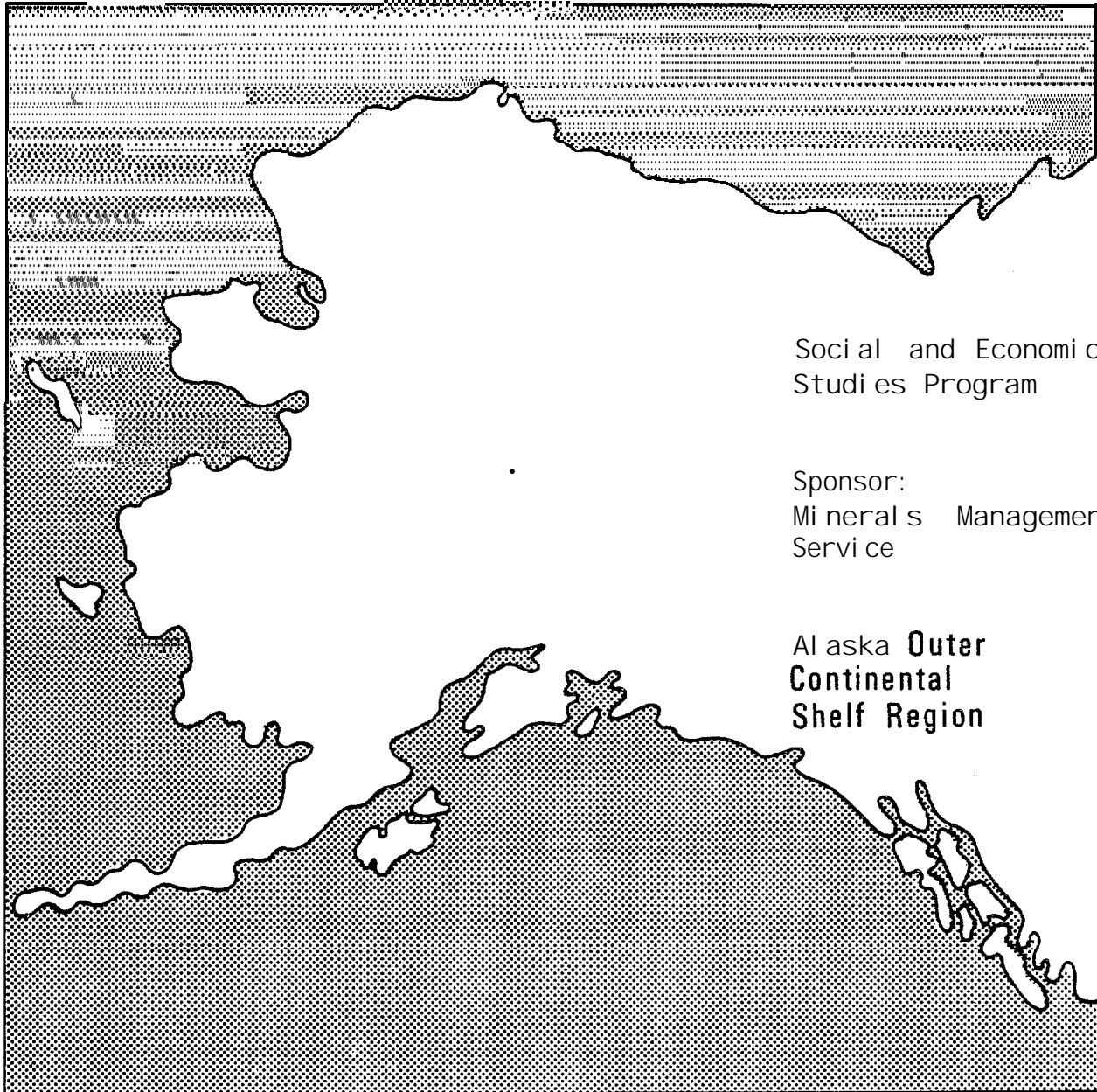


Technical Report
Number 101



Social and Economic
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Minerals Management
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Alaska Outer
Continental
Shelf Region

**Barrow Arch Socioeconomic and Sociocultural
Description**

TECHNICAL REPORT NO. 101

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The Social and Economic Studies Program
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Alaska OCS Region

BARROW ARCH SOCIOECONOMIC AND **SOCIOCULTURAL** DESCRIPTION

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January 1984

NOTICE

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ABSTRACT

The primary objective of this report was to develop an understanding of current conditions and to analyze changes and trends in the socioeconomic and **sociocultural** structure and organization of the **Chukchi** Sea communities of the North Slope Borough. This effort is seen to be essential for the later development of forecasts and analyses of potential localized impacts and changes resulting from OCS oil and gas activities in the Barrow Arch Lease sale area.

- Alaska Consultants, Inc. recently produced a series of reports for the North Slope Borough which provide extensive background information on each village within the Borough. Information from these reports was summarized for use **in** this report and attention for the 1983 fieldwork specifically for **this** study therefore focused **heavily** on the subsistence economy and subsistence land use patterns.

This report both confirms the findings of previous authors and contains new insights into some issues. The major conclusions can be summarized as follows:

- o That two distinct population groups inhabit the North Slope Borough -- the group living in the region's traditional communities and the group **living** in industrial enclaves. There is very **little** contact between the two groups.
- o The North Slope Borough directly accounts for over half of all full-time jobs equivalents in **all** traditional villages of the region. When Borough-derived construction jobs are included, up to

95 percent of all employment in some villages is for the North Slope Borough.

- o While the North Slope Borough has a very large amount of taxable property within its boundaries, the extent to which it can tax for operating expenditures is limited by State law to a **population-** based formula. Furthermore, the Borough's ability to assume further bonded indebtedness is presently being scrutinized by the State. OCS development in the **Chukchi** Sea area is not **expected** to change either of these factors.
- o Increased availability of cash, primarily as a result of North **Slope** Borough employment opportunities, has accelerated changes in the techniques and timing of the harvests of many marine mammals. Because of the demands of employment, time has become a more important factor in subsistence activities. Thus, there is a much greater dependence on three-wheelers, **snowmachines** and wooden or aluminum boats with outboard motors to reduce travel time. Such equipment also permits a greater amount of hunting after work, on weekends and on leave periods. In addition, it permits hunters to range over a wide area.
- o Despite changes in both the wage and subsistence economies, subsistence harvesting, kinship and extended family relationships, and sharing continue to be values which are central to **Inupiat** culture.

TABLE OF CONTENTS

	Page
<u>INTRODUCTION</u> 0 0 * *	1
<u>NORTH SLOPE BOROUGH - AN OVERVIEW</u> 0	3
Population * *	3
Past Trends	3
Borough Population Counts *	9
Population Composition	14
Social Interaction	20
Migration	22
Recent Trends and Changes 0	25
Economy	28
Composition of Employment	28
Sector Analysis	36
Government 0 *	36
Oil and Gas Exploration and Development	39
Tourism *	50
" Alaska Native Claims Settlement Act Corporations *	52
Minerals	57
North Slope Borough Finances	58
Operating Budget *	59
Capital Projects Funds *	59
Enterprise Fund	60
Borough Revenues	60
Operating Revenues	61
Property Taxes	61
Other Operating Revenues 0 *	62
Capital Improvement Revenues	63
Trends in Borough Revenues 0 0 * ** *	64
Trends in Borough Expenditures 0	66
Future Borough Property Tax Revenues	71
Property Tax Rates *	71
Property Tax Base	71
Impact of Federal Offshore Oil and Gas Development	74
Borough Tax Revenues *	74
Borough Bond Revenues *	75
Subsistence Economy	79
Snowmachine	81
Three-Wheelers	84
Boats and Outboard Motors 0	85
Costs Associated with Subsistence Activities 0	87
Subsistence Leave	91
Changes in Target Species 0	93
Conclusion	96
Political Organization 0	97
Formal Political Organization *	97
North Slope Borough * *	97
Governing Bodies and Offices 0 0	98

	Page
Areawide Powers	98
Non-Areawide Powers and Duties in the Area	
Outside Cities	100
Arctic Slope Regional Corporation	102
Inupiat Community of the Arctic Slope	106
Inuit Circumpolar Conference'	108
Informal Political Organization	111
Alaska Eskimo Whaling Commission	111
Land Use	114
Land Status	114
Federal Lands	114
Regional and Village Corporation Lands	117
State Lands	119
North Slope Borough Lands	120
Native Allotments	121
Subsistence Land Use Patterns	122
Community Facilities and Utilities	125
Borough Programs	125
Cultural Impacts	126
Transportation	130
Inter-Community Links	130
Social Organization	131
Traditional Social Organization	131
Recent Social Organization	132
Values	137
Traditional Inupiat Values	137
Recent Inupiat Values	138
<u>POINT HOPE</u>	143
Introduction	143
Population	144
Past Population Trends	144
Population Composition	146
Social Interaction	151
Migration	152
Recent Trends and Changes	154
Economy	155
Composition of Employment	157
Unemployment and Seasonality of Employment	159
Income Levels	161
Economic Growth Prospects	162
Subsistence Economy	166
Political Organization	171
Formal Political Organization	171
North Slope Borough	171
Point Hope IRA Council	172
City of Point Hope	173
Tigara Corporation	175
informal Political Organization	176
Land Use and Housing	178
Land Status	178
City of Point Hope	178
Point Hope Area	181

	Page
Subsistence Land Use Patterns	183
Bowhead Whale	186
Seal and Ugruk	191
Walrus	195
Belukha	198
Fish	200
Migratory Birds and Eggs	203
Polar Bear	205
Village Land Use Patterns	205
Housing Conditions	209
Community Facilities and Utilities	213
Administrative and Miscellaneous Public Buildings	213
Public Safety	215
Police Protection	215
Fire Protection/Search and Rescue	217
Health	219
Education	221
Recreation	224
Utilities	226
Water	226
Sewage	227
Solid Waste	229
Electric Power	229
Fuel Storage	231
Communications	233
<u>POINT LAY</u>	235
Introduction	235
Population	236
Past Population Trends	236
Origin of Population	238
Population Composition	239
Social Interaction	243
Migration	245
Recent Trends and Changes	246
Economy	247
Composition of Employment	250
Unemployment and Seasonality of Employment	253
Income Levels	255
Economic Growth Prospects	256
Subsistence Economy	260
Political Organization	264
Formal Political Organization	264
North Slope Borough	264
Point Lay IRA Council	265
Cully Corporation	266
Informal Political Organization	268
Land Use and Housing	269
Land Status	269
Village of Point Lay	269
Point Lay Area	270
Subsistence Land Use Patterns	274
Belukha	276

	Page
Fish	279
Walrus	282
Seal and Ugruk	284
Migratory Birds and Eggs	287
Bowhead Whale	289
Polar Bear	290
Village Land Use Patterns	290
Housing Conditions	294
Community Facilities and Utilities	298
Administrative and Miscellaneous Public Buildings	298
Public Safety	299
Police Protection	299
Fire Protection/Search and Rescue	301
Health	303
Education	305
Recreation	308
Utilities	310
Water	310
Sewage	311
Solid Waste	313
Electric Power	314
Fuel Storage	316
Communications	318
WAINWRIGHT	319
Introduction	319
Population	320
Past Population Trends	320
Population Composition	322
Social Interaction	328
Migration	329
Recent Trends and Changes	331
Economy	332
Composition of Employment	334
Unemployment and Seasonality of Employment	337
Income Levels	339
Economic Growth Prospects	341
Subsistence Economy	345
Political Organization	347
Formal Political Organization	347
North Slope Borough	347
City of Wainwright	348
Olgoonik Corporation	349
Informal Political Organization	350
Land Use and Housing	353
Land Status	353
City of Wainwright	353
Wainwright Area	354
Subsistence Land Use Patterns	358
Fish	359
Migratory Birds	361
Seal and Ugruk	363
Walrus	365

	Page
Belukha	367
Bowhead Whale	369
Village Land Use Patterns	372
Housing Conditions	376
Community Facilities and Utilities	379
Administrative and Miscellaneous Public Buildings	379
Public Safety	381
Police Protection	381
Fire Protection/Search and Rescue	383
Health	386
Education	388
Recreation	392
Utilities	393
Water	393
Sewage	396
Solid Waste	398
Electric Power	399
Fuel Storage	401
Communications	403
ATQASUK	405
Introduction	405
Population	406
Past Population Trends	406
Origin of Population	406
Population Composition	409
Social Interaction	413
Migration	414
Recent Trends and Changes	415
Economy	416
Composition of Employment	418
Unemployment and Seasonality of Employment	420
Income Levels	422
Economic Growth Prospects	423
Subsistence Economy	426
Political Organization	429
Formal Political Organization	429
North Slope Borough	430
City of Atqasuk	430
Atqasuk Corporation	432
Informal Political Organization	433
Land Use and Housing	434
Land Status	434
City of Atqasuk	434
Atqasuk Area	436
Subsistence Land Use Patterns	438
Village Land Use Patterns	443
Housing Conditions	447
Community Facilities and Utilities	450
Administrative and Miscellaneous Public Buildings	450
Public Safety	451
Police Protection	451
Fire Protection/Search and Rescue	453

	Page
Health	455
Educational	457
Recreation	461
Utilities	462
Water	462
Sewage	464
Solid Waste	466
Electric Power	466
Fuel Storage	469
Communications	471
BARROW e	473
Introduction	473
Population	474
Past Population Trends	474
Population Composition	477
Social Interaction	481
Migration	486
Recent Trends and Changes	490
Economy	492
Composition of Employment	495
Unemployment and Seasonality of Employment	499
Income Levels	502
Economic Growth Prospects	504
Subsistence Economy	510
Political Organization	517
Formal Political Organization	517
City of Barrow	518
Ukpeagvik Inupiat Corporation	519
Informal Political Organization	521
Land Use and Housing	525
Land Status	525
City of Barrow	525
Barrow Area	529
Subsistence Land Use Patterns	532
Bowhead Whaling	536
Spring Whaling	536
Fall Whaling	540
Belukha	545
Seal and Ugruk	547
Walrus	552
Fish	555
Migratory Birds	559
Village Land Use Patterns	562
Housing Conditions	568
Community Facilities and Utilities	573
Administrative and Miscellaneous Public Buildings	573
Public Safety	575
Police Protection	575
Fire Protection	578
Search and Rescue	580
Health and Social Services	581
Health Services	581

	Page
Social Services	585
Barrow Animal Clinic	586
Friendship House	586
Youth Drop-In Center	586
Women in Crisis Center	587
Children's Receiving Home	587
Day Care Center	587
Education	587
Recreation	595
Utilities	599
Water	599
Sewage	601
Solid Waste	603
Electric Power and Gas	604
Fuel Storage	610
Communications	612
<u>FORECAST METHODOLOGY</u>	617
<u>ANNOTATED BIBLIOGRAPHY</u>	625

LIST OF TABLES

		Page
Table 1	Population Estimates, North Slope Borough, 1939 - 1983	7
Table 2	Population Composition, North Slope Borough Villages, Alaska and United States, 1980	16
Table 3	Population Composition by Sex and Race, North Slope Borough Villages, 1980	18
Table 4	Population Forecast, North Slope Borough Villages, 1982 - 2000	27
Table 5	Nonagricultural Wage and Salary Employment, North Slope Borough, 1980	30
Table 6	Population at Oil-Related Worksites by Type of Camp, North Slope Borough, 1981	32
Table 7	Average Annual Full-Time Employment, North Slope Borough Villages, 1982	33
Table 8	Estimated Full-Time Equivalent Employment by Race, Residency Status and Employment Category, North Slope Borough, 1980	34
Table 9	Proven and Probable Oil Reserves on Currently Leased State Lands, North Slope Borough	41
Table 10	Planned Federal and State Leasing Schedules, North Slope Region	49
Table 11	General Revenues by Source, North Slope Borough, FY 1979 - 1984	65
Table 12	Property Tax Revenues, North Slope Borough, FY 1979 - 1984	67
Table 13	General Government Expenditures, North Slope Borough, FY 1979 - 1984	68
Table 14	Operating Expenditures by Activity, North Slope Borough, FY 1979 and 1984	70
Table 15	State of Alaska, Local Government Debt	77
Table 16	Alaska Municipal Debt Ratios	78
Table 17	Partial List of Subsistence Expenses, Chukchi Sea Villages, 1983	89
Table 18	Population Trends, Point Hope, 1939 - 1983	145
Table 19	Length of Residence of Heads of Household, Point Hope, June 1980	148
Table 20	Population Composition by Race and Age, Point Hope, 1980	149
Table 21	Average Annual Full-Time Employment, Point Hope, 1982	158
Table 22	Existing Land Use, Point Hope Townsite, 1982	208
Table 23	Point Hope Housing Inventory, September 1982	211
Table 24	Public Safety Department Activity, Point Hope, 1980 - 1982	216
Table 25	School Enrollment Trends by Grade, Point Hope, 1959/60 - 1982/83	223
Table 26	Firm and Peak Generating Capacities, Point Hope, October 1982	230

