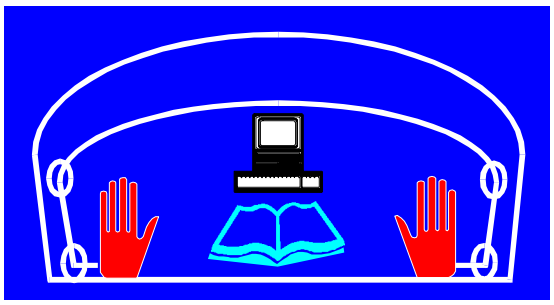

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POLAR GAS - Regional Socio-Economic Statement

(1984 Submission)

THE CURRENT SOCIO-ECONOMIC SITUATION: NORTHWEST TERRITORIES

CHAPTER 5.

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CHAPTER 5.

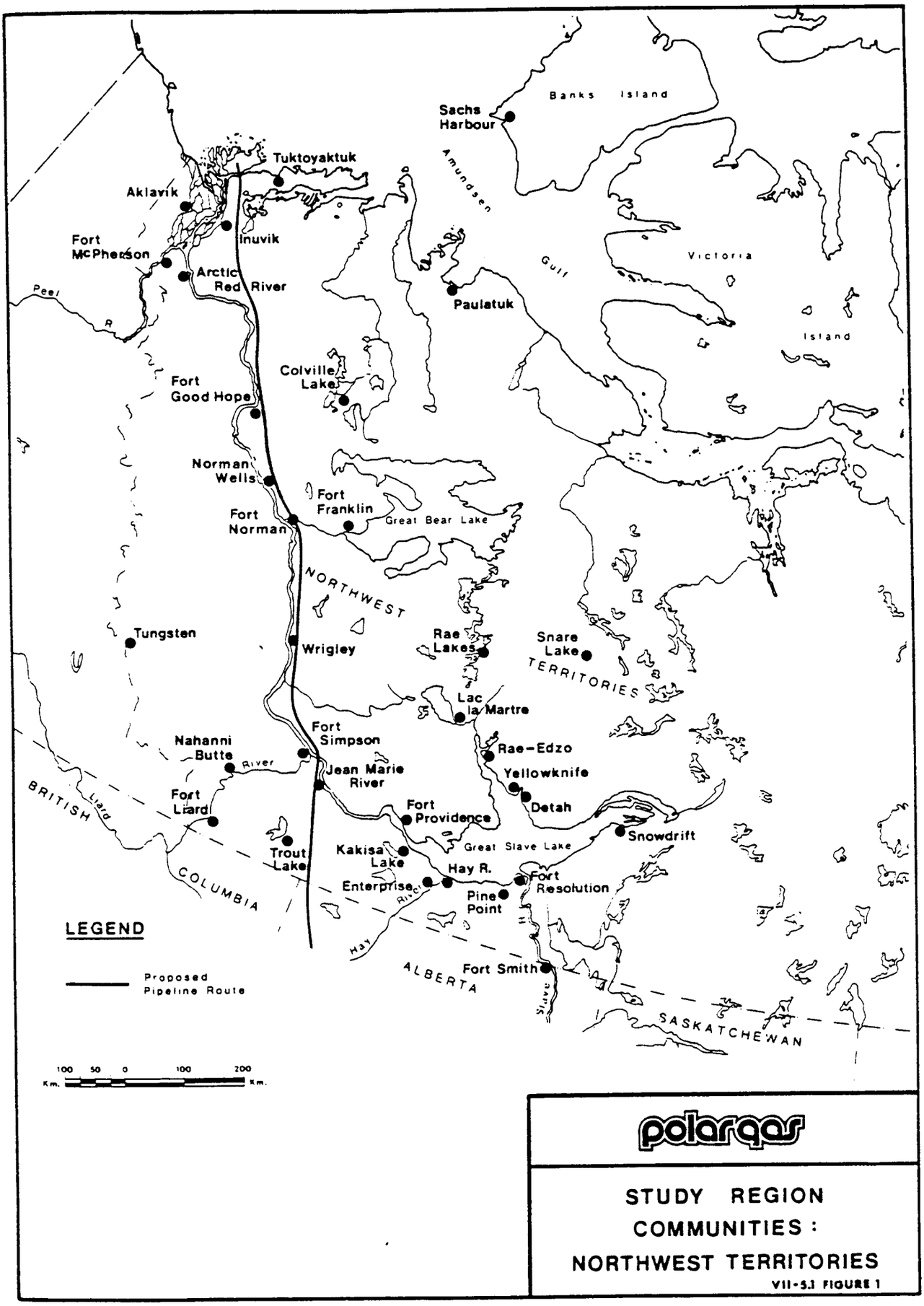
THE CURRENT SOCIO-ECONOMIC SITUATION: NORTHWEST TERRITORIES

5.1 INTRODUCTION

This chapter presents information on the social and economic conditions in the Study Region and its component communities, information that is necessary to the discussion and analysis found in subsequent chapters. In particular, the chapter provides a basis for the assessment of the possible effects of the project as discussed in Chapters 11 and 12.

This introduction begins with an overview of the social and economic situation for the region as a whole. This overview is intended to provide a context for a more detailed examination of community groups and individual communities within the Study Region. The chapter is not intended to be a detailed and exhaustive socio-economic analysis of all aspects of this Region. Rather, it is a summary description of those aspects of the current social and economic situation that are considered directly relevant to the assessments of project effects. Much of the statistical and tabular material used in this chapter has been obtained from a wide range of secondary sources, and from published, file and personal communication sources from offices of the Government of the Northwest Territories, the Government of Canada, and the Government of Alberta. Although every attempt has been made to obtain current, comprehensive data, for some topics data is limited.

As defined in VII-1.2.1, Study Region communities are those which are situated within 50 km of the proposed route, which are identified with resource harvesting in that zone, which may experience staging or other construction support activity, which may provide workers, or which are dependent for services. Study Region communities are shown in VII-5.1 Figure 1. For the purpose of the following discussion, these communities have been grouped by geo-cultural sub-region and type to reflect their diverse geographical, social and economic character. The three Sub-regions selected and the three general community types are presented in VII-5.1 Table 1.



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STUDY REGION
COMMUNITIES :
NORTHWEST TERRITORIES

VII-5.1 FIGURE 1

VII-5.1 TABLE 1

STUDY REGION COMMUNITIES BY SUB-REGION AND TYPE
WITH PROJECTIONS OF 1984 POPULATIONS

Sub-region	Community Type			
	Industrial	Service	Traditional	Mining
Delta	Inuvik (3684)	Tuktoyaktuk (872)	Sachs Harbour (176) Paulatuk (192) Aklavik (781) Arctic Red River (122) Fort McPherson (674)	--
Mackenzie River	--	Norman Wells (545*) Fort Simpson (1033)	Colville Lake (56) Fort Good Hope (514) Fort Franklin (558) Fort Norman (281) Wrigley (149) Fort Liard (428) Nahanni Butte (89) Jean Marie River (74) Trout Lake (61)	Tungsten (410)
Great Slave Lake	Hay River (3185) Yellowknife (10841)	Fort Providence (649) Fort Smith (2393) Enterprise (48)	Kakisa Lake (37) Fort Resolution (490) Snare Lake (75) Snowdrift (259) Rae-Edzo (1517) Rae Lakes (212) Lac la Martre (294) Detah (151)	Pine Point (1922)

Note: *Population estimate as of December, 1983 by the GNWT, Bureau of Statistics. Unpublished estimate made June 1984.

Source: Government of the Northwest Territories, Bureau of Statistics. 1983. Unpublished projections by community. October 1983.

The Mackenzie Delta Sub-region includes includes the communities and resource-harvesting areas of Tuktoyaktuk, Inuvik, Aklavik, Sachs Harbour, Paulatuk, Fort McPherson and Arctic Red River. The Mackenzie River Sub-region includes twelve communities and their resource-harvesting areas: Colville Lake, Fort Good Hope, Fort Franklin, Norman Wells, Fort Norman, Wrigley, Fort Simpson, Fort Liard, Nahanni Butte, Jean Marie River, Trout Lake and Tungsten. Fourteen other communities within the Northwest Territories and their harvesting areas are included which comprise the Great Slave Lake Sub-region: Hay River, Enterprise, Pine Point, Kakisa Lake, Fort Smith, Fort Resolution, Snowdrift, Rae-Edzo, Rae Lakes, Lac la Martre, Snare Lake, Yellowknife and Detah.

For the purposes of this analysis, the communities in each Sub-region have been characterized as one of four types: 'Industrial', 'Service', 'Traditional', or 'Mining'. 'Industrial' communities perform major industrial government and service functions for large areas of the central and western Northwest Territories. Because of their function and size, these communities usually offer a wide range of services and employment opportunities. There are three such communities in the Study Region: Yellowknife, Hay River and Inuvik. The 'Service' communities include those which perform service functions for smaller sub-regions. There are six such service communities in the Study Region: Tuktoyaktuk, Norman Wells, Fort Simpson, Fort Providence, Fort Smith and Enterprise. Most of these communities have mixed industrial/service/traditional economies. The 'Mining' communities are largely self-contained enclaves which have come into existence to provide accommodations and services for mine and concentrate plant personnel. There are two of these: Tungsten on the Yukon border (it has road connections only with the Yukon) and Pine Point, located south of Great Slave Lake. 'Traditional' communities are classified as those in which the resource harvesting economy typically predominates.

An overview discussion of the characteristics of the Study Region is best organized in terms of the three Sub-regions. The Delta Sub-region, from a geographic perspective, has two component areas. Tuktoyaktuk, Sachs Harbour and Paulatuk are all Arctic coastal communities well north of the treeline and they experience typical Arctic weather conditions. The remaining communities, including Inuvik which is approximately 150 km from Tuktoyaktuk, are situated in the relatively temperate Mackenzie Delta, an area rich in wildlife. The biological resources of the area, together with the considerable wage employment opportunities provided by regional government offices and business establishments, have contributed to the relatively high population densities found here. However, despite the industrial character of Inuvik and Tuktoyaktuk, some people in both

of these communities as well as many in the other Delta communities continue to depend heavily on the resource-harvesting economy.

The Delta area is unique in the north because of its ethnic diversity. This Inuit/Dene/Euro-Canadian heritage is most evident in Inuvik and Aklavik, where all three ethnic groups are represented in substantial numbers. In contrast, residents of Sachs Harbour, Tuktoyaktuk and Paulatuk are predominantly Inuit, and those of Fort McPherson and Arctic Red River are almost exclusively Dene. Nevertheless, all are viewed as integral to the larger "Delta community". Inuvik is the major service and industrial centre for the Delta and as a result its residents have access to a wide range of services and wage employment opportunities. Tuktoyaktuk serves as the support base for much of the Beaufort Sea oil exploration activity and for that reason the level of wage employment and services there has increased considerably in recent years. However, part of the populations of both these communities continue to participate in the traditional resource harvesting economy more characteristic of Sachs Harbour, Paulatuk, Aklavik, Fort McPherson and Arctic Red River.

The Mackenzie River Sub-region, situated entirely south of the treeline, is essentially the Mackenzie River Valley, extending north from about the point where the river leaves Great Slave Lake. There is no Industrial community in this Sub-region and all communities are relatively small, with none exceeding 1 250 persons. It is unique in that Dene residents predominate in all of the communities with the exception of Norman Wells. Despite its small size Norman Wells has important functions associated with the oil field and small refinery. Following completion of the Interprovincial oil pipeline, the community will assume additional functions as a pipeline operations and maintenance base. In addition, in part because it has the only major airstrip between Fort Simpson and Inuvik, Norman Wells gradually is becoming the administrative and service delivery centre for a number of government functions. Because Native people comprise such a small part of the Norman Wells population, resource-harvesting figures minimally in the economy of this community.

The same service delivery functions which Norman Wells provides are delivered at the southern end of this Sub-region by Fort Simpson. This very old community has been inhabited continuously since 1804. Its size and its position near the junction of the Liard and Mackenzie Highways have made it the obvious site for the administrative centre in this part of the Mackenzie Valley and for the industrial and service sectors required in the upper Valley. Nevertheless, a majority of the residents are Dene, many of whom remain heavily dependent on resource harvesting.

Tungsten is a very small mining village located on the Yukon border 375 km west of Fort Simpson. It is a non-Native company town established to house workers at the Canada Tungsten mine and their families. The remaining communities in this Sub-region are all traditional Dene communities, with very few non-Native residents. The larger of these villages are generally located along the river, whereas other smaller ones are located inland. The major exception is Fort Franklin, one of the largest in the Sub-region, which is located where the Bear River leaves Great Bear Lake. The larger communities all have mixed resource harvesting and wage economies with the former dominating. Since 1982, however, Esso Resources has actively recruited many Native people to work on its expanding work force at the Norman Wells oilfield. As a result, there is increasing involvement in wage employment among the residents of Fort Good Hope, Fort Franklin, and Fort Norman in particular. Also, Fort Liard is becoming increasingly involved in industrial employment as a result of opportunities provided by the Pointed Mountain gas field, the construction of the Liard Highway and the opportunities for providing highway services now that this Highway has opened. The very smallest communities still depend heavily on resource harvesting. The most traditional among these is probably Colville Lake.

The Great Slave Lake Sub-region has the greatest variations in community size among the three Sub-regions. The two major Industrial centres, Yellowknife and Hay River, are the largest communities in the Northwest Territories. Both offer a selection of services and employment opportunities appropriate for their sizes to relatively large populations which are largely Euro-Canadian. Small Dene settlements are located in or near each of these centres; their residents have the choice of pursuing either an industrial or a traditional lifestyle.

Fort Providence has a mixed industrial/service/traditional economy and with Fort Smith and Enterprise is categorized as a Service centre. Fort Providence is ethnically diverse, and includes southern Canadians, Dene and Metis who follow a range of lifestyles. Fort Smith is similar in ethnic composition, but it functions as the technical and advanced education centre in the Northwest Territories, as well as providing a home base for many native people involved in resource harvesting. Enterprise, which has a very small resident population, is essentially a highway service centre at the junction of the highways leading to Fort Simpson and Hay River.

Pine Point is the second Mining community in the Study Region. It is a company town inhabited by an overwhelmingly non-Native population which is employed in operating the nearby Cominco Pine Point open pit lead-zinc mine.

The remaining communities in the Great Slave Lake Sub-region are Traditional Dene communities. Most are small, but Rae-Edzo has a population of about 1 400, all but a few of whom are Dogrib Dene. In all of these Native communities, the traditional resource harvesting economy predominates and wage employment is very limited. As with the traditional Inuit settlements, income from wage employment often is directed into support of traditional activities. Since wage employment opportunities are very limited in the Traditional communities of this Sub-region in particular, many of these communities typically are quite dependent on transfer payments.

5.2 DEMOGRAPHIC CHARACTERISTICS

This sub-section presents a broad description of the demographic characteristics of communities in the Study Region. Information on the total population and age and sex characteristics is followed by a discussion of ethnic composition and population dynamics.

5.2.1 OVERVIEW: THE POPULATION OF THE STUDY REGION

Statistics on the total population of the Study Region by Sub-region and community type are presented in VII-5.2 Table 1. The figures show that when the Census was taken, in 1981, the population of the Study Region was 29 640, up from 22 890 in 1971, or an increase of 30 percent. The population of the Territories as a whole increased by virtually the same percentage, 31 percent, during the same period. However, of the total increase, 25 percent occurred between 1971 and 1976, whereas only seven percent occurred between 1976 and 1981. This abrupt drop in the rate of population increase followed the Berger Inquiry rejection of the Arctic Gas and Maple Leaf pipeline proposals.

In both 1971 and 1981, 65 percent of the total population of the Northwest Territories was residing within the Study Region boundaries. In 1971, 50 percent of the Region population lived in Industrial towns, 21 percent lived in Service communities, six percent in mining communities and 24 percent in Traditional communities. By 1981 the Industrial towns and Mining communities had grown at the expense of the Service and Traditional communities, so that these proportions became 52, 18, 7 and 23 percent. Much of this urban growth was in Yellowknife which had 27 percent of the total Study Region population in 1971, and over one third (34 percent) in 1981.

Within the Study Region, the proportions of the total population residing in each of the Sub-regions changed slightly between 1971 and 1981. The Great Slave Lake Sub-region, of course, had the largest proportion, 66 percent in 1971 and 68 percent in 1981. The next largest was the Delta which had 22 percent in 1971 but only 19 percent in 1981, whereas

VII-5.2 TABLE 1

TOTAL POPULATION AND PERCENT CHANGE BY SUB-REGION AND COMMUNITY TYPE, 1971 TO 1981

Sub-region/Community Type	1971 (Census)	1976 (Census)	% Change 1971-76	1981	% Change 1971-81
Delta					
1) Industrial	2 669	3 170[1]	18.8	3 158[1]	18.8
2) Service	597	590	1.2	772	29.3
3) Traditional	1 683	1 903	13.1	1 808	17.3
TOTAL	4 949	5 663	14.4	5 738	15.9
Mackenzie River					
1) Industrial	--	--[2]	--	--[2]	--
2) Service	1 155	1 598	38.4	1 480	28.1
3) Traditional	1 538	1 805	17.4	2 082	35.4
4) Mining	130	229	76.2	320	46.2
TOTAL	2 823	3 632	28.7	3 882	37.5
Great Slave Lake					
1) Industrial	8 693	11 803[3]	35.8	12 393[3]	42.6
2) Service	3 032	2 983	-1.6	2 939	-3.1
3) Traditional	2 176	2 525	16.0	2 827	34.5
4) Mining	1 217	1 915	57.4	1 861	52.9
TOTAL	15 118	19 226	27.2	20 020	32.4
Total Study Region					
1) Industrial	11 362	14 973[1,3]	31.8	15 551[1,3]	36.9
2) Service	4 784	5 171[2]	8.1	5 191	8.5
3) Traditional	5 397	6 233	15.5	6 717	24.4
4) Mining	1 347	2 144	59.2	2 181	61.9
TOTAL	22 890	28 521	24.6	29 640	29.5

Notes:
1. Persons in Inuvik "Unorganized area" included in population.
2. Persons in Fort Simpson "Unorganized area" included in population.
3. Persons in Hay River "Unorganized area" included in population.

Sources: Calculated from figures obtained from Government of Canada, Statistics Canada, Census 1976, Vol. 1, Population: Geographic Distributions, Agglomerations and Vol. 8, Supplementary Bulletins: Geographic and Demographic Populations of Unincorporated Places.

Government of the Northwest Territories, Bureau of Statistics. 1982. Interim Population Projections, Population by Age, by Ethnicity and by Sex. November 1982.

the smallest was the Mackenzie River Sub-region, with 12 percent in 1971 and 13 percent in 1981.

The figures in VII-5.2 Table 1 show that the three Sub-regions experienced the same pattern of rapid growth between 1971 and 1976 as the whole of the Region, although some grew more rapidly than others. The largest increase, 29 percent, was in the Mackenzie River area, followed by the Great Slave Lake (27 percent) and the Beaufort-Delta, (14 percent). Between 1976 and 1981 the lowest growth was again in the Delta Sub-region, one percent, whereas Mackenzie River and the Great Slave Lake Sub-regions grew by seven and two percent respectively. On the other hand, Yellowknife did grow between 1976 and 1981 by 1 009 people or 12 percent, with the result that the remainder of the Great Slave Lake Sub-region actually lost two percent of its 1976 population during the ensuing five years. However, all of this loss took place in Hay River which declined by 419 people during this period. In fact, during this period, Hay River and Fort Simpson both lost, 13 percent and 14 percent respectively of their 1976 populations, which in both cases had grown very rapidly earlier in the decade.

By 1981, the early stages of two other projects were beginning to induce new population growth in the Study Region. Norman Wells was beginning to grow under the impetus of Esso Resources' decision to expand production from the Norman Wells oil field and the populations of Tuktoyaktuk and Inuvik were responding to the rapid escalation of the offshore drilling programs of Dome Petroleum and, to a lesser extent, of Esso Resources. Since 1981 the population effects of these two programs, augmented in 1983 by Gulf Resources offshore drilling program, have become increasingly apparent. There are no indications yet, however, that this increased activity is having any significant effects on the populations of Fort Simpson or the Great Slave Lake towns.

5.2.2 ETHNIC COMPOSITION

Ethnic composition is a significant factor in shaping the demography of northern communities, through its influence on birth rates, death rates, family size and household composition. The relevant data, based on information from the 1981 Census of Canada, are summarized in VII-5.2 Table 2. These data, which are summarized graphically in VII-5.2 Figure 1, show that for the Study Region as a whole the largest component of the population, comprising 57 percent, is non-Native. The Native component includes the 23 percent who are Dene (Treaty Indian), the 13 percent who are Metis or non-Status Indian and the eight percent who are Inuit. The figures in the table show clearly that the Industrial communities are dominated by an 78 percent majority of non-Natives. The Traditional communities have an even heavier majority of Native people, 91 percent, but

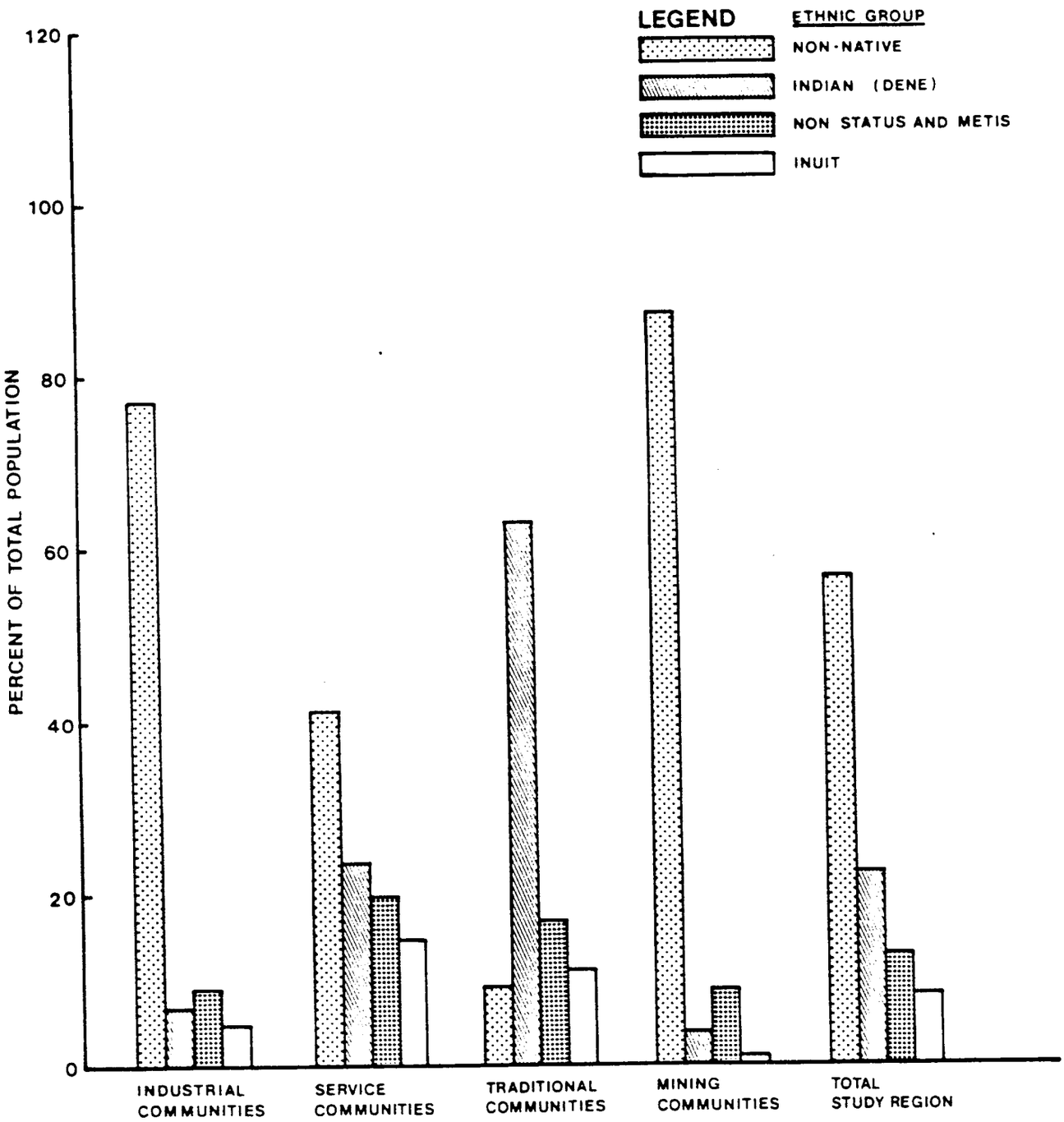
VII-5.2 TABLE 2

ETHNIC COMPOSITION BY SUB-REGION AND COMMUNITY TYPE, 1981

Sub-region/ Community Type	Indian (Dene) No.	Indian (Dene) %	Non-Status & Metis No.	Non-Status & Metis %	Inuit No.	Inuit %	Total Native No.	Total Native %	Non-Native No.	Non-Native %	Total
Delta											
1) Industrial	230	7.4	235	7.5	640	20.6	1 105	35.5	2 010	64.5	3 115
2) Service	15	2.0	15	2.0	675	87.7	705	91.6	65	8.4	770
3) Traditional	700	39.4	225	12.7	685	38.6	1 610	90.7	165	9.3	1 775
4) Mining	--	--	--	--	--	--	--	--	--	--	--
TOTAL	945	16.7	475	8.4	2 000	35.3	3 420	60.4	2 240	39.6	5 660
Mackenzie River											
1) Industrial	--	--	--	--	--	--	--	--	--	--	--
2) Service	475	34.1	210	15.1	5	.4	690	49.5	705	50.5	1 395
3) Traditional	1 560	75.4	355	17.2	5	.2	1 920	92.8	150	7.3	2 070
4) Mining	10	3.1	15	4.7	--	--	25	7.8	295	92.2	320
TOTAL	2 045	54.0	580	15.3	10	.3	2 635	69.6	1 150	30.4	3 785
Great Slave Lake											
1) Industrial	835	6.8	1 140	9.3	175	1.4	2 150	17.5	10 115	82.5	12 265
2) Service	740	25.6	780	26.9	55	1.9	1 575	54.4	1 320	45.6	2 895
3) Traditional	1 995	70.5	560	19.8	--	--	2 555	90.3	275	9.7	2 830
4) Mining	60	3.2	160	8.6	10	0.5	230	12.4	1 625	87.6	1 855
TOTAL	3 630	18.3	2 640	13.3	240	1.2	6 510	32.8	13 335	67.2	19 845
Total Study Region											
1) Industrial	1 065	6.9	1 375	8.9	815	5.3	3 255	21.2	12 125	78.8	15 380
2) Service	1 230	24.3	1 005	19.9	735	14.5	2 970	58.7	2 090	41.3	5 060
3) Traditional	4 255	63.8	1 140	17.1	690	10.3	6 085	91.2	590	8.8	6 675
4) Mining	70	3.2	175	8.1	10	0.5	255	11.7	1 920	88.3	2 175
TOTAL	6 620	22.6	3 695	12.6	2 250	7.7	12 565	42.9	16 725	57.1	29 290

Source: Government of the Northwest Territories, Bureau of Statistics. 1983. "Population, by Community by Ethnic Origin, Age and Sex", calculated from tabulations of 1981 Census Canada data,

Note: Tables 1 and 2 were calculated from different Census source tables. The difference between the 1981 Totals in these two tables is explained at least in part by the fact that figures in the source for Table 2 were random rounded, whereas those in the source for Table 1 were not.



ETHNIC COMPOSITION OF THE STUDY REGION BY COMMUNITY TYPE, 1981

Source: VII-5.2 Table 2

VII-5.2 FIGURE 1

there is a more even balance in the Service communities where 59 percent are Native. In contrast to the Treaty Status Indians, who are most heavily represented in the Traditional communities, and the non-Natives who primarily live in the Industrial centres, the highest representation of non-Status Indians and Metis are found in the Service communities (20 percent), as compared with their 17 percent representation in the Traditional communities. The non-Status Indians and Metis also have the most equal representation across all three categories of communities.

There are significant differences in the proportional representation of the various ethnic groups between the three Sub-regions. In each of these Sub-regions, there is the familiar clear contrast between the Traditional communities which are predominantly Native and the Industrial communities which are predominantly non-Native. In the Delta Sub-region, the Native people are in the majority, but the non-Natives are the largest single group with 40 percent of the total. The Inuit are the largest Native group with 35 percent, the Treaty Status Indians have 17 percent, and the non-Status Indians and Metis have just half that proportion. It is interesting to note, however, that the Dene comprise the plurality in the Traditional communities in this Sub-region, whereas they contribute only seven percent to the Industrial (Inuvik) population. By contrast the Inuit make up 20 percent of the Inuvik residents, and 39 percent of the Traditional communities and, of course, dominate the Service community, Tuktoyaktuk, with 88 percent of that population.

There are no Industrial communities in the Mackenzie River Sub-region, and the number of Inuit is insignificant. Native and non-Native residents each comprise half of the population of the Service communities, essentially because the strong non-Native majority in Norman Wells and the Native majority in Fort Simpson balance each other. The Traditional communities in the Mackenzie River Sub-region resemble those in the Delta Sub-region since in both the populations are over 90 percent Native.

The Industrial communities of the Great Slave Lake Sub-region are strongly non-Native whereas persons of Native origin comprise a slight majority in the Service communities. The marginal situation of the non-Status Indians and Metis is clearly reflected in the figures for the Mining Communities. These are heavily, 88 percent, non-Native in composition, but among the remainder the non-Status Indians and Metis outnumber the Status Indians more than two to one; 175 as compared with 70.

Throughout the Study Region, there is a clear contrast between the Traditional communities which are predominantly Native and the Industrial communities which are predominantly non-Native. Indeed if the three large, generally Euro-Canadian, industrial

centres of Yellowknife, Hay River and Inuvik together with the Mining Communities are excluded from consideration, the ethnic composition of the remainder of the Study Region changes dramatically. Approximately 47 percent of the Study Region population exclusive of the Industrial and Mining communities are of Dene origins, instead of the 22 percent shown in the table, and the Inuit proportion increases from eight to 12 percent. The non-Status Indians and Metis proportion changes comparably, increasing from 12 to 18 percent. It thus becomes very clear that non-Natives are in the minority in all but the Industrial communities of the Study Region.

5.2.3 SEX/AGE DISTRIBUTION

Information on the number of men per 100 women in the population, the sex ratio, is found in VII-5.2 Table 3. These data are available by Sub-region, ethnic group, and community type. They show that the Study Region as a whole has a sex ratio of 111, that is, there are 111 men for every 100 women in the Region. Although there are some differences between the Sub-regions, all have a surplus of men. The highest sex ratio is 118, found in the Mackenzie River Sub-region. This is followed by the Delta Sub-region which has a ratio of 112, and the Great Slave Lake Sub-region with 110. All of the community types also have a surplus of men. The Mining Communities have the highest sex ratio with 122 men per 100 women. The Traditional communities have the next highest, with 114 men for every 100 women. Industrial communities are in third place with 111 and the Service communities have the lowest sex ratio with 107.

The sex ratios for the different ethnic groups show that the Inuit are the only group having even a slight surplus of women, with a sex ratio of 99.5. Among the Native people as a whole there are 105 men per 100 women, and the ratios are the same for non-Status Indians and Metis as among the Treaty Status Indians (106). The non-Natives have the highest sex ratio figure (116).

The age distributions of the populations in the three Sub-regions as of 1981 are shown in VII-5.2 Table 4. These data show that the population of the Study Region is distinctly younger than the Canadian population as a whole, with a higher proportion of the population under 15 years, and a much smaller proportion aged more than 34 years. Traditional communities are the most youthful. No less than 37 per cent of the population is under 15 years of age, making this, by a one percent point advantage, the largest of the four age groupings. It is noteworthy, however, that they also have the largest proportion of elderly people, with 5.3 percent aged 65 and over. The Industrial communities have the

VII-5.2 TABLE 3

ESTIMATED SEX RATIOS BY SUB-REGION, COMMUNITY TYPE AND ETHNIC GROUP, 1981

Sub-region/ Community Type	Ethnic Group	Number		Sex Ratio
		Male	Female	#men/100 women
DELTA				
Industrial:	Indian	110	125	88
	Non-Stat & Metis	115	125	92
	Inuit	315	325	97
	Total Native	540	575	95
	Other	1 125	885	127
	Total	1 665	1 460	114
Service	Indian	10	5	200
	Non-Stat & Metis	5	5	100
	Inuit	365	315	116
	Total Native	380	325	117
	Other	40	25	160
	Total	420	350	120
Traditional	Indian	340	355	96
	Non-Stat & Metis	130	105	124
	Inuit	365	335	109
	Total Native	835	795	105
	Other	80	85	94
	Total	915	880	104
MACKENZIE RIVER				
Service:	Indian	240	240	100
	Non-Stat & Metis	105	105	100
	Inuit	--	--	--
	Total Native	345	345	100
	Other	390	315	124
	Total	735	660	111
Traditional:	Indian	740	630	117
	Non-Stat & Metis	155	150	103
	Inuit	5	10	50
	Total Native	900	790	150
	Other	75	50	150
	Total	975	840	116

VII-5.2 TABLE 3 (cont'd)

Sub-region/ Community Type	Ethnic Group	Number		Sex Ratio
		Male	Female	#men/100 women
Mining	Indian	5	5	100
	Non-Stat & Metis	10	5	200
	Inuit	--	--	--
	Total Native	15	10	150
	Other	185	110	168
	TOTAL	200	120	167
GREAT SLAVE LAKE				
Industrial:	Indian	395	445	88
	Non-Stat & Metis	555	585	95
	Inuit	60	110	55
	Total Native	1 010	1 140	89
	Other	5 385	4 740	113
	Total	6 395	5 880	108
Service:	Indian	365	375	97
	Non-Stat & Metis	410	370	111
	Inuit	25	35	71
	Total Native	800	780	102
	Other	670	655	102
	Total	1 470	1 435	102
Traditional:	Indian	1 075	935	115
	Non-Stat & Metis	315	235	134
	Inuit	--	5	--
	Total Native	1 390	1 175	118
	Other	150	125	120
	Total	1 540	1 300	118
Mining:	Indian	35	20	175
	Non-Stat & Metis	80	85	94
	Inuit	5	10	100
	Total Native	120	110	109
	Other	875	750	117
	Total	995	860	116
TOTALS:	Indian	3 315	3 135	106
	Non-Stat & Metis	1 880	1 770	106
	Inuit	1 140	1 145	100
	Total Native	6 335	6 050	105
	Other	8 975	7 740	116
	TOTAL	15 310	13 790	111

VII-5.2 TABLE 3 (cont'd)

Sub-region/ Community Type	Ethnic Group	Number		Sex Ratio
		Male	Female	#men/100 women
Industrial		9 250	8 330	111
Service		2 625	2 445	107
Traditional		3 430	3 020	114
Mining		1 195	980	122
Beaufort Delta		3 000	2 690	112
Mackenzie River		1 910	1 620	118
Great Slave Lake		10 400	9 450	110

Source: Government of the Northwest Territories, Bureau of Statistics. 1983. "Population, by Community by Ethnic Origin, Age and Sex", calculated from tabulations of 1981 Census Canada data.

VII-5.2 TABLE 4

ESTIMATED POPULATION AND AGE DISTRIBUTION BY SUB-REGION AND COMMUNITY TYPE, 1981

Sub-region/Community Type	0-14 Years		15-34 Years		35-64 Years		65+ Years		Total
	No.	%	No.	%	No.	%	No.	%	
Delta									
1) Industrial	965	30.5	1 495	47.3	670	21.2	30	.9	3 160
2) Service	270	34.5	325	40.8	175	22.0	25	3.1	795
3) Traditional	640	34.9	675	36.8	405	22.1	110	6.0	1 830
TOTAL	1 875	32.4	2 495	43.0	1 250	21.6	165	2.8	5 785
Mackenzie River									
1) Industrial	--	--	--	--	--	--	--	--	--
2) Service	425	30.4	590	42.2	335	24.0	45	3.2	1 395
3) Traditional	770	36.9	735	35.2	430	20.6	30	1.4	2 085
4) Mining	85	26.6	115	35.9	120	37.5	--	--	320
TOTAL	1 280	33.7	1 440	37.9	885	23.3	75	2.0	3 800
Great Slave Lake									
1) Industrial	3 365	27.2	5 685	46.0	3 060	24.7	245	1.9	12 355
2) Service	920	31.2	1 150	39.0	725	24.6	145	4.9	2 945
3) Traditional	1 065	37.3	1 015	35.6	550	19.3	215	7.5	2 855
4) Mining	615	33.2	835	45.0	395	21.3	10	0.5	1 855
TOTAL	5 965	29.8	8 685	43.4	4 730	23.6	615	3.1	20 010
Mining Enclaves									
1) Industrial	700	32.2	940	43.3	510	23.5	20	.9	2 170
Total Study Region									
Industrial	4 330	27.9	7 180	46.3	3 730	24.0	275	1.8	15 515
Service	1 620	31.6	2 065	40.3	1 230	24.0	215	4.2	5 130
Traditional	2 475	37.3	2 425	36.5	1 385	20.9	355	5.3	6 640
Mining	700	32.2	950	43.7	515	23.7	10	0.5	2 175
TOTALS	9 125	31.0	12 620	42.8	6 860	23.3	855	2.9	29 460

Source: Government of the Northwest Territories, Bureau of Statistics. 1983. "Population, by Community by Ethnic Origin, Age and Sex", calculated from tabulations of 1981 Census Canada data,

lowest proportion of juveniles aged less than 15 years, 28 percent, and likewise the smallest proportion of elderly people, only 1.8 percent. About two thirds of the remainder, 46 percent of the total, are youthful employables aged 15 to 34 years.

The Service communities generally fall midway between the Industrial and the Traditional communities in proportions of children, young adults and of elderly people. These patterns are due in considerable measure to the fact that many single workers and childless couples are attracted to Industrial communities, whereas the youthful nature of the Traditional communities generally mean that there are unusually high proportions of young families.

The data in VII-5.2 Table 4 also show that although the differences between Sub-regions are not as great as might be expected, the Mackenzie River Sub-region has the highest proportion of residents under age 15 (34 percent) followed by the Delta Sub-region with 32, and the Great Slave Lake area with 30. Identically high proportions of young employable (15-34 years) residents (43 percent) are found in the Delta and the Great Slave Lake Sub-regions. There are few differences between the Sub-regions in the proportions of people aged 65 years and over.

The total numbers of children (under 15 years of age) and of elderly persons (over 64 years of age) in a community comprise the dependents who must be supported by those in the active or employable years. The ratio of those under 15 years and over 64 years to those aged 15 through 64 is called the dependency ratio. The dependency ratios for the Study Region by Sub-region and community type for 1981 are found in VII-5.2 Table 5, together with the comparison figure for all of the Northwest Territories.

The ratio for the entire Study Region, 0.51, is considerably lower than the Territorial ratio of 0.60. However, the ratio in the Traditional communities is very high; at 0.74 it is very much higher than that in the Industrial communities where the ratio is 0.43. The ratio is highest in the Mackenzie River Sub-region, 0.58, and lowest in the Great Slave Lake Sub-region where it is only 0.49. The data also shows that the dependency ratio of the Traditional communities in the Great Slave Lake Sub-region, 0.82, is significantly higher than those of the Traditional communities in the Delta and the Mackenzie River Sub-regions (0.69 in both cases). The lowest ratio, 0.41, is found in the Industrial communities of the Great Slave Lake Sub-region.

VII-5.2 TABLE 5

ESTIMATED DEPENDENCY RATIOS BY SUB-REGION AND COMMUNITY TYPE, 1981

Sub-region/Community Type	Population under 15 and Over 65	Population 15 to 64 Years	Dependency Ratio
Delta			
1) Industrial	995	2 165	0.57
2) Service	295	500	0.59
3) Traditional	750	1 080	0.69
4) Mining	--	--	--
TOTAL	2 040	3 745	0.54
Mackenzie River			
1) Industrial	--	--	--
2) Service	470	925	0.51
3) Traditional	800	1 165	0.69
4) Mining	85	235	0.36
TOTAL	1 355	2 325	0.58
Great Slave Lake			
1) Industrial	3 610	8 745	0.41
2) Service	1 065	1 875	0.57
3) Traditional	1 280	1 565	0.82
4) Mining	625	1 240	0.50
TOTAL	6 580	13 425	0.49
Total Study Region			
1) Industrial	5 315	12 375	0.43
2) Service	1 830	3 300	0.55
3) Traditional	2 830	3 810	0.74
4 Mining	710	1 465	0.49
TOTAL	9 975	19 485	0.51

Source: The Government of the Northwest Territories, Bureau of Statistics. 1983. "Population, by Community by Ethnic Origin, Age and Sex", calculated from tabulations of 1981 Census Canada data.

5.2.4 FAMILY AND HOUSEHOLD SIZES

Information on average family and household sizes is found in VII-5.2 Table 6 for the Study Region communities in 1981, the most recent year for which data are available. The average for the Study Region as a whole was 3.7, somewhat lower than the 4.0 figure for all of the Northwest Territories. Predictably, the intra-regional comparisons by type of community show that the Industrial communities have the fewest people per family (3.4), followed by the Mining communities (3.6), the Service Communitites (3.9) and the Traditional communities (4.6). The Mackenzie River Sub-region, which lacks any Industrial centres, had the largest Sub-regional average with 4.1 persons per family, followed by the Delta Sub-region with 4.0 and the Great Slave Lake Sub-region with 3.6 persons per family.

