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co-ordination and research centre department of northern affairs and national resources

THE HUMAN ECOLOGY AND SOCIAL ECONOMIC CHANGE IN THE COMMUNITY OF TUKTOYAKTUK N.W.T.

J.D. FERGUSON

NCRC-61-2

THE HUMAN ECOLOGY AND SOCIAL AND ECONOMIC CHANGE IN THE COMMUNITY OF TUKTOYAKTUK, N. W. T.

A Study by
J. D. Ferguson

The material for this report was collected by Mr. J. D. Ferguson during the summer of 1957, while he was employed by the Northern Co-ordination and Research Centre of this Department. It is reproduced here as a contribution to our knowledge of the north. The opinions expressed however are those of the author and not necessarily those of the Department.

Northern Co-ordination and Research Centre,
Department of Northern Affairs and National Resources,
Ottawa.

February, 1961.

INTRODUCTION

Purpose of Study

This report summarizes the findings of an anthropological field trip to Tuktoyaktuk, N.W.T. during the summer of 1957. The field research and preparation of this report were sponsored wholly by the Northern Co-ordination and Research Centre of the Department of Northern Affairs and National Resources.

The purpose of the trip was to study the social organization of the Tuktoyaktuk Eskimos in relation to the resources of the area and to find out how the Eskimos' society is adapting to new demands brought about by changes in available resources. To this end, an inventory of resources was carried out in addition to a sociological study. Finally, it was also proposed to estimate future change in the social and economic order.

Organization of Report

As written, this report is divided into two main sections. The first deals with the human ecology of the region and discusses the town of Tuktoyaktuk as its natural centre; the second deals with the social processes of the community. A concluding chapter in each section summarizes the socio-economic change and outlines the specific directions which this change may take. Specific recommendations are contained in the conclusions to each of the two main sections.

Method of Inquiry

During the field trip the writer tried to live with the Eskimos and like them as far as this was possible in terms of their acceptance and a minimal level of comfort. By taking part in fishing, whaling, dancing and other social activities he tried to approach the desirable level of a participant and an observer of community life. The actual technique of gathering information was by simple observation and by means of directed interviews which used memorized questionnaires as guides. Because Tuktoyaktuk was a very busy place during the summer of 1957, considerable difficulty was found in getting informants: most of the suitable persons were working twelve to fourteen hours a day. Few women were interviewed during the field study because of certain practical limitations.

Acknowledgements

The greatest of thanks is due to Thomas Umauk, Deacon of the Church of England, and to Frs. Franche and LeMur, O.M.I., who provided much of the background information for the study. Miss Audrey Weir, Principal of the Federal Day School, and Miss Edith Hayes, Department of National Health and Welfare nurse, were of great assistance in locating informants at Tuktoyaktuk.

The writer found that almost without exception the residents of Tuktoyaktuk co-operated fully in the field research. He would especially like to thank Felix Nuyaviuk, Raymond Mangelanna, Joe and David Nesualuak, Edward Jacob Kikuak and Roy Kikuak, and Emmanuel Felix.

For criticism of the manuscript the writer is indebted to G. W. Rowley, Advisory Committee on Northern Development, and V. F. Valentine of the Northern Co-ordination and Research Centre. For very real administrative assistance both in the field and in Ottawa he would like to thank J. E. Cleland also of the Advisory Committee on Northern Development.

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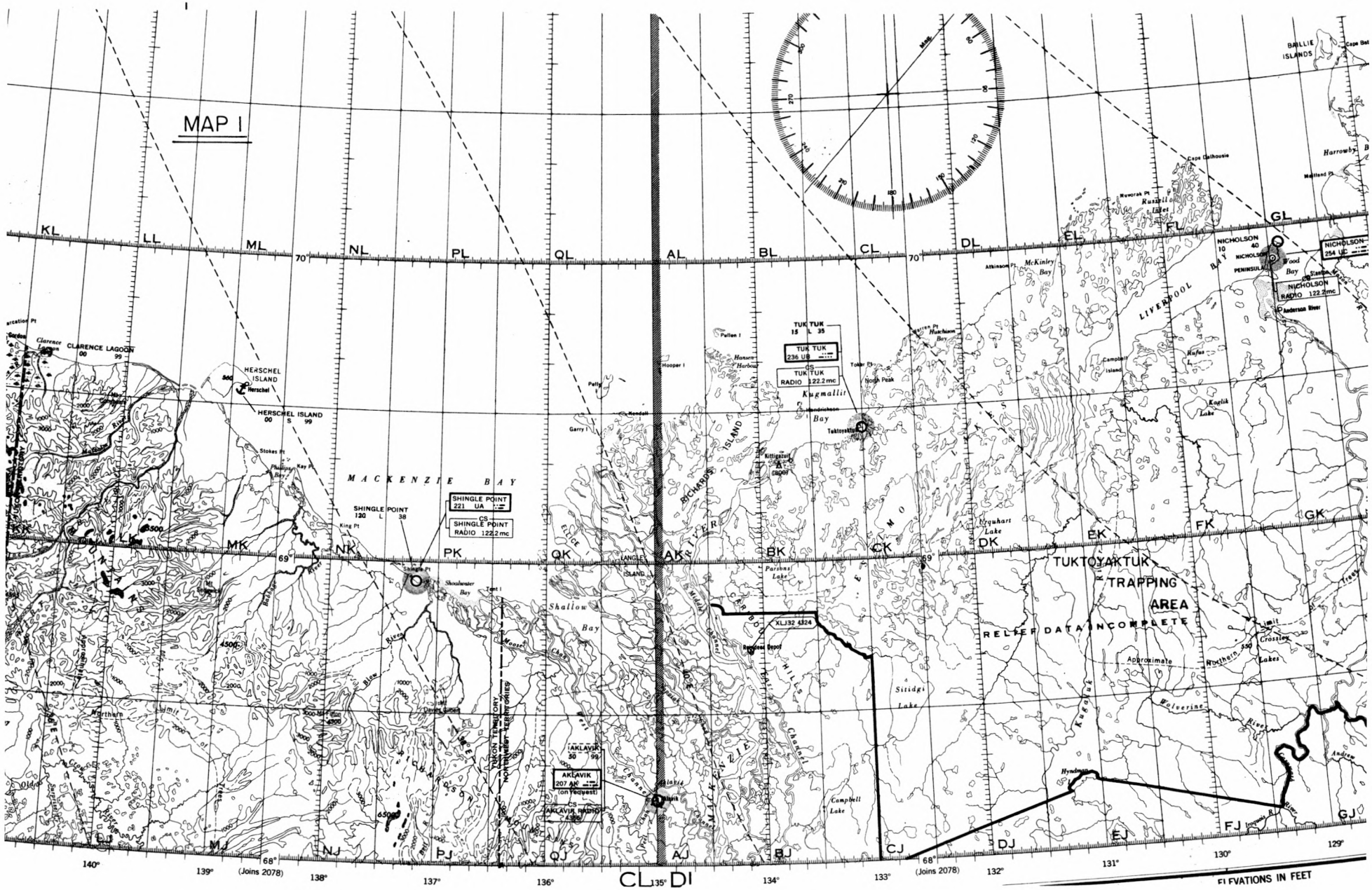
MAP I
MACKENZIE BAY
HERSCHEL ISLAND
CLARENCE LAGOON
SHINGLE POINT
221 UA
CS
SHINGLE POINT
RADIO 122.2mc
TUK TUK
236 UB
CS
TUK TUK
RADIO 122.2mc
NICHOLSON
254 UC
CS
NICHOLSON
RADIO 122.2mc
AKLAVIK
207 AK
(on Yoowest)
CS
AKLAVIK RADIO
TUKTOYAKTUK
TRAPPING
AREA
RELIEF DATA INCOMPLETE
Approximate
Shallow
Bay
Kugmallit
Bay
Tuktoyaktuk
Sitidgi
Lake
Campbell
Lake
Parsons
Lake
Moguhart
Lake
Koglik
Lake
Wood
Bay
LIVERPOOL
BAY
McKinley
Bay
Shoalwater
Bay
Hooper I
Pullen I
Hansen
Harbour
Pelly
Garry I
Hendall
Kittigazuit
(ruins)
Hendrickson
Bay
Toker Pt
North Peak
Campbell
Island
Kufus
L
Cape Dalhousie
Ruzzell
Inlet
Atkinson Pt
Warren Pt
Hutchison
Bay
Harrowby
Matland Pt
BAILLIE
ISLANDS
Cape Bat
Anderson River
Stanton
Clarence
Lagoon
Herschel
Stokes Pt
Phillips
Bay
Kay Pt
King Pt
Shingle Pt
Tent I
Blow
River
Mackenzie
Delta
Northern
Limit
Devon Lakes
Crossley
Lakes
Wolverine
River
Hyndman
Anderson
River
Atlakiu
Lake
Middle
Channel
West
Channel
Bennett
Channel
Kugluktuk
Channel
Dease
Bay
Dease
Depot
XLJ32 4324
ELLICE
ISLAND
ANGLE
ISLAND
RICHARDS
ISLAND
RICHARDSON
MOUNTAINS
YUKON TERRITORY
NORTHWEST TERRITORIES
CARIBOU
HILLS
MACKENZIE
RIVER
Mackenzie
Delta
Northern
Limit
Oldman
River
Surprise
Creek
Thirty
Mile
River
Bear
River
Arctic
Red
River
Peel
River
Mackenzie
Mountains
Clarence
Lagoon
00
99
HERSCHEL
ISLAND
00
S
99
SHINGLE POINT
120
L
38
TUK TUK
15
L
35
NICHOLSON
40
10
NICHOLSON
PENINSULA
AKLAVIK
30
99
KL
LL
ML
NL
PL
QL
AL
BL
CL
DL
EL
FL
GL
MK
NK
PK
QK
AK
BK
CK
DK
EK
FK
GK
LJ
MJ
NJ
PJ
QJ
AJ
BJ
CJ
DJ
EJ
FJ
GJ
70°
69°
68°
(Joins 2078)
140°
139°
138°
137°
136°
135°
134°
133°
132°
131°
130°
129°
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DI
ELEVATIONS IN FEET

P A R T I

HUMAN ECOLOGY

CHAPTER I

GEOGRAPHY

The population centre of Tuktoyaktuk is located within a fairly well defined geographic area which will be regarded here as the fundamental ecologic unit. From this area the majority of the residents of Tuktoyaktuk derive their livelihood; they also regard this area as being their "home" territory. It includes the coastal region of the Beaufort Sea from Herschel Island to Baillie Island, the lower half of the Eskimo Lakes and the islands of the Mackenzie River delta as far south as Tununuk (Map 1).

Topography

Topography varies only slightly throughout this area, possibly because the greater part was formed by the Pleistocene Mackenzie River delta. From Herschel Island to the west channel of the Mackenzie River a rolling plateau extends inland for a distance of ten miles or more at an elevation of more than one hundred feet to the base of the cordillera. Braided river valleys cut through this tundra zone and small lakes and ponds are frequent. The plateau drops off abruptly to the sea and narrow mud and gravel beaches extend along the shore. Herschel Island rises to an altitude of 600 feet at the centre, is tundra covered, and bordered on the shores by infrequent gravel and silt beaches.

The islands of the Mackenzie River delta are of low relief and elevation. The majority have narrow sand beaches.

The main land north and east of Tununuk is of lower relief than the western mainland. It is made up of innumerable lakes and lagoons. From Tununuk to Tuktoyaktuk the beaches are mud and gravel while from Tuktoyaktuk to Baillie Island many beaches are sandy and shelve gradually into the sea.

The water area lying between Escape Reef and Toker Point is between one and three fathoms depth while the entire shoreline between Herschel and Baillie Islands shelves gradually so that it has no more than two or three fathoms depth at a mile from the shore. Harbours are infrequent, the only one suitable for deep-draft ships being at Herschel Island. Both Tuktoyaktuk and Baillie Island harbours are limited to ships of thirteen foot draft. The coast bordering the Mackenzie delta is limited to ships of a draft of eight feet.

The shallow sea south of the latitude of Toker Point is of slight salinity varying with the season of the year. Discolouration from river silt is always present to this latitude. Freeze-up of the sea area along the coast varies between the first of October and the third week of October although it is uniformly earlier in the delta area. Break-up is likewise earlier in the places of strong current flow and occurs between the fifteenth of June and the fifteenth of July.

Shoreline erosion is definitely proceeding in this area. Various forces are at work but one of the major factors is certainly wave action on windward shores. At high wind velocities the tide may rise six feet in Tuktoyaktuk harbour. There would not appear to be a fixed rate of land erosion, however, it seems to occur discontinuously. Soil deposition in the delta efflux area is undoubtedly continuous and is making the seas more shallow although the rate is not known. Hydrographic survey teams in the summer of 1957 found that much of the water area surveyed during the summers of 1956 and 1957 was two feet or more shallower than shown by the survey thirty-some years previously. There seems to be good evidence that much sedimentation is occurring.

Climate

Climatologically the region lies within the Sub-Arctic Zone and summer temperatures compare to those of Churchill, Great Whale River and Fort Chimo. Average wind force and direction are not known but probably the prevailing winds are NNW approximately 65%, and ESE 25%, with the balance SSW. Fogs are frequent during April, May, June, September and October. Precipitation is about 10" per year and snowfall 40". Most of the rain occurs during August and September while the snow is more or less evenly distributed during the winter months.

The area around Herschel Island is subject to very high winter winds and freak "chinook" winds during April and May when the temperature rises above freezing for short periods.

Vegetation

The entire area lies north of the tree line and vegetation consists of a series of grasses, sedges, mosses and lichens with creeping willows and birches found in most of the area. There are also many alpine plants, crowberries, salmon-berries and cranberries. The

latter three are the only edible plants used by the Eskimos for food in this region.

In summary it could be said that this region is a Sub-Arctic maritime zone of low topographic relief and characteristic tundra vegetation.

CHAPTER II

SETTLEMENT

Within this geographic area permanent settlement is found at a limited number of locations (Map 1). Excluding Tuktoyaktuk which will be dealt with in greater detail these settlements and their locations are as follows:

Small Settlements

Herschel Island has an R.C.M. Police detachment of two men and one Eskimo family. The Eskimo family lives in a permanent house and is dependent for subsistence upon the police. It is infrequently visited by other Eskimos or Europeans. The total population was six during 1957.

At Warren Point four Eskimo families maintain a reindeer herd as do three familes at Toker Point. Both of these groups are migratory although they have permanent wooden houses in these locations.

At Komokok, Kay Point, Blow River, Tununuk, Tuktoyaktuk, Atkinson Point, and Cape Dalhousie, D.E.W. Line radar installations are located. The majority of the population is European although two families of Eskimos live at each of these sites. They are housed in wood and canvas tents and are entirely dependent for subsistence upon the D.E.W. Line. These families have lived within the defined geographic area all their lives and previous to this employment were close to the major settlement of Tuktoyaktuk.

Tuktoyaktuk

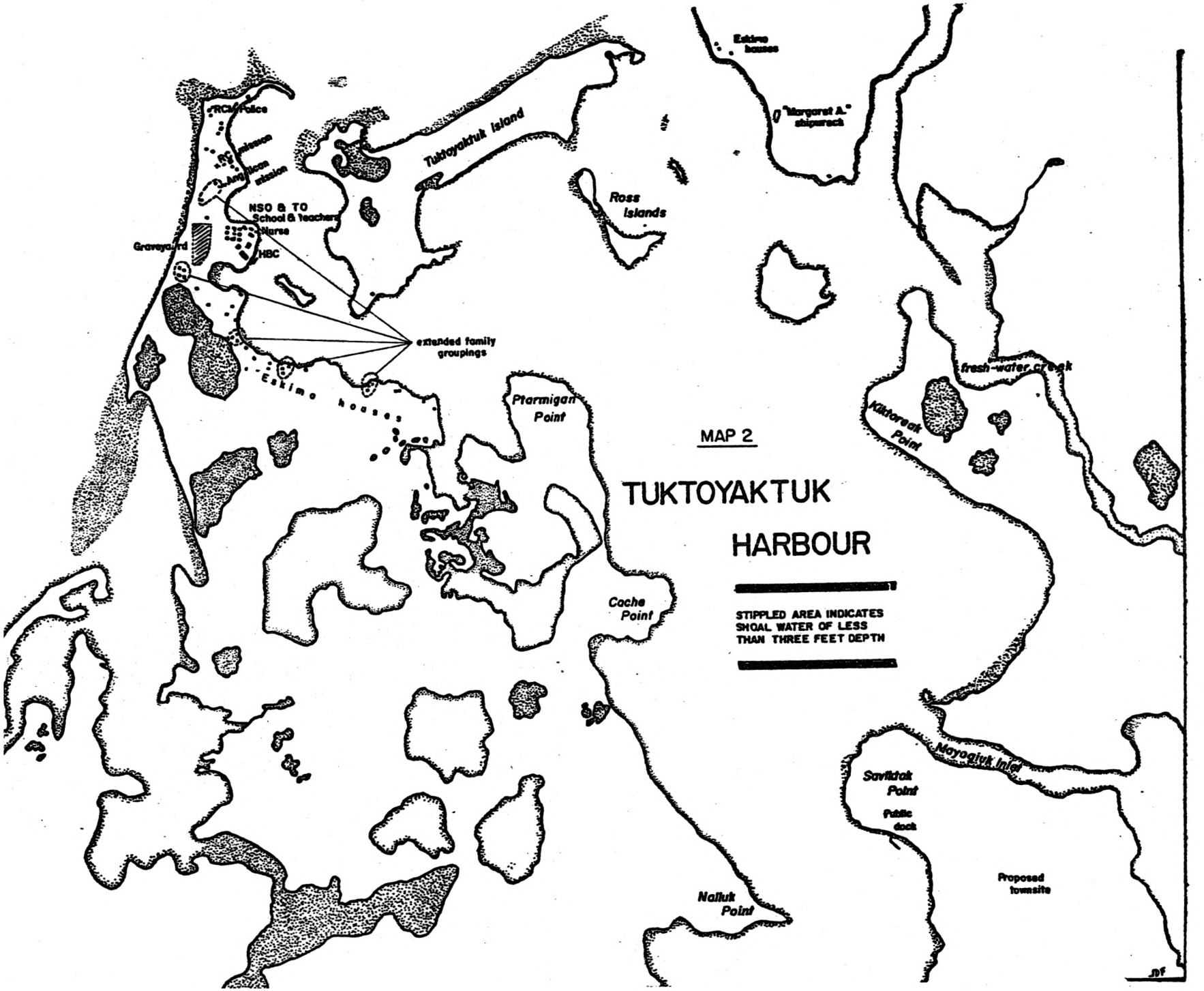
Tuktoyaktuk is a settlement of linear type located on a gravel bar which fronts the Beaufort Sea on its west side and a complex lagoon on its eastern side. It is the only ship harbour of the Mackenzie River delta and occupies a central position within the geographic area.