	Page
Table 27	Population Trends, Point Lay, 1939 - 1983 237
Table 28	Population Composition by Race and Age, Point Lay, 1980 241
Table 29	Average Annual Full-Time Employment, Point Lay, 1982 251
Table 30	Existing Land Use, Point Lay Townsite, 1982 293
Table 31	Point Lay Housing Inventory, October 1982 295
Table 32	Public Safety Department Activity, Point Lay, 1980 - 1982 300
Table 33	School Enrollment Trends by Grade, Point Lay, 1977/78 - 1982/83 307
Table 34	Firm and Peak Generating Capacities, Point Lay, October 1982 315
Table 35	Diesel Fuel Storage Capacity and Usage, Point Lay, 1983 317
Table 36	Population Trends, Wainwright , 1920 - 1983 321
Table 37	Length of Residence of Heads of Household, Wainwright , April 1980 324
Table 38	Population Composition by Race and Age, Wainwright , 1980 325
Table 39	Average Annual Full-Time Employment, Wainwright , 1982 335
Table 40	Existing Land Use, Wainwright Townsite, 1982 375
Table 41	Wainwright Housing Inventory, August 1982 377
Table 42	Public Safety Department Activity, Wainwright , 1980 - 1982 382
Table 43	School Enrollment Trends by Grade, Wainwright , 1959/60 - 1982/83 391
Table 44	Firm and Peak Generating Capacities, Wainwright , October 1982 400
Table 45	Population Trends, Atqasuk , 1939 - 1983 407
Table 46	Population Composition by Race and Age, Atqasuk , 1980 410
Table 47	Average Annual Full-Time Employment, Atqasuk , 1982 419
Table 48	Existing Land Use, Atqasuk Townsite, 1982 446
Table 49	Atqasuk Housing Inventory, August 1982 449
Table 50	Public Safety Department Activity, Atqasuk , 1980 - 1982 452
Table 51	School Enrollment Trends by Grade, Atqasuk , 1977/78 - 1982/83 460
Table 52	Firm and Peak Generating Capacities, Atqasuk , October 1982 468
Table 53	Population Trends, Barrow, 1890 - 1982 475
Table 54	Population Composition by Race and Age, Barrow, 1980 478
Table 55	Length of Residence of Heads of Household, Barrow, June 1980 488
Table 56	Average Annual Full-Time Employment, Barrow, 1982 496
Table 57	Household Income Distribution, Barrow, 1980 503
Table 58	Existing Land Use, Barrow Surveyed Area, August 1982 567
Table 59	Barrow Housing Inventory, August 1982 570

	Page
Table 60 Public Safety Department Activity, Barrow, 1980 - 1982 *	577
Table 61 Health and Social Services Programs, Barrow	583
Table 62 School Enrolment Trends, Barrow, 1966/67 - 1982/83 *	594

LIST OF FIGURES

	Page
Figure 1 Index Map of North Slope Borough . . .000.0. . .*..	2
Figure 2 Composition of Population, North Slope Borough, State of Alaska, Point Hope, 1980	150
Figure 3 Land Tenure, Point Hope Area, 1983*	182
Figure 4 Point Hope Subsistence Use Areas: Bowhead Whale.	188
Figure 5 Point Hope Subsistence Use Areas: Seal/Ugruk	192
Figure 6 Point Hope Subsistence Use Areas: Walrus	197
Figure 7 Point Hope Subsistence Use Areas: Belukha	199
Figure 8 Point Hope Subsistence Use Areas: Fish	202
Figure 9 Point Hope Subsistence Use Areas: Migratory Birds	204
Figure 10 Existing Land Use, Point Hope, September 1982	206
Figure 11 Composition of Population, North Slope Borough, State of Alaska, Point Lay, 1980	242
Figure 12 Land Tenure, Point Lay Area, 1983	271
Figure 13 Point Lay Subsistence Use Areas: Belukha	278
Figure 14 Point Lay Subsistence Use Areas: Fish . . .**..	281
Figure 15 Point Lay Subsistence Use Areas: Walrus*	283
Figure 16 Point Lay Subsistence Use Areas: Seal/Ugruk	285
Figure 17 Point Lay Subsistence Use Areas: Migratory Birds	288
Figure 18 Existing Land Use, Point Lay, October 1982	291
Figure 19 Composition of Population, North Slope Borough, State of Alaska, Wainwright , 1980 . . .**..	326
Figure 20 Land Tenure, Wainwright Area, 1983*	356
Figure 21 Wainwright Subsistence Land Use Areas: Fish	360
Figure 22 Wainwright Subsistence Land Use Areas: Migratory Birds*	362
Figure 23 Wainwright Subsistence Land Use Areas: Seal/ Ugruk	364
Figure 24 Wainwright Subsistence Land Use Areas: Walrus	366
Figure 25 Wainwright Subsistence Land Use Areas: Belukha	368
Figure 26 Wainwright Subsistence Land Use Areas: Bowhead Whale	371
Figure 27 Existing Land Use, Wainwright , August 1982	373
Figure 28 Composition of Population, North Slope Borough, State of Alaska, Atqasuk , 1980 . . .**..	411
Figure 29 Land Tenure, Atqasuk Area, 1983**..	437
Figure 30 Existing Land Use, Atqasuk , August 1982*	444
Figure 31 Composition of Population, North Slope Borough, State of Alaska, Barrow, 1980	480
Figure 32 Land Tenure, Barrow Area, 1983	531
Figure 33 Barrow/Atqasuk Subsistence Use Areas: Spring Whaling . . .**..	537
Figure 34 Barrow/Atqasuk Subsistence Use Areas: Fall Whaling*	541
Figure 35 Barrow/Atqasuk Subsistence Use Areas: Belukha	546
Figure 3.6 Barrow/Atqasuk Subsistence Use Areas: Seal/ Ugruk	548
Figure 37 Barrow/Atqasuk Subsistence Use Areas: Walrus	554

Figure 38	Barrow/Atqasuk Subsistence Use Areas: Fish	557
Figure 39	Barrow Subsistence Use Areas: Migratory Birds	561
Figure 40	Existing Land Use, Barrow, August 1982	565

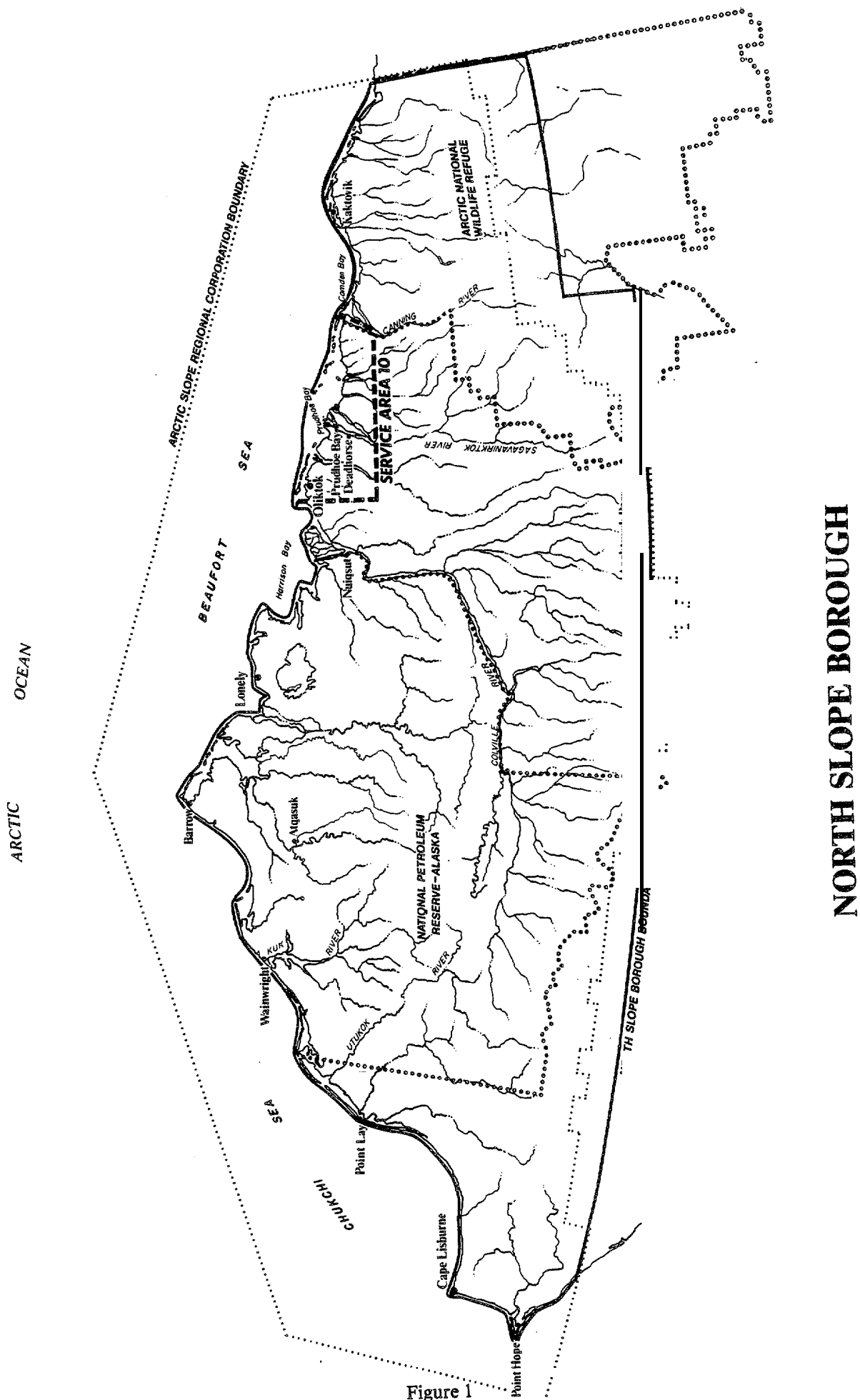


INTRODUCTION

The North Slope Borough is a vast 88,000 square mile area which stretches across the northern portion of Alaska (see Figure 1). The **Chukchi** Sea area, which is the subject under study, covers the western half of the Borough from Barrow to Point Hope,

This report focuses on socioeconomic and **sociocultural** conditions in the North Slope region generally, where relevant, and in five villages in the **Chukchi** Sea area -- Point Hope, Point Lay, **Wainwright**, **Atkasuk** and Barrow. Much of the information contained in this report, particularly that dealing with the population, economy, land status, village land use, housing and community facilities **and** utilities, was previously collected by **Alaska** Consultants, Inc. for the North **Slope** Borough. That information is summarized here and has been updated, where necessary. Fieldwork undertaken for this report was primarily concentrated on documenting subsistence land use patterns and the subsistence economies of both individual villages and the region as a whole. Additional **sociocultural** information pertaining to village perceptions and opinions on a variety of issues was also collected in the field in 1983.

As well as regional and village **level analyses**, this report includes an annotated bibliography of **major** and lesser references used during the course of the study.



NORTH SLOPE BOROUGH

Figure 1

NORTH SLOPE BOROUGH - AN OVERVIEW

Population

PAST TRENDS

The difficulties of accurately tracing population trends for the period between World War II and 1970 in the area now encompassed by the North Slope Borough have been previously discussed by Alaska Consultants (1977) and others. While past population figures are available for individual towns, areas outside the region's traditional communities have periodically experienced large, though usually temporary, influxes of people for oil and gas exploration, military or scientific purposes. Since the region was within three census divisions for the 1960 and 1970 censuses and within two completely different divisions for several censuses prior to 1960, it is virtually impossible to derive a complete picture of population trends in what is now the North Slope Borough even for the period since World War II.

Three major in-migrations to the North Slope Borough took place between World War II and 1970:

- (1) That associated with oil and gas exploration undertaken by the Navy in the then Naval Petroleum Reserve #4 (NPR-4) during the period 1944-1953;
- (2) That related to construction of the DEW (Distant Early Warning) Line system and associated AC&W (Aircraft Control and Warning) sites by the U.S. Air Force during the 1950's; and

(3) That resulting from increased **oil** and **gas** exploration, particularly in the **Prudhoe** Bay area following the State onshore lease sales of **1964**, 1965 and 1967 and, more recently, from State and federal offshore **lease sales**.

The Navy exploration program involved a large influx of military and civilian personnel and brought lasting change to Barrow which had been selected as the main base for exploration activity. A camp was built near Barrow at what later became the Naval Arctic Research Laboratory (**NARL**), but jobs related to the exploration program ceased when the exploration ended in 1953.

DEW Line stations were constructed during the 1950's across the north coast of what is now the North Slope Borough from Cape **Sabine** to Demarcation Bay. As part of this program, stations were built near the traditional villages of Point Lay, **Wainwright** and Barrow, with the major station being located on Barter Island. The **latter** resulted in several physical relocations of the village of **Kaktovik** as the station and airfield facilities were constructed. An **AC&W site** was also constructed at Cape **Lisburne**, remote from any traditional settlement. When these military facilities were completed, the construction crews left but personnel required to run the facilities **remained**.

After the Navy's exploration program in **NPR-4**, limited petroleum exploration activity in the **region** continued to be generated as a **result** of non-competitive federal leases. However, it was the State's lease sales of 1964 through 1967 which **led** to **major** oil discoveries in **1968**

and the State's "bonanza" lease sale in 1969. Following the 1968 discoveries, in-migration related to oil and gas activities in the region increased and this substantial addition to the North Slope's population has remained although the distribution of workers among the exploration, development, operation and transportation activities has varied.

- The population of the traditional communities on the North Slope rose from 1,258 in 1939 to 3,027 in 1970, a 141 percent change in three decades, reflecting continued high birth rates and an increasing life expectancy for the Eskimo population, plus an influx of non-Native government personnel to provide services such as health and education or to undertake scientific research. However, the regional increase in traditional village population was distributed unevenly from community to community as **Atqasuk** and Point Lay were abandoned as permanent villages by 1960. Between 1939 and 1970, Barrow's population rose 480 percent to 2,104 residents, Kaktovik's population had increased 846 percent to 123 residents, and Point Hope's population had undergone a 50 percent increase to 386 persons. During that same period, **Wainwright's population** fell from 341 to **315**, while the nomadic **Nunamiut** peoples had established the new village of **Anaktuvuk** Pass with a population totaling 99 in 1970.

- After World War II, Barrow had clearly emerged as the regional center. Not only was there a flow of government personnel into the community but there was also an in-migration of Eskimos from the smaller villages on

the North Slope, **Inupiat**s attracted by the greater opportunities for jobs and the availability of government services in Barrow.

The decade between **1970** and 1980 witnessed some startling changes in the North Slope Borough's population (see Table 1). Three abandoned villages -- **Atqasuk, Nuiqsut** and Point Lay -- were re-established, although at new sites. **All** of the smaller communities on the North Slope grew **during** this period, attracting Eskimo residents from Barrow as well as from outside the Borough. Barrow's population increased the least, **only 4.9** percent, and the city's Eskimo population actually declined during the 1970 to 1980 decade. The **total** population for **all** traditional villages within the Borough rose about 26 percent, from 3,027 residents to 3,827, with the greatest growth occurring after 1977 as the momentum of construction activities associated with the Borough's capital improvements program picked up.

The **re-establishment** of traditional villages, the more rapid growth of smaller North Slope villages relative to Barrow and the overall growth of **all** of the communities resulted in part from passage of the Alaska Native Claims Settlement Act and incorporation of the North Slope Borough. The Claims Act legislation led to the organization of Native corporations which were recipients of both cash and land and which, in turn, provided vehicles for Eskimo economic enterprise with vested interests in the maintenance or **re-establishment** of traditional villages.

TABLE 1

POPULATION ESTIMATES
NORTH SLOPE BOROUGH
1939 - 1983

Community	1939	1950	1960	1970	1980	1981	1982	1983
Traditional Communities a/								
Anaktuvuk Pass	--	66	35	99	203	235	215	228
Atqasuk	78	49	30	---	107	195	210	231
Barrow	363	951	1,314	2,104	2,207	2,539	2,882	2,882
Kaktovik	13	46	120	123	165	201	189	203
Nuiqsut	89	--	--	--	208	270	302	305
Point Hope	257	264	324	386	464	531	544	570
Point Lay	117	75	--	--	68	105	105	126
Wainwright	341	227	253	315	405	410	465	483
	1,258	1,678	2,076	3,027	3,827	4,486	4,912	5,028
Oil & Gas/Pipeline Camps b/								
Prudhoe Bay/Deadhorse/Other	NA	NA	NA	279	3,628	4,980	7,735	
NPR-A	NA	NA	NA	3	119	163	108	
				282	3,747	5,143	7,843	
Military Stations c/								
	--	--	--	194	222	127	193	
Other d/								
	--	--	--	--	19	19	16	
TOTAL e/								
				3,503	7,815	9,775	12,964	

a/ Population for traditional villages taken from the U.S. Census through 1980; 1981 figures are those accepted by the State Demographer after negotiations with the North Slope Borough and a special State-supervised census for **Atqasuk**, Point Lay and the NARL base at Barrow; 1982 figures are those submitted by the North Slope Borough for which a special State-approved census was undertaken by the City of Barrow after the Borough had submitted its population estimate; 1983 figures are based on village censuses except in the case of Barrow.

b/ Population for oil and gas and Pipeline camps taken from the U.S. Census for 1970, but subsequently reflect North Slope Borough estimates. No Borough count of industrial areas was undertaken in 1983. The 1980 U.S. Census listed only 114 persons at Prudhoe Bay and Deadhorse because of a State-requested change in the method of enumerating people in this area, with the result that almost all petroleum workers in the Borough were reassigned to other areas of the State and the nation. Changes in State regulations governing local censuses in 1981 resulted in the rejection of the Borough's 1981 industrial area count. A total of 2,466 persons was deemed to be Borough 'Presidents' as a result of a special State-supervised census in January/February 1982. The Borough 1982 industrial area count was undertaken using the guidelines laid down in S.B. 180, as amended. This bill passed the Alaska State Legislature but was vetoed by the Governor and the Borough census was rejected.

c/ Population for military stations in 1970 derived from the U.S. Census. Subsequent estimates based on figures provided annually to the North Slope Borough by station operators.

d/ Population for other sites, primarily Colville River village on the Colville River delta, based on figures provided annually to the North Slope Borough.

e/ Total population accepted by the Alaska Department of Community and Regional Affairs was 7,098 in 1981 and 7,552 in 1982.