A very similar pattern is found in the data on average household sizes in the Study Region, seen in VII-5.2 Table 6, though the figures are slightly smaller. The Study Region average is 3.4, again smaller than the Territories figure of 3.8. Intra-regional comparisons show that the Industrial centres have the smallest households with an average of 3.0, followed as before, by the Mining communities (3.4), the Service communities (3.8) and the Traditional communities (4.9). Comparison of these figures with those for average family size shows that homes in Traditional communities often include non-family members, whereas the homes in the remaining communities commonly do not include all family members. Again the Mackenzie River Sub-region has the highest average, 4.1, followed by the Delta Sub-region with 3.8 and the Great Slave Lake Sub-region with an average household size of 3.3. All six of the communities having no more than 3.5 members per household are those that have the highest proportions of non-Native residents: Yellowknife, Hay River, Inuvik Norman Wells, Tungsten and Pine Point.

5.2.5 POPULATION DYNAMICS

The dynamics of all populations, their tendencies to increase, decrease, or to remain stable, are a function of birth, death and migration rates. Unfortunately, this information is not available specifically for the Study Region. However, it is available for two broader areas, namely the Inuvik and the Mackenzie Medical Health Zones.

The boundaries of these zones are shown in VII-5.2 Figure 3. The Inuvik Zone conforms broadly to the Delta Sub-region, but also includes Fort Good Hope, Colville Lake, Fort Franklin, Fort Norman and Norman Wells which we include in the Mackenzie River Sub-region. The Mackenzie Zone includes the remainder of our designated Mackenzie River Sub-region, as well as the Great Slave Lake Sub-region, and many communities outside

the Study Region, including Resolute, Cambridge Bay, Holman Island, Coppermine, Resolute, Spence Bay, Pelly Bay, Ghoa Haven and Port Radium.

In VII-5.2 Figure 3, crude birth and death rates are expressed as a rate per 1 000 population for the two medical zones for the years 1967 to 1981. It is important to recognize that crude birth and death rates are gross measures, sensitive to the age structures of the population under consideration. Thus a population in which young couples are over-represented will, in all probability, have an elevated birth rate irrespective of its ethnic origin or social class position.

Several patterns are evident in the data. Considering the birth rate data for the Mackenzie Zone first, the data for the Dene group show a generally consistent pattern of decline from 1967 to 1978, with little apparent change thereafter. The Inuit data, on the other hand, exhibit a curvilinear pattern, which started at a high level, dropped to a low point in 1975, increased in the three following years and then began to drop again. The rate for Others (Metis, non-Status Indians and non-Natives) shows an overall, very gradual decline, from 1967 through 1981.

The patterns in the Inuvik Zone are generally similar to those in the Mackenzie zone. The Dene and Inuit birth rates, like those for the Dene population in the Mackenzie Zone, have exhibited a general decline, though the Inuit rate in this zone has been rather erratic. The rates for Others in the Inuvik Zone show considerable fluctuation, with rates similar to those in the Mackenzie Zone in 1967 to 1978, but much increased during the 1972 through 1976 period. In both zones in 1981, the Inuit had the highest birth rate, Others had the next highest, and the Dene had the lowest.

Consistent with the patterns discussed above, the Dene birth rates have fallen more steeply than those for the other groups, so that by 1978 the Dene rates in the two zones were only about half of what they were 10 to 15 years earlier. By contrast, the Inuit rates have dropped only about 26 per cent, and the Other rates were virtually identical at the beginning and end of the period.

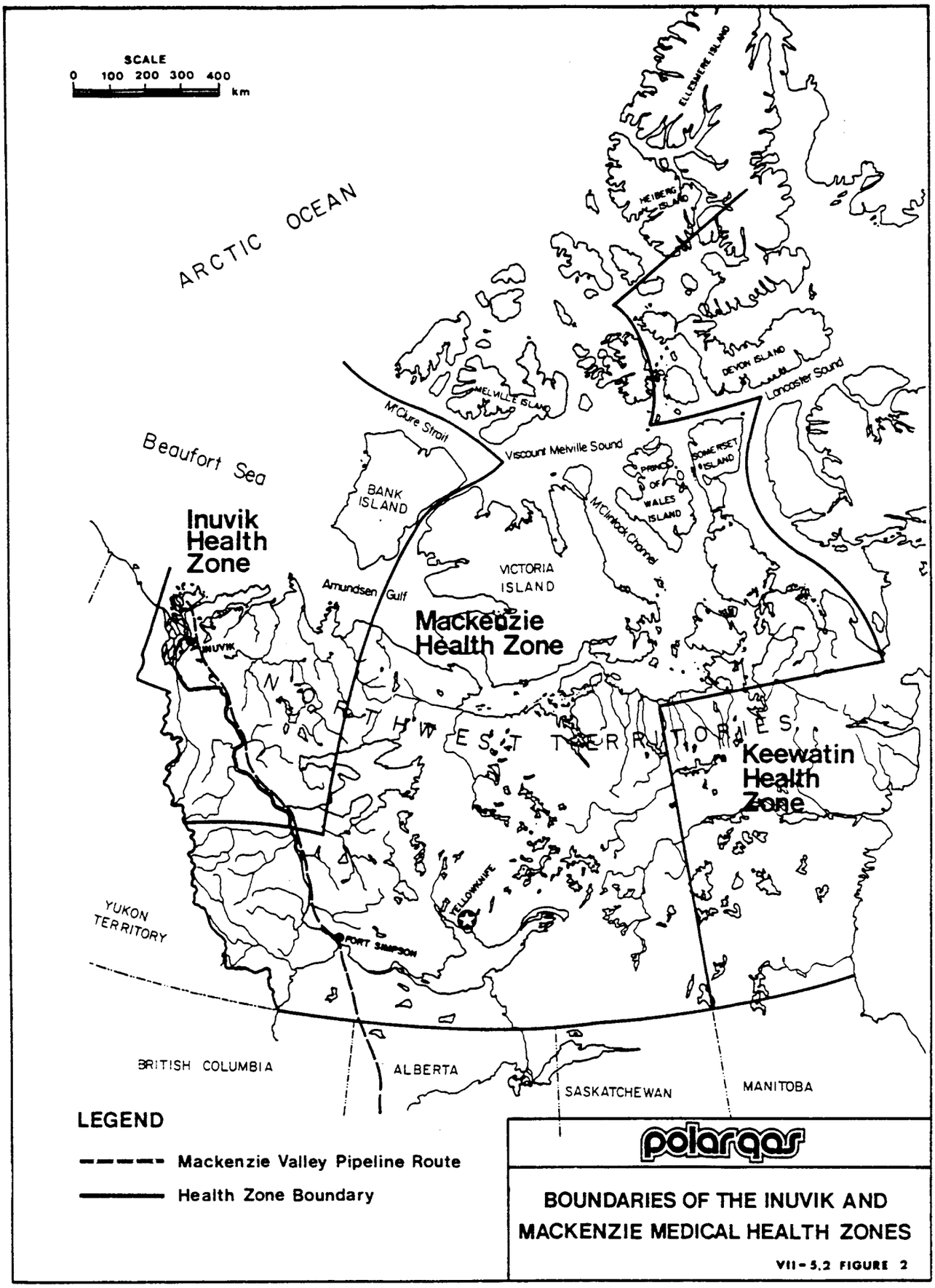
It is considerably more difficult to identify patterns in the death rate data for the different ethnic groups, and in contrast with the birth rates there was little change in rates for the Dene and Others between 1967 and 1981. Inuit rates do show greater fluctuation during this period.

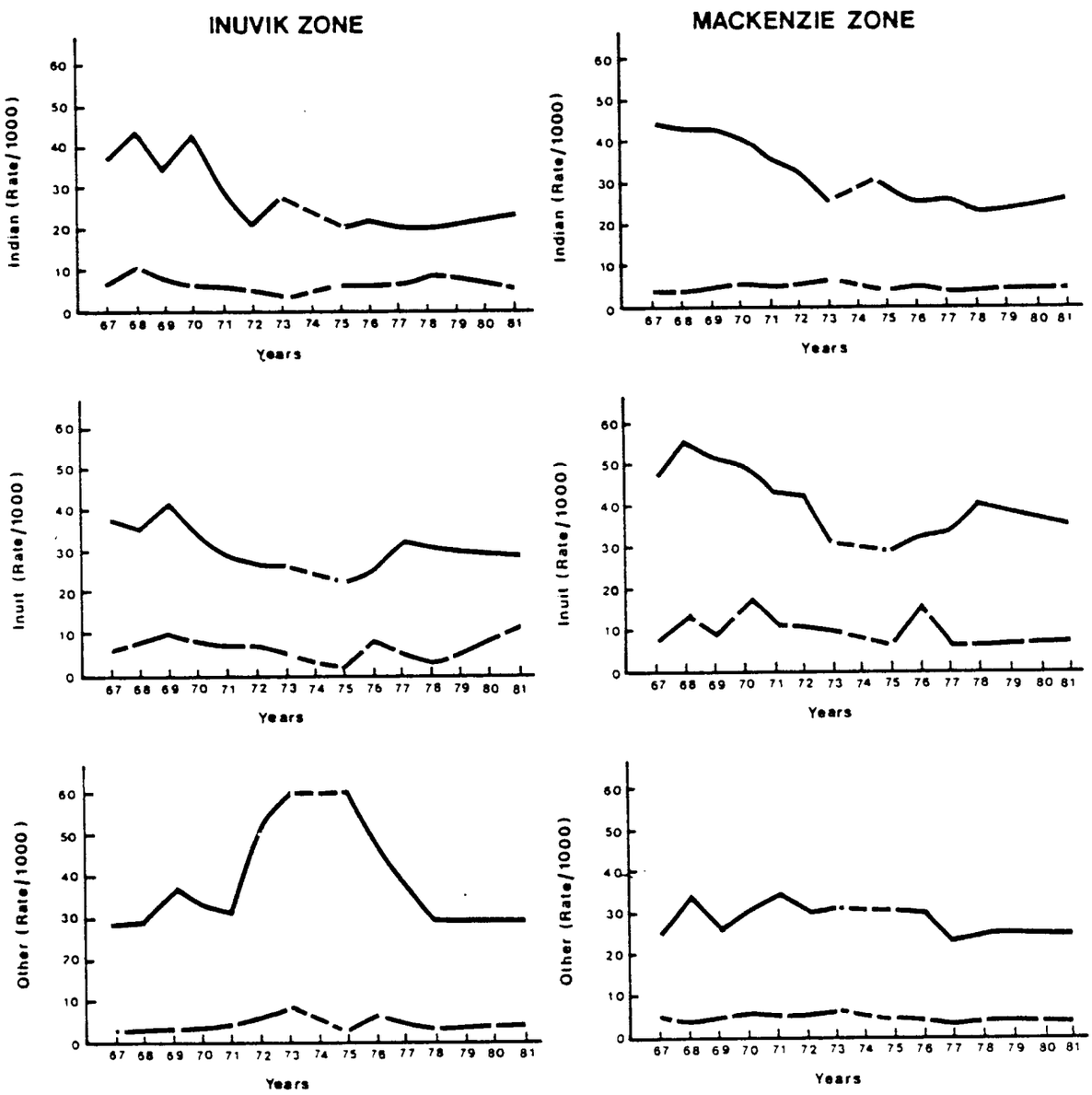
VII-5.2 TABLE 6

AVERAGE FAMILY SIZE AND AVERAGE HOUSEHOLD SIZE
BY COMMUNITY TYPE AND SUB-REGION, 1981

Sub-region/Community Type	Average Family Size	Average Household Size
Delta		
Industrial	3.6	3.2
Service	4.6	5.3
Traditional	4.5	4.6
Total Sub-region	4.0	3.8
Mackenzie River		
Service	3.6	3.5
Traditional	4.5	4.6
Mining	3.5	3.7
Total Sub-region	4.1	4.1
Great Slave Lake		
Industrial	3.4	2.9
Service	3.9	3.6
Traditional	4.7	5.3
Mining	3.6	3.4
Total Sub-region	3.6	3.3
Total Study Region		
Industrial	3.4	3.0
Service	3.9	3.8
Traditional	4.6	4.9
Mining	3.6	3.4
Total Study Region	3.7	3.4
Total Northwest Territories	4.0	3.8

Source: Government of Canada, Statistics Canada. Census 1981, "Population, Occupation, Private Dwelling, Private Households, Census Families in Private Households", Catalogue E567. Selected Characteristics.


SCALE
0 100 200 300 400
km
ARCTIC OCEAN
Beaufort Sea
Inuvik Health Zone
Mackenzie Health Zone
Keewatin Health Zone
BANK ISLAND
M'Clure Strait
Viscount Melville Sound
Amundsen Gulf
VICTORIA ISLAND
M'Clintock Channel
PRINCE OF WALES ISLAND
SOMERSET ISLAND
DEVON ISLAND
Lancaster Sound
MELVILLE ISLAND
ELLESMERE ISLAND
HEIBERG ISLAND
INUVIK
YELLOWKNIFE
FORT SIMPSON
NORTHWEST TERRITORIES
YUKON TERRITORY
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
LEGEND
Mackenzie Valley Pipeline Route
Health Zone Boundary
polarqas
BOUNDARIES OF THE INUVIK AND MACKENZIE MEDICAL HEALTH ZONES
VII-5.2 FIGURE 2

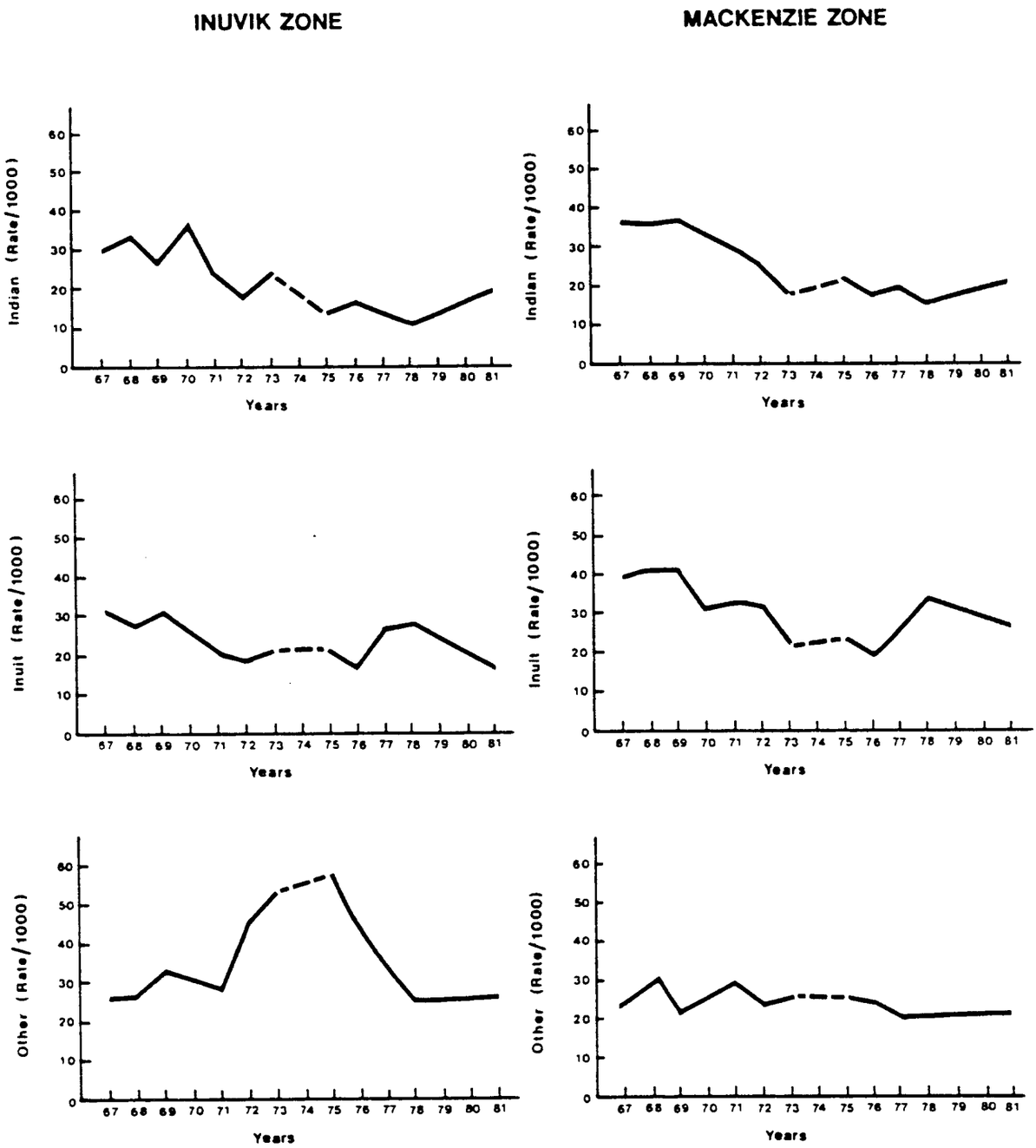


Sources: Government of Canada, Department of National Health and Welfare, Northern Health Service. Report on Health Conditions in the Northwest Territories, 1967 to 1972; and
Government of the Northwest Territories, Chief Medical and Health Officer. Report on Health Conditions in the Northwest Territories, 1973, 1975 to 1982

Note: Data Unavailable for 1974

CRUDE BIRTH AND DEATH RATE BY NWT HEALTH ZONE AND ETHNIC GROUP, 1967 TO 1981

VII-5.2 FIGURE 3



Sources: Government of Canada, Department of National Health and Welfare, Northern Health Service Report on Health Conditions in the Northwest Territories, 1967 to 1972; and
Government of the Northwest Territories, Chief Medical and Health Officer, Report on Health Conditions in the Northwest Territories, 1973, 1975 to 1982

Note: Data Unavailable for 1974

RATE OF NATURAL INCREASE BY NWT HEALTH ZONE AND ETHNIC GROUP, 1967 TO 1981

VII-5.2 FIGURE 4

The rates of natural increase for each ethnic group by zone are presented in VII-5.2 Figure 4. Several patterns are readily evident. Generally in both zones, the Dene rate has declined significantly, though it has increased during the last three years for which data are available. The Inuit rate has presented a more fluctuating pattern but has ended in decline in very recent years. The rate for the Other group seems to be only slightly lower at the end as compared with the beginning of the period; however, in the Inuvik Zone the Other rate showed a major but short-lived increase in the mid-1970s. This growth was no doubt due to an influx of southern Euro-Canadians of childbearing age during the boom experienced at that time.

Although natural increase accounts for much of the change in population numbers for the Dene and Inuit groups, it is far less significant for the Other group. The non-Native segment of the Northwest Territories population is sufficiently mobile that major changes in the size of this group are due mainly to in- or out-migration. Young Euro-Canadian couples with children moving to the Northwest Territories can rapidly increase the size of the Other segment of the population, but the increase is tempered by the fact that many Euro-Canadians return south eventually, and their children often leave the north before forming their own families. Unfortunately, data on net migration are not readily available so that it is not possible to evaluate the effect of migration on population change.

5.3 THE ECONOMY

The economy of the Study Region is both a reflection and a determinant of the essential forces at work in the North. There is a "modern" component largely controlled and operated by the non-Native population, and a "traditional" component which historically has sustained the Native way of life. In economic terms, the modern component can be defined as a market economy, based on the concept of private property. The traditional component is suggestive of a barter economy, based on a sharing principle.

It is because of the coexistence of the market and barter economies that the Study Region is said to be characterized by a dual economy. It is important to recognize, however, that the economy of the Study Region also functions as an integrated whole, with each of its several aspects influencing and being influenced by the development of the others. For example, many northern residents who are active in the traditional economy now accept part-time employment in order to purchase the equipment needed for successful hunting and trapping. As well, some of the Dene bands in the smaller, more traditional communities are establishing development corporations in order to pursue business opportunities offered by the oil and gas companies.

The three major Industrial communities of Inuvik, Yellowknife, and Hay River have developed relatively "mature" local economies based largely on the activities of government, mineral extraction, and the provision of transportation/communications facilities and services. The development of these industries and the attendant employment and population growth have stimulated the expansion of other sectors. Inuvik and Yellowknife, in particular, have become regional and territorial administrative and service centres respectively, acting as focal points for the distribution of goods and services, both public and private, to neighbouring communities. Hay River is the focus for the rail/marine transportation system serving the region. A well-developed infrastructure exists within the market economies of these communities and their populations are predominantly Euro-Canadian.

The six Service communities of Tuktoyaktuk, Norman Wells, Fort Simpson, Fort Providence, Enterprise, and Fort Smith are much smaller than the major centres. Although they provide transportation and communication services to their immediate regions, their industrial base is limited — except for Norman Wells and Fort Smith — and their infrastructures are less developed. The scope of the secondary and tertiary sectors of these local wage economies is small. The public services available in these communities, although significant compared to other local employment opportunities, are fewer than the services available in the larger centres.

The Traditional component of the local economies is generally more prominent as a source of both employment and income-in-kind, although it is not a major source of monetary income. The population of these communities is primarily Native with the Euro-Canadian segment largely employed in the service sector.

The 22 Traditional communities in the Study Region are also small and the non-Native populations usually comprise less than 10 percent of the total. These communities have relatively limited access to the major transportation and communication networks and their local economies tend to be more self-sufficient and rely to a greater degree on renewable resources than do the service communities.

Hunting, trapping, and fishing are the major economic activities in these communities. The resulting income-in-kind is supplemented by transfer payments, by the commercial sale of fur, and by seasonal wage employment in the government, service and mineral extraction sectors. Handicraft production and the operation of tourist facilities are also significant components of some of these economies. Due to this predominantly "traditional" economic base, there has been little development of the local infrastructure, and access to such services that do exist is largely provided through links with larger

neighbouring communities. The economies of the two Mining communities, Tungsten and Pine Point, are dominated by the mining industry, together with the service firms established to supply the mines and their resident populations. These communities' links with other NWT communities and the total Territorial economy are quite limited.

5.3.1 LABOUR FORCE

.1 Participation Rates

The labour force of a region is normally defined to include only individuals who are actually employed, together with those who are unemployed and actively seeking work. In the Northwest Territories, however, this approach tends to understate the number of potential participants in the labour force. Willingness to work, for example, may be influenced by the limited number of jobs available and recent success or failure in gaining employment. Similarly, in centres where a significant proportion of the population engages in traditional resource-harvesting activities, potential male participants in the labour force may choose not to seek wage employment in the off-season. Women in these communities may be fully occupied with household duties and traditional roles and, as a consequence, may not pursue wage employment.

Factors such as those noted above influence the participation rate (the ratio between the number of people in the labour force and the total working age population) which provides a measure of the propensity of the working age population to become involved actively in the job market.

According to Census figures, participation rates at the territorial level expanded steadily up to 1976, but displayed little change thereafter. This is the consequence of the decline in male labour force participation from 1976 to 1981.

This decline may reflect, in part, the downturn in economic activity in the Northwest Territories since the "pre-Berger" period. In addition, a community-by-community analysis suggests that many hunters and trappers in the more traditional communities who reported themselves as members of the work force in 1976 may have indicated in 1981 that they were out of the work force.

In contrast to male participation, labour force participation among females continued to increase from 1976 to 1981.

Participation rates in the Territories were well above the national rates in 1976, but by 1981 labour-force participation in the Northwest Territories was about the same as the national average of 64.8 percent. By sex, the Northwest Territories male rate in 1981 was five percentage points below the national norm of 78.2 percent, but the female rate in the

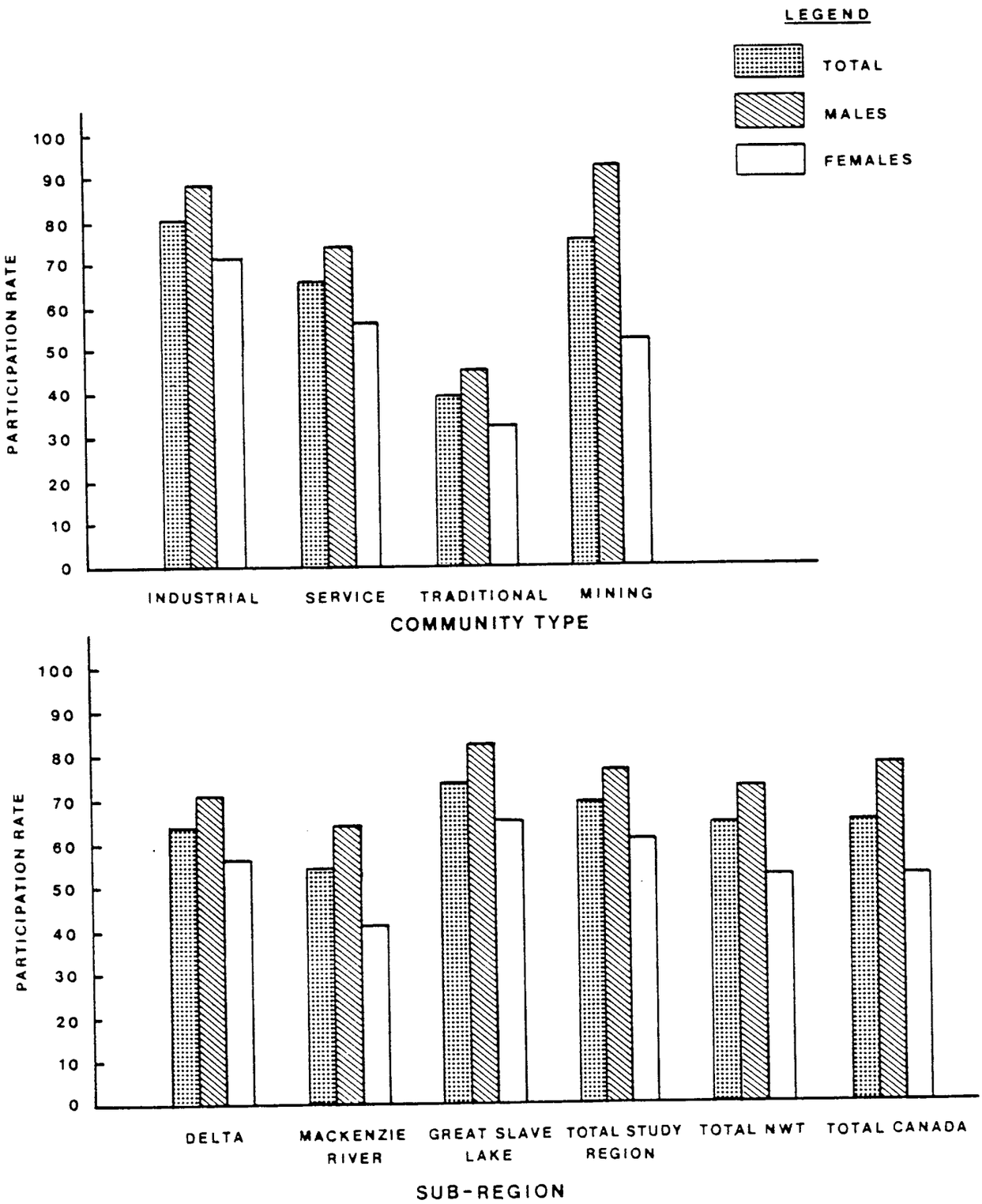
NWT at 55.0 percent was significantly above the all-Canada figure for females of 51.8 percent.

For the 33 Study Region communities, 20 400 people aged 15 and over constituted the potential labour force in 1981 out of a total population of 29 000. The labour force participation rate for both sexes combined came to 69.2 percent which was well above the territorial average of 64.7 percent. The Study Region's active labour force in 1981 was 14 100. The available evidence suggests that labour force participation rates in the Study Region showed a small increase from 1976 to 1981 (compared with no change for the NWT in total). The Study Region's more favourable performance reflects to an important degree the major increase in labour force participation exhibited by Yellowknife, responding in large part to the further expansion of the city's government sector. A secondary factor could be the effects of the Beaufort Sea oil and gas exploration activity.

An indication of the range of participation rates within the Study Region is provided by VII-5.3 Figure 1 which shows 1981 participation rates by community type and Sub-region, for the total population and for males and females. As would be expected, the three Industrial communities display the highest labour force participation rates, whereas rates in the Traditional communities are less than one-half of the rates in the Industrial category.

Among the 22 Traditional communities, the labour force participation rates are well below average for both males and females; in 1981, only 45 percent of the males of working age reported that they were either employed or actively seeking work. As noted above, we believe that many hunters and trappers did not report themselves as members of the labour force in 1981. The total male labour force in the 22 Traditional communities in 1981 was estimated to be 1 005 in the Census. In contrast, over 1 200 residents of these communities (most of whom are probably male) indicated they were actively involved in trapping in 1981-82 (see VII-5.3 Table 17). It is evident that the Census statistics (especially in 1981) greatly understate the degree of labour force participation in the Traditional communities.

The low participation rates for females in the traditional communities is partly the consequence of their very small service sectors which typically are the major employers of females in a community or regional economy. An additional factor is that the members of the labour force who are younger and have more training in the skills relevant to the market economy are the people who tend to hold the relatively few permanent jobs that are available in the communities. These individuals are disproportionately male. (On the other hand older males are generally restricted to hunting and trapping and seasonal and part-time work of an unskilled nature).



PARTICIPATION RATES BY COMMUNITY TYPE AND SUB-REGION, 1981

Source: Government of Canada, Statistics Canada Census 1981. Special tabulations from unpublished data.

VII-5.3 FIGURE 1

The two Mining communities are fairly close to the Industrial grouping in terms of labour force participation. It is noteworthy, however, that female labour force participation in the Mining communiites is lower than in the Service communities. This reflects the fairly undeveloped service sectors in the two mining towns. The six Service communities are, on average, closer to the Industrial grouping than the Traditional communities. However, these averages tend to cover up some fairly wide variations within the Service category. For example, labour force participation rates in Norman Wells and Fort Smith are fairly close to those in the Industrial communities, whereas labour force participation rates in Tuktoyaktuk and, to a lesser degree, in Fort Providence are much closer to the rates in some of the Traditional communities. Lower levels of labour force participation in many of the Service communities (compared to the Industrial category) reflect the smaller number of employment opportunities, the larger Native segment of the population, and the consequent cultural and economic inhibitions to fuller involvement in the wage economy.

There are also significant differences among the Traditional communities. Labour force participation rates in Aklavik, Nahanni Butte, and Jean-Marie River are similar to those in some of the Service communities. In many of the other Traditional communities less than three out of ten people of working age reported themselves as members of the active labour force in 1981.

Among the three Sub-regions, labour force participation rates are highest in the Great Slave Lake Sub-region. The "averages" for this Sub-region are dominated by Yellowknife and Hay River which, combined, account for over 60 percent of the total population of this Sub-region. It is noteworthy that many of the Traditional communities in the Great Slave Lake Sub-region have participation rates that are significantly below the average for all Traditional communities. This is the situation in Rae Lakes, Snare Lake, Lac la Martre, Rae-Edzo, Detah and Snowdrift.

It is evident that the presence of Yellowknife in the Sub-region does not have a significant effect on employment opportunities in other communities in the Great Slave Lake area. This points out the poor economic linkages which have developed between different communities in the Greater Slave Lake Sub-region and within the Northwest Territories in general. The comparatively lower participation rates in the Mackenzie River Sub-region are consistent with the fact that there is no Industrial community in that Sub-region.

.2 Unemployment and Employment Rates

The unemployment rate is defined as that proportion of the labour force that is unemployed and actively seeking employment. For reasons cited earlier however, this formal definition may not produce a particularly meaningful measure of unemployment or underemployment, particularly in the predominantly Native communities of the Study Region.

The last year for which unemployment rate data are available for the Northwest Territories is 1981. (The Labour Force Survey of Statistics Canada does not report on labour force conditions in the two territories.) VII-5.3 Table 1 indicates that the unemployment rate in the Northwest Territories moved up sharply from 1971 to 1981 to reach 8.2 percent in the latter year, with most of the increase occurring in the last half of the decade. Unemployment among males displayed a particularly strong advance between 1976 and 1981, from 4.2 percent to 7.8 percent.

Although a number of factors could help to explain this increase, it would appear that the 1977 postponement of the Arctic Gas Pipeline did have a very significant effect on labour market conditions in the Northwest Territories. As of 1981, unemployment in the NWT was somewhat higher than in Canada as a whole (when the Census reported an overall unemployment rate of 7.4 percent for the total country). In contrast, in 1971 and 1976, the NWT rate was significantly below the all-Canada average, 7.8 and 6.8 respectively. However, the available evidence suggests that the world recession has a much smaller effect on the Northwest Territories than on the rest of Canada over the past two years. The expectation is that the unemployment rate in the NWT is somewhat below the Canadian average at the present time.

VII-5.3 Table 2 compares the unemployment rates by community type and Sub-region within the Study Region. The 1981 unemployment rate in the Study Region is somewhat below the rate for the Northwest Territories as a whole. As might be expected, the unemployment rates in the Industrial and Mining communities were very low in 1981 — a rate below five percent is generally thought to constitute effectively full employment. In contrast, rates in the Service and especially the Traditional communities were very high in 1981. This largely reflects the limited wage employment opportunities in those two community groupings.

Among the Sub-regions, the lower rate in the Great Slave Lake Sub-region is perhaps the anticipated result in light of the importance of Yellowknife within the Great Slave Lake Sub-region. This Sub-region was much less affected by the post-Berger slump than the Delta and Mackenzie River Sub-regions.

It is difficult to know what weight to place on these unemployment rates, especially in the Traditional and Service communities. Biases could operate in either direction. On the one hand, it is possible that many people who hunt and trap on a fairly full-time basis reported themselves as unemployed in the 1981 Census (these people may have been equating employment with wage employment). On the other hand, because the Census was taken in June, employment may be overstated by the number of people with seasonal jobs at that time of year. In any event, these figures should be used only as a guide to general labour market conditions in different types of communities and areas, and not as a precise indication of labour force availability in different locations.

Data on unemployment insurance claims by community provide additional information about the nature of unemployment and the unemployed in the Study Region.

In many communities in 1983, females constitute 40 percent or more of the total number of claimants. This is particularly evident in most of the Industrial and Service communities (including Inuvik, Tuktoyaktuk, Norman Wells, Fort Simpson, Yellowknife, and Fort Smith.) This situation may be explained partially by the fact that there are relatively large service, sales, and clerical sectors in these local economies. Traditionally, these occupations are filled by female members of the labour force and the general availability of such jobs in a community induces female participation.

This induced participation results in unemployment to the extent that the demand for such jobs exceeds the supply. Perhaps more startling is the large proportion (28 percent) of young people (aged 15 to 24 years) receiving benefits. Given the small proportion they make up of the labour force, they bear a substantial share of the burden of unemployment.

Also worthy of note is the wide variation in the size of the benefits paid in the average claim in the communities of the Study Region. Claims in 1982-83 ranged from $1 490 in Inuvik to nearly $3 000 in Fort Providence and Pine Point. Although the pattern is not consistent, the average claim tends to be smaller in the larger communities where job opportunities are relatively more plentiful and, therefore, the period of unemployment tends to be shorter. In addition, the average claims are very high in the two mining communities of Tungsten and Pine Point, reflecting the high wages paid by the two mines when they are in operation.

VII-5.3 TABLE 1

LABOUR FORCE ACTIVITY, 1971, 1976, 1981

NORTHWEST TERRITORIES	1971	1976	1981
Both Sexes			
Population 15 Years & Over	19 870	26 170	29 665
Labour Force	11 025	16 690	19 180
Employed	10 555	16 090	17 615
Unemployed	465	870	1 565
Participation Rate	55.4	64.8	64.7
Unemployment Rate	4.2	5.1	8.2
Employment Rate	53.1	61.5	59.4
Male			
Population 15 Years & Over	10 605	14 015	15 725
Labour Force	7 575	10 885	11 515
Employed	7 245	10 395	10 615
Unemployed	325	490	900
Participation Rate	71.4	77.7	73.2
Unemployment Rate	4.2	4.5	7.8
Employment Rate	68.3	74.2	67.5
Female			
Population 15 Years & Over	9 265	12 155	13 945
Labour Force	3 450	6 075	7 665
Employed	3 310	5 690	7 000
Unemployed	140	385	665
Participation Rate	37.2	50.0	55.0
Unemployment Rate	4.0	6.3	8.7
Employment Rate	35.7	46.8	50.2

Source: Government of Canada, Statistics Canada, 1971 Census, Volume III, Part 1, Catalogue 94-703; 1976 Census, Catalogue 94-801; and 1981 Census, Catalogue 92-914, Table 1.

VII-5.3 TABLE 2
UNEMPLOYMENT RATES BY COMMUNITY TYPE
AND SUB-REGION, 1981

Industry Group	Total Percent	Males Percent	Females Percent
Industrial Communities	4.5	4.2	4.9
Service Communities	9.6	10.0	8.9
Traditional Communities	16.4	18.9	12.2
Mining Communities	5.0	2.6	10.6
Sub-region and Region			
Delta	9.9	10.6	8.8
Mackenzie River	11.1	11.3	10.8
Great Slave Lake	5.4	5.2	5.7
Total Study Region	6.7	6.8	6.7
Total NWT	8.2	7.8	8.7
Total Canada	7.4	6.5	8.7

Source: Derived from Government of Canada, Statistics Canada. 1983. Unpublished Labour Force Activity data from 1981 Census (from microfiche).

The 1 965 UIC claims paid in 1982-83 in the Study Region may tend to overstate actual levels of unemployment to the extent that recipients may be gainfully employed for a portion of the year or may be eligible for more than one claim during the year. On the other hand, in many of the Native communities members of the labour force do not gain sufficient work time to become eligible as UIC claimants. To the extent that this is the case, the above total will tend to understate the actual levels of unemployment in the Study Region.

Because of the problems associated with defining and interpreting labour force participation and unemployment in most Study Region communities and the Northwest Territories as a whole, the employment rate is often used in this document as a measure of labour force conditions and employment opportunities in the Study Region and its

different communities. The employment rate is defined as the proportion of the total population which is employed, and it therefore combines the effects of labour force participation and unemployment. VII-5.3 Table 3 compares 1976 and 1981 employment rates by Sub-region and community type. Study Region, Northwest Territories and Canadian average rates are provided for purposes of comparison.

VII-5.3 Table 4 confirms the significant deterioration in labour market conditions (as defined and reported in the Census) in the Study Region's 22 Traditional communities from 1976 to 1981. In strong contrast, the employment rate in the six Service communities exhibited only a small decrease, whereas the Industrial and Mining communities reported significant increases. The performance by Sub-region reflects the community composition of each, plus the fact that the 1977 postponement of the Mackenzie Valley Pipeline had a smaller effect on the Great Slave Lake Sub-region than on the other two Sub-regions. VII-5.3 Table 2 also shows that the employment rate in the Study Region was above the all-Canadian average in both 1976 and 1981, but that the differential closed significantly from 7.3 percentage points in 1976 to 4.2 points in the later year.

VII-5.3 TABLE 3

EMPLOYMENT RATES BY COMMUNITY TYPE AND SUB-REGION, 1976 AND 1981

Community Type	1976 (percent)	1981 (percent)
Industrial Communities	71.5	76.7
Service Communities	59.7	58.7
Traditional Communities	41.0	32.8
Mining Communities	67.5	71.0
Sub-region and Region		
Delta	61.7	57.9
Mackenzie River	56.9	48.5
Great Slave Lake	64.7	68.7
Total Study Region	63.2	64.2
Total NWT	61.5	59.4
Total Canada	55.9	60.0

Source: Derived from Government of Canada, Statistics Canada. 1983. Unpublished Labour Force Activity data from 1976 Census and 1981 Census (from microfiche).

Note: The employment rate is defined as the employment as a proportion of the working age population. The rates in the Table are for both sexes combined.

VII-5.3 TABLE 4

CHANGES IN EMPLOYMENT BY COMMUNITY TYPE
AND SUB-REGION, 1976 TO 1981

Community Type	% Change in Employment 1976 to 1981
Industrial Communities	20.1
Service Communities	7.0
Traditional Communities	-4.5
Mining Communities	12.8
Sub-Region and Region	
Delta	4.7
Mackenzie River	-2.8
Great Slave Lake	19.4
Total Study Region	14.2
Total NWT	9.5

Source: Derived from Government of Canada, Statistics Canada. 1983. Unpublished Labour Force Activity data from 1976 Census and 1981 Census (from microfiche).

.3 Labour Force Status by Ethnicity

Previous sections have indicated that labour force participation, unemployment and employment rates in the Northwest Territories and Study Region in 1981 were generally comparable to the all-Canada figures. It should be emphasized that the Territorial averages cover up dramatic differences in labour force status between Native and non-Native residents. Community-by-community analysis indicates that labour force conditions in the larger centers with a large non-Native population compare very favourably with the national norm.

This situation contrasts sharply with the Traditional, largely Native, settlements where the number employed often amounts to 25 percent or less of the working-age population. This is illustrated in VII-5.3 Table 5 which cross-classifies 31 communities by ethnicity and employment status (employment data are not available for Snare Lake and Kakisa Lake). All of the communities where Euro-Canadians comprise over 60 percent of the population have employment rates of 60 percent or more (that is, above the Territorial and Canadian averages). In sharp contrast, the Native communities are all below the Territorial average; in most cases the differential is more than 20 percentage points.

VII-5.3 TABLE 5

GROSS CLASSIFICATION OF STUDY REGION COMMUNITIES
BY ETHNIC COMPOSITION AND EMPLOYMENT STATUS, 1981

Employment Rate	Percent of Population who are Native		
	Less than 40%	40% - 70%	70% or more
Less than 35%			Paulatuk Fort McPherson Fort Good Hope Fort Franklin Wrigley Trout Lake Rae Lakes Lac la Martre Rae-Edzo Detah Snowdrift
35 - 60%		Fort Simpson	Tuktoyaktuk Sachs Harbour Aklavik Arctic Red River Colville Lake Fort Norman Nahanni Butte Fort Providence Fort Resolution Jean Marie River Fort Liard
60% or more	Inuvik Norman Wells Yellowknife Hay River Tungsten Enterprise Pine Point	Fort Smith	

Source: Derived from Government of Canada, Statistics Canada. 1983. Unpublished Labour Force Activity data from 1981 Census (from microfiche).