The harbour runs inland in a south-westerly direction for approximately seven miles with water depths of approximately two and one-half fathoms and provides suitable anchorage for large ships. Shoals complicate harbour entrance for ships of more than eight foot draft. A maximum of thirteen foot draft is permissible. A public dock and a transfer warehouse of Northern Transportation Company were under construction in the southwestern part of the harbour during 1957 (Map 2).

Photo 1 - Looking north over the main part of the Eskimo residential area at Tuktoyaktuk, N.W.T. June, 1957.

The residential area is located on the gravel bar forming the northwest enclosure of the harbour. The R.C.M. Police and Hudson's Bay Company Transportation Division occupies five frame buildings on the northward end, the R.C. Mission is located immediately to the south, as is the Anglican Chapel. Two hundred yards to the south of these buildings is the major concentration of European population. The Hudson's Bay Company maintains its transportation dock, warehouse and store; the Anglican Church has a residence for its missionary, and the Federal Government either maintains or is building three school buildings, a nursing station, four residential homes for employees, and a powerhouse. All the buildings occupied by Europeans are of frame construction and built of imported materials.

The Eskimo population occupies a small part of the area north of the Hudson's Bay Company store but is concentrated principally in the area to the south. During the summer every family pitched a wall tent


MAP 2
TUKTOYAKTUK
HARBOUR
STIPPLED AREA INDICATES
SHOAL WATER OF LESS
THAN THREE FEET DEPTH
RCMP Police
Anglican mission
NSO & TO
School & teachers
Nurse
HBC
Graveyard
Tuktoyaktuk Island
Ross Islands
Eskimo houses
"Margaret A." shipwreck
extended family groupings
Eskimo houses
Ptarmigan Point
Cache Point
Nalluk Point
Kiktorak Point
fresh-water creek
Mayogiuk Inlet
Savikdak Point
Public dock
Proposed townsite

averaging 10' x 14' in dimension beside their winter quarters. The winter quarters are of a variety of sizes and constructions but the dominant type is of logs with a peak roof. The average dimensions are approximately 14' x 22'. There are 25 log houses and 11 frame houses.

In addition, two families occupy winter quarters on the mainland shore East of Port Brabant Island. One house is of logs and the other of frame construction. A total of 54 nuclear families had continuous residence at Tuktoyaktuk during the summer of 1957. This indicates the likelihood of multiple family usage of houses during the coming winter unless population emigration takes place. Thus the number of persons occupying each permanent house would average 9.4 during the winter of 1957-58.

The land area of the settlement is divided into northern and southern areas by a hill, about one hundred feet high upon which no houses have been built. Limited parts of the occupied area are marshy although only to the southwest of the settled area is the ground low. Drainage is better than in most other surrounding land areas. The average elevation above sea level is approximately fifteen feet. The seaward side of the settlement is said to be eroding rapidly although the majority of Eskimos maintain that only the northern-most extremity is washing away. Erosion there has been rapid and could result in the disappearance of 200 feet of land very shortly.

The actual location of the settlement is conditioned by two factors: (1) the natural advantages, and (2) the location of the Hudson's Bay Company store.

Because the gravel bar is at the entrance to the harbour its shores are ice-free about the 10th of July, several weeks earlier than the area near the public dock. Freeze-up is also delayed until approximately the 15th of October. During the relatively warm summer mosquitoes are very dense in the upper harbour but the settled area is relatively free of them. Other natural advantages are the protection afforded to small boats from the prevailing wind, and the ease of setting fish nets along the protected shore. Nearly a month more fishing time is gained by locating nets near the settlement because of the longer season of open water.

Small boats are anchored or beached at almost every place along the harbour side of the settlement. No matter how strong the wind, shelter is provided. The gravel beach drops away sharply providing an average of

three feet of water six feet from the shore. Numerous anchorages for schooners are available and also suitable areas for marine haul-out of these larger vessels.

During the open water season fresh water has to be collected from a creek two and a half miles southeast of the main settlement; during the winter ice is collected from the numerous ponds lying on the mainland southwest of the settlement. Water or ice is stock-piled and stored in oil drums during freeze-up and break-up. There is neither a sewage disposal system nor a pressure water system in the settlement. The Eskimos have constructed a number of out-houses; the Europeans have chemical toilets in their homes.

Tides average 18 to 24 inches between rise and fall although a northwest wind may cause the water to rise six feet. Low water during the autumn reduces the water level one foot or more making access to the fresh water creek difficult.

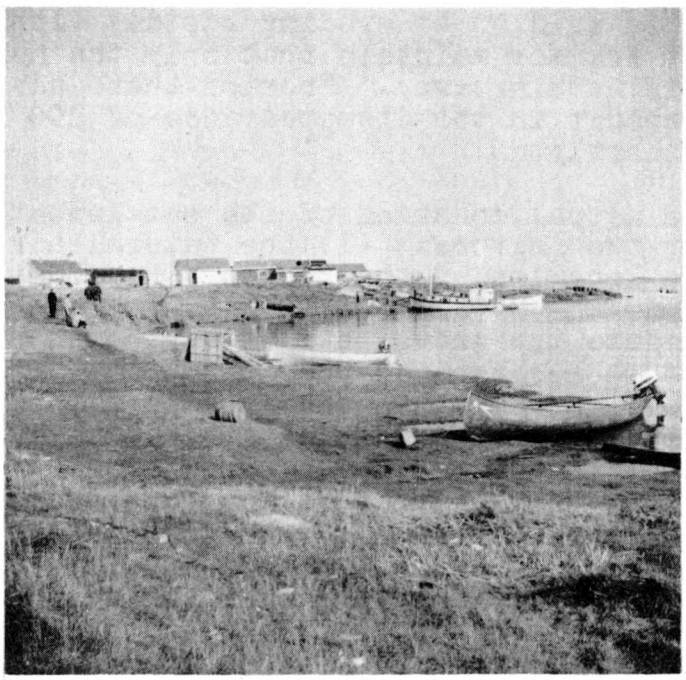


Photo 2 - One of the anchorages and beaching areas for small boats on the lee shore of Tuktoyaktuk harbour. In the background, far left, is the Roman Catholic chapel and in the centre is the Anglican chapel. Along the shore are examples of the four types of boats in use: schooner, whaleboat, skiff and canoe. August, 1957.

The water immediately below the winter ice is fresh and during the spring the open water along the shoreline also remains fresh. It became progressively saltier during the summer as the water from Beaufort Sea entered the harbour. Currents flow anti-clockwise in the lower harbour creating a considerable flow-rip at the northernmost extremity of the settlement. The upper harbour has very weak currents subject mainly to tide ebb and flow. No contamination is evident although berthing of the D.E.W. Line supply convoy during September of 1957 resulted in considerable quantities of oil accumulating along the southern shore of the harbour.

In summary, the water area surrounding Tuktoyaktuk is of critical significance in determining the size and location of the settlement.

CHAPTER III

RESOURCE USE

The constellation of wood, fish, and transportation provides subsistence while fur, wage employment, and transportation form the basis of a money economy.

This group of resources is crucial to the provision of both subsistence and money wealth. Without efficient means of transportation no other economic activities could be carried out.

Dog teams and sledges are the normal type of winter transportation. For land use the manufactured Nome sleigh or the splint toboggan is used and between three and six dogs harnessed in single file. Depending on the number of dogs, a toboggan could pull loads up to 500 pounds while a Nome sleigh could take loads of approximately 800 pounds. The traditional ice sled with large timber runners is not used frequently since most travel is done over land areas.

There are twenty-five teams of three or more dogs in the settlement making approximately one team for every two families. Only eight of these teams are large enough and in good enough condition to travel for any distance or for any time longer than two or three days. The dog teams are used to visit trap lines and to haul wood and ice for the household. During the summer they were idle, kept chained, and were poorly fed--on the average once in two days. To be fed properly a dog requires a minimum of three pounds of fish a day. During the late winter, prepared dog food was purchased by many families because they no longer had fish. Some evidence of mongrelization of the Husky breed is apparent and the results are inferior work animals, according to the Eskimos.

Canoes and skiffs with outboard motors are the usual forms of summer transportation. Eskimo-owned boats in operation are as follows:

Type	Number	Average Cost per Unit $
Freight canoes	28	350.00
Skiffs, rowboats	12	300.00
Outborad motors	36	325.00
Whaleboats - over 20'	3	2,500.00
Small cabin cruisers - under 20'	1	2,000.00
Schooners - over 24'	3	15,000.00

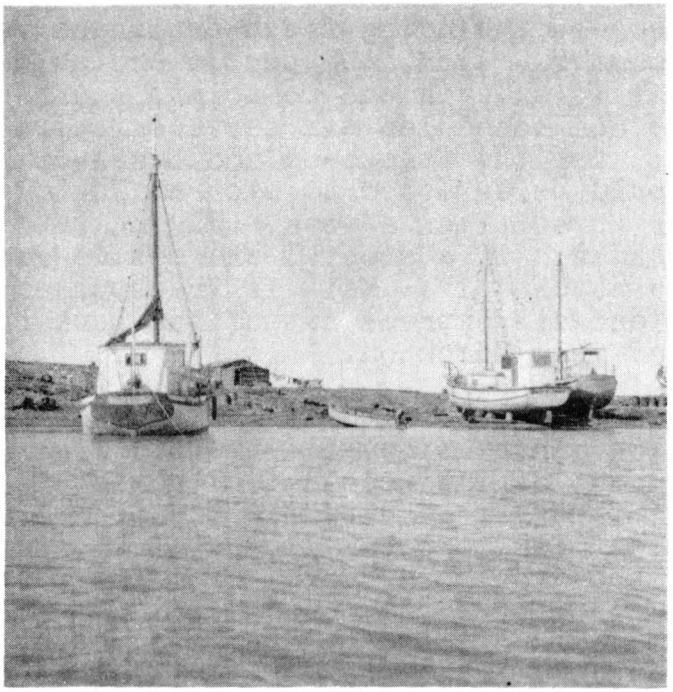


Photo 3 - Three of the four schooners owned by Eskimos of Tuktoyaktuk. The "Saucy Jane" was launched later in the summer. July, 1957.

Numerous other large boats are beached and are not operable or repairable. The trend in boat purchases is towards smaller and lighter boats with canoes being preferable because of their low cost-to-load ratio.

Canoes and boats are used for fishing, hauling water and wood, and for pleasure travelling. The average small boat was used 350 hours a season while the larger boats were used approximately 150 hours. At least half the small boat operation is for pleasure travel, while the major portion of large boat operation is for work purposes. Most of the large boats are twenty-five years old and in a poor state of repair. One new whaleboat and one cabin cruiser have been built and sold in Tuktoyaktuk during the past year, while 12 canoes and small boats have been purchased. Boat motors have a life expectancy of less than five years, and are poorly maintained. Parts are not available in Tuktoyaktuk but have to be shipped in from Edmonton.

Tuktoyaktuk is the northern terminus of the Mackenzie River water transportation system, and the residents are able to take advantage of low freight rates (averaging $85.00 a ton from Waterways, Alberta, to Tuktoyaktuk). This enables them to purchase a wide variety of goods, including fresh fruit and vegetables during the summer. Also, the people are able to travel easily by air to Aklavik and to points south via one of the frequent non-scheduled air services operating in the area. Except for the freeze-up and break-up periods an aeroplane could be expected to stop at Tuktoyaktuk at least two or three times a week. Flying rates are $120.00 to Aklavik if a special charter is required or $60.00 for a "backhaul". Mail is transported by plane at air mail and air express rates, the latter being $1.25 a pound from Edmonton.

The D.E.W. Line site at Tuktoyaktuk is also a transportation centre since all traffic from the other sites within the defined ecological region is channelled through it. This has resulted in the formation of a small transient Eskimo population at Tuktoyaktuk during the periods they are being moved from one site to another.

Radio communication is carried out by the Hudson's Bay Company's commercial station to the south, and east-west traffic is handled through the Hudson's Bay Company and the D.E.W. Line. Radio communication is utilized fully by the administration and to a more limited extent by the Eskimos whose interests and needs to contact other population centres is not great.

During the summer period boats are required for transportation between the settlement, the D.E.W. Line site, and the public dock. This is the only possible method of communication between these points. During the summer high winds make it impossible for small boats to travel back and forth. A road connects the D.E.W. Line site to the settlement but is used only by the radar station personnel who have motor vehicles.

In summary it can be said that water transportation is of great importance and utilization of water transportation is restricted only by the capital funds available for boats. It must be added, however, that canoes and small boats have been found to be unsuitable for open water travel outside of the Tuktoyaktuk harbour. Many of the residents, therefore, are restricted to the immediate harbour area.

Driftwood is used for heating and for housing at Tuktoyaktuk. Large quantities are deposited by the waters of the Mackenzie River on the beaches of the delta region. Progressively smaller quantities are found towards Herschel

Island in the west and Baillie Island in the east. The size of the driftwood varies from logs of two feet in diameter and a foot in length to the smallest usable size of one inch by one foot. Quantities deposited yearly can not be estimated but are considerable. Any one area has a limited amount of wood available, however, and much of this is already rotten.

At Tuktoyaktuk each house burns an average of fifty pounds of wood a day during the year. During the summer wood is gathered by canoe and boat; only a few families attempted to stockpile logs. During the winter dog-teams and toboggans are used to haul wood but its bulky nature restricts each load to 150 or 200 pounds, enough only for two to three days consumption. Approximately one-quarter of the houses have small commercial wood stoves while the majority have stoves made from half of a 45 gallon oil drum.

Photo 4 - Older children playing ball at about 1:00 a.m. Two of the boys wear leather "motorcycle" jackets while one wears a parka. The girls are dressed in calico "Mother Hubbards". In the background is a typical frame house built of plywood. June, 1957.

Because of the size of population at Tuktoyaktuk and the difficulty of winter recovery of wood, families must range further afield each year for a wood supply. One Eskimo owns a snowmobile which he uses occasionally to haul wood for sale. A load of approximately 800 pounds is sold for ten dollars. When one Eskimo hauls a sled load of wood for another he charges two or three dollars.

Most of the houses at Tuktoyaktuk are built from drift logs floored and roofed with imported lumber. About 40 logs are required for a house and the price paid, if purchased from other Eskimos, is between five and eight dollars a log. Finishing lumber costs another $200. to $300., making the cost of the average house approximately $500. A typical frame house constructed by Bobby Taylor and of the same dimensions cost approximately $1000. The Eskimos maintain that a lumber house is never as warm in winter as a well constructed log house. If constructed with care a log house can be expected to last twenty years and even longer if regularly maintained.

Photo 5 - Three different types of houses at Tuktoyaktuk. One, the far left, is a frame house, in the centre a log house, and on the far right a house of frame and log construction. July, 1957.

The majority of the Eskimos said they lived at Tuktoyaktuk because there is an ample wood supply. Certainly this was a crucial factor in the concentration of population there.

The Primary Resource

Fish is the most readily available food resource throughout this entire region. Common species are whitefish, at least two varieties of herring, smelts, and the large fish-inconnu or "connie". Smelts are not utilized in any way.

Winter fishing is carried out at the Eskimo Lakes or other nearby fresh-water lakes by placing nets under the ice. In late winter some "jigging" with hook and line is done in Tuktoyaktuk harbour. Most of this winter fishing is done of necessity, to augment the diminishing stock caught during the Fall.

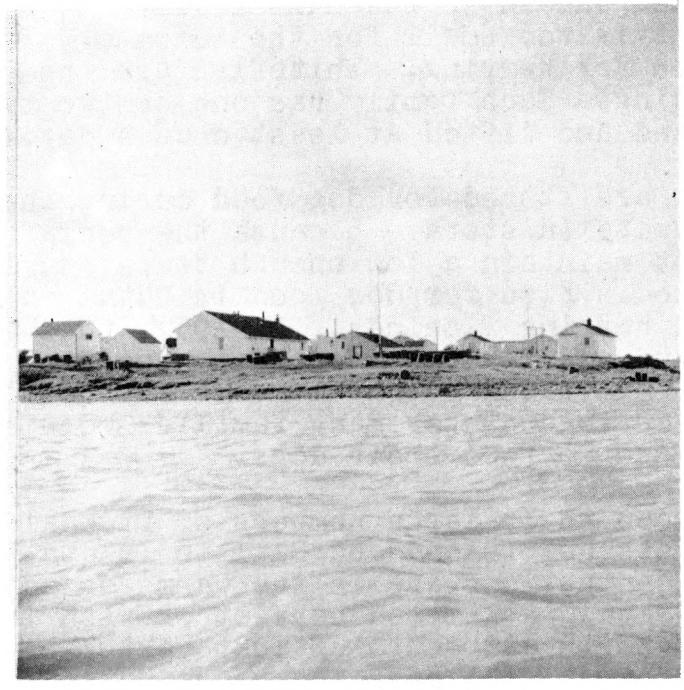


Photo 6 - The European section of Tuktoyaktuk showing the school building in the foreground. August, 1957.

The Fall fishing normally takes place in the harbour of Tuktoyaktuk at the end of September when herring enter the harbour. They are caught with sweep nets in the shallow water east of Port Brabant Island. Perhaps one year in five the herring do not enter the harbour and another year in five the harbour begins to freeze before the harvest is completed. The average annual harvest over a five year period would be fifty tons.

The average family at Tuktoyaktuk uses twenty pounds of fish a day. At this rate of consumption the proceeds of the autumn's fishing will support the population for three months with no other resources used. In actual fact the fish supply lasts on the average until the end of February.

The summer fish supply is gathered daily from the time the ice begins to pull away from the shore until freeze-up. Average yields are 30 pounds a day which allows for some fish to be dried and stored. Drying is done by splitting the fish, removing the backbone, head and ribs, scoring the inside of the fillets then hanging them from a rack in the sun. Fish are occasionally smoked after preparing them in this manner.

Summer fishing is conducted by means of nets of approximately 30 feet by 6 feet and of 3½" or 4½" mesh. This size is most suited to the numerically larger whitefish although it is too small for the inconnu. It is too large a mesh for herring. Whitefish are the preferred species for eating. Each family has one or two nets which are visited and lifted at least once a day.

No fish are stored for dog food during the summer. There is difficulty in storage because the permafrost icehouses do not maintain a low enough temperature during the summer period. Fish for dog food is obtained wholly from the autumn herring fishings. In 1957, this was a total failure and all families found it necessary to start late fishing in the nearby lakes. Personal reports indicated that during October many families were securing barely enough fish to feed their dogs.

There seem to be large numbers of fish along the coast between Herschel Island and Baillie Island. Undoubtedly the densest concentrations are in the warm sea adjacent to the Mackenzie delta. A limited harvest of fish is taken along the coast north and south of Tuktoyaktuk but again it is done with short gill nets and these nets are set spasmodically. The size and condition of boats plus limitations of skill and fishing equipment make the bulk of the fish harvest of necessity a harbour operation. The summer fish resources are only partially utilized.