Sources: U. S. Census.
North Slope Borough.

Incorporation of the North Slope Borough in 1972 provided local residents with a means to levy property taxes on the new oil and gas industry's capital facilities being built in the region. These revenues permitted the North Slope Borough to launch a major capital improvements program (after several court tests of the Borough's tax jurisdiction). It also enabled the Borough to expand the level of public services. In turn, the public facilities and housing constructed by the Borough in the region's traditional communities contributed to their population growth. Furthermore, the wages flowing from local jobs in construction and from direct Borough employment encouraged the relocation of Eskimos back to the smaller traditional villages if families had traditional ties to those villages and preferred living there rather than in Barrow or outside the Borough.

However, the major component of population increase in the North Slope Borough since 1970 has been derived from exploration for and the development and operation of the region's oil fields, plus construction and operation of the Pipeline to transport the oil south to Valdez. The debate as to how this population is to be enumerated has served to cloud the description of such a dynamic workforce. Completion of the Trans Alaska Pipeline (TAPS) in 1977 initiated the marketing phase for Prudhoe oil. The Pipeline construction workers departed but the loss of that workforce has since been partially offset by the arrival of other oil industry workers. Table 1 uses the North Slope Borough's annual reports to the Alaska Department of Community and Regional Affairs for data on the size of the region's oil industry workforce because these figures better reflect the dynamics of the Borough's population. The debate as

to how this workforce should be enumerated, especially with reference to place of residence, has grown with the size of that **workforce** and of the petroleum industry's taxable property in the Borough.

- The military component of the Borough's population has remained small and is likely to decline in the future as a result of the current upgrading of electronic equipment used at the DEW Line stations. In addition, no significant population increases at locations such as **Colville** River village are expected.

- The total number of **people** inhabiting the North **Slope** Borough at any given time has been a controversial subject since **1980**. Because this subject gives some insight into the **political** (which also translate into legal) problems faced by the Borough, the recent history of Borough population counts is presented in the following pages.

Borough Population Counts

In terms of population living within the North Slope Borough but outside the region's traditional communities, the important issue in recent years has not been the total number of people but the number which the North Slope Borough has been able to count. The Borough was incorporated on July 1, 1972 as a first class borough under Alaska law. However, as a result of a special session of the Alaska Legislature in 1973, a 20 mill levy was applied by the State against certain oil and gas properties throughout the State. The extent to which local governments could tax such properties under their jurisdiction for

operating purposes (i.e. excluding debt service) was linked to a population-based formula set forth in Section 29.53.045 of the Alaska Statutes, which is quoted in part:

- "(a) A municipality may **levy** and collect taxes **on** taxable property taxable under **AS 43.56** only by using one of the methods set out in (b) or (c) **of** this section.
- "(b) A municipality may levy and **col**lect a tax on the **ful**l and true value of taxable property taxable under AS 43.56 as **valued** by the Department of Revenue at a rate not to exceed that which produces an amount of revenue from the **total** municipal property tax equivalent to **\$1,500** a year for each person residing within its boundaries.
- "(c) A municipality may levy and collect a tax on the **ful**l and true **value** of that portion of taxable property taxable under **AS 43.56** as assessed by the Department of Revenue which value, when combined with the value of property otherwise **tasable** by the municipality, does not exceed the product of 225 percent of the average per capita assessed full and true value of property in the state multiplied by the number of residents of the taxing municipality. For purposes of this subsection the average per capita **assessed full** and true value of property in the state **shall be** calculated without regard to the assessed **value** of taxable property under AS 43.58."

Because its tax base is almost **entirely** derived from oil and gas-related property subject to AS 29.53.045, it has been extremely important to the North Slope Borough to maintain an accurate and complete record of its population. Through 1980, population counts in the Prudhoe Bay/Deadhorse area and at Pipeline camps within the Borough were compiled by BP Alaska, Inc. (and later by **Sohio**) and submitted to the North Slope Borough. This population count method was essentially similar to that used in 1970 by the **U.S.** Census.

Using industry-generated counts, **total** population in the **Prudhoe Bay/ Pipeline** area between 1975 and **1980** trended downward following

completion of construction of the Pipeline but then stabilized, as follows:

<u>Year</u>	<u>Prudhoe Bay/Deadhorse</u>	<u>Pipeline</u>	<u>Total</u>
1975	1,835	3,187	5,022
1976	3,897	4,904	8,801
1977	3,504	1,814	5,318
1978	3,052	315	3,367
1979	2,127	101	2,228
1980	3,054	537	3,591

At the request of the State, however, normal Census rules for counting population in the Prudhoe Bay area were changed in 1980. The result was that workers were enumerated at places away from rather than at their workplace, so that only 114 persons were counted by the Census at Prudhoe Bay/Deadhorse, less than had been counted here in 1970. Almost all Prudhoe Bay/Deadhorse workers were reassigned to other locations in Alaska and the nation and the only people counted as living in the North Slope Borough were those for whom the Census Bureau had no "home" address. However, these "low" figures did not affect the Borough's 1980 population count for State revenue sharing or for taxation as Census results were not released until later in that year.

In 1981, the Alaska Department of Community and Regional Affairs revised its regulations for the enumeration of population by local governments to conform with Census guidelines, i.e. those which the State had requested to be used by the 1980 Census. The North Slope Borough was subsequently advised that its 1981 count which originally totaled 9,940

was unacceptable 'and that a detailed census count which **asked people** a standard set of questions to determine their residency in accordance with Census definitions would be required. **At** considerable cost to the Borough, a State-supervised census was conducted in January/February **1982**. Out of a total **of** 6,306 persons counted on-site in the **Prudhoe Bay/Deadhorse/Kuparuk** and Pipeline corridor areas, 2,466 were judged by the State Demographer in the Alaska Department of Labor to meet the 1980 Census definition of residency. Together with some adjustments to **village** populations, the State accepted a final population figure for the North Slope Borough **in 1981** of 7,098 persons.

In 1982, a bill {Senate Bill 180} passed the Alaska State Legislature which defined population as follows:

"... population **shall** include permanent residents and military personnel or employees of a military reservation located **in** the municipality. Population **shall also** include **all** persons working at isolated **job** sites in a municipality. The Commissioner of Community and Regional Affairs **shall** determine the number of persons working at isolated sites from information supplied by employers which shows the number of persons employed on the sites **as** of July **1** of each year, notwithstanding the **place** of permanent residence of those employees."

Using these guidelines, the Borough counted **7,735** persons in a July **1982** census of the **Prudhoe** Bay/Deadhorse/Kuparuk and Pipeline corridor areas and a **total** Borough population of 12,729. (**The total 1982** population figure shown in Table 1 is a slightly higher **12,964** because an official count of Barrow's population taken later in **1982** is used instead **of** the **July 1982** estimate). However, Senate **Bill 180** was subsequently vetoed **by** the Governor and the Borough's **1980** count was rejected by the Department of Community and Regional Affairs.

In an effort to accommodate the Borough's problem, the Department of Community and Regional Affairs passed an emergency regulation in November 1982 which said that persons working at remote sites could be counted by a local government if the worker had spent four nights or more at that site during the week that the count was taken. Such a definition was consistent with normal Census procedures. This regulation was challenged in State superior court by several Southcentral Alaska municipalities. The court found that there was no emergency but agreed that the North Slope Borough needed **special** consideration in determining its population, provided that the method accepted by the Department of Community and Regional Affairs had a rational basis. The Department subsequently certified a 1982 Borough population of 7,552 persons.

No regulations detailing an acceptable method for counting the North Slope Borough's industrial enclave population have yet been drafted by the Alaska Department of Community and Regional Affairs. As a result, the Borough did not conduct a census in 1983. Instead, the Department announced two population figures for the Borough's 1983 population -- one of 5,118 for State revenue sharing purposes and another of 10,427 for use in determining the extent to which the Borough is able to levy property taxes for operating purposes.

The concept of two population figures was apparently designed to appease several **Southcentral** Alaska municipalities which feel that their State revenue sharing entitlements are being shortchanged by the North Slope Borough's counting of Prudhoe Bay workers. However, the 5,118 figure

excludes **all Prudhoe Bay** workers, despite the fact that the State Demographer judged 2,466 of these people to be Borough residents in **1981** using 1980 Census guidelines. Furthermore, the fact that there is still **no** accepted method **by** which the Borough can count its population in **1984** and following **years** places it in **an** untenable political position. **It** **also** makes **it** impossible for the Borough to develop projections of operating revenues with any assurance of accuracy, with possible repercussions on the Borough's ability to assume additional bonded indebtedness.

POPULATION COMPOSITION

Difficulties associated with determining the **1970** population composition in what is now the North **Slope** Borough arose from the need to combine data from three census divisions, a task undertaken by **Alaska Consultants (1977)**. Given these limitations, it was determined the 1970 population of the North **Slope** region was approximately **83** percent Alaska Native. The distribution of **Alaska** Native residents within the region's villages varied **slightly**, ranging from **87.8** percent of the total population in Kaktovik to 98.0 percent in **Anaktuvuk** Pass. By contrast, three non-traditional settlements for which statistics by race were available (**Cape Lisburne, Deadhorse** and **Prudhoe Bay**) all had populations which were at least 90 percent non-Native.

The age and sex characteristics **of** the North **Slope** Borough population as measured by the 1970 Census showed the Borough to have some typically Alaska characteristics but to a more extreme degree. **The** median age of

Borough residents was 18.7 years (21 for males and 16 for females), compared with 22.9 for the State and 28 for the nation. Males outnumbered females by a 57.2 to 42.8 ratio in the Borough in 1970, a slightly more extreme ratio than the State (54.3 to 45.6) and quite unlike that of the nation (49 to 51). Inclusion of the relatively small Prudhoe Bay/Deadhorse population, most of which was male, in Borough totals had some influence on male to female ratios and median ages. This bias caused by male workers was further magnified by the inclusion of military or military subcontractor personnel in Borough population figures.

The 1980 data available regarding age and sex characteristics of the population of the Borough's traditional villages confirm the general characteristics established for 1970 and also substantiate several significant trends. As indicated in Table 2, the median age for all village residents was 23.7 years, significantly lower than the 26.1 years for the State or the 30.0 years for the nation. However, the 1980 median age for North Slope Borough villages reflected the weighting of non-Native residents whose median age was 28.7 years, as the median age of Alaska Natives in Borough villages in 1980 was only 21.2 years.

A striking feature of the age distribution of the Borough's Alaska Native residents in 1980 was the high proportion of persons under 20 years of age. Fully 41.7 percent of the Alaska Native population living in North Slope villages in 1980 was under the age of 20, compared with 36.1 percent for the State and 32 percent for the nation as a whole.

POPULATION COMPOSITION
 NORTH SLOPE BOROUGH VILLAGES, ALASKA AND UNITED STATES
 1980

(percentage distribution)

TABLE 2

Age	North Slope Borough Villages a/			Alaska b/		United States b/		
	Male	Female	Total	Male	Female	Male	Female	Total
Under 5	5.2	5.7	10.9	5.0	4.7	3.7	3.5	7.2
5 - 9	4.3	4.3	8.6	4.5	4.2	3.8	3.6	7.4
10 - 14	4.6	5.0	9.6	4.4	4.1	4.1	4.0	8.1
15 - 19	6.2	6.4	12.6	4.9	4.3	4.8	4.5	9.3
20 - 24	6.4	5.1	11.5	6.0	5.2	4.7	4.7	9.4
25 - 29	7.3	5.3	12.6	6.4	5.7	4.3	4.3	8.6
30 - 34	5.0	3.4	8.4	5.7	4.8	3.8	4.0	7.8
35 - 39	3.3	2.2	5.5	4.3	3.5	3.0	3.2	6.2
40 - 44	3.1	1.9	5.0	3.1	2.5	2.5	2.9	5.4
45 - 49	2.9	1.5	4.4	2.5	2.1	2.4	2.5	4.9
50 - 54	2.0	1.7	3.7	2.1	1.8	2.5	2.7	5.2
55 - 59	1.1	1.0	2.1	1.7	1.4	2.4	2.4	4.4
60 - 64	0.8	0.7	1.5	1.1	0.9	2.0	2.4	5.1
65 - 69	0.9	1.0	1.9	0.7	0.6	1.7	2.2	3.9
70 - 74	0.5	0.3	0.8	0.4	0.4	1.3	1.7	3.0
75 and over	0.7	0.3	1.0	0.4	0.4	1.5	2.9	4.4
<u>TOTAL</u>	<u>54.3</u>	<u>45.8</u>	<u>100.0</u>	<u>53.0</u>	<u>47.0</u>	<u>48.6</u>	<u>51.4</u>	<u>100.0</u>
<u>Median Age</u>	<u>25.3</u>	<u>21.2</u>	<u>23.7</u>	<u>26.1</u>	<u>25.8</u>	<u>28.8</u>	<u>≥ .3</u>	<u>30.0</u>

a/ Alaska Consultants, Inc. North Slope Borough Housing Survey, prepared for the North Slope Borough, Public Works Department. Anchorage. September 1980.

b/ U.S. Census.

The non-Native proportion of the North Slope Borough's village population rose to 23.1 percent by 1980, with 71.9 percent of this group concentrated in Barrow (see Table 3). In the remaining villages combined, non-Natives made up only 15.3 percent of the population, whereas in Barrow non-Natives accounted for 28.8 percent of that community's population in 1980. This represented a significant increase since 1970.

Males continued to outnumber females in the North Slope villages in 1980. For Alaska Natives, the ratio was found to be 52.7 to 47.3 while that for non-Native residents was a more disproportionate 63.0 to 37.0 percent. **All** told, the ratio of males to females for North Slope Borough villages in 1980 was 55.1 percent males to 45.9 percent females, slightly more extreme than the State's 53.0 percent to 47.0 percent ratio and quite unlike that of the nation where females outnumbered **males** by a 51.4 to a 48.6 percent margin.

The changes from 1970 to 1980 in North Slope village population age and sex characteristics as well as an increase in the proportion of non-Natives reflect the dynamics of village society and economics. Although Barrow grew little in that decade, the composition of that community's population underwent a significant change as the number of non-Native residents increased and number of Alaska Natives actually declined, primarily a result of the **re-establishment** of **Atqasuk** and **Nuiqsut** (and, to a lesser extent, Point Lay) by Alaska Natives from Barrow during this period. Barrow's development as the administrative center for the North Slope Borough and as the headquarters for the

POPULATION COMPOSITION BY SEX AND RACE
NORTH SLOPE BOROUGH VILLAGES
1980

TABLE 3

Village	Alaska Native			Non-Native			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	
Anaktuvuk Pass	94	88	182	37	16	53	13	104	235
Atkasuk	45	50	95	10	3	13	55	53	108
Barrow	892	810	1,702	419	268	687	1,311	1,078	2,389
Kaktovik	83	56	139	36	17	53	119	73	192
Nuqsut	92	99	191	46	15	61	138	114	252
Point Hope	232	210	442	20	18	38	252	228	480
Point Lay	44	33	77	11	3	14	55	36	91
Wainwright	197	161	358	23	14	37	220	175	395
TOTAL	1,679	1,507	3,186	602	354	956	2,281	1,861	4,142
Percent Distribution	<u>52.7</u>	<u>47.3</u>	<u>100.0</u>	<u>63.0</u>	<u>37.0</u>	<u>100.0</u>	<u>55.1</u>	<u>44.9</u>	<u>100.0</u>

Source: Alaska Consultants, Inc. North Slope Borough Housing Survey, prepared for the North Slope Borough, Public Works Department. Anchorage. September 1980.

Arctic Slope Regional Corporation resulted in the creation of a number of professional, management and technical positions which attracted non-Native persons to the city, primarily because of the high salaries being offered. The in-migration of non-Native residents was particularly noticeable as the Borough's expenditures for its capital improvements program and government services expanded after 1977. The in-migration of non-Natives to the smaller Borough villages outside Barrow was also prompted by an increase in high salaried professional positions, particularly in the school system as high school classes were offered at the village level for the first time during this period. However, the increase in the number of non-Native residents in the smaller villages appears to have leveled off and is not expected to rise significantly in the future. In fact, it could decline in the longer term as trained Alaska Native residents assume some of the positions now held by non-Natives.

There are no comprehensive data available to evaluate the population composition of areas outside the North Slope Borough's traditional villages because these people were not counted as living here by the 1980 Census. However, some analysis of the population at oil-related worksites in the Borough was undertaken by the State Demographer following the State-supervised census for that area undertaken in January/February 1982.

Of the 6,306 persons counted at oil-related worksites in January/February 1982, 90.6 percent were male, indicating that little change in sex ratios had taken place here since 1970. The same census also found

that 2,466 (39.1 percent) of all persons counted at these locations met the 1980 Census definition for residence in the North Slope Borough although North Slope Borough residence was actually claimed only by 3.7 percent (a figure which included persons for whom no residence information was available) of the people counted. In addition, a total of 1,023 people (16.2 percent of the total) was found not to meet the 1980 Census definition of Alaska resident, with the largest number of these Outsiders found to be residents of California, Washington and Texas respectively. Of the 2,817 persons counted who qualified as Alaska residents but not as North Slope Borough residents, the largest share came from the Municipality of Anchorage (53.6 percent), Fairbanks-North Star Borough (22.4 percent), the Kenai Peninsula Borough (9.5 percent) and the Matanuska-Susitna Borough (8.4 percent).