Information on labour force activity by ethnicity has not yet been published from the 1981 Census. However, the Supplementary Information to the Beaufort Sea-Mackenzie Delta Environmental Impact Statement (Dome Petroleum Ltd. **et. al.** 1983) provides this information for each of the three zones used in this EIS. Two of these zones, the Beaufort-Delta and the Mackenzie-Great Slave, when combined together, correspond fairly closely to our Study Region. Labour force activity by ethnicity in the two zones combined was reported as follows:

	Labour Force Age Population	Total Active In Labour Force	Participation Rate (%)
Native	8 465	3 970	46.9
Non-Native	12 565	10 415	82.9
Total	21 030	14 385	68.4

These figures indicate that there is considerable room for growth in the Native labour force from the existing population base, but very little room for growth among the non-Native population.

.4 Changes in Employment, 1976-1981

The information from the 1976 and 1981 Census can also be used to assess changes in employment by Sub-region and community type. VII-5.3 Table 5 presents the five-year percentage changes in employment betweet 1976 and 1981.

Over this five-year period, the Industrial and Mining communities showed the strongest growth in employment, whereas the Traditional communities displayed an absolute decline. Among the 22 Traditional communities, only four reported an increase in employment from 1976 to 1981; these were Arctic Red River, Fort Franklin, Fort Norman and Rae-Edzo. Four of the six Service communities displayed fairly healthy employment gains; the exceptions are Enterprise and Fort Simpson (where employment fell by 23 percent from 1976 to 1981). The performance of the Industrial communities largely reflects the substantial employment increase which occurred in Yellowknife. By comparison, the employment advance in Inuvik was a more modest 10 percent whereas the employed work force in Hay River recorded an absolute decline. The performances of the three Sub-regions are consistent with the results by community type. The Great Slave Lake Sub-region displayed an impressive advance (almost totally explained by the employment growth in Yellowknife and Fort Smith) whereas the Mackenzie River Sub-region -- which includes Fort Simpson -- experienced an absolute decrease.

5.3.2 STRUCTURE OF THE MARKET ECONOMY

The market economy in the Northwest Territories is characterized by the predominance of two major sectors or industry groupings — the primary resource extraction industries, which account for about 90 percent of total territorial exports, and the combined government/service sector.

VII-5.3 Tables 6, 7, 8, 9 and VII-5.3 Figure 2 display various aspects of the structure of the market economy and recent changes to that structure, using a variety of economic indicators. It should be noted that these data are derived from a variety of sources and therefore definitions and industry groupings vary.

The tables and figure confirm that two industrial groupings: mining, oil and gas, and government dominate the Northwest Territories economy. VII-5.3 Table 6 indicates that mining, oil and gas accounted for over 30 percent of the gross domestic product of the NWT in 1977. (This position has probably not changed greatly since 1977). VII-5.3 Table 7 illustrates that wages and salaries paid by the mining industry accounted for 23 percent of total personal income in the Territories in 1981. However, since the early 1970s, the public sector has grown considerably, so that now the combined government/services group accounts for a greater share of total output than the mining, oil and gas group.

If wages and salaries paid are used as a measure of relative economic weight, the predominance of the public sector is even more pronounced because of the capital intensity of the resource industries. The detailed estimates in VII-5.3 Table 7 allow us to combine the wages and salaries paid to all public sector activities. This calculation shows that the wages and salaries paid by the government sector consitituted 36 percent of total personal income in the NWT in 1981.

Other fairly important activities in the NWT economy include transportation, communication and utilities, retail and wholesale trade, and construction. These are generally termed "residentiary" or local market oriented activities, whole economic fortunes are closely tied to growth in the so-called "export" sectors, largely mining, oil and gas, and the public sector.

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VII-5.3 TABLE 6

DISTRIBUTION OF GROSS DOMESTIC PRODUCT AT FACTOR COST BY INDUSTRY GROUP, NORTHWEST TERRITORIES, 1977(1)

Industry Group	$000	%
Mining, Oil and Gas	140 331	31.7
Community, Business and Personal Services	94 520	21.3
Public Administration and Defence	71 490	16.1
Transportation, Storage, Communications and other Utilities	54 835	12.4
Finance, Insurance and Real Estate	41 289	9.3
Retail Trade	17 721	4.0
Construction	14 622	3.3
Manufacturing	4 538	1.0
Fishing and Trapping	3 011	0.7
Forestry	565	0.1
Wholesale Trade	24	*
Agriculture	*	*
Total	442 946	100.0

Source: Pavich, M., undated, "Gross Domestic Product at Factor Cost by Industry".

Notes: (1) The industry groupings and accounting mechanisms used to compile this table preclude direct comparison with other industry statistics presented in subsequent subsections.

* Negligible values

VII-5.3 TABLE 7

SOURCES OF PERSONAL INCOME, 1981,

TOTAL NWT

	$000	% of Total
Wages, Salaries, and Supplementary Income		
Forestry	1 500	0.3
Trapping	2 600	0.6
Mining	107 000	22.5
Manufacturing	5 800	1.2
Construction	18 400	3.9
Transportation, Communications, Utilities	22 300	4.7
Trade	20 400	4.3
Finance, Insurance, Real Estate	11 600	2.4
Community, Business, Personal Service(1)	24 300	5.1
Federal Government Administration	51 000	10.7
Federal Enterprises	16 000	3.4
Armed Forces	7 900	1.7
Territorial Government	85 000	17.8
Local Government	10 500	2.2
Unclassified	4 200	0.9
Subtotal: Wages, Salaries, etc.	388 500	81.5
Other Income	88 000	18.5
Total Personal Income	476 500	100.0

Note: (1) Excluding government employees. Therefore, unlike Figures 1, 2, 4, and 5, CBPS in this table largely relates to private services.

Source: DPA estimates developed from a variety of published and unpublished sources, including Statistics Canada, National Revenue, and NWT Government (e.g., various issues of Statistics Quarterly).

Government of Canada, Revenue Canada, Department of Taxation. 1983. Analyzing the Returns of Individuals for the 1981 Taxation Year and Miscellaneous Statistics.

Government of the Northwest Territories, Bureau of Statistics. 1981. Personal Income Statistics, Northwest Territories.

If wages and salaries paid are used as a measure of relative economic weight, the predominance of the public sector is even more pronounced because of the capital intensity of the resource industries. The detailed estimates in VII-5.3 Table 7 allow us to combine the wages and salaries paid to all public sector activities. This calculation shows that the wages and salaries paid by the government sector consitituted 36 percent of total personal income in the NWT in 1981.

Other fairly important activities in the NWT economy include transportation, communication and utilities, retail and wholesale trade, and construction. These are generally termed "residentiary" or local market oriented activities, whole economic fortunes are closely tied to growth in the so-called "export" sectors, largely mining, oil and gas, and the public sector.

VII-5.3 Table 8 illustrates the shifts which have occurred in the structure of the Northwest Territories labour force from 1971 to 1981. In percentage terms, the largest employment gains were realized by finance, insurance and real estate, retail and wholesale trade, community, business and personal services, and public administration and defense. To some extent, the shifts in industrial structure reflect the modernization and growing sophistication of the NWT economy and society, as well as the sharp increases in disposable income which occurred over this ten year period.

VII-5.3 Table 9 illustrates that the structure of the Study Region economy does not differ significantly from the economic structure of the total Northwest Territories. This situation results in part from the importance of the Study Region within the total Territorial economy.

Each of the major industry groupings is discussed in the following subsections, where particular emphasis is placed on the Study Region and, where possible, on specific communities or community groups. In many cases, however, the discussion is limited by the fact that information exists only at the territorial level.

.1 Non-Renewable Resource Extraction

In the period since 1967, the mining industry in the Northwest Territories has grown steadily as indicated by VII-5.3 Figure 2, which shows total wages and salaries paid by the industry over that period. The 18 percent growth rate over the period has resulted in the mining industry surpassing transportation, communications and utilities to become the second largest employer in the territories and the Study Region (based on the industry definitions used in VII-5.3 Figure 2).

VII-5.3 TABLE 8
LABOUR FORCE BY INDUSTRY IN THE
NORTHWEST TERRITORIES, 1971 AND 1981

Industry	1971 No.	1971 % of Total	1981 No.	1981 % of Total	Average Annual Increase: 1971-1981
All Industries	10 950	100.0	19 270	100.0	5.8
Agriculture	10	--	25	0.1	9.6
Forestry	100	0.9	70	0.4	-3.5
Fishing, Trapping	370	3.4	235	1.2	-4.4
Mines	1 175	10.7	2 145	11.1	6.2
Manufacturing	335	3.1	420	2.2	2.3
Construction	445	4.1	980	5.1	8.2
Transportation, Communications, Utilities	1 115	10.2	2 085	10.8	6.5
Trade	905	8.3	2 095	10.9	8.8
Finance, Insurance, Real Estate	110	1.0	690	3.6	20.2
Community, Business, Personal Services	2 270	20.7	4 725	24.5	7.6
Public Administration, Defense	2 475	22.6	4 970	25.8	7.2
Other (Unspecified)	1 635	14.9	825	4.3	-6.6

Source: Government of Canada, Statistics Canada, 1971 Census, Volume III, Part 4, Catalogue 94-741; and 1981 Census, Catalogue 92-921, Table 1.

VII-5.3 TABLE 9

EMPLOYMENT BY INDUSTRY FOR STUDY REGION, 1981

Industry	Number	% of Total
All Industries	13 100	100.0
Agriculture	---	---
Forestry	100	0.8
Fishing, Trapping	200	1.5
Mines	1 600	12.2
Manufacturing	400	3.1
Construction	700	5.3
Transportation, Communications, Utilities	1 300	9.9
Trade	1 400	10.7
Finance, Insurance, Real Estate	500	3.8
Community, Business, Personal Services	3 300	25.2
Public Administration, Defense	3 300	25.2
- Federal	1 300	9.9
- Territorial	1 500	11.5
- Local	500	3.8
Other (unspecified)	300	2.3

Government	Study Region	N.W.T.
Territorial	2 300	3 200
Local	500	650
Federal Administration	1 900	2 700
Federal Enterprises	500	600
Total	5 200	7 150
% of Total Employment	39.7	54.6

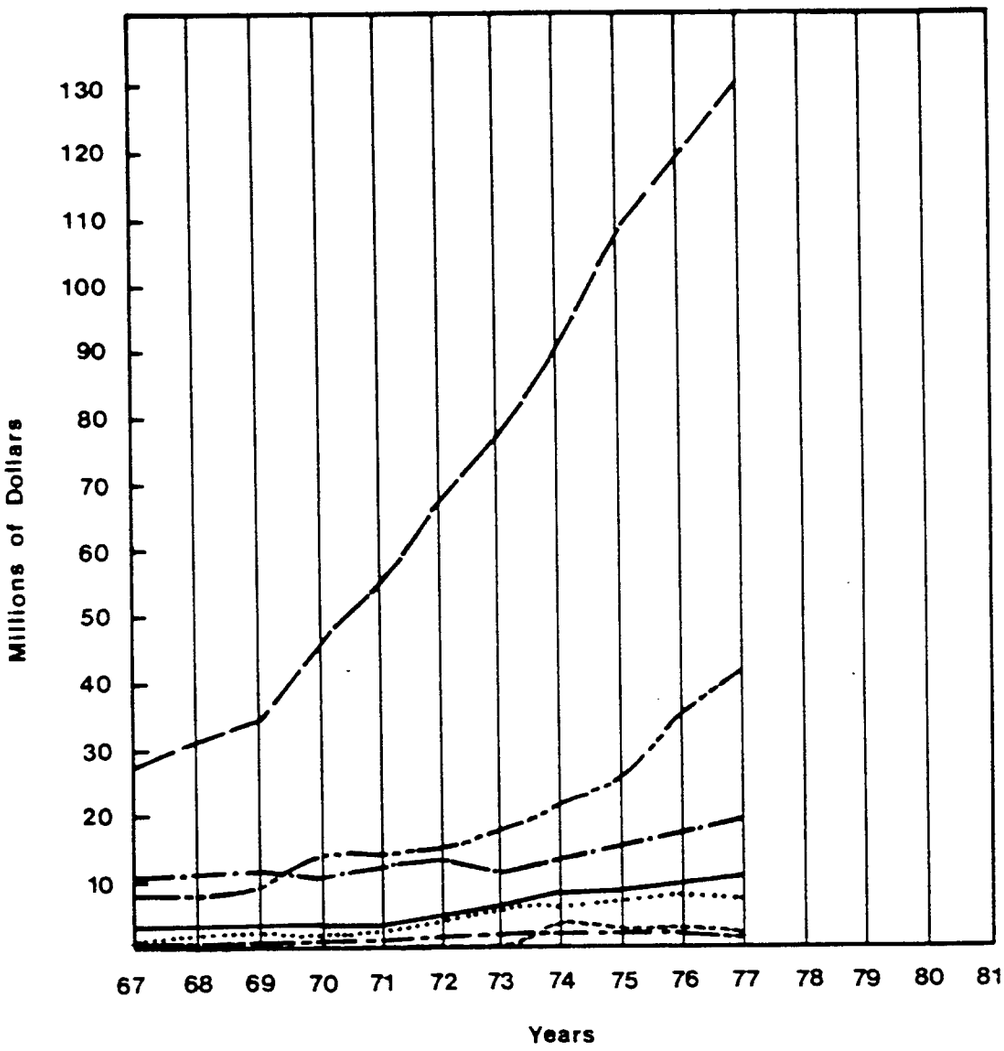
Source: Government of Canada, Statistics Canada. 1981 Census, Catalogue 92-921.

Note: All estimates are rounded off to the nearest 100. In the Census figures, many government employees, eg. teachers, nurses, etc., are included under Community Business and Personal Services and other sectoral groupings. Other sources provide the estimates of government employment in the Study Region and NWT in 1981.

The 1982 value of metal production in the Northwest Territories mining industry approached $600 million (Devine 1982), a record level of output which exceeded the 1981 level by about 5 percent (VII-5.3 Table 10). Two mines, the Pine Point lead-zinc mine and the Cantung tungsten mine at Tungsten were closed for significant portions of 1982, but the production lost from these closures was offset by new production from three other mines: the Polaris lead-zinc mine on Little Cornwallis Island north of Resolute, which began production in late 1981; the Lupin gold mine of Echo Bay Mines Ltd., which began production in April, 1982; and the Cullaton Lake gold mine in the Keewatin District, which started production in October, 1981. Preliminary estimates suggest the value of metal production in 1983 was closer to $500 million, reflecting sharply reduced output from the Pine Point and Cantung mines (see below).

Six of the nine producing mines in the Northwest Territories are located in or near the Study Region. The location, nature, size and number of employees of each facility are summarized in VII-5.3 Table 11. All six mines were in production as of February, 1984. The Cantung mine at Tungsten was not in operation from early 1982 but resumed production at a reduced level in the fall of 1983. The Pine Point mine was shut down for the last six months of 1982 and the first five and a half months of 1983. Production was resumed in June, in part through the financial assistance of the Federal and Territorial governments. Pine Point was in partial production for three months and has been close to full production and employment since September, 1983.

Mining is especially important to three communities in the Study Region. Employment at the Giant and Cominco mines in Yellowknife accounted for about 12 percent of the community's employed labour force in 1981. This share of local employment illustrates that government has replaced mining as the dominant component of the economic base of Yellowknife; however, the employment share percentage ignores the indirect and induced employment effects of the mining industry and therefore underestimates the overall importance of the industry to the community. Pine Point and Tungsten are dominated by the employment provided by their two mines. At Tungsten, the Cantung mine, when it is in full production, accounts for virtually all employment in the community, whereas the Pine Point mine at full production constitutes about 70 percent of the employed work force in that community.



LEGEND

- Mining
- Oil and Gas
- Manufacturing
- Construction
- Transportation, Storage, Communication and Other Utilities
- Services (Community, Business & Personal) and Public Administration & Defence
- Trade (Retail) and Finance, Insurance and Real Estate

Source: Pavich, M. undated. "Gross Domestic Product at Factor Cost by Industry."

TOTAL WAGES AND SALARIES PAID BY SELECTED INDUSTRY GROUP, 1967 TO 1977

VII-5.3 FIGURE 2

VII-5.3 TABLE 10

VALUE OF MINERAL PRODUCTION IN THE
NORTHWEST TERRITORIES, SELECTED YEARS

	Value ($000's) by Year							
Metals	1971	1974	1977	1978	1979	1980	1981	1982
Bismuth	41	--	--	--	--	--	--	--
Cadmium	301	--	3	--	--	--	--	--
Copper	728	841	446	519	942	679	650	489
Gold	10 897	28 651	31 336	45 770	61 868	96 920	64 894	103 160
Lead	22 630	34 933	40 833	56 899	80 118	55 833	63 855	58 877
Silver	4 575	17 670	18 717	23 854	34 771	41 331	14 956	1 181
Tungsten[1]	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	75 056	132 251	125 104	143 911	205 600	172 556	269 047	297 900
Sub-Total	114 228	213 346	216 439	270 953	383 299	367 319	413 402	461 607
Non-Metallics	--	--	--	--	--	--	--	--
Fuels								
Natural Gas	117	5 537	34 925	32 423	409	46 268	37 023	16 451
Petroleum	1 208	3 167	4 295	6 263	7 455	10 894	16 536	12 963
Sub-Total	1 325	8 704	39 220	38 686	7 864	57 162	53 559	29 414
Standard Materials	--	--	--	--	--	--	--	--
TOTAL	115 553	223 050	255 659	309 639	391 163	424 481	466 961	491 021

Notes:

1. Production of tungsten (lbs):

   1971 - 3 288 400
   1974 - 3 557 600
   1977 - 5 036 260
   1978 - 6 363 352
   1979 - 7 174 756
   1980 - 8 835 049
   1981 - 3 827 713
   1982 - 6 500 056

2. Other documents show different values for the value of metals production in the Northwest Territories. The NWT Data book indicated the following:

	($million)
1979	461.3
1980	543.0
1981	540.9

   These figures included estimates for the value of tungsten production which were:

	($million)
1979	53.1
1980	64.1
1981	40.2

3. As well, Statistics Canada reported confidential values of $107 613 000 in 1982. This figure was not reported in previous years.

Source: Government of Canada, Statistics Canada. 1983. General Review of the Mineral Industries, Catalogue 26-201.

VII-5.3 TABLE 11

PRODUCING MINES IN THE STUDY REGION, 1983

Mine	Location	Type of Operation	Product	Tonnes of Ore Milled (1981)	No. of Direct Employees (1980)
Terra Mining & Exploration Ltd.	16 km south of Great Bear Lake	Underground	Silver, copper, bismuth	24 000	65
Giant Yellowknife Mines Ltd.	Yellowknife	Open pit & underground	Gold, silver	220 000	323
Cominco Ltd.	Yellowknife	Underground	Gold, silver	200 000	337
Pine Point Mines Ltd.	80 km east of Hay River	Open pit & underground	Zinc, lead	3 300 000	616
Cantung Mining Corporation	Tungsten	Underground	Tungsten	365 000	219
Lupin (Echo Bay Mines)	Contwoyto Lake, 400 km NE of Yellowknife	Underground	Gold	NA[1]	250[1]

Note: 1. Started production in April 1982 at rate of 1 000 tons per day.

Sources: Price, Waterhouse and Associates. 1982. The Northwest Territories Mining Industry in 1980.

Worobec, A. (ed). 1982. Canadian Mines Handbook, 1982-83.

M. Devine (ed). 1982. NWT Data Book 1982-83.

One other small mine started production in late 1983. The Salmita project of Giant Yellowknife Mines Ltd., which is located at Mackay Lake in the Mackenzie District, is expected to produce 150 tonnes per day and employ 75 to 125 employees. There are current ore reserves to support 12-18 months of production, but ongoing exploration work could uncover additional reserves. In addition, Cominco has indicated that gold production from its Ptarmigan property, located near Yellowknife, could commence in the near future. Production from this property is proposed to be 100 tonnes per day.

Mineral exploration is also a fairly important component of the NWT economy. Exploration and development expenditures from 1976 to 1983 are reported to be as follows:

Year	$ million
1976	17.1
1977	15.9
1978	19.5
1979	32.4
1980	48.5
1981	55.0
1982	25.0
1983	20.0 (estimate)

Sources: Price, Waterhouse and Associates. 1982. The Northwest Territories Mining Industry, 1980.

Daniels, T. 1983. Personal communication, Manager, NWT Chamber of Mines.

Following the downward trend in exploration expenditures, the number of claims recorded fell from 1 330 in 1980 to 1 040 in 1981 and to only 276 in 1982. The record levels of activity in 1980 and 1981 largely reflected the heavy expenditures on uranium exploration at that time. In 1980, uranium exploration accounted for 36 percent of the total spending. Uranium exploration more than offset the downturn in base metal exploration which began in 1976. The sharp overall decline from 1981 to 1983 follows the decrease in metal prices, especially uranium prices, over the past two years. In 1983, one-half of the expenditures on mineral exploration was for gold exploration and gold property development. The NWT Chamber of Mines expects interest in uranium to increase over the next five years, but base metal exploration is not expected to rebound until zinc prices strengthen, probably in the late 1980s.

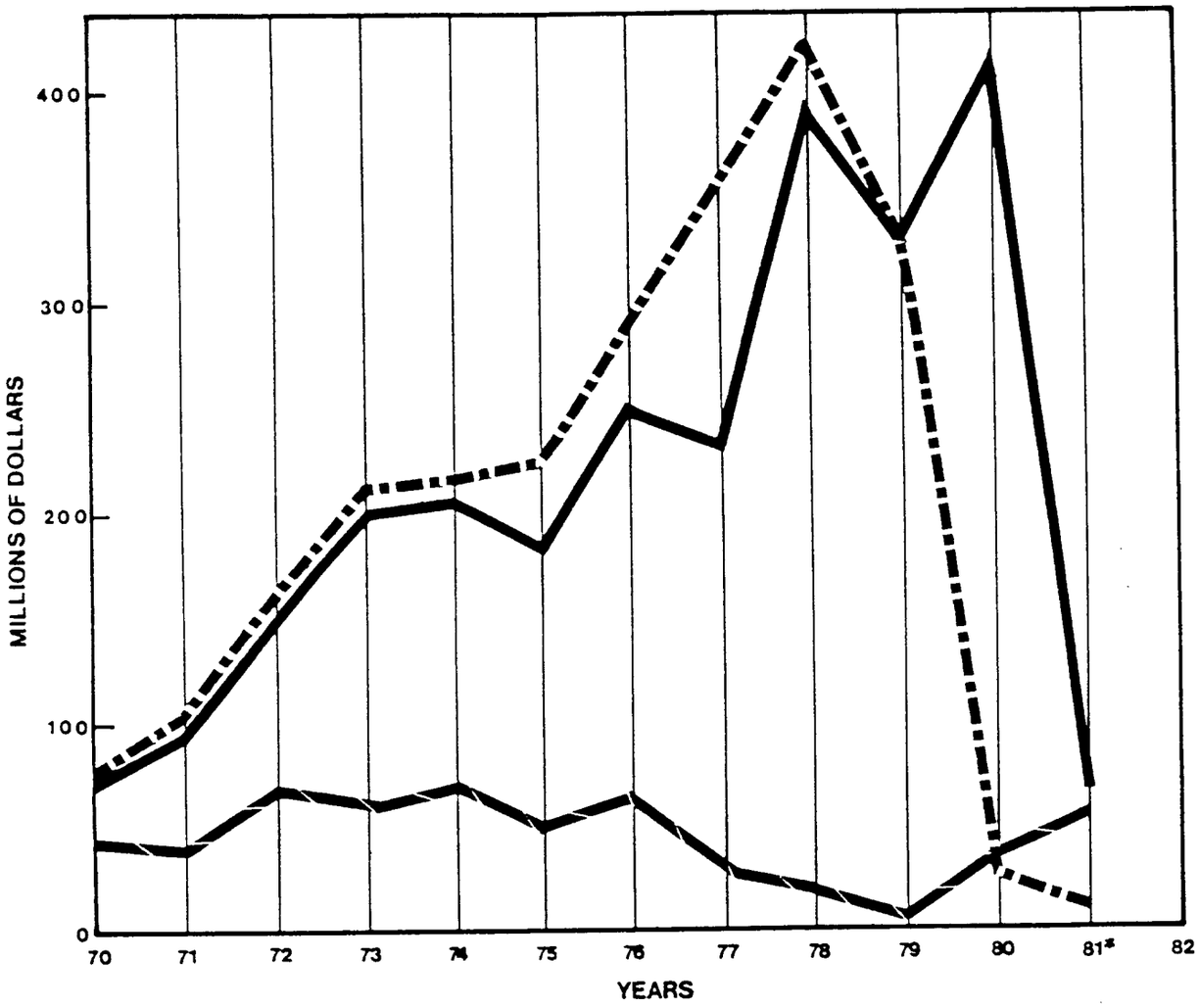
Oil and gas are currently produced at two locations in the Northwest Territories, both of which are in the Study Region. Oil is produced at Norman Wells and natural gas is produced in the Pointed Mountain area near Fort Liard. Production was valued at $29.5 million in 1982, down from the record level of $57.2 million in 1980 (VII-5.3 Table 10).

Despite these relatively low levels of production in comparison to the rest of the mineral extraction industry, expenditures on oil and gas exploration are about 10 times larger than the expenditures on other mineral exploration.

VII-5.3 Figure 3 shows the total level of exploration expenditures for the Mackenzie Delta, Beaufort Sea, and Arctic Islands areas from 1970 to 1981. Recent information suggests that hydrocarbon exploration activities have at best remained at a constant level since 1981. Activity in the Delta area has declined significantly since the late 1970s but this has been more than offset by growing exploration expenditures in the Beaufort Sea and the Arctic Islands.

The number of rights and permits in effect decreased fairly significantly in 1981 and 1982. In addition, the total area covered by these rights and permits fell from a monthly average of 52.7 million hectares in 1981 to 50.5 million hectares in 1982. However, the number of oil and gas leases in effect increased from a monthly average of 1 500 in 1980 to about 1 900 in each of the past two years. (Statistics Quarterly, NWT, various issues). The growth in the number of leases in 1982 was largely accounted for by growing interest in the Arctic Islands and Marine Coast. Both the number of leases and the area covered by these leases declined in the first six months of 1983 compared with the corresponding period in 1982.

VII-5.3 Table 12 shows the person-months of employment provided by the petroleum industry and its contractors to residents of Study Region communities during the period 1974-75 through 1977-78. As is evident from the table, employment opportunities have been concentrated particularly in the Mackenzie Delta area. As might be expected, residents of Inuvik accounted for about 60 percent of the total person-months of employment created in that area in the period from 1976 to 1977. Between 1977 and 1978 however, the employment was spread more evenly among communities, with residents of the Service and Traditional communities accounting for more than 50 percent of the total. The relatively high level of employment generated in other Sub-regions primarily reflects activity in Hay River and is associated with the logistics functions of the industry.



Source: Woodward, H.W., 1980, personal communications; and Government of Canada, Department of Indian Affairs and Northern Development, Oil and Gas Activities, 1981.

Note: * Only preliminary numbers for 1981.

MACKENZIE DELTA, BEAUFORT SEA, AND ARCTIC ISLANDS HYDROCARBON EXPLORATION EXPENDITURES 1970 TO 1981

VII - 5.3 FIGURE 3

VII-5.3 TABLE 12

PETROLEUM INDUSTRY EMPLOYMENT FOR SELECTED STUDY REGION COMMUNITIES 1974-75 TO 1977-78

Communities	Person-months worked			
	1974-75	1975-76	1976-77	1977-78
Hay River	239	1 355	776	1 005
Inuvik	608	956	1 081	562
Tuktoyaktuk	207	291	487	415
Fort McPherson	59	124	103	109
Aklavik	133	109	154	102
Other Communities	215	167	185	227
Total Study Region	1 461	3 002	2 786	2 420

Source: Petroleum Industry Committee on the Employment of Northern Residents. 1978. Northern Resident Employment by the Oil Industry working in the Yukon and Northwest Territories 1977-78.

Note: Information given is the result of a one-time study. The format and criteria for the above have not been replicated.

It is notable that, for the total Study Region, petroleum industry employment declined significantly in 1976 and 1977 and, to a lesser extent, in 1977 to 1978. In the Mackenzie Delta communities, the decline occurred in 1977 to 1978. These declines generally were associated with the anticipation and subsequent publication of the recommendations of the Berger Inquiry. Petroleum industry employment by community is not available from 1977-78 on, but the Beaufort Sea-Mackenzie Delta Environmental Impact Statement Supplementary Information (1983) provided figures by regional zone. These figures showed that in the Beaufort/Delta zone (which includes Aklavik, Inuvik, Tuktoyaktuk, and Coppermine), the petroleum industry provided employment of 3 290 person-months in 1982 compared to 1 872 person-months in 1980 and an average of 1 680 per year from 1975-76 to 1977-78. In the Middle Mackenzie zone (which includes Norman Wells and Fort Norman), the 1982 employment was 1 254 person-months compared to 780 person-months in 1980 and an average of 125 per year from 1975-76 to 1988-89. For the Upper Mackenzie Zone (which includes Fort Liard, Fort Simpson, and Wrigley), the 1982 figures was 176 compared with a yearly average of 55 person-months from 1976-76 to 1977-78. These regional figures suggest that for many of the communities in VII-5.3 Table 12

petroleum industry employment in recent years could be two or more times higher than the figures in the mid to late 1970s.

The growth in exploration expenditures in recent years reflects the industry shift to much more costly, but also more promising, offshore operations. Actual activity, as measured by acreage under permit and lease, or by wells and depth drilled, declined steadily through the 1970s. The number of exploratory wells completed dropped from 18 in 1977 to 14 in 1978, as did the number of development wells, from eight in 1977 to four in 1978. In 1981, the number of exploratory wells completed was 13, whereas about 20 were completed in 1982. Much of the money in 1982 was spent on completing suspended locations in the Beaufort Sea, and by Esso Resources in installing the production facilities required to bring its Norman Wells field up to design output for pipelining south.

Petroleum exploration in the Northwest Territories has concentrated on the following areas: the Mackenzie Delta; Beaufort Sea; Arctic Islands; Lancaster Sound/Baffin Bay, and Davis Strait. A variety of technologies, many developed within the past ten years, are used to cope with the extreme conditions encountered in these areas. Drilling from artificial islands, icebreakers and drillships equipped with sophisticated electronics, and drilling platforms made of floating ice are some of the methods used.

In general terms, the major constraint on significant expansion in exploration and development activities is the absence of an effective transportation facility to bring reserves to southern markets. The uncertainty surrounding this question since the Berger Inquiry has probably been the single most important determinant of the industry's expenditure levels.

As shown in VII-5.3 Figure 2, total wages and salaries paid by the oil and gas industry are relatively low compared to other industry groups. However, the exploration effort has a direct and substantial economic impact on several of the communities of the Study Region.

Until very recently, Dome/Canmar has been the major actor in the exploration and development effort in the Beaufort Sea area. In 1980, Dome/Canmar and its contractors employed 312 northerners who were paid $3.5 million in employment income (Outcrop Ltd. 1981). In that year, northerners held 188 of 1 150 positions created by Dome/Canmar and its contractors; the number of positions held by northerners in 1976 came to 67. In 1980, most of the northern employees were from the Beaufort Sea communities, with the largest component (33 percent) from Tuktoyaktuk, followed by Inuvik (29 percent), Aklavik (11 percent) and Fort McPherson (seven percent). As well, the number of NWT residents in skilled positions has increased over the years. Only six NWT residents held

skilled positions in 1976 but this number increased to 62 by 1980. Nonetheless, while more northerners are moving into skilled positions, the low level of skills available in the NWT is evident in the fact that, in 1980, NWT residents held only seven percent of the total number of skilled positions on the project.

The Dome/Canmar share of total business activity in some of these communities was also very significant - reaching 40 percent of private sector activity in Tuktoyaktuk and 15 percent in Inuvik in the late 1970s. When the direct, supplier-related and re-spending effects are added together, it is found that Dome/Canmar has accounted for significant portions of total income and employment in many Beaufort Sea communities. For example, in 1980, Dome/Canmar accounted for about 50 percent of total personal income in Tuktoyaktuk, whereas the comparable figure for Inuvik was about 10 percent.

Impact evaluations have not been conducted on Gulf and Esso activity in the Beaufort but newspapers, newsletters, and other sources can be used to develop some understanding of their impacts on the regional economy. At the peak of drilling activity in September, 1983, Gulf/Beaudril and its major contractors employed 589 people north of 60. Major communities for hiring were Tuktoyaktuk, Inuvik, Whitehorse, Coppermine, Aklavik, Hay River, Old Crow, and Yellowknife. In addition in 1983, Gulf/Beaudrill purchased more than $18 million in goods and services from about 175 northern-owned or northern-based businesses. Locations of these businesses included Tuktoyaktuk, Inuvik, Yellowknife, Whitehorse, Aklavik, Fort McPherson, Hay River, Norman Wells, and Fort Smith. The "northern content" expenditures from Esso's Beaufort Sea Exploration Progam came to $9.0 million in 1982 and $8.8 million to the end of the third quarter of 1983. Esso's Beaufort Sea program provided 1 397 person-months of work to northern residents in 1982 and 1 480 person-months up to the end of the third quarter of 1983.

In 1983, Gulf was the busiest of the three companies which have operated in the Beaufort in recent years. The major element of the Gulf program was the commercial drilling unit Kulluk which is the first component of Gulf's $674 million drilling system to enter the Beaufort Sea. This unit performed very well despite severe ice conditions which stopped drilling operations in October and November. Gulf also contracted Canmar's mobile drilling caisson, the SSDC (Semi-Submersible Drilling Caisson). In addition to contracting its SSDC to Gulf, Dome was actively drilling wells at several locations during the summer of 1983. The company anticipates that all four of its drillships will be fully occupied in 1984, and the level of activity will be about the same as in 1983. Esso's new steel caisson was assembled at Tuft Point and towed to the Kadluk location, 120 km northwest of Tuktoyaktuk. As well, a new $30 million drilling rig was installed and drilling began on the site in late September.

A major development of 1983 was the establishment of Sheetah Drilling Ltd. which is a joint venture of Dehcho Drilling (which in turn is a joint venture of the Denedeh Development Corporation and the Metis Development Corporation) and Esso Resources Canada Ltd. Sheetah Drilling operates a drilling rig with a 2 300 m depth capacity and a service rig with a 2 750 m well-servicing capacity. Sheetah currently has a two-year contract with Esso for drilling near Norman Wells. The rig was paid for by a grant of $1.5 million from the federal Department of Indian Affairs and Northern Development while the other $1 million was borrowed from the bank. When the rig was first acquired by Sheetah, the majority of the workers were from Esso crews but, as of early January, 1984, 15 of the 26 people employed on the rig were Native and two others were experienced northerners; as well, four of the five office staff were Native.

In addition, the Inuvialuit Development Corporation (IDC) started its first drilling project at the end of 1983. In January, 1983, the IDC and Atco Drilling Ltd formed a joint company which received its first drilling contract from Petro-Canada in October 1983. The drilling rig purchased by the joint company started drilling in December 1983 at a site near Colville Lake. A training program for Native workers is part of the overall program. The IDC also is involved with Polar Marine of Victoria to form Qayaq Marine, which provides marine support in the Western Arctic for offshore operations.

.2 The Public Sector

As has already been observed, governments account for a large and growing element in the economic base of the Northwest Territories. VII-5.3 Figure 2 illustrates the 17 percent growth rate in wages and salaries paid by the combined public administration, defence, community business and personal services industry groups over the last decade. In 1981, the public sector accounted for 44 percent of the total wages and salaries paid in the Northwest Territories (VII-5.3 Table 7).

VII-5.3 Table 13 shows total direct employment by all levels of government in the Northwest Territories in 1982. Government employee totals include those working for crown corporations or other government activities that are outside the normal departmental structure. The total government employment of 7 600 represented approximately 42 percent of the estimated 1982 employed labour force. In addition to being the largest single employer in the territorial economy, the public sector is a source of indirect economic stimulus through the provision of employment creation services and programs, and the purchase of local goods and services.

VII-5.3 TABLE 13

DIRECT GOVERNMENT EMPLOYMENT AND PAYROLL
IN THE NORTHWEST TERRITORIES, 1982

Level of Government	# of employees (Monthly Average)	Payroll ($000s)
Federal Government		
- Administration	2 814	65 049
- Enterprises	718	22 546
Territorial	3 408	110 761
Municipal	656	11 691
Total	7 596	210 047

Source: Government of the Northwest Territories, Bureau of Statistics Statistics Quarterly, January-March 1983. These figures include teachers, health workers and other service workers, but excludes armed forces personnel.

From a Study Region perspective, the economic significance of government activity is even greater than at a territorial level. Since the capital of the Northwest Territories moved to Yellowknife in 1967, the growth of the civil service in that city has been prolific. The Government of Canada has 20 departments or agencies represented in the Northwest Territories, all of which have offices in Yellowknife. Similarly, the Government of the Northwest Territories includes some 18 distinct administrative units or agencies. The bulk of the employment associated with these functions is located in Yellowknife. In 1981, the public sector accounted for nearly 40 percent of total employment in Yellowknife.

The senior levels of government also have field offices in most of the communities of the Study Region. As indicated by VII-5.3 Table 14, which lists current Government of the Northwest Territories employees by community, Inuvik, in particular, is a regional administrative centre for the Government of the Northwest Territories and a major source of public services to neighbouring communities. To a lesser but still significant extent, both levels of government have a major presence in Fort Simpson, Fort Smith and Hay River.

Although direct government employment in the Traditional communities generally is small in absolute terms, such employment is significant in view of the limited wage employment opportunities in those communities.

In addition to the direct economic impacts of the public sector on the Study Region, additional employment and income are generated through various job creation programs that are largely federally-funded. For example, between 1977/78 and 1980, approximately 25 000 work-weeks of employment were generated in Study Region communities through such programs as Canada Works, Young Canada Works, Summer Job Corps and Youth Job Corps. The Federal Government contribution to these programs over that period exceeded $5.5 million. The distribution of employment by community type was as follows: Industrial Communities—45 percent, Service Communities—22 percent, Traditional Communities - 33 percent.

.3 Tourism

The tourist industry in the Northwest Territories is a healthy and growing segment of the economy of the North, as indicated in VII-5.3 Table 15, which shows the pattern of growth of facilities over the past 12 years. The number of licenced accommodation facilities available to tourists more than doubled from 1969 to 1981. The industry caters to a variety of activities including touring, camping, hunting, fishing and nature observation. There are three national parks in the Territories as well as numerous campgrounds and picnic sites.

Other tourist-oriented facilities include hotels, motels, sport fishing lodges and outfitters. Together, these facilities now accommodate more than 40 000 tourists each summer — about one-fifth originating in the United States and the remainder from other parts of Canada, predominantly Alberta. The level of affluence typical of these visitors is a major contributor to the economic potential of this industry. Tourism revenues during the summer of 1982 - including the spending by pleasure tourists and by business travellers -was estimated to be $44 million, and the tourist industry now supports perhaps close to 1 000 full and part-time jobs in the NWT. The tourism industry has shown particularly strong growth over the past few years. It is expected that tourism expenditures in 1983 will be 25 percent greater than the 1982 figure. Earlier information indicated that in 1981 campground and park revenues were up 50 percent over the previous year; as well, activity has been very brisk at the information center on the Dempster Highway at the 60th parallel, which in 1981 recorded a 100 percent increase in tourists signing the guest book over the previous year (Devine 1982). Tourism growth is indicated further by restaurant sales which rose by 13 percent in 1982 over 1981. The growth in sales by licensed restaurants (at 17 percent) was particularly strong.

VII-5.3 TABLE 14

GOVERNMENT OF THE NORTHWEST TERRITORIES
EMPLOYMENT BY COMMUNITY, APRIL 1983

Community/Sub-region		Number [1]
A. DELTA		
1.	Inuvik	224
2.	Tuktoyaktuk	22
3.	Sachs Harbour	6
	Paulatuk	6
	Aklavik	29
	Fort McPherson	25
	Arctic Red River	4
Delta Sub-region		
1.	Industrial	224
2.	Service	22
3.	Traditional	70
Sub-region Total		316
B. MACKENZIE RIVER		
1.	None	
2.	Norman Wells	16
	Fort Simpson	61
3.	Colville Lake	--
	Fort Good Hope	15
	Fort Franklin	14
	Fort Norman	10
	Wrigley	6
	Nahanni Butte	3
	Jean Marie River	4
	Trout Lake	5
	Fort Liard	6
4.	Tungsten	5
Mackenzie River Sub-region		
2.	Service	77
3.	Traditional	63
4.	Mining	5
Sub-region Total		145

VII-5.3 Table 14 (cont'd)

Community/Sub-region		Number[1]
C. GREAT SLAVE LAKE		
1.	Yellowknife	1 232
	Hay River	161
2.	Fort Providence	25
	Enterprise	19
	Fort Smith	298
3.	Rae Lakes	4
	Snare Lake	1
	Lac la Martre	10
	Rae-Edzo	Rae-10; Edzo-27
	Detah	4
	Snowdrift	10
	Fort Resolution	19
	Kakisa Lake	--
4.	Pine Point	42
Great Slave Lake Sub-region		
1.	Industrial	1 393
2.	Service	342
3.	Traditional	85
4.	Mining	42
Sub-region Total		1 862
TOTAL STUDY REGION		
1.	Industrial	1 617
2.	Service	441
3.	Traditional	218
4.	Mining	47
TOTAL STUDY REGION		2 323
TOTAL NWT		3 311

Notes: 1 These employment figures include teachers.