The vast water area of the Eskimo Lakes and their fish resources are an almost unknown quantity since few Eskimos have fished there in recent years. In addition to the above mentioned species there are quantities of arctic char available there. The presence of large

quantities of shrimp or sea-fleas make net-fishing hazardous since the fish caught in a net can be wholly devoured by shrimp within a few hours. Winter transportation of fish is easily accomplished by sleigh or bombardier over an overland route--a distance of fifteen miles. In summer, transportation could be by air or by water--the latter a journey of some two hundred miles along a difficult coastline.

Fur varies in both the quantity and the extent of its exploitation. Species of fur common to the area are muskrat, found in the delta proper thirty-odd miles to the south of Tuktoyaktuk, white fix, found principally along the coast between Tuktoyaktuk and Baillie Island and to a lesser extent on the islands and mainland to the west, marten, found in quantity along the Anderson River, and mink, occasionally found in the Mackenzie delta.

Muskrat trapping for Tuktoyaktuk residents has been restricted since 1953 to the region shown on Map 1. A few families have registered trap lines within the area set aside for Aklavik residents but the majority have access only to the undivided area to the west. This area gives a poor yield and, according to the Eskimos, gives the average trapper approximately 700 pelts during a season. None of the Tuktoyaktuk trappers have trapped there for two seasons.

The majority of Eskimos do not trap muskrats but shoot them with a .22 calibre rifle for a two week period during the open water of spring. A canoe, a supply of ammunition, and food are all that are needed. A large proportion of available muskrat are lost to the trapper when only this type of hunting is practised. A few skilled trappers work the "push-up" in March and set their traps in April, then make a "clean-up" of their area during late April and early May. This type of intensive trapping requires a good dog-team and the ability to remain upon the trap line for long periods of time.

White fox have not been intensively trapped for the last two seasons partly because of low prices and partly because many trappers were working on D.E.W. Line construction. During the winter of 1956-57 approximately 3000 traps were set along the coast and on the islands. The yield was 160 foxes divided fairly evenly among ten trappers. It is estimated that double that number could have been trapped if trap lines had been visited more frequently.

Photo 7 - A typical interior of a log house. Seated on the left is Edward Jacob Kikuak. July, 1957.

Photo 8 - Roy Kikuak plays the accordian in another view of the interior of the same house. July, 1957.

The number and quality of dogs available to the fox trapper determines the length of his trap line. The average one is perhaps twenty miles long although Eddie Gruben with a snowmobile was able to run a trap line 200 miles long. He took three days to cover this distance where by dog team he took two weeks.

The fox cycle of four years shows one peak year and one low year of yields. We may assume that 160 is a low and that the peak yield may be expected to between six and seven times as great--if we assume that the cycle follows the same pattern as that shown for the rest of the Western Arctic. An average yearly fur take over a four year period could be expected to be approximately 500 for these same ten men or an average of 50 pelts per year. Actual fur statistics are not known so all figures are estimates.

None of the Eskimos from Tuktoyaktuk has gone trapping on Banks Island for two seasons. Before that much of the white fox traded at Tuktoyaktuk and Aklavik could be credited to this area rather than the home territory of the trappers. The cost of outfitting a family for a year at Banks Island ran between $1200. - $1800. Conditions of living there were difficult; the work was very hard. Many Eskimos are reluctant to impose this exile upon themselves, although two families of Eskimos from Tuktoyaktuk plan to spend the winter of 1958 - 59 there, a season of expected peak yields.

Marten are found in numbers only in the valley of the Anderson River. Twnety years ago some Eskimos and a few white trappers made a livelihood from trapping this valuable fur. A quota imposed in 1940 made marten trapping uneconomical. Next season the quota will be lifted but low prices are unlikely to draw Eskimos into this type of trapping.

Mink pelts make up an insignificant part of the fur crop. They are caught in the delta area south of Tuktoyaktuk and provide only a very small income to Tuktoyaktuk trappers. Coloured foxes are in the same category.

The fur crop provides a basic but varying income to the Eskimo. It is difficult to estimate the extent of its potential utilization because many trappers have been diverted into D.E.W. Line employment and, too, the exploitation of fur resources was not complete during periods of low prices or when the fox population was low.

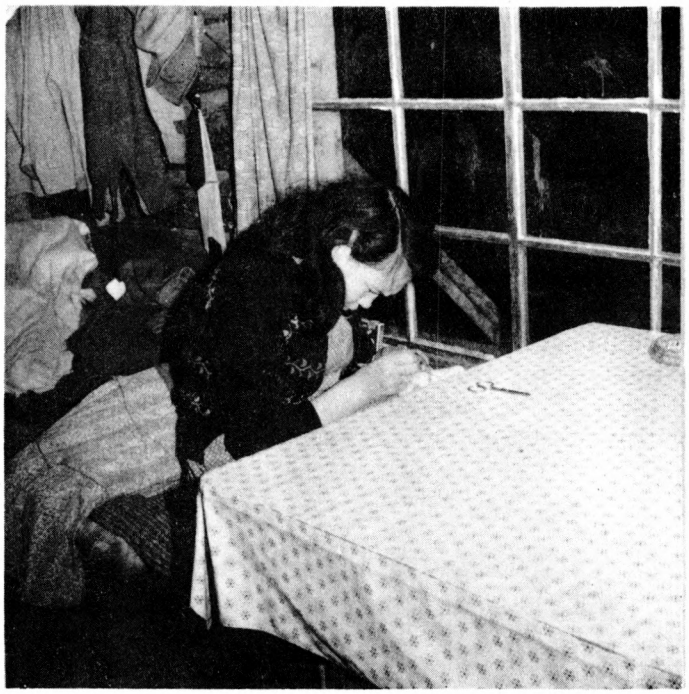


Photo 9 - Elizabeth Kikuak embroiders a slipper in another view of the same house. July, 1957.

Photo 10 - Emmanuel Felix, the "chief" of Tuktoyaktuk, threads backing line through a fishnet. July, 1957.

Wage employment has provided a basic income for many of the adult men of Tuktoyaktuk for several years. Of a possible labour force of sixty, fifteen men worked for various lengths of time at D.E.W. Line construction. During the summers of 1956 and 1957 an average of twenty men were employed for four months by Hudson's Bay Company Transport Division as stevedores. In addition, five men were employed in labouring jobs at the new public dock. The income of the D.E.W. Line workers cannot be estimated precisely because they worked for varying periods. The average Hudson's Bay Company Transportation employee earns $1200.00 during the summer period, as did the five workers at the public dock. Three men are employed permanently by the administration and receive salaries of approximately $2500.00 per year. Two men work for the nearby radar site and earn about $3500.00 each per year plus food and fuel oil for family maintenance.

About one-half of the employable male population have wage employment for part of the year. It is unlikely that more jobs would have takers since a sizeable proportion of the available proportion of the available workers have interests which keep them from wage employment.

Other Resources

Whaling is a short-lived activity occurring between the middle of July and the middle of August. Sixty-two whales were captured by Tuktoyaktuk residents in 1957 and fifty-odd by Aklavik residents. Whaling is done at either Hendrikson Island, fifteen miles west of Tuktoyaktuk, or by the Aklavik residents at Whitefish Station, near the old village of Kittigazuit.

Only three boats of sufficient size and power were available for whaling at Tuktoyaktuk during the summer of 1957. The technique used is to single out a whale, chase it and attempt to kill it with high-powered rifles, and then throw a hand-held harpoon into the whale before it sinks and is lost. Of all the whales hunted and killed approximately one-third are lost to the hunter. When the total number of whales captured has reached the load-limit of the boat the return journey is made to Tuktoyaktuk. The whalers at Whitefish Station cut up their animals there and render the meat on the spot.

Muktuk or whaleskin is stripped, allowed to air dry, then boiled and placed in barrels for storage. The blubber layer is stored in barrels outside or in ice-houses, while the black meat is air-dried and kept unrefrigerated. An average size whale yields about 1000

pounds of muktuk, blubber and meat, the blubber being the bulk of weight. Muktuk and black meat are a staple human food while blubber and oil are used for dog food. Some Eskimos estimate that the average family could use three whales per year, but on the average only one per family is caught. Two whale-nets are in existence at Tuktoyaktuk but were not used during the 1957 season.

Reindeer and caribou are available food resources within the area--caribou being available only west of the delta area and along the coast nearly to Herschel Island. These animals are not fully exploited by the Eskimo because they are a long distance away from the main population centres. According to the Eskimos caribou migrate either east or west of the Richardson mountains, depending on climatic conditions. In any event, they frequented the Arctic coast between Blow River and Herschel Island during the summer of 1957. It was not possible to obtain an estimate of their number. A few caribou were seen in the area south of Baillie Island but because there were so few of them and they were so far away none of them were killed.

Reindeer herds are maintained at Richards Island, Warren Point and Toker Point. The available meat supply from these animals is in the neighbourhood of 84,000 pounds of meat and bone per year. Approximately 10,000 pounds of reindeer meat was sold at Tuktoyaktuk and the remainder at Aklavik at a cost of approximately 38¢ per pound.

Since about 25% of the Mackenzie delta population lives at Tuktoyaktuk and something less than 10% of the total meat supply is sold there, it would appear that utilization of available meat was not complete. The European residents are permitted to buy reindeer meat and there is a certain competition between them and the Eskimos for the limited supply which is presently available. The herders sell their animals by the whole carcass. This creates a problem for the Eskimos as they do not have enough money to buy the whole carcass.

Gamebirds are used as a source of food during Spring and Autumn throughout the area. Tuktoyaktuk does not seem to be located along a major flyway so the number of birds taken is a moderate one.

Income derived from family allowance payments and relief rations constitute a significant resource in this area. Family allowance payments per family average $350. annually. Less than 1% of the population of Tuktoyaktuk

received destitute rations during 1957 but it was expected that this percentage might reach 5% during the following winter. Four persons receive old-age pensions but only three of them are totally dependent for livelihood on this allowance.

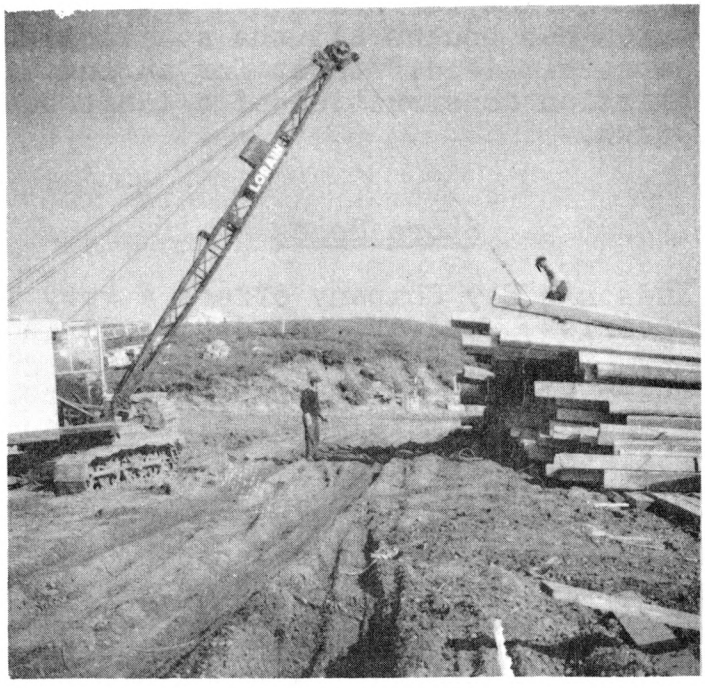


Photo 11 - Construction of the public dock at Tuktoyaktuk continued steadily during the summer of 1957. Moses Raddi is feeding timbers to the grab-hook of the crane.

Handicrafts sold through the school during the twelve month period ending August 1957 brough in a total of $2066. It is estimated that private sales added another $1000. to this total.

The boat building project permanently employs three men on salary. Each man is earning approximately $3000. a year. The boats produced on the whole have been cheaper in price and more suitable than those which are imported. Technically, the Eskimos who are employed on this project own the business but in practise the Roman Catholic Mission pays them salaries at an hourly rate upward of $1.35 per hour. For the past two years this business has shown a small net profit.

About ten boats have been built each year--the majority being 16 foot "jolly boats" which are sold for approximately $350.00. Three whaleboats 28 feet in length have been built and sold, less engine, for approximately $1500.00 each. Little boat repair work is being done. The size and poor construction of the present boat shop limits production, as does the lack of power tools and suitable boat-building lumber.

The main market for boats has been the Hudson's Bay Company which has bought all the available boats produced to date. It is difficult for an individual Eskimo to commission construction of a large boat unless he has ready cash.

Store Goods

The Hudson's Bay Company offers a very large variety of groceries, hardware and dry goods in its store at Tuktoyaktuk. Most of the items found in a general store in northern Alberta can be purchased here. Prices of most items are approximately 85% higher than those in a rural Alberta store. The exceptions are rifles, ammunition, and traps, which are sold at Edmonton prices.

Store goods are more important for the wage earners than for the group of Eskimos living largely on county food. The latter use the store only for hard-goods and luxury foods. The wage earners, of necessity, obtain most of their food from it during the summer period.

The volume of mail order business is unknown, but it is a small proportion of the total of store business and is of more use to the Europeans than the Eskimos. Air express rates make mail order goods as expensive as the same articles bought from the Hudson's Bay Company. One Eskimo ordered bedroom, living room, and kitchen furniture for his home last winter and it was delivered by boat during the summer. Considerable quantities of goods were ordered C.O.D. and not claimed when delivered.

Clothing at Tuktoyaktuk is bought from the Hudson's Bay Company or made from materials purchased there. Some reindeer or muskrat parkas are used by men during the winter but the majority use duffle and Grenfell cloth parkas. Women buy calico to make "Mother Hubbards" although some of the younger girls had adopted the short gabardine and duffle parka with a zipper front. Children are dressed in store clothes. Aside from parkas, the only clothing of native manufacture is the moosehide-soled "kamik" or slipper worn universally by men and women. A few boys wear store boots.

Photo 12 - Sales were brisk over the counter of the Hudson's Bay Company store. July, 1957.

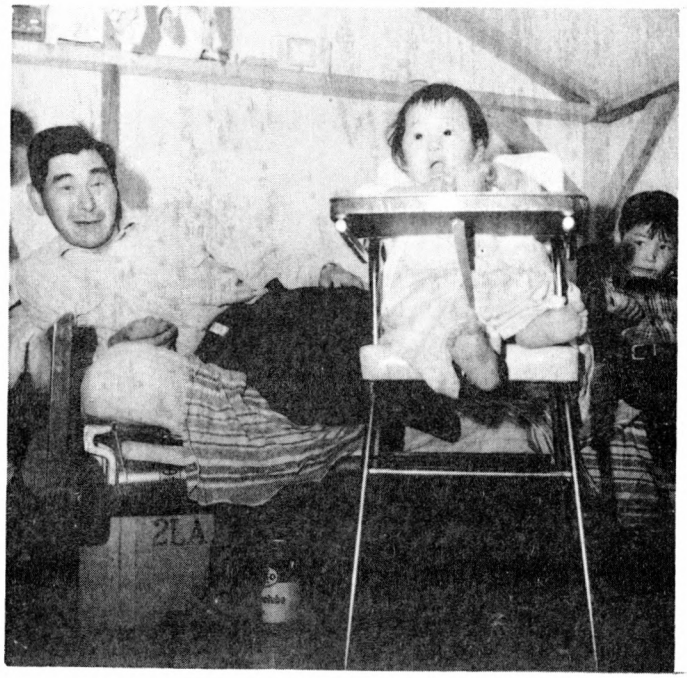


Photo 13 - Emmanuel Felix and his two sons relax in their framed tent. A wealthy man, he has many European goods. July, 1957.

Women's summer clothing differed little from winter clothing, but many of the men wore fabric or leather windbreakers, sportshirts and gabardine trousers. The men of the settlement probably spend three to four times as much as the women on clothes.

CHAPTER IV

ECONOMICS OF THE REGION

Although very few statistics are available for this region considerable information was obtained from individuals at Tuktoyaktuk. The table shown as Appendix I gives estimated income by families of the residents of Tuktoyaktuk including the reindeer herders of Toker and Warren Points but excluding the D.E.W. Line workers at places other than Tuktoyaktuk. The incomes shown are for the year ending August, 1957, with the exception of trapping income which was averaged over a four year period.

The average income per family was approximately $1850.00 and the per capita income $295.00 during 1956-57, both incomes being substantially higher than those for Eskimos at other Arctic settlements. The sources of income for the Eskimo community were as follows:

Trapping			11%
Permanent Wage Employment	28%	=	60%
Casual Wage Employment	32%		
Family Allowances	17%	=	22%
Old Age Assistance & Relief	5%		
Sale of Country Food			6%
Handicrafts			1%

It is significant that income from trapping was exceeded greatly by that from wage employment and even by that from family allowances. Indeed, income gained by social legislation is second only to that from wage employment. Although there is a relatively intensive handicraft industry at Tuktoyaktuk, the income derived is very small. This may be caused by the nature of handicraft production--most of the basic material is purchased from a store before manufacturing and this cuts the profit to the worker very drastically.

There is a great variation in the ways income is spent among the different families at Tuktoyaktuk. An average budget would be as follows, assuming an income of $1850:

Item	Amount Spent	Percent of Total
Store food	$1000.	55
Store clothing	300.	16
Boat maintenance	150.	8
Gas and oil	100.	5

Item	Amount Spent	Percent of Total
Hunting and fishing equipment	100.	5
House and furnishings	100.	5
Dog food	50.	3
Country food	50.	3
	$1850.	100

Those with lower incomes spend less on store food and those with higher incomes spend more on capital and durable goods such as boats, house furnishings and clothing. It is particularly difficult to assess the actual income of the different families as distinguished from their monetary income. For this purpose the working population will be enumerated by occupational groups.

Photo 14 - Lunch break during the reindeer round-up at Toker Point. Tea is in the containers to the left. July, 1957.

Wage employment comprise the largest occupational group at Tuktoyaktuk. Only one-third worked permanently; the remainder worked for the transportation company during three months of the summer.

The permanent employees include the Federal Government employees, the Hudson's Bay Company employees and the D.E.W. Line employees. The R.C.M. Police Special Constable and the D.E.W. Line employees are supplied food, fuel oil and housing, if they wish, and are given a salary between $200. - $350. a month. This income would be spent entirely on clothing, household furnishings, and luxury goods since subsistence is guaranteed. This group enjoys the highest actual income, perhaps $500. - $400. a month, of any of the residents at Tuktoyaktuk.

