing bond with the land despite the increasing intrusion of the outside market place. Furthermore, it is unlikely that this situation will change in the near future given Old Crow's geographic position - peripheral to modern industrial activities.

Even though several statements have been made about the 'values' and beliefs of the Old Crow people, the information presented should in no way be considered complete. Too much of what went on in Old Crow was either missed or not understood by the researcher. This inevitably raises the question, can we as researchers actually carry out the recommendations made in the final section when it involves assigning a comprehensive value to a way of life which falls outside our life experiences? Perhaps at some point in the future policy and decision makers will just have to accept that native northerners 'value' their traditional way of life for reasons that cannot be readily quantified and therefore easily explained in the context of the modern industrial economy.

Whatever the case may be, past research efforts as well as the present one, have proven that the traditional sector of the northern economy in Canada is active and important, and therefore deserves policies which ensure its maintenance and growth.

REFERENCES

REFERENCES

- Asch, Michael.
1979 "The Economics of Dene Self-Determination".
Turner, David and Gavin A. Smith (eds) Challenging
Anthropology: A Critical Introduction to Social
and Cultural Anthropology. McGraw-Hill Ryerson
Limited. Toronto. pp. 339-352.
- Balikci, Asen.
1963 Vunta Kutchin Social Change. Dept. of Northern
Affairs and National Resources. Northern
Co-ordination and Research Centre. (NCRC 63-3).
Ottawa.
- 1968 "Perspective on the Atomistic-type Society; Bad
Friends". Human Organization. (27:3) pp. 191-199.
- Berger, T.R.
1977 Northern Frontier Northern Homeland. (The Report
of the Mackenzie Valley Pipeline Inquiry, 2 vols)
Dept. Supply and Services. Ottawa.
- Bissett, D. and S. Meldrum.
1973 Old Crow: A Community in Transition. Dept. of
Indian Affairs and Northern Development. Economic
Staff Group. Ottawa.
- Blades, Derek W.
1975 "Subsistence Activities In The National Accounts of
Developing Countries With Special Reference To
Latin America". The Review of Income and Wealth.
No. 4. Series 21. pp. 391-410.
- Bryan, J.E. et al.
1973 Freshwater Aquatic Ecology In Northern Yukon
Territory, 1971. Department of Environment,
Northern Operations Branch. Task Force on Northern
Pipeline. (Report No. 73-21).
- Chibnik, Michael.
1978 "The Value of Subsistence Production". The Journal
of Anthropological Research. Vol. 34. No. 4. pp.
561-576.
- Clammer, John. (ed)
1978A The New Economic Anthropology. St Martin's Press.
New York.
- Clark, Colin and Margaret Haswell.
1964 The Economics of Subsistence Production.
MacMillan and Co. Ltd. London.
- Crowe, Keith J.
1974 A History of the Original Peoples of Northern
Canada. Arctic Institute of North America.
McGill-Queen's University Press. Montreal.

- Dimitrov, P. and M. Weinstein.
1984 So That The Future Will Be Ours. (Ross River Indian Impact Report). prepared for; The Ross River Indian Band. 2 vols. Ross River.
- Environment - Social Committee, Northern Pipelines.
1974 Mackenzie Valley and Northern Yukon Pipelines - Socio-Economic and Environmental Impacts. (A Report to the Task Force on Northern Oil Development). Ottawa. Report No. 74-17.
- Feit, Harvey A.
1979 "The future of hunters within nation-states: anthropology and the James Bay Cree". Expansion of a paper presented at the Conference on Hunters and Gatherers. Paris, June 27-30.
- 1983 "Conflict Areas in the Management of Renewable Resources in the Canadian North: Perspectives Based on Conflicts and Responses in Northern Quebec". Paper presented at the Third National Workshop on People, Resources, and the Environment North of 60°. Yellowknife, June 1-3. Canadian Arctic Resources Committee.
- Foote, D.C. and H.A. Williamson.
1966 "A Human Geographical Study". Wilimousky, H. and J. Wolfe (eds) Environment of the Cape Thompson Region, Alaska. U.S. Atomic Energy Commission, Oak Ridge, Tennessee. pp. 1041-1107.
- Freeman, Milton M.R. (ed)
1976 Report Inuit Land Use and Occupancy Project. 3 vols. Dept. of Supply and Services. Ottawa.
- 1981 Proceedings First International Symposium on Renewable Resources and the Economy of the North. Banff, Alberta. May, 1981. Association of Canadian Universities for Northern Studies. Ottawa.
- Fried, J.
1964 "Urbanization and Ecology in the Canadian Northwest Territories". Arctic Anthropology. (2:2) pp. 56-60.
- Gourdeau, E.
1974 "The native uses of resources in the context of the proposed Mackenzie gas pipeline". Environmental Impact Assessment of the Portion of the Mackenzie Pipeline from Alaska to Alberta, Volume IV, Research Reports. Winnipeg: Environmental Protection Board. pp. 293-307.
- Hall, E.S.
1969 "Speculation on the Late Prehistory of the Kutchin Athapaskans". Ethnohistory. (16:4) pp. 317-333.