Source: Demage, A. July 1983. Personal communication. Government of the Northwest Territories, Department of Personnel; Manager, Systems and Administration, unpublished data.

VII-5.3 TABLE 15

LICENSED TOURIST ACCOMMODATION BY TYPE OF ESTABLISHMENT, NORTHWEST TERRITORIES, 1969 TO 1981

Type of Establishment	1969	1970	1971	1972	1973	1974	1975	1976	1977	1981
Hotels and Motels	19	24	24	32	33	38	38	38	38	50
Sport Fishing Lodges	25	27	33	34	37	37	41	43	45	50
Sport Fishing and Big Game Outfitters	25	21	21	23	28	29	29	29	29	40
Others	--	--	2	3	2	4	3	3	3	--
TOTAL	69	72	80	92	100	108	111	113	115	140

Source: Government of the Northwest Territories, Department of Economic Development and Tourism. 1980. Northwest Territories, Statistical Profile. Devine, M. (ed). 1982. NWT Data Book, 1982-83.

The recent surge in the Northwest Territories tourism industry has been particularly important at this stage of the Territories' development. Tourism expansion not only provides some needed diversification to the NWT economy, but also tends to offset the decrease in employment and incomes which has occurred in other sectors of the N.W.T. economy. The Study Region's share of the NWT's tourism activity is likely more than proportional to its share of population. This is because the Study Region includes the city of Yellowknife, the NWT portion of the Dempster Highway, and two of the three national parks in the NWT.

An important segment of the tourism industry is the sport fishery. Forty-one sport fishing lodges were engaged actively in the sport fishery in the Northwest Territories in 1980 (Devine 1982). Most lodges operate only during the June to September season. There were an estimated 6 500 guests in 1980, with a total of 41 400 guest days. During 1975, the latest year for which figures are available, sport fishermen took over 430 000 kg of fish in the NWT. Their direct expenditures in the NWT totalled $4.9 million in 1975, a substantial inflow to the angler service industry.

Total gross sales to Northwest Territories lodges in 1980 were composed largely of package plan revenues and amounted to an estimated $7 million with a gross profit of $2 million. Approximately half the lodges reporting financial information have an estimated operating loss. Wages and salaries to NWT residents are estimated at $604 000, from

short-term employment of 264 NWT residents, mainly as guides and cabin staff. This represents 39 percent of total wages and salaries paid by lodges and 81 out of 175 person-years of employment.

Sport hunting in the Territories is permitted according to the regulations of the NWT Wildlife Service. Resident sport hunters, defined as Canadian citizens or landed immigrants who have lived in the Territories for two years, hunt both for recreation and for food. Hunts for grizzly bear or Dall sheep in the Mackenzie mountains or for polar bear or musk ox in the central Arctic attract non-resident hunters and provide revenue to NWT communities. Non-resident hunters are required to employ a licensed outfitter or Class B guide.

The growth potential of the tourist industry is an important element in the development plans of many of the Study Region communities. For the residents of smaller communities, the tourist industry provides an opportunity to use traditional skills to earn cash incomes: it is an industry where the traditional and modern components of the dual economy of the North can merge. In addition to the provision of guiding and related services, tourism provides a local market for traditional crafts. It appears that Native people recognize the potential in tourism for economic development that is compatible with traditional activities and lifestyles. This is evidenced by the growing participation of Native co-operatives in the industry.

.4 Transportation, Communications and Utilities

The organization of this sector is indicative of recent development in the territories: there is extensive participation of crown corporations, specialized enterprises of a small to medium scale owned by northerners, limited involvement at management or ownership levels by Native entrepreneurs, and a direct dependence on government and large scale economic activity as a major source of revenue.

VII-5.3 Figure 2 shows that the industry was relatively stable in the period from 1967 to 1973. In fact, if total wages and salaries paid are discounted to account for inflation, the industry may have experienced more significant declines in employment than are evident from the graph. However, from 1973 to 1977 the industry experienced steady growth, with wages and salaries increasing at a rate of about 16 percent per year. It is notable that this period of growth corresponds to a sustained period of quite rapid growth in the mining, oil and gas industries.

Government involvement in transportation, communications and utility services is substantial. The following figures illustrate the levels of government employment for 1978 to 1979 in the Northwest Territories in these fields: federal Department of

Transport — 280 employees; federal Department of Communications — 280 employees; federal Crown Corporations (Including CBC, NCPC, NTCL, CNT and CNR) -- 484 employees; Northwest Territories Department of Public Works and Highways -- 542 employees. The majority of the federal Department of Transport employees worked in support of the air and, to a lesser extent, the marine transportation modes. A major proportion of the Northwest Territories Department of Public Works and Highways employment was directed to the design, construction and maintenance of roads.

The remaining 1 500 or so jobs in transportation and communication are in private companies which provide a variety of transportation services to Northwest Territories residents.

The transportation and communications facilities and services in the Study Region are described in VII-5.5.3. As that section makes clear, the transportation industry is particularly important in Hay River: Hay River is the major port for the Mackenzie River barging system and has truck-to-barge and rail-to-barge transfer facilities, extensive wharfage, and vessel repair facilities.

The communities of Inuvik, Tuktoyaktuk, Fort Simpson and Yellowknife also have significant cargo handling facilities. For years Tuktoyaktuk has served as a base for marine resupply operations along the Arctic Coast as far east as Spence Bay, and more recently serves as the primary harbour for the support of offshore drilling activities. Since logistics activities are relatively labour intensive, transportation serves as an important source of employment in all of these communities.

Additional employment is created in Study Region communities by the operation and maintenance of transportation and communications facilities described in VII-5.5.3.

.5 Retail Trade and Finance, Insurance and Real Estate Services

VII-5.3 Table 16 provides data on estimated retail sales by type of business in the Northwest Territories from 1979 to 1982. The industry has grown in dollar value from $67.9 million in 1974 to its current level of nearly $190 million, an average annual rate of growth of 13.8 percent that is well in excess of the inflation rate.

In the period from 1971 to 1977, total wages and salaries paid by the combined retail trade/services industry group increased at an annual rate of 19 percent, as illustrated in VII-5.3 Figure 2. In 1981, wholesale and retail trade accounted for five percent of the total wages and salaries paid in the Northwest Territories, while finance, insurance and real estate accounted for another three percent. VII-5.3 Table 8 indicates that, in terms of employment, finance, insurance, and real estate was the fastest growing industry grouping in the NWT from 1971 to 1981, while the trade sector also displayed well above average growth.

VII-5.3 TABLE 16

ESTIMATED RETAIL SALES BY TYPE OF BUSINESS, 1979 TO 1982

Business Group	Retail Sales ($000s) 1979	1980	1981	1982	Average Annual Increase 1979-82
Food	21 007	25 714	29 378	35 235	18.8
General Merchandise	69 380	77 971	89 844	95 953	11.4
Motor Vehicles	14 893	17 830	17 546	20 043	10.4
Automotive	1 206	733	867	712	-16.1
Hardware and Furnishing	25 323	27 631	34 056	38 483	15.0
Total	131 809	149 879	171 691	190 426	13.1

Source: Government of the Northwest Territories, Bureau of Statistics. Statistics Quarterly, March issue for the years 1980, 1981, 1982 and 1983.

In the Study Region, as in the Northwest Territories generally, the extent of retail trade activity is largely dependent on other developments, particularly population and general economic growth. For example, population growth is a major factor in determining overall market size and individual product preferences and hence the number and diversity of retail outlets in a particular community. As a result, the greatest number and diversity of outlets is found in the Industrial communities, followed by Service communities. A similar pattern prevails in the case of finance, insurance and real estate services. The Traditional communities have a very limited range of retail outlets and may not have any of the services available locally. For example, Hay River, with a 1981 population of 2 910, has some 140 businesses providing a comprehensive range of services and supplies. Fort Simpson with a population of 1 060 has 40 such enterprises whereas Colville Lake, with a population of 57, has a single general store.

.6 Construction and Manufacturing

At the territorial level, the construction and manufacturing industries are relatively small from an employment perspective, accounting for five percent and one percent, respectively, of total wages and salaries paid in 1977.

As defined by Statistics Canada, the manufacturing sector in the Northwest Territories includes the refinery operation at Norman Wells and the sawmill portion of the forestry industry — activities that are detailed in VII-5.3.2. Other manufacturing

activities in the Northwest Territories include fish processing, food and beverage production, metal fabricating, boat building, furniture making, and newspaper publication. The number of establishments fluctuated in the range of 12 to 18 over the period from 1970 to 1977, with employment ranging from 126 to 186 workers. Statistics Canada data show that in 1980 the NWT had 19 manufacturing establishments employing a total of 276 workers who were paid wages and salaries of $3.9 million. Manufacturing development in the Northwest territories is constrained by its very small local market (reflecting the NWT's small and scattered population), the Territory's small labour force and limited technical, managerial and entrepreneurial skills, and the NWT's distance from major North American and world markets.

VII-5.3 Tables 17 and 18 illustrate recent trends in Northwest Territories construction activity. Substantial growth occurred in the value of construction from 1972 to 1977, but this boom came to an end with the decision to postpone the Arctic Gas Mackenzie Valley pipeline. These boom-bust conditions have acted as a serious constraint to the development of a firmly-established, qualified construction industry in the NWT. Among the Study Region communities, only Yellowknife has enjoyed a relatively buoyant construction industry in recent years, maintained by the growth in the public sector.

The only major construction project recently active in or near the Study Region has been the Liard Highway. With this exception, the industry has been restricted largely to local housing construction, road maintenance and improvements, and other small-scale developments.

VII-5.3 TABLE 17

CONSTRUCTION ACTIVITY IN THE NORTHWEST TERRITORIES: 1972 TO 1983

Full Year	Number of Dwelling Units	Estimated Value of Construction ($000)[1]
1972	279	8 921
1973	347	12 549
1974	131	12 684
1975	248	17 124
1976	181	19 441
1977	416	21 539
1978	138	14 458
1979	55	7 269
1980	17	5 526
1981	29	11 370
1982	90	7 049
January - March		
1981	8	5 835
1982	6	1 107
1983	36	6 334

Note: 1. Includes residential, industrial, commercial, institutional and government. This survey is based on data supplied by municipalities. In the case of the Yukon and the Northwest Territories, the municipalities covered by the survey account for 55 percent of the population of the two Territories combined. This compares with coverage of 89 percent for Canada as a whole.

Source: Government of Canada, Statistics Canada. 1983. Building Permits. Catalogue 64-001, Ottawa. January - March 1983.

VII-5.3 TABLE 18

ESTIMATED VALUE OF CONSTRUCTION
BY TYPE OF CONSTRUCTION, 1972 TO 1982

	Value ($000's)				
Year	Residential	Industrial	Commercial	Institutional and Government	Total
1972	4 093	440	3 655	733	8 921
1973	7 380	530	4 340	296	12 546
1974	3 830	719	1 515	6 620	12 684
1975	9 100	828	5 362	1 834	17 124
1976	7 923	3 112	7 475	931	19 441
1977	12 711	142	1 345	7 341	21 539
1978	7 305	746	3 818	2 589	14 458
1979	2 727	781	1 569	2 192	7 269
1980	911	305	1 017	3 329	5 562
1981	1 913	1 119	2 692	5 646	11 370
1982	5 444	120	732	753	7 049

Source: Government of Canada, Statistics Canada. 1983. Building Permits. Catalogue 64-001, Ottawa. January - March 1983.

.7 Renewable Resource Harvesting

This section deals with the traditional renewable resource harvesting activities of hunting, trapping and fishing, and with forestry and agriculture, in the context of the wage economy where these activities result in a commodity which is sold for cash in the marketplace. These pursuits are also very significant as a source of income-in-kind in the form of country food and building materials. That aspect of renewable resource harvesting is discussed in VII-5.3.3.

- Trapping

Trapping is probably the most widespread income-producing resource-harvesting activity. Northwest Territories government statistics indicate that from 1981-82, there were a total of 1 900 registered trappers in the Study Region. Although it is extremely difficult to differentiate between full-time and part-time trappers, it is clear that a significant portion of the Study Region population derives income from trapping activities. In 1981-82, Study Region trappers received over $2.5 million for fur harvested, and nearly 950 trappers earned more than $600 each. For some communities, trapping revenue forms a significant part of community income.

Income from trapping generally constitutes five percent or more of total money income in the following communities:

Sub-Region	Community
Delta	Sachs Harbour, Aklavik, Fort McPherson, Arctic Red River
Mackenzie River	Colville Lake, Fort Good Hope, Fort Franklin, Fort Norman, Wrigley, Nahanni Butte, Trout Lake
Great Slave Lake	Fort Providence, Rae Lakes, Lac la Martre, Snowdrift, Fort Resolution, Kakisa Lake

Most of these are Traditional communities with limited opportunities for wage employment. In many of these settlements, trapping is the major source of earned income for the majority of families. VII-5.3 Table 19 divides 1981-82 trapping activities in the Study Region by sub-region and type of community. The table confirms that the vast majority of trapper activity in the Study Region is conducted by residents of the Service and Traditional communities; perhaps as many as 60 percent of the adult males between the ages of 15 and 64 conducted at least some trapping in 1981-82. As well, the average income per trapper tends to be much higher in these communities than in the Industrial

VII-5.3 TABLE 19

REGISTERED TRAPPERS AND TRAPPING INCOME BY SUB-REGION AND TYPE OF COMMUNITY, 1981-82

	Total No. of Trappers	Trappers Earning $600+		Total Fur $	Average Income/ Trapper
By Sub-Region		(number)	(% of total)	($000's)	
Delta	555	259	47	691 526	1 246
Mackenzie River	468	275	59	853 716	1 824
Great Slave Lake	879	413	47	1 023 975	1 165
By Type of Community					
Industrial	292	124	42	305 086	1 045
Service	384	186	48	564 375	1 470
Tradtional	1 224	637	52	1 699 756	1 389
Total Study Region	1 900	947	50	2 569 217	1 352
Total NWT	3 635	1 486	41	3 725 903	1 025

Source: Government of the Northwest Territories, Department of Renewable Resources, Wildlife Service. Personal communication, December 1980 and July 1983. Information collected for the Trapper's Incentive Program.

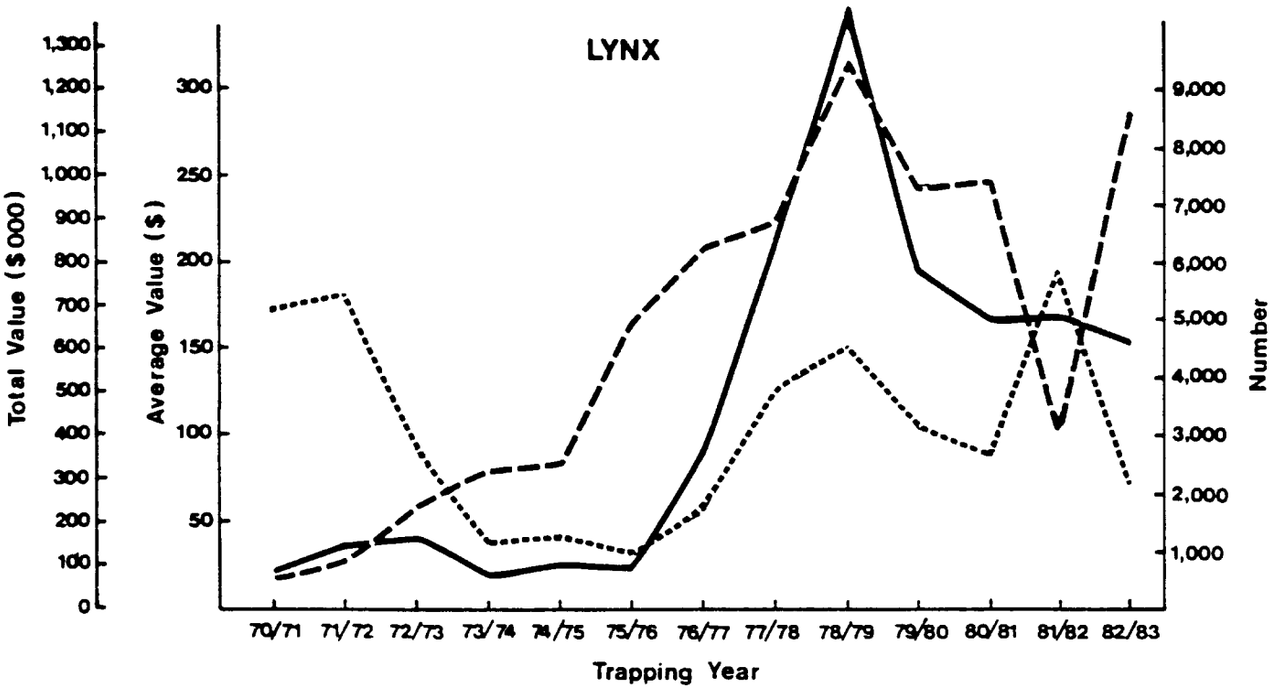
communities, suggesting that relatively more of the trappers in the Industrial communities view trapping as a part-time pursuit. It should be noted that in terms of gross income per trapper, trapping appears to be a more lucrative activity in the Study Region than in other parts of the NWT.

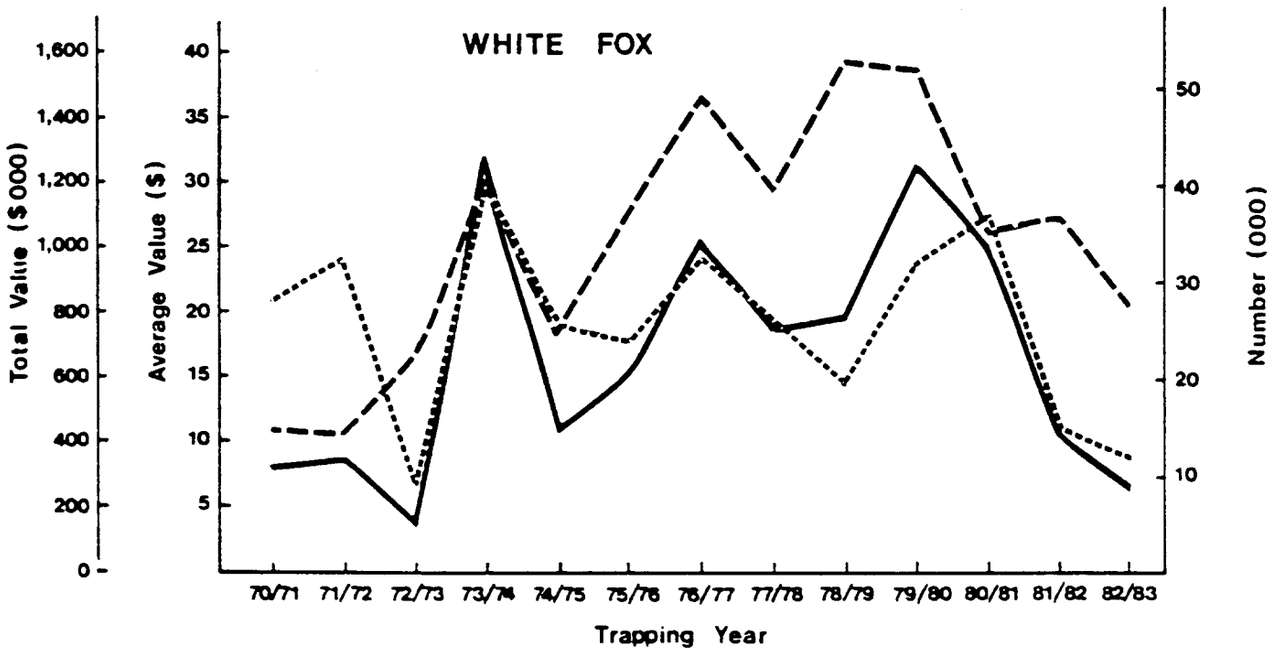
The most important species in the Northwest Territories are marten, lynx, white fox, muskrat, ringed seal and polar bear. These six species combined accounted for 84 percent of the total value of the NWT fur harvest in 1982-83. Another 18 species accounted for the remaining 16 percent.

The level of trapping activity, and the level of income derived from the sale of pelts often varies significantly from year to year. This variability is determined by several factors, including the price of fur, the population cycles of the animals trapped, and the local availability of alternative employment. VII-5.3 Figure 5 illustrates recent price fluctuations for two of the most commonly harvested species in the Northwest Territories. It is clear that the size and the value of the harvest from a given species can vary by as much as 600 percent between seasons. These large variations make it exceedingly difficult for a trapper to estimate what income he will obtain from a winter's work of trapping. Further complicating the situation are the sometimes irregular population cycles to which many fur-bearing animals are subject.

These uncertainties mean that many trappers pursue local wage-employment opportunities whenever they are available in preference to full-time trapping. Similarly, many trappers rely on other sources of income or employment and trap on a part-time basis to supplement their incomes. As a result, in 1981-82, only 50 percent of the trappers registered in Study Region communities earned more than $600.

Adding to the uncertainties in the industry is the recent downward trend in gross income from the fur harvest. The total value of the fur harvest has fallen sharply from $5.7 million in 1978-79 to $3.7 million in both 1981-82 and 1982-83. The decrease in gross income is the result of lower prices, a reduced harvest, or a combination of the two, depending on the species. Soft prices reflect in part the impact of the world-wide recession, but two other factors of a more fundamental nature also are having a significant effect. There are the growing concerns over leg-hold traps and the adverse publicity surrounding the seasonal Newfoundland hunt for immature seals which has affected the world market for the product of the year-round Inuit hunt for mature seals. VII-5.3 Table 20 illustrates that gross income per trapper in the Northwest Territories has fallen from $1 464 in 1978-79 to $1 025 in 1981-82. This decline, combined with the effects of rising operating costs and double-digit inflation means that the constant-dollar





LEGEND

Number

Average Value

Total Value

Source : Government of the Northwest Territories, Department of Renewable Resources, Wildlife Service, personal communication, December 1980 and July 1983

SIZE OF HARVEST, TOTAL HARVEST VALUE AND AVERAGE PELT VALUE FOR NWT LYNX AND WHITE FOX, 1970/71 TO 1982/83

VII-5.3 FIGURE 4

VII-5.3 TABLE 20

TRAPPER ACTIVITY AND EARNINGS
IN THE NORTHWEST TERRITORIES, 1976/77 TO 1981/82

	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82
Total Number of Trappers	4 089	3 679	4 618	4 319	4 336	3 635
Number Earning over $600[1]	1 946	1 325	1 772	1 952	1 890	1 486
Total Fur Dollars	3 860 065	3 411 496	5 746 144	5 334 462	5 029 151	3 725 903
Average Annual Dollars	944	928	1 464	1 235	1 160	1 025

1. Number earning over $400 in 1976/77.

Source: Government of the Northwest Territories, Department of Renewable Resources, Wildlife Service. Personal communication, December 1980 and July 1983. Information collected for the Trapper's Incentive Program.

returns per trapper have decreased by at least 50 percent over the past few years. This helps to explain the sharp decrease in the number of trappers in the NWT. The number has fallen from over 4 000 in 1978-79 to about 3 600 three years later.

Commercial hunting is not a significant renewable resource harvesting activity. For example, the annual commercial caribou harvest is only 10 percent of the estimated domestic harvest in the Mackenzie Valley. Similarly, only 15 percent of the commercial caribou tags available to General Hunting Licence Holders in the Territories are utilized (tags are not required for meat sold and/or consumed within the Native community).

However, the Government of the Northwest Territories is interested in expanding the returns from commercial hunting by encouraging inter-community trade in country food. One caribou can provide gross income of $200 to the hunter.

- Commercial Fishing

Commercial fishing is a significant economic activity in several Study Region communities. The fishing industry is based principally in Hay River and operates on Great Slave Lake, where the catch is mainly whitefish and lake trout. The Government of the Northwest Territories also is interested in establishing a commercial fishery on Great Bear Lake. A federal crown corporation, the Freshwater Fish Marketing Corporation, markets the product. Corporation purchases in the NWT in 1982-83 were divided as follows by major species:

Species	% of Total Purchase (by weight)
Whitefish	76.0
Pickerel	3.7
Northern Pike	9.7
Trout	5.0
Inconnu	1.2
Arctic Char	4.4
Total	100.0

Source: Dorbot, A. March 1984. Personal communication. Freshwater Fish Marketing Corporation.

The overall catch for the Northwest Territories has shown considerable variation over the last decade. The catch declined from more than 4.5 million pounds in 1970/71 (value $1.1 million) to 2.6 million pounds in 1975/76 (value $0.7 million). In 1982-83, the figures were 3.4 million pounds and $1.3 million.

During the peak August period of the 1978 to 1979 summer season, the industry provided employment for 71 boat operators and 711 crewmen. During the peak of the winter season in January, 31 operators and 161 crewmen were employed (Admiral 1980).

- Forestry

About 17 percent, or 54.6 million hectares, of the NWT is estimated to be forest land. However, less than 2.4 million hectares are considered to be primary forest land, that is, located within 86 km of a designated or major wood conversion center.

The forestry industry is focused on the harvesting of soft wood, particularly white spruce, along the Mackenzie River and its tributaries. Although growth is slow in the northern climate, there is still a substantial estimated sustained yield of some 50 million board feet produced annually along the Mackenzie Valley.

The annual NWT timber harvest has been as follows over the past number of years:

	Wood Harvest ($000m^3$)			
	1978	1979	1980	1981
Timber	44.9	51.3	42.0	45.9
Roundwood	1.7	1.7	2.3	2.8
Fuelwood	7.1	6.7	9.1	5.5

Source: Devine, M. (ed). 1982. NWT Data Book, 1982-83.

The value of lumber production was $2.2 million in both 1980-81 and 1981-82.

In the Study Region, commercial sawmills are located at Fort Simpson and Hay River. There are also several community mills which operate when needed, and a large timber reserve in the Liard Valley which remains virtually untapped. Local market penetration remains poor with a number of problems facing the lumber industry: there is low productivity of both labour and raw materials, due in part to the small scale of operations; profitability and consequent access to financing are adversely affected by a lack of control over prices and by seasonal markets; and marketing techniques are inadequate. Quality of the product also had been a concern until the early 1970s when grade-stamping was introduced. Recently, some sawmill operators have had better success in selling to specific southern markets than in satisfying the demands of local contractors.

- Agriculture

Agriculture is not a significant component of the territorial economy in comparison to the major resource and service industries. Soils in the Liard River Valley, Hay River Valley, Slave River Lowlands and Upper Mackenzie Region have been surveyed. About two million hectares of land in these areas are judged suitable for some form of agriculture. Only 10 percent of land in these areas is considered capable of supporting sustained arable agriculture, whereas 70 percent is marginal and suitable for permanent pasture or hay production and grazing. The highest capabilities for agriculture are indicated for the Liard River Valley, which now supports barley, oats, and market garden crops. A substantial expansion of the industry from its current base of a half dozen commercial farmers is constrained by high production costs resulting from a lack of local supporting services, high risks due to climate, and limited markets due to small local demand and high transportation costs. In 1976, there were only nine farm holdings in the NWT, and only five of these realized crop values of over $1 200. Leasing of land for agricultural use was discontinued in 1975, partly in response to Native concerns surrounding the land claims questions. Since 1977, however, four hectare market garden plots have been available near Hay River and Fort Simpson.

.8 Co-operatives

Co-operatives represent an important organizational form with an expanding role in the northern economy, particularly in the predominantly Native communities. Co-operatives operate in various sectors and in some communities are one of the more important employers of Native labour, offering opportunities in such varied pursuits as merchandising, hotel and restaurant operation and management, fur garment manufacturing and arts and crafts.

In the Northwest Territories, co-operatives are often multi-purpose associations. Retail operations familiar to southern co-ops, such as the merchandising of food, drygoods and hardware are carried out by Northern co-ops, but most also purchase fine art and handicrafts, fur and country food. Co-ops in many cases handle local service contracts, including water and petroleum delivery, taxi and freight haulage, airline agency and runway maintenance. They may subcontract with firms for site clearance, construction and kitchen services. Employment creation has become a priority with many co-ops, and they provide a contact point for the development of local labour pools. Co-ops have also expanded into the tourist industry, building hotels and operating fishing and hunting camps. Arts and crafts remain perhaps the most important source of revenue for most Northern co-ops.

As of June 1981, there were 36 active co-operatives in the NWT. Of interest as a possible trend is the recent establishment of two co-operatives in the largely non-Native community of Yellowknife, centred on food and housing respectively. In 1980-81, NWT co-ops had sales of more than $20 million. Membership increased by 15.8 percent over 1979-80 to approximately 4 500. Employment increased to 350 from 320 (not including casual employees and fishermen) generating direct wages and benefits of $3.5 million.

It is estimated that as many as 1 500 NWT residents benefit from payments to suppliers of country food, carvers, artists and others who sell products to co-ops. Such payments are substantial, at over $3.5 million in 1980-81, and are of major importance to the economy of many communities where wage employment opportunities are limited.

The Study Region co-operatives are listed by community in VII-5.3 Table 21, which shows the areas of activity of each co-operative, the number of members and the number of employees in 1983. The 12 active co-operatives reported employment of 25 people in that year. Many of these co-operatives have been in operation for over a decade.

5.3.3 INCOME

Community income may include earned income (including wages and salaries and income from self-employment), investment income, transfer payments and income-in-kind. The latter is the imputed value of game and fish resources that are consumed directly without passing through a market transaction. Each of these components of income is discussed in this section from a territorial perspective and, to the extent possible in view of data limitations, from a Study Region perspective.

The structure of personal income, as summarized in VII-5.3 Table 22, exhibits a number of characteristics that are unique to the northern economy. Foremost among

VII-5.3 TABLE 21

CO-OP SIZE AND ACTIVITY BY COMMUNITY, 1983

Community	Co-Op	Founded	No. of Employees	No. of Members	Economic Activity
Inuvik	End of the Road	1983	NA	NA	NA
Sachs Harbour	Ikanuk	1971	3	58	Retail store, gasoline sales, handicrafts
Fort McPherson	Tetlit Service	1982	5[1]	260[1]	Retail store, distributor, fur buyer
Colville Lake	Kapami	1968	1	24	Retail store
Fort Franklin	Great Bear	1963	2	93	Retail store, tourism
Wrigley	Petanea	1973	4	71	Retail store, water & san. services
Jean Marie River	Jean Marie River Comm.	1972	2	25	NA
Yellowknife	Raven	1974	0	27	Buying
	YK Direct Charge	1981	1	190	Retail food
	Borealis Housing	1982	NA	NA	Housing
Lac la Martre	Meni-Dene	1971	4	106	Retail store
Snowdrift	Snowdrift	1973	3[2]	250[2]	NA

Notes: NA - not available
1. based on 1980 return
2. based on 1981 return

Source: Government of the Northwest Territories, Department of Economic Development. 1983. Statistical Analysis of the Northwest Territorial Co-operative System. Yellowknife.

these is the predominance of wages and salaries as a source of income in comparison with Canada as a whole. For example, from 1976 to 1981, taxation statistics indicate that total wages and salaries accounted for almost 90 percent of total income in the Northwest Territories as compared to 75 percent for Canada. Income from interest, dividends and other investment-related activities accounted for only three percent of territorial income as compared to 10 percent at the national level (Government of the Northwest Territories, Bureau of Statistics 1982; Government of Canada, Revenue Canada 1983).

The composition of transfer payments is also characteristic of the population of the Northwest Territories; a low proportion of pension income as compared to Canada as a whole is symptomatic of the young population profile, as is the greater share of income resulting from Family Allowance benefits. However, in total, transfer payments from governments to individuals in the territories comprise a smaller proportion of personal income than at the national level (four percent compared with an average of eight percent in the total country from 1976 to 1981).

.1 Monetary Income

VII-5.3 Figure 6 shows the growth in average personal incomes in the Northwest Territories over the period 1970 to 1981 for people filing tax returns. The figure shows that average income, based on all returns, dropped quite markedly from 1977 to 1978. This reflects, in part, the general economic downturn which occurred in 1978 throughout most of the Northwest Territories. However, a more important factor may be the introduction of the Child Tax Credit Program in that year. In 1978, the total number of returns filed in the NWT rose by 18 percent while total reported income increased by only 13 percent resulting in a four percent decline in average income for all tax returns. Consistent with this, VII-5.3 Table 23 shows that average income per taxable return increased fairly steadily through the 10-year period.

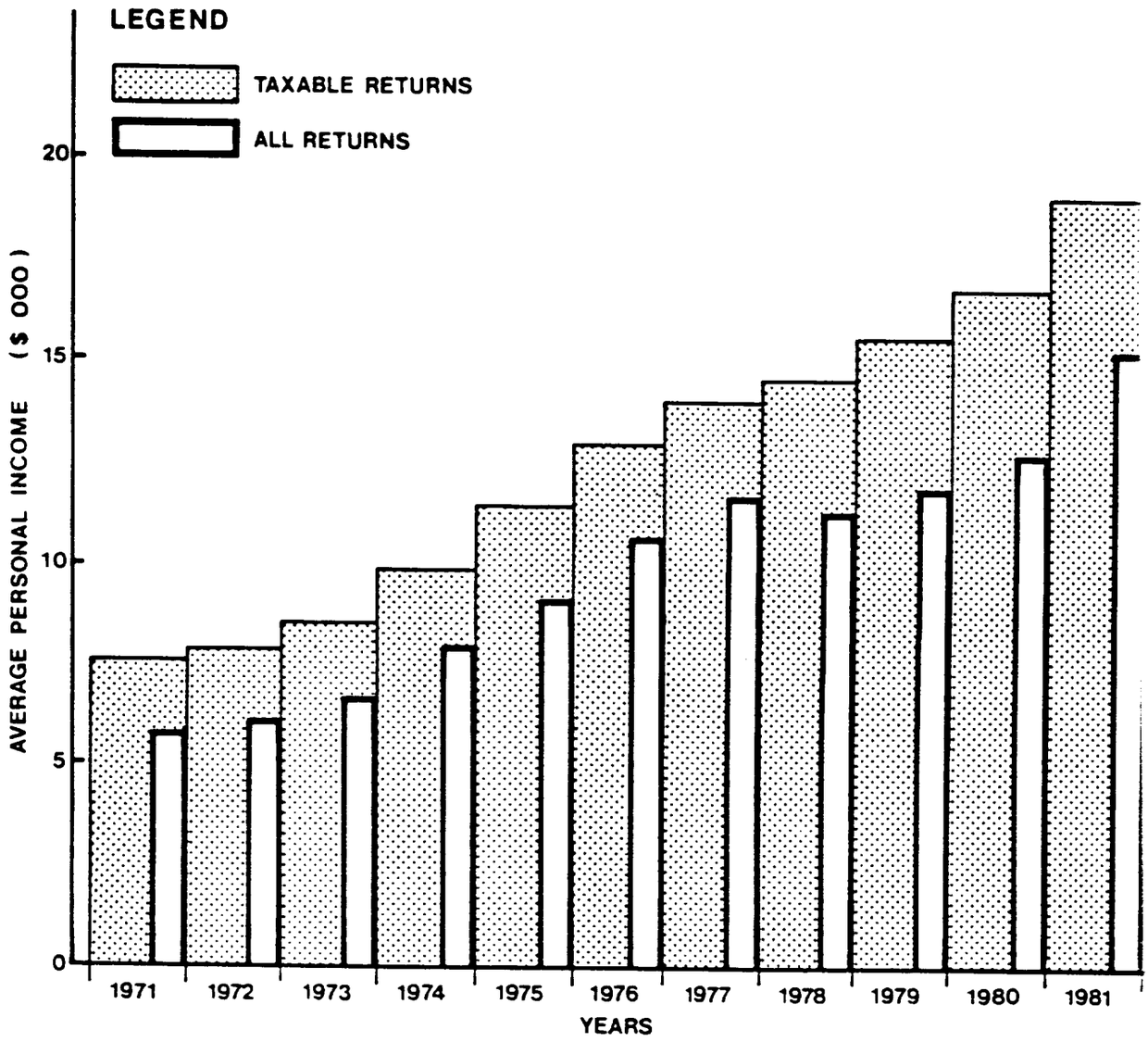
VII-5.3 TABLE 22

SOURCES OF PERSONAL INCOME, CANADA AND NORTHWEST TERRITORIES, 1980

Source	Canada		Northwest Territories	
	Income ($M)	Percent	Income ($000)	Percent
Wages, Salaries and Other Employment Income	173 237	74.0	346 232	89.4
Current Transfers	16 683	7.1	14 369	3.7
Business, Farm and Fishing Income	10 865	4.6	6 607	1.7
Interest, Dividends and Miscellaneous Investment Income	29 445	12.6	15 098	3.9
Miscellaneous	3 764	1.6	4 976	1.3
Total Income Assessed	233 994	100.0	387 282	100.0

Source: Government of Canada, Revenue Canada, Department of Taxation. 1983. Analyzing the Returns of Individuals for the 1981 Taxation Year and Miscellaneous Statistics.

Government of the Northwest Territories, Bureau of Statistics. 1982. Summary of Personal Income Statistics, 1976 to 1980. Yellowknife.



AVERAGE PERSONAL INCOMES OF INDIVIDUALS FILING INCOME TAX RETURNS IN THE NORTHWEST TERRITORIES 1971 TO 1981

Source: Government of the Northwest Territories, Bureau of Statistics. Statistics Quarterly, Volume 3 No.1; Volume 5 No.4

VII - 5.3 FIGURE

VII-5.3 TABLE 23

MONEY INCOME PER CAPITA BY COMMUNITY TYPE

AND SUB-REGION, 1980

Community Type	Personal Income Per Capita ($)	% of National Average
Industrial Communities	15 300	132.6
Service Communities	8 900	77.5
Traditional Communities	4 000	34.4
Mining Communities	14 300	123.8
Sub-Region and Region		
Delta	9 700	84.3
Mackenzie River	6 800	59.3
Great Slave Lake	13 300	15.3
Total Study Region	11 500	100.0
Total NWT	10 400	90.3

Source: Government of Canada, Revenue Canada, Department of Taxation. 1983. Analyzing the Returns of Individuals for the 1981 Taxation Year and Miscellaneous Statistics.

Government of the Northwest Territories, Bureau of Statistics. 1982. Summary of Personal Income Statistics, 1976 to 1980. Yellowknife.

VII-5.3 Table 25 illustrates that from 1976 to 1979 the average incomes of tax return filers in the NWT were slightly higher than Canadian levels. The difference in those years can be explained partly by the dominance of the mining and government sectors with their relatively high salaries and the "isolation allowance" incentive payments for working in the north provided by both the public and private sectors.

It may be noteworthy however that average income per tax document filed in the NWT fell to four percent below the national average in 1980 and was only equal to the national average in 1981. More significantly, in per capita terms, average incomes in the NWT are significantly below the Canadian average. Estimates presented in VII-5.3 Table 24 indicate that average incomes per capita in the Territories were 10 percent below the national standard in 1980. Lower per capita incomes are explained by the relatively low territorial participation rates discussed in VII-5.3.1.1 and by the high unemployment rates discussed in VII-5.3.1.2. Money incomes in the NWT are further eroded by the high consumer prices experienced in all centers in the north (see VII-5.3 Table 28).

The territory-wide averages tend to cover up the very dramatic differences in per capita monetary incomes among different Sub-regions and types of communities in the Study Region. These differences are highlighted in VII-5.3 Table 23. Our estimates suggest that per capita money incomes in the Study Region are about equal to the national average. However, incomes among the Industrial and Mining communities are well above the averages for the Study Region and Canada, while money incomes in the Traditional communities are only about a third of the national average. VII-5.3 Table 24 indicates that, even allowing for higher consumer prices, residents of the Mining and Industrial communities in the Study Region enjoy a standard of living which compares quite favourably with southern standards.

In sharp contrast, per capita money incomes in many Traditional communities amount to less than 30 percent of the national average. This reflects the lack of wage employment in the Traditional communities, and the limited money incomes generated in recent years by the traditional resource-harvesting activities. Many of these communities are highly dependant on country food and other income in kind in order to maintain a reasonable standard of living.

Substantial income disparities also exist between men and women (VII-5.3 Figure 7). As this Figure illustrates, average female incomes per tax return have amounted to less than 50 percent of the male average from 1978 to 1980. The disparity in favour of males is comparable to the difference prevailing in southern Canada and may reflect many of

VII-5.3 TABLE 24

ESTIMATES OF TOTAL AND PER CAPITA INCOME BY COMMUNITY, 1981

Community	Total Personal Income ($000)	Per Capita Personal Income(s)	Per Capita % of Canada[1]
Inuvik	40,800	12,900	112
Tuktoyaktuk	6,400	8,300	72
Sachs Harbour	630	3,900	34
Paulatuk	580	3,300	29
Aklavik	3,600	5,000	43
Fort McPherson	3,300	5,200	45
Arctic Red River	430	3,600	31
Norman Wells	5,700	13,600	118
Fort Simpson	6,300	5,900	51
Colville Lake	150	2,600	23
Fort Good Hope	1,700	3,700	32
Fort Franklin	1,600	3,100	27
Fort Norman	1,700	5,900	51
Wrigley	480	3,500	30
Nahanni Butte	250	2,900	25
Jean Marie River	310	4,500	39
Trout Lake	240	4,100	36
Fort Liard	1,700	4,200	37
Tungsten	6,400	20,100	175
Yellowknife	156,700	16,500	143
Hay River	40,100	13,800	120
Fort Providence	2,900	4,800	42
Enterprise	630	13,700	119
Fort Smith	24,400	10,600	92
Rae Lakes	460	2,300	20
Snare Lakes	140	2,000	17
Lac la Martre	750	2,800	24
Rae-Edzo	5,100	3,700	32
Detah	380	2,700	24
Snowdrift	690	2,700	24
Fort Resolution	2,300	4,800	42
Kakisa Lake	100	2,800	24
Pine Point	24,700	13,300	116
Total Study Region			
Industrial communities	237,600	15,300	133
Service communities	46,330	8,900	78
Traditional communities	26,590	4,000	34
Mining communities	31,100	14,300	124
Totals	341,620	11,500	100

Note: 1. Personal income per capita in Canada in 1981 was $11,520.