The casual employees occupy an ambivalent economic position. All of them are trappers and hunters but the greater proportion of their income is obtained during the short summer period. Approximately half the average casual worker's income is spent during the work-period. Most of this is spent on food and the remainder on dry-goods. Fresh vegetables and fruit, fresh eggs and soft drinks are the foods most in demand. Each family was able to save approximately half its summer income for purchases of winter food or hunting and trapping equipment.

Because of a work-week of approximately 60 hours, few of the casual wage-earners are able to lay by stocks of winter foods and many of them are unprepared, therefore, for winter trapping. The shortage of fish for dog food would require the purchase of correspondingly greater amounts of this essential commodity by those families during the late winter of 1957. Thus, they become more dependent upon store food and a money economy.

Trappers, hunters and gamblers form another economic group. All these occupations are characterized by the unpredictable nature of the returns, and the wide variation from year to year in an individual's income.

The skilled trapper is often the skilled poker player and derives a large part of his income from gambling. At least five families are dependent to a large extent upon gambling income for their subsistence. It was impossible to estimate the gambling income of this small group but it would appear that the wage employees lost, as a group, approximately 15% of their income or about $10,000. Some of this money left the community in the pockets of transients but the greater part was won by the professional gamblers.

Trapping income averages $200.00 per year per family for the community although the skilled trappers average more than $500.00 income per year. When the income from gambling is added to this, the skilled trapper has placed himself in a higher income bracket than a superficial

estimate would indicate. Of course, the trapper has more capital expenses than the person dependent on wage income. He must spend more on hunting equipment, must lay up a larger supply of dog food and must usually depend more upon country food for his own subsistence. These men tend not to work for wages and to spend more of their income on capital equipment and less on store food. After a lucky evening at gambling they frequently buy a new canoe, outboard motor, rifle, or some other major piece of equipment.

Boat builders occupy an anomalous position in the economy. During the summer of 1957 there were three men employed permanently at this profession. Their incomes averaged $300.00 a month which placed them towards the top of the income scale. These men spent a proportionately larger amount on store food since they worked a forty-eight hour week and were unable to hunt or trap.

The corporate organization of the boat building project is not definite. Theoretically the project was a partnership owned by two of the workmen operating on a $6000.00 loan from the Eskimo Loan Fund. This capital sum allowed material to be ordered and paid for in advance and provided wages during the winter period while the boats were being built. The supervision of the project was under Fr. Franche O.M.I. During the years 1955 and 1956 the men were paid on a piece work basis, a system not to their total satisfaction. They were put on an hourly rate during the spring of 1957 and appeared to be much more satisfied with the arrangement. Permanency of income has thus been only a recent fact. But it would appear that their economic position is about the same as that of the other permanent wage employees except that they receive no housing, fuel or food and must themselves provide these necessities.

Fishermen, whalers and reindeer herders are in marginal occupations. One man derives a basic income from fishing, five men make their living from reindeer herding and for another five whaling is a secondary occupation.

Because of the limited size of boats available and the types of nets used, fishing is possible only in the harbour. The only full-time fisherman made a catch of approximately 60 pounds a day during a three-month period. He sold an estimated 10,000 pounds of fish during the past year at widely varying prices. One other family sold approximately 5,000 pounds of fish during the early summer but stopped fishing when the head of the family started to work for wages.

Photo 15 - Everyone watches the reindeer in the corral.
July, 1957.

Photo 16 - Two men hold a reindeer in the corral.
July, 1957.

A very small amount of whale meat is sold, the greater part being given to relatives by the whalers. This occupation provides no income, therefore, although it does require a large investment in equipment. Only boats of twenty feet or more length provide enough stability and freeboard for this occupation. A minimum investiment in this type of boat is $2000.00. In addition, cold storage is required for the successful preservation of meat.

The reindeer herders are engaged full time at their work. The economic return appears to be unsatisfactory since two families are disposing of their herds, one of the men starting commercial fishing, the other going to work on a wage basis for the government herd. Only the herd at Warren Point will remain and this herd still belongs to the Federal Government. These families have been more independent than any other occupational group in relation to their use of store food. They were, indeed, only marginal members of the Tuktoyaktuk community and lived the greater part of the year away from the settlement.

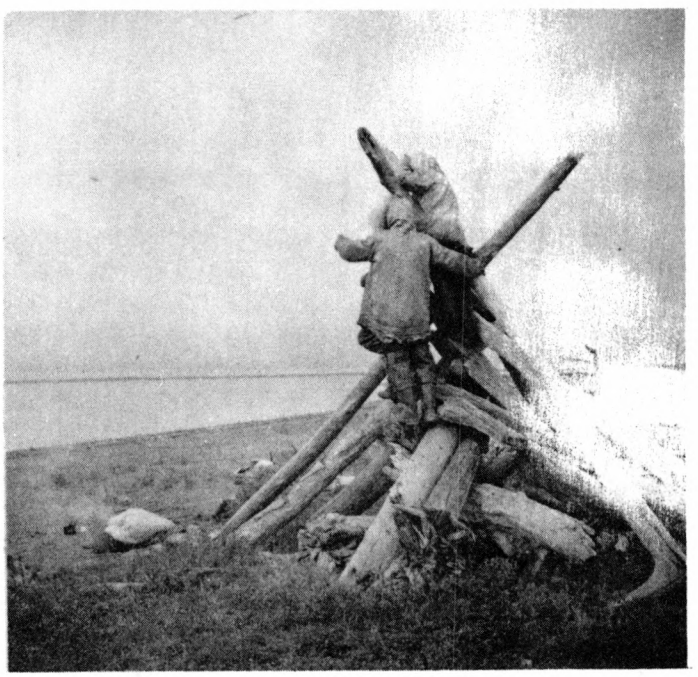


Photo 17 - White whales are spotted from the lookout tower on Hendrickson Island. July, 1957.

CHAPTER V

POPULATION

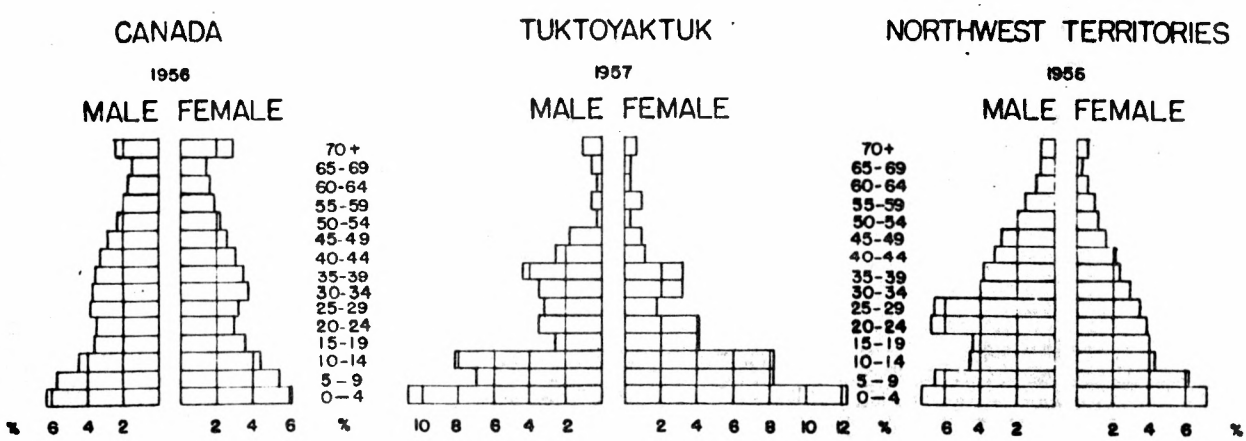
The population referred to in this section is made up of the residents of Tuktoyaktuk, Eskimos living at the D.E.W. Line sites between Baillie Island and Herschel Islands, and the reindeer herders' camps at Warren and Toker Points. This is the total population of the geographical area between Herschel and Baillie Islands. It numbers 340 and does not include eight transient Eskimos.

Shown below is the sex and age distribution of this region by percentage with comparative charts for Canada as a whole and for the Northwest Territories.

GRAPH I

PERCENTAGE DISTRIBUTION OF THE POPULATION BY AGE GROUPS AND SEX

(FOR STATISTICS SEE APPENDIX 4)



The comparison shows very striking dissimilarities between the Canadian population and that of Tuktoyaktuk with the one for the Northwest Territories falling somewhere between the two.

The most obvious characteristic of the Tuktoyaktuk population is the large number of individuals below the age of fifteen--approximately 55.4%.

This is much higher than the Canadian average of 32.4% shown by 1956 Census and considerably higher than the average for the Northwest Territories, which is not available but which possibly ranges about 35%. Accordingly, the age groups above 14 years of age are proportionately smaller and the ones above 49 years of age very much smaller. The picture is one of a very "young" population with a high birth rate.

Although the population sample is too small for accurate statistical manipulation, by adjustment we find the birth rate of the Tuktoyaktuk population to be 85.3 per 1000 in 1957 as compared to 28.4 per 1000 for Canada in 1955. It greatly exceeds the Venezuelan birth rate of 47.1 per 1000 which is the highest for any nation of the world.

The death rate for the year ending June 1, 1957, was 29.4 per 1000, more than three times the 1955 Canadian average of 8.2 per 1000. It exceeded the rates for countries such as Mexico which had a rate of 13.3, and India, which had a rate of 12.7 per 1000, in 1955.

The rate of natural increase for 1957 was 55.9 per 1000 as compared to 20.2 per 1000 for Canada in 1955. Venezuela had a rate of 36.9 and Mexico a rate of 32.9 in that year.

Neonatal mortality was 23.4 per 1000 live births and infant mortality also 23.4 per 1000 live births. Both samples are too small for comparison with large population but it is significant that they were not too different from the rates for many European countries.

Illegitimate births were 10.7% of total live births, considerably higher a percentage than the Canadian average of 3.8% in 1955.

Although the sex balance in the community appears to approach a 50-50 proportion, it must be pointed out that there were not always equal numbers of males and females in any of the five-year age groups. The tendency in marriages is for a disparateness in ages that is possibly greater than the Canadian average. During 1956-57 there were more unmarried women than in the age group of 15-19 years and their numbers were greater than the combined total of unmarried men in the groups of 15-19 and 20-24. If these women are to find husbands they must marry men ten or more years older than themselves or marry outside the community.

There is only one widow and three widowers in the community between the ages of 25 and 50.

The average family consists of six persons, including 3.4 children under the age of 15. Dependents over the age of 15 but resident within a household average 0.6 per family. Approximately one-third of the families share their houses with other families during the winter period.

In summary, the population of Tuktoyaktuk and the surrounding region is one having a high rate of natural increase. notwithstanding a very high death rate. Surprisingly, the infant and neonatal mortality rates are low. Because of the differences in the sizes of the age and sex groups it seems likely that health and diet factors have produced a differential mortality in the past.

CHAPTER VI

DIET AND HEALTH

Because research on this subject belongs properly to the specialist, only a general summary will be attempted. Information gathered was of this order and was limited in scope.

Food resources of the area are confined to fish and whale, a few reindeer and the large resources of the Hudson's Bay Company store. Fresh meat is at all times in short supply and is a continual subject of conversation among the Eskimos. They further lament the high cost of food at the Hudson's Bay Company. Eskimos expressed considerable concern during the summer of 1957 about their supply of food for the coming winter. It was, indeed, the matter which received most attention in the community.

Diet of the residents of Tuktoyaktuk maintained a high protein level during the summer of 1957 because of the great use of fresh fish, but because of the limited fish harvest during the fall it is expected that this protein level will not be maintained during the winter of 1957-58. During this period the diet may become basically starch-carbohydrate because of the dependence upon bannock and bread.

During the summer of 1957 large quantities of fresh eggs, vegetables and fruit were consumed by most of the families at Tuktoyaktuk. At any time when money was available, canned fruit and fruit juice were purchased in large quantities--often by the case.

There was no single typical meal among these Eskimos since personal preference, money available and family idiosyncrasies made for a wide variation. A typical meal--averaging these variants--might consist of:

Fish, fresh or dried,
or
Muktuk (whale skin) and Whale meat,
Bannock, bread or doughnuts,
Fruit juice and/or canned fruit,
Tea or Coffee.

This meal would be typical under the best conditions, and when fish was not available or money in short supply the meal would be reduced to bannock, tea and a very small amount of fish or whale meat. The latter would be a typical winter meal for a poor family.

The level of nutrition, therefore, varies seasonally and would have to be studied over a full year if valid estimates are to be made.

The health of the community is likewise a complex matter. The death rate would indicate that health is poor since we know that accidental death rarely occurs. When the causes of death were recorded, an overwhelming majority were seen to be respiratory diseases, especially pneumonia. The direct cause of pneumonia was probably poorly heated houses during the winter period. Most houses were inadequately insulated and the wood stoves were allowed to go out during the night. Babies were not swaddled. Complicating factors here were inadequate nutrition of babies--they were frequently fed reconstituted milk only--and the lack of hygiene in the average home.

Water is in short supply in all Eskimo houses at Tuktoyaktuk. Basic hygiene, moreover, is not fully appreciated. Care of a sick person is not understood, at least in our terms. Frequently, the whole family will exhaust itself in a day and night vigil with a sick person, not eating when the sick person does not eat and often, as a result, developing the same disease. There were no cases of tuberculosis during 1957, and an epidemic of measles killed only two persons although one hundred and twenty were affected.

The specific health problems would appear to be related to the level of nutrition and the incidence of respiratory disease. Secondary problems would be in the area of hygiene and sanitation.

Photo 18 - The harpoon point is being cut out of a captured whale by Nanoona as other men hold it close to the boat. July, 1957.

CHAPTER VII

ECOLOGICAL CHANGES

The pre-contact period of Eskimo occupation about the delta of the Mackenzie River might be summarized by saying that settlements varied in size from twenty to five hundred persons. The total population exceeded that found there now. Housing was permanent and built of logs, moss and sand. Communities were sedentary except during the summer migration to fishing or whaling camps.

Food resources were white whale and fish in the area about Richards Island while seal, fish and caribou were the resources of the smaller settlements east and west along the coast. Food production was a communal effort.

Water transport by skin-covered boat was crucial to the economy. Dog transport was not common. Trade of manufactured and raw goods was conducted with Eskimos to the west and in the late part of the period with the Indians to the south.

Photo 19 - Three men are engaged in the first steps in butchering a white whale. July, 1957.

Contact with whalers in the 1890's brought far-reaching changes in ecological patterns. Large numbers of Eskimos moved from the Mackenzie River delta to Herschel

Island. At the same time many Alaskan Eskimos immigrated from the west. The inducement was employment as hunters of fresh meat for the whalers.

Food production became individualistic and techniques of communal hunting fell into disuse. Dog transportation became more important with the changes in occupation. At the same time, single family housing became more common than the former multiple family type.

European goods assumed an importance in the Eskimo economy - especially flour, tea, sugar and firearms.

A series of epidemics between 1900 and 1910 killed possibly 75% of the population. The remainder moved from Herschel to Baillie Island with a few returning to the Mackenzie River delta. A great deal of miscegenation resulted from the whalers' contacts with Eskimos so that two generations later there was probably not a full-blooded Eskimo left in this area.

The expansion of the fur trade followed shortly after the end of commercial whaling. The population began to disperse from the Mackenzie River delta again and to move eastward as far as Pearce Point. Few settlements were larger than two or three families, and few were permanent.

Many whaleboats and schooners were built to facilitate the nomadic way of life which now developed. Dog transport became tremendously important for winter trapping and the Nome sleigh and harness were adopted. Store food became a necessity to supplement the natural foods. Time formerly spent hunting was now spent trapping. In short, the European goods and technology became essential to this new Eskimo economy.

A further series of immigrations of Alaskan Eskimos took place during the 1920's as muskrat trapping developed in the Mackenzie River delta. They tended to displace the original Eskimo inhabitants from the area in their development of an intensive muskrat trapping industry. The displaced Eskimos were engaged almost wholly in the trapping of white fox.

This new economy was subject to fluctuation because of the variable fox population and the variable world market. A barter system with extended credit was established by the many traders located along the coast.

The constraction of the fur trade resulted from the general world depression of the 1930's and lessened demand for white fox skins. This situation resulted in a retreat

of the Eskimo population from the less desirable trapping areas and its concentration at Baillie Island, Tuktoyaktuk and Aklavik. Much of this concentration was the result of the abandonment of private trading posts and the consolidation of trading under the Hudson's Bay Company. After 1939 and the abandonment of Baillie and Herschel Island posts, the balance of population living along the coast moved to Tuktoyaktuk. A further inducement to movement was the establishment of the Hudson's Bay Company trans-shipment centre there. This gave limited opportunities for wage employment of Eskimos. The abandonment of Stanton mission in 1954 forced the last few families resident along the coast to move to Tuktoyaktuk.

Tuktoyaktuk had abundant wood for fuel and housing--something which the other settlements on the coast lacked. It did not have caribou or seal food resources, however, so consumption shifted to fish and small amounts of whalemeat through necessity.

The construction of the D.E.W. Line provided opportunities for large-scale employment of Eskimos and provided an income at a time when fur income was small. This income allowed many families who previously had no permanent place of residence to construct permanent houses at Tuktoyaktuk.

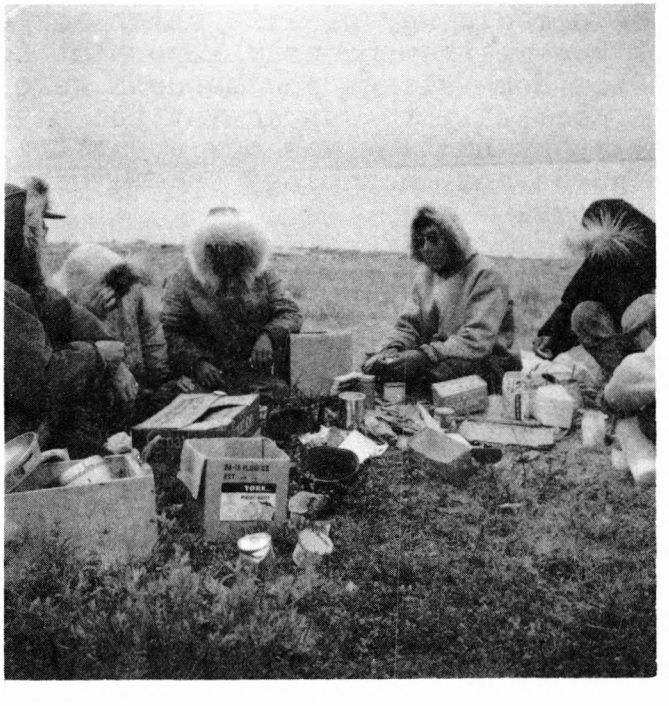


Photo 20 - On a two or three day whaling trip each man brings his own store food and does not share it with the others--excepting tea. July, 1957.

Photo 21 - The final butchering takes place at Tuktoyaktuk. The men seated at the far left are waiting for an expected gift of whale meat. July, 1957.