- Harington, C.R. and W.N. Irving
1967 Some Upper Pleistocene Middens Near Old Crow, Yukon Territory. Society of American Archaeologists, Annual Meeting, May 5. Ann Arbor, Michigan.
- Harington, C.R.
1971 "Ice Age Mammal Research in the Yukon Territory and Alaska". UBC Law Review. (6:1) pp. 59-73.
- Harington, C.R. et al.
1975 "Bones say man lived in Yukon 27,000 years ago". Canadian Geographical Journal. 91 (1-2) pp. 42-48.
- Helm, June and Nancy O. Lurie
1961 The Subsistence Economy of the Dogrib Indians of Lac La Martre in the Mackenzie District of the NWT. Dept. of Northern Affairs and National Resources. Northern Co-ordination and Research Centre. (NCRC 61-3). Ottawa.
- Honigmann, J. and I. Honigmann
1965 Eskimo Townsmen. Canadian Research Centre for Anthropology. Ottawa.
- Honigmann, John.
1965 "Social Disintegration of Five Northern Native Communities". Canadian Review of Sociology and Anthropology. (2:4) pp. 199-214.
- Innis, Harold A.
1956 The Fur Trade In Canada. (An Introduction to Canadian Economic History Revised Edition). University of Toronto Press.
- Irving, W.H.
1968 "Upper Pleistocene Archaeology in Old Crow Flats, Yukon Territory". Arctic Circular. (17:2) January. pp. 18-19.
- Jenness, Diamond.
1976 The Indians of Canada. University of Toronto Press in Association with National Museum of Man. National Museum of Canada. Ottawa.
- Jones, Mary Jane. (ed)
1969 Mackenzie Delta Bibliography. Dept. of Indian Affairs and Northern Development. Mackenzie Delta Research Project. (MDRP 6) Ottawa.
- Kahn, Joel S.
1978 "Marxist Anthropology and Peasant Economics: A Study of the Social Structures of Underdevelopment". Clammer, J. (ed) The New Economic Anthropology. St Martin's Press. New York, pp. 110-137.

- Keith, Robert F. and Janet B. Wright. (eds)
1978 Northern Transitions vol II Second National Workshop on People, Resources and the Environment North of 60°. Canadian Arctic Resources Committee. Ottawa.
- Kemp, W.B.
1971 "The flow of energy in a hunting society". Scientific American. (224:3) pp. 104-116.
- Krech, Shepard.
1978 "On The Aboriginal Population Of the Kutchin". Arctic Anthropology. XV-1. pp. 89-104.
- Kruse, John A.
1981 "Subsistence and the North Slope Inupiat: The Effects of Energy Development". Langdon, Steve J. (ed) Contemporary Subsistence Economies of Alaska. Department of Fish and Game, Alaska. Division of Subsistence. Technical Paper No. 67. Juneau. pp. 311-382.
- Langdon, Steve J. (ed)
1981 Contemporary Subsistence Economies of Alaska. Department of Fish and Game, Alaska. Division of Subsistence. Technical Paper No. 67. Juneau.
- Leechman, D.
1948 "Old Crow's Village". Canadian Geographical Journal. July. pp. 2-16.
- 1954 Vanta Kutchin. National Museum of Canada Bulletin #130.
- Lonner, Thomas D.
1981 "Subsistence as an Economic System in Alaska: Theoretical Observations and Management Implications". Langdon, Steve J. Contemporary Subsistence Economies of Alaska. Department of Fish and Game, Alaska. Division of Subsistence. Technical Paper No. 67. Juneau. pp. 43-74.
- Marshall, H.
1970 "Problems of a Contemporary Arctic Village". Arctic. (23:4) pp. 286-287.
- McCann, L.D. (ed)
1982 A geography of Canada Heartland and Hinterland. Prentice-Hall, Canada. Toronto.
- McClellan, Catherine.
1964 "Culture Contacts in Northwest North America". Arctic Anthropology. (2:2) pp. 3-15.
- McKenna, R.A.
1935 "Anent the Kutchin Tribes". American Anthropologist. 37. no. 2. p. 369.
- 1965 The Chandalar Kutchin. Arctic Institute of North America. Technical Paper #17. Montreal.