Source: Government of Canada, Revenue Canada, Department of Taxation. 1983. Analyzing the Returns of Individuals for the 1981 Taxation Year and Miscellaneous Statistics.

Government of the Northwest Territories, Bureau of Statistics. 1982. Summary of Personal Income Statistics, 1976 to 1980. Yellowknife.

the same factors. For example, this situation could be due in part to the large number of two income families where the second income earner is usually female and may seek only part-time or seasonal employment. However, factors specific to the Territories may also play a role, including the limited service-industry wage employment opportunities for females in many of the Traditional communities. In addition, different educational and skill backgrounds and traditional attitudes regarding the role of women in the economy may contribute to the imbalance.

This male-female disparity tended to increase over the half decade; in 1976, female incomes came to 56 percent of the male average but this ratio had dropped to 48 percent by 1980. This growing disparity would reflect a variety of factors. The decline in female incomes in 1978 may reflect the tendency for an economic downturn to particularly affect the service sectors in an economy like that of the Northwest Territories. In the major centres, where the service sector is concentrated the effects of an economic downturn would have been accentuated by the decline in total population that was experienced by some of these communities. A second contributory factor was the introduction of the Child Tax Credit Program in 1978 which had a pronounced effect on the number of women filing tax returns

VII-5.3 Table 25 presents data on average reported income from Revenue Canada for Study Region communities for which such information is available back to 1976. Average incomes of Administrative Regions and for the total NWT also are indicated. The average annual growth rates in the last column provide some indication of relative growth trends in different parts of the Study Region over the last half of the 1970s. The growth rates suggest that the Delta communities of Inuvik and Aklavik, plus Fort Franklin in the Mackenzie River Region, were hit particularly hard by the downturn in the NWT economy which followed the postponement of the Arctic Gas Mackenzie Valley pipeline. In contrast, Tuktoyaktuk displayed a fairly strong increase in per capita income, reflecting the impact of continued exploration activity in the Beaufort. The continued growth in government employment largely explains the income advance experienced by Yellowknife.

Tax filer data provides only a partial guide to relative incomes and income trends in the Study Region and its various communities and Sub-regions. One important factor is the number of tax filers in comparison to the size of the potential labour force.

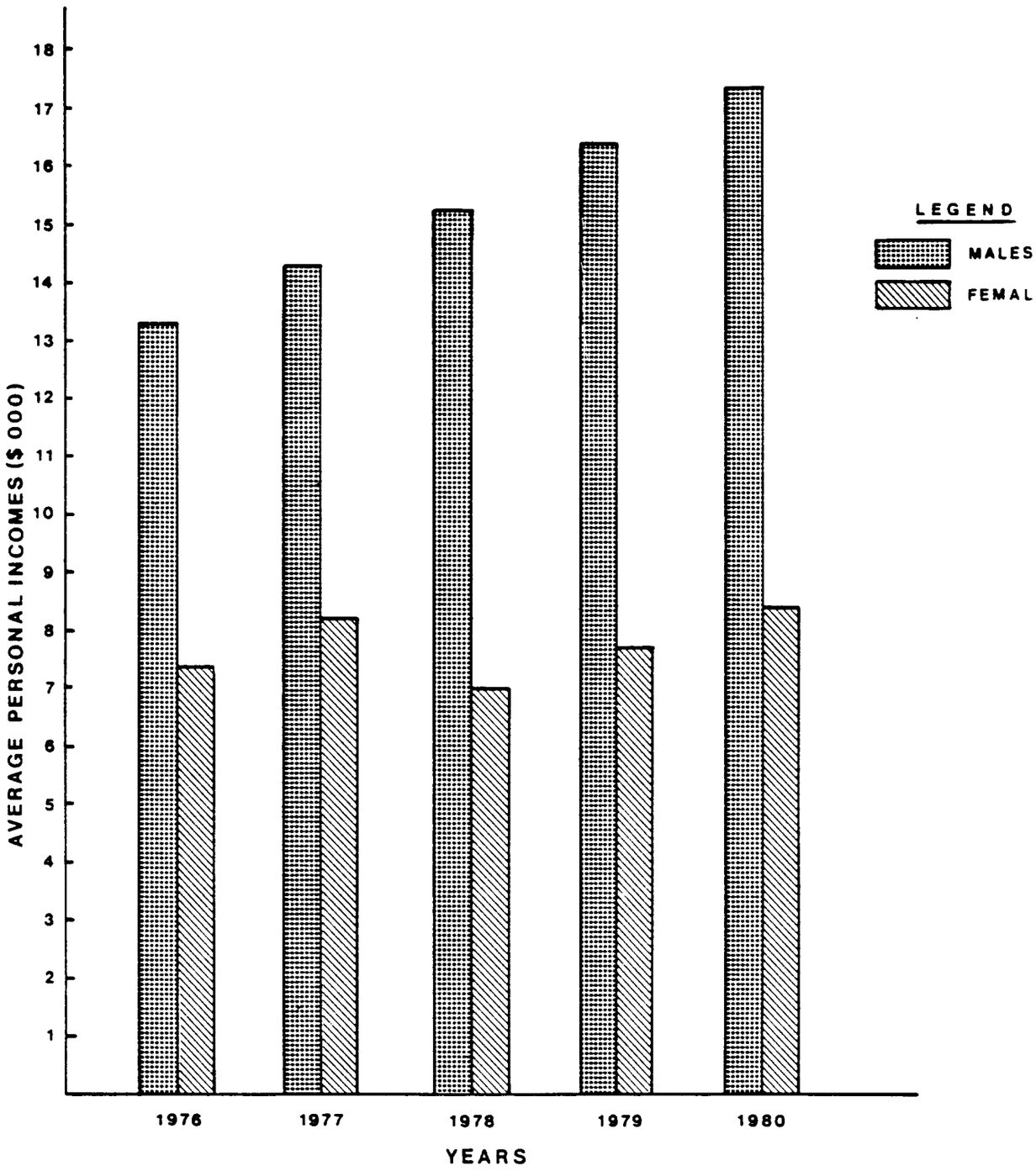
The Government of the Northwest Territories estimated that, for the 1976 taxation year, 68 percent of the territorial population 15 years of age or more filed tax returns as compared to 72 percent for Canada as a whole. However, there were large variations from the territorial average which appeared to be related to the ethnic composition, age structure and integration into the wage economy of individual community populations -

VII-5.3 TABLE 25

AVERAGE INCOME OF TAX FILERS IN SELECTED STUDY REGION COMMUNITIES, 1976 TO 1980

Communities	1976 Average Income($)	1977 Average Income($)	1978 Average Income($)	1979 Average Income($)	1980 Average Income($)	Average Annual Increase (%) 1976-80
Industrial Communities						
Inuvik	11 729	12 370	11 766	12 488	13 465	3.5
Yellowknife	12 336	13 252	14 251	15 697	17 097	8.5
Hay River	11 504	12 398	12 110	13 276	14 548	6.0
Service Communities						
Tuktoyaktuk	7 698	9 316	9 217	10 797	12 092	12.0
Fort Simpson/Nahanni Butte	9 346	3 849	9 550	—	—	--
Fort Smith	10 347	11 290	11 197	12 031	12 656	5.2
Traditional Communities						
Aklavik/Cape Parry	7 305	7 854	7 097	8 064	8 392	3.5
Fort Franklin	6 938	7 420	5 339	5 748	6 032	-3.4
Rae-Edzo	6 875	8 068	5 841	6 244	7 015	0.5
Mining Community						
Pine Point	13 607	15 154	13 956	14 888	16 244	4.5
Administrative Regions						
Inuvik	10 364	11 090	10 135	10 985	11 820	3.3
Fort Smith	11 613	12 491	12 323	13 458	14 495	5.7
Total NWT	10 978	11 921	11 412	12 332	13 191	4.7
Total Canada	10 313	11 114	10 964	12 079	13 716	7.4

Source: Government of Canada, Revenue Canada, Department of Taxation, Analyzing the Returns of Individuals (various years) and Government of the Northwest Territories Bureau of Statistics, Personal Income Statistics, Northwest Territories, 1976 to 1980.



AVERAGE PERSONAL INCOMES BY SEX, NORTHWEST TERRITORIES, 1976 TO 1980

Source: Government of Canada, Revenue Canada, Department of Taxation, Analyzing the Returns of Individuals for the 1980 Taxation Year and Miscellaneous Statistics, 1982

VII-5.3 FIGURE

characteristics that are reflected by the low participation rates and high unemployment rates discussed previously. For example, 1976 filing rates for the major Industrial/Service communities ranged from 77 percent in Hay River to 93 percent in Yellowknife. The corresponding rates for Aklavik/Cape Parry and Rae-Edzo were 41 percent and 40 percent, respectively.

Another important consideration bearing on the income picture in communities is the number of people that must be supported by these incomes. As discussed in VII-5.2.1, dependancy rates are generally higher in the Study Region than in southern Canada and are particularly high in the Traditional communities. Therefore, while only estimates, the per capita money income figures discussed previously perhaps provide a more complete picture of income disparities among communities in the Study Region.

Another concern is that monetary income from commercial trapping and transfer payments, both of which are important contributors to total Study Region incomes, may not be reflected fully in Revenue Canada data. These sources of income may go unreported especially in the more traditional communities. A previous section VII-5.3.2.7 highlighted the importance of trapping income to many of the Service and Traditional communities in the Study Region. VII-5.3 Table 26 provides an additional perspective on this by analyzing the number of trappers and total fur dollars in the Study Region on a per capita basis. These figures further confirm the importance of income from trapping to the Traditional communities and to many of the Service communities in the Study Region. When the Traditional communities are combined, it is found that one of out of five people conducted at least some trapping activity in 1981-82, while one out of 10 earned better than $600 from trapping. These ratios are even higher in some of the Traditional communities, especially some of the smaller ones. Comparing the three Sub-regions, the table indicates that trapping is a more important source of income in the Mackenzie River Sub-region than in the other two. The small role of trapping in the economy of the Great Slave Lake Sub-region reflects the dominant position of Yellowknife within that Sub-region.

To the extent allowed by the available data, VII-5.3 Table 27 displays the importance of transfer payments as a source of income to the different types of communities and Sub-regions in the Study Region. Unfortunately, unemployment insurance payments are not disaggregated sufficiently by community to allow the development of a distribution by community type. As well, data on other forms of transfers (eg. old age assistance, family allowance payments) are not available by community. These other transfers are more related to the age-structure of a community's population than to the socio-economic conditions in a community. The per capita figures for social assistance benefits illustrate

that social assistance is a more important source of income in the Traditional and Service communities than in the Industrial and Mining communities. This is consistent with the higher labour force participation rates and lower unemployment rates typically exhibited by the former communities compared with the Service and especially the Traditional communities. Social assistance payments probably constitute four percent or more of total monetary income in the following Study Region communities:

Sub-Region	Community
Delta	Paulatuk, Aklavik
Mackenzie River	Colville Lake, Fort Good Hope, Fort Franklin, Wrigley, Nahanni Butte, Trout Lake
Great Slave Lake	Rae Lakes, Snare Lakes, Lac la Martre, Rae-Edzo, Detah, Snowdrift, Kakisa Lake.

All of these communities come under the Traditional category.

VII-5.3 TABLE 26

TRAPPING ACTIVITY IN THE STUDY REGION, 1981-82

Sub-region and Community Type	Number of Trappers: Total		Number of Trappers: Earnings Over $600		Total Fur Dollars	
	No.	Rate Per 100	No.	Rate Per 100	$'000	Capita
A. DELTA						
Industrial	103	3.3	45	1.4	144.7	36.32
Service	50	6.5	23	3.0	64.3	83.29
Traditional	402	22.2	191	10.6	512.5	283.46
Sub-region Total	555	9.7	259	4.5	691.5	120.51
B. MACKENZIE RIVER						
Service	98	6.6	50	3.4	188.9	127.64
Traditional	370	17.8	225	10.8	664.8	319.31
Sub-region Total	468	12.1	275	7.1	853.7	219.90
C. GREAT SLAVE LAKE						
Industrial	189	1.5	79	0.6	190.3	15.36
Service	236	8.0	113	3.8	311.1	105.86
Traditional	452	16.0	221	7.8	522.5	184.82
Sub-region Total	879	4.4	413	2.1	1 024.0	51.15
TOTAL STUDY REGION						
Industrial	292	1.9	124	0.8	305.1	19.62
Service	384	7.4	186	3.6	564.4	108.73
Traditional	1 224	18.2	637	9.5	1 699.8	253.10
Study Region Total	1 900	6.4	947	3.2	2 569.2	86.68
TOTAL NWT	3 635	7.9	1 486	3.2	3 725.9	81.46

Sources: Government of Canada, Statistics Canada. 1983. Selected Population Characteristics, 1981 Census, Volume II Provincial Series, Table 6: Geographica Identification, Population, Land Area and Population Densities for Census Subdivisions, 1976 and 1981.

VII-5.3 TABLE 27

SELECTED TRANSFER PAYMENTS BY
COMMUNITY TYPE AND SUB-REGION

		Total Annual Payments ($'000)	Payments/ Capita ($)
I.	Social Assistance Benefits: 1981-82		
	By Sub-Region		
	Delta	641.5	111.80
	Mackenzie River	636.7	164.01
	Great Slave Lake	1 848.8	92.35
	By Type of Community		
	Industrial	616.6	39.65
	Service	609.1	117.34
	Traditional	1 897.7	282.52
	Mining	3.6	1.64
	Total Study Region	3 127.0	105.49
	Total NWT	7 389.6	161.55
II.	Unemployment Insurance Payments: 1982-83		
	Delta Sub-region	635.9	110.85
	Mackenzie River Sub-region	371.2	95.62
	Great Slave Lake Sub-region	3 422.8	170.97
	Total Study Region	4 429.9	149.46

Sources: Government of the Northwest Territories, Department of Social Services, August 1983. Unpublished data printouts.

Government of Canada, Canada Employment and Immigration Commission. August 1983. Employment Centre, Yellowknife. Personal communication.

Comparing the three Sub-regions, per capita social assistance payments are much higher in the Mackenzie River Sub-region than in the other two Sub-regions. It is noteworthy that the Mackenzie River Sub-region does not contain an Industrial community.

However, unemployment insurance payments have a very different sub-region distribution, showing a much higher per capita value in the Great Slave Lake Sub-region than in the other two. This situation reflects two longer-term considerations and one factor specific to the 1982-83 period.

(a) Because of the limited wage employment opportunities in the Traditional communities and some Service communities, relatively few workers are in jobs long enough to become eligible for unemployment insurance benefits. This helps explain the low per capita value for the Mackenzie River Sub-region and to a lesser degree the Inuvik Sub-region.

(b) Average benefits per claimant are very high in the Mining communities, especially Pine Point, reflecting in part the high wages paid by the mining industry. This helps to explain the high per capita value for the Great Slave Lake Sub-region.

(c) Finally and perhaps most important, the 1982-83 sub-regional distribution is distorted by the shutdown of the Pine Point mine for most of the 12 month period. The community of Pine Point accounts for six percent of the Study Region's population but in 1982-83 it accounted for over 20 percent of the total unemployment insurance benefits paid in the Study Region.

Because of the first two factors, per capita unemployment insurance could still be higher in the Great Slave Lake Sub-region than in the other two Sub-regions in a "typical" year. There is no question though that the closing of the Pine Point mine tended to exaggerate these sub-regional differences.

.2 Income-in-Kind

The significance of the traditional production of country food (that is, hunting and fishing for domestic consumption) and hand-crafted goods in local economies has been recognized for many years. However, it is very difficult to evaluate the contribution of these activities to the local or territorial economies without a clear measure of production. Since the usual market value measure does not exist for goods that do not enter a market transaction, therefore some imputation of their value must be made. Three methods prevail in the literature on the subject (Pavich 1978):

(a) the "local exchange value" approach values goods using the sale price that one person would charge another within a community if the commodity were to be bought, sold or bartered locally;

(b) the "opportunity cost" approach values goods on the basis of the foregone or lost value of the best alternative uses to which the production inputs could be applied (the traditional nonmarket activity versus market or wage activity);

(c) the "substitution cost" approach values goods at the dollar cost of replacing the goods produced from traditional activities with similar goods which could be made available from the market (Pavich 1978).

A calculation of the country food components of 1977 income-in-kind for the Northwest Territories was made by M. Pavich of the Data Management Division, Northern Economic Planning Branch of the Department of Indian Affairs and Northern Development. The purpose of the calculation was to provide an estimate of the imputed value of traditional activities for use as an input to the Economic Accounts of the Northwest Territories. The results provide a useful overall measure of the significance of income-in-kind.

The substitution cost approach was used for the calculation on the grounds that this approach yields an imputed value that most closely approximates the cost of purchasing the equivalent food. To account for costs of production (fishing gear, boats, snowmobiles, etc.), the total imputed value of country food was reduced by a factor of 25 percent to derive a net imputed value.

The following summary of the calculation results indicates the substantial contribution that country food can make to total incomes.

Total Imputed Value of Country Food	$17 340 000
Cost of Production	4 335 000
Net Imputed Value of Country Food	13 005 000

By dividing the net imputed value of $13 005 000 by an estimated total Dene, Inuit and Metis 1977 population of 34 314, a per capita income contribution of almost $380 is indicated. In fact, not all Native people pursue traditional activities and a significant number derive their incomes from wage employment. The implication is that the per capita figure greatly understates the importance of country food to particular individuals, families and communities.

An example of the importance of country food to an individual Dene community is provided by an analysis of traditional activities in Fort Franklin in 1974 to 1975, described by Scott Rushforth (1977). Using the substitution cost approach, Rushforth estimated that the value of the 143 938 to 187 280 pounds of country food harvested in that year ranged from $185 938 to $225 200. The population of Fort Franklin was 353 in that year, with 64 households. Rushforth's estimate therefore yields a per capita value of $527 to $638 and a per household value of $2 905 to $3 519.

Rushforth did not make an explicit allowance for the capital and operating costs associated with hunting, trapping and fishing activities. However, he notes that such costs are very high. The application of the 25 percent cost factor used by Pavich yields the following total, per capita and per household values:

Total Value of Country Food	-	$139 454 to $168 900
Per Capita Value	-	$ 395 to $478
Per Household Value	-	$ 2 179 to $2 639

It is notable that the per capita range closely parallels the Pavich estimate for the total Northwest Territories. The significance of country food is made particularly apparent by the estimate of more than $2 000 per household, a significant contribution to family income in view of the relatively low wage income base in Native communities.

With this one exception, figures on the importance of country food are not available on a community basis. There is no question however, that country food is a more important source of income in the Traditional and some Service communities in the Study Region, than in the Industrial and Mining communities. As a general guide, it can probably be said that hunting and domestic fishing are important sources of total income for the same communities where trapping is an important source of monetary income. To this extent, the value of country food would tend to narrow the income disparities between the Traditional and other Study Region communities. This serves to point out the continuing importance of access to traditional hunting and domestic fishing areas for residents of many communities in the Study Region.

5.3.4 COST OF LIVING

Differences in the cost of living tend to exacerbate the income disparities among communities in the Study Region. These differences are displayed in VII-5.3 Table 28 which categorizes communities in terms of their cost of living, using costs in the city of Edmonton as a base.

VII-5.3 TABLE 28
LIVING COST DIFFERENTIALS[1] FOR
SELECTED STUDY REGION COMMUNITIES[2], 1977-79

Base City, Edmonton - 100

115 - Tungsten

125 - Yellowknife
Hay River
Fort Simpson
Enterprise
Fort Smith
Pine Point

135 - Inuvik
Rae-Edzo
Fort Providence
Fort Liard
Fort Resolution

145 - Aklavik
Arctic Red River
Fort Norman
Norman Wells
Wrigley
Nahanni Butte
Jean Marie River

155 - Tuktoyaktuk
Fort McPherson
Snowdrift
Fort Good Hope
Fort Franklin
Trout Lake
Rae Lakes
Snare Lake
Lac la Martre

165 - Paulatuk
Colville Lake

175 - Sachs Harbour

Source: Devine, M. (ed). 1982. NWT Data Book, 1982-83. Government of the Northwest Territories, Department of Economic Development and Tourism, Planning and Resource Development Division, 1980. Northwest Territories Statistical Profile (Interim publication).

Notes: (1) Based on Federal Government employee expenditures; excludes shelter costs (for example, rent, fuel, utilities) clothing and automobile purchases.

(2) Living cost differentials not available for Detah and Kakisa Lake.

In general, residents of the larger centres pay significantly less for consumer goods - notably food - than do individuals living in the more remote communities. For example in 1977-78, Yellowknife consumer prices were some 25 percent higher than corresponding levels in Edmonton; residents of Sachs Harbour paid 75 percent more for the same basket of goods than their Edmonton counterparts. Across the Study Region, the Industrial, Service and Mining communities registered consumer prices which typically were 10 to 40 percent lower than those found in the Traditional communities.

The primary factors underlying these differentials are the relative sizes of the communities and their location in relation to the surface transportation networks. Community size and, hence, market size is a determinant of the scale and number of retail outlets in a community, which in turn affects the degree of price competition. Market size is also a function of the prevalent life style and consumption patterns in a community. The larger industrial centres are not unlike similarly-sized southern communities in these patterns. In contrast, the residents of predominantly Native communities consume a relatively high proportion of fish and game as part of their diets and a correspondingly lower proportion of food is purchased.

The importance of transportation access is also confirmed by the information in VII-5.3 Table 28. Those communities which are on the road network all have significantly lower cost of living indices than the more remote communities. Many of the more remote communities, such as Sachs Harbour, Paulatuk, Snowdrift and Snare Lakes, have the highest costs of living.

Market size and transportation costs influence not only food prices but also relative housing costs, fuel prices, clothing prices and prices of durable consumer goods such as stoves and refrigerators. In their Spatial Price Survey for June 1982, the Bureau of Statistics of the Government of the Northwest Territories estimated that a 180 item food basket cost 25 percent more in Yellowiknife than in Edmonton. This placed food second to housing in the survey. The survey showed that the cost of housing in Yellowknife was 50 percent above housing costs in Edmonton. Price indices for the components in the survey - clothing; transportation; health and personal care; recreation, reading and education; tobacco and alcohol - were below 120; the lowest was for clothing for which Yellowknife prices averaged 15 percent higher than those in Edmonton.

In larger Industrial and Service centres, the cost of living is moderated somewhat by widespread government subsidies on such items as housing and heating fuel. In the Traditional communities, substantial subsidies are augmented by income-in-kind from traditional activities.

The price differentials have not changed significantly since 1972. This suggests that the major factors contributing to the differentials -- market size and transportation costs -- generally have been constant in their influence over time.

5.3.5 RECENT TRENDS IN THE NORTHWEST TERRITORIES ECONOMY

The previous sub-sections have focussed on medium to long term developments in the Northwest Territories economy. The purpose of this sub-section is to take a closer look at developments over the past year or so. This will help to set the stage for the projections provided in VI-7.

The world-wide recession had less effect on the NWT economy than most other parts of Canada; in particular, the NWT has fared much better than the Yukon where the shut down of the mining industry has resulted in a major population exodus. There are a number of reasons for the relatively favourable performance of the Territorial economy of the past 12 to 18 months.

(a) The NWT's mining industry was not too badly affected by the slump in world markets. Only two of the NWT's nine operating mines were shut down for an extended period of time, and these losses were largely offset by the production and employment provided by new mines, especially the Polaris mine.

(b) Government, which arguably is now the critical sector in the Territories' economic base, continued to expand in employment and payroll through at least the first half of 1983. In 1982, the wages and salaries paid to federal and territorial employees experienced a year-over-year increase of 25 percent, while employment provided by the two governments expanded nearly six percent. This upward trend continued through the first nine months of 1983. Government payrolls were higher by 12.5 percent compared with the first nine months of 1982 and government employment was higher by 3.2 percent. Federal government restraint may ultimately act as a brake to growth in the NWT's government sector, but this situation had not yet surfaced as of 1983.

(c) The available information suggests that the tourism sector has experienced substantial growth over the past year or so. Despite the recession, it was anticipated that tourism expenditures in the NWT would advance by 25 percent in 1983 over 1982. It has been suggested that recent tourism growth was the result of private and public marketing efforts, and low value of the Canadian dollar vis-a-vis the American dollar, and a growing interest in northern lifestyles among people in the south.

(d) Expenditures on oil and gas exploration on the Beaufort Sea remained at fairly high levels, while the start of construction on the Norman Wells Expansion and Pipeline provided an additional stimulus to the NWT economy in 1983.

(e) Many of the communities in the Delta and along the Mackenzie Valley experienced significant losses in employment and population in the late 1970s after the decision to postpone the Mackenze Valley Pipeline. Communities in this situation include Aklavik, Fort Macpherson, Fort Simpson, Wrigley, and Hay River. For these communities, the recession came much earlier and their economies had already gone through a period of retrenchment and consolidation. Therefore, they were better able to absorb the effects of the later world-wide recession.

To summarize, most components of the NWT's economic base have continued to expand during 1982 and 1983. The major exceptions are the trapping industry and mineral exploration. Trends in some of the key indicators further confirm the relative health of the NWT economy. Employment in large firms in the Territories showed a year-over-year advance of nearly six percent in 1982 - compared with a drop of six percent in Canada as a whole. The NWT's growth in total retail sales, at 11 percent, was marginally above the Canadian inflation rate of 10.8 percent. In contrast, retail sales in the nation as a whole rose by only three percent in 1982. For the first nine months of 1983, restaurant sales were higher by 26 percent compared with the same period in 1982; and at the end of September 1983, the number of companies on register was higher by six percent compared to September 1982. GNWT population estimates indicate that the NWT population expanded by 3.7 percent from December 1981 to December 1982. Estimates by District suggest the Study Region's population displayed a comparable advance.

5.4 LAND USE

The use of land in the Study Region takes a wide range of forms and patterns, despite the tendency of some to describe the vastness of northern regions as empty and seldom-used. Although productivity is low by southern standards, perhaps the most important use of the land is for the production of plants and animals. As was mentioned previously, the commercial value of forest resources is limited; however, many areas of the north are rich in wildlife resources. The important aspects of these resources are described in Volume VI, Environmental Statement. The commercial and recreational harvesting of these wildlife resources through hunting, trapping and fishing is also a major land use in the Study Region. Other more limited uses of land include exploration for and development of non-renewable resources; industrial activities such as docks and shipping yards; railways, roads, airstrips and communications facilities; land use for communities; and lands set aside for parks and reserves. The following discussion touches on the concept of ownership of land and resources in the context of northern resource harvesters, and summarizes other land uses.

5.4.1 RESOURCE HARVESTING

The attachment of a people to their ancestral homeland is always strong, and this bond is clearly demonstrated by the strength of feeling with which the Dene and Inuit view land and water resources. For many "the land" is a symbol of their heritage and independence from the Euro-Canadian culture. Most Native people view resource harvesting (hunting, trapping and fishing for a livelihood) as 'the' preferred lifestyle.

The social determinants of current land use in the north are several. Key to the northern Native's perception of land use is his concept of land "ownership" as compared to the concept prevailing in Euro-Canadian society. The southern concept of ownership of a distinct parcel of land with fixed boundaries has evolved in the context of an agricultural or urban society. In a hunting and gathering society, such as has existed in the north since time immemorial, the ownership of the right to harvest certain resources in a specific region is most important. In other words, the ownership of usage (or the right to use land-supported resources) is far more significant than physical ownership of the land that supports the resources. Gradually, northern Natives are adapting to the southern concept of physical ownership of land as a method of establishing ownership of resource-use. However, the progress of the land claims negotiations attests to the difficulty of reconciling these two concepts of land and resource ownership.

Thus, to many northern Natives, occupation or use of the land by themselves or their ancestors clearly demonstrates their ownership. And, although most now reside in a settlement environment, most still highly value the right to use the land traditionally used by their ancestors.

It is the process of centralization that has brought about the greatest modification of land use in the north. People who formerly moved about a region and resided in seasonal camps came to establish a residence in a permanent community base, attracted by modern services and facilities (medical care, education services, churches, family allowance, subsidized housing, heat and utilities), and a measure of comfort and security. Thus, the use of land has become centred on the new community bases, and intensity of usage is determined more by proximity to the settlement than by the abundance of the resource to be harvested or traditional use and occupation. Nevertheless, many of the former "occupiers" of the resource-harvesting areas far from settlements still return from time to time to these traditional areas, demonstrating their continued ownership of harvesting rights.

The transition to an urban-style settlement lifestyle has reduced the extent and intensity of land use in other ways. The over-exploitation of resources close to a settlement makes hunting, trapping or fishing less productive. The southern-style facilities and services of a settlement often provide little support for the traditional outlook, perceptions and thought patterns integral to the traditional resource harvesting lifestyle.

Some of the above factors also may be examined in the light of cost economics. As well as being inconvenient for family life, travel from a base community to a distant traditional harvesting area is expensive in terms of the money needed for gasoline, snowmobiles or aircraft time. Extensive hunting, trapping or fishing also requires an expensive stock of equipment. The use of country food can decrease a hunter's or trapper's expenses while he is on the land, but even then many other supplies must be purchased. Overall, a full-time resource harvester must make a major investment, and must do it with little assurance of the final price he will receive for his furs, fish or meat. Thus, in economic terms, the northern resource harvester has an uncertain incentive to pursue a demanding lifestyle.

Despite the above, a resource-harvesting lifestyle remains possible for, and attractive to, many residents. Some people in each settlement are able to make a living harvesting resources in areas easily accessible from the settlement. A very few, preferring a less urban lifestyle, move to outpost camps in traditional resource-rich areas distant from the

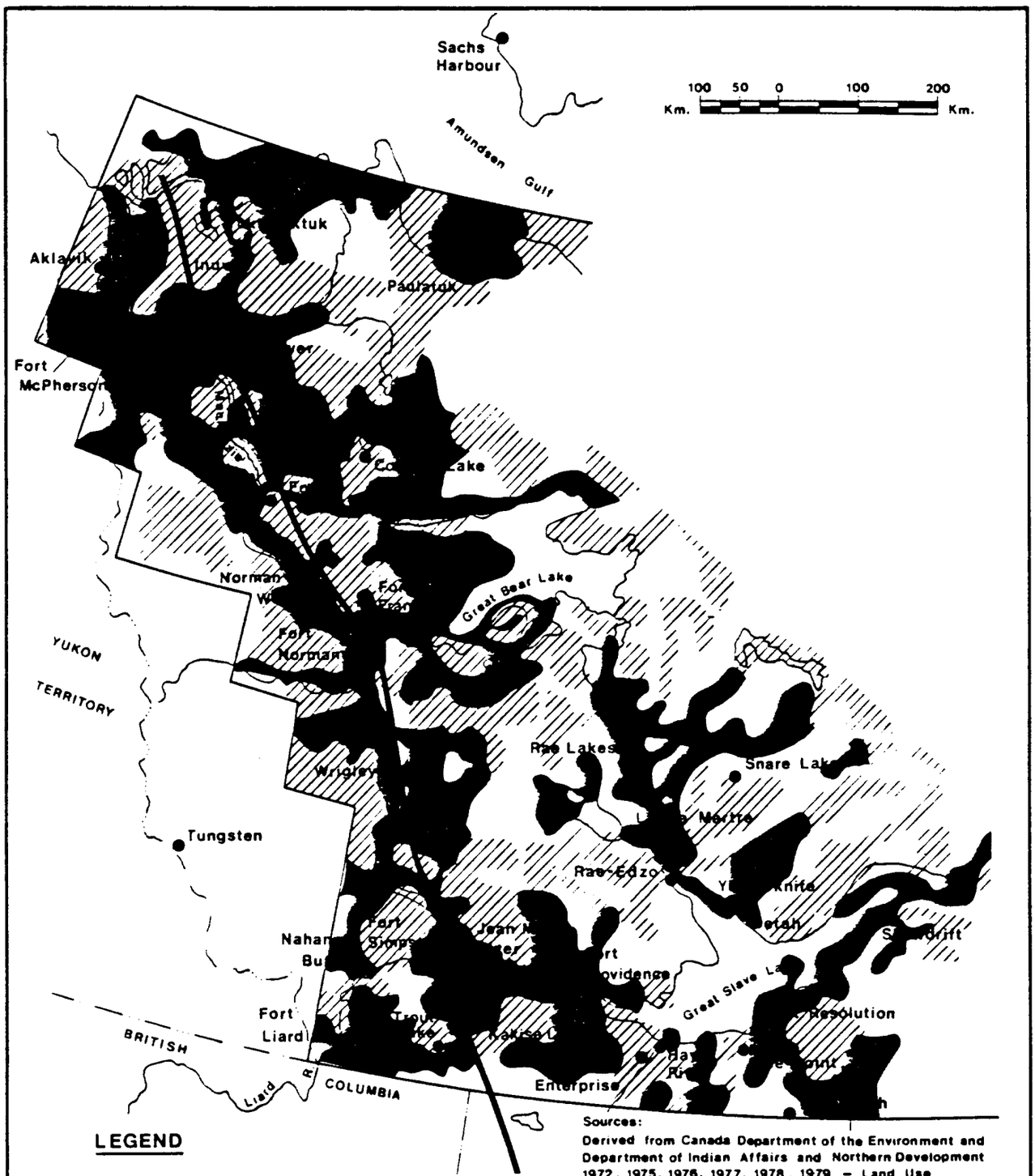
settlement, aided by small government subsidies. But for most northern residents hunting, trapping and fishing have become highly valued occasional activities, though often pursued during weekends and holidays.

In summary then, resource harvesting land use in the north is determined by a very complex set of social, cultural and economic factors. Centralization generally has brought with it a significant reduction in the extent and intensity of resource harvesting. However, few northern Natives perceive that reduction of usage as significantly weakening their rights of ownership of land use. In recent years, resource harvesting has been characterized by three activity levels or styles. First, many northern residents place a high value on occasional seasonal involvement in resource harvesting, often concentrated in areas easily accessible from the community. Second, a small proportion of each community's residents continues to pursue resource harvesting on a full-time or equivalent basis in traditional areas, but typically receive limited and uncertain returns for their efforts. And third, a small proportion of each community's residents wish to pursue a non-urban resource-harvesting lifestyle and often do so by moving to an outpost camp. The overall pattern of land use for resource harvesting is determined to a great extent by the land use style most common in a given community.

VII-5.4 Figure 1 summarizes land use for resource harvesting in the vicinity of Study Region communities in the Northwest Territories. Although this information does not incorporate recent documentation of land uses related to land claims research, it does demonstrate a probable current pattern. In most cases, the most commonly-used areas are centred on the relevant community, along a traditional travel route, or around a traditional camp. It is apparent that large tracts of the Study Region continue to be used regularly for resource-harvesting activities.

5.4.2 OTHER LAND USE

Although the use of land for the production and harvest of wildlife resources is of major importance to many northern residents, there are a number of less extensive, but still very significant, land uses. Recreational use of land by non-resident tourists is significant for some areas and provides an important source of revenue. Many tourists come specifically to experience "virgin" northern landscape little altered by other uses. Similarly, some of the more notable natural areas have been proposed as park or wildlife reserves. Tourist lodges and camps are scattered through the Study Region. In addition to these lodges, most communities now offer commercial accommodation for visitors. Territorial or provincial parks, usually campgrounds or picnic sites are most common


Sachs Harbour
Amundsen Gulf
100 50 0 100 200
Km. Km.
Aklavik
Paulatuk
Fort McPherson
Great Bear Lake
Norman Wells
Fort Norman
YUKON TERRITORY
Rae Lakes
Snare Lakes
Wrigley
Tungsten
Nahanni Butte
Fort Simpson
Providence
Great Slave Lake
Resolution
Fort Liard
BRITISH COLUMBIA
Liard
Enterprise
LEGEND
Proposed Pipeline Route
Primary Resource Harvesting Areas
Secondary Resource Harvesting Areas
Limit of Survey
Sources:
Derived from Canada Department of the Environment and Department of Indian Affairs and Northern Development 1972, 1975, 1976, 1977, 1978, 1979 – Land Use Information Map Series.
polargas
LAND USE FOR RESOURCE HARVESTING IN THE NORTHWEST TERRITORIES STUDY REGION
VII-5.4 FIGURE 1

along the highway system around Great Slave Lake, and the Mackenzie Highway in northern Alberta. National Parks have been proposed or established for some of the most outstanding natural areas. Certain areas of the Northwest Territories also have been reserved as wildlife or bird sanctuaries or preserves.

Land is used also for the exploration and extraction of non-renewable resources in the Northwest Territories. The mining of metals has been occurring for decades in some parts of the Territory. Yellowknife and the lands to the north and east have yielded over a dozen gold mines. Prior to 1970, mining formed the major economic base of Yellowknife. The land to the east of Hay River is notable for its lead-zinc deposits, responsible for the establishment of the town of Pine Point. Mineral exploration continues in many areas of the Northwest Territories today. Exploration for hydrocarbons has also occurred for several decades and in recent years has maintained high levels of activity in the Beaufort Sea area. Significant seismic exploration and drilling also have occurred in the Fort Good Hope-Colville Lake area, the Norman Wells-Fort Franklin area and the Hay River area. In the vicinity of many settlements the mining of sand and gravel for building houses, roads and airports has become very important.

The variety of land uses associated with settlements also may have a significant effect on alternative uses of large areas. All-weather and winter roads, airports, dockyards, trans-shipment yards, and water or fuel pipelines all affect the use of adjacent land. Similarly, beacons, weather stations, microwave towers, and radar sites affect patterns of land use.

No significant forestry or agricultural land uses occur along the proposed route within the Northwest Territories.

5.5 COMMUNITY FACILITIES

The following discussion will provide a review of the community infrastructure serving residents of the Study Region communities. The discussion includes reference to local government, municipal utilities, communication facilities services, and facilities for recreation. An examination of the health, education and social services available is found in VII-5.6

5.5.1 LOCAL GOVERNMENT

In the Northwest Territories, senior levels of government traditionally have assumed considerable responsibility for the administration of local government. Prior to 1950, community affairs were managed primarily by the church missionaries, traders and

R.C.M.P., who provided basic education, health, social assistance and justice services. As the Federal government assumed increasing responsibility for education, housing, health and social assistance during the 1950s, Northern Service Officers were posted in most communities as administrators. It was not until the 1960s that the Territorial government, situated in the newly established capital of Yellowknife, began to assume responsibilities for the appointment of local administrators.

A prime responsibility of local administrators was to foster the development of a local responsible government in each community. In most instances this local structure was based on southern Canadian concepts, usually resulting in some variation of an elected council, led by a council chairman. In recent years, the Territorial government has made a concerted effort to increase the responsibilities and capabilities of local governments, and now even the smallest communities are assuming responsibility for local administration.

The current local government structure in the Northwest Territories is outlined in VII-5.5 Table 1. Each level has clearly-defined responsibilities with respect to funding and local administration. The first step beyond the unorganized community level is the "Settlement", essentially a training stage in the development of a local administration. The "Hamlet" is the first level of true local government. In settlements and hamlets, capital projects are the responsibility of Territorial government. The "Village" and "Town" levels have an increased level of administrative sophistication and have fiscal and legislative autonomy. A city has essentially the same powers and responsibilities as a town, the primary differences being size and prestige.

The table also classifies Study Region communities by level of government. As can be seen, the larger Industrial centres have considerable autonomy in local administration, whereas most Traditional, Native communities are governed by a Settlement Council under the tutelage of the Territorial Council. Increased demands for greater local independence in smaller communities are likely to result in modifications to some of the present restrictions on settlement responsibilities or a change from Settlement to Hamlet status.

This policy was first outlined in the 1978 Annual Report of the Government of the Northwest Territories:

> "Efforts will be made to establish the municipal council as the prime body through which the community can exercise responsibility for community programs and services. In the coming year, all communities will be asked to pay some of the costs of local services and programs. Local councils will be encouraged to raise their own

funds when they wish those services and programs to be above a certain standard. A special ordinance for hamlets and settlements, separate from the Municipal Ordinance, will be introduced in recognition of their special needs (p. 28)".

The Department of Local Government continues to be committed to a major overhaul of the Municipal Ordinance. To this end, the Department is in the process of consulting with local groups and leaders -- Band chiefs, native organizations, chairmen of councils, government staff, and municipal associations -- to develop structures that will meet local needs in a better way. Under discussion are a new community government ordinance and amendments to the Managerial Ordinance which would complement the new ordinance. Accordingly, the information contined in VII-5.5 Table 1 is provisional only.

A second major policy thrust involves the establishment of regional/tribal councils. In the past, regional Directors and Superintendants of local government arranged periodic meetings with the mayors in their regions to discuss issues of general interest and establish communication links. Through these meetings, local government representatives came to recognize the advantage of establishing joint policy positions. In 1978, the Baffin Regional Council (BRC) was formed and in 1980 it was legalized in legislation which provided funding to hire its own staff.

After the BRC became legally constituted and formally funded, other regions became interested in this concept. The result was the Regional/Tribal Council Ordinance passed by the Assembly in the fall of 1983. Besides the BRC, the Keewatin and Kitikmeot Regional Councils were established. In the Western Arctic, the Dene Nation already had a regional framework in place in the form of the Deh Cho Regional Council (Fort Simpson group) and the Dogrib Tribal Council (Rae group). The Western Arctic Regional Municipality (WARM) is in the process of being established (as of the first quarter of 1984).