The stability of income enjoyed by the Eskimos of Tuktoyaktuk between 1954 and 1957 was a new experience for the majority of them. Because of the D.E.W. Line, freighting through Tuktoyaktuk increased greatly and a casual labour market was created. This will undoubtedly continue as long as the D.E.W. Line operates, although the number of jobs available is not likely to increase.

CHAPTER VIII

IMPROVED RESOURCE UTILIZATION

In general, the resources of the area are utilized to the limit of the abilities of the residents. While they are working at wage employment they cannot be hunting or fishing, nor can they trap when the fur-bearing animals are not available. Further to this, the lack of capital funds among these Eskimos precludes certain types of intensive industry. Most particularly, there is the conflict between the demands of wage employment and the type of life associated with it, and the demands of a hunting-trapping life.

Wage employment, particularly casual wage employment, is the key to the occupation pattern of the residents. It tends to keep the population resident in the settlement of Tuktoyaktuk during the summer, it creates money wealth and allows for gambling, it causes a large number of adult men to turn their energies from whaling and fishing--the two industries which supply winter food. Against this negative aspect is the large income produced for purchases of boats, motors, other capital equipment, and the fresh fruit and vegetables which undoubtedly have dietary value.

Those Eskimos who have worked for wages for the past several years are anxious to continue since they find the money income very attractive, but the future of wage employment at Tuktoyaktuk appears problematical.

Northern Transportation Company will probably employ twenty or thirty Eskimos between the 15th of June and the 15th of July each year, as long as the D.E.W. Line remains operative. It is doubtful, however, if many Eskimos will be employed as stevedores or as ships crews since the majority of freight handling will be done with machinery. Perhaps five men will be employed during the summer period. Again, there may be some work for Eskimos during the fall on ship clean-up crews but it will be of short duration.

The main source of summer employment has been the Hudson's Bay Transportation Company at Tuktoyaktuk. According to Mr. W. E. Brown, the General Manager, this operation will be mechanized during the summer of 1959 and will employ, therefore, fewer Eskimos. If only half the number are employed then a drop in total wage income of 25% will take place.

Permanent wage employment is unlikely to increase very much. Only a small number of men can work at the boat shop since a large increase in production could flood the present market and any future market up the Mackenzie River. Eskimo employees of the administration will probably

average one for every three European officials. This would not make for a substantial number of permanent jobs.

There will be an increase in the number of employable males of approximately 5% per year although it would appear that the labour market will contract rather than expand in the foreseeable future. The per capita income from wage employment cannot help but fall under these conditions.

The residents of Tuktoyaktuk must travel long distances before they are able to begin trapping. The rewards are not great when compared to present wage employment. Although it is impossible to predict the price level in the fur market it is reasonable to assume that it will never rise to the levels of the 1920's because so many synthetics are now displacing natural fur.

The skill of the average Eskimo at trapping is not great. Only a small number make a large income from it. By and large the younger men are least skilled and they do not appear to be learning more. Trapping, like any other profession, requires training. This was provided, to a large extent, during the 1920's by a small group of white trappers who used Eskimos as assistants--possibly even slaves--and taught them the most successful methods.

Because of the poor trapping area surrounding Tuktoyaktuk it appears that only a small number of men can expect to make a satisfactory income from this occupation. By and large the trappers will find it necessary to move out of the settlement for the winter and make permanent camps in the centre of productive areas. Some of the present trappers have houses already located in such places. Probably not more than ten men could expect to make average yearly incomes of $1500.00 from trapping in this way. If more trappers attempt to harvest the limited trapping areas, the incomes will be much lower--perhaps corresponding to the present average trapping income. The plain fact is that too many Eskimos are trying to trap in the Tuktoyaktuk area at the present.

Banks Island could be trapped much more intensively than it has been for the past five years. But few Eskimos have the desire to spend ten months of the year in that harsh environment and even fewer have the money or equipment necessary to outfit themselves for a first trip. It is not expected that more than two or three families from Tuktoyaktuk will go trapping there within the next two seasons.

For the Eskimos, the present settlement location is satisfactory. Most of them have permanent homes there; the sea is close by, opens early in the spring and freezes late

in the fall; they are close to their summer work at the Hudson's Bay Company dock, and the settlement is relatively free of mosquitos during the summer.

For the Europeans, the settlement location does not make for the easy provision of public utilities, and there is possibly not enough land area for future requirements.

The proposed townsite near the public dock is not suitable for Eskimo occupation. Few Eskimos could move their present houses there because most of the buildings are structurally not possible to move. The new location does not provide adequate marine shelter or beaching area.

Eskimos must be close to the Hudson's Bay Company dock for summer employment, and there is no indication that this company will move to the public dock. Fishing would not be done easily near the proposed townsite and contamination of the water area from the D.E.W. Line convoy is a definite possibility in this area.

If the government facilities are moved to the proposed site, the Eskimo community will be completely separated from the European community. It will not be easy for Eskimos to get to the nurse, children to school, or the police to the settlement. For a period of six weeks to two months each year no transportation will be possible unless a road is built connecting the two settlements. The writer estimates this road would be approximately fifteen miles long, would cost something between $500,000.00 to one million dollars and at least $10,000.00 a year to maintain. It still would not provide adequate transportation for Eskimos since they do not own motor vehicles.

This would be the money and human cost of providing a model community with flush toilets.

One of the major arguments advanced for moving the present settlement is that the land mass is being steadily eroded. This belief is conjecture and has not been documented by competent authorities. Nor has any attention been given to possible ways of slowing down the supposed erosion. Nor has attention been given to ways of making better use of the existing land area of the present settlement. It is wasteful at present but even so there are several acres of unoccupied land suitable for construction of European buildings.

The greater part of fishing at Tuktoyaktuk is confined to the harbour itself. According to the research of J. B. Hunter of the Fisheries Research Board, utilization of fish resources was incomplete in the Mackenzie River delta

in 1955, (see Appendix 3). It is unlikely that the situation has changed by 1957. Hunter's report outlined the possibilities for a subsistence level fishery supplying the settlements of Aklavik, "East 3" and Tuktoyaktuk. He stated that their research had shown a commercial fishery to be impossible within this area. His research did not extend to the area of the Eskimo Lakes where such a project might be possible.

Cotton and linen nets used by the Mackenzie Eskimos were believed to be inferior by Fisheries Research Board staff. They recommended nylon nets made from thread sizes as follows:

1½" mesh - twine 140/3
2½" mesh - twine 210/4
3½" mesh - twine 210/4
4½" mesh - twine 208-3 medium
5½" mesh - twine 208-3 medium

Nylon nets were regarded as superior because they required no maintenance and lasted two to five times as long. However nylon nets for sale by the Hudson's Bay Company were regarded as unsuitable. Most suitable net size for all species was found to be 4½" mesh. Tendency of 3½" mesh was to catch immature inconnu besides whitefish. Herring were found to be abundant and could be gill-netted with 2½" or 3½" nets. In the interests of maintaining the inconnu, it was thought that it might be necessary to discourage use of 3½" mesh nets if full use of the fish resources was to be made.

At the present time gill-netting and sweep-netting are done within the harbour of Tuktoyaktuk. Only the occasional Eskimo fishes at any other place along the coast although all know of the quantities of herring, smelts and whitefish available. During the summer it is impossible to freeze fish fast enough in the permafrost ice-houses. There is, therefore, no point in catching any more fish than can be split and dried within a short time of pulling the nets. Quantities of fish could be caught and fast-frozen if a portable refrigerator were available. Such an apparatus would probably best be utilized by placing the freezing coils inside an existing icehouse to make use of the already low temperatures. The Technical Officer at Tuktoyaktuk, C.Z. Franzin, has been studying the practicability of types of such apparatus.

Icehouses, as used now, present a variety of problems. There are two private icehouses and one large community icehouse belonging to the Eskimos at Tuktoyaktuk. These icehouses have vertical shafts of approximately 12' and rooms or

galleries leading off from the base. The community icehouse has not been a success because those who use it do not keep it clean. A temperature below freezing is naturally maintained in such icehouses during the greater part of the summer and they thaw out only in September and early October because of the lag in the absorption of heat by permafrost.

The practice of constructing icehouses with large galleries is probably not the best method. Although the writer has no way of validating it, he believes that a series of short tunnels would probably create a greater cooling effect. This is the way Eskimos build their own icehouses--by tunnelling horizontally into a cut bank. If community icehouses were built by making a series of tunnels radiating from a central vertical shaft, each family could have a separate locker. This would minimize the theft of food from the community icehouse, a very common thing at present. Any freezing plant placed in the icehouses would have to operate continuously during September and early October and at any time when fresh food was being taken into the icehouse.

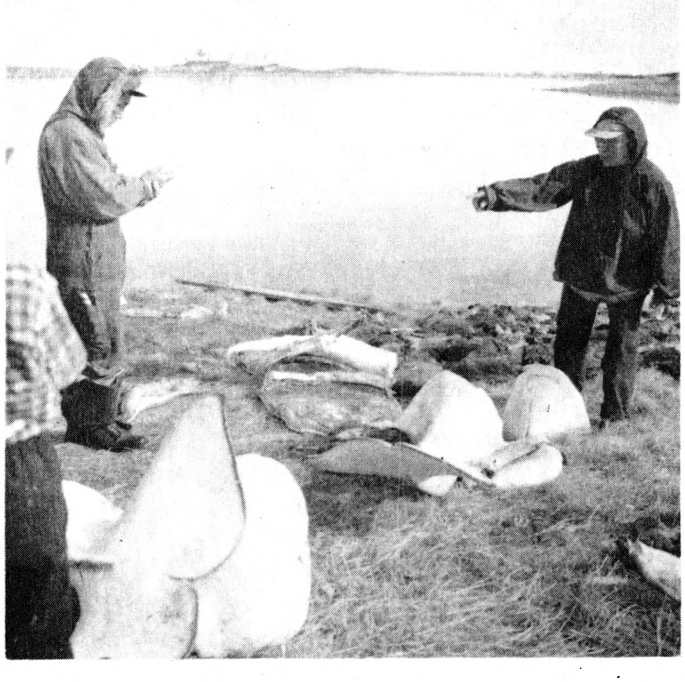


Photo 22 - Thomas Umauk on the right supervises the division of the whalemeat--a function of the leader of the expedition. This is one of the few remaining traditional practices of the present-day whale hunt. July, 1957.

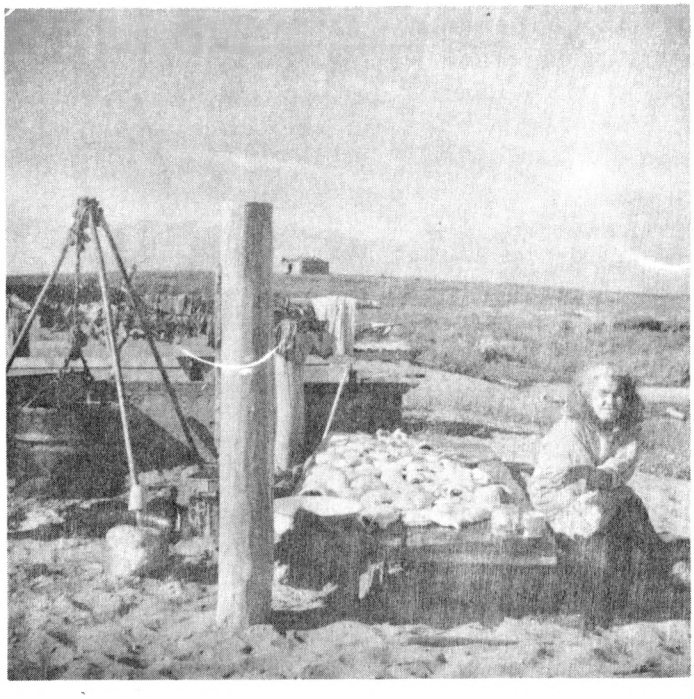


Photo 23 - Margaret Cockney prepares muktuk, or whaleskin, for storage by boiling it in the kettle at the left. The muktuk at the right is cooling preparatory to storing. August, 1957.

In order to catch and freeze fish satisfactorily, it would be necessary for Eskimos to have an icehouse immediately adjacent to their fishing area. This means that if they are fishing herring at Topkak Point, they must dig icehouses there. This is not difficult if done in the winter--each man should be able to dig his own unassisted.

Boats are the basic equipment necessary for fishing. Outside the harbour of Tuktoyaktuk, large boats are necessary both to withstand the beating of rough water and to haul large enough quantities of fish. Generally speaking, a boat must be over 20 feet in length to answer these requirements. The average Eskimo does not have enough money to buy such equipment. The same basic requirement is needed for whaling craft.

Photo 24 - The interior of a smoke-house with dried fish hanging from the poles and a pile of whale meat in the right background. August, 1957.

Whaling

Whaling, as practised now, suffers from the same problems of utilization as fishing. Indeed, whales and fish are found in the same areas and at the same times although the best fishing follows the run of the main herd of whales--after the 15th of August. Hendrickson Island and Whitefish Station are two of the places where both industries could be done simultaneously or consecutively.

Problems of preservation of whale meat are similar to those for fish. At present the carcasses are towed ten to fifteen miles from the point of capture to Tuktoyaktuk. The one large whale boat is able to tow and carry three or four whales and the smaller boats only one, or at the most two. The loss of time in transportation and delay of transportation caused by poor weather causes approximately 50% of the available hunting time to be lost. If the whale meat were butchered, the blubber rendered on the spot and fast frozen, it could be transported at leisure later in the summer or by dog team during the winter.

Phot 25 - Tail sections of white whale stored in a permafrost icehouse. August, 1957.

Whaling and a summer fishing industry should be run simultaneously and by the same workers. It would not provide large scale employment; possibly only three or four families could work full-time during the summer. It would, however, provide an abundance of basic food resources for the community and should ensure an income for the families concerned.

A small number of families at Tuktoyaktuk were issued relief during the winter of 1956-57. During the two winters previous to that a greater number were given relief. This coming winter of 1957-58 will probably see an increased number issued relief again. The plain fact is that individuals do not catch enough fish or whale to last the whole of the winter. If relief must be issued, it would perhaps be economically more sound to give the bulk of it in whale and fish rather than in store food. This system would also supply fresh dog food as a part of relief rations, a necessity if a family is to be able to recover from a destitute position. The income derived from the sale of relief goods would not leave the community if such a practice were instituted.

Caribou skins for winter clothing are not available in this area and the supply of reindeer skins is sufficient for only a small proportion of the community. To supply winter parkas for the working males of the community would require about two hundred and forty skins, killed during the summer, and these are not available.

Store clothing answers the needs of the population except in the case of parkas. Neither ready-made parkas nor the materials of duffle, gabardine or grenfell cloth provide warm clothing suitable for prolonged trips during the coldest months of winter.

United States Air Force parkas, made for flying crews, were worn by the writer during the coldest months of the past winter. The parka was found to be very warm and durable and excellently suited for long stays out of doors during high winds. The only criticism against it might be the fact that it is too short in the body and rather heavy. Eskimos working on the D.E.W. Line found it to be superior to any parkas they owned for working out of doors. It is manufactured in four sizes which fit the majority of Europeans while the two smallest sizes fit most Eskimos. Either the U.S.A.F. parka or a modification of it would be completely suitable for Eskimo use. The manufacturer's selling price is believed to be in the neighbourhood of $50.00. The insulation of this parka is made from synthetic material and it might be possible for this material to be made available to Eskimos so that they might make their own parkas from it. The outer material is also made of a synthetic. It is more resistant to wear than grenfell cloth or other materials available at the Hudson's Bay Company.

The availability of suitable winter clothing governs, to a large extent, the length of time the Eskimo can spend out of doors. It affects his trapping, his winter hunting and fishing. The improvement of parka design and manufacture is, therefore, of crucial importance in the improved utilization of natural resources.

P A R T II

SOCIAL ORGANIZATION OF THE REGION

CHAPTER IX

TUKTOYAKTUK

Because the only settlement in the ecological area besides the few families living at D.E.W. Line stations is the one at Tuktoyaktuk, all references to community organization refer to it.

Prior to 1939 no more than four families lived there permanently. These families were related by descent or marriage and were under the "chieftainship" of William Mangalalook, who was by all accounts a very remarkable patriarch.

The abandonment of Herschel Island by the Hudson's Bay Company in 1938 and the moving of its transportation centre to Tuktoyaktuk brought the first of what were to be many Eskimo immigrants to the new settlement. The closing of Baillie Island trading post in 1942 brought still more families to Tuktoyaktuk and the closing of Stanton Mission in 1954 brought the remainder of the population of the area.

It must be noted that until 1954 and the beginning of construction for the D.E.W. Line, the majority of the Eskimos who said they lived at Tuktoyaktuk were, in reality, spending a good deal of the winter and spring in their trapping areas either in the Baillie Island-Anderson River vicinity, the Eskimo Lakes, or in the muskrat areas of the Mackenzie delta. Tuktoyaktuk was principally a trading centre during this period and only a small part of the dependent population lived there permanently.

As the volume of freight passing through Tuktoyaktuk materially increased after 1952, there were more summer jobs each year and more incentive was given for the Eskimos to make summer homes there. Few permanent houses were built, however, until the D.E.W. Line was started and permanent employment was available. Between 1954 and now, more than twenty log or frame houses have been built and permanent residence taken up by the majority of the fifty-seven nuclear families now living there.

Prior to moving to this new centre, the families involved had lived in groups of two or more families at the smaller settlements. When they moved to Tuktoyaktuk they took up residence in such a manner that they continued to live in two or three family clusters. These ties were based on kinship, either of descent or marriage. The groupings still exist (Map 2) although the growth and marriages of a new generation are breaking the former bonds of kinship.

Photo 26 - The grave of the former chief. August, 1957.

It might be said that Tuktoyaktuk is not one community but a series of smaller communities. In fact, there are a series of loyalties to a variety of social groups dependent upon the regional origin of the families, the age of the person concerned, his occupation, and membership in a European church. The basic loyalty and identification which the person makes, however, is to his parents and to his complex family group.

Photo 27 - Sports Day at the Federal Day School. June, 1957.

dances because the fundamental religious base has been altered and because there is no place large enough in the community to hold them. The elation created by intoxicants may not be too different from that caused by prolonged singing and dancing.

Gambling is a competitive activity carried on with individuals outside the extended family group. It is regarded as "bad form" to win money from immediate relatives. The gambling parties take place in at least one-quarter of the homes at Tuktoyaktuk, most often the ones farthest from the R.C.M. Police barracks. Women and children co-operate in the gambling parties--which also makes sparing use of home-brew--by keeping a sharp lookout for the appearance of the police. These parties are quiet for the most part and cause little disturbance in the Eskimo community. There is not the same secrecy attached to them as to the home-brew parties, nor are the gamblers reticent about discussing their losses or gains with some members of the white community.

Invitations have been extended to certain of the permanent white residents at different times to attend both home-brew and gambling parties, but with few exceptions these were declined.