No age or race information was asked as part of the State-supervised census taken in January/February 1982. However, there are no children living at such sites and the population is believed to be heavily concentrated in the 20 to 40 age ranges. There are also few Alaska Natives in such areas.

SOCIAL INTERACTION

As previously indicated, there are two distinct areas of settlement within the North Slope Borough -- that in the region's traditional villages and that in the region's industrial enclaves, with the largest share of the latter being in the Prudhoe Bay/Deadhorse/Kuparuk and Pipeline corridor area. There is little social interaction between

these two major groups. Few people from the North **Slope** Borough's traditional villages travel to work at Prudhoe Bay. Furthermore, industrial area workers normally fly in and out of Deadhorse directly from Anchorage or Fairbanks and very few have even visited any of the Borough's traditional villages.

As part of the 1983 fieldwork in the **Chukchi** Sea villages of Point Hope, Point Lay, Wainwright, **Atqasuk** and Barrow, an effort was made to see how the different groups in these villages interacted with each other, particularly **Inupiat**s and whites. The results of that work are included within the text of this report for each village. Generally, however, **Inupiat**s in the smaller villages of the region expressed few negative feelings against whites, with the exception of transient non-Native construction workers who were viewed with a certain amount of resentment. Most non-Native persons living in these smaller villages are there to provide specialized services such as education and **public** safety and possess skills which are not available locally, something which is recognized by most **Inupiat** residents.

In Barrow, the picture was much more complex as there is a greater diversity of non-Natives in this community, including a complement of Hispanics and Asians. **Inupiat**s in Barrow appeared to harbor little resentment against whites who had made long-term commitments to remain in the community or those who possessed specialized skills not otherwise available locally. However, negative feelings were expressed with varying degrees of intensity against non-Native transient construction workers and against non-Natives who did not possess special skills but

who were nevertheless employed. This **latter** group **was** particularly resented by many **Inupiat**s who viewed **their** presence in the community as an intrusion.

A number of whites in Barrow were also questioned about the amount of interaction they had with **Inupiat**s. In general, long term non-Native residents or those with commitments through marriage to remain in Barrow tended to adopt an **Inupiat** perspective and socialized **freely** with both **Inupiat**s and whites in the community. Those who were in Barrow strictly for employment and accompanying financial reasons tended to socialize **little** with **Inupiat**s and **also** spent very little money locally. Many people in this group claimed that they were made to **feel** unwelcome in Barrow by **Inupiat**s. Transient construction workers, especially those **living** in camp accommodations, basically have **no** communication with **Inupiat**s outside the workplace.

MIGRATION

Only a limited amount of information is available on the subject of migration into and within the North Slope Borough. Most persons who work in the industrial enclave areas come from outside the region although many are technically Borough residents. Within the region's traditional villages, a major out-migration of **Inupiat**s from Barrow accompanied the **re-establishment** of the traditional **villages** of **Nuiqsut** and **Atqasuk** and, to a lesser extent, Point Lay during the **1970's**. An in-migration of whites, particularly to Barrow, has **also** been significant.

As part of his analysis of the Prudhoe Bay/Deadhorse/Kuparuk and Pipeline corridor population counted in a special State-supervised census in January/February 1982, the State Demographer provided some information on migration into this area. As part of that census effort, individuals were asked if they had a place which they considered to be their usual place of residence, as well as a question intended to determine if individuals had spent more days within the Borough in 1981 than outside it.

Of the total of 6,306 persons counted in January/February 1982, 1,432 (22.7 percent) claimed residence outside Alaska, including 35 people claiming to live in other countries plus representatives of every state in the union except Delaware and Rhode Island. A total of 4,874 people claimed Alaska residence. Slightly over half (51.3 percent) of that group claimed residence in the Municipality of Anchorage, followed by those claiming the Fairbanks-North Star Borough (22.6 percent), Kenai Peninsula Borough (9.1 percent), Matanuska-Susitna Borough (8.0 percent) and the North Slope Borough or no usual place of residence (3.7 percent). While individual concepts of "residence" were different from those used by the 1980 Census, they nevertheless indicate the pattern of migration for employment into this North Slope Borough industrial enclave area.

The fact that relatively few permanent residents of North Slope traditional communities presently migrate for employment to the Prudhoe Bay area can be documented through an analysis of the North Slope Borough's workforce at Service Area 10 (Deadhorse). Of a total of 120

Borough employees at Service Area 10 in September 1983, only 13 (11 Alaska Natives and 2 whites) commuted there from North Slope Borough traditional villages. By most standards, the Borough has a high proportion of Alaska Native employees (35 percent) at Service Area 10, including 20 of its 27 female workers. There is some evidence to suggest that some of these Alaska Native employees are former Borough residents who find it more convenient to commute for employment to Service Area 10 from locations such as Fairbanks, Anchorage and the Kenai Peninsula.

As part of the 1983 fieldwork, people in the villages of the Chukchi Sea area were asked if anyone from those villages was working in the Prudhoe Bay area or had worked on the Pipeline. Given the current high level of construction activity in these villages, there was little incentive for people to migrate for employment to areas such as Prudhoe Bay. However, this could change in the future as the North Slope Borough's capital improvements program winds down.

Within the region, a major shift in Inupiat population occurred during the 1970's as a result of the re-establishment of three traditional villages. These villages, particularly Nuiqsut and Atkasuk, were mainly settled by Inupiat from Barrow. As a result, the number of Alaska Natives living in Barrow actually declined between 1970 and 1980. An in-migration of whites took place during the latter half of the 1970's and has continued into the early 1980's. However, this group tends to have few dependents. As a result, Barrow's population grew the least (4.9 percent) of any of the region's traditional villages during that

period, despite the rapid increase in employment opportunities which took place.

RECENT TRENDS AND CHANGES

It is not possible to document recent trends or changes in population in the Prudhoe Bay/Deadhorse/Kuparuk and Pipeline corridor area since the 1980 Census, which should have provided benchmark information, counted almost no one in this area. Furthermore, population counts conducted in 1980 by Sohio, in 1981 by the Borough and by the January/February 1982 special census, and in 1982 by the Borough did not use the same methodology. As a result, these counts are not directly comparable and no real trends can be discerned.

Within the region's traditional villages, the major trend since 1980 has been a sharp increase in population from 3,827 in 1980 to an estimated 5,028 in 1983 (using a 1982 census figure for Barrow). This 31.4 percent increase over a three-year period has already eclipsed the 24.5 percent growth recorded for the entire 1970 to 1980 decade. By village, rates of growth since 1980 have not been even, with the re-established villages of Atqasuk (115.9 percent), Point Lay (85.3 percent) and Nuiqsut (46.6 percent) experiencing the greatest growth. Barrow registered a 30.6 percent increase in population between 1980 and 1982, an abrupt change from the nominal 4.9 percent growth recorded between 1970 and 1980. (Barrow may have been undercounted by the 1980 Census. Alaska Consultants, Inc. counted 2,389 people here in the summer of 1980 which represented a 13.5 percent gain over the 1970 Census figure and

indicated a more modest but still significant gain of 20.6 percent between 1980 and 1982).

The major factor encouraging population growth in the North Slope Borough's traditional villages since 1980 has been the North Slope Borough itself. Temporary construction jobs derived from the Borough's ongoing capital improvements program, plus permanent jobs added to operate and maintain new facilities, have served to encourage an in-migration of people to the region's smaller villages. These same reasons, plus an increase in administrative jobs associated with the North Slope Borough and the regional and village Native corporations, have contributed to a rapid increase in population in Barrow. However, except for an increase in the number of non-Natives to provide specialized services such as education and public safety plus a temporary influx of transient construction workers, population growth in the smaller villages has included a growth in the number of Inupiat beyond what could be expected from natural increase. According to observations by Alaska Consultants, Inc. and the 1983 fieldwork, this growth in Inupiat population has involved the return of some former Borough residents who were attracted by the combination of improved economic conditions and subsistence opportunities. The extent to which this is true of Barrow is not-clear, as that community has seen a continued influx of non-Natives, including a contingent of Asians and Hispanics. Furthermore, there continues to be a good deal of coming and going of Inupiat between Barrow and some of the smaller villages.

TABLE 4
 POPULATION FORECAST
 NORTH SLOPE BOROUGH VILLAGES
 1982 - 2000

<u>Village</u>	<u>Year</u>				
	1982 <u>a/</u>	1985	1990	1995	2000
Anaktuvuk Pass	215	249	291	321	354
Atqasuk	210	258	313	346	381
Barrow	2,882	3,336	4,019	4,659	5,402
Kaktovik	189	232	281	310	343
Nuiqsut	302	370	450	497	549
Point Hope	544	613	703	776	857
Point Lay	105	128	156	171	189
Wainwright	465	538	630	695	768
<u>TOTAL</u>	<u>4,697</u>	<u>5,462</u>	<u>6,510</u>	<u>7,376</u>	<u>8,366</u>

a/ 1982 figures based on village censuses taken in that year.

Sources: North Slope Borough.
 Alaska Consultants, Inc.

Population projections developed in 1983 for each village by Alaska Consultants, Inc. as part of its work for the North Slope Borough assumed a continued high rate of population growth in the region's traditional villages through about 1987, followed by a rate more suggestive of that of natural increase (see Table 4). These forecasts assumed that the Borough's capital improvements program would continue at a high level for about that period. In addition, they were made with the reservation that any significant slackening in the Borough's capital improvements program could rapidly lead to a deceleration of village growth rates or even a decline in population. This reservation was made since the number of jobs created to operate and maintain Borough facilities is much less than the number required to construct them.

Economy

COMPOSITION OF EMPLOYMENT

Unlike population, nonagricultural wage and salary employment information collected by the Alaska Department of Labor is recorded by place of work and therefore includes jobs held in the North Slope Borough's industrial areas as well as its traditional communities. However, information compiled by the Alaska Department of Labor on the total civilian labor force is keyed to Census data, with the result that the total civilian labor force in the North Slope Borough has been shown to be less than half that of total nonagricultural wage and salary employment in recent years. Thus, information compiled by the Department on the size of the civilian labor force and on rates of

unemployment (which is computed as a proportion of the labor force) are not meaningful.

A review of nonagricultural wage and salary employment in the North Slope Borough in 1980, the most recent year for which statistics have been published, indicates an annual average of **6,115** jobs in the region (see Table 5). The largest employment sectors were mining and government. Mining jobs made up 45.2 percent of the Borough's nonagricultural wage and salary employment in 1980, with most of these jobs being located in the **Prudhoe Bay/Deadhorse** and **Kuparuk** areas. Government jobs accounted for 23.0 percent of the region's total nonagricultural wage and **salary** employment in that same year, with essentially all of these jobs being based in the region's traditional communities. Of the remaining sectors, it can be assumed that most jobs in trade and in finance, insurance and real estate were based in the Borough's traditional communities. However, it is not possible to disaggregate employment by area in the contract construction, the transportation, communications and public utilities or the services sectors.

Some data are available for the Prudhoe Bay/Deadhorse/Kuparuk and Pipeline corridor area for 1981 as a result of a State-supervised special census-undertaken in January/February 1982 which counted a total of 6,306 persons, all of whom were employed. Although it is not possible to determine average annual full-time employment from the data available, the Alaska Department of Labor did provide some information

TABLE 5
NONAGRICULTURAL WAGE AND SALARY EMPLOYMENT
NORTH SLOPE BOROUGH
1980

Industry Classification	Month												TOTAL				
	January	February	March	April	May	June	July	August	September	October	November	December					
Mining	2,556	2,546	2,609	2,697	2,707	2,686	2,397	2,348	2,406	3,340	3,349	3,508	2,762	705	0	422	Trade
Contract Construction	368	466	665	693	582	474	322	524	672	1,173	1,262	1,261	705	0	0	552	Wholesale Retail
Manufacturing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Finance, Insurance and Real Estate
Transportation, Communications and Public Utilities	346	350	350	377	372	393	427	431	413	525	533	552	422	0	0	330	Miscellaneous
	*	*	322	296	258	306	355	390	491	306	318	316	0	0	0	0	Services
	*	*	343	255	255	306	355	390	491	306	318	316	0	0	0	0	Government
	1,262	1,368	1,400	1,406	1,432	1,401	1,280	1,332	1,467	1,537	1,519	1,481	1,407	1,407	1,407	1,407	Federal State and Local
	(1,011)	(242)	(254)	(259)	(260)	(237)	(238)	(232)	(267)	(259)	(253)	(249)	(249)	(249)	(249)	(249)	Government
	(1,126)	(1,146)	(1,147)	(1,172)	(1,164)	(1,043)	(1,094)	(1,235)	(1,270)	(1,260)	(1,228)	(1,158)	(1,158)	(1,158)	(1,158)	(1,158)	Government
Unemployed	5,294	5,756	5,884	5,813	5,741	5,294	5,586	5,946	7,419	4,521	7,672	6,115	6,115	6,115	6,115	6,115	Government

* Employment figures withheld to comply with disclosure regulations.
a/ Three-month average.

Source: Alaska Department of Labor, Statistical Quarterly.

on employment composition by breaking out employment by type of camp (see Table 6).

As part of its work for the North Slope Borough, Alaska Consultants, Inc. counted annual average full-time employment in all traditional villages of the Borough in 1982. A review of these data indicates the dominant role played by the North Slope Borough government (see Table 7). Local government, almost **all** of it derived from the North Slope Borough, accounted for 46.7 percent of average annual full-time employment in 1982 in the region's traditional villages. In addition, almost **all** contract construction work in the villages was associated with the North Slope Borough's ongoing capital improvements program (as was a significant share of Borough employment since, depending on the type of contract, the Borough often pays village construction workers directly). Thus, the North Slope Borough directly or indirectly provided about two-thirds of all jobs counted in its villages in 1982, not counting jobs contributed by the Borough to the trade, services and transportation sectors. Further analysis of the dominance of the Borough in village employment is provided for each **Chukchi** Sea community in subsequent chapters of this report.

The Institute of Social and Economic Research (September 1983) attempted to break down the region's employment by race, residency status (i.e. permanent residents versus non-permanent residents) and employment category for 1980, using total non-agricultural wage and salary employment data developed by the Alaska Department of Labor as a base (see Table 8). While **one** can dispute some of the figures, particularly

TABLE 6 "

POPULATION AT OIL-RELATED WORKSITES BY TYPE OF CAMP a/
NORTH SLOPE BOROUGH

<u>Type of Camp</u>	<u>Number of Persons</u>	<u>Percent of Total</u>
Operations	963	15.3
Trades, Construction	1,884	29.9
Oil Rig	1,431	22.7
Seismic Train	219	3.5
Technical Services and Fabrication	106	1.7
Government	35	0.6
Ground Transportation	284	4.5
Air Transportation	60	1.0
Supply, Services, Repair	404	6.4
General	920	14.6
<u>TOTAL</u>	<u>6,306</u>	<u>100.0</u>

a/ Information derived from a special State-supervised census conducted in January/February 1982.

Source: Alaska Department of Labor, Research and Analysis Section.

TABLE 7
 AVERAGE ANNUAL FULL-TIME EMPLOYMENT
 NORTH SLOPE BOROUGH VILLAGES
 1982

<u>Industry Classification</u>	<u>Number</u>	<u>Percent of Total</u>
Agriculture, Forestry and Fishing	0.0	0.0
Mining	50.5 <u>a/</u>	2.6
Contract Construction	435.0	22.0
Manufacturing	0.0	0.0
Transportation, Communications and Public Utilities	188.0	9.5
Trade	110.5	5.6
Finance, Insurance and Real Estate	80.5	4.1
Services	108.5	5.5
Government	1,002.0	50.7
Federal	(66.5)	" (3.4)
State	(13.0)	(0.7)
Local	(922.5)	(46.7)
<u>TOTAL</u>	<u>1,975.0</u>	<u>100.0</u>

a/ Includes jobs held by village residents in the Prudhoe Bay area except for those from Barrow.

Source: Alaska Consultants, Inc. 1982.

TABLE 8

ESTIMATED FULL-TIME EQUIVALENT EMPLOYMENT
BY RACE, RESIDENCY STATUS AND EMPLOYMENT CATEGORY
NORTH SLOPE BOROUGH

Categories	Employment				Total	-
	Inupiat	Non-Inupiat Resident	Total Resident	Non-Resident		
1. State and Federal Government	64	39	103	191	294	-
2. Borough Operating	517	275	792	0	792	-
3. Borough CIP	321	0	321	0	321	-
4. Borough-funded Private CIP	0	0	0	348	348	-
5. Support	299	159	458	0	458	-
6. Oil Industry	10	0	10	3,892	3,902	-
TOTAL	<u>1,211</u>	<u>473</u>	<u>1,684</u>	<u>4,431</u>	<u>6,115</u>	-
<u>Subtotals</u>						
Total Borough (2+3)	838	275	1,113	0	1,113	-
Total CIP (3+4)	321	0	321	348	669	-
Total Gov't (1+2+3)	902	314	1,216	191	1,407	●
Total Gov't Funded (1+2+3+4)	902	314	1,216	539	1,755	-
Total Private Funded (5+6)	309	159	468	3,892	4,360	-
Total Private (4+5+6)	309	159	468	4,240	4,708	-

Source: University of Alaska, Institute of Social and Economic Research. September 1983. A Description of the Socioeconomic of the North Slope Borough. Prepared for the Minerals Management Service, Alaska Outer Continental Shelf Region. Anchorage. (Technical Report Number 85).

the racial breakdown and residency status in several instances, it nevertheless represents an attempt to disaggregate employment in oil and gas-related enclaves from the remainder of the region.