- McSkimming, R.J.
1975 Territory, Territoriality, And Cultural Change In An Indigenous Society: Old Crow, Yukon Territory. Unpublished M.A. Thesis. Dept. of Geography. The University of British Columbia. Vancouver. May.
- Muller-Wille, Luger.
1978 "Cost Analysis of Modern Hunting Among The Inuit of the Canadian Central Arctic". Polar Geography. Vol. II. No. 2. April-June. pp. 100-114.
- Murphy, Robert F. and Julian H. Steward
1956 "Tappers and Trappers: Parallel Processes in Acculturation". Economic Development and Cultural Change. Vol. 4 (4). July. pp. 335-355.
- Murphy, S.
1984 Prices, Food Quality and Consumption Patterns in Old Crow, Yukon Territory. prepared for: Northern Economic Planning Directorate. Department of Indian Affairs and Northern Development. December.
- Naysmith, J.K.
1971 Canada North: Man and the Land. Dept. of Indian Affairs and Northern Development. Northern Economic Development Branch. Ottawa.
- Netting, Robert M.C.
1977 Cultural Ecology. Cummings Publishing Company. Phillippines.
- Njootli, G.
1983 Presentation to the Beaufort Sea Environmental Assessment Panel. Public Meetings. Community Session held at Old Crow, Yukon. November 11, 1983. Total Reporting Service. pp. 43-50.
- Nowak, Michael.
1977 "The Economics of Native Subsistence Activities in a Village of Southwestern Alaska". Arctic vol. 30. No. 4. Dec. pp. 225-233.
- Osgood, C.
1934 "Kutchin Tribal Distribution and Synonymy". American Anthropologist. Vol. 36. New Series. Wisconsin. pp. 168-179.
- 1936 Contribution to the Ethnography of the Kutchin. Yale University Publications in Anthropology #14. Yale University Press. New Haven.
- 1936a The Distribution of Northern Athapaskan Indians. Yale University Publications in Anthropology #7. Yale University Press. New Haven.
- Palmer, J.
1973 Social Accounts for the North: Interim Paper no. 3: The Measurement of Incomes in the Yukon and Northwest Territories. Dept. of Indian Affairs and Northern Development. Economic Staff Group. Ottawa. pp. 46, 51.

- Riches, David.
1982 Northern Nomadic Hunter-Gatherers - A Humanistic Approach. Dept. of Geography. University of St. Andrews. Academic Press. New York.
- Roots, E.F.
"Can we talk our way into a better northern resource management and economy?". Freeman, Milton, M.R. (ed) Proceedings First International Symposium on Renewable Resources and the Economy of the North. Banff, Alberta. May, 1981. Association of Canadian Universities for Northern Studies. Ottawa. pp. 249-259.
- Slobodin, R.
1960 "Eastern Kutchin Warfare". Anthropologica. New Series (2:1) pp. 76-94.
- 1962 Band Organization Of The Peel River Kutchin. National Museum of Canada. Bulletin No. 179. Anthropological Series No. 55. Dept. of Northern Affairs and National Resources. Ottawa.
- 1970 "Kutchin Concepts of Reincarnation". Western Canadian Journal of Anthropology. V.2. no. 1. SP I. pp. 76-77
- 1976 "Kutchin". Handbook of North American Indians. Vol. 6. The Sub Arctic. Smithsonian Institute. Washington, D.C. pp. 514-533.
- Smithsonian Institute.
1976 Handbook of North American Indians. Vol. 6. The Sub Arctic. Washington, D.C.
- Spadley, James D.
1979 The Ethnographic Interview. Holt, Rinehart and Winston. New York.
- Stager, J.K.
1962 "Fur Trading Posts in the Mackenzie Region Up to 1850". Occasional Papers in Geography. Canadian Association of Geographers. B.C. Division. pp. 37-46.
- 1974 Old Crow, Y.T. And the Proposed Northern Gas Pipeline. Prepared for: the Environmental Social Program, Northern Pipelines. June. Task Force on Northern Oil Development. Report No. 74-21.
- Statistics Canada
Fur Production. Catalogue 23-207. Various Years. Ottawa.
- The Consumer Price Index. Catalogue 62-001. Various Years. Ottawa.