The functions of both activities are primarily entertainment but gambling is competitive and conducted primarily between non-relatives while home-brewing is a family activity and usually restricted to the family group.

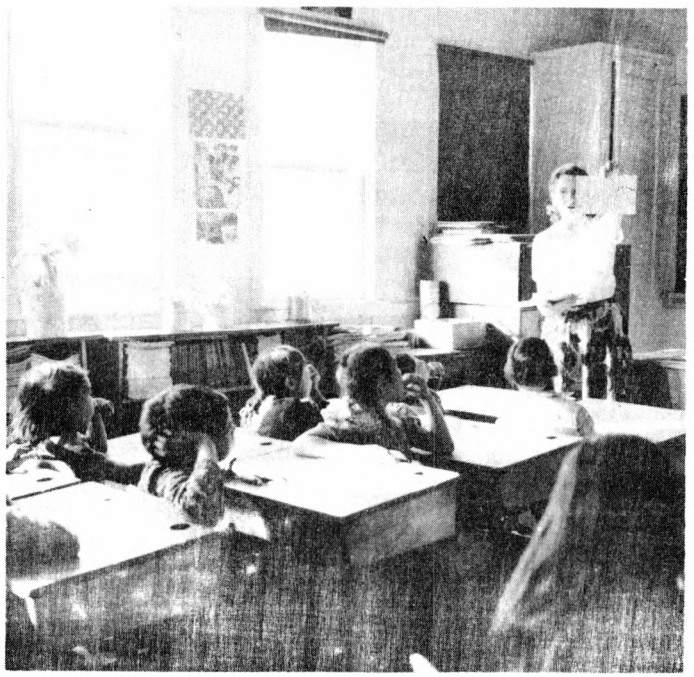


Photo 28 - The principal of the Federal Day School, Audrey Weir, and her class of Eskimo children. September, 1957.

Drinking and gambling could be discussed in a number of different ways but for the purposes of this report are regarded as an institutionalized kind of family behaviour. Both take place in the home and, excepting that the women did not gamble, these were activities in which all members of the family took part, including older children.

Drinking has a history of more than sixty years in the Mackenzie delta and the art of homebrewing is known by every man, woman and child. Except for a few families at Tuktoyaktuk, all take part in drinking parties. Interestingly enough, drinking parties appear to be confined to the extended family group. This is partly because of the need for secrecy and partly because the houses are too small to hold more than the adult members of an extended family. Drunkenness is not common among the adults although it certainly is among the teen-agers. The purposes of drinking are not easily formulated but the scene is nearly always a simple party group enlivened by liquor and story telling. The writer believes that the drinking party has occupied the same place in family life that was formerly occupied by the traditional songs and dances. It is no longer possible to hold these

present day informants, occupied by related nuclear families with usually the parents and sons and daughters and the latter's husbands and wives forming the social unit.

At the present this situation is duplicated by the grouping together of the houses of parents, their children and grandchildren in the village of Tuktoyaktuk. The basis of this grouping is primarily the common and normal sentiment of kinship. Of secondary importance are the factors of foodsharing and co-operation in hunting and fishing. In actual fact, there is a minimum of co-operation in the food quest--partly because of the present occupation of wage employment and partly because everyone is not engaged in the same work at the same time. Food sharing is still common although attitudes to it are becoming ambivalent. It is significant to note that sharing of country food is still very common but that store food is the property of the buyer and is not a commodity to be shared. Again, co-operation in the hunting of food animals is still a desirable thing, as it is in fishing, but the work of trapping is a competitive, individualistic activity and the proceeds would never be shared.

The extended family is probably the correct term to be used when referring to these family groupings of parents, children, and grandchildren. There were approximately twelve such groupings at Tuktoyaktuk during the summer of 1957 although the allegiances appeared to be fluid.

A couple just married has two choices of residence: with the bride's family or with the groom's. The choice would be determined by the relative resources of the two parental groups and which one could provide the most for the newly-married couple. Status considerations also enter into the decision since it is more worthwhile to ally oneself with a family commanding respect in the community than with a poorly regarded one. The size of any one of the particular extended families depends upon the wealth of the senior family and the number of children who have been brought to marriage. In the past this has been a product of the skill of the original head of the family at hunting and trapping. Such a man was able to maintain this position only as long as he was an active producer of wealth. To a certain extent the payment of old-age assistance would buttress the position of the patriarch.

Each of the extended families tends to fragment continually, through member families setting up separate residences and by the death of the original founding family. At Tuktoyaktuk the average extended family is now in its third generation and with the death of the first generation, there will undoubtedly be a re-alignment of social allegiances.

CHAPTER X

THE FAMILY BASIS

It is almost redundant to say that the most basic form of social organization in any society is the nuclear family of man, wife and children. It is only worthwhile to point out that among the majority of Eskimos it continues to be the only clearly defined social group in a settlement. The very smallness of the communities and the migratory pattern of subsistence tend to make the nuclear family the only social form preserved in continuity. The many writers about Eskimos have pointed out that the Eskimo nuclear family is able to minister totally to the wants and needs of its members without any outside help.

The functions of the family in the community of Tuktoyaktuk are manifold. It is the basic reproductive unit and the primary economic unit. The division of labour between man and wife is still traditional except that the wife may derive some income from handicrafts. Property in the family is almost wholly the husband's except for the few household implements which belong to the wife. Children have no property until such time as they leave the family, or, until such time as they begin wage employment. Money income is personal property within the family, a reversal of traditional attitudes.

Attitudes towards marriage and the regulation of sex are exemplified by family behaviour, and the education of children in these attitudes is carried out within the confines of the family. Marriage is desirable for a girl shortly after she reaches puberty but is not desirable for a boy until he has proved himself as a provider of food and money income.

Children are allowed complete sexual freedom during their adolescence and during this time the normal taboo on incest is not seriously regarded.

The traditional pattern of wife exchanging has disappeared at Tuktoyaktuk and been replaced by casual adultery on the part of married Eskimos. Most of this is conducted in a clandestine way and with strong feelings of guilt on the part of some of the people involved. To some extent the Christian concept of sin has been learned.

It has been mentioned that many of these families live in close proximity to relatives. This has a precedent in the Mackenzie River delta where the houses of the early 1900's were often communal houses with three or four families living under one roof. The basis of communal life was the sharing of food and co-operation in hunting and fishing. Each of these large houses was, according to

CHAPTER XI

OTHER SOCIAL GROUPS

Kinship bonds distinguish the primary social groups about the nuclear family. But certain other social groups tend to further divide or consolidate the families at Tuktoyaktuk.

National groups are the result of the diverse origins of the population. The most important division here is between the families who are descended from original inhabitants of the Mackenzie River area and those families who have migrated from or are descendents of immigrants from Alaska.

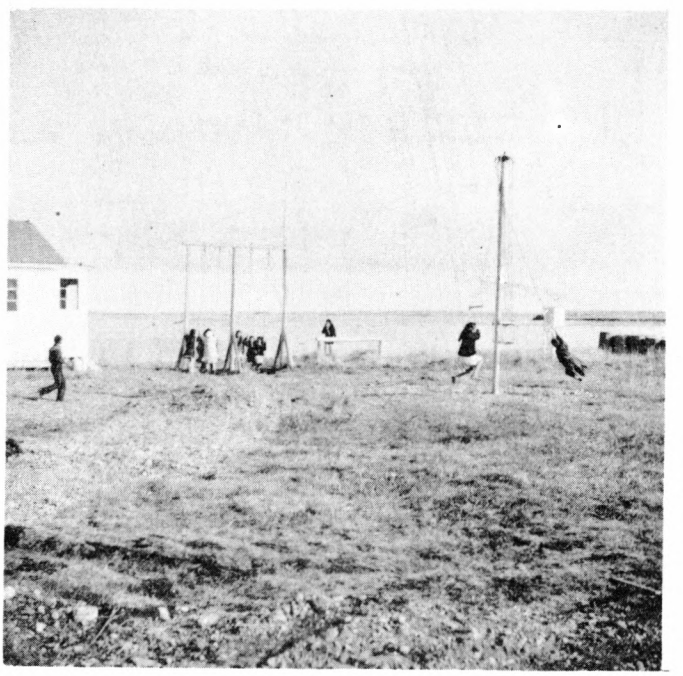


Photo 29 - The playground of the school.
September, 1957.

The dominant families of the community and those with the greatest wealth and status are descendents of families from Kittigazuit or Tuktoyaktuk. The Alaskan Eskimo group have intermarried with a second minority group, the Eskimos from Cambridge Bay and Coppermine, and formed a social group of low status and wealth. The basic division of the community is on a national basis, although the necessity of intermarriage between the two groups is becoming more urgent and this division can be expected to decline in importance.

Photo 30 - The weekly square-dance in the school classroom. June, 1957.

Occupational groups cut across the kinship and national groupings. Permanent wage employees, casual employees, and hunters and trappers are found in all the lineages and national groups.

The status of occupations depends upon two factors: the income derived, and the degree of independence associated with the occupation. The highest status occupation is, therefore, that of the skilled trapper who makes a large income during the short trapping period but remains independent of wage employment. Reindeer herding, when it was profitable, also occupied this high status position.

The permanent wage employees occupy an anomalous position because they have a high income and a security of livelihood but also a very low degree of independence. Their position in the status heirarchy is not well defined--they are admired by the other Eskimos for their wealth, but looked down upon for their dependence on Europeans. Of the permanent employees, the boat-builders possibly occupy the highest status. They work with a high degree of independence from European supervision at a craft occupation that is highly meaningful to the rest of the community. It is

worthwhile to note that the employees here are all members of Tuktoyaktuk's "first family" - the Nuyaviuks.

The casual workers derive little status from their wage occupation but are dependent for occupational status upon their skill as hunters and trappers. The majority of the casual employees are also casual hunters and trappers and do not make a large income from fur. In the final analysis, the casual wage earners do not form an occupational group since their basic grouping is dependent upon their ability as hunters and trappers.

The reindeer herders are an occupational social group. It is one which has declined in status as the income derived has declined. The owners occupy, certainly, a much higher status than the men whom they employ. The members of this group are least likely to seek employment in another occupation for wages. Most of the reindeer herders maintain a small trapline close to their winter locations.

The occupations of hunting, trapping and fishing are pursued for at least part of the year by all of the adult males of Tuktoyaktuk except those permanently employed and the infirm. Although it is not a productive occupation when compared to casual employment, it is the traditional occupation and has high value in the eyes of the community. Although it was not productive in 1957, it had been very productive in the past and all believed that, with luck, a "killing" could be made again. Even those men who were permanently employed were preparing for the winter of 1958-59 so they might leave their jobs and trap during the peak of the fox population cycle. The plain fact of the matter is that hunting and fishing provide the food base for this community. While money wealth gives status, food production is more important.

Age groups within the community at Tuktoyaktuk are extensions of the same groups found within the traditional community.

Children band into play groups at the age of four or five years of age and spend the greater part of their waking time within those play groups. Play groups tend to be composed of children of related extended families although there was certainly no definite kinship principle in operation. The composition of play groups vary but they appear to be made up of children within a four or five year age bracket. Children tend slowly to leave the play groups at about the age of fourteen or fifteen, when they reach puberty. At any one time with the community of Tuktoyaktuk there is likely to be one large play group of older children, and a number of smaller groups of younger

children. The younger play group is most active during daytime while the older play group is more active during the evening and late night. This older group wanders through the settlement playing ball games, tag, and causing a carefully calculated degree of noise, not enough to rouse the anger of adults but enough to disturb them. Regular hours of school and the fact that a large number of older children attend the residential schools at Aklavik tends to break up the older children's play group during the winter.

The initiation of children into sexual intercourse takes place in the older children's play group. Children are not naive about the mechanics of sex, since they live in houses where privacy is at a minimum. Whatever education they receive about sex, the greater part comes from this play group. Puberty, however, is the point at which they break away from this group though there is no sharp severance of contact - rather a gradual drifting away by both sexes.

Leadership among the children tends to develop as a product of the aggression of the individual, and is supported by the number of age-mates to whom he is related and whose attention he can command. Fighting between children is common between the ages of eight and twelve but not common among younger children or the teen-age group.

The teen-agers at Tuktoyaktuk are of the "new" social groupings. Within the traditional community a girl can be expected to marry at puberty while a boy will be inducted from a play group into his parental group until marriage--usually several years after puberty. These young adults perform the roles in the Eskimo family which they could be expected to perform after their marriage, the man as a hunter and the woman as a housewife.

At Tuktoyaktuk it was obvious that the adolescents are not being absorbed totally into the family structure. These teen-agers differentiate themselves from the adult population by a distinctive dress: the men wear "motorcycle" jackets, the women slacks and short parkas, unlike the otherwise universal "Mother Hubbards"; both sexes try to escape the work patterns of the parental group, and their activities revolve around partying and the central activity of the weekly square-dance. Few of the parents participate in square-dancing but many of them attend the dances to watch as do all the children of the community.

Photo 31 - An informal square-dance held in an abandoned trader's warehouse by the Eskimos. White participation was not encouraged. June, 1957.

By distinctive dress, rejection of the parental behaviour pattern and distinctive patterns of personal behaviour, the teen-age group at Tuktoyaktuk maintains its identity. As in our own society, the teen-age group also includes a limited number of young married people.

The teen-agers have become a distinct group due to a variety of reasons. They have an education which has given them a limited experience of European culture--an education which has given them knowledge and the desire for a different life than that of their parents. The availability of wage employment makes the male teen-agers the equal of their parents as family providers for at least part of the year; an apprenticeship under the parents is no longer the absolute necessity it was under the hunting economy. The methods of parental discipline within the family are no longer so effective since the teen-ager is not totally dependent upon his parents for education or subsistence. The teen-age girls are not as independent of their parents as the boys but they identify with them in relation to their goals: wage employment and

the life of a European. And finally, for a variety of reasons the adolescent period has become longer for the average Eskimo now growing up at Tuktoyaktuk. This gives definition to a group which would otherwise be simply children undergoing a steady transition.

Criminality, as defined by the European administration, is almost wholly confined to this group. The total of offences arising at Tuktoyaktuk during the summer of 1957 amounted to more than thirty and seventeen persons were convicted. All offences arose from drinking although some of the charges were for disorderly conduct. Fifteen of those convicted belonged to the teen-age group. Admittedly, five of these persons were from Aklavik but the important fact is that they were identified with and part of the teen-age group.

The continued recruitment of children into this teen-age group seems to be assured since they look to the teen-agers with admiration. There is thus some indication that the alienation of children from the old family structure is taking place.

Photo 32 - Evangelist Don Violet gets ready to leave the settlement in his airplane. August, 1957.

The foreign Eskimo group at Tuktoyaktuk during the summer of 1957 made up a part of the teen-age group. These four men and one woman were residents of Aklavik who went to Tuktoyaktuk because, as one member said, "You can get away with anything there". They were deported to Aklavik after convictions for infractions of the liquor ordinance. They held a very high status among the teen-age group and a low status among the majority of adults at Tuktoyaktuk. This obviously was not a permanent social group although the residents of Tuktoyaktuk said that each summer for the last three years young adults from Aklavik had come to Tuktoyaktuk. But in previous years there had been far fewer offences and convictions.

Religious groups at Tuktoyaktuk would not appear to have great significance in relation to other status groups. Approximately 60% of the community belonged to the Church of England, 20% to the Roman Catholic Church, and 10% to an evangelical group. The membership in the established churches appears to be more or less random although the Nuyaviuk and the Cockney family--the two dominant families--belong to different churches and express their rivalry through this membership.

The majority of the reindeer herders and those Eskimos who have recently left herding belong to the evangelical religious group, as does the majority of those of Alaskan nationality and their descendents.

CHAPTER XII

THE WHITE COMMUNITY

The members of the white community at Tuktoyaktuk perform vital functions within the larger Eskimo community. They direct the religious organizations, the educational system, the economic system and, to a degree, the very pattern of social relations between Eskimos in the community.

Because their functions are derived from the larger Canadian society and not from the community at Tuktoyaktuk itself, their power is immeasurably greater. They have no basic responsibility to the residents; they belong to none of the basic social groups within the community. For this reason we must be careful in describing this total Eskimo-White system as one of a caste or class nature and avoid any accusation of "discrimination" practised by the whites against Eskimos, or a failure of the white residents to understand or to have social relations with Eskimos. What we have is two social systems operating together, the one placed in a more powerful position than the other and controlling certain of its functions.

The agents of this power group are located in clearly defined institutions although there is a considerable over-lapping of interests. Each of these institutions has certain policies, maintains attitudes towards Eskimos and creates attitudes and patterns of behaviour towards itself.

The Hudson's Bay Company

The Hudson's Bay Company stands in an unique position at Tuktoyaktuk since it provides the bulk of the material goods for the community, is the agent for relief, buys the marketable produce of Eskimos--the furs and boats, and provides the main wage employment for Eskimos. During the trading year of 1956, approximately $150,000.00 worth of merchandise was sold. The fur trade was not significant. One Eskimo woman is employed as a clerk at a salary of $125.00 per month while others are employed for short periods.

The Hudson's Bay Transportation Company is the largest employer of Eskimos although this employment is all of a temporary nature. The white supervisors and the ships' crews are brought in to work for the summer period.

For the Hudson's Bay Company white representatives at Tuktoyaktuk, the Eskimos are potential customers or potential labour. An effort is made to sell as much

merchandise as possible and to get as much work as possible from the employees. This attitude is only the common business ethnic of the European. Generally speaking, the Hudson's Bay Company representatives maintain an attitude of aloofness toward the Eskimo population although there is some variation. The regular manager was not present during the summer of 1957 and the relief manager maintained a very non-committal attitude towards Eskimos. The post assistant was engaged to a young Eskimo girl but was suddenly moved to Rocher River, N.W.T., during the summer.

The Hudson's Bay store is the focal point for day-time entertainment and a social centre--much like the country store in a rural community. This is particularly true when new goods are being unpacked and put on display, or when family allowance cheques have arrived in the mail. Eskimos are unanimous in their denunciation of the prices charged at the store and certain of them express their feelings to the manager or to the other employees. The replies given are always to the effect, "Well, you don't have to buy it", said courteously and tolerantly.

As the focal point of economics in the community the Hudson's Bay Company has an enormous effect upon the Eskimos. Its lack of involvement with the community is a policy of the company, based on the belief that it should not interfere in matters except of trade. But by economic control, it must be involved very definitely in a large segment of community life. The attitude expressed could only result in a kind of unconscious control where the white manager and employees exert power without accepting any of the responsibilities which are entailed. To say that it causes confusion and resentment on the part of the Eskimos is an under-statement. They continually remarked upon the enormous profits which the Hudson's Bay Company makes in its post at Tuktoyaktuk, talked of the injustice of the manager (largely imaginary) and ascribed many stories of crooked dealing to the company as a whole. The latter stories have a small amount of truth in them. Particularly, they looked back to the "good old days" of free traders and the American whalers.