In summary, labor force and employment data currently provided by the Alaska Department of Labor provide only a gross insight into the wage and employment dynamics of the North Slope Borough. While the information provided does provide some understanding of total employment by industry classification, it gives little which would be of use in establishing baselines or for monitoring changes in those baselines for any or all of the region's traditional communities. These deficiencies in current data are even more critical when the object for continuing research is to measure change not only at the community level but also in terms of **Inupiat** residents. When research directed to isolating the impact of oil and gas-related activities on individual village economies and their **Inupiat** residents is further refined to detecting the impact of industry activity in a specific geographic area such as the **Chukchi** Sea, then the labor force and employment data now available are of virtually no use. Given the present state of the art for reporting labor force and employment data in the North Slope Borough region, there appears to be little hope that efforts to monitor future economic impacts of oil and gas-related activities in the **Chukchi** Sea area upon communities along the **Chukchi** Sea coast and their residents will be successful unless the State provides much more detailed labor force and employment data on a regular basis or unless funding is provided for other organizations to do so on a continuing basis.

SECTOR ANALYSIS

Government

Based on counts of employment in each North Slope Borough traditional village in 1982 by Alaska Consultants, Inc., a combined annual average of **1,002** full-time jobs in this sector was identified. When government jobs in other areas of the region are included, with North Slope Borough employees at Service Area 10 (Deadhorse) accounting for the major share, the government sector in this region employed an equivalent of about **1,150** persons on an annual average full-time basis **in 1982**.

The different **levels** of government (federal, State and **local**) are not equally represented in the North Slope Borough. In the region's traditional villages, the federal government was significant only in Barrow and **Kaktovik** in **1982** and the State was not represented in any community but Barrow except for a magistrate at Point Hope. Both the federal and State governments have a minor amount of employment at Deadhorse, mainly associated with airport operations and maintenance.

By contrast, local government is the major employer in the region's villages, directly accounting for **46.7** percent of **total** village employment in **1982**. When Borough-sponsored construction projects are considered, it is estimated that the North **Slope** Borough directly or indirectly provided close to two-thirds of all jobs in these communities on an **annual** average full-time basis in 1982.

No significant change is anticipated in the federal government's presence at the village level in the North Slope Borough. It is assumed that the Barrow hospital will continue to be operated as a federal facility and that other federal employers such as the Federal Aviation Administration, the Weather Bureau and the Post Office will maintain staffing at about current levels. Federal monitoring activities in the National Petroleum Reserve-Alaska, the Arctic National Wildlife Refuge and the Gates of the Arctic National Park and Preserve may require some additional federal manpower, but this should not have any major impact on the number of resident federal employees. Likewise, no significant increase in the number of State employees now working on the North Slope is anticipated.

The North Slope Borough has undertaken an ambitious capital improvements program and an expansion of public services, programs sustained primarily by property tax revenues. The Borough also operates certain utility services at Deadhorse on a service area basis and is currently involved in the development of an industrial park facility in the Kuparuk area. A September 1983 count of Borough employees by the Borough at Service Area 10 (**Deadhorse**) found 120 employed of whom 42 were Alaska Native. However, all but 11 of the latter group resided outside the Borough during their off-time.

The Borough's capital improvements program has created temporary construction jobs in the particular communities where projects are being built and has added a lesser number of permanent jobs associated with the operation and administration of completed facilities. The capital

improvements program has also resulted in the **hiring** of additional administrative staff at Barrow.

Borough revenues available to sustain operations and capital improvement outlays come principally from property taxes levied upon the **Prudhoe Bay/Kuparuk** industrial properties and associated **oil** pipelines.

However, the extent to which the North **Slope** Borough can levy taxes upon certain oil and gas properties (most of the Prudhoe Bay/Kuparuk facilities) is limited by State-imposed restrictions, restrictions which have thus far applied **only** to the Borough's operating revenues. The nature and significance of these restrictions and the possibility of the State limiting Borough tax revenues **by** restricting property tax levies for debt service and/or restricting the Borough's ability to assume additional bonded indebtedness are discussed at length in other sections of this report. Unless the present restrictions on the Borough's power to tax for operations are modified, that portion of the Borough's operating budget which must be allocated **to** the operation and administration of new capital facilities **will** become an increasing concern and, in the longer term, **itself** an indirect **limit** to further Borough capital projects construction.

The Borough is currently considering the need to slow its-rate of general obligation bond **sales** in order to maintain its excellent credit rating **in** the bond market. **Any** such reduction in the **level** of **sales** **will** be reflected in the **level** of Borough capital construction expenditures, as bonds provide the primary revenue source for such outlays. Thus, a reduction in the **level** of bond sales by the Borough

would lead to a leveling off or even a reduction of temporary construction employment in the region's villages.

Oil and Gas Exploration and Development

Since the North Slope Borough government is the largest employer in the region's traditional villages and since it derives almost all of its property tax revenues from oil and gas properties in the **Prudhoe Bay/Kuparuk/Pipeline** area, future developments in the region's oil and gas industry will continue to play a vital role in the region's economic wellbeing. Thus, although the producing oil fields are physically remote from most of the traditional communities and directly employ few local residents, the oil and gas industry indirectly funds a very large share of local government jobs.

The presence of oil and gas in the North Slope region has long been known. Numerous oil seeps generated interest by private groups as far back as the early 1900's when mining claims were staked in the Cape Simpson area, but these activities ceased with the creation of Naval Petroleum Reserve #4 (**NPR-4**) in 1923.

Between 1923 and 1944, no attempt was made to discover petroleum resources in NPR-4 although geological surveys and analyses of surface features did take place. In response to a possibility of oil shortages if World War II continued for several more years., however, a major exploration program in the Reserve was initiated by the Navy in 1944 and was continued by civilian contractors until 1953. During this period,

nine oil and/or gas fields were discovered but, because of high costs and the relatively small scale of the discoveries, only the South Barrow gas field was developed (and its development was feasible only for local use). Exploration activities in NPR-4 ceased in 1953 when it was determined that the Reserve's remote location and its environmental vulnerability, combined with a lack of major finds, were serious obstacles to further development.

After the NPR-4 exploration program, no exploratory drilling took place on the North Slope until ten years later when private companies leased federal lands east of NPR-4 to the south of the present Prudhoe Bay field. However, no commercial discoveries of oil and gas resulted and interest then shifted to State-selected lands along the Beaufort Sea coast.

The State held four competitive oil and gas lease sales on the North Slope during the 1960's - one each in 1964, 1965, 1967 and 1969. Most of the leased area was acquired in the 1965 sale by Humble Oil (now EXXON) and the Richfield Oil Corporation (now ARCO). The discovery well for the Prudhoe Bay field was spudded in 1967 and the find was officially announced in July 1968. The size of the Prudhoe Bay discovery - with proven and probable oil reserves estimated at between 6.17 and 7.34 billion barrels in July 1982 - was the largest ever made in the United States (see Table 9).

The building of a pipeline to carry oil from Prudhoe Bay to Alaska's south coast was delayed until settlement of pending Native claims was

TABLE 9

PROVEN AND PROBABLE OIL RESERVES ON CURRENTLY LEASED STATE LANDS a/
NORTH SLOPE BOROUGH

Area	Range of Reserves		
	Low	Most Likely	High
Prudhoe Bay Unit - Sadlerochit Reservoir	6,170	6,950	7,340
Sag River Reservoir	100	130	220
North Prudhoe Bay - West Dock Area	50	75	100
Kuparuk River Formation	600	1,000	1,500
Milne Point Area	30	45	80
Gwydyr Bay Area	50	80	120
Prudhoe Bay Lisburne Reservoir and Sag Delta Area and Duck Island Area	460	650	975
Point Thomson Area and Flaxman Island Area	400	600	900
TOTAL <u>b/</u>	<u>7,860</u>	<u>9,530</u>	<u>11,215</u>

a/ All estimates as of July 1982. Reserves are given in millions of barrels.

b/ Total proven and probable reserves minus Prudhoe Bay are Low - 1,690 million barrels; Most Likely - 2,580 million barrels; and High - 3,875 million barrels.

Source: Alaska Department of Natural Resources, Division of Minerals and Energy Management.

reached with passage of the Alaska Native **Claims Settlement Act in 1971**, while litigation against constructing the **Pipeline itself** was resolved with passage of the **Trans Alaska Pipeline Authorization Act in 1973**. Construction **of** the Pipeline finally got underway in April 1974 and continued for the next three years, with operation of the Pipeline beginning on June 20, 1977.

Aside from the Prudhoe Bay field, other major discoveries have also been made on State lands in the area between what is now the National Petroleum Reserve-Alaska (**NPR-A**) and the Arctic National Wildlife Refuge. They include the Kuparuk field, the **Lisburne** formation, **Flaxman** Island, Point Thomson, **Duck** Island-Sag Delta and other lesser fields. Of these, the **Kuparuk** field is one of the largest fields in the United States with proven and probable reserves estimated at between **0.6** and **1.5** billion barrels as of July **1982**. Development of this field began **in 1979**, with phase I production beginning in **1982**. Total field production **should** peak at close to 250,000 barrels per day (according to **ARCO**) in **1984** or shortly thereafter.

The Kuparuk field has an estimated life of between 20 and 25 years. However, it is more expensive **to** develop than the Prudhoe Bay field because the **producing** zone is relatively shallow and more wells and well pads and other associated facilities are needed. **In** addition, the field has no gas cap, implying the need to **waterflood** on a schedule shorter than that for Prudhoe Bay.

The **Lisburne** formation is a major petroleum resource-bearing formation located east of Prudhoe Bay. This **field** is deeper than the **Prudhoe** field and is thought to extend offshore **to** the north of Prudhoe Bay and east across the **Sagavanirktok** River. Little exploration of this field has taken place to date. Although it is believed to contain as much as 400 million barrels of oil, it is considered more of a gas than an oil field (see Table 9).

In addition to State onshore lands, approximately 1 million acres of federal land located between **NPR-A** and the Arctic National Wildlife Refuge are currently being studied by the U.S. Bureau of Land Management to determine their feasibility for future oil and gas leasing. According to the Bureau of Land Management, the study will be completed once State land selections in this area have been finalized.

Initial aeromagnetic and seismic work is underway in the vicinity of the Arctic National Wildlife Refuge which is administered by the U.S. Fish and Wildlife Service. The coastal plain of the Refuge has been identified as a favorable area for significant accumulations of oil and gas. According to the Fish and Wildlife Service, exploration activities to be conducted in the Refuge will be designed to identify those areas having oil and gas production potential and to estimate the volume of potential resources. Based on these activities, an evaluation of how potential oil and gas resources in the Refuge would relate to the national need for domestic energy sources will be made.

In 1985, the Fish and Wildlife Service must submit a plan to Congress recommending whether or not exploration drilling should take place in the Arctic National Wildlife Refuge and, if so, what stipulations should be attached to the leases. However, a recent land swap between the Department of the Interior and the Arctic Slope Regional Corporation will probably result in exploratory drilling near Kaktovik at an earlier date. This trade involved the transfer of approximately 101,272 acres of the surface estate of Arctic Slope Regional Corporation lands located within the Gates of the Arctic National Park and Preserve for the subsurface estate of approximately 92,160 acres of land within the Arctic National Wildlife Refuge. Any exploration activity on the approximately 92,160 acres of Corporation lands is subject to Section 22(g) of the Alaska Native Claims Settlement Act and must comply with stipulations found in the agreement. The stipulations include a requirement that a "plan of operations" be filed with the U.S. Fish and Wildlife Service before the commencement of exploration activities. The regional director would then make a determination based on the perceived impacts of the proposed activities. Authorization from Congress would still be necessary before the Regional Corporation could begin producing oil or gas from its lands in the Arctic National Wildlife Refuge.

Closer to Barrow, recent federal onshore oil and gas exploration and leasing activity has been concentrated in NPR-A. A comprehensive evaluation of the petroleum potential of the Reserve was begun by Husky Oil for the Navy in 1975 and continued under the Department of the Interior through 1981. All told, 28 test wells were completed during this period. No delineation wells were drilled.

Servicing of camps in NPR-A during the Husky Oil exploration period was handled out of Camp Lonely in the eastern portion of the Reserve.

Equipment and supplies were barged in from Seattle during the summer to designated "drop off" points and were then hauled overland as soon as weather conditions permitted. Thus, except for a small Husky camp at NARL, Barrow felt little direct impact from these activities.

In response to a 1980 Congressional mandate, the Bureau of Land Management began an oil and gas leasing program in NPR-A. To date, three sales have taken place, one in January 1982, the second in May of the same year and the third in July 1983. A total of 6.76 million acres have thus far been offered, with successful bids having been received for approximately 1.3 million acres. The Bureau of Land Management plans to offer a total of 8 million acres for lease in NPR-A, averaging 2 million acres per sale.

Despite a long history of government-sponsored exploration activity, the only development in NPR-A to date is that associated with the Barrow gas fields. The most recent estimates of economically recoverable reserves in NPR-A are 1.4 billion barrels of oil. However, it is believed that only about 8 million acres, about one-quarter of the Reserve's area, have oil potential. Most of this potential falls within an area transcribed by two arcs. The first arc runs from a point 30 miles south of Barrow in a shallow curve to a point 20 miles south of Nuiqsut. The second runs from a point 15 miles north of Umiat in a shape the reverse of the Barrow arc to the middle of the southern NPR-A boundary.

Other onshore oil and gas--related activities on the **North** Slope in recent years have been on Arctic Slope Regional Corporation lands. According to its **1982** annual report, the Corporation now owns about 4.6 million acres, including approximately 1 **million** acres of "**in lieu**" and village subsurface **lands**. (The **land** trade agreement between the Regional Corporation and the federal government has subsequently increased the amount of subsurface estate owned by the Corporation by approximately **92,160** acres and has decreased the amount of surface estate by approximately **101,272** acres). According to the Corporation's most recent **annual** report, it currently has about 4.3 million acres under **lease** to Chevron U.S.A., **Union/Amoco** and Shell **Oil** Company for evaluation and exploration activities. To date, a total of eight exploratory **wells** have been drilled in areas southeast and west of **NPR-A**, southeast of **Umiat** and near Point **Lay**. **All** wells **drilled** thus far, including two **drilled** in **1982**, have been reported as dry holes. Nevertheless, Chevron has indicated its continuing interest in these lands by extending its primary lease term from **10** to **15** years. Low **level** exploration activities are expected to continue on these lands, at least for the next decade. The relatively low **level** of interest in Corporation **lands** for petroleum development does not extend to subsurface estate in the Arctic National Wildlife Refuge which the Corporation recently obtained in a land exchange agreement with the Department of the Interior. According to the Arctic **Slope** Regional Corporation, it has received 13 proposals from **oil** companies to explore **lands** in this area.

Oil and gas exploration **activities** are not confined to onshore areas on the North Slope. The leasing of offshore tracts in the Beaufort Sea got underway in December 1979 with a joint federal-State sale. A total of 514,202 acres was offered, 323,174 acres of which were State lands, 17,605 acres were State-managed disputed lands, 86,263 acres were federal lands and 87,160 acres were federally-managed disputed lands. Since then, the federal government held a second offshore lease sale in the Beaufort Sea (#71, **Diapir** field) in September 1982. Another four federal offshore lease sales are scheduled, two in the Beaufort Sea (#87, **Diapir** field in June 1984 and #97, **Diapir** field in June 1986) and two in the **Chukchi** Sea (#85, Barrow Arch in February 1985 and #109, Barrow Arch in February 1987).

The probability for commercial **petroleum** discoveries in these offshore areas is considered to be high, although this **optimism** may be tempered in light of disappointing drilling results to date in the promising **Mukluk** formation. Prior to its 1982 sale in the **Diapir** field, the federal government predicted a 100 percent probability for the discovery of commercial quantities of petroleum resources, with estimates of 1.66 billion barrels of oil and 8.85 trillion cubic feet of natural gas. For the Barrow Arch area, the federal government predicts a 76 percent probability for the discovery of commercial quantities of petroleum resources. The mean estimates of discoveries expected from the leasing program in this area are lower than those for the Beaufort Sea - 240 million barrels of oil and 1.05 trillion cubic feet of natural gas. All told, the estimated production capability from the Beaufort Sea is 8.129 billion barrels and that from the **Chukchi** Sea is 2.508 billion barrels.

The State has also been active in **both** onshore and offshore **oil** and gas **leasing** activity **on** the North **Slope** during the past few years. Since the 1979 joint federal-State lease **sale**, it has **held** four lease **sales** in the North Slope region, two in the Prudhoe Bay Uplands area which were **held** in September 1980 and September 1982, and two offshore/uplands **sales** in the Beaufort Sea in June 1982 and May 1983. **During** the next five years, the Statewide petroleum leasing program **will** include two in the Beaufort Sea (#43 and #52), two in the **Kuparuk** Uplands (#47 and #48) and one each at Camden Bay (#50), **Prudhoe** Bay Uplands (**#51**) and **Icy** Cape (**#53**). (See Table 10).

A major and as yet unresolved issue affecting oil and gas-related activities in the North Slope region is transportation of natural gas discoveries to outside markets. The **Alaska** Highway natural gas pipeline route, which envisaged a pipeline paralleling the TAPS line to the Interior and then following the Alaska Highway south, is currently stalled. Resolution of the gas pipeline issue is essential to the **full** development of North Slope oil fields.