- Tanner, Adrian.
1979 Bringing home animals: religious ideology and mode of production of the Mistassini Cree hunters. St John's: Memorial University of Newfoundland. Institute of Social and Economic Research. C. Hurst & Company. London.
- Usher, Peter J.
1971 The Bankslanders: Economy And Ecology Of a Frontier Trapping Community. 3 vols. Dept. of Indian Affairs and Northern Development. Northern Science Research Group. Ottawa. NSRG 72-2.
- 1973 The Significance of Land to the Northern Native. unpublished paper.
- 1976 "Evaluating country food in the northern native economy". Arctic. Vol. 29. pp. 105-120.
- 1976a "The Traditional Economy Of The Western Arctic". evidence presented on behalf of COPE at the Berger Inquiry. Yellowknife. July, 20.
- 1981 "Sustenance or Recreation? The Future of Native Wildlife Harvesting in Northern Canada". Freeman, Milton M.R. (ed) Proceedings: First International Symposium on Renewable Resources and the Economy of the North. Association of Canadian Universities for Northern Studies. Ottawa. pp. 56-71.
- 1982 "The North: Metropolitan Frontier, Native Homeland?". McCann, L.D. (ed) A Geography of Canada Heartland and Hinterland. Prentice-Hall, Canada. Toronto. pp. 411-456.
- 1982a Renewable Resources In The Future Of Northern Labrador. prepared for; The Labrador Inuit Association. Ottawa. September, 1980. (revised edition).
- 1984 Native Harvest Studies In The Northwest Territories. prepared for; The Northwest Territories Wildlife Service. Contract # SC219331. Ottawa. March, 31.
- Vallee, F.
1962 Kabloona and the Eskimo in the Central Arctic. Department of Northern Affairs and National Resources. Northern Co-ordination and Research Centre. (NCRC 62-2).

- Van Stone, James W.
1960 "A Successful Combination Of Subsistence And Wage Economies On The Village Level". Economic Development and Cultural Change. The University of Chicago. Vol. 8. No. 2. January. pp. 174-191.
- Webster, S.J.
1974 "Problems Of Determining And Measuring The Reliability Of National Accounts In Developing Countries". The Review of Income and Wealth. Series 20. pp. 41-54.
- Welsh, Anne.
1970 "Community Pattern and Settlement Pattern in the development of Old Crow Village, Yukon Territory". Western Canadian Journal of Anthropology. 2-1. pp. 17-30.
- Wolfe, R.J.
1981 "The Economic Efficiency of Food Production in a Western Alaska Eskimo Population". Langdon, Steve J. (ed) Contemporary Subsistence Economies of Alaska. Department of Fish and Game, Alaska. Division of Subsistence. Technical Paper No. 67. Juneau. pp. 267-309.
- Wolfe R.J. et al.
1984 Subsistence-Based Economies In Coastal Communities of Southwest Alaska. Technical Paper No. 89. prepared for; Division of Subsistence, Alaska Department of Fish and Game, and Minerals. Management Service Alaska Region, U.S. Department of the Interior. Juneau. February.
- Wolforth, John.
1971 The Evolution and Economy of the Delta Community. Dept of Indian Affairs and Northern Development. Northern Science Research Group. Mackenzie Delta Research Project. #11. Ottawa.
- Yukon Territorial Government
1984 Harvest Records for various years. Game Branch. Dept of Renewable Resources. Whitehorse.

Personal Communications

- Attwood, W.
1985 Acting Director. Economic Development. Indian and Northern Affairs Canada. Whitehorse. January.
- Energy, Mines and Resources
1985 Renewable Energy Division Ottawa. January, 31.
- Health and Welfare Canada
1985 Income Security Programs. Vancouver. January.
- Yukon Territorial Government
1984a Dept. of Economic Development and Tourism. Whitehorse. October, 17.

APPENDIX A

OLD CROW QUESTIONNAIRE

APPENDIX A

OLD CROW QUESTIONNAIRE

This questionnaire was designed to elicit facts and the quantifiable elements of the people's economic activities and general life rhythm in Old Crow, both past and present. The questionnaire was similar to the questionnaire used by J.K. Stager in 1974, asking the people about their traditional activities, family life, wage employment and the community in general. The sample population were asked all the same questions. People responded to the questions for two time periods, 1978 and 1983. Answers were recorded according to age and sex.¹

Before initiating the questionnaire the interviewer explained to each person that the research was being carried out to try and show others the importance of the land and its resources to the people of Old Crow.

Hunting:

1. What animals did you hunt in the past year and how were they used?

Question	Caribou	Moose	Rabbit	Muskrat	Birds	Other
# Animals hunted						
use: food						
clothing						
sold						
dog food						
other						

- *2. Do you use all of the caribou you catch? What do you do with what you don't use?

3. What months of the year did you hunt each kind of animal? (Write down time spent each month and the number of animals in each month).