The error on the part of the Hudson's Bay Company is the belief that economic man can be divided mysteriously from social man and that what affects one did not affect the other.

The Federal Day School

The school performs a series of crucial functions in the community. More than any other institution it is the agent of change since it is educating Eskimo children.

The curriculum and the method of teaching is aimed at inculcating European patterns of behaviour. There is little value placed upon the present way of Eskimo life except in establishing its relation to the highly-prized European culture.

In the main, children are taught to read and write, a minimum of history, mathematics and a good deal of hygiene. The teachers try to follow their curriculum, that of the Alberta Department of Education, but say that it is impossible to cover the whole of it. According to the teachers the basic problem is to make industrial life meaningful to the children and this took up the bulk of the time. The quality of teaching is excellent.

In addition to the teaching function, the school is the entertainment centre of Tuktoyaktuk since all meetings, square-dances and movies are held there. All social activities are under the supervision of the teachers, who feel that this part of their duties is of some importance. The principal, Audrey Weir, also supervises the sale of handicraft production at Tuktoyaktuk. In this way she has considerable contact with the women of the community--more than any other person except the Northern Health Services' nurse. Many of the Eskimo women also take part in an Anglican Church Auxiliary which is supervised by Miss Weir and Mrs. Thomas, the wife of one of the teachers.

The attitude of the teachers towards the Eskimos can be described as a formal one--it is determined by their function as teachers in the community and they tend to regard Eskimos as persons to be taught. The Eskimos are responsive to the teachers and encourage their children to go to school. The majority of the adults have attended residential school and they regard formal education as a valuable asset, although some Eskimo men resent the school teacher's regarding them as persons requiring guidance. The overall picture is one of amicability, however, where the Eskimos are anxious to take advantage of European education, and the teachers are anxious to teach.

In the day school the distribution of children by grades during 1957-58 was as follows:-

Grade I	-	15
Grade II	-	21
Grade III	-	7
Grade IV	-	3
Grade V	-	4
Grade VI	-	0
Grade VII	-	5
Grade VIII	-	3
Grade IX	-	1
		59

The one child in Grade 9 was the son of the Technical Officer and was studying by correspondence. The low numbers in the higher grades was the result of the majority of older children in the settlement attending residential school at Aklavik. The parents prefer sending older children there for their education and the residential schools are not too anxious, apparently, to teach the lower grades. In the federal day school, children are in the grade which would be expected if they had started school at the age of six and progressed normally one grade a year, but a higher proportion of children spent four years in progressing from Grade 2 through Grade 4.

One aspect of the school program which makes it desirable for the school children and for the parents is the serving of a hot lunch to the pupils each school day. There is no direct evidence that this causes high attendance but it is certainly a factor. During the school-year 1956-57 thirty school days were lost due to breakdown of heating or lighting equipment. Inclement weather normally causes a number of children to stay away for an average of fifteen days during a school year. Some of the homes are located between a half mile to a mile from the school and during storms younger children will not walk this distance.

The largest classroom is the only hall available for community activities. The principal allows one square-dance a week during the school term and discontinues them during the month of August. This causes some resentment among the Eskimos; they expressed the desire to have square-dances oftener and that they not be prohibited during August. Formerly, an abandoned trader's warehouse was rented for $5.00 a year from the owner in Aklavik. During the summer period dances were held every night but the white residents expressed concern about the noise, the rowdyism and the lack of supervision in this dance hall. At the request of the trader the building was closed and nailed shut about mid-August in 1957. There was a certain amount of conspiring on the part of the R.C.M. Police and the school teachers in closing this "dance hall".

The teachers do not like using a classroom as a community hall since the principal lives in the same building and is subjected to considerable noise and the responsibility of supervising the dances. All the white residents have expressed their view that a community hall should be built and maintained for the community. No clear opinion was expressed as to who should finance and supervise this building and its activities although the white residents expressed the view that one of them would and should supervise all social activities in this community. The attitude toward construction is that the federal

government should assume full responsibility.

The control exerted by the school over the Eskimo community is thus fairly impressive. In the intangible area of education and the inculcation of values and attitudes the school is the major agent of the white community. In the control of legitimate entertainment the school is supreme since it supervises the two functions--dancing and movies.

The Churches

All representatives of the religious organizations are white with the exception of Thomas Umauk, the Anglican deacon at Tuktoyaktuk. Two R.C. missionaries, one Church of England missionary, the Church Army missionary and his wife; and a spinster evangelist of the Glad Tidings missionary society make up the religious community.

Rivalry is intense between the different congregations with the Roman Catholic congregation gaining slowly at the expense of the Anglicans, and the evangelical sect being an unknown quantity in the contest since the evangelist has been at Tuktoyaktuk for only four months.

The Roman Catholic services are conducted in Latin and Eskimo while the Anglican services are conducted in either Eskimo or English at any one service. Umauk usually gives an Eskimo service on Sunday morning and the Church Army missionary conducts services in the afternoon and the evening. A smaller number of Eskimos attend the Eskimo service. The evangelist conducts her church services in English and uses a translator. She alone has no church and holds her services in the houses or tents of her congregation.

The services of the Catholic Church are similar to those of any Catholic Church except that more guidance is given the congregation during the Mass. The Church Army missionary, Capt. T. Frith, believes in faith healing and is fundamentally evangelistic in his sermons at the Anglican Service. Umauk, the Eskimo Minister, gives short sermons on a variety of subjects related usually to every day problems of the community. Miss Kay Gordon, the evangelist, seems to have a message of redemption through faith and urges her followers to "deliver yourselves up to God and be saved". Her sermons frequently end with the congregation weeping and confessing their sins--a stylized display perhaps since laughter and joking follow immediately after the service. From discussions with those persons adhering to the evangelist, it would appear that the service tends to bring anxieties to the surface and relieve them through a common emotional display.

All the missionaries spend a great deal of time during the week with the Eskimos. Only the Catholic missionaries speak Eskimo, however, and are able to converse freely. This does not appear to be too significant in an English-speaking community such as Tuktoyaktuk.

The Catholic congregation appear to spend proprotionately more of its time with the missionaries during the week and to seek their advise more often than do the Anglicans. The Catholic congregation also appears to be wealthier than the Anglican and to contain more members of powerful families. The Catholic mission is, in addition, wealthier than the Anglican mission and could aid its members and give them loans more readily. They have a more extensive physical plant including a variety of boats, outboard motors and a bombardier. The mission also sells cigarettes, tobacco and candy to its congregation. The evangelist has few resources and only completed a small house at Tuktoyaktuk shortly before freeze-up. Like her, most of her congregation is poor.

Among the Eskimos, distinction of denominational adherence is not strict. Indeed, there is a limited shifting of allegiance between denominations--the evangelical group tend to attend Roman Catholic or Anglican services at Easter, Christmas and New Year's Day. The arrival of either bishop tends to find Catholics and Anglicans greeting him and the evangelists attending his church service.

There is universal respect for missionaries of every denomination and the only missionary who could expect any disrespect in the community was Thomas Umauk, an Eskimo. It may be going too far in saying it, but there is also a basic fear in the attitudes of Eskimos to missionaries. There was an inevitable withdrawal of expression when the writer attempted to discuss any aspect of religion with an Eskimo. It is in certain respects a taboo area of human behaviour. No one believes that a missionary could exert great power over him but there is an unsureness about this power. The belief is that the missionary is an intermediary between God and the Eskimo. There is no clear elaboration of belief beyond this on the part of the Eskimo. God is not a clearly defined figure either because He seems capable of great love and terrible anger--something which seems unusual, at least to one informant. The missionary as the intermediary of this unpredictable figure is to be held in great respect and treated carefully.

The National Health and Welfare Nursing Station

The Nursing Station at Tuktoyaktuk provides through the Northern Health Service Nurse a treatment and preventative service for the community. It also serves as a transfer point for Eskimo patients being evacuated to Aklavik hospital from settlements to the east along the D.E.W. Line. Aircraft service for medical emergencies between Aklavik and Tuktoyaktuk is normally very efficient. Because of this, the Tuktoyaktuk nursing station has served in the past as an outpost of the Aklavik hospital and any patients seriously ill were evacuated more often than would have been possible at isolated settlements.

A nurse was established at Tuktoyaktuk during 1955 and the nursing station completed during 1956. During the fall of 1957 a four-bed ward was completed as an addition since there had been no bed patient facilities until then. As a policy of Northern Health Service, the nurse was expected to treat all patients at the nursing station except those confined to bed in their homes. Transient patients on their way to Aklavik were boarded out with one of the families at Tuktoyaktuk. Possibly two patients a month were detained in this manner awaiting transportation.

An average of seven persons a day visited the nurse during the summer period of 1957, the great majority being women and their children. The women of the community welcome any opportunity to use the facilities of the nursing station. The men have reservations about bringing their ailments to the nurse and she complains that she had great difficulty in diagnosing their complaints.

The only endemic diseases are upper respiratory with sporadic occurrences of boils and skin diseases caused, possibly, by specific instances of malnutrition. The nurse said that there had been a steady occurrence of staphylococcus infections during her visit there. All members of the community co-operated in the public health aspect of the nurse's work and express considerable respect for the nurse's efforts.

The male Eskimos do not like the nurse because they feel that she does not spend enough time diagnosing their ailments and treating them. The common complaint among the men is: "That woman is lazy".

In examining this attitude we must remember that the nurse now occupies the position of the old-time shaman in the function of healing. This is a crucial function in any community in the world. Amongst the Mackenzie Eskimos, the shaman was most often an older man although it could be

a woman. The shaman was also a much respected hunter or, if a woman, a senior member of a large family. The nurse in the present community has none of these attributes in the eyes of the men. The result is that they prefer to go to the Fathers at the R.C. Mission or to the R.C.M. Police with their ailments. They are invariably sent to the nurse. The speed with which the nurse diagnosed and treated seems to dismay the men and her impersonality towards them is also a contradiction of the old pattern, where a ritual was the basic process of healing and would take hours if not days.

The nurse suggested that there is a certain amount of psychosomatic illness among the older generation--particularly those men who were neglected by their children.

Because the women in the community are concerned not only with their own health but with that of their children, because they ask the nurse more often for assistance and treatment, and because the nurse is also of their sex, they have more respect for her treatment.

The R.C.M.P.

The R. C. M. Police detachment at Tuktoyaktuk is composed of a corporal and a constable, both unmarried. They are responsible only for police work in the settlement and for issuing of game and fur licenses.

Almost all of the arrests made at Tuktoyaktuk during the summer of 1957 were for infractions of the N.W.T. Liquor Ordinance and were concerned with the illegal manufacture of liquor. Since all but six homes in the settlement had home-brew hidden in them at some time during the summer, it is not difficult to see that any number of arrests could have been made. Under this Liquor Ordinance the R.C.M. Police are empowered to search without a warrant--an unusual interpretation of English common law--but they rarely enter a home unless a complaint has been made to them or there has been obvious disorderliness.

The police are respected but not liked by the Eskimos of the community. Because of the very real power of the police they are inevitably called when any disturbance occurs between Eskimos--the enforcement of peace is definitely in the hands of the Europeans. Disputes between Eskimos are frequently settled by the police since the Eskimos believe that the police have an impartial authority in the settlement and can be counted on for fairness in their decision.

Resentment is continually expressed, however, at the enforcement of the liquor ordinance and a few comparisons have been made of the discrepancy between the permissible drinking of the Europeans and its prohibition for the Eskimos.

The attitudes of the police are hard to gauge but it should be said firstly that they are primarily interested in the enforcement of existing law. They prosecute the small group of teen-agers--who were violating the liquor ordinance frequently--more severely than they do the majority of householders who are also breaking the liquor ordinance but doing it quietly. It is fair to say that the police are disgusted with the small group of roisterers and make continuous efforts to arrest, bring to trial and press for conviction of this group. They feel that these persons are the troublemakers of the settlement and should be sent to jail, or, if not members of the community, should be deported to Aklavik.

The Northern Service Officer

The Northern Service Officer was not resident in the settlement during the summer of 1957. His duties would appear to have been largely as an employment officer of Eskimos at the D.E.W. Line sites. Although he has not been resident in the community, the majority of the Eskimos have a long-time acquaintance with him and a considerable respect is shown him.

The Tuktoyaktuk Trapper's Association was formed by the Northern Service Officer in 1955. It is a voluntary association which is limited to the men of the settlement and which meets every two months to discuss common problems of the community under the executive direction of Eskimos but supervised indirectly by the N.S.O. or by Mr. L. C. Thomas, one of the school teachers. The functions of this association are to act as a forum of public opinion and to deal with specific welfare problems such as the transportation of a starving family from the Eskimo Lakes to Tuktoyaktuk or the gathering of wood for a disabled individual. The N.S.O. uses this association as a convenient method of discussing administrative policy with the Eskimo and obtaining their opinions.

The Technical Officer arrived at Tuktoyaktuk during August of 1957 and assumed the supervision of the boat-building project. At the same time he gave assistance to many Eskimos in the maintenance of their outboard motors and marine engines. He expressed his intention of teaching the maintenance of mechanical equipment to Eskimos as well as teaching a smaller number the craft of building boats. He also assumed responsibility as a building superintendent for

the Department of Northern Affairs building and grounds.

It would be premature to say that the Eskimos have formed any decided opinions about the Technical Officer but they are universally impressed with his knowledge of mechanical equipment and his readiness to assist them in its maintenance. The D.E.W. Line Site employs two Eskimos and totally supports the families of these men. The Europeans resident there have little other contact with Eskimos of the community except for weekly visits to the square-dances held at the school. The writer has no knowledge of illicit relations between Eskimos and D.E.W. Line personnel and believes that they were non-existent during the summer of 1957 although there had been many such relations during the previous two years.

The D.E.W. Line Site personnel pay frequent social visits to the white residents of Tuktoyaktuk, bring mail for them and a few gifts of fresh meat and vegetables. The white residents also visit the D.E.W. Line Sites for movies and for occasional meals.

Because of the resources and the high standard of living of the D.E.W. Line staff, they have a high status within the white community and are "courted" for favours by the white community of Tuktoyaktuk. They have little contact with Eskimos and are, therefore, outside of their sphere of interest.

CHAPTER XIII

SOCIAL LIFE IN THE WHITE COMMUNITY

Because of the common traditions of the Europeans they tend to make their social life with each other rather than with the larger Eskimo community.

The police, the D.E.W. Line employees, the nurse, the Hudson's Bay Company employees and two of the school teachers make up one social grouping in the community. All these individuals are young, interested in parties and spend much of their time together. They do not associate with Eskimos except in a professional capacity.

The principal of the school, the Anglican missionary and his wife, and the R.C. priests form an older age group which has less tenous ties and have religious rivalries between them. But they regard themselves as the more stable social group in the community and frown upon the parties of the other group. In the white community, this group holds a greater share of power by virtue of their roles. This group also has more social ties to the Eskimo community and can be regarded as the intermediaries between the other white residents and the Eskimos.

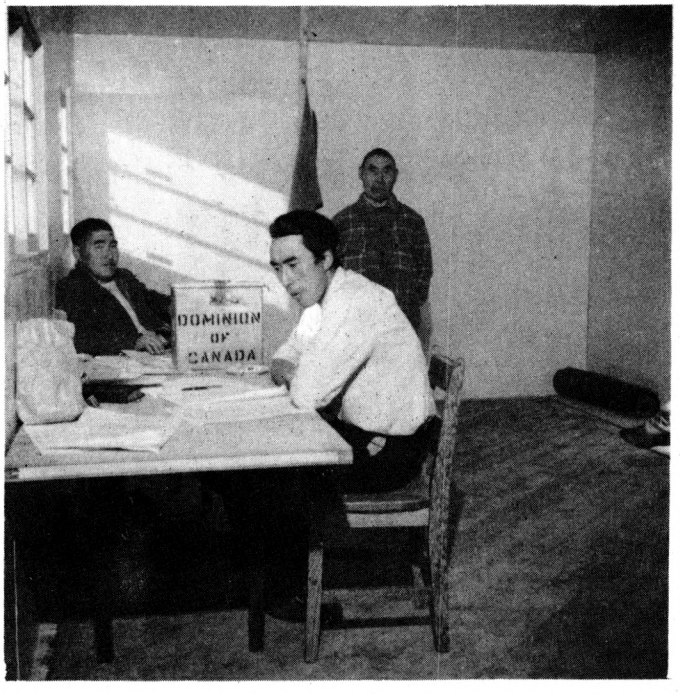


Photo 33 - Tuktoyaktuk polling station for the Territorial Council election. Left to right are: David Andreason, deputy returning officer; Sam Raddi, poll clerk; Thomas Umauk, a candidate's scrutineer. August, 1957.

Antagonism between the two social groups is not open and possibly could never be since other loyalties of religion and of interest tend to cross the two basic groupings. Certainly, there are continuing demonstrations of the solidarity of the entire white community in matters of importance such as teenage drinkings, and in matters of welfare affecting the Eskimo community.

In terms of ordinary human relations the white community appears to get along very well. There are minor antagonisms, there are allegiances of contrary nature to which different persons identified, but the basic tenor of relations is equable and co-operation the rule.

CHAPTER XIV

LEADERSHIP

The examination of the different social groups at Tuktoyaktuk has shown that there is no formal ordering of these groups into a clearly defined power structure. Social class is emergent, perhaps, within the community although it was too early to forecast what form it will take.

The suggestion has been made that the power functions of the community lay mainly within the resident white group and that this group is divorced from any reciprocal obligations to the Eskimo community. It fulfils functions in this community but derives its obligations from the larger Canadian society.

A large part of the leadership of the total community comes from the white segment. Religion is conducted almost totally under white leadership, the regulation of law and order is in the hands of white men, education is similarly entrusted, and the money economy of the community is in the hands of a white institution. The regulation of health is also a responsibility of whites.

Eskimo Leadership

What does this leave the Eskimos in the way of leadership opportunity? It leaves two types of leadership open to them--one derived from that of the whites, and another, of secondary order, within the small area in which white is not present.

The leader who depends upon derived power is best exemplified by Thomas Umauk, the Eskimo deacon in the Church of England. He is descended from a "chief" at Herschel Island and under the traditional order would most likely have become a shaman himself in later years. Instead, he was inducted into the Christian church and has become a leader in the Christian Eskimo community. It is difficult to evaluate the extent of his leadership but it is worth mentioning that he gives his services with the white minister standing by, cannot marry anyone without consulting the archdeacon at Aklavik or the white minister at Tuktoyaktuk and is unable to make any of the necessary decisions relating to the operation of the mission without consultation with these superiors.

His role in the present community is very much like the old time "chief" in that he attempts to lead the Anglican Eskimos in whaling as when a young man he led them in hunting

and trapping. He provides his boat for whaling and makes all the necessary arrangements; he also apportions the meat after an expedition.