In summary, the North Slope is the major area of interest to petroleum companies in the State of Alaska. Production is currently limited to the **Prudhoe** Bay and **Kuparuk** fields. However, additional onshore and offshore fields appear **likely** to **be** developed in the future. **It** is not assumed that region's traditional communities, with the possible exception of **Kaktovik**, **will** be directly impacted by **such** activities. Furthermore, the impact of petroleum activities on the North Slope Borough is related more to possible actions of the State government **on**

TABLE 10

PLANNED FEDERAL AND STATE LEASING SCHEDULES
NORTH SLOPE REGION

<u>Year</u>	<u>Proposed Date</u>	<u>Government Agency</u>	<u>Sale Number</u>	<u>Area</u>
1984	5/84	State	43	Beaufort Sea
	6/84	BLM-MMS	87	Diapir Field
	7/84	BLM-NPR-A	--	NPR-A
1985	2/85	BLM-MMS	85	Barrow Arch
	5/85	State	47	Kuparuk Uplands
	7/85	BLM-NPR-A	..	NPR-A
1986	1/86	State	48	Kuparuk Uplands
	6/86	BLM-MMS	97	Diapir Field
	7/86	BLM-NPR-A	--	NPR-A
	9/86	State	50	Camden Bay
1987	1/87	State	51	Prudhoe Bay Uplands
	2/87	BLM-MMS	109	Barrow Arch
	5/87	State	52	Beaufort Sea
	7/87	BLM-NPR-A	--	NPR-A
	9/87	State	53	Icy Cape

Source: Alaska Department of Natural Resources, Division of Minerals and Energy Development.

limiting Borough operating revenues and bonded indebtedness than **it is to** the size of **oil** or gas discoveries.

Tourism

Tourism is a minor and extremely seasonal element in the North Slope's economy. Most tourists visiting the North Slope travel in organized tours offered by Alaska Tour and Marketing Services. Organized group tours to Barrow are operated between June 1 and August 31, with three travel packages currently being offered. The **first** is a one-day excursion trip with tourists arriving at Barrow in the morning and leaving on the afternoon flight. The second involves arrival in Barrow on the afternoon flight, staying overnight in the community and then leaving the next morning. The third involves a flight to Prudhoe Bay for the morning, followed by a flight to Barrow where visitors spend the night and the following morning and then fly out of the region.

In Barrow, tourists are treated to a program which features an Eskimo blanket toss and traditional Eskimo dancing. Opportunities are **also** available for tourists to purchase locally made arts and crafts items. Overnight visitors stay at the 40--room Top of the **World** Hotel which is operated by a subsidiary of the Arctic **Slope** Regional Corporation. Two other hotels have recently been constructed in Barrow-but, to date, they are not patronized by tour groups.

No current statistics are available on the number of tourists who visit Barrow. However, it is believed that the community normally **receives**

between 4,000 and 5,000 visitors on organized tours each year. Few tourists visit Barrow independently of tour groups. Nevertheless, according to Top of the World Hotel operators, individuals do come to the community throughout the year, including some in winter who are attracted by phenomena such as total darkness and the northern lights.

There is a potential for increased tourism in Barrow. This is an interesting area of the State and one which could be further promoted. Increases in tourism would result in increases in services (hotels) and trade (restaurants and souvenir sales) employment, as well as providing additional income to local craftsmen. Despite some growth, however, tourism is likely to remain a significant but highly seasonal element in Barrow's economy through the foreseeable future. The attitude of most Barrow residents towards tourism is an ambivalent one with recognition of economic benefits accruing from the industry but with reservations as to other impacts on the community from increased tourist traffic.

There is also some potential for tourism in several of the smaller villages of the North Slope, particularly Anaktuvuk Pass and Kaktovik. Anaktuvuk Pass is a point of entry to the Gates of the Arctic National Park and Preserve although Bettles (located outside the Borough) is the key air transportation center for most visitors to that area. To date, visitors passing through Anaktuvuk Pass have spent little in the community for supplies or services and no local persons are currently employed as guides. Similarly, Kaktovik serves as a transportation point for visitors to the Arctic National Wildlife Refuge, but here also

little money **is** spent in the village **by** Refuge visitors aside from that paid for the services of a locally based airtaxi operator.

Continued improvements in scheduled airline service to jump-off points, expansion of local air taxi services and the gradual development of local guide services should encourage a growth in tourist traffic to Anaktuvuk Pass and Kaktovik as national interest in wildlife and wilderness areas increases. (The regulation of visitors in these areas will also be a factor in attracting tourists). However, the expense of travel, the ruggedness, strangeness and very size of the areas being visited, and the short summer season combine to discourage any growth in tourism at a rate which would soon yield significant economic benefits for the residents of the smaller North Slope villages.

Alaska Tour and Marketing Services has developed a one-day tour package for **Prudhoe** Bay area visitors which can be combined with its tour packages for Barrow. No data on traffic for the **Prudhoe** tour are available, but the one-day tour price is close to \$500 at midsummer, a rate that could discourage most tourist interest **unless** favorably combined with a visit to a traditional village.

Alaska Native Claims Settlement Act Corporations

Under terms of the **1971** Alaska Native **Claims** Settlement Act, **twelve** Native regional corporations (with provision made for a thirteenth) and a large number of village corporations were established to manage lands and to invest cash payments transferred to Alaska Natives in the

settlement of their claims. The Arctic Slope Regional Corporation is the regional entity for the North Slope.

By authority of Section 12(a) and **12(b)** of the Claims Act, the Arctic Slope Regional Corporation is entitled to receive title to several million acres of land within the North Slope region. This includes lands selected by the regional corporation on its own account, to which it receives both surface and subsurface rights, plus subsurface title to lands selected by villages in the region. The latter includes "in-lieu" lands since several North Slope villages (**Atkasuk, Barrow, Nuiqsut, Wainwright and Kaktovik**) are located either within the former Naval Petroleum Reserve #4 or within the Arctic National Wildlife Refuge where subsurface selections are not normally permitted. As a result, the regional corporation has selected "regional deficiency" lands elsewhere in the region. Under Section 1431(0) of the Alaska National Interest Lands Conservation Act (**ANILCA**) passed in **1980**, however, the Corporation was given the option, under certain conditions, of exchanging "in-lieu" subsurface lands for an equal acreage of subsurface estate beneath village corporation lands in NPR-A or in the Arctic National Wildlife Refuge. Another opportunity for exchanging lands was afforded by Section 1302(h) of ANILCA and Section 22(f) of the Claims Act which authorize the Secretary of the Interior to make land exchanges. Under this legislation, the Arctic Slope Regional Corporation has exchanged approximately 101,272 acres of surface estate within the Gates of the Arctic National Park and Preserve for 92,160 acres of subsurface estate in the coastal plain of the Arctic National Wildlife Refuge.

According to the Corporation's most recent annual report, which was published prior to the signing of the recent land swap agreement, it now owns approximately 4.6 million acres of land, of which about 1 million acres are in "in-lieu" and village subsurface lands, close to its total entitlement. The same report indicates that the Corporation took advantage of the option afforded by Section 1431(0) of ANILCA during 1982 to acquire a small but important parcel in the Cape Halkett area. The Corporation is pursuing the possible acquisition of other lands through the same option.

Based on an enrollment of about 3,900 persons, the Arctic Slope Regional Corporation was entitled to a cash payment of approximately \$51 million to be paid over a 10-year period from the so-called Native Fund. (The Fund included Congressional appropriations and mineral revenues from State and federal lands). In turn, half of the cash payments received by the regional corporation must be redistributed to individuals enrolled in the region and to village corporations. The Arctic Slope Regional Corporation's cash entitlement has now been paid in full, except for incoming (and outgoing) funds under Section 7(i) of the Claims Act.

To date, the Arctic Slope Regional Corporation has invested its funds heavily in companies doing business on the North Slope. This has resulted in the creation of a significant number of jobs in Barrow. Aside from its corporate headquarters, the Corporation has formed a number of subsidiary companies. These include Eskimos, Inc., SKW/Clinton, Inc., Arctic Slope Consulting Engineers, Tundra Tours, Inc.,

the Tundra Tours Bus Company, **Inupiat Drillers, Inc.** and ASRC Communications, Inc.

Arctic Slope Alaska General Construction Company, formerly a wholly owned subsidiary of ASRC and now held in partnership with **Wright Schuchart, Inc.**, has been active in both **NPR-A** and the Prudhoe Bay area. According to the regional corporation's most recent annual report, major projects in which this company has recently been involved include road construction, piling installation, camp operations and drilling pads for oil companies active on the North Slope. Arctic Slope Alaska General is also working under contract to the North Slope Borough as part of a joint venture **with Gregory and Cook, Inc.** on construction of the Barrow water and sewer **utilidor** project. The same company operates a construction camp on the south side of the Barrow airport runway, a facility which was expanded to accommodate up to 250 personnel during 1982. In addition, the company is involved in other joint ventures which encompass a wide variety of projects both in and outside the North Slope region.

Eskimos, Inc. was formed in 1974 as a wholly owned subsidiary of the Arctic Slope Regional Corporation. In Barrow, its activities presently include operation of **the** community gravel pit, a heavy duty equipment repair service, rental of heavy construction equipment, operation of a service station and local storage and distribution of fuel oil, gasoline and other petroleum products. In addition, Eskimos, Inc. has been engaged in a range of construction activities in conjunction with **SKW/Clinton, Inc.** Since the purchase of all **SKW/Clinton, Inc.** stock in

1982, both of these companies are **now wholly** owned subsidiaries of the Arctic Slope Regional Corporation.

Arctic Slope Consulting Engineers was established as a **wholly** owned subsidiary **of** the Arctic Slope Regional Corporation during 1982. This firm offers engineering and construction management services and operates on a Statewide basis.

Tundra Tours, Inc. is another subsidiary of the regional corporation. It owns and operates the 40-room Top of the World Hotel (but contracts **out** the operation and management **of** the hotel restaurant). Tundra Tours **also** has contracts to provide student bus transportation services in the Fairbanks and **Palmer/Wasilla** areas through the **Tundra** Tours Bus Company.

The other two wholly owned subsidiaries, **ASRC** Communications, **Inc.** and **Inupiat** Drillers, **Inc.**, run the Barrow **cable** TV station and invest in drilling rigs respectively.

Through the development of its **lands** (see earlier under Oil and Gas Exploration and Development) and through the operations of its subsidiary companies, the Arctic **Slope** Regional Corporation exerts considerable economic influence throughout the North Slope region and in Barrow. The company's corporate headquarters are in Barrow and about 40 administrative staff are employed **here**. Depending on the success of **oil** and gas exploration activities on its lands and on the activities of its corporate subsidiaries, the Arctic **Slope** Regional Corporation **should** continue to **play** an important **role** in Barrow's economy in the **future**.

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- Each of the eight North Slope traditional villages -- Anaktuvuk Pass, Atqasuk, Barrow, Kaktovik, Nuiqsut, Point Hope, Point Lay and Wainwright -- have village corporations established under terms of the Alaska Native Claims Settlement Act. The land entitlements of those villages within the Chukchi Sea region (Atqasuk, Barrow, Point Hope, Point Lay and Wainwright) are outlined in the sections of this report dealing with individual villages, as are the economic activities in which the various corporations are involved. In general, the corporations have invested locally in village stores and fuel distributorships and most have participated in construction activities, either alone or as part of joint ventures. In some cases, corporations have also invested outside their village. While not large employers, the village corporations are large land owners and, as such, exert a considerable influence on village development.

Minerals

- Although the North Slope region is not generally regarded as a favorable area for mineral discoveries, one of the world's most promising lead/zinc deposits, known as the Red Dog mine, is located in the southwestern portion of the Borough on Northwest Alaska Native Corporation (NANA) lands. Cominco American Inc. has paid \$1.5 million to the NANA Corporation for lease rights to the mine and will pay \$1 million per year plus a percentage of the profits to the Corporation throughout the estimated 50 year life of the project.

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According to reports from **Cominco**, the **Red Dog** mine **would** produce refined ore amounting to 350,000 tons of zinc and 80,000 tons of lead during each **of** its first five or six years of operation. Following that period, production facilities could **be** expanded to 580,000 tons of zinc and 120,000 tons of **lead** per year.

A decision as to whether or not to proceed with development of the Red Dog property will be made **early** in 1984. Aside from prices and world markets, factors which could affect that decision include transportation of the ore **to** tidewater and the construction of dock facilities. Both of these factors **will** involve considerable expense and probably, also, controversy as the route from the mine to tidewater which is presently favored by **Cominco** passes through a portion of the Cape **Krusenstern** National Monument.

NORTH SLOPE BOROUGH FINANCES

The North **Slope** Borough's home rule charter provides for the mayor to submit **to** the Assembly an operating budget and a capital improvements program incorporating a- **plan** for capital improvements proposed for the succeeding six **years**. The charter also provides that the budget **shall** be adopted by ordinance and taxes levied in an amount necessary to fund the budget. This is a comprehensive budget suborning the budget of the **school** board. The Assembly must act upon the budget by May **1**. Since July **1** is the due and delinquent date for taxes (except for residential properties), a substantial portion of Borough revenues are therefore collected at the commencement of the Borough's fiscal year on July **1**.

The home rule charter provides that any obligation, including a bond, requiring the payment of funds from an appropriation in a subsequent fiscal year must be approved by a majority of the voters authorized to vote on the issue.

Operating Budget

The operating budget is essentially a budget for the General Fund. It includes appropriations for operation and maintenance, debt service, a reserve for working capital and a contribution to the Capital Projects Funds. If total revenues (on a cash basis) exceed total expenditures (on an accrual basis), the balance is transferred to the reserve for capital outlays account in the General Capital Projects Fund.

A restricted account within the General Fund has been established for debt service. All debt service is usually paid from property taxes. If an emergency arises, additional funds for debt service could be made available from the reserve for capital outlays in the General Capital Projects Fund.

Capital Projects Funds

The capital improvements program is reviewed and adopted by the Assembly concomitantly with the operating budget. The Mayor prepares a capital improvements program each year, consisting of a plan for capital improvements proposed for the next six fiscal years. The Assembly then by ordinance approves and appropriates funds for stipulated projects

classified by the seventeen Capital Projects Funds by which the Borough accounts for its capital improvements program. The integration of the first year's capital budget with the operating budget provides a complete financial plan for the fiscal year. The source of funding for capital projects is chiefly bonded indebtedness supplemented by monies provided by federal and State grants.

Currently included in the capital improvements program is an industrial park complex being constructed in conjunction with development of the Kuparuk oil and gas field. The project is expected to be self-liquidating as to debt service by around fiscal year 1986/87.

Enterprise Fund

The Borough maintains sanitary facilities at **Prudhoe Bay** providing water, sewer, solid waste disposal and landfill services. These operations are accounted for through the Enterprise Fund. Direct operations and maintenance costs (excluding depreciation) are to be recovered primarily by user charges. The debt service on Enterprise Fund obligations is provided by levies on all property within the boundaries of the Borough.

Borough Revenues

The Borough has five principal sources of revenue: property taxes, a sales tax, charges for services and utilities, interest earnings and State and federal intergovernmental transfers. The capability of the

Borough to finance current operations and its capital improvements program depends primarily upon revenues from property taxes levied upon the petroleum industry. State law limits the rate at which the Borough may tax property for operating purposes, whereas the rate of taxation for retirement of bonded indebtedness is not restricted.

Operating Revenues.

- o Property Taxes. State law restricts property taxes collected by the Borough for operating purposes in two ways. First, the maximum tax rate is limited to three percent (30 mills) of the assessed valuation of property within the Borough. Secondly, and far more important at present, the Borough is limited as to the amount of property tax which may be collected per Borough resident.

Under State law, the maximum property tax for operations which may be collected per Borough resident is limited to:

\$1,500, or if greater, to

$$\frac{\text{Total Assessed Value of Property Statewide}}{\text{Total State Population}} \times 2.25 \times 0.03$$

The latter formula is a restatement of the State statute limiting property tax collections per Borough resident to three percent of a maximum assessed value arrived at by multiplying 225 percent of the average per capita assessed value of property Statewide.

The limit on total annual property taxes levied by the Borough for operating purposes is the smaller of the **values** yielded by these two formulas:

$$\text{Total Assessed Value of Property Within the Borough} \times 0.03$$

$$\frac{\text{Total Assessed Value of Property Statewide}}{\text{Total State Population}} \times 0.0675 \times \text{Total Borough Population}$$

This **latter** formula was re-expressed in the Mineral Management Service's Technical Report **Number 85 (ISER)** as:

$$\frac{\text{Total Borough Population}}{\text{Total State Population}} \times \frac{\text{Total Assessed Value of Property Statewide}}{\text{Total State Population}} \times 0.0675$$

The restated formula serves **to** emphasize that the North Slope Borough's maximum property tax revenues for operating purposes are limited by the proportion of the Borough's population to that for the **State**. The formula also makes clear that Statewide property values, rather than property **values** within the Borough, currently limit Borough property tax revenues for operating purposes.

- o Other Operating Revenues. In addition to property taxes, the Borough receives substantial operating revenues from State and federal intergovernmental transfers, from interest earned, from-a **sales** tax and from charges for services and **public** housing.

Most intergovernmental transfers are for specific purposes. State funds make up the largest proportion of these revenues,

while education grants in aid dominate transfers from both governments. The State's Foundation Program is the principal source of aid for school operations.

Interest earned has been important in recent years, reflecting high interest rates as well as substantial cash funds on hand. Such income exceeded intergovernmental transfers in fiscal year 1982. Much of the interest earned is restricted in use to capital outlays and debt retirement.

The three percent sales tax is limited to the first \$1,000 of each sale. The Borough also has a sizable flow of funds from its housing activities, utility operations and other miscellaneous activities. The housing and utility operations are not accounted for as enterprises, so the magnitude of deficits arising from these activities cannot be determined with any accuracy.