	Caribou	Moose	Rabbit	Muskrat	Birds	Other
Jan.						
Feb.						
Mar						
↓						
Dec						
Total						

* - indicates question only asked in 1983

Note 1: Three age categories were used:

young	20-35 years
medium	36-59 years
old	≥ 60 years

4. How much did it cost you to hunt this past year? (gas, food, shells, etc)
 Fall _____ Spring _____
 Winter _____ Summer _____
 or Caribou _____ Rabbit _____ Birds _____
 Moose _____ Muskrat _____ Other _____
5. Did you use all your own equipment? Y ___ N ___ If no, whose equipment did you borrow? (share)
 Name: _____
 Relation: _____
6. How did you hunt each particular animal this past year?
 Caribou _____ Rabbit _____ Birds _____
 Moose _____ Muskrat _____ Other _____
7. How did you keep the meat and who did the work? (How much time was spent?)
 Method Work Time
 Caribou _____
 Moose _____
 Rabbit _____
 Muskrat _____
 Birds _____
 Other _____
8. How did you travel to hunt? (How much time was spent?)
 Caribou _____ Rabbit _____ Birds _____
 Moose _____ Muskrat _____ Other _____
9. Did you hunt: Alone? Family? Other? who shared the meat?
 Caribou _____
 Moose _____
 Rabbit _____
 Muskrat _____
 Birds _____
 Other _____
 (It was noted if the person who went along for the hunt was a regular partner or not)
10. How much money did you make on the furs you sold?
 Caribou _____ Rabbit _____ Birds _____
 Moose _____ Muskrat _____ Other _____
11. On the map mark the places where you hunted each animal and the route taken to get there.
12. Are there any rules followed by the community regarding the killing of caribou; moose and so on?

Trapping:

1. What type of animals did you trap over this past year? (Record numbers trapped)

Muskrats _____	Weasel _____	Other _____
Beaver _____	Mink _____	(specify)
Marten _____	Lynx _____	

2. What months did you trap each animal? (Write down time spent each month and the number of animals in each month).

	Muskrats	Beaver	Marten	Weasel	Mink	Lynx	Other (specify)
Jan.							
Feb.							
Mar							
↓							
Dec.							
Total							

- 3.a) When you trap, do you go out for days at a time?
 b) Have you ever spent an entire winter in the bush trapping?

4. How did you trap each type of animal?

Muskrat _____	Weasel _____	Other _____
Beaver _____	Mink _____	(specify)
Marten _____	Lynx _____	

- 5.a) How many traplines did you have?

b) How long were they?

c) How often did you check them?

d) Where were your traplines? (Show on map)

6. Did you use your own equipment to trap? Y _____ N _____
 If no, whose equipment did you borrow? (share)

Name: _____

Relation: _____

7. How much did it cost you to trap this past year (gas, food, equipment, etc.)

Fall _____	Spring _____
Winter _____	Summer _____

8. How did you prepare each type of pelt and who did the work? (Write down time spent).

Muskrat

Beaver

Marten

Weasel

Mink

Lynx

Other (specify)

9. How did you travel to trap?
 Muskrat _____ Weasel _____ Other _____
 Beaver _____ Mink _____ (specify) _____
 Marten _____ Lynx _____
10. Did you trap Alone? Family? Other? Who shared the catch?
 Muskrat
 Beaver
 Marten
 Weasel
 Mink
 Lynx
 Other (specify)
11. How did you sell your furs? To whom? When? Where? \$ made?
 Muskrat
 Beaver
 Marten
 Weasel
 Mink
 Lynx
 Other (specify)
12. Did your family use any fur? How much? What for?
 Muskrat
 Beaver
 Marten
 Weasel
 Mink
 Lynx
 Other (specify)
- 13.a) Mark on the map your traplines or where you trapped.
 b) Mark on the map your trapping camps
 c) Mark on the map the route you take to your camp and/or traplines
- *14. Do you ever use a deadfall trap? (How do you make it? Who taught you?)
- *15. Who taught you to trap?
- *16.a) Do you have an area that you trap regularly?
 b) Why do you trap there? (father did etc)
 c) Do you change your trapline routes each year?
- *17.a) What new equipment did you buy for hunting, trapping or fishing in the past 5 years?
 b) Who paid for it?
 c) What new equipment would you like?

Fishing:

1. What type of fish did you catch in the past year? (Write down the numbers caught and how fish used)

Use	Dog Salmon	King Salmon	Whitefish	Other**
dog food				
food				
other				

** includes - jackfish, losche, sucker, coni and grayling

2. How many nets did you put out? How often did you check them?
3. What time of the year did you fish for each? (Write down the time spent and the numbers caught)

	Dog Salmon	King Salmon	Whitefish	Other
Jan				
Feb				
Mar				
↓				
Dec				
Total				