5.5.2 MUNICIPAL SERVICES AND UTILITIES

A major responsibility of local government is the organization of municipal services and utilities. The services available in Study Region communities are discussed below.

Community water supply and waste disposal services are summarized in VII-5.5 Table 2. The table illustrates the wide range in the level of services provided. All of the Industrial communities have a level of service essentially the same as that found in similar-sized southern communities. Water is treated by screening, filtration, chlorination, fluoridation, etc. before delivery to customers in a piped system, which serves most residents. For the most part, sewage is collected through a piped system and treated prior to disposal.

VII-5.5 TABLE 1

LEVELS AND CHARACTERISTICS OF LOCAL GOVERNMENT

IN THE NORTHWEST TERRITORIES, 1983

Municipal Status	Criteria	Government Structure	Funding Sources	Powers and Responsibilities	Study Region Communities	
Unorganized	N/A	No council or employees	No budget or revenues	N/A	Colville Lake	Detah Jean Marie R. Kakisa Lake Nahanni Butte Snare Lake Trout Lake Tungsten
Settlement	. Not incorporated . Decision of Territorial Government . Willingness of residents to form council	. 6-8 councillors including chairman . settlement manager an employee of territorial government . no other employees	. Included in Regional budget . Per capita grants for local projects	. Advise territorial government . No legislative or fiscal authority . No discretion in spending of per capita grants	Arctic Red River Fort Good Hope Fort Liard Fort McPherson Fort Norman Fort Providence Fort Resolution Lac la Martre Paulatuk Rae Lakes	Sachs Harbour Snowdrift Wrigley
Hamlet	. Petition of 25 residents . Approval of Commissioner	. Mayor and 7 Councillors . Secretary-Mgr. hired by Hamlet Corporation	. Community service charges, permits, fees fines . cannot levy taxes . Budget mainly financed by territorial government	. Budgeting in consultation with territorial government . Wide range of legislative authority within constraint of municipal ordinance . Some spending discretion	Aklavik Fort Franklin Norman Wells Rae-Edzo Tuktoyaktuk	
Village	. Population 500 plus . Land tax revenue potential	. Mayor and 7 Councillors . Employees	. Community service charges permits, licenses, fines, fees . Property tax . Debenture sales to finance capital projects	. As for Hamlet	Fort Simpson	
Town	. Population 1000 plus . Taxable land assessment of $2,500 per capita	. Mayor and 8 Councillors . Employees	. As for Village plus matching grants of 50% for road and sidewalk construction	. Complete budgeting and taxing autonomy . Significant discretion in munipal legislative and financial matters	Inuvik Fort Smith Hay River Pine Point	
City	. Population 6000 plus . Economic viability	Mayor and 8 Aldermen	. As for town but no operating funds from territorial government for municipal services	. Essentially same as for town	Yellowknife	

N/A - Non-Applicable

Sources: Devine, M. (ed). 1982. NWT Data Book, 1982-83.
Koring, Paul. 1977. Canada North Almanac.
Van Ginkel Associates Ltd. 1974. Communities of the Mackenzie

VII-5.5 TABLE 2
WATER SUPPLY AND WASTE DISPOSAL SERVICES BY STUDY REGION COMMUNITY, 1983

Industrial Communities	Water Treatment			Water Delivery		Sewage Collection		Sewage Disposal		Garbage Collection
	Minimal	Partial	Full	Trucked	Piped	Truck	Pipe	Dump	Treatment	
Inuvik			x	x	x		x		x	x
Yellowknife			x		x		x		x	x
Hay River			x		x		x		x	x
Service Communities										
Tuktoyaktuk		x		x		x			x	x
Norman Wells			x		x	x	x		x	x
Fort Simpson		x			x		x	x		x
Fort Providence		x		x		x			x	x
Enterprise		x		x		x		x		x
Fort Smith			x		x		x		x	x
Traditional Communities										
Sachs Harbour		x		x		x		x		x
Paulatuk		x		x		x		x		x
Aklavik			x	x		x		x		x
Arctic Red River		x		x		x		x		x
Fort McPherson			x	x	x	x	x	x	x	x
Fort Good Hope		x		x		x		x[1]		x
Colville Lake	x									
Fort Franklin		x		x		x			x	x
Fort Norman		x		x		x			x	x
Wrigley		x		x						x
Nahanni	x									x
Jean Marie River	x									x
Trout Lake	x									x
Fort Liard	x	x		x						x
Lac la Martre	x									x
Snowdrift		x		x		x		x		x
Rae-Edzo			x	x	x	x	x		x	x
Snare Lake	x									x
Detah		x	x	x		x		x		
Fort Resolution			x		x		x		x	x
Kakisa Lake	x									
Mining Communities										
Tungsten		NA			x		x	NA		NA
Pine Point			x		x		x		x	x

Source: Government of the Northwest Territories, Department of Local Government. 1982. Community Water and Sanitation Services.

Notes: (1) Sewage from government buildings is treated prior to disposal.

NA = information not available.

Most of the Service communities have partial water treatment, involving screening and chlorination in a small treatment plant or batch chlorination before truck delivery. Water delivery in these communities is provided either through a piped system or by truck, the latter requiring periodic filling of holding tanks in individual buildings. The Service communities have sewage collection either through a piped system or by truck. Truck collection may involve the pumping out of holding tanks or the collection of "honey-bags". Sewage disposal usually occurs in a lagoon system or a dump area, but in the case of Fort Simpson, sewage is discharged also into the Mackenzie River.

The level of service in the Traditional communities is generally lower. For example, several communities are without any water treatment or delivery service and only three communities have piped water to any local buildings. Similarly, five of the 15 Traditional communities do not have any organized sewage collection or disposal.

All of the communities except Colville Lake, Kakisa Lake, Snare Lake and Trout Lake have electrical service. In most communities, electricity is provided by the Northern Canada Power Commission (NCPC) using community diesel generators. The exceptions are Tuktoyaktuk, which receives electricity via a land line from Inuvik; Fort Providence and Hay River, which are supplied by Alberta Power Ltd. diesel generators; and Rae-Edzo and Yellowknife, which are supplied from NCPC hydro plants.

The majority of communities are provided with petroleum products by the Government of the Northwest Territories, generally via Northern Transportation Company Ltd. (NTCL) barge. The communities of Aklavik, Inuvik, Norman Wells, Fort Providence, Fort Simpson, Hay River/Enterprise, Lac la Martre, Fort Smith, Tungsten, Rae-Edzo, Rae Lakes, Yellowknife/Detah and Pine Point are served by private petroleum companies. In the case of Fort Providence, petroleum deliveries are by truck. A combination of truck and barge is used to supply Fort Simpson and Yellowknife, and a combination of truck and rail serves Hay River.

Bulk oil storage facilities are maintained by private oil companies in major Study Region communities, as shown in VII-5.5 Table 3.

VII-5.5 TABLE 3
BULK OIL STORAGE FACILITIES AT SELECTED
STUDY REGION COMMUNITIES, 1982

Community	Imperial Oil Ltd.	Shell Oil Ltd.	Gulf Canada Ltd.	Petro Canada Ltd.
Aklavik	X			
Inuvik	X			
Hay River	X	X	X	X
Fort Simpson	X	X(1)		
Yellowknife	X		X	

Source: Devine, M. (ed). 1982. NWT Data Book, 1982-83.

Notes: (1) Shell Oil's storage farm in Fort Simpson currently is not in use.

5.5.3 TRANSPORTATION AND COMMUNICATIONS

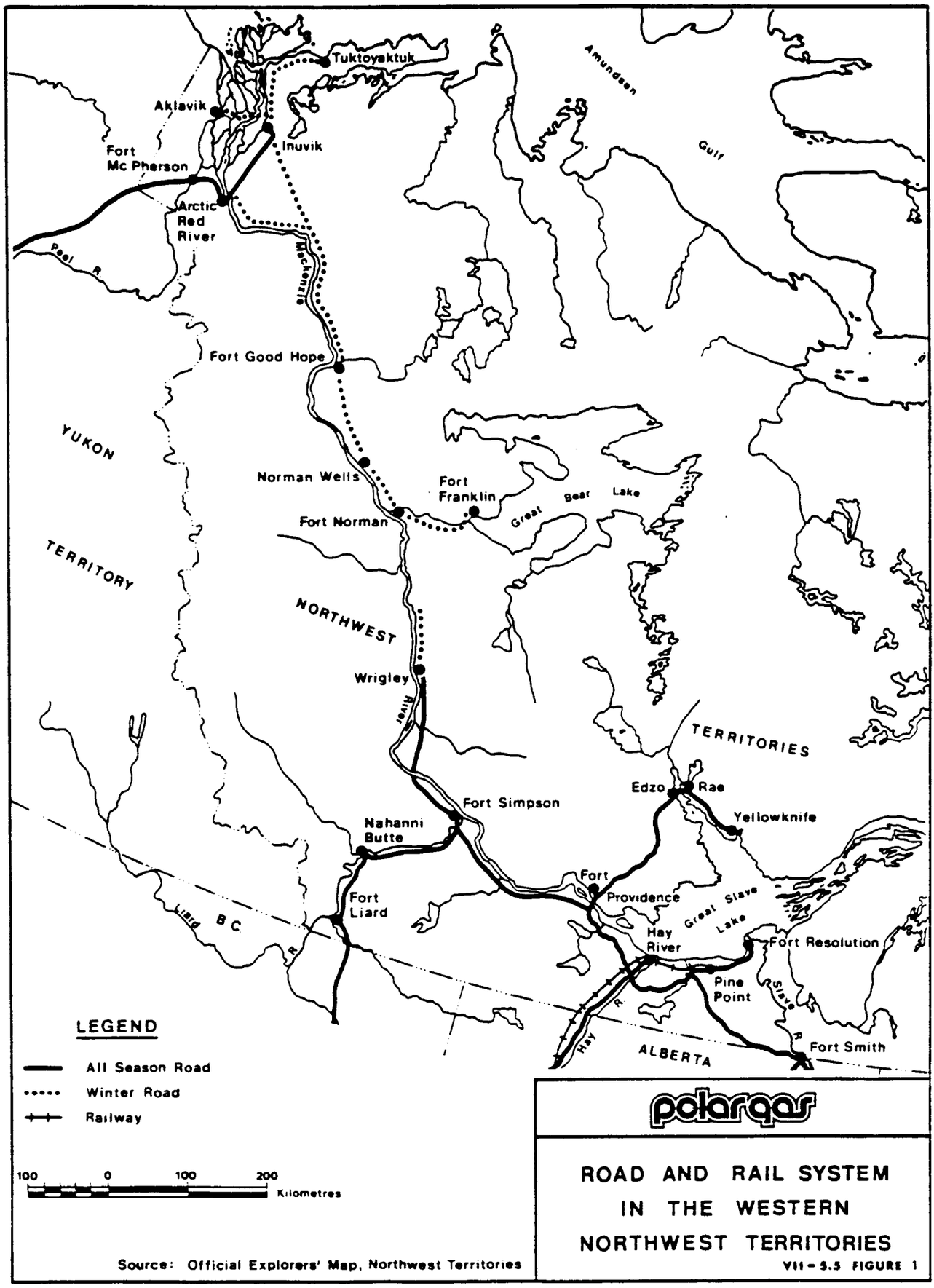
.1 Road and Rail Facilities and Services

Road and rail connections to Study Region communities are shown in VII-5.5 Figure 1. One recent addition is the Liard Highway, largely completed in 1983, which connects the communities of the Liard River Valley to British Columbia roads. Sachs Harbour, Paulatuk, Colville Lake, Fort Good Hope, Snare Lake, and Snowdrift do not have any road connections to other communities or to the south. The remaining communities are served either by the all-weather road system or by winter roads.

The all-weather roads are generally gravel-surfaced, although most of the highway between Hay River and the NWT border is now paved. Five routes connect communities around Great Slave Lake and in the southern part of the Mackenzie Valley to southern Canada. Route 1, the Mackenzie Highway, connects to Alberta, and through Route 2 to Hay River, Route 5 to Fort Smith, Route 6 to Fort Resolution and Route 3 to Yellowknife. Route 8, the Dempster Highway, connects the communities of the Mackenzie Delta with Dawson in the Yukon Territory. These roads are maintained year-round and normally are passable in all weather. However, Highways 1, 3 and 8 cross major rivers using ferries in the summer months and ice bridges during the winter. During freeze-up and break-up in the fall and spring there are two-to six-week periods when these ferries and ice bridges are inoperative.

In the late 1960s it was planned that the Mackenzie Highway (Route 1) would be constructed to Inuvik. However, in 1975, it was announced that the highway would terminate in Wrigley. A subsequent decision was made to stop construction at km 684 because of the reluctance of the people of Wrigley to have the highway terminate in their community. Work was completed to km 684 in 1977. The Dempster Highway (Route 8) was opened in 1979 although work continues on improvement of the gravel surface. During the fall, winter and spring there are periods when traffic may be restricted to avoid disturbance of caribou herds west of the Peel River. The Liard Highway (Route 7) leaves the Mackenzie Highway approximately 61 km south of Fort Simpson and generally follows the Liard River to Fort Liard. The newly constructed highway then runs southward to the NWT/BC border and from there to Fort Nelson, BC.

Bus service is provided on a daily basis between Edmonton and Hay River, via Peace River, by Canadian Coachways System. Connections to Fort Providence, Rae-Edzo and Yellowknife can be made at Enterprise three times weekly via NWT Coachlines. This company also provides daily service (except on Sundays and statutory holidays) between Hay River, Pine Point and Fort Resolution.


Tuktoyaktuk
Aklavik
Inuvik
Fort
Mc Pherson
Arctic
Red
River
Peel R.
Mackenzie
Amundsen
Gulf
Fort Good Hope
YUKON
TERRITORY
Norman Wells
Fort
Franklin
Great Bear Lake
Fort Norman
NORTHWEST
TERRITORIES
Wrigley
Mackenzie River
Edzo
Rae
Yellowknife
Fort Simpson
Nahanni
Butte
Fort
Providence
Great Slave Lake
Fort
Liard
Liard R.
B C
Hay
River
Fort Resolution
Pine
Point
Hay R.
ALBERTA
Fort Smith
LEGEND
All Season Road
Winter Road
Railway
100 0 100 200
Kilometres
Source: Official Explorers' Map, Northwest Territories
polarqas
ROAD AND RAIL SYSTEM
IN THE WESTERN
NORTHWEST TERRITORIES
VII - 5.5 FIGURE 1

Major commercial trucking companies provide common carrier service to Yellowknife, Hay River, Fort Simpson, and via the Yukon to Inuvik. Aklavik, Fort McPherson, Inuvik, Hay River, Rae-Edzo and Yellowknife also have local trucking companies.

The number of motor vehicle registrations in the NWT has increased in recent years to reach 18 400 in fiscal year 1981-82. Trucks account for a further 32 percent. About 19 100 residents of the Territories now hold valid driver's licenses.

Rail Service is provided by the Great Slave Lake Branch of the Canadian National Railways which extends 607 km from Roma Junction (12 miles west of Peace River) to Hay River. There is an 86.9 km branch line to the lead-zinc mine at Pine Point. Freight services to Hay River are provided on a car lot basis; there are no passenger services.

Marine transportation plays an important role in the movement of heavy freight, with the Mackenzie River serving as a natural north-south artery for barge services from the rail terminus at Hay River to the Mackenzie Delta. Barge service also is provided across Great Slave Lake to Yellowknife and Snowdrift, and along the Arctic coast to Paulatuk and Sachs Harbour.

Barge services are provided by Northern Transportation Co. Ltd. (NTCL), a crown corporation, and two smaller private operators. In 1982, NTCL had total revenues of $147.5 million, and handled 303 000 tonnes of cargo (representing a drop of 13 percent from 1981). Employment during the peak shipping season was 768 (Northern Transportation Company Ltd 1983). The major port for the barging system is Hay River which has truck and rail-to-barge transfer facilities, extensive wharfage, and vessel repair facilities, including a drydock. Inuvik, Aklavik, Norman Wells, Fort Simpson, Tuktoyaktuk, Fort Good Hope, Fort Norman, Fort Resolution and Yellowknife all have cargo handling facilities. Tuktoyaktuk serves as the primary harbour for support of offshore drilling activities and for transfer of goods from larger vessels to barges and vice versa. Limited facilities are available at Arctic Red River, Fort Franklin, Paulatuk, Fort Providence, and Snowdrift.

The shipping season generally extends from mid-June to early October.

.2 Air Facilities and Services

The airplane has been the most instrumental of any modern mode of transportation in opening up the north. Air transportation continues to play a critical role in the movement of goods and people throughout the north. Six scheduled carriers provide regular service to a number of the Study Region communities, with connections to other centres in the Northwest Territories and southern Canada.

In addition, charter air services are available in Tuktoyaktuk, Fort Providence, Fort Simpson, Rae-Edzo, Inuvik, Hay River and Yellowknife. Both helicopter and fixed-wing charters provide a means of access to the most remote communities throughout the year.

The Industrial community airports — Inuvik, Hay River and Yellowknife — have complete navigational facilities and asphalt runways capable of handling large commercialjets. With the exception of Fort Providence and Enterprise, the Service communities have at least some navigational aids in addition to a non-directional beacon. Most of the Service communities have relatively long gravel runways that can handle intermediate-sized commercial aircraft such as Boeing 737s. The exceptions are Fort Simpson, which has a full-length asphalt runway, Fort Providence which has a relatively short runway capable of handling only smaller aircraft such as Twin Otter, and Enterprise which is served from Hay River.

Among the Traditional communities, only Arctic Red River, Snare Lake, Detah, Rae-Edzo and Kakisa Lake are without any land aerodrome facilities. Most communities also have some form of water aerodrome. The exceptions are Sachs Harbour, Rae Lakes, Snare Lake, Jean Marie River, Kakisa Lake, Tungsten and Pine Point.

.3 Communications Facilities and Services

Communications services in the Study Region include radio, television, postal services, line and radio telephone and newspapers. As shown in VII-5.5 Table 4, there is considerable variation in the type and level of service available to different communities, particularly in the Traditional category.

Five of the Traditional communities do not have any local telephone service, and long distance service is provided by radio links. Communities equipped with local telephone service have long distance circuits accessible either by direct dialing or with operator assistance. Most communities with conventional telephone service also have radio telephone facilities.

All of the Industrial and Service communities receive radio and TV broadcasts. Further, there is some local radio programming in Inuvik, Hay River, Tuktoyaktuk, Fort Simpson and Yellowknife. A number of the Traditional communities receive neither radio nor TV broadcasts and some receive only radio. Several began receiving radio or TV very recently. Fort Franklin, Fort Good Hope and Rae-Edzo have some local radio programming.

Only the communities of Inuvik, Hay River, Yellowknife, and Fort Smith have local newspapers. None of the local newspapers are dailies. The only communities that do not receive the regional newspapers—Yellowknifer, News/North, Hub and Drum— are those that are quite isolated, including Arctic Red River, Colville Lake, Rae Lakes, and Snare Lake. The Native Press and Nunatsiaq News are distributed on a controlled circulation basis to most communities.

Nine of the 33 communities do not have full postal service. Those commuunities are served by postal stations in nearby communities as indicated in VII-5.5 Table 4.

VII-5.5 TABLE 4

SUMMARY OF COMMUNICATIONS SERVICES AND FACILITIES BY COMMUNITY, 1982

Community	Telephone	Broadcast Radio	Broadcast TV	Local Newspaper	Postal Service
Industrial Communities					
Inuvik	x	x	x	x	x
Yellowknife	x	x	x	x	x
Hay River	x	x	x	x	x
Service Communities					
Tuktoyaktuk	x	x	x		x
Norman Wells	x	x	x		x
Fort Simpson	x	x	x		x
Fort Providence	x	x	x		x
Enterprise	x	x	x		x
Fort Smith	x	x	x	x	x
Traditional Communities					
Sachs Harbour	x	x	x		x
Paulatuk	x				(1)
Aklavik	x	x	x		x
Arctic Red River	x	X			x
Fort McPherson	x	x	x		X
Fort Good Hope	x	x	x		x
Colville Lake	R				(2)
Fort Franklin	x	x	x		x
Fort Norman	x	x	x		x
Wrigley	x	x	x		x
Nahanni Butte	R				(3)
Jean Marie River	R				x
Trout Lake	R				(3)
Fort Liard	x	x	x		x
Lac la Martre	R	x	x		(4)
Snowdrift	x	x	x		x
Rae-Edzo	x	x	x		x
Rae Lakes	R				(4)
Snare Lake					(5)
Detah	x	x	x		(4)
Fort Resolution	x	x	x		x
Kakisa Lake	R	x	x		(6)
Mining Communities					
Tungsten	x	x	x		x
Pine Point	x	x	x		x

Sources: Devine, M. (ed). 1982. NWT Data Book, 1982-83 and Thomas B. 1983. CBC Northern Service.

Notes:
R - Radio-phone
(1) - Via Inuvik
(2) - Via Fort Good Hope
(3) - Via Fort Simpson
(4) - Via Yellowknife
(5) - Via Rae/Edzo
(6) - Via Fort Providence

5.5.4 HOUSING

In the Northwest Territories, government plays a central role in the provision and maintenance of the housing stock. Another characteristic of the housing market in the Northwest Territories is the high percentage of subsidized rental accommodation and the correspondingly low percentage of private rental and owner-occupied housing. Both of these characteristics are particularly evident in the Service and Traditional communities.

The Northwest Territories Housing Corporation (NWTHC) was established in 1973 to create, coordinate, and give direction to northern housing programs with the objective of ensuring the availability of an adequate stock and standard of housing for NWT residents. Current programs include the provision of subsidized housing for low income families, single persons and senior citizens. The NWTHC also encourages and facilitates home ownership through a rental-purchase program. The NWTHC headquarters is located in Yellowknife, but services also are provided through five district offices. Central Housing and Mortgage Corporation (CMHC) is also active in the north, with responsibility for financing housing under the terms of the National Housing Act (NHA). CHMC makes mortgage loans, insures mortgage loans made by approved NHA lenders, and makes loans to territorial or municipal governments for housing, land assembly and sewage treatment projects. When requested by the Department of Indian Affairs and Northern Development, CMHC is also authorized to provide planning assistance to northern communities, including financial and technical assistance for Native groups.

The Town Planning and Lands Division of the Northwest Territories Department of Local Government is responsible for planning land developments and disposing of land. The Municipal Services Branch services land for both organized and unorganized communities. In addition, a grant system is used to assist communities in delivering services to residents. The Branch also assists in the preparation and implementation of area and community development plans, to ensure orderly development.

In larger centres, the municipal governments also exercise a degree of control over land use planning and housing. In smaller communities, local involvement in housing is being fostered through housing associations that are responsible for the maintenance and upkeep of public housing and northern rental units. Rental revenue from the units is retained by the local groups as a supplement to annual operating grants from the NWTHC. This approach is in keeping with the overall government objective of decentralizing administration and increasing community involvement and responsibility for local affairs.

In many communities, the northern territorial rental and public housing stock accounts for a very large proportion of the total housing available, particularly in the smaller

predominantly Native communities. The other large component of the stock is government staff housing. Company-owned housing is important in the Industrial and Mining communities. Private owner-occupied and private rental stock tends to be concentrated in Industrial and Service communities.

The historic northern problem of housing which is overcrowded by southern standards persists, particularly in the Traditional communities.

5.5.5 RECREATIONAL FACILITIES

Changing life styles, centralization and the construction of new educational and community hall facilities have resulted in vastly improved facilities for recreational activities in most communities. Many Study Region residents now view good recreational facilities and programs as necessities; this is particularly true for young people who have been exposed to physical education programs at school.

The Industrial communities have a full range of facilities, generally comparable to those in southern centres of similar size. Two of the Service communities, Fort Simpson and Fort Smith are nearly as well equipped. Norman Wells, Fort Providence, and Tuktoyaktuk have a more limited complement of facilities. The most common facility in the Traditional communities is a community centre, but a number have a library, gym, curling rink and cinema as well. Fort Norman and Aklavik are particularly well-equipped for their size.

The intensiveness with which recreation facilities are used often depends on the interests and commitment of local volunteer organizers. Where enthusiasm is high, the school gymnasium and community recreation centre are in use virtually every night.

5.6 HEALTH AND SOCIAL DEVELOPMENT SERVICES AND CONDITIONS

Although a wide range of health and social services are available to residents of the Study Region, delivery of these services is often dependent on the size and relative isolation of each community. This section examines health and education facilities and programs as well as services relating to social assistance, alcohol and drug abuse and law enforcement. The section also discusses current health and social conditions in Study Region communities.

5.6.1 HEALTH

.1 Facilities and Services

The quality of medical care available to Study Region residents is typically as good as that available to southern Canadian residents in communities of similar size. The Industrial and Service communities have hospital facilities and staffs which are at least comparable with those found in provincial towns of similar sizes, and locally-based medical evacuation aircraft for evacuation of emergency cases. Primary care at the hands of trained nurses is available to residents of Traditional communities, with several exceptions. Emergency air medical evacuation is available in virtually all of these communities, subject of course to flying and landing conditions.

Despite this level of service, a recent study (Spady **et al.** 1979) concludes that morbidity and mortality rates among northern Native residents continue to be elevated well above rates for all of Canada, although they have declined significantly during the past two decades. Rates for certain conditions, such as tuberculosis, continue to be high by contrast with the rest of Canada, but the levels are much lower than they were a decade and more ago.

The major medical facilities and services available in Study Region communities are summarized in VII-5.6 Table 1. Communities not included in the table do not have a resident doctor, although most do have a nursing station. In addition to the communities shown in the table, Aklavik, Fort McPherson, and Tuktoyaktuk have a resident dental therapist. Arctic Red River, Colville Lake and Paulatuk have only a Health Station staffed by a resident lay dispenser. There are no health delivery facilities or personnel of any kind at Detah, Enterprise, Kakisa Lake, Lac la Martre, Rae Lakes and Trout Lake. Tungsten has a clinic with staff provided by the company which operates the Cantung mine.

Four Service communities, Tuktoyaktuk, Norman Wells, Fort Providence and Pine Point, do not have a hospital. Counting the cottage hospital at Rae-Edzo, all communities

with populations in the 300 to 1 000 range have a nursing station staffed by two to four nurses, who in most cases have advanced training in fields such as midwifery. Most of those communities lacking hospital facilities receive regular visits from doctors, dentists and other more specialized health care personnel such as pediatricians.

.2 Health Conditions

Although health services in the Study Region as a whole are good, many residents, especially Native residents in the smaller communities, continue to experience elevated rates of health problems. In part, this is due to poor housing, sanitation and nutrition, but a demanding lifestyle and an apparent weakness in inherited immunities to many recently-introduced diseases are also factors. Nevertheless, improved health service delivery in recent years has contributed significantly to reduced mortality, both from contagious diseases and among infants.

VII-5.6 TABLE 1
MAJOR MEDICAL FACILITIES IN STUDY REGION COMMUNITIES, 1983

Community	Medical Facility	Number Active Treatment Beds	No. of Nurses	No. Of Doctors	Resident Dentist or Therapist
Inuvik	HO/HC	55	33	5	Yes
Fort Simpson	CH/HC	14	6	1	Yes
Hay River	HO/HC	50	3(1)	3	Yes
Rae-Edzo	CH/HC	3	7	1	No
Yellowknife	HO/HC	72	60	15	Yes
Fort Smith	HO/HC	15	6	3	Yes

Source: Government of the Northwest Territories, Department of Health, Personal Communication. 1983a.

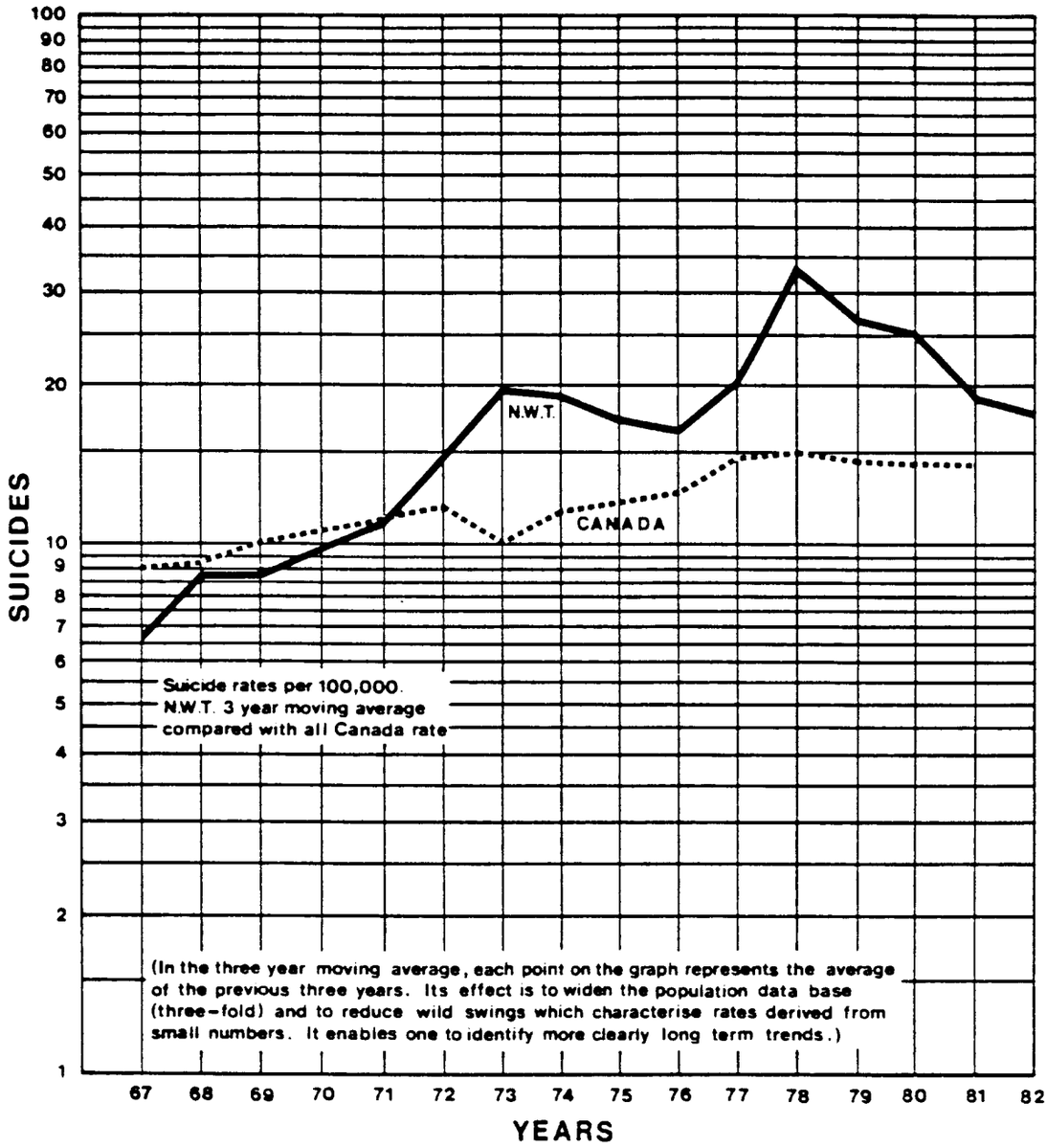
Notes: (1) number of nurses for health clinic only.

Abbreviations: HO - general hospital
HC - health centre
CH - cottage hospital

Various kinds of data are available which provide indications of current problems and trends in health conditions among Study Region residents. VII-5.6 Table 2 shows the causes of death among Indian and Inuit residents for all of the Northwest Territories in 1961, 1966, 1971, 1976, and 1981. These data show that generally the most common causes are injuries and accidents, cardiovascular diseases, malignant neoplasms (tumors), infancy diseases and conditions, ill-defined conditions, and respiratory diseases — particularly pneumonia. There have been distinct changes in causes of death during the 20 years for which data are available. The proportions of deaths due to infectious and parasitic diseases and diseases of the respiratory system have declined, but the proportions due to injuries and poisonings, diseases of the circulatory system, and neoplasms have increased.

Relatively high death rates among Native infants continue to be one of the most serious health conditions in the north. Between 1968 and 1978, the infant death rate for Indians in the Inuvik and Mackenzie Health Zones has fluctuated between 5 and 60 per 1 000 live births. Among the Inuit the rates have ranged from above 90 to below 40, whereas the rates of the Other ethnic group ranged between 10 and 33. Although there is evidence that the Inuit rate has been falling significantly in recent years, infant death rates throughout the Northwest Territories generally continue to be about twice the Canadian average (Government of the Northwest Territories, Chief Medical and Health Officer 1973 to 1981).

One of the most disturbing causes of death in the Northwest Territories is suicide. As can be seen in VII-5.6 Figure 1, the N.W.T. suicide rate has been generally increased more than the Canadian rate from 1967 through 1978 when it peaked at 33 per 100 000 population, more than double the Canadian rate. Since then it has fallen sharply, to 17.3 in 1982, little more than half the 1978 peak rate.



Source: Government of the Northwest Territories, Chief Medical and Health Officer. Report on Health Conditions in the Northwest Territories, 1983

NORTHWEST TERRITORIES SUICIDE RATE PER HUNDRED THOUSAND, 1967 TO 1982

VII-5.6 FIGURE 1

VII-5.6 TABLE 2

INDIAN AND INUIT DEATHS BY CAUSE,
NORTHWEST TERRITORIES, 1961, 1966, 1971, 1976 AND 1981

Cause of Death	Percent of Total Deaths									
	1961		1966		1971		1976		1981	
	Indian	Inuit	Indian	Inuit	Indian	Inuit	Indian	Inuit	Indian	Inuit
Infectious and parasitic disease	11	9	2	4	0	4	0	0	0	2
Neoplasms	2	2	22	6	9	8	10	16	17	17
Nervous system and sense organs	2	5	2	6	4	3	2	5	3	1
Disease of circulatory system	4	3	8	5	13	9	13	15	31	5 (2)
Disease of respiratory system	11	21	28	34	13	18	15	16	9	10
Disease of digestive system	18	5	0	7	2	5	6	4	3	2
Congenital anomalies, infancy diseases	4	15	10	16	13	19	11	5	3	10
Injury, poisoning	16	6	15	14	33	26	40	33	23	41
Senility and other causes	31	35	10	6	13	9	4	7	11	13
Total(1)	99	101	97	98	100	101	101	101	100	101
TOTAL NUMBER OF DEATHS	45	172	40	123	46	117	53	103	35	95

Source: Government of Canada, Department of National Health and Welfare, Report on Health Conditions in the Northwest Territories, 1961, 1966 and 1971.

Government of the Northwest Territories, Chief Medical and Health Officer. Report on Health Conditions in the Northwest Territories. 1976 and 1981.

Notes:
1. Percentages do not total to 100% due to rounding.
2. In 1980 this figure was 24%.

VII-5.6 TABLE 3

PATIENTS AND PATIENT DAYS BY SELECTED ICD DISEASE CATEGORIES[1]
BY SUB-REGION AND COMMUNITY TYPE

	Mental Disorders		Respiratory Diseases		Infectious & Parasitic Diseases		Endocrine,Nutritional & Metabolic Diseases		Injuries & Poisonings	
	Patients Rate	Patients Days Rate	Patients Rate	Patients Days Rate	Patients Rate	Patients Days Rate	Patients Rate	Patients Days Rate	Patients Rate	Patients Days Rate
Delta Sub-region										
1) Industrial	13.1	72.6	28.7	151.3	4.7	36.4	3.5	55.9	26.7	215.2
2) Service	10.7	44.7	28.5	199.4	2.5	20.8	1.3	28.3	27.0	132.1
3) Traditional	10.1	56.0	27.0	228.1	2.2	26.0	2.5	15.8	24.6	381.8
Total	11.8	63.5	25.4	182.2	3.6	30.9	2.9	39.4	26.1	243.8
Mackenzie River Sub-region										
1) Industrial	--	--	--	--	--	--	--	--	--	--
2) Service	9.7	140.1	28.4	167.0	5.0	50.9	2.9	38.7	27.2	268.5
3) Traditional	5.3	27.3	25.2	220.6	4.1	65.3	1.7	18.9	22.1	229.5
3) Mining	1.6	15.6	15.6	48.4	--	--	1.6	18.8	4.7	7.8
Total	6.4	65.4	23.2	172.9	3.9	42.1	2.0	25.3	21.7	217.4
Great Slave Lake Sub-region										
1) Industrial	16.7	149.4	23.8	164.4	3.8	64.6	2.7	24.4	23.3	241.4
2) Service	8.7	93.9	23.1	167.7	2.4	69.4	3.2	38.9	24.1	179.3
3) Traditional	9.7	75.2	43.9	570.7	7.2	136.2	2.7	44.1	19.6	202.0
4) Mining	8.9	108.3	15.1	75.0	1.3	12.6	3.5	29.6	23.7	185.2
Total	13.6	125.2	25.3	210.3	3.8	69.5	2.8	29.3	22.6	218.4
Total Study Region										
1) Industrial	15.0	129.0	22.9	150.7	3.6	53.3	2.9	30.1	23.6	226.4
2) Service	9.3	98.8	23.7	167.0	3.1	56.9	2.8	37.2	25.4	196.2
3) Traditional	8.4	55.0	33.5	368.0	4.9	77.7	2.3	28.5	21.7	248.8
4) Mining	7.8	95.2	15.2	71.4	1.1	10.8	3.2	28.0	21.0	159.2
Total	12.9	112.9	26.3	206.1	3.9	59.7	2.9	32.7	248.7	235.7

Source: Government of the Northwest Territories, Department of Health. 1983b. Calculated from unpublished statistics.

Note: 1. Average frequencies and rates per 1 000 for 1981-82 combined.

Information on selected categories of diseases for the Study Region, averaged for the years 1981 and 1982, are found in VII-5.6 Table 3. The information is on numbers of patients hospitalized, and numbers of patient-days of hospitalization. The disease categories are specified by the International Classification of Diseases. Five of these disease categories have been chosen for analysis because of their particular relevance in assessing the impacts of industrial projects: injuries and poisonings, mental disorders, respiratory diseases, infectious and parasitic diseases, and endocrine, nutritional and metabolic diseases. The first was included because both accidental and violent injury rates may be affected by increased industrial employment, and the same is true of mental disorders. Respiratory infection rates tend to be particularly high among Native people generally. Infectious and parasitic diseases rates may be elevated by the increased mobility which may accompany industrial development. Finally the changes in diet which increased industrial employment may induce among Native people may lead to increased levels of endocrine, nutritional and metabolic diseases.

The information in the table includes the numbers of patients and the numbers of patient days per 1 000 population. An unfortunate limitation in the available information is that no Territorial-wide data are available, nor are there comparison data for any other part of Canada. Accordingly it is only possible to make various internal comparisons.

The aggregated data for the whole Study Region show that the highest hospitalized patient rates are for respiratory diseased, followed by injuries and poisonings, mental disorders, infectious and parasitic diseases and endocrine, nutritional and metabolic diseases. The rankings for rates of patient days are similar, except that injuries and poisonings ranked first and respiratory diseases ranked second.

Using these data it is possible to test some common assumptions about the relationship between development activity and morbidity rates among Native people. These assumptions would anticipate that morbidity rates would be elevated in the Beaufort Sub-region because of the very high levels of oil exploration activity in this area during 1981 and 1982. Elevated rates would also be expected in the Mackenzie River Sub-region because of the increased activity associated with expansion of the Norman Wells oil field.

Scrutiny of the data indicate that these expectations are not generally upheld. The Great Slave Lake Sub-region has the highest patient and patient-day rates for mental disorders and has the highest patient-day rates for respiratory diseases and infectious and parasitic diseases as well. The Delta Sub-region has the highest patient rates for respiratory, endocrine, nutritional and metabolic diseases and injuries and poisonings, and the highest patient-day rates for the latter two as well. The Mackenzie River Sub-region

ranks first and second on rates of patients and patient-days, respectively, for infectious and parasitic diseases. Rankings on the remaining disease categories were lower.

Generally these data do not uphold the expectation that the highest rates would be found in areas having the most economic development activity. Rather they suggest that elevated rates are found in the Sub-regions where there are high proportions of non-Natives, the Great Slave Lake and Delta Sub-regions. This is not to imply that it is the non-Natives who experience elevated rates, otherwise the morbidity rates would be elevated in the Mining communities. Rather the elevated disease rates appear to be experienced by Natives living in these Sub-regions, some of whom may find these conditions stressful, or otherwise unhealthful.

Specific disease conditions which continue to pose serious health problems are identified in a tabulation of non-venereal infectious diseases, seen in VII-5.6 Table 4. These data show that there are high frequencies of influenza-like infections, gastro-enteritits, measles, salmonellosis, shigellosis, and the "childhood diseases", mumps and chicken pox. Generally, however, the incidence of these diseases is less than in the past. Since in recent years the population has increased steadily, there have been significant improvements in accessability to health services and record-keeping and Native people are probably making greater use of health services, one might expect an increase in reported frequencies. In fact there have been very substantial declines in the frequency of certain serious disease conditions during this period, although it must be borne in mind that where there are low frequencies, statistics tend to exhibit random fluctuation. The most dramatic declines have been in the incidences of hepatitis infections and measles, but the reduced frequencies of diptheria and meningococcal meningitis are important as well. On the other hand, there have been some increases in salmonellosis and bacillary dysentery.