All Eskimos respect him for this function but many have passed the type of remark that seems to imply that he is only a tool of the white minister. He is respected, certainly, for his abilities as a hunter and is feared because he is only a slightly transmogrified shaman and chief. He sees himself mainly as "helping the people". He realizes also that he is relatively helpless in his role without the aid of the white minister.

It is difficult to place the present "chief" of the community, Emmanuel Felix, in any kind of definite category. His chieftainship is inherited from William Mangalalook and he is acknowledged as the "chief" by all members of the Eskimo community. He commands no respect, however, and is laughed at because he can not provide food for the community--can barely provide it for himself and family. He does not perform any chiefly functions as far as the old definition went. But he does serve as a go-between in relations of whites with Eskimos, he provides a messenger service when any family wants the police, and he relays information from the white residents to the Eskimos. Thus, although he occupies a position in which power normally resides, his actual position of slight power is derivative from his relations with the white men. Emmanuel Felix emulates the whites of the community more than any other Eskimo. The dress of his family, his occupation as a permanent wage employee, the furnishing of his house and the ready ease with which he made friendships with the whites makes him the most Europeanized of any adult Eskimo at Tuktoyaktuk. He accepts the scorn of his fellow Eskimos and the condescension of the whites. Much of his income has been lost in gambling to other Eskimos. The form of leadership exhibited by the present chief is not derivative from his position in the Eskimo society but from an assigned position in the channel of communication between Eskimos and whites. It is a necessary role but one without honour.

The definition of the roles of leadership within the Eskimo community are necessarily restricted. They tend to be related and determined by the demands of family organization and food production, additional determinants are the presence of distinct national groups and the age-group of teenagers. The family groups require leaders for the production of food while the other social groups seem to require leaders in order to maintain their unity and to differentiate themselves from the other social groups. The fact that there is not any one leader who stands as a

representative for the whole community is a commentary upon the segmentary nature of this community. The characteristics of the leaders of the extended family groups are their seniority within the family, their success as hunters and trappers, and their wealth. These men in a former time would each have been "chiefs" of a small community dependent upon one family for its existence. This type of leadership is in decline since the extended family group is not crucial to the present community organization.

The leadership of occupational groups is only a potential position since the occupation of trapper and hunter finds its leaders in the extended family group. Casual wage employment does not require Eskimo leadership since it has European leaders and is an overlay upon the hunting-trapping economy. Nor does permanent wage employment require leadership, with the possible exception of the boat-building project.

This latter occupation derives its leadership pattern from the old sources. The "chief" of Tuktoyaktuk, an older relative who is also the head of Tuktoyaktuk's principal family, and a younger relative are the three employee-partners. The younger man is the foreman and the obvious leader of the project. All three are descendants of Mangalalook but this young man, William Mangelanna, is not only the foreman but the President of the Tuktoyaktuk Trapper's Association. Significantly he is a poor trapper. But he is the direct descendent of a great chief, a vigorous and wealthy man, and is engaged in the responsibility of a meaningful occupation. It must be added here that the R.C. priest in charge of the boat-building centre from 1955 to 1957 selected these three men with such thoughts in mind. This did not diminish the ready acceptance on the part of the community of the leadership of William Mangelanna.

The leader of the teenage group tends to vary with which one of the young men from Tuktoyaktuk or Aklavik is resident and has money to spend. Here wealth is one of the prime determinants of leadership, while it is only one of a constellation in the other social groups. An additional quality of leadership here is the ability with which the young man can manipulate the European environment. What European clothes and other possessions he has, his use of European food and his social relations or the ease with which he uses the Europeans are important determinants. One person who most successfully fills certain requirements, however, also invariably runs afoul of the R.C.M. Police and his career is interrupted by arrest and frequently a jail sentence.

Eskimo leadership among the Alaskan national group is being vigorously contested but the balance of power seems to be in the hands of Mark Noksana, the foreman of the Hudson's Bay Company's casual employees and a man with aspirations to being a lay preacher in the evangelistic sect. He usually acts as translator for the white evangelist's services although the word "translator" is perhaps not correct. He interprets what he thinks the preacher should say, not what she actually has said. This type of leadership is based upon fear both as a foreman and as a preacher since the message of the latter is a forecast of doom and the former role one of strict authoritarianism. The contenders for the leadership of this religio-nationalist group are both guitarists at the prayer services. It seems unlikely that either of them will usurp the present leader's position.

In addition to the forms described, there is also a negative form of leadership. It makes its appearance in a variety of ways but the writer saw it best exemplified at a meeting of the Trapper's Association.

The "chief" was proposing that the Trapper's Association buy reindeer meat at slaughtering time so that a supply might be available during the winter. There was interest shown in the idea by the majority of members but two of the best trappers and hunters at the meeting immediately protested that this would have far reaching consequences--if people started to buy meat they might forget how to hunt. These protests were an indirect attack upon the chief and embodied the common attitude of the hunter--that he must be able to procure all of his food himself.

The two men who raised the objections are vigorous and young and are perhaps the best hunters and family providers in the community. But they are continually lamenting the laziness and improvidence of the majority of men. These hunters have the respect of most of the community, but they will not accept the allegiance of anyone nor will they give assistance to any but near relatives. Indeed, they complain about the sharing of food with relatives. It seems to indicate that there is a basic disharmony in the leadership functions of the community and that these very successful hunters have been turned away from the roles which would be expected of them under the traditional society. It may be indicative of how much importance the hunting pattern is in the present community. The value remains since the hunter is respected, but the actual function of the hunter in providing the basic food resource is of diminished importance.

Leadership in the traditional Eskimo community of the Mackenzie River delta was probably a role that was performed by the heads of each extended family. The "leader" of the family was also a religious leader and his power, the sanctions which he could bring to bear upon the family as an economic unit, were undoubtedly derived from his position as a shaman. Any one settlement had many leaders and what co-operation and consensus obtained in the community were the result of a common core of religious belief. Also, the basic economics of any settlement would be homogeneous so that the choices open to the leaders in any particular situation were fairly limited.

The present "chief" at Tuktoyaktuk derives his power hereditarily from an ancestor who was the leader of the four or five families resident at Tuktoyaktuk before the community increased in size to its now--large population. The religious sanctions which formerly gave power to a leader are now absent and the homogeneity of economics is a thing of the past. The role of the "chief" is, therefore, something of the nature of a quaint survival.

The presence of a variety of interest groups in the community, each with its own leader, makes it unlikely for any one man to be able to fulfil the role of "chief"--except as a legal fiction. But consensus of opinion and of action cannot be expected to come naturally from the present leaders since each represents a group of different interests. Since there is no council or formal group where such diversity of interests would be resolved, the community structure of Tuktoyaktuk is amorphous, and is, indeed, only a collection of extended families, each pursuing its own interests.

The larger community in any society appears to make certain specific demands upon its members in the area of economic co-operation if there is to be a full utilization of resources. But the situation at Tuktoyaktuk precludes co-operation beyond the bounds of the extended family group. There is practically no specialization of occupation between members and little division of labour outside the family.

APPENDICES

APPENDIX I

ESTIMATED INCOMES IN DOLLARS - TUKTOYAKTUK REGION
Year ending August, 1957

Families	Trapping Averaged over 5-year Period	Employment Permanent	Employment Casual	Handicraft	Sale of Crafts Animal Product	Social Legislation: Family Allow.	Social Legislation: Old Age Pen.	Social Legislation: Relief	Total
J. Nesualuak				150	500	504			1154
D. Nesualuak	750		1200						1950
J. Raddi	100	2400				96			2596
J. Kotokak	100							200	300
S. Anakina	500		1200	50		96			1846
P. Etagiak	100	2400				456			2956
S. Raddi	100	2400		50		456			3006
T. Umauk		600					552		1152
M. Noksana	100	2400				288			2788
B. Chicksi	100		1200	50		96			1446
S. Kikuak	100		1200			216			1516
D. Pingo	100		1200			552			1852
P. Rufus	100					288			388
J. Norberg	500	3600				288			4388
H. Amagonaluk	100					288		500	888
J. Raddi	100		1200			96			1396
B. Pokiak	500		1200			936			2636
R. Kowikchuk		3600		50		528			4178
A. Elias	500		1600	50		576			2726
Mary Gruben						156		200	356
Nevadlook				50			552	200	802
W. Gruben	500		1200			240			1940
C. Gruben	750		600	50		744			2144
E. Kikuak				50		96		600	746
F. Nujaviak		3600							3600
P. Anikina	100		1200			216			1516
N. Felix	100		1200			72			1372
E. Kotokak	500		1200			288			1988

APPENDIX I (Continued)

Families	Trapping Averaged Over 5-year Period	Employment Permanent	Employment Casual	Handicraft	Sale of Crafts Animal Product	Social Legislation: Family Allow.	Social Legislation: Old Age Pen.	Social Legislation: Relief	Total
D. Silowchuk	100		600			288			988
A. Felix	100		1200			288			1588
P. Raymond	100		1200			384			1684
E. Felix		3600		150		432			4182
A. Cockney	100		1200	50		360			1710
M. Raddi	500		1200						1700
D. Cockney							552		552
N. Elias	500		1200			480			2180
D. Klengenberg	100			150		1018			1268
E. Gruben	750		500		200	480			1930
B. Cockney				50					50
A. Vodras	100		1200			216			1516
J. Jacobson	750		600	50		216			1616
B. Dillon		3600				360			3960
O. Anakina	500					144			644
J. Carpenter	100		1200			552			1852
E. Elias	500		1200	50		504			2254
K. Ovayuk	100		1200			552			1852
W. Dick	100					384		500	984
Numatuma			500				552		1052
P. Adam			1200			312			1512
R. Dick	100					756			856
R. Mangilanna		3600							3600
F. Kemiksana	100		1200			552			1852
W. Lucas	500				1500	240			2240
Adam Emaghok	100				1500	216			1816
Jos. Avingayoak	100				1500	240			1840
	11,100	31,800	30,800	1,050	5,200	16,546	2,208	2,200	99,904

APPENDIX II

(From (Confidential) Annual Report for 1956 of the Arctic Unit to the Fisheries Research Board.)

Fisheries Investigations

The preliminary survey of 1955 in the Mackenzie delta region was followed in 1956 by intensive studies on both sides of the delta. Fisheries work is being developed first in the western arctic because of the relative abundance and variety of fish in this region, with the possibilities of greater utilization and better organization of fishing. A preliminary survey of fish in the Back River system, N.W.T., was undertaken in the interests of inland Eskimo economy.

No. 1

Western Arctic

Two areas of fishing were considered in 1956, one at Whitefish Station on the east bank of the Mackenzie River delta, the other west of the Mackenzie River as far as the Firth River opposite Herschel Island.

Fishing operations commenced at Whitefish Station just after the ice went out and was carried on continously, except for weather interruptions, from July 7 to September 15. Fishing was done at the mouth of the Firth River from July 27 to August 10 and again at King Point Harbour until August 30.

On a reconnaissance trip into Coppermine September 26 the aircraft was lost on the way home and was missing for 19 days. Complications arising mainly from this situation, with the subsequent transfer of the writer to Montreal, have precluded analysis of the data collected during the summer.

During the fishing season at Whitefish Station 15 species were taken and a total of 10,000 fish were caught. Lengths, weights, scales or otoliths, sex, maturity, stomach contents and parasites were recorded and collected. The majority of fish caught were Coregonids. The catch reached as high as 700 in one day. The nets used were graduated in one inch sizes from 1½ to 5½ inches. The efficiency of the nets was noted and the relation of the catch to the season recorded.

A fine-mesh net was set in a small clear-water lake, situated a quarter of a mile from the Mackenzie River and connected to it during normal times by a very shallow marshy

stream. The only fish caught here were stickleback (Pungitius pungitius).

At the mouth of the Firth River seven species totalling about 1,000 fish were caught. Coregonids and arctic char made up the bulk of this catch. Weather hampered operations at both fishing locations during August often making it impossible to keep a net in the water.

A small otter trawl was tried in the sea off the mouth of the Firth River but the drifting ice prevented access to water more than 10 feet deep. The restricted fishing allowed produced small cod (Eliginus gracilis). These fish were forming the main diet of the Arctic char being caught.

King Point Harbour is simply an indentation in the coastline forming a small bay (about 0.25 square miles). It is protected from the sea by an extensive sand spit leaving only a small entrance into the area. Approximately 2,000 fish were caught here by the R.C.M.P. this year in the course of four days. Continued equal fishing effort for the succeeding 15 days produced less than 400 fish. This isolated population was not receiving a recruitment from outside waters adequate to withstand the fishing intensity applied. A narrow band of fresh water from the Mackenzie River often extends along the coast and it was reported that in 1954 when the wind changed, altering the salinity picture, fresh water cod or burbot (Lota) died in large numbers and were found distributed along the beaches. No burbot were caught this year however. Seven cod (Eliginus gracilis) measuring from 38.5 to 48.5 centimentres were caught by gill-nets in King Point Harbour this season.

APPENDIX II
Continued

FISHERIES RESEARCH BOARD
OF OTTAWA

Head Office in Ottawa
(Under the Minister of
Fisheries)

Please address reply to:

Arctic Unit,
505 Pine Avenue W.,
Montreal, Que.

October 18, 1957.

Mr. J. Ferguson,
Northern Research Co-ordination Centre,
Dept. of Northern Affairs & National Resources,
Kent Building,
Ottawa, Ontario.

Dear Mr. Ferguson:

I regret the delay in providing the information you requested in our telephone conversation but much of the material was in its original form and required re-working.

The mouth of the MacKenzie River from our experience provides a very good fishing ground for a subsistance level fishery. Commercial fishing apart from supply Tuktoyaktuk, Aklavik or East 3 is not recommended by our work.

In 1956 we caught approximately 10,000 fish of all species present. About 98% of these fish were caught in 5 gill nets each 150 feet long. The nets ranged in mesh size from 1½ to 5½ inches. All were nylon nets, a fact which increased their efficiency over the linen and cotton nets used by the natives.

Nylon nets have been tried by the local inhabitants and have been found seriously wanting. Such an outcome is to be expected in view of the size of the thread employed in the nylon nets sold in the Arctic. Minimum thread size recommended for nylon nets are:

1½" mesh, twine 140/3
2½" mesh, twine 210/4
3½" mesh, twine 210/4
4½" mesh, twine #208 3 medium
5½" mesh, twine #208 3 medium

APPENDIX II
Continued

Nylon netting lends itself to the native fishing methods better than either cotton or linen. Firstly it is not inclined to pick up as much dirt and silt as the other two materials and secondly it can remain in the water the entire season without harm whereas the other two materials should be dried or cured at least once a week. Natives, we found, often left their nets unattended for days at a time.

The different species are caught in nets of almost all mesh sizes but certain meshes catch greater poundages of certain species than others. The greatest poundage of whitefish was caught in our 4½" mesh net while the 5½" net caught larger fish but not as many pounds were taken. The 3½" net caught about 30% more whitefish than did the 5½" net but the poundage was 33% less. A 3½" mesh net, although it catches whitefish of reasonable size, also catches inconnu of economical size. However, the inconnu caught by this mesh are usually immature so that extensive use of 3½" mesh nets might lead to problems in the production of this species.

At Whitefish Station East, Lake herring can be caught in appreciable numbers during the summer. These fish were caught by all our net sizes but were more abundant in the 2½" and 3½" mesh nets. Mesh sizes again present a problem in view of the inconnu being present at the same time.

Yours truly,

(Sgd) J. G. Hunter.

APPENDIX III

SEX AND AGE DISTRIBUTION
TUKTOYAKTUK POPULATION 1957

		Total	Male	%	Female	%
Age	0-4	79	37	10.8	42	12.3
	(0-1)	(28)	(10)	--	(14)	--
	5-9	52	24	7.0	28	8.2
	10-14	56	28	8.2	28	8.2
	15-19	23	9	2.6	14	4.1
	20-24	26	12	3.5	14	4.1
	25-29	17	11	3.2	6	1.8
	30-34	23	12	3.5	11	3.2
	35-39	26	15	4.4	11	3.2
	40-44	13	9	2.6	4	1.1
	45-49	9	6	1.8	3	.9
	50-54	2	1	.3	1	.3
	55-59	5	2	.6	3	.9
	60-64	2	1	.3	1	.3
	65-69	3	2	.6	1	.3
	70 +	6	4	1.1	2	.6
		342	173	50.5	169	49.5

Note: The statistics on which are based the diagrams for Canada and Northwest Territories in Graph I, were taken from Census of Canada, 1956; Dominion Bureau of Statistics.

APPENDIX IV

ITINERARY

21 June, 1957	-	Left Edmonton at 2.00 p.m. via Pacific Western Airlines C-46; arrived at D.E.W. Line site "PIN" approximately 12.00 midnight.
24 June, 1957	-	Arrived at Tuktoyaktuk via P.W.A. DC - 3 and took up residence in the village.
25 June, 1957	-	Began field work with Eskimos of the community.
15-16 July, 1957	-	Spent two days whaling with Eskimos in vicinity of Hendrickson Island.
24-25 July, 1957	-	Spent two days whaling with Eskimos in vicinity of Hendrickson Island.
27-28 July, 1957	-	Spent two days at Toker Point observing reindeer round-up of Herds Numbers Three and Four.
10 September, 1957	-	Struck tent and moved to D.E.W. Line site "BAR 3" awaiting transportation to Edmonton. Field work ended.
16 September, 1957	-	Arrived Edmonton via P.W.A. DC-4.
20 September, 1957	-	Arrived Ottawa, Ont.

EQUIPMENT USED

- A 9' x 12' umbrella tent.
- A Coleman two-burner gasoline stove.
- A Coleman gasoline lantern (300 C.P.).
- An assortment of cutlery and cooking utensils suitable for cooking for two persons.
- Six enamelled mugs.
- A "safari" bed, cotton mattress and "Howard Explorer" sleeping bag.
- A gabardine and duffle cloth parka of Eskimo manufacture.
- Two suits of lightweight woollen underwear.
- A pair of 10" heavy leather boots with rubber soles.
- A pair of 10" rubber boots.
- A pair of hip rubber boots.

-Two pairs of work trousers; one light and one heavy.
-Two flannel shirts.
-A heavy wool sweater.
-A Mackinaw coat.
-A rubber and nylon rain suit.
-A ski cap.
-A brimmed hat and mosquito head net.
-A mosquito "bar".
-A pair of work gloves.
-Six pairs of "6 lb." socks.
-Two 6 x 6 cm. cameras (Yashicamat).
-Two 35 mm. cameras (Diax 11a).
-A 16 mm. movie camera (Bolex RX 16).
-A portable, dry battery-operated tape recorder (Wirek Reporter 7½ i.p.s.)

All of the departmentally owned and personally owned equipment proved satisfactory for the period during which it was used.