4. How did you keep all the fish? and who did the work?
- | | | | |
|-------------|-------|-----------|-------|
| Dog Salmon | _____ | Whitefish | _____ |
| King Salmon | _____ | Other | _____ |
5. How much did it cost you to fish this past year? (nets, gas, etc)
- | | | | |
|--------|-------|--------|-------|
| Fall | _____ | Spring | _____ |
| Winter | _____ | Summer | _____ |
6. Did you use all your own equipment? Y ____ N ____
 If no, whose equipment did you borrow? (share) _____
 Name: _____
 Relation: _____
- 7.a) Did you go to fish camp this past year?
 b) How long?
 c) Who with?
 If no, did your family used to go to fish camp? Why did they stop?
8. Who did you go fishing with? Who shared the catch?
- 9.a) Mark on the map the place where you catch each type of fish
 b) Mark on the map your fishcamp if you have one
 c) Mark on the map the route you take to your camp/nets

Wage Activities:

- 1.a) Did you have any jobs in the past year?
 b) Who did you work for?
 c) How long?
 d) What Season?
 e) What is steady work?

2. How did you get this job(s)?
- Did you go looking or did people ask you?
Looking _____ Asked _____
- 3.a) Were there many jobs this past year?
b) Were they hard to get?
lots _____ hard _____
not many _____ sometimes hard _____
easy _____
4. Do you have any special job training?
Job Training: Type Where Taken When
5. What sorts of jobs were available this past year?
6. Did you work outside Old Crow this past year?
Y _____ N _____
Where? When? How long? Job?
- *7. When you look around for a job, what kind do you want? How long should it go on?
Type Length
- *8. How do you feel about shift work?
- *9. How do you feel about moving your family away for a job?
- *10. (if appropriate) How come you don't want to work all year round?
- *11.a) Would you work outside Old Crow? Y _____ N _____
b) Have you worked outside Old Crow? Y _____ N _____
Where? What? When? How long?
- *12. When no jobs are available what do you do?
look for work elsewhere?
go on UIC?
trap and hunt?
other? (specify)
- *13. Would you like to winter trap? Why don't you?
- *14. Would you take a job in the Beaufort Sea if the opportunity arose?

*15. What type of jobs do you prefer? How come?

<u>Job?</u>	<u>How come?</u>
in town	
oil/pipeline	
building roads	
mining	
other	

Family Life:

*1.a) Is Loucheux spoken in the home regularly?

regularly _____ sometimes _____ no _____

b) Among whom? older people _____
 parents/old people _____
 parents _____
 parents/children _____
 children/old people _____
 all of the above _____

c) Does anyone understand Loucheux but not speak it? _____

*2. Why did young people leave home in the past 5 years?

*3.a) How much of your day is spent at home?

Fall	_____	Spring	_____
Winter	_____	Summer	_____

b) Do the children have assigned jobs? Y _____ N _____
Job Fall Winter Spring Summer

*4. How many hours do children spend working and playing each day?

		<u>Working/hours</u>	<u>playing/hours</u>
during school	young (≤ 6)		
	older (7-14)		
summer	young (≤ 6)		
	older (7-14)		

*5. How has time spent working changed since you were young?

*6. Does your whole family go into the bush for hunting or trapping?

always _____ never _____
 sometimes _____

*7. Who from your family went to Crow Flats for ratting this past year? How long did they go for?

*8. Is there any occasion when your whole family goes out onto the land?

- *9. Has your family been out on the land in the past 5 years?
Where? When? How long?

Do you know how to make?

Did you make in the
past 3 years?

Yes

No

Yes

No

toboggan
dog whip
harnesses
snow shoes
rat canoe
fix caribou
wood boat
canvas scow
log cabin
dog packs
babiche
tan hides
sew boats
beading
drying meat/fish
bone grease
pemican
fix a kicker
deadfall
snare
fix a skidoo
fix furs
set a trapline

Social Activities: - all questions only asked for one period, 1983

1. Do you go to band meetings? How often have they been held in the past 5 years?
always _____ weekly _____
sometimes _____ monthly _____
never _____ every two months _____
seldom _____
2. Do you speak your peace at band meetings or just listen?
3. Does the band council have much influence in Old Crow? Do people do what the band council tells them to do?
4. Do the same people attend the various meetings held in town? Are they mostly older? younger?

5. Do most people agree with what happens and is said at band meetings?
6. If you disagree with what is said; what do you do?
7. Do you talk among friends and relatives about what you will say or feel about things before you go to a band meeting?
8. Do young people attend meetings?
9. How have band meetings changed since 1960 or so?
10. Do you go to the dances held in Old Crow?
11. What kind of dances are done?
 traditional _____ traditional/rock'n roll _____
 country _____ other _____
12. About how many people go to the dances?
- 13.a) How often do they have dances?
 b) How often do you go?
14. How have dances changed?
- 15.a) How much drinking is there done before or during dances now days?
 b) What does drinking do to the dances?
- 16.a) Do you play Bingo? a lot _____
 sometimes _____
 rarely _____
- b) Do you play Navada Cards? always _____
 . sometimes _____
 never _____
17. Do you take part in the sports at the school?