Capital Improvement Revenues. As of March 31, 1983 the North Slope Borough had \$787,400,000 in general obligation bonds outstanding, with a further \$308,474,000 authorized by Borough voters for future sale. In April 1983, \$200,000,000 in bond anticipation notes were sold and a sale of \$15,000,000 in general obligation bonds was made in December 1983. Sale of the remaining \$293,474,000 in general obligation bonds is scheduled for February 1984, with \$200,000,000 of the proceeds to be used for retirement of the bond anticipation notes.

The Borough's capital improvements program has also been supported by intergovernmental transfers from the State and federal governments. **As** of June 30, 1982 the Borough had received \$2,682,276 in such funds. Further funding of \$43,566,239 was then expected in future years.

The State does provide substantial aid for the construction of education facilities. The principal support is provided through appropriations for payment of debt service incurred by a municipality for school construction. State aid is authorized for payment of **100** percent of the debt service incurred prior to **July 1, 1977** and 90 percent of such debt service incurred July 1, **1978** and thereafter. The aid **is** confined to approved costs of basic education facilities as defined by State regulations. **To** the extent that such costs for additional facilities exceed regulatory standards set by the Department of Education, those costs will not be funded by the State. The State Legislature may appropriate at a level below that authorized by statute.

The State may **also** provide appropriations contributing directly to the capital cost of specific **school** structures.

Trends in Borough Revenues

Table 11 summarizes North Slope Borough general revenues for the fiscal years 1979 through 1984. Total revenues increased fourfold during this period. The growing reliance on property taxes is reflected in the

TABLE 11

GENERAL REVENUES BY SOURCE a/
 NORTH SLOPE BOROUGH
 FY 1979 - 1984
 (millions of dollars)

<u>Fiscal Year</u>	<u>Property Taxes</u>	<u>Sales Taxes</u>	<u>Intergovernmental Transfers</u>		<u>Interest Income</u>	<u>Other Miscellaneous Revenues</u>	<u>Total Revenues</u>
			State	Federal			
1979	\$35,138	\$1,854	\$9,606	\$2,551	\$6,548	\$ 1,543	\$57,240
1980	52,445	2,116	11,587	4,577	7,394	1,572	79,691
1981	59,062	3,714	17,992	8,143	22,698	2,389	113,948
1982	109,741	4,313	26,664	7,952	42,208	5,838	196,716
1983 <u>b/</u>	134,205	4,228		\$31,162	15,000	3,264	187,859
1984 <u>b/</u>	152,010	4,222		33,778	24,272	16,509	230,791

a/ All cash receipts except enterprise funds.

b/ Budgeted revenues.

Sources: North Slope Borough, Official Statement Relating to the Original Issuance of \$200,000,000 Bond Anticipation Notes, Series A: Part II: Information Statement (April 5, 1983), p 35.

North Slope Borough Budget Document, FY 1983-84, Ordinance 83-3, p 10.

percentage of such taxes to total revenues, moving from **61.4** percent in 1979 to 65.9 percent in 1984. The Borough's use of property tax revenues has changed more dramatically, as indicated in **Table 12**. In FY 1979, **only** 30.9 percent **of** property tax revenues was dedicated to debt retirement. By **FY 1984**, 78.2 percent was budgeted for that purpose.

Property taxes allocated **to** current operations increased from \$24,273,000 in FY **1979** to \$33,117,000 in FY **1984**, a change of 36.4 percent. Property tax revenues used for debt service during that same period increased from \$10,865,000 to \$118,892,000, a change of **994.3** percent.

While property tax revenues allocated to the Borough's operations have increased substantially, the proportion of property tax dollars to total operating outlays has decreased. As **Table 12** indicates, property tax support of the operating budget declined from **61.4** percent in FY 1979 to **31.7** percent in FY 1984 as revenues other than property taxes assumed a more important **role** in supporting annual operations.

Trends in Borough Expenditures

Table 13 summarizes the Borough's general expenditures by category. Total expenditures for operations increased from \$39,541,000 in FY **1979** to \$104,621,000 (budgeted) in FY **1984**, or **2.6** times. Expenditures for debt service increased from \$10,865,000 to \$126,170,000 in the same fiscal years, or **11.6** times. Capital expenditures had increased from \$69,143,000 in FY 1979 to an estimated \$268,000,000 in FY **1983**.

TABLE 12

PROPERTY TAX REVENUES
NORTH SLOPE BOROUGH
FY 1979 - 1984

 (millions of dollars)

Fiscal Year	Operations		Debt Service	Total Property Tax Revenues	Annual Percent Increase
	Revenues	% of Total Operating Expenditures			
1979	\$24,273	61.4	\$ 10,865	\$35,138	
1980	26,365	57.4	26,080	52,445	49.3
1981	26,242	46.6	32,820	59,062	12.6
1982	34,777	43.0	74,964	109,741	85.8
1983 <u>a/</u>	33,835	38.7	100,370	134,205	22.3
1984 <u>a/</u>	33,117	31.7	118,892	152,010	13.2

a/ Budgeted revenues.

Sources: North Slope Borough, Official Statement Relating to the Original Issuance of \$200,000,000 Bond Anticipation Notes, Series A: Part 11: Information Statement (April 5, 1983), p 35.

North Slope Borough Budget Document, FY 1983-84, Ordinance 83-3, p 10.

TABLE 13

GENERAL GOVERNMENT EXPENDITURES a/
 NORTH SLOPE BOROUGH
 FY 1979 - 1984
 (millions of dollars)

Fiscal Year	General Fund			Capital Improvements Programs
	Operating Expenditures <u>b/</u>	Debt Service	Total	
1979	\$ 39,541	\$ 10,865	\$50,406	\$69,143
% Distribution	78.4	21.6	100.0	
1980	45,915	29,152	75,067	90,524
% Distribution	61.2	38.8	100.0	
1981	56,564	32,820	89,384	128,921
% Distribution	63.3	36.7	100.0	
1982	80,909	74,150	155,059	210,594
% Distribution	52.2	47.8	100.0	
1983 <u>c/</u>	87,489	100,370	187,584	268,000
% Distribution	46.6	53.4	100.0	(est)
1984 <u>c/</u>	104,621	126,170	230,791	N/A
% Distribution	45.3	54.7	100.0	

- a/ Includes all expenditures except enterprise funds.
- b/ Includes transfers to Capital Projects Funds.
- c/ Budgeted expenditures.

Sources: North Slope Borough, Official Statement Relating to the Original Issuance of \$200,000,000 Bond Anticipation Notes, Series A: Part II: Information Statement (April 5, 1983), p 36.

North Slope Borough Budget Document, FY 1983-84, Ordinance 83-3, p 10.

Alaska Consultants, Inc.

As Table 14 indicates, expenditures for education have remained the largest single item of outlay in the Borough's operating budget. However, the rate of increase in expenditures for education since 1979 has been the lowest for all of the categories of activity. The housing function experienced the steepest rate of increase as the Borough's stock of public housing facilities expanded. Since the Borough does not utilize enterprise fund accounting for activities such as public housing and utilities, it is difficult to assess the rate of change in the net cost for such activities after deducting the revenue from rents and user fees.

The acceleration in capital improvements program spending can be illustrated in terms of the general obligation bond sales essential to support construction expenditures (see Table 13 for annual capital expenditures). The bond sales from 1979 to date have been:

<u>Year</u>	<u>Total Bonds Sold</u>
1979	\$50,000,000
1980	140,000,000
1981	140,000,000
1982	260,000,000
1983	315,000,000 (Includes \$200,000,000 bond anticipation notes)

The remaining authorized but unissued general obligation bonds totalled \$308,474,000 when the \$200,000,000 sale of bond anticipation notes was made in April 1983. A sale of \$15,000,000 in general obligation bonds was made in December 1983. The remainder of the authorized general obligation bonds (\$293,474,000) will be sold in February 1984, but \$200,000,000 of the sale's proceeds will be used to retire the bond anticipation notes. A special bond election, subject to final Assembly

TABLE 14
 OPERATING EXPENDITURES BY ACTIVITY a/
 NORTH SLOPE BOROUGH
 FY 1979 AND 1984
 (thousands of dollars)

<u>Activity</u>	<u>Fiscal Year</u>		<u>Percent Increase</u>
	1979 <u>b/</u>	1984 <u>c/</u>	
General Government	\$6,038	\$18,812	211.6
Community Services	5,862	18,768	220.2
Health/Social Services	1,687	6,116	262.5
Miscellaneous	500	--	--
Housing	537	5,116	852.7
Public Safety	1,702	6,954	308.6
Education	<u>12,636</u>	<u>28,855</u>	<u>128.4</u>
Sub-Total	(28,963)	(84,621)	(192.2)
Capital <u>d/</u>	<u>10,579</u>	<u>20,000</u>	<u>89.1</u>
<u>TOTAL</u>	39,541	104,621	164.6

a/ All expenditures except enterprise funds.

b/ Actual expenditures.

c/ Budgeted expenditures.

d/ Transfers to the Capital Project Funds equal to 5 percent of bonds to be sold.

Sources: North Slope Borough, Official Statement Relating to the Original Issuance of \$200,000,000 Bond Anticipation Notes, Series A: Part II: Information Statement (April 5, 1983), p 36.

North Slope Borough Budget Document, FY 1983-84, Ordinance 83-3, p 10.

approval, is planned to be held in February 1984, at which time Borough voters will be asked to authorize the sale of a further \$153,941,000 in general obligation bonds.

Future Borough Property Tax Revenues

The ability of the North Slope Borough to control its property tax revenues is influenced by three sets of factors: legal constraints on the tax rate, total assessed values and the willingness of local taxpayers to tax themselves.

Property Tax Rates. The State may limit municipal property tax rates directly by establishing a maximum rate-or indirectly by limiting the amount of tax dollars which can be collected annually. An even more indirect limitation on that portion of the property tax assessed for debt retirement would be to **limit** the maximum bonded indebtedness which a municipality can incur.

Local taxpayers can also influence the rate by limiting their authorization of bonded indebtedness and by electing mayors and municipal legislative bodies committed to establishment of certain tax rates.

Property Tax Base. The total assessed value of a municipality's taxable properties is determined by the magnitude of taxable properties as well as the method by which the properties are

evaluated. The State may establish procedures controlling the property assessment or **it** may undertake the task itself,

At present, there is no statutory **limit** to the property tax rate which the North Slope Borough may establish for servicing its bonded indebtedness. The State assesses **certain** oil and gas industry facilities and these properties make up the bulk of the taxable property within the Borough.

Under State law, municipalities may levy up to a 30 mill tax on property for operating purposes. However, a municipality **also** has a per capita **limit** on the **total** property tax dollars it can collect for operating purposes. **It** is this per capita restriction which is presently limiting the property tax rate which the Borough now establishes for operating purposes. The State also calculates the **total** number of Borough residents each year. This right to determine the total population figure is of particular importance because the manner in which the workers at the oil and gas industry camps within the Borough are enumerated as to **place** of residence may change the Borough's total resident population count for tax purposes by as much as 100 percent.

State tax statutes provide for a **levy** of **20** mills on certain oil and gas properties directly assessed by the State. However, the industry's payments of this tax to the State are reduced by the property taxes which are **paid to** a municipality for the same properties. The higher the municipal property tax rates, the lower is the State's tax revenue from the oil and **gas** industry property. It is this relationship between

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North Slope Borough property tax revenues from the oil and gas industry and the net flow of property tax dollars to the State which strongly influences attitudes of those municipalities with little or no oil and gas properties to tax directly. Such municipalities have taken legal and political action to influence the State's annual computation of the North Slope Borough's resident population and thus control the property tax rate which the Borough can levy for operations (as well as controlling Borough's revenues under the State's revenue sharing program). The 1983 introduction of a **bill** in the State Legislature to establish a maximum per capita indebtedness for municipalities is a variation of the effort to limit the North Slope Borough's taxing powers.

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The various forces which could work to limit the North Slope Borough's property tax rates and revenues are discussed extensively in Mineral Management Service's Technical Report **Number 85 (ISER)**. The report concludes:

- o That the property tax base of the North Slope Borough will, even without new oil discoveries, remain very high and is not likely to be a constraint on the Borough's revenues for at least the next 15 years;
- o That the property tax burden upon Borough residents is not likely to be so high as to constrain property tax revenues;
- o That State-imposed limits will continue to be the primary factor limiting Borough property tax revenues, with these limitations being determined in the Statewide political arena; and

- o **That** increased uneasiness among private **lenders regarding the** size of **the** Borough's debt and the ability of the Borough to finance the cost of operating its expanding facilities is **likely** to cut back Borough borrowing.

The bond rating bureaus have indeed recently expressed concern regarding the rate and magnitude of the Borough's bond sales. Standard and Poor's cut its rating of the Borough's bonds in June **1983**, but other rating bureaus did not follow this **lead**. The reduction of the Borough's bond credit rating, if maintained, could lead to higher Borough interest expense, a **loss** of some current markets, increased concern by the State administration and Legislature and, especially, some reduction in overall bonding capacity.

Impact of Federal Offshore Oil and Gas Development

- o **Borough Tax Revenues**. The Minerals Management Service's Technical Report Number 85 (ISER) also analyzes the impact of OCS development resulting from Federal Lease Sale **87** upon Borough revenues. The conclusion is reached that expansion of the Borough's property tax base from this OCS development in the Beaufort Sea would not have a significant effect upon Borough revenues because future Borough revenues are more **likely** to be constrained by politically determined limits rather than by the size of the Borough's tax base and because a large **share of** the resulting capital investment **could** be offshore and beyond the Borough's tax jurisdiction.

OCS development in the **Chukchi** Sea following the **Barrow Arch Lease** sales would, for the same reasons, have a limited impact upon the Borough's property tax revenues. The **Chukchi** Sea development might be relatively more important to Borough tax benefits in that it will be occurring at a later date when the decrease in present onshore property values may be accelerating.

It does not seem likely that OCS development will have any significant impact upon intergovernmental revenues which the Borough receives from the State. The State's revenues from oil and gas development beyond the three-mile zone are limited relative to the benefits realized from development onshore and in State territorial waters. Long range forecasts of State revenues show overall declines by the 1990's, despite OCS development.

- o **Borough Bond Revenues.** Future Borough capital expenditures will depend primarily on the ability of the Borough to **sell** general obligation bonds and service the attendant indebtedness. The rating bureaus have already evidenced concern about the amount of Borough bonds outstanding and the rate at which the bonds have been sold in recent years. **While** there is now no legal limit on the rate at which the Borough may tax property for debt service, strong political and economic forces undoubtedly will come into play if the **total** property tax rate approaches 20 **mills**. Once the 20 mill rate is reached, the State **would** receive no property taxes from oil and gas properties which it assesses in the North Slope Borough

since the Borough would have preempted the entire 20 mills for its own purposes.

A bill was introduced in the 1983 session of the State Legislature to limit municipal per capita indebtedness. If such legislation were passed, the North Slope Borough's ability to sell more bonds and (indirectly) to tax property for debt service could be seriously impacted. Alternative approaches to this proposed State-imposed restriction on the Borough's taxing powers for debt service could be a limit on property taxes for debt service purposes or a limit on property taxes for all purposes.

Since OCS development will have a limited impact upon the Borough's taxable property values, and since State-imposed limitations on the Borough's taxing powers are so significant, OCS development which might result from Barrow Arch Lease sales in the Chukchi Sea will not likely alter the probability that the North Slope Borough now faces a much lower level of future general obligation bond sales than has been the case during the past several years.

A report entitled "A Review of Debt Capacity and Debt Management for the State of Alaska", prepared by the Municipal Finance Officers Association for the Alaska Legislative Budget and Audit Committee was released in August 1983. In discussing local government debt, the report notes that the State of Alaska presently places few constraints on the issuance of debt by its local government subdivisions, in contrast to most states where a

TABLE 15

STATE OF ALASKA
LOCAL GOVERNMENT DEBT

City/Borough	General Obligation Debt Outstanding 07/01/82 <u>a/</u>	Revenue- Supported Debt Outstanding <u>b/</u> 12/31/81	Moody 's Rating <u>c/</u>
North Slope Borough	\$587,400,000 <u>d/</u>	-0-	A
Municipality of Anchorage	261,010,000	\$236,660,000	A1 /Baa
Kenai Peninsula Borough	98,999,603	-0-	A
City of Valdez	84,460,000	9,200,000	A
Fairbanks North Star Borough	83,158,350	35,000,000	A/Aa
Matanuska-Susitna Borough	65,218,090	-0-	A
City and Borough of Juneau	27,904,000	146,000	Baa1
Kodiak Island Borough	20,042,372	-0-	Baa1
City and Borough of Sitka	17,486,200	5,168,000	Baa1
Ketchikan Gateway Borough	14,495,000	-0-	Baa1
City of Fairbanks	11,915,000	36,400,000	A
City of Ketchikan	8,110,000	12,567,000	Baa1 /Baa
Bristol Bay Borough	3,895,000	-0-	NR
City of Kenai	3,695,000	280,000	NR
City of Palmer	3,629,401	-0-	NR
City of Unalaska	3,500,000	456,000	NR
City of Kodiak	3,250,000	4,295,000	Baa
City of Petersburg	2,995,000	2,526,000	Baa1
City of Homer	2,877,000	1,096,000	Baa
City of Nenana	2,725,000	-0-	NR
City of Wrangell	2,578,000	612,000	NR
City of Skagway	1,826,325		NR
City of Cordova	1,673,200	1,000,000	NR
Haines Borough	923,310	-0-	NR
City of Haines	805,000		NR
City of Bethel	585,000	-0-	NR
City of Nome	507,872	960,000	NR
City of Seldovia	430,000	55,000	NR
City of Dillingham	73,000	231,000	NR
City of Craig	37,498	93,000	NR
TOTAL	\$1,316,294,221	\$347,356,000	

a/ From Alaska Department of Community and Regional Affairs, Alaska Taxable 1982.

b/ From Moody's Investors Service, Moody's Municipal and Government Manual 1983, and Alaska Department of Community and Regional Affairs.

c/ When two ratings are given, the first applies to general obligation debt, and the second to the majority of revenue bonds.

d/ As of March 31, 1983 the North Slope Borough had \$787,400,000 in outstanding general obligation bonds. In April 1983, the Borough sold \$200,000,000 in bond anticipation notes and subsequently sold another \$15,000,000 in general obligation bonds in December 1983. The Borough is planning a February 1984 sale of all remaining authorized bonds (\$293,474,000), with \$200,000,000 of the proceeds to be used for retirement of the bond anticipation notes.