VII-5.6 TABLE 4

INCIDENCE OF INFECTIOUS DISEASES[1], BY HEALTH REGION, 1980 AND 1982

	Year							
	1980	1982	1980	1982	1980	1982	1980	1982
Influenza-like diseases	136	210	499	264	629	348	939	637
Gastro-enteritis	295	84	334	264	629	348	939	637
Chickenpox	85	15	183	189	168	204	379	370
Shigellosis	157	1	36	7	193	8	209	12
Salmonellosis	8	5	101	13	109	18	109	34
Measles	15	4	33	19	48	23	65	31
Mumps	0	17	21	16	21	33	24	35
Rubella	0	0	16	7	16	7	24	7
Pertussis	0	0	21	1	21	1	24	2
Meningitis Haemophilus	2	0	5	4	7	4	16	14
Meningitis Bacterial (Unspecified)	0	2	0	6	0	8	3	14
Hepatitis (A)	0	1	12	3	12	4	12	5
Hepatitis (B)	0	3	5	2	5	5	8	9
Diphtheria	0	1	11	0	11	1	11	1
Brucellosis	0	0	2	0	2	0	6	2
Meningitis Viral	0	0	0	3	0	3	5	1
Meningococcal Meningitis	0	0	0	1	0	1	0	2
Trichinosis	0	0	0	0	0	0	0	2
Botulism	0	0	0	2	0	2	0	1
Food Poisoning	0	0	0	1	0	1	0	0

Notes: 1. Not including Tuberculosis and venereal diseases.

Source: Government of the Northwest Territories, Chief Medical and Health Officer, Report on Health Conditions in the Northwest Territories, 1982.

Venereal diseases frequently are a serious problem in frontier areas where there are many transient workers. However, during 1981 no cases of syphilis were recorded in any part of the Northwest Territories, and the most recent cases were two reported in 1979. The data in VII-5.6 Table 5, show that large numbers of gonorrhea cases were reported in the Study Region during 1968, 1973, 1978 and 1981. The combined data for the Inuvik and Mackenzie Medical Health Regions show that while the number of confirmed and unconfirmed cases of gonorrhea more than trebled between 1968 and 1981, the total number actually peaked in 1973 and has been somewhat lower between 1978 and 1981. The infection rates increased most rapidly between 1968 and 1978 in the Mackenzie River Sub-region Traditional communities, but this increase has subsequently leveled off.

Tuberculosis has been the most serious health affliction among northern Native people since it was first introduced with the arrival of Euro-Canadians. However, the successful results of the massive campaign waged against this widespread and deadly disease by the Northern Health Service can be seen in VII-5.6 Table 6. Between 1968 and 1981 the number of new and reactivated cases of tuberculosis reported in the Inuvik and Mackenzie Health Regions declined by 85 percent, from 107 to 17. Even more significant is the fact that there have been no deaths from tuberculosis in the Northwest Territories since 1969.

5.6.2 EDUCATION

.1 Facilities and Programs

In general, school facilities in Study Region communities are good, and comparable to those available in southern centres. There is, however, a general lack of vocational programs at the secondary school level. The grades offered in each community are indicated graphically in VII-5.6 Figure 2.

The four Industrial communities have both elementary and high school facilities. Yellowknife has the most extensive system with three schools operated by the Public School Board, two operated by the Roman Catholic board, and a high school operated by the Territorial Government. The Public system consists of a primary school with grades K through 3, an elementary school with grades 4 through 6 and a Junior High School with grades 7 through 9. The Roman Catholic system has an elementary school with grades K through 6 and a junior/senior high school with grades 7 through 12. Public school system students attend the Territorial high school which is located in Yellowknife.

Hay River has three elementary schools, of which one is located on the nearby Indian Reserve, and one secondary school. The elementary schools all offer grades K through 6,

VII-5.6 TABLE 5

OCCURRENCE OF CONFIRMED AND UNCONFIRMED CASES OF GONORRHEA BY NORTHWEST TERRITORIES HEALTH REGION AND SELECTED REGION COMMUNITIES, 1968, 1973, 1978, 1979, AND 1981

Inuvik Region	1968	1973	1978	1968-78 Percent Change	1979	1981	Change
Inuvik	214	n.a	396	85	432	465	7.6
Other Region Communities	168	n.a	305	82	431	452	4.9
Total	382	913	701	84	863	917	6.3
Mackenzie Region							
Fort Simpson	13	n.a.	103	692	128	86	-32.8
Hay River	48	n.a	110	129	122	113	-7.4
Yellowknife	150	n.a.	434	189	319	362	13.5
Other Region Communities	71	n.a.	816	1049	593	678	14.3
Total	282	1380	1463	419	1162	1239	6.6

Note: In 1981, no new cases of syphilis were reported in the Northwest Territories; in 1979, 2 cases of syphilis were recorded; in 1978, there were no cases; in 1973, there were 4 cases; and in 1968 tere were 5.

Source: Government of the Northwest Territories, Chief Medical and Health Officer, Report on Health Conditions in the Northwest Territories, 1973, 1978, 1979 and 1981.

Government of Canada, Department of National Health and Welfare. Report on Health Conditions in the Northwest Territories, 1968.

VII-5.6 TABLE 6

NEW AND REACTIVATED TUBERCULOSIS CASES BY
NORTHWEST TERRITORIES HEALTH REGION, 1968 TO 1981

Year	Inuvik Region	Mackenzie Region	Total
1968	26	81	107
1969	12	51	63
1970	11	41	52
1971	6	30	36
1972	5	25	30
1973	8	22	30
1974	7	33	40
1975	6	21	27
1976	7	27	34
1977	4	40	44
1978	2	35	37
1979	4	28	32
1980	5	16	21
1981	2	15	17

Note: There have been no deaths resulting from tuberculosis in the Northwest Territories since 1969.

Source: Government of the Northwest Territories, Chief Medical and Health Officer, Report on Health Conditions in the Northwest Territories, 1975, 1976, 1979, 1980 and 1981.

Government of Canada, Department of National Health and Welfare. Report on Health Conditions in the Northwest Territories, 1968.

VII-5.6 FIGURE 2

SCHOOL GRADES OFFERED IN STUDY REGION COMMUNITIES, 1983

Sub-region / Community	GRADES OFFERED	Total Enrollment
Delta Sub-region		
Inuvik	K 1 2 3 4 5 6 7 8 9 10 11 12	933
Tuktoyaktuk	K 1 2 3 4 5 6 7 8 9 10 11 12	195
Sachs Harbour	K 1 2 3 4 5 6 7 8 9 10 11 12	42
Paulatuk	K 1 2 3 4 5 6 7 8 9 10 11 12	51
Aklavik	K 1 2 3 4 5 6 7 8 9 10 11 12	195
Arctic Red River	K 1 2 3 4 5 6 7 8 9 10 11 12	16
Fort McPherson	K 1 2 3 4 5 6 7 8 9 10 11 12	173
Mackenzie River Sub-region		
Tungsten	K 1 2 3 4 5 6 7 8 9 10 11 12	95
Norman Wells	K 1 2 3 4 5 6 7 8 9 10 11 12	75
Fort Simpson	K 1 2 3 4 5 6 7 8 9 10 11 12	238
Colville Lake	None	0
Fort Good Hope	K 1 2 3 4 5 6 7 8 9 10 11 12	128
Fort Franklin	K 1 2 3 4 5 6 7 8 9 10 11 12	139
Fort Norman	K 1 2 3 4 5 6 7 8 9 10 11 12	68
Wrigley	K 1 2 3 4 5 6 7 8 9 10 11 12	22
Fort Liard	K 1 2 3 4 5 6 7 8 9 10 11 12	100
Nahanni Butte	K 1 2 3 4 5 6 7 8 9 10 11 12	29
Jean Marie River	K 1 2 3 4 5 6 7 8 9 10 11 12	12
Trout Lake	K 1 2 3 4 5 6 7 8 9 10 11 12	14
Great Slave Lake Sub-region		
Hay River	K 1 2 3 4 5 6 7 8 9 10 11 12	755
Yellowknife	K 1 2 3 4 5 6 7 8 9 10 11 12	2313
Pine Point	K 1 2 3 4 5 6 7 8 9 10 11 12	469
Fort Providence	K 1 2 3 4 5 6 7 8 9 10 11 12	183
Fort Smith	K 1 2 3 4 5 6 7 8 9 10 11 12	644
Enterprise	None	0
Kakisa Lake	None	0
Fort Resolution	K 1 2 3 4 5 6 7 8 9 10 11 12	96
Snowdrift	K 1 2 3 4 5 6 7 8 9 10 11 12	73
Detah	K 1 2 3 4 5 6 7 8 9 10 11 12	32
Rae-Edzo	K 1 2 3 4 5 6 7 8 9 10 11 12	397
Rae Lakes	K 1 2 3 4 5 6 7 8 9 10 11 12	52
Lac la Martre	K 1 2 3 4 5 6 7 8 9 10 11 12	92

Source: Government of the Northwest Territories, Department of Education, Statistical Services, Unpublished data. June 1983.

and the combination junior-senior high school provides grades 7 through 12. The single elementary school in Inuvik offers grades K through 6 and the secondary school there provides grades 7 through 12. Pine Point also has two schools, which provide grades K to 5 and 6 to 12 respectively.

Most of the Service and Traditional communities have one elementary school, in some cases extending to grade 10, but only Fort Smith has a full secondary school program as well. There are significant variations in the grades offered locally, particularly among the Traditional communities. The Aklavik and Fort Simpson schools offer grades K to 10. The Trout Lake school provides only grades K to 4. Grades K through 6 are available at Arctic Red River, Wrigley, Fort Liard, Nahanni Butte, Jean-Marie River and Rae Lakes, while Paulatuk and Lac la Martre provide grade 7 as well. The schools in all the remaining communities offer grades K to 8 or 9.

There is a large enrollment in these Study Region schools, no less than 7 624 children and young people in grades K through 12, more than 26 percent of the total Study Region population. Many of the 29 schools which they attend are quite large: but 17 schools (59 percent) enroll less than 100 pupils, and eight (28 percent) have less than 50. The importance of shool size relates to the range of resources available in the school, and the amount of variety and specialization they can provide. It is significant in this context that eight of the schools have no more than two teachers.

All but seven (24 percent) of the schools have classroom assistants in the schools to aid the regular teachers in working with Native children. Those without assistants are the schools at Tungsten and Pine Point and the high schools in Inuvik, Hay River and Yellowknife.

The size of the student/teacher ratio has important implications for the amount of individual attention that a teacher is able to give students in the class, though similar attention may be given by some classroom assistants. Student/teacher ratios in Study Region schools vary from a low of 11:1 in Wrigley and 12:1 in Jean-Marie River to a high of 33:1 in Fort Liard. The median ratio is 17 students per teacher, and two thirds of the communities have ratios of no more than 19:1. As might be expected, some of the lowest as well as some of the highest student-teacher ratios occur in Traditional communities. However all of the Service and Traditional communities have at least one classroom assistant, and in one case as many as eight, whose help in the classroom is not reflected in the student/teacher ratios.

There are no schools in Colville Lake, Kakisa Lake and Enterprise. Children from Colville Lake attend school in Inuvik or Fort Good Hope, while those from Kakisa Lake

are locally boarded in Fort Providence or some other nearby community of the parents' choice. Enterprise students are bused into Hay River. Students living north of Wrigley attend secondary school in Inuvik. Students in all of the more southerly communities, including Wrigley, have the choice of attending junior and senior high school in Fort Smith or Yellowknife. Of the total 1983 school enrollment, 7 868 students from the Study Region communities, 244 or about three percent, attended school outside their home communities. In most cases, of course, these were young people attending junior or senior high school. Students from 23 communities were attending schools away from their homes. The number from any one community ranged from one to 32, and the median number was eight.

The consequence of a situation where continued schooling frequently requires a student to leave home is that in many cases students drop out of school rather than experience such a separation. Data for the 1978-79 school year indicate that the number of Study Region children under 16 years of age who were not attending ranged from 288 or 4.2 percent of total enrollment during the first quarter of the year, to 412 or 8.0 percent during the last quarter. The latter figure is more than twice the number of students who had left their home community to continue their education elsewhere. Another indication of the size of the dropout problem is seen in the fact that during the first quarter of the 1982-83 school year 159 or 2.1 percent of those enrolled were not attending school, while by the fourth quarter these numbers had increased to 456 or 6.0 percent of the total enrollment.

Some of the early school leavers may do so in order to camp on the land with their parents, and may therefore be attaining an education which is relevant to their future lifestyles. However it is reasonable to presume that the necessity of leaving home for further education and the lack of vocational programs also have a significant bearing on school attendance decisions. This situation poses a problem for adequate educational attainments among the children of most of the communities under consideration.

As is true of most small Canadian towns, continuation in vocational or other post-secondary education requires students to leave their home communities. For students in the Study Region communities, this typically means going to Fort Smith or to a city or town elsewhere in Canada. Such a move may be easier for those students who have already attended school away from home than for those who were able to remain at home throughout their high school years.

During the 1982-83 school year, the number of Study Region students enrolled at Thebacha College in Fort Smith totalled 296. The largest numbers of students were from

Yellowknife (64), Fort Smith (55), Pine Point (28), Inuvik (21), Hay River (20), and Rae/Edzo (13). The most popular courses were those related to construction work, such as carpentry, heavy duty equipment operation, and heavy duty mechanics, which attracted a total of 77 students. Courses relating to other industrial trades and services were the second most popular with an enrollment of 75. Community service occupations, such as certified nursing assistants, classroom assistants and housing maintenance, drew course enrollments of 35 students. A variety of other programs accounted for the remaining 113 students.

5.6.3 SOCIAL SERVICES

.1 Programs

Senior levels of government in Canada provide a wide range of social service programs to their constituents. Many of the services normally available to southern residents also are provided to Study Region residents.

Preventative social service programs include organizing local community advisory committees, youth centres, day care programs, individual and family counselling, vocational rehabilitation and programs for the handicapped. Other community support programs include mental health projects, homemaker and home care services and community alcohol programs. Problem-oriented programs include marriage conciliation, child welfare, social assistance appeal committees, juvenile court committees, community probation officers, and community service projects for offenders.

The speed of social change in the north, particularly since 1960, has inevitably fostered dislocations in traditional social relationships and patterns. The resultant social problems often have made it imperative that a wide range of social services be offered to residents of even the smallest communities. However, few of the small communities are able to support resident social service staff. As a result, social service program delivery requires that an agent commute to smaller communities on a regular basis, or that small community residents travel to the nearest centre providing the service. Only Yellowknife, Inuvik, and Hay River have the full range of services provided locally.

.2 Social Assistance

For many small Study Region communities, social assistance benefits are an important source of cash income. Most people still rely heavily on local wild food resources, though there is a growing dependence on store-bought food. Typically, resource harvesters are not able to obtain the cash needed to purchase and operate the equipment required to harvest fish, fur and game from the proceeds earned by hunting and trapping alone. For people in this situation, social assistance payments may help to cover the shortfall in cash that is needed.

Information on social assistance case loads and payments has been summarized in VII-5.6 Table 7. For the whole of the Study Region there was an average of 356 cases per 1 000 population, with an average payment of $3 847 per case/year. However, on a community-type basis, the rate varied inversely with the level of industrialization, ranging from 132 case months per thousand for Industrial communities, to 485 per thousand in Service communities, to 890 case months per thousand population in Traditional communities. The Mining communities had only six case months per 1 000 population. A somewhat different pattern emerges for average annual payment per case year, varying from $3 606 in Industrial communities to $2 901 in Service communities to $3 811 in Traditional communities, and $3 566 in Mining communities.

Examination of the social assistance data by Sub-region indicates that the case rate (per 1 000) was highest in the Mackenzie Sub-region, and that overall, the case rate was highest in the Traditional communities of the Great Slave Lake Sub-region. The payment rate per case year was highest overall in the Mackenzie River Sub-region Mining communities. The highest Sub-regional average annual payment per case year was found in the Mackenzie River Sub-region. The lowest incidence rate of social assistance cases was found in the Great Slave Lake Sub-region Industrial communities, and the lowest average payment per case was reported in the Service communities of the Mackenzie River Sub-region.

5.6.4 ALCOHOL AND DRUGS

.1 Programs

There is considerable statistical, as well as non-statistical, information indicating that the level of alcohol consumption in northern communities exerts a significant influence on social conditions in these communities. High levels of alcohol abuse are associated with elevated rates of crime, violent injuries and accidents in affected communities (Royal Commissionon the Northern Environment 1978; Hobart and Kupfer 1973). They also may

VII-5.6 TABLE 7

SOCIAL ASSISTANCE CASELOAD AND BENEFITS
BY SUB-REGION AND COMMUNITY TYPE, 1981-82

Sub-region/Community Type	1981 Population	No. of Case/Months	Case/Months Per 1 000 Population	Total Annual Payments	Average Payment Per Case Year
Delta Sub-region					
1) Industrial	3,158	756	239	$ 233,873	$ 3,712
2) Service	772	384	497	102,369	3,199
3) Traditional	1,808	1,092	604	305,284	3,355
TOTAL	5,738	2,232	389	$ 641,526	$ 3,449
Mackenzie River Sub-region					
1) Industrial	--	--	--	--	--
2) Service	1,480	432	309	$ 88,242	$ 2,451
3) Traditional	2,082	1,572	755	548,282	4,185
4) Mining	320	3	9	137	547
TOTAL	3,882	2,007	517	$ 636,661	$ 39,714
Great Slave Lake Sub-region					
1) Industrial	12,393	1,296	105	$ 382,756	$ 3,544
2) Service	2,939	1,704	580	418,507	2,947
3) Traditional	2,827	3,312	1,172	1,044,124	3,783
4) Mining	1,861	9	5	3,429	4,572
TOTAL	20,020	6,321	316	$1,848,816	$ 3,076
Total Study Region					
1) Industrial	15,551	2,052	132	616,629	3,606
2) Service	5,191	2,520	485	609,118	2,901
3) Traditional	6,717	5,976	890	1,897,690	3,811
4) Mining	2,181	12	6	3,566	3,566
GRAND TOTAL	29,640	10,560	356	$3,127,003	$ 3,847

Source: Government of the Northwest Territories, Program Evaluation and Information Systems, Department of Social Development, unpublished data. 1983.

adversely affect the quality of child care, and so increase infant morbidity and mortality rates. There is widespread awareness of these relationships in most Native communities, with the result that there have been frequent attempts to introduce control programs. Rehabilitation programs can be found in all types of communities.

There are three major program approaches which have been taken to address the alcohol problem. The first assumes that alcohol abuse is greatly facilitated by boredom in small communities, particularly of young people. Some community programs attempt to improve recreational facilities or to utilize more effectively those available, perhaps through the establishment of an organized recreational program. A second approach involves the establishment of community alcohol education programs. The communities which currently have such programs are Inuvik, Aklavik, Paulatuk, Tuktoyaktuk, Fort McPherson, Norman Wells, Fort Simpson, Fort Norman, Fort Providence, Hay River, Fort Smith, Fort Resolution and Yellowknife. The effectiveness of these programs depends to a great extent on the specific features of each.

The third, and theoretically most effective, program is local prohibition or some method of rationing. Prohibition has been adopted in Fort Franklin, Fort Good Hope, Lac la Martre, Rae-Edzo, Rae Lakes, Nahanni Butte, and Snowdrift. Various methods of rationing have been adopted in Norman Wells, Fort Simpson, and Fort Liard, as of the summer of 1983. However, it should be added that local rationing or prohibition does not necessarily mean that alcohol is not available, since bootlegging is well-established in some of these communities.

.2 Availability and Consumption

Alcohol may be purchased at local outlets in only nine locations in the Study Region: Yellowknife, Hay River, Inuvik, Norman Wells, Fort Simpson, Fort Smith, Tungsten, Pine Point and Fort Providence. The first eight all have local liquor stores, while Fort Providence has a bar which makes off-premises sales as well. In the remaining communities alcohol may be imported legally (where there is not local prohibition) by prepaid mail orders, chartered aircraft, motor vehicles, boats, or by visitors to the community. Clearly the scarcity of liquor outlets imposes some limitations on the availability of alcohol. The distance to the nearest liquor store ranges from 56 km for Aklavik residents to the 165 km distance between Fort Franklin and Norman Wells.

Liquor sales figures are available from the Territorial Liquor Control Board for individual liquor stores, but not for the licensed outlet which is found in Fort Providence. Figures for Yellowknife, Hay River, Fort Simpson, Inuvik, Norman Wells, Fort Smith, Tungsten and Pine Point are tabulated in VII-5.6 Table 8, for the years 1968-69 to 1981-

82, in 1972 constant dollars. Per capita consumption values are also shown. The latter are based on the populations of the areas served by each store: thus the population of the area serviced by the Inuvik store includes all of the Delta communities, as well as Sachs Harbour and Paulatuk. The Fort Simpson store serves Fort Liard, Nahanni Butte, Trout Lake, Jean Marie River, Kakisa Lake and Wrigley. The Norman Wells store serves Colville Lake, Fort Good Hope, Fort Franklin and Fort Norman, as well as local residents. No per capita figures were calculated for the Yellowknife store since mail orders for liquor arriving from all over the Territories are filled at this store, as are sales to bootleggers who may be serving Rae-Edzo, Rae Lakes, Lac la Martre, Snowdrift, etc. Accordingly, per capita figures based only on the surrounding area would be misleading.

The per capita figures shown in VII-5.6 Table 7 should be taken only as index figures, rather than as firm indications of the amount of liquor consumed by individuals, for two reasons. First, through most of the 1970s there were transients in many parts of the Study Region who typically contributed substantially to local liquor consumption. A Territorial Government study completed in 1975 estimated that transients probably accounted for about 13 percent of all alcohol consumed in the Territories at that time (Wong 1975). The contribution of transient demand to total sales undoubtedly was higher in Hay River and Inuvik than it was in Fort Simpson, Tungsten or Pine Point. The second reason is that the total population was used in the calculation of per capita consumption, and the proportions of children differ very substantially between various Study Region communities.

The data in the table show that the per capita consumption figures for five outlets, Inuvik, Norman Wells, Fort Simpson, Hay River and Fort Smith, present rather similar patterns. In every case there were rather steep increases in the per capita values from 1968-69 until the early or mid 1970s (between 1972-73 and 1975-76 - see VII-5.6 Figure 3). These were the early years during which the oil exploration boom was felt strongly by communities in this area. Sales almost tripled in Fort Simpson during this period, but failed to double during this period in the remainder of the outlets. More recently, Inuvik, Norman Wells, Hay River, and Fort Smith all show sharp increases in per capita consumption in 1980-81 or 1981-82. This increase appears to be due to the renewed "boom" in oil exploration activity in the Beaufort Sea. The failure of Fort Simpson to show a parallel increase probably is due to the imposition of rationing in that community.

VII-5.6 TABLE 8

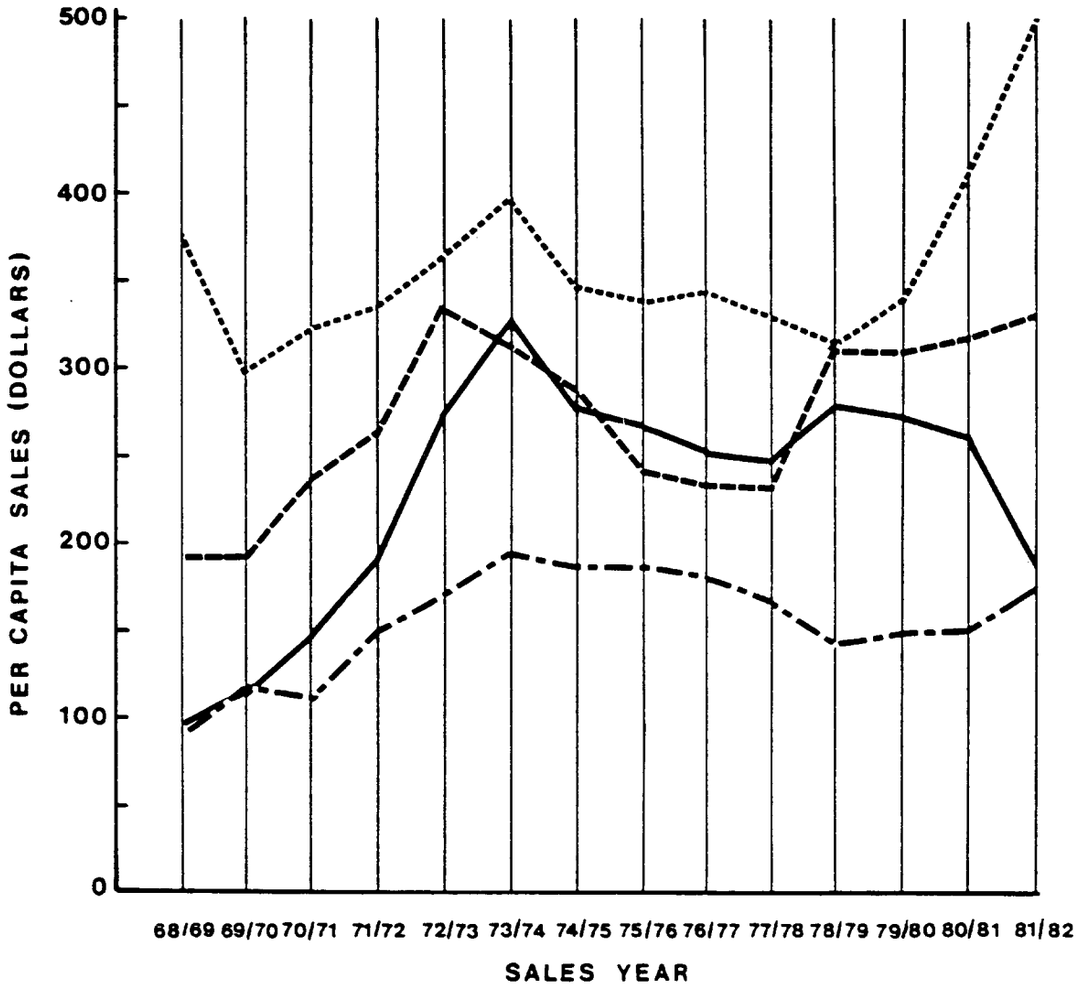
LIQUOR STORE SALES IN SELECTED STUDY REGION COMMUNITIES
1968-69 THROUGH 1981-82[1]

	Inuvik Sales		Norman Wells Sales		Fort Simpson Sales		Hay River Sales		Yellowknife[2] Sales		Fort Smith Sales		Tungsten Sales		Pine Point[3] Sales	
	Total ($000)	Per Capita ($)	Total ($000)	Per Capita ($)	Total ($000)	Per Capita ($)	Total ($000)	Per Capita ($)	Total ($000)	Per Capita ($)	Total ($000)	Per Capita ($)	Total ($000)	Per Capita ($)	Total ($000)	Per Capita ($)
1968/1969	839	189	111	94	122	96	827	374	1,655	-	496	222	47	275	-	-
1969/1970	879	190	141	117	152	115	693	299	1,528	-	399	175	42	264	217	121
1970/1971	1,127	235	139	113	203	147	784	328	1,674	-	500	214	41	284	309	169
1971/1972	1,321	267	191	151	271	190	840	332	1,962	-	579	242	42	326	332	181
1972/1973	1,676	331	224	169	413	274	976	363	2,144	-	607	252	38	252	383	196
1973/1974	1,615	311	273	197	522	326	1,128	396	2,632	-	599	247	58	341	400	193
1974/1975	1,512	284	263	186	471	279	1,042	346	2,716	-	572	234	79	415	408	187
1975/1976	1,305	240	272	185	477	268	1,072	338	2,949	-	565	229	83	396	407	177
1976/1977	1,309	231	271	178	470	252	1,105	344	3,240	-	559	225	96	420	474	196
1977/1978	1,313	230	267	168	448	269	1,151	326	2,709	-	637	256	137	556	472	197
1978/1979	1,727	309	243	143	499	277	1,067	314	2,884	-	642	257	169	636	418	175
1979/1980	1,753	308	263	150	485	269	1,146	343	3,695	-	578	230	160	564	428	179
1980/1981	1,811	318	265	151	469	259	1,277	408	2,088	-	688	273	123	408	555	236
1981/1982	1,954	338	301	173	338	187	1,462	500	4,705	-	720	285	182	568	605	259

Notes: 1. Values in constant 1972 dollars.
2. Per Capita values not calculated because local sales are aggregated with mail order sales.
3. The Pine Point liquor store opened mid-year during 1969-70.

Sources: Calculated from data in Annual Reports of the Northwest Territories Liquor Control Board, 1968-69 - 1981-82.

Government of the Northwest Territories, Liquor Control Board Annual Reports, 1968-69 - 1970-71; and in the Government of the Northwest Territories Liquor Control System and Licensing Board, 1971-72 through 1981-82.



LEGEND

- Inuvik
- Norman Wells
- Fort Simpson
- Hay River

PER CAPITA LIQUOR SALES IN SELECTED COMMUNITIES, 1968/69 TO 1981/82

Source: Government of the Northwest Territories. Liquor Control Board. Annual Reports. 1968-69 to 1970-71; and in the Government of the Northwest Territories. Liquor Control System and Licensing Board. 1971-72 to 1981-82.

VII-5.6 FIGURE

In contrast to the communities discussed above, per capita sales figures in Tungsten increased steadily, from 1968-69 to 1981-82, reaching exceedingly high levels, no less than $568 per capita, which is well over twice the Territorial per capita figure. Per capita figures for Pine Point show little more than random fluctuation between 1969-70 and 1981-82, when expressed in constant dollar terms. As noted previously, no per capita sales, and thus no trends could be established for Yellowknife, because the value of local sales is combined with that of mail order shipments.

.3 Alcohol and Drug Abuse

Indications of the extent of alcohol and drug abuse are available from "Uniform Crime Report" statistics compiled by the R.C.M.P. It should be emphasized that the validity of these figures is somewhat questionable, however. All crime statistics invariably reflect variations in police procedures (including variations in frequency and type of patrolling activity), in rapport with the public (which influences the latter's readiness to call the police), in response to and handling of complaints, and in recording procedures. These sources of invalidity are even more significant in respect to liquor and drug offences, because of uncertainty in the perspectives of the public and of the police themselves as to whether certain levels of inebreation and the use of certain drugs are actually "crimes". There is reason to believe that the recording of liquor and drug offences in different jurisdictions and during different years is subject to even more variation than in the case of other offences and the statistics cited in the following discussion should be viewed accordingly.

Data on numbers and rates of liquor offences are found in VII-5.6 Table 9. These data show rates for the Study Region by Sub-region and by community type for the years 1974, 1978, and 1982, together with 1981 comparison data for all of the Northwest Territories and for Alberta. The data in the table indicate that the liquor offence rate for the Study Region as a whole increased from 277 per 1 000 population in 1974 to 344 in 1978, and thereafter declined to a low of 253 per 1 000 population in 1982. But while the 1982 rate was the lowest of any of these three years, it was still substantially higher than the total Territorial rate in 1981 (253 vs 212), and was more than five times as high as the 1981 Alberta rate (47 per 1 000).

The data show further that in 1978 and 1982 the Service communities had the highest liquor offence rates. In 1974 the Industrial communities were highest and they were second highest in 1978, but in 1982 the Traditional communities were in this position. The Mining communities consistently present the lowest rates. The Sub-regional data show that in every year the Great Slave Lake area had the lowest rate, with the Beaufort-Delta

highest in 1974, while in 1978 and 1982 the Mackenzie River Sub-region had the highest rate. In the Delta Sub-region, the highest rates were in the Industrial community (Inuvik) in all three years, whereas in the Mackenzie River Sub-region the Service communities had the highest rates. In the Great Slave Lake Sub-region the Industrial communities were highest in 1974, the Service communities displaced them in 1978 and the Traditional communities had the highest rate in 1982.

Drug offence data are found in VII-5.6 Table 10 by Sub-region and by community type for the years 1974, 1978, and 1982. Offence rates per 1 000 population for the whole of the Study Region were very stable, standing at 7 per 1 000 population in all three years. These rates were slightly lower than the 1981 rate for all of the Northwest Territories, 8 per 1 000 population, though they were somewhat higher than the 1981 rate for Alberta which was 5 per 1 000 population. Generally, the rates varied directly with the degree of industrialization or acculturation of communities, with the Industrial and Mining communities having the highest and the Traditional communities the lowest rates in 1982 in all Sub-regions. The rates in the Industrial, Mining and Service communities show fluctuation but no tendency to increase between 1974 and 1982, but the rates for the Traditional communities did increase from 1 to 4 per 1 000 during this period. There were only slight differences between the three Sub-regions. The Great Slave Lake Sub-region had the highest rates, 8, 8 and 7 per 1 000 during the three years shown, whereas in the Mackenzie River Sub-region they were 5, 6 and 7 and in the Delta Sub-region they were 5, 3, and 7 per 1 000.

VII-5.6 TABLE 9

LIQUOR OFFENCES AND RATE PER THOUSAND POPULATION
BY SUB-REGION AND COMMUNITY TYPE, 1974, 1978 and 1982

Sub-region/Community Type	1974		1978		1982	
	No.	Rate/1 000	No.	Rate/1 000	No.	Rate/1 000
Delta Sub-region						
1) Industrial	1,764	587	2,666	907	1,155	366
2) Service	96	143	249	396	222	288
3) Traditional	589	308	582	287	557	308
TOTAL	2,449	438	3,497	611	1,934	337
Mackenzie River Sub-region						
1) Industrial	--	--	--	--	--	--
2) Service	778	688	1,850	1,292	1,174	793
3) Traditional	180	105	384	186	369	177
4) Mining[2]	--	--	--	--	16	50
TOTAL	958	336	2,234	639	1,559	402
Great Slave Lake Sub-region						
1) Industrial	2,316	246	2,666	199	2,468	199
2) Service	750	235	1,017	346	635	216
3) Traditional	485	175	827	312	733	259
4) Mining	25	18	67	38	165	89
TOTAL	3,576	213	4,577	221	4,001	200
Total Study Region						
1) Industrial	4,080	329	5,332	327	3,623	233
2) Service	1,624	325	3,116	607	2,031	391
3) Traditional	1,254	196	1,793	266	1,659	247
4) Mining[2]	25	18	67	38	181	80
TOTAL	6,983	277	10,308	344	7,494	253
Northwest Territories (1981)[3]					9,179	212
Alberta (1981)[3]					101,716	47

Source: Government of Canada, Statistics Canada. Uniform Crime Report Data, unpublished tabulations, 1974, 1978 and 1982.

Notes:
1) "Other Provincial Offences", which are 90-95% Liquor Act Offences; Liquor Act offence data alone are not available.

2) The Tungsten RCMP Detachment was established in April, 1982

3) 1982 data not available.

VII-5.6 TABLE 10

DRUG OFFENCES AND RATE PER THOUSAND POPULATION BY SUB-REGION AND COMMUNITY TYPE, 1974, 1978, AND 1982

	TOTAL DRUG OFFENCES					
	1974		1978		1982	
Sub-region/Community Type	No.	Rate Per 1 000	No.	Rate Per 1 000	No.	Rate Per 1 000
Delta Sub-region						
1) Industrial	16	5	7	2	33	10
2) Service	6	9	3	4	8	10
3) Traditional	0	0	8	4	2	1
Total	22	4	18	3	43	7
Mackenzie River Sub-region						
1) Industrial	-	-	-	-	-	-
2) Service	14	12	19	13	13	9
3) Traditional	3	2	2	1	8	4
4) Mining[1]					6	19
Total	17	6	21	6	27	7
Great Slave Lake Sub-region						
1) Industrial	94	10	135	10	98	8
2) Service	17	5	5	2	21	7
3) Traditional	-	-	6	2	15	5
4) Mining	15	11	11	6	13	7
Total	126	8	157	8	147	7
Total Study Region						
1) Industrial	110	9	149	9	112	7
2) Service	37	7	27	5	42	8
3) Traditional	3	1	16	2	25	4
4) Mining[1]	15	11	11	6	19	9
Total	165	7	196	7	198	7
Northwest Territories (1981)[2]					349	8
Alberta (1981)[2]					11,399	5

Source: Government of Canada, Statistics Canada. Uniform Crime Report Data, unpublished tabulations, 1974, 1978 and 1982.

Notes: 1. The Tungsten RCMP Detachment was established in April, 1982.

2. 1982 data not available.

5.6.5 PUBLIC SAFETY

.1 Facilities

The Federal government has a long-standing responsibility for law enforcement in the Northwest Territories. RCMP officers are posted at many northern communities and in most cases maintain excellent rapport with the communities for which they are responsible. The Study Region is served by 15 R.C.M.P. detachments. In many cases, the detachment serves the community in which it is situated as well as small outlying communities in the areas, some of which may be up to several hundred kilometres distant. The detachments range in size from two officers in the case of Sachs Harbour, Fort Franklin, Fort Good Hope, Fort Norman, Fort Liard, Tungsten, and Snowdrift, to the 22 officers in Yellowknife.

Most detachments have basic detention facilities that are used on an overnight basis or to temporarily hold offenders being transferred. Offenders seldom serve sentences in these local facilities; most do so in the Territorial Detention Centre in Yellowknife and Hay River. The larger Service and Industrial communities have facilities for offenders serving brief sentences for non-indictable offences, but those serving longer sentences do so at the Territorial Detention Centre. Offenders judged to be criminally insane are sent to appropriate facilities in Alberta.

Information on Judiciary and related services in Study Region communities is found in VII-5.6 Table 11. Justices of the Peace have the responsibility for adjudicating minor, routine charges as they arise in their own communities. On occasion a Justice of the Peace may be required to travel to another community when the need arises.

In recent years, Native Court Workers have become increasingly significant in providing assistance to Native persons charged with offences. This service is particularly important because most Native people have little knowledge of how the court system operates, or of their legal rights and protections under this system. Native court workers may travel to neighboring communities as required.

There are four Territorial Court Judges in the Territories, three at Yellowknife and one at Hay River. These judges travel to communities all over the Territories, as required, to deal with more serious charges that are beyond the jurisdiction of the resident Justices of the Peace. VII-5.6 Table 11 indicates the number of times the Territorial Courts visited each community during 1982. Communities south of Great Slave Lake are served from Hay River, while the rest of the N.W.T. is served from Yellowknife. There is only one Supreme Court Judge in the Territories, residing in Yellowknife. This court also travels on circuit to communities throughout the Territories,

as required. Native court workers from Yellowknife or Hay River typically accompany the Territorial and the Superior Courts when they are on circuit.

.2 Criminal Offences

It is appropriate to emphasize again that criminal offence data are subject to a wide range of variability and therefore require cautious analysis. Differences in police patrolling practice, enforcement and reporting procedures, and in the size of the detachment may significantly affect recorded offence rates. This is especially true in the north, where detachments are typically small, have responsibility for several communities, where there are relatively frequent transfers, and where frequencies of offences are low.

One of the best indicators of offences available is the 'crimes known to the police' data contained in the RCMP "Uniform Crime Reports". Analysis of the data is somewhat complicated by the fact that some RCMP detachment jurisdictions do not match the Sub-region and community-type breakdown chosen for analysis. In the cases of the Yellowknife, Hay River and Fort Simpson detachments, the jurisdictional area includes two or more Traditional communities, as well as the Industrial or Service community where the detachment is based. Accordingly the groupings of the offence data by community type in VII-5.6 Tables 12 and 13 must be viewed as imprecise.

VII-5.6 TABLE 11

JUDICIARY SERVICES IN STUDY REGION COMMUNITIES, 1982-83

Community	Resident Justice of the Peace	Resident Native Court Worker	No. of Territorial Court Circuits 1982-83[1]
Aklavik	2	-	7
Arctic Red River	-	-	-
Fort Norman	2	-	4
Colville Lake	-	-	1
Fort Franklin	1	-	4
Fort Good Hope	1	1 (vacant)	5
Norman Wells	2	1	5
Fort McPherson	2	-	8
Inuvik	4	2	17
Paulatuk	2	-	-
Fort Liard	2	-	15
Tuktoyaktuk	2	-	10
Fort Resolution	2	-	18
Fort Providence	2	1 (vacant)	16
Fort Smith	3	1	17
Fort Simpson	2	1	16
Hay River	8	1	35
Jean Marie River	-	-	-
Lac la Martre	-	-	-
Rae-Edzo	1	-	11
Rae Lakes	-	-	-
Trout Lake	-	-	1
Snowdrift	1	-	4
Yellowknife	10	2	Daily
Enterprise	-	-	-
Nahanni Butte	-	-	-
Tungston	1	-	1
Kakisa Lake	-	-	-
Detah	-	-	-
Pine Point	3	-	17
Wrigley	-	-	3
Sachs Harbour	1	-	1

Source: Government of the Northwest Territories, Department of Justice and Public Services, Deputy Minister's Office, 1982. Personal Communication.

Notes: 1. These data are for the period August 1, 1982 to July 31, 1983.

VII-5.6 TABLE 12

CRIMES AGAINST PERSON AND AGAINST PROPERTY AND RATE PER THOUSAND POPULATION
BY SUB-REGION AND COMMUNITY TYPE, 1974, 1978, 1982

Sub-region/Community Type	Crimes Against Persons						Crimes Against Property					
	1974		1978		1982		1974		1978		1982	
	No.	Rate/1000	No.	Rate/1000	No.	Rate/1000	No.	Rate/1000	No.	Rate/1000	No.	Rate/1000
Delta Sub-region												
1) Industrial	190	63	178	61	216	68	376	125	503	171	461	146
2) Service	66	98	83	109	80	104	36	53	85	112	85	110
3) Traditional	164	86	110	54	99	55	113	59	211	104	171	95
Total	420	75	371	65	395	69	525	94	799	140	717	125
Mackenzie River Sub-region												
1) Industrial	-	-	-	-	-	-	-	-	-	-	-	-
2) Service	110	97	103	103	151	102	280	248	219	153	196	132
3) Traditional	104	61	57	28	85	41	61	35	72	35	114	55
4) Mining[1]	-	-	-	-	5	16	-	-	-	-	29	91
Total	214	75	204	58	241	62	341	120	291	83	339	87
Great Slave Lake Sub-region												
1) Industrial	368	40	314	23	333	27	1220	130	1395	104	1387	112
2) Service	183	57	186	63	160	54	330	103	272	92	298	101
3) Traditional	107	39	114	43	118	42	115	42	132	50	163	58
4) Mining	20	15	26	15	20	11	65	47	152	86	115	62
Total	678	40	640	31	631	32	1730	103	1951	94	1963	98
Total Study Region												
1) Industrial	558	45	492	30	549	35	1596	129	1998	122	1848	119
2) Service	359	72	416	81	391	75	646	129	576	112	579	112
3) Traditional	375	59	281	42	302	45	289	45	415	62	448	67
4) Mining[1]	20	15	26	15	25	11	65	47	152	86	144	66
Total	1312	52	1215	41	1267	43	2596	103	3041	102	3019	102
Northwest Territories (1981)[2]					1466	34					4180	97
Alberta (1981)[2]					18024	8.4					148415	69

Notes: 1. The Tungsten RCMP Detachment was established in April, 1982.
2. 1982 data not currently available.

Source: Government of Canada, Statistics Canada, Uniform Crime Report Data, unpublished tabulations, 1974, 1978 and 1982.

VII-5.6 Table 12 contains offence rates for 1974, 1978 and 1982 for two major criminal categories, offences against persons and against property, by Sub-region and by community type. In the Study Region as a whole, the rate for crimes against persons shows a general decline, from 52 per 1 000 in 1974, to 41 in 1978, though it increased slightly to 43 in 1982. These rates are all somewhat higher than the total Territorial rate for 1981 of 34 per 1 000 population, and no less than five times the Alberta rate in 1981 of 8.4 per 1 000. The rates for the Region-wide categories of communities show that in 1982 the Service communities had the highest rates, and the Mining communities had the lowest. Moreover, the Service community rates increased between 1974 and 1982, whereas the rates of Industrial, Traditional and Mining communities all declined.

The data for the three Sub-regions shows that the Delta Sub-region had by far the highest rates in 1978 and 1982, followed by the Mackenzie River Sub-region, with the Great Slave Lake Sub-region much lower, amounting to about half the Delta Sub-region rates in each of the three years. The pattern of changes in these rates for all three Sub-regions is the same as for the Study Region as a whole, declining significantly between 1974 and 1978 and increasing slightly by 1982. The 1974 to 1978 decline in the case of the Delta Sub-region area is particularly large among the Traditional communities, from 86 to 54 in 1978, rising to 55 in 1982. The Traditional communities in the Mackenzie River Sub-region show a similar pattern. The Industrial community in the Delta Sub-region, Inuvik, and the Service community, Tuktoyaktuk, both show slight increases in the rate of crimes against persons between 1974 and 1982.

The data in VII-5.6 Table 12 show that in contrast to the pattern for crimes against persons, property offence rates for the whole of the Study Region were unchanging, standing at 103 per 1 000 population in 1974 at 102 in 1978 and 1982. These rates are roughly comparable with the Territories-wide rate of 97 per 1 000 in 1981, but are almost half again higher than the Alberta rate of 69 per 1 000 population. The intra-Study Region comparisons show that between 1974 and 1982 there were substantial increases in the rates of the Traditional and the Mining communities, whereas the rates declined somewhat in the Industrial and Service communities. Generally, the Industrial communities had the highest rates of property offences and the Traditional communities had the lowest rates, despite the tendency for the Traditional community rates to increase.

Property offence rates were highest in the Delta Sub-region and lowest in the Mackenzie River Sub-region in 1978 and 1982. In contrast to the other two, the Delta Sub-region experienced a distinct increase in these offences betwen 1974 and 1978 and

1982, seen in all three categories but especially in the Traditional and Service communities.

Rates of total offences are shown in VII-5.6 Table 13. The pattern for the Study Region as a whole shows an increase from 532 per 1 000 population in 1974 to 588 in 1978, and then a sharp decline, to 470 per 1 000 in 1982. These are all somewhat higher than the rate for all of the Northwest Territories in 1981 which was 430 per 1 000, and about three times as high as the Alberta 1981 rate of 163 per 1 000 population. The intra-Study Region comparisons show that this pattern of first an increase and then a drop holds for the Service and Traditional communities, but the rates for the Industrial communities rose, and those for the Mining communities fell between 1974 and 1982. The Service communities consistently had the highest, and the Mining communities the lowest rates in all three years. In terms of the Sub-regions, the Delta Sub-region had the highest and the Great Slave Lake Sub-region had the lowest rates, again in all three years. Only the Mackenzie River Sub-region experienced an increase in rates between 1974 and 1982. It is noteworthy that the total offence rate for Tuktoyaktuk, the only Delta Sub-region Service community, more than doubled (from 389 to 834) during this period, in sharp contrast to the Great Slave Lake Sub-region Traditional communities, for example, which declined by about one half during this same period.

5.7 CULTURAL AND SOCIAL ENVIRONMENT

An important facet of the current socio-economic situation of the Study Region is the cultural and social environment. The vitality of the culture and the social organization of a society is a key determinant of its ability to adapt to changing circumstances.

5.7.1 THE CULTURAL MILIEU

As was discussed in VII-4.3, the socio-cultural setting of the north has undergone great changes in recent decades. Yet, despite far-reaching changes in physical lifestyle, many elements of the traditional culture remain strong throughout the Study Region. In the following discussion, it is important to keep in mind the cultural diversity of Study Region communities -- from small, isolated native settlements such as Colville Lake and Lac la Martre to large, industrialized, essentially Euro-Canadian centres like Yellowknife and Hay River.

VII-5.6 TABLE 13

TOTAL OFFENCES[1] AND RATE PER THOUSAND POPULATION
BY SUB-REGION AND COMMUNITY TYPE, 1974, 1978, 1982

Sub-region/CommunityType	1974		1978		1982	
	No.	Rate/1000	No.	Rate/1000	No.	Rate/1000
Delta Sub-region						
1) Industrial	2666	887	3906	1329	2316	733
2) Service	240	389	524	834	687	890
3) Traditional	1092	571	1102	544	1039	575
Total	3998	715	5532	967	4042	704
Mackenzie River Sub-region						
1) Industrial	-	-	-	-	-	-
2) Service	1372	1213	2556	1785	1780	1203
3) Traditional	485	282	612	297	692	332
4) Mining[2]	--	--	--	--	86	269
Total	1857	652	3168	906	2558	659
Great Slave Lake Sub-region						
1) Industrial	4869	518	5378	402	5187	419
2) Service	1614	505	1896	664	1284	437
3) Traditional	861	311	1296	489	447	158
4) Mining	197	143	345	196	405	218
Total	7541	450	8915	430	7323	366
Total Study Region						
1) Industrial	7535	607	9284	569	7503	482
2) Service	3226	645	4976	969	3751	723
3) Traditional	2438	381	3010	447	2178	324
4) Mining[2]	197	143	345	196	491	225
Total	13396	532	17615	588	13923	470
Northwest Territories (1981)[3]					18568	430
Alberta (1981)[3]					351614	163

Source: Government of Canada, Statistics Canada. Uniform Crime Report Data, unpublished tabulations, 1974, 1978 and 1982.

Notes:
1. Exclusive of traffic offences.
2. The Tungsten RCMP Detachment was established in April, 1982.
3. 1982 data not currently available

The most traditional orientations are found among the older Native people and among those living in isolated communities or otherwise partially buffered from the acculturative exposure to schools, churches, hospitals and administrators. However, even in communities with many Euro-Canadian residents and despite the impacts of formal education and the mass media, perpetuation of the traditional culture is facilitated by the segregation of the Native and the Euro-Canadian worlds from each other, physically in most cases and where this is not true, at informal and intimate levels. Few residents of northern communities succeed in breaching these barriers in a significant way (Parsons 1970).

One consequence of the survival of traditional perspectives is a certain amount of local ethnocentrism. There is awareness of differences between different categories of Inuit - the Delta Inuit distinguish themselves from Inuit living to the east, and the Dene are sharply conscious of Band differences. Similarly, Dene are distinguished from Inuit, though each group considers the other to be authentic northerners. Such Dene and Inuit differences tend to be overshadowed by the Native/non-Native differences.

To a significant extent the viability of the traditional culture is indicated most clearly by the level and style of resource harvesting activity, for two reasons. First, living, hunting, fishing, and trapping on the land relate to the interests, motivations, activities and disciplines which are central to this culture. They require use of traditional lore and language concepts to make discriminations which are critically important to land living, but which have limited relevance in the modern industrial world. Traditional harvesting activities often involve deliberate self-removal from this Euro-Canadian world, thus reducing the occasions for acculturative contact. They are also associated with interaction reflective of traditional inter-personal obligations and privileges -- co-operation in hunting and sharing of country foods.

The second reason is that living on the land, and harvesting its resources symbolize the traditional lifestyle to many Native people. As Justice Berger was told many times during the course of the Berger Commission Hearings, to be a Dene, or to be an Inuk, is automatically to <u>be</u> a hunter. No matter what modern equipment is used, most Native people engaged in hunting and fishing feel that they are sustaining traditional lifestyles and perpetuating them for their offspring.

.1 The Delta Sub-region

The Delta Sub-region is the most heterogeneous of the three Sub-regions, encompassing as it does, Arctic coastal and inland communities and settlements which are virtually all Inuit or all Dene, as well as communities in which Inuit, Dene and Euro-Canadians are all present in sizable numbers.

Since the beginning of the 20th century, the area has experienced some degree of fusion of a variety of cultures, including Kuchin Indian, Inuit from the Mackenzie Delta, other Inuit from the Amundsen Gulf coast to the east and Alaska to the west, as well as Euro-Canadians of numerous nationalities. The resulting cultural amalgam has been described by some as a Frontier Culture (Honigmann and Honigmann 1970; Smith 1975). The patterns of the Delta culture which have become dominant are generally better understood, they argue, as products of the frontier conditions of life in this area, than as a derivative from traditional patterns.

Despite this long process of cultural amalgamation, there is much evidence of the continued vitality of uniquely traditional Native components of Delta culture. One strong indication is the unexpected vitality and continued growth of Aklavik which, according to the planners, was to have been abandoned because of poor site conditions following the building of Inuvik. But despite the inducements and attractions in Inuvik, and despite the pressure which the government exerted on people to move, many of the long-time residents clearly indicated their preference for the greater traditionalism of Aklavik by staying there.

Most Native residents of the Delta continue to participate in resource harvesting activities, hunting and trapping muskrats in the Delta, netting fish in the lakes and rivers, hunting caribou or sheep in the mountains to the west and hunting beluga whales in the coastal bays. Although many of the 900 Native people in Inuvik are employed full-time, most still spend weekends or holidays fishing and hunting on the Delta of the coast. (Dome Petroleum **et al.** 1983).

The diversity of this Sub-region derives from the fact that there are all-Inuit and all-Dene communities, in addition to Inuvik and Aklavik which have broadly mixed populations. The Inuit communities are located on the Arctic coast and consist of Sachs Harbour, Paulatuk and Tuktoyaktuk. All three are linked by common kinship ties, but there are distinct differences between them. Small and relatively isolated, Paulatuk is probably the most traditional of the three. Here and in Sachs Harbour as well, the scarcity of local wage employment and the proximity of relatively good resource harvesting areas have facilitated the survival of the traditional culture.

Tuktoyaktuk undoubedly reflects the impacts of a long period of contacts with Euro-Canadians — including whalers about the turn of the century, explorers, traders, white trappers and more recently, construction workers, oil field workers and government personnel — who have affected the local culture of this community. The Inuit trait of adaptability in making use of whatever resources might be available has probably enabled

Tuktoyaktuk residents to respond to new opportunities made available by oil exploration, including new forms of wage employment and contracting and small business opportunities as well.

Despite this apparent readiness to seize new opportunities among Tuktoyaktuk residents, the 1977 report on Social and Economic Aspects of Dome Canmar's Beaufort sea Project reported:

> "An increasing number of Tuk residents are establishing trap lines over the winter. Many trappers are engaged in wage employment during the summer in order to obtain the 'grub stake' for equipment. As well, a great many Tuk residents participate in goose hunting, fishing, whaling and caribou hunting during the appropriate seasons of the year." (Collins 1978)

Similarly, the Territorial Government Socio-Economic Review of the Beaufort Sea Drilling Program, 1978 reports that:

> "of the 31 (Dome-Canmar employees interviewed) 39 percent said they spent their between-drilling-season time fully or partly trapping. Of the 12, five said they used earnings to purchase hunting and trapping equipment". (Rollefson **et. al.** 1979).

Smaller proportions of the work forces from the two Dene Communities, Fort McPherson and Arctic Red River, have been involved in oil exploration employment than has been the case for Tuktoyaktuk and Aklavik (Dome Petroleum **et. al.** 1983). Local wage employment is relatively scarce in both; opportunities consist primarily of community servicing jobs, although Fort McPherson also has a canvas sewing shop and several small businesses serving Dempster Highway traffic. Although studies conducted as long as 20 years ago reported considerable eagerness for wage employment in Fort McPherson (Cohen 1962), there is no evidence of significant permanent increases in employment levels beyond those associated with population growth. The resource harvesting data available indicate continuing high levels of harvesting activity (Dome Petroleum **et. al.** 1982). These indicators all point to high levels of cultural retention in the Dene Delta communities.

.2 The Mackenzie River and Great Slave Lake Sub-Regions

The greatest diversity in sizes of settlements occurs in the Mackenzie River and Great Slave Lake Sub-regions, where communities range from tiny, isolated Colville Lake with a population of only 73 persons, to Yellowknife, a modern industrial city of 10 000. However, despite the acculturative influences resulting from extensive contacts with Euro-Canadians, cultural retention remains strong among the Dene of this Sub-region. Their continuing commitment to a relatively traditional life style is seen in the continued vitality of the many small Dene communities in the Mackenzie District which

accommodate this life style: Colville Lake, Lac la Martre, Rae Lakes, Snare Lake, Snowdrift, Jean Marie River, Wrigley and Kakisa.

The determination among the Dene to preserve of their traditional culture and lifestyle was fully demonstrated at the Berger Inquiry (Berger 1977). This Inquiry received extensive testimony in support of the importance of the traditional land-based, resource harvesting lifestyle and country food to the Dene culture. Concern about the vitality of their culture is clearly widespread among Dene and they continue to feel close personal ties to the land, country food and the traditional lifestyle.

Despite the massive changes in religion, mobility and settlement patterns, in technology and in education and training of children, and in spite of the problems that alcohol has frequently brought, indications of cultural retention are seen in many areas of Native life. Travelling, and living on the land, and harvesting wild food and fur resources remain activities with great economic and symbolic significance to the Dene, as well as the Inuit. The isolation and the insulation from Euro-Canadian influences which these activities provide, and their conceptual requirements facilitate and even necessitate continued fluency in the Native languages. Wild food harvests, in turn, help to perpetuate traditional sharing patterns and the inter-personal relationships which sharing helps sustain. All of these contribute strongly to identification with traditionally-based senses of personal and group identities, and so to sustaining other traditional patterns, such as respect for the elderly and concensual approaches to decision-making.

The retention of traditional culture appears to be more extensive among the Dene than among the Inuit, despite the longer period of exposure to Euro-Canadian influences among the former (Smith 1975), and is stronger among residents of small and isolated communities than among those living in the larger towns. However, there are important indications of cultural retention even in the larger centres where the acculturative attractions and pressures of the Euro-Canadian culture are most powerful.

5.7.2 SOCIAL ORGANIZATION

This sub-section discusses the group structure, social stratification, leadership and interaction patterns within communities. There is evidence that the social structures of Native communities in the Study Region are changing more rapidly than the cultural patterns, since the social organization of a group must relate to the immediate changing realities that the group confronts. A discussion of the social organization of Inuit communities is followed by that of Dene communities, and of the larger Service and Industrial centres.

.1 Inuit Social Organization

The Inuit communities of the Study Region are diverse, ranging from a small traditional settlement like Paulatuk to the urban environment of Inuvik, but they all are subject to similar trends in social organization. Although groups living on the land at summer fishing or whaling camps continue to follow traditional leadership patterns with a minimum of social differentiation, they have been exposed to the social stratification which evolved through centralization and increased dealings with Euro-Canadian administrators. Moreover all are feeling the effects of several trends which emerged in the 1970s.

The changes are most evident with respect to leadership influence and prestige, and specifically regarding the increased social leadership exerted by young people and women. The increased significance of young people derives from the increasing importance, in recent years, of the ability of negotiate successfully with Euro-Canadian authorities, such as Federal and Territorial government officials and oil and mining company personnel. This ability is based primarily on educational attainments and sophistication derived from experience in a variety of encounters with Euro-Canadians. The outstanding representatives of this category typically have well-paying wage employment and reputations as successful and generous hunters as well. These characteristics are mutually complementary, the earnings from employment enabling them to obtain and operate the expensive equipment that efficient resource harvesting now requires. Thus, the social stratification and prestige now found in most Inuit communities are a result of both old and new influences. There continue to be the prestigious and influential families of successful hunters; there are representatives of the newer class of sophisticated negotiators; and frequently, though there are many exceptions, the latter individuals are members of the influential families (Williamson 1977).

Thus far it is rare for women to occupy leadership positions, but they are increasingly active in such roles. This is a result, in part, of the former practice of taking boys out of school to help their fathers in resource harvesting activities, so that in many communities, young women are often better educated than young men. Because of this, and because they are less heavily involved in resource harvesting, it is not unusual for women to have more responsible and more dependable wage employment than men. These characteristics give them the knowledge, the insight, and increasingly, the self-confidence to speak up in community meetings (Williamson 1977).

An important development in respect to group organizations is the recent emergence of many new community groups and associations — such as Hunters and Trappers

Associations, Housing Associations, Settlement Councils and Co-operatives. All of these are without explicit traditional precedent, although some, like the Hunters and Trappers Associations, relate to very strong traditional interests. Most of these are essentially local groups, typically organized at the behest of the government. However, among the strongest of these organizations are those developed by the Inuit to protect and further their own interests, such as the Committee for the Original People's Entitlement. All these organizations are contributing to a new vitality in the present-day Inuit culture.

.2 Dene Social Organization

Like the Inuit communities, the Dene communities of the Study Region reflect considerable diversity, from small, isolated settlements like Colville Lake and Lac la Martre, to the large Dene communities in Rae/Edzo and Yellowknife. Life in the more isolated settlements is sufficiently traditional that there is little social stratification and few formal associations. Leadership in these communities frequently continues to be based on skills relating to travelling and living on the land and an individual's capabilities as a hunter. In contrast, many Dene in Hay River or Yellowknife are involved in community associations, exercise leadership and receive prestige rewards in the same way as their Euro-Canadian neighbours.

The most important recent development in terms of stratification and prestige is the emergence of young, influential and respected leadership in contrast with the traditional pattern whereby influence and prestige accrued to older men who demonstrated hunting prowess. As with the Inuit, the major influence in this changeover is the great importance of skill in negotiating effectively with government officials and corporation representatives.

The traditional status disadvantages of women are also disappearing, largely for the same reasons as were described in connection with Inuit women. These have particular relevance in the larger and more sophisticated communities where there are more opportunities for educated women, whereas in the small isolated communities traditional expectations of the woman's role and status still remain.

In recent years, some Dene communities have experienced competition between older and newer forms of local organization. More traditional forms of Band organization have been formalized, though in modified form and under Department of Indian Affairs auspices, as Band Councils headed by an elected Band Chief. At the same time, the Department of Local Government of the Government of the Northwest Territories has undertaken to implement legislative provisions for local government involving establishment of local Settlement or Hamlet Councils which may include Metis or

non-Native as well as Status Indian members. The result was competition between Band and Settlement Councils, but in many communities this conflict now appears to have been satisfactorily resolved.

The local organizations and voluntary associations now found in Dene communities are similar to those found in Inuit settlements of comparable size. In addition to the Hamlet, Town or Settlement Council, most Dene communities have a Band Council, a Housing Association and a Hunters and Trappers Association. There may be local chapters of the Dene Nation and of the Metis Association of the Northwest Territories, and perhaps a handicraft-producing/marketing cooperative. In recent years in many communities, local advisory groups also have been organized to provide citizen input regarding education, social assistance, juvenile problems and corrections programs at the community level.

.3 Social Organization of the Industrial and Service Communities

A discussion of the social organization of Industrial and Service communities must distinguish between the Industrial communities—Yellowknife, Hay River, Inuvik—and the Service communities—Fort Simpson, Fort Providence, Tuktoyaktuk, Norman Wells and Fort Smith. The organization of the Industrial communities is generally similar to provincial towns or cities which are comparable in size and/or function. There are similar local government organizations (City or Town Councils), similar service, recreational, business and professional, religious and fraternal organizations, as well as church, hospital and educational auxiliaries. The major point of difference is that, in addition to these, there are some distinctively Native organizations, such as the Dene Band Council at Hay River, the Dene Nation and Metis Association organizations and offices in Yellowknife and the Committee for the Original People's Entitlement in Inuvik.

At the level of informal association, the Native and non-Native components of these communities often are segregated. Although Native and non-Native people may work together in the same offices or for the same companies, their after-work associations are typically with fellow Natives or non-Natives. For example, the history of Inuvik shows that there was more Native and non-Native interaction during the first few years of its history than later. As the proportion of non-Natives in the community increased, Native people tended to withdraw from some groups in which they had been members (Parsons 1970).

The social organization of the small Service communities includes aspects derived both from Native communities and Industrial towns. Where the non-Native population is comprised of some permanent residents who have lived there for many years, as is the case in Fort Simpson and Fort Providence, the stratification and prestige patterns reflect

both Native and non-Native influences. The pattern is not simple, however, because to some extent there are segregated Native and non-Native communities within the larger communities, each with its own distinctive pattern.

The same is generally true of influence and leadership; there is ethnically-appropriate leadership within the Native and the non-Native communities. There is also community-wide leadership drawn from both ethnic groups but which may be disproportionately reflective of non-Native influences. The Euro-Canadian leadership is comprised of small businessmen and government officials. The Native leadership resembles the leadership in Native communities in being young, educated and sophisticated, but in addition has concerns and sensitivities reflective of the ethnic composition of the community. In several communities, Metis leaders function as synthesizing agents between the Dene and the non-Native communities. In Tuktoyaktuk, several successful Inuit businessmen play a similar role between the transient non-Native and the Inuit communities.

The group organizations found in the small Service communities are also more typical of the Traditional communities than of the larger Service and Industrial communities. There is the same range of predominantly Native organizations — Hamlet Council, Housing Association, Hunters and Trappers Association, and educational, social assistance and correctional advisory groups. In addition, there are a few more distinctively Euro-Canadian organizations in Fort Simpson, the largest of these communities, including a service club, a Chamber of Commerce and sports clubs relating to curling, snowmobiling and shooting.

Thus, the patterns of social organization found in the Service communities in the Study Region range from those very similar to comparably-sized prairie communities, to others resembling the social organization of Traditional Native communities.

5.7.3 THE STRESSES OF A CHANGING SOCIETY

It is proverbial that these are times of rapid social change in the north. Perhaps never before in the history of Canada have people experienced such rapid social change as the Native people in the Study Region have known for the past several decades. During this period almost all have had to adopt a settlement-based lifestyle, with all the adjustments and changes that this required. Provision of essentially provincial-level public education to all children has inevitably made it much more difficult for parents and children to understand each other and has increased the confusion and ambivalence of people toward the lifestyle available to them (Savishinsky 1974). Moreover, northern Native people are

now increasingly exposed to disorganizing patterns from the south including some of the violence and drug-promoting content of the mass media, and increased availability of alcohol and drugs of various kinds. For some, plentiful and well-paying employment on hydrocarbon exploration projects has come and gone, and most recently returned again. In addition, the major challenges to the existing Treaty provisions, land usage and political arrangements which surfaced first during the early years of the oil exploration activities and reached maturity during the course of the Berger Inquiry, have raised expectations and dreams which have yet to be met. Both the James Bay and the Alaskan Native land claims settlements serve as highly visible prototypes, raising both hopes and fears over what the eventual provisions of Dene and Inuit claims settlements may be. The consequences inevitably contribute to uncertainty and stress in individuals, families, communities and even in Inuit and Dene Native organizations.

Some Euro-Canadians experience cultural and environmental shock when they move north, but the lifestyle which they can typically establish for themselves in their new homes is similar to that which they knew in the south (Parsons 1970). The discontinuities which Native people have experienced have been far more severe and in contrast to the Euro-Canadians, these changes have usually been induced by forces over which they had no control. These include pressures to move into permanent settlements, cyclical employment and earning opportunities, inter-personal stresses arising when people are "locked" into communities where they cannot withdraw from conflict situations as they did traditionally (Savishinsky 1974) and the alienation between generations.

These individual stresses are further complicated by intra-family stresses. One important source is the changes in the roles of men and women. Men are sometimes not able to live up to traditional expectations of their obligations as hunter-provider for their families, thus falling short of their own and their wives' expectations. Similarly, when wives are able to obtain well-paid employment outside the home and take increasingly vocal parts in community affairs, the traditionally-defined status of the male family head can be undercut (Williamson 1977). To this must be added the great problems that parents and offspring experience in understanding each other, arising out of differences in their background socialization and the contrasting worlds in which they have grown up.

Inter-relationships and conflicts between stressed individuals and families can induce distortions within communities. This is particularly true when there are not well-established patterns and techniques for dealing with the conflicts which arise in any community. The presence of transient but powerful Euro-Canadians, who may have limited insight into the thoughts and feelings of Native people, is of little help.

Although the stresses of a changing society often produce undesirable social dislocations and stresses, not all change is undesirable and permanently negative. All societies are constantly adapting to change; in fact, the ability to adapt to changing circumstances is a feature of any healthy society and culture. Recent decades have brought many difficult challenges to the cultures of northern residents, but there is evidence that many individuals and communities have learned to adapt to and fully participate in the realities of today's north. At the community level, local associations are now commonly organized to devise culturally and locally relevant solutions to educational, social assistance and correctional problems. Many communities have taken strong initiatives to control alcohol abuse in ways they feel are most appropriate. Regional associations are making great strides in identifying and nurturing the common culture of Native peoples and are providing strong leadership in shaping the future of the north. Native people are taking increasing responsibility in the affairs of the Government of the Northwest Territories. The Inuit, the Dene and the Metis Development Corporations are demonstrating that Native people can beneficially participate in northern development. All the above clearly demonstrate that the north is continuing to change and that, increasingly, northern residents are willing and able to influence and participate in the future as full partners.

5.8 SELECTED BIBLIOGRAPHY

Admiral, D. 1980. Personal Communication, July. Freshwater Fish Marketing Corporation, Winnipeg.

Berger, Thomas R. 1977. Northern Frontier, Northern Homeland: The Report of the Mackenzie Valley Pipeline Inquiry, Vol. 1. Supply and Services Canada, Ottawa.

Canadian Imperial Bank of Commerce, Oil and Gas Division. 1980. Canadian Petroleum Highlights (map). Calgary

Clairmont, D.H.J. 1962. Notes on the Drinking Behaviour of Eskimos and Indians in the Aklavik Area. Canada, Department of Indian Affairs and National Resources, Northern Science Research Group. Ottawa.

Cohen, Ronald. 1962. An Anthropological Survey of Communities in the Mackenzie-Slave Lake Region of Canada. Ottawa, Department of Northern Affairs and National Resources.

Collins, Mary. 1978. Social and Economic Aspects of Dome/Canmar's Beaufort Sea Project, 1977. Report for Canadian Marine Drilling Ltd., Calgary.

Daniels, T. 1983. Personal communication, July. Manager, Northwest Territories Chamber of Mines. Yellowknife.

Dent, T.W. 1980. Personal Communication, October.

Devine, M. (ed). 1982. NWT Data Book, 1982-83. Outcrop Ltd. Yellowknife.

Dome Petroleum Ltd., Esso Resources Canada Ltd., and Gulf Canada Resources Inc., 1982. Hydrocarbon Development in the Beaufort Sea-Mackenzie Delta Region, Environmental Impact Statement, Vol. 5, Socio-Economic Effects.

Dome Petroleum Ltd., Esso Resources Canada Ltd., and Gulf Canada Resources Inc., 1983. Beaufort Sea-Mackenzie Delta, Environmental Impact Statement; Response to Deficiencies; Socio-Economic Issues.

Drobot, A. 1984. Personal Communication, March. Freshwater Fish Marketing Corporation. Winnipeg.

Fournier, Ronald. 1979. "Economic Circumstances in the Northwest Territories". Draft unpublished paper. Canada, Department of Regional Economic Expansion, Western Region, Regional Analysis Branch, Saskatoon.

Government of Canada, Department of the Environment and Department of Indian Affairs and Northern Development. 1972, 1975, 1976, 1977, 1978, 1979. Land Use Information Map Series. Ottawa.

Government of Canada, Department of Indian Affairs and Northern Development, Northern Affairs Program. 1980. Mines and Minerals Activities 1979. Ottawa.

Government of Canada, Department of Indian Affairs and Northern Development, Northern Affairs Program. 1981. Oil and Gas Activities 1980. Ottawa.

Government of Canada, Department of National Health and Welfare, Northern Health Service. 1968-1972. Report on Health Conditions in the Northwest Territories. Edmonton.

Government of Canada, Department of National Health and Welfare, Northern Health Service. 1968-1972. Report on Health Conditions in the Northwest Territories. Edmonton.

Government of Canada, Revenue Canada, Department of Taxation. Various years. Analyzing the Returns of Individuals for the 1978 Taxation Year and Miscellaneous Statistics. Ottawa.

Government of Canada, Statistics Canada, Census 1971. Volume 1 (Part 1) - Population: Geographic Distributions. Ottawa.

Government of Canada, Statistics Canada. 1974, 1976, 1982. Uniform Crime Report data, unpublished statistics. Ottawa.

Government of Canada, Statistics Canada, Census 1976, Volume 1, Population: Geographic Distributions, Municipalities, Census Metropolitan Areas and Census Agglomerations, Catalogue 92-806 and Volume 8, Supplementary Bulletins: Geographic and Demographic Populations of Unincorporated Places, Canada. Catalogue 92-830. Ottawa.

Government of Canada, Statistics Canada, 1979. Estimates of Population by Sex and Age for Canada and the Provinces, Catalogue 91-202, June 1, 1979. Ottawa.

Government of Canada, Statistics Canada, Ottawa.
- Federal Government Employment, Catalogue 72-004, Various Issues.
- Provincial Government Employment, Catalogue 72-007, Various Issues.
- Local Government Employment, Catalogue 72-009, Various Issues.
- General Review of the Mineral Industries, Catalogue 26-201.
- Census 1981, Labour Force Activity, Catalogue 92-915 (Table 1) and Labour Force - Industry by Demographic and Educational Characteristics, Catalogue 92-921 (Table 1).
- Census 1976, Labour Force Activity by Sex, Catalogue 94-801.
- Census 1971, Labour Force Activity by Sex, Catalogue 94-703, Volume III, Part 1 and Industry Divisions by Sex, Catalogue 94-741, Volume III, Part 4.

Government of Canada, Statistics Canada. 1983. Building Permits. Catalogue 64-001, Ottawa.

Government of Canada, Statistics Canada. 1983. Population, Occupation, Private Dwelling, Private Households, Census Families in Private Households, Selected Characteristics. Ottawa.

Government of the Northwest Territories, Bureau of Statistics. Various dates. Statistics Quarterly, Various issues. Yellowknife.

Government of the Northwest Territories, Bureau of Statistics. 1976 to 1980. Summary of Personal Income Statistics, Northwest Territories. Various issues. Yellowknife.

Government of the Northwest Territories, Bureau of Statistics. November 1982. Interim Population projections, Population by Age, by Ethnicity and by Sex. Yellowknife.

Government of the Northwest Territories, Bureau of Statistics. 1983. Population, by Community, by Ethnic Origin, Age and Sex. Yellowknife.

Government of the Northwest Territories, Chief Medical and Health Officer. 1973 to 1982. Report on Health Conditions in the Northwest Territories, Yellowknife.

Government of the Northwest Territories, Department of Economic Development and Tourism, Planning and Resource Development Division. 1980. Northwest Territories Statistical Profile, Yellowknife.

Government of the Northwest Territories, Department of Economic Development and Tourism, Travel Arctic. No date. Official Explorers' Map. Yellowknife.

Government of the Northwest Territories, Department of Education, Statistical Services. June, 1983. Unpublished data. Yellowknife.

Government of the Northwest Territories. Department of Health. 1983A. Personal communication. Yellowknife.

Government of the Northwest Territories, Department of Health, 1983B. Unpublished Statistics. Yellowknife.

Government of the Northwest Territories, Department of Justice and Public Service, Deputy Minister's Office, 1982. Personal Communication.

Government of the Northwest Territories, Liquor Control Board. 1968-1971. Annual Reports of the Northwest Territories Liquor Control Board. Various issues. Yellowknife.

Government of the Northwest Territories, Liquor Control System and Licensing Borad. 1972-1982. Annual Reports of the Northwest Territories Liquor Control System and Licensing Board. Various issues. Yellowknife.

Government of the Northwest Territories, Department of Local Government. 1982. Community Water and Sanitation Services. Yellowknife.

Government of the Northwest Territories, Department of Planning and Program Evaluation, Statistics Section. 1979a. Population Estimates, Statistical Cross Tabulations, Northwest Territories, December 31, 1978. Yellowknife.

Government of the Northwest Territories, Department of Planning and Program Evaluation, Statistics Section. 1979b. Population Estimates, Methodological Report, Northwest Territories, December 31, 1978. Yellowknife.

Government of the Northwest Territories, Department of Planning and Program Evaluation, Statistics Section. 1979c. Summary Note, Migration Statistics, Northwest Territories, 1975-1978. Yellowknife.

Government of the Northwest Territories, Department of Planning and Program Evaluation, Statistics Section. 1979d. Population Projections, Community Tabulations, Northwest Territories, 1978 to 1988. Yellowknife.

Government of the Northwest Territories, Department of Planning and Program Evaluation, Division of Policy and Evaluation. No date. Summary of Personal Income Statistics, Northwest Territories, Taxation Year 1976. Yellowknife.

Government of the Northwest Territories, Department of Renewable Resources, Wildlife Service. 1983. Personal communication.

Government of the Northwest Territories, Department of Social Services, Financial Assistance Programs. 1980. Personal communication.

Government of the Northwest Territories, Department of Social Development, Program Evaluation and Information Systems. 1983. Unpublished data. Yellowknife.

Hobart, Charles W. 1963. Unpublished. Interviews with Teachers in Selected NWT Communities.

Hobart, Charles W. 1970. "Eskimo Education in the Canadian Arctic", Canadian Review of Sociology and Anthropology, Vol. 7, No. 1, pp. 49-69.

Hobart, Charles W. 1974. "Employee Adjustment and Effectiveness, Arctic Oil Exploration of Gulf Oil Canada, 1973-74", Sociological Analysis, Vol. 1. Westrede Institute, Edmonton.

Hobart, Charles. W. 1976. Rotation Work Schedules in the Northwest Territories. Government of the Northwest Territories, Department of Economic Development and Tourism, Planning and Development Division, Yellowknife.

Hobart, Charles W. 1978. "Economic Development, Liquor Consumption and Offender Rates in the Northwest Territories", Canadian Journal of Criminology, Vol 20, No. 3, pp. 259-278.

Hobart, Charles W. 1978a. Rotation Employment of Coppermine Inuit Men: Effects and Community Perspectives. A Report for Esso Resources. Esso Resources Canada, Calgary.

Hobart, Charles W. 1978b. Work Aspirations and Physical Mobility Interests of Young Inuit in Gjoa Haven, Northwest Territories. Report prepared for the Polar Gas Project, Toronto.

Hobart, Charles W. 1979. When Employment Ends: A Study of the Termination of the Gulf Program in Coppermine. Report for Gulf Oil Canada Limited, Edmonton.

Hobart, Charles W. 1980. Socio-Economic Impacts of the Nanisivik Mine on North Baffin Region Communities. A Study Conducted by the Baffin Region Inuit Association for Nanisivik Mines Ltd., the Government of the Northwest Territories and the Government of Canada.

Hobart, Charles W. and C. Brant. 1966. "Eskimo Education, Danish and Canadian: A Comparison." Canadian Review of Sociology and Anthropology. Vol. 3, pp. 47-66.

Hobart, Charles W. and G. Kupfer. 1973. Inuit Employment by Gulf Canada: Assessment and Impact on Coppermine, 1972-73. Westrede Institute, Edmonton.

Hobart, Walsh and Associate Consultants Ltd. 1979. Regional Socio-Economic Impact Assessment, in Support of an Oil Sands Mining Project. Vol. 2, Alsands Project Group, Calgary.

Honigman, John J. and I. Honigman. 1970. Arctic Townsmen. Canadian Research Centre for Anthropology, St. Paul University, Ottawa.

Inuvik Drum. 1984. The Oil Drum, Winter/Spring.

Kemp, W.B., G. Wenzel, N. Jensen and E. Val. 1977. The Communities of Resolute and Kuvinaluk: A Social and Economic Baseline Study. A study for the Resolute Community Council, the Kuvinaluk Community and the Polar Gas Project. Published by the Polar Gas Project, Toronto.

Koving, Paul. 1977. Canada North Almanac, Research Institute of Northern Canada, Yellowknife.

Kruse, John A., 1980. "Impact of Energy Development on the North Slope Eskimo." Presented at the Pacific Sociological Association Meetings, San Francisco, 1980.

Kruse, John A., 1982. Subsistence and the North Slope Inupiat: The Effects of Energy Development, Institute of Social and Economic Research, University of Alaska, Anchorage.

Kruse, John A., J. Kleinfeld and R. Travis. 1981. Energy Development and the North Slope Inupiat: Quantitative Analysis of Social and Economic Change, Institute of Social and Economic Research, University of Alaska, Anchorage.

McKinnon, R. 1984. Personal communication, March. Government of the Northwest Territories, Department of Local Government. Yellowknife.

Northern Miner Press Limited, Toronto, The Northern Miner, March 6, 1980.

Northwest Territories Chamber of Mines, Annual Report, Yellowknife, 1979.

Northern Transportation Company Ltd. 1983. 1982 Annual Report. Edmonton.

O'Malley, Martin. 1976. The Past and Future Land, An Account of the Berger Inquiry into the Mackenzie Valley Pipeline. Peter Martin Associates Limited, Toronto.

Outcrop Ltd. 1981. Dome/Canmar Beaufort Sea Operations, An Economic Analysis, 1976-1980. Yellowknife.

Parsons, G.F. 1970. Arctic Suburb: A Look at the North's Newcomers. Canada, Department of Indian Affairs and Northern Development, Northern Science Research Group, Ottawa.

Pavich, Mary. 1978. "The Estimation of the Imputed Value of Traditional Activities, Northwest Territories, Yukon, 1967-74". Unpublished discussion paper. Department of Indian Affairs and Northern Development, Northern Economic Planning Branch, Data Management Division, Ottawa.

Pavich, Mary. Undated. "Gross Domestic Product at Factor Cost by Industry".

Petroleum Industry Committee on the Employment of Northern Residents. 1978. "Northern Resident Employment by the Oil Industry Working in the Yukon and Northwest Territories, 1977-78". Calgary.

Price, Waterhouse and Associates. 1982. The Northwest Territories Mining Industry in 1980. Yellowknife.

Roberts, Lance W. 1977. Wage Employment in Two Eastern Arctic Communities. Ph.D. Thesis submitted to the Faculty of Graduate Studies and Research, Department of Sociology, the University of Alberta, Edmonton.

Rollefson, C., C. Szpuniarski, J. Powell, and T. Foster. 1979. Socio-Economic Review of the Beaufort Sea Drilling Program. 1978. Government of the Northwest Territories, Department of Planning and Program Evaluation. Yellowknife.

Rushforth, S. 1977. "Country Food" in M. Watkins. 1977. Dene Nation - The Colony Within. University of Toronto Press, Toronto.

Savishinsky, Joel. 1974. The Trail of the Hare, Life and Stress in An Arctic Community. Gordon and Breach Science Publishers, New York.

Smith, Derek G. 1975. Natives and Outsiders: Pluralism in the Mackenzie River Delta, Northwest Territories. Canada, Department of Indian Affairs and Northern Development, Northern Research Division, Ottawa.

Spady, D., F. Covill, C. Hobart, O. Schaefer and R. Tasker. 1979. The Northwest Territories Perinatal and Infant Mortality and Morbidity Study. Report to the Government of Canada. The University of Alberta, Edmonton.

Sullivan, P. 1984. Personal Communication, March. Government of Canada, Department of Indian Affairs and Northern Development. Ottawa.

Thomas, R. 1983. Personal communication. CBC Northern Service, Planning and Information. Ottawa.

Van Stone, James W. 1965. The Changing Culture of the Snowdrift Chipewyan. The National Museum of Canada, Ottawa, Bulletin No. 209, Anthropological Series No. 74.

Watkins, M. (ed). 1977. Dene Nation - The Colony Within. University of Toronto Press, Toronto.

Williamson, Robert G. 1977. The Boothia Peninsula People: Social Organization in Spence Bay, N.W.T. An Independent Study for the Settlement of Spence Bay and the Polar Gas Project. Published by Polar Gas Project, Toronto.

Wolforth, John. 1971. The Evolution and Economy of the Delta Community. Northern Science Research Group, Department of Indian Affairs and Northern Development, Ottawa.

Wong, Gordon. 1975. Notes on Alcohol Consumption and Expenditure in the N.W.T. 1973-74 and 1974-75. Unpublished Report for the Liquor Control Commission of the Northwest Territories, Yellowknife.

Woodward, H.W. 1980. Personal communication, July. Director. Northern Non-Renewable Resources Branch, Department of Indian Affairs and Northern Development. Ottawa.

Worobec, A. (ed). 1982. Canadian Mines Handbook, 1982-83. Toronto.