Social Gatherings: - all questions only asked for one time period, 1983.

1. How many people do you think go to church? Have services changed? If so, how?
2. When things are done for the community do people help willingly?
3. Do people expect to be paid for working on community activities?
 Y _____ N _____ (Are there any activities where people don't expect pay? (if appropriate)).

4. Do people help everyone or just friends & relatives
everyone _____ friends & relatives _____
5. Are feasts held like always?

Community Economics: - all questions only asked for one time period, 1983.

1. What people at home bring in money or goods?
- 2.a) What part of the money coming into the house comes from trapping?
b) What part of the money coming into the house comes from trapping, beadwork, and other traditional activities?
3. What part of the money coming into the house comes from wage employment?
4. What part of the food you eat comes from the Co-op?
5. What part of the household food comes from hunting, fishing, trapping etc.?
6. How often does your family eat caribou?
7. What type of assistance do you get from the government?
Old Age Pension
Mother's allowance etc...
8. Does anyone else in the household receive government assistance?
9. Did you take advantage of the government's housing project?
10. Where do you get your firewood from? (had them show places on map)
11. How much wood do you burn in one year?
12. How much income do you spend on food? _____ hunting? _____ trapping? _____ and fishing? _____

Personal Movement:

1. Have you been outside in the last two years?

<u>Where</u>	<u>When</u>	<u>How long</u>	<u>How did</u>	<u>Cost</u>	<u>Who paid</u>
			<u>you get there</u>		
2. Have you travelled in the Old Crow land in the last two years besides for hunting etc? (have them show on the map).
3. How much of the Old Crow land have you seen in your lifetime? (have them show on the map).

APPENDIX B
SUPPORTING TABLES

Table B-1

FOOD WEIGHT VALUES USED TO CALCULATE OLD CROW COUNTRY
FOOD HARVESTS*

Species	Edible Weight (lbs)	(kg)
Caribou	120	54.5
Moose	438	199.0
Rabbits	1.5	.68
Geese ¹	3.5	1.6
Ducks ²	1.7	.77
Ptarmigans ³	.8	.36
Muskrats ⁴	1.4	.63
Dog Salmon ⁵	3	1.36
King Salmon ⁶	3.75	1.7
Whitefish ⁷	1.125	.51
Other ⁸	1.875	.85

Notes:

- *: All animal and bird figures are derived from Berger, 1977:24, while all fish species are from Bryan et al 1973:36 as adopted by Stager, 1974:65.
- 1,2&3: These three species were grouped under the common heading of Birds. Most residents could not recall specific harvests so the average weight of 2 lbs or .91 kgs was applied to all bird harvests.
- 4: The amount of muskrats eaten in 1983 was derived from the formula used by Stager in 1974 and from field data. Families who indicated that they did eat muskrat were assigned 4 rats/day/adult or 2 rats/day/child for the number of days they were in the flats before June 1 (this is when rats become undesirable as human food).
- 5,6&7: These weights are from Bryan et al (1973) and Usher (1971) who stated that 75% of a fish was actually edible.
- 8: "Other" is comprised of the average edible weight of grayling, losch, sucker and inconnu.

Table B-2

MEAT/FISH HARVEST DATA FOR OLD CROW 1973 AND 1983¹

Species	<u>1973</u>		<u>1983A</u>		<u>1983B</u>	
	Quantity	Total kgs	Quantity	Total kgs	Quantity	Total kgs
Caribou	751	40,929.50	600	32,700.00	1,000	54,500.00
Moose	22	4,378.00	22	4,378.00	22	4,378.00
Rabbit	202	137.36	388	263.84	388	263.84
Birds	342	310.00	255	231.81	255	231.81
Muskrats ²	2,896.8	1,825.00	2,427.3	1,529.18	2,427.3	1,529.18
Fish ³	-	<u>2,875.57</u>	-	<u>1,865.43</u>	-	<u>1,865.43</u>
		50,455.43		40,968.26		62,768.26

Source 1983A : field data

1983B : field data and YTG official Caribou Harvest Records for 1982/83 and 1983/84 (YTG Dept. of Renewable Res. 1984)

1: For Edible weight values see Table B-1

2: Quantities were derived from formula applied by Stager in 1974. 4 rats/day/adult and 2 rats/day/child were assigned to each camp for each day spent at Flats prior to June 1 unless field data indicated otherwise. (After June 1 assumed rats unpalatable).