NR Not Rated.

Source: Municipal Finance Officers Association. A Review of Debt Capacity and Debt Management for the State of Alaska. Washington, D.C. August 1983.

TABLE 16

ALASKA MUNICIPAL DEBT RATIOS

<u>City/Borough (population)</u>	<u>G.O. Debt Per Capita</u>	<u>Debt as Percentage of Assessed Value</u>
North Slope Borough *	\$77,781	7.10
Municipality of Anchorage ****	1,278	2.46
Kenai Peninsula Borough ***	3,064	4.45
City of Valdez *	22,864	4*97
Fairbanks North Star Borough ****	1,146	2.78
Matanuska-Susitna Borough ***	2,508	5.42
City and Borough of Juneau **	1,267	2.69
Kodiak Island Borough **	1,576	4.58
City and Borough of Sitka *	2,127	4.15
Ketchikan Gateway Borough **	1,166	2.17
City of Fairbanks ***	463	1.12
City of Ketchikan *	1,043	2.58
Bristol Bay Borough *	3,064	4.45
City of Kenai *	706	1.80
City of Palmer	1,438	3.93
City of Unalaska *	1,821	4.76
City of Kodiak *	553	1.00
City of Petersburg *	985	2.32
City of Homer *	993	1.85
City of Nenana *	5,046	30.39
City of Wrangell *	1,085	2.94
City of Skagway *	2,312	3.21
City of Cordova *	747	1.44
Haines Borough *	499	1.30
City of Haines *	746	0.23
City of Bethel *	159	0.41
City of Noms *	148	0.32
City of Seldovia *	590	2.26
City of Dillingham *	40	0.11
City of Craig *	62	0.17
<u>Statewide Average</u>	<u>\$4,648</u>	3.75

Moody's Local Debt Medians

<u>Populati on</u>		
****	200,000 - 300,000	361
****	50,000 - 100,000	391
***	25,000 - 50,000	289
**	10,000 - 25,000	422
*	Under 10,000	600

Source: Alaska Department of Community and Regional Affairs. Alaska Taxable, Fiscal Year 1982, as published by Municipal Finance Officers Association in A Review of Debt Capacity and Debt Management for the State of Alaska, p. 120.

limit is placed on the amount of local government debt which may be issued. After discussing the high levels of debt which have been issued by the State's local governments (see Tables 15 and 16), the higher than average interest costs of Alaska's local government debt, and the loss to the State of revenues from property taxes levied by certain localities to meet annual debt service requirements, the report authors suggest that the State might wish to further analyze the bond market experience of local governments and State policies regarding local debt management to encourage prudent use and guard against misuse of local debt issuance. The authors also conclude that:

"Currently the State is being short-changed by those localities that levy a high amount of taxes on oil production property in order to finance debt service. Because taxes paid to the locality are credited towards State property tax liability, this represents a direct revenue loss to the State. It is, therefore, in the State's interest to address the absolute level of debt issuance by its localities."

The point here is not to judge the appropriateness of the study's conclusions but to suggest that the conclusions are probably shared by a number of municipalities in Alaska as well as by the State legislators representing them.

SUBSISTENCE ECONOMY

As previously discussed, economic opportunity in terms of wage and salary employment for North Slope communities has greatly increased in the past ten years, primarily related to the discovery and development of oil and gas reserves in the region and to the subsequent

incorporation of the North Slope Borough. This section considers 1) the interrelationships between the subsistence and more modern wage economies and 2) the impacts which increased wage and salary employment has had on subsistence activities, including the amount of time available for subsistence, scheduling, harvest ranges and equipment. It should be noted that the quantity of wildlife resources harvested is beyond the scope of this report.

Increased employment opportunities have affected the subsistence activities of North Slope Borough residents in two ways. First, greater opportunities for employment have increased the amount of money readily available for investment in subsistence equipment. Second, employment has reduced the amount of time available for the pursuit of subsistence activities. These two impacts have resulted in changes in harvest techniques, the timing/scheduling of specific harvests, the amount of time necessary for the successful harvest of specific wildlife resources and, in some cases, they have influenced hunting ranges and changed the hunting emphasis on specific resources. On the other hand, techniques used, the range and the timing of the harvest have remained the same for some species.

To understand the technological changes in harvest tools and techniques presently used by North Slope-Borough residents requires a brief discussion of the time frame during which these advances were incorporated, as well as how technology, settlement patterns, harvest ranges and scheduling, and the wage economy are all interwoven. For example, the introduction of the rifle in the late 19th century focused

- interest on ice edge hunting and altered settlement patterns as more people gradually moved to suitable coastal locations to hunt seals during the winter months. Although the rifle required some access to money and/or trade goods, it did not necessitate the high level of cash as did later equipment. On the other hand, the use of **snowmachines**, large outboard motors and three-wheelers which has occurred on the North Slope has become widespread in the past fifteen years. Such equipment requires considerable amounts of cash to purchase, maintain and operate.

- It is beyond the scope of this report to discuss how seal hunting gradually changed from the long vigil at the breathing hole to the type of open lead hunting which is practiced today, or how the caribou skin tent was replaced by the canvas wall tent. Rather, this discussion addresses the major technological innovations of the past twenty years which have become commonly available and used largely as a result of the increased buying power of **local** residents. These changes include the replacement of dog teams by snowmachines, the use of wood and aluminum boats with increasingly powerful outboard motors, the addition of the three-wheeler and, in some communities, the airplane to the repertoire of subsistence harvest tools.

Snowmachine

- The replacement of the dog team by the snowmachine began on the North Slope in the mid-1960's and was virtually completed by the late 1970's. ● While there are still a few active dog teams, most families presently use snowmachines for travel and hunting during the winter. **Local**

residents indicated that the snowmachine has numerous advantages over the dog team including speed, mobility and a reduction of the quantity of food necessary to feed sled dogs. Perhaps most important is the increased travel speed which **snowmachines** provide. Trips which used to take villagers four days with a dog team are now accomplished in a single day (fieldwork for this study). **Snowmachines** also allow villagers to travel further from the village and cover a greater area while hunting, thus bettering their chances of a successful hunt. In addition, because the hunter can cover such large areas rapidly, he can be more selective in what he harvests.

The speed, hauling power and mobility of the snowmachine have enabled villagers to balance local employment and subsistence pursuits. For example, snowmachines have facilitated weekend hunting by allowing hunters to travel faster and harvest a week's worth of game in a single day. As one resident stated, "Because less time is spent traveling, the snowmachine gives you more time to hunt and more time to **work**." Thus, the single most important advantage which snowmachines provide is to reduce travel time to and from harvest areas.

Another advantage of snowmachines is that they do not have to be fed except when they are being **used**. Dog teams must be fed year-round, including the summer when they are rarely **used**. **Also**, under present schedules where many hunters mix subsistence activities with wage employment, dogs have to be fed all week during the winter although the hunters may only use them on the weekend. **In** this case, the snowmachine

is much easier to own. It can sit idle with no effort expended by the hunter during the week and only requires fuel while in use.

Conversely, there are also disadvantages to **snowmachines**. These include dependability, price and operating costs. One resident summed up the dependability of dog traction when he said, "Dogs will always bring you back home." Also, as discussed **below**, residents noted that dog teams are much better on sea ice where they are better suited to negotiate pressure ridges and, because of the distribution of weight over a large area, safer than the heavy **snowmachines**. Snowmachines are also costly to repair. Their continual use in harsh conditions (especially rough ice), and the high cost of replacement parts makes them one of the most expensive items to maintain and repair. Some families average \$1,000 each winter on repairs. New machines average \$3,500 and generally only last two to three years. Families with several adult sons who continually use the household **snowmachine** reported that they only got one winter out of a new machine. Thus, as with all hunting equipment, the useful life depends on the use and care given to the tools. A further difficulty related to snowmachine repair is the large variety of brands now available which makes interchanging parts difficult.

The unreliable nature of **snowmachines** has led to a change in hunting patterns. First, the solitary hunter is no longer the norm. Rather, on **long** distance expeditions, hunters often travel with a partner. As a result, there is more teamwork than in the past. If hunters do go out alone, they travel on well used trails so that if they break down, other hunters are **likely** to pass them. Second, the fieldwork indicated that

there has been a change **in** the use areas for winter sealing in some villages. Because **snowmachines** are unsuitable on the pack ice, more time is spent along the **landfast** ice margin, with hunters traveling further distances from the village but staying closer to shore.

Three-Wheelers

In recent years, three-wheelers have come into use in the study communities. These **all** terrain vehicles travel on gravel beaches, hard packed snow, mud, shallow water, ice and **land**. They are fast, economical to operate and, according to the 1983 interviews, well-built. Less expensive than **snowmachines** (\$1,600 to \$2,400), they require fewer repairs and reportedly travel in excess of 60 miles on one tank of gas. Villagers indicated that three-wheelers lasted approximately two to three years.

Three-wheelers are used year-round **in** some villages and therefore many families consider them more practical than **snowmachines**. Most importantly, they provide overland access during the snow-free summer when **inland travel** is difficult. As discussed under the separate communities, three-wheelers provide rapid access to subsistence use areas, especially at Point **Hope**. **In** this sense, they provide quick access to previously inaccessible areas in certain seasons, reduce **travel** time to harvest areas, expand the seasonal hunting range and **allow** additional time for hunters **to** devote to wage employment. Three-wheelers also facilitate **travel** within the **villages** which have recently become more spread out, largely because of subdivisions

developed by the North Slope Borough for new housing. Three-wheelers are commonly used to travel to the airport, to and from the store and to other houses in the village. An indirect effect of three-wheelers is that they have extended the life of **snowmachines** by providing an economical alternative to summer use of **snowmachines**.

Boats and Outboard Motors

Both outboard motors and wooden boats have been used by residents of the study area for decades. However, in the past ten years, increasingly more powerful outboard motors and lighter aluminum or fiberglass boats have become more available to North Slope residents. While each village of the study area has adopted equipment suitable to the particulars of its **local** environment, the general tendency has been to use more powerful motors and primarily aluminum boats. This equipment has had a variety of effects on the subsistence economy, including reducing the number of marine mammals harvested to maintain skin boats (now primarily used only for whaling) and increasing hunter speed, mobility and harvest ranges for some sea mammals.

When the dog team was replaced by the snowmachine, it became unnecessary to hunt seals continually throughout the winter. **However**, the **desire** for **seal** oil and sea mammal meat for human consumption did not necessarily decrease and, while some hunters continued to hunt **seals** during the winter months, many altered their seasonal rounds to obtain seal **oil** and meat later in the year. The advent of more powerful outboard motors and sturdy aluminum boats enhanced this process.

Presently in all villages in the study area, the majority of **seal, ugruk** and walrus hunting occurs during the open water season as the hunters travel in and among the numerous ice pans and **floes** looking for sea mammals asleep on the ice. The increased mobility provided **by** these larger motors allows the hunters to travel to hunting areas faster, **cover larger** areas while hunting and travel into areas which would have been considered too far and dangerous in the slower man-powered skin boats.

The increased affluence of many residents of the study area allows them **to** have different boats for different subsistence activities. Boats with outboards are now also the common means of river transport, although both the boats and motors are generally smaller than their oceangoing counterparts. Prior to the adoption of outboard motors, dog teams were often used to **pull** boats upriver **to** inland fishing and hunting areas. Outboard motors also have the same advantage over dogs as do **snowmachines** in that they do not have to be fed when they are not in use.

Some marine **hunting** activities have not been directly altered by this new equipment. **For** example, in Point Hope and Barrow, the skin covered **umiak** is still used for spring bowhead whaling. However, because the **umiaks** are now no longer used in these communities for other subsistence activities, their skins now last longer before they need to be replaced. **In Wainwright**, on the other hand, the lead conditions are different and the majority of whaling captains presently use aluminum boats with powerful outboards to pursue and harvest bowhead whales. This practice

is especially effective late in the whaling season when the leads are wide and bowheads travel further from shore. In addition, in those villages which no longer use skin covered **umiaks** (Point Lay and **Atqasuk**), the harvest demand for **ugruk** has decreased and, in some instances, altered the seasonal subsistence activities of local residents.

Perhaps the **most** important change which has occurred since the adoption of boats and outboard motors is the reduced amount of traveling time to and from harvest areas. Hunters can now travel to hunting areas for a particular species and return in a fraction of the time formerly necessary, **allowing** them to maintain steady employment and **still** hunt and fish for the desired quantity of food.

Costs Associated with Subsistence Activities

From the preceding discussion of new equipment used by North Slope hunters and fishermen, it is apparent that in order to actively participate in the contemporary seasonal round of subsistence harvests, it is necessary for a hunter to have access to cash. The **equipment** is expensive to acquire, maintain and operate. In addition, because of the harsh Arctic conditions and the intensity of seasonal use, much of it (especially **snowmachines**) has a very short life span. Equipment needed and other annual costs include: boats, outboards, **snowmachines**, three-wheelers, repairs, ammunition, rifles, tents, sleeping bags, cook stoves, fuel, sleds and nets.

Table 17 presents a partial list of subsistence expenses in the study area. It indicates that a hunter who is not a whaling captain spends an estimated \$3,800 annually for fuel, ammunition and repairs. Combining the estimated life of the four major equipment expenditures with their average purchase price results in an **annual** average cost of \$3,927 for the purchase of an aluminum **skiff**, outboard motor, snowmachine and a three-wheeler. Although a hunter does not purchase each of these items every year, the relatively short life span of this equipment in the study villages requires that he often purchases at least one of them annually. Thus, in order to replace this equipment as it wears out, the hunter currently spends approximately \$4,000 per year. Combining this with the annual costs for fuel, ammunition and repairs, results in an estimated annual cost of \$7,727. That figure represents the capital outlay for an individual hunter and is not necessarily representative of the collective subsistence costs for a household or **family** unit. If there are two hunters in a household, the costs would increase but not necessarily double because not **all** equipment is duplicated. In addition, some related families living in separate households hunt together and purchase some equipment collectively. Although each hunter may have a **snowmachine**, the group may only purchase one seagoing boat and outboard motor. If the hunter is a whaling captain who only whales in the spring (Point Hope, **Wainwright** and some Barrow captains), his **annual** subsistence costs are approximately \$12,227. If he also whales in the **fall** (Barrow captains **only**), his average annual subsistence expenditures rise to approximately \$15,227.

TABLE 17

PARTIAL LIST OF SUBSISTENCE EXPENSES a/ b/
CHUKCHI SEA VILLAGES
1983

Equipment <u>c/</u>	Cost Range	Average Cost	Estimated Life	Estimated Average Annual Cost
Aluminum Ski ffs	\$1,800-3,000	\$2,400	5-6 years	\$ 436
Outboard Motors	1,500-4,000	2,750	2-5 years	786
Snowmachines	2,800-4,500	3,650	1-3 years	1,825
Three-wheelers	<u>1,800- 2,600</u>	<u>2,200</u>	2-3 years	880
	\$7,900-14,100	\$11,000		\$3,927
Estimated Annual Cost of Fuel	\$1,600-2,000	\$ 1,800		
Estimated Annual Cost of Ammunition	200- 600	400		
Estimated Annual Cost of Repairs	<u>1,200- 2,000</u> 33,000-4,600	<u>1,600</u> \$3,800		\$3,800
Estimated Annual Cost of Spring Whaling	\$3,000-6,000	\$4,500		\$4,500
Estimated Annual Cost of Fall Whaling	\$2,000-4,000	\$3,000		\$3,000

a/ Does not include the cost of rifles, sleeping bags, cook stoves, tents or binoculars.

b/ Information **is** based on interview data from 34--subsistence harvesters in Point Hope, Point Lay, **Atqasuk** and Barrow. Generally, **all** of the interviewees were employed during the past year (either seasonal construction, full-time permanent, or part-time permanent). Four were unemployed at the time of the interview.

c/ The estimated life of aluminum ski ffs represents the number of years they can be used safely in the ocean. Often, after they are considered unsafe for ocean use, villagers (especially from Barrow) may take them upriver to fish camps.

Source: Stephen R. Braund & Associates.

The recent **availability** of **local** temporary and permanent **jobs** associated with or resulting the North Slope Borough's capital improvements program has greatly contributed to villagers' ability **to** obtain, maintain and operate their hunting equipment. **In** many cases, it is not only the job opportunity which has enhanced subsistence activities but also the type and location of job. For example, there are a relatively **large** number of jobs available in the villages which enable individuals to both work and participate in local subsistence activities. Most jobs in each village are either construction-related or permanent North Slope Borough positions. The North Slope Borough has a generous leave policy for permanent employees which allows them time to pursue subsistence interests. Construction jobs are generally high paying, seasonal and temporary. Many local males prefer to participate in temporary construction work rather than in full-time, year-round employment because it allows them more time to pursue subsistence activities. They can hunt during periods of unemployment, and