3: Quantities are not shown here. For harvest figures see Table 4.2. Weights here were derived from the assumption made by Stager (1974) that only 25% of all fish caught was consumed by humans except King Salmon. King Salmon is reserved primarily for human consumption. All edible weights were equal to 75% of total weight after Usher (1971).

Table B-3

SUMMARY OF HUNTING COSTS,
OLD CROW, 1983¹

<u>SPECIES</u>	<u># HSHLDS PARTIC</u>	<u>HARVEST #'s</u>	<u>TOTAL COST</u>	<u>AVG COST/ HSHLD</u>	<u>AVG LANDED COST/ANIMAL</u>
Caribou	37	542	\$10,275.	\$277.70	\$18.95
Moose	13	21	\$2,045.	\$157.31 ²	\$97.38
Rabbit	13	388	\$500.	\$38.46 ³	\$1.29
Birds	17	255	\$FREE	\$FREE ⁴	\$FREE
Fish	16	4,895	<u>\$3,055.</u>	\$190.94	\$.62
			\$15,875.5		

Note 1: These hunting costs are based only on gasoline, oil and food costs incurred by the individual households. No other production costs are represented here because of the difficulty in allocating the cost of a skidoo etc to one specific activity when its uses are many.

2: 4 households obtained moose free while involved in some other activity like wood cutting and therefore costs/hshld here are not totally reflective of the actual situation.

3: Here, 10 out of 13 families obtained rabbits free - mainly at the flats or near town. One household incurred a cost of \$400.00 therefore \$500.00 is really not indicative of actual costs nor is the \$38.46/hshld.

4: All birds were obtained in May in flats for free or on traplines set for rabbits near town.

5: This cost is higher than the total cost shown on Table 3.6 because more households were used here. (Did not have complete income data to do this so only 40 households examined in relation to 3.6)

Table B-4

CPI INDEX (BASE YEAR: 1981)

1913	12.1				
1914	12.2				
1915	12.4				
1916	13.5	1946	19.0	1976	62.9
1917	16.0	1947	20.8	1977	67.9
1918	18.0	1948	23.8	1978	73.9
1919	19.8	1949	24.5	1979	80.7
1920	23.0	1950	25.2	1980	88.9
1921	20.2	1951	27.9	1981	100.0
1922	18.5	1952	28.5	1982	110.8
1923	18.5	1953	28.3	1983	117.2
1924	18.2	1954	28.5	1984	122.3
1925	18.4	1955	28.5		
1926	18.6	1956	28.9		
1927	18.3	1957	29.8		
1928	18.3	1958	30.6		
1929	18.5	1959	31.0		
1930	18.4	1960	31.2		
1931	16.6	1961	31.7		
1932	15.1	1962	32.0		
1933	14.4	1963	32.6		
1934	14.6	1964	33.2		
1935	14.7	1965	34.0		
1936	15.0	1966	35.2		
1937	15.4	1967	36.5		
1938	15.6	1968	38.0		
1939	15.5	1969	39.7		
1940	16.1	1970	41.0		
1941	17.1	1971	42.2		
1942	17.9	1972	44.2		
1943	18.2	1973	47.6		
1944	18.3	1974	52.8		
1945	18.4	1975	58.5		

Source: - Statistics Canada Catalogue 62-001
 - 1981 = 100
 (this was derived using a CPI formula)

Table B-5

SUMMARY OF EMPLOYMENT DATA
OLD CROW - 1983

<u># EMPLOYED</u>	YOUNG (19 - 35 yrs)	MEDIUM (36 - 59 yrs)	OLD (60 and over)
MALE	17 (100%)	11 (100%)	3 (27%)
FEMALE	<u>12</u> (70.6%)	<u>3</u> (37.5%)	<u>1</u> (8%)
INTERVIEW TOTAL	34	19	23

<u>TYPE OF EMPLOYMENT</u>	MALE	%	FEMALE	%
Labourer	16	52	-	-
Equipment Operator	2	6.5	-	-
Alcohol Worker	1	3	-	-
Co-Op Store	1	3	1	6
Weather Observer	1	3	-	-
Clerical	-	-	3	19
Teacher's Aid	-	-	2	13
Social Worker	-	-	1	6
Chamber Maid	-	-	2	13
Pipeline	2	6.5	-	-
Newspaper	-	-	1	6
Housekeeping	-	-	5	31
Other	<u>8</u>	<u>26</u>	<u>-</u>	<u>-</u>
	31	100%	16	100%

LENGTH OF EMPLOYMENT

1 wk - 1 mos	4	13	2	12
1 - 3 mos	2	7	-	-
3 mos - 1 yr	10	32	3	19
1 yr or more	<u>15</u>	<u>48</u>	<u>11</u>	<u>69</u>
	31	100%	16	100%

Source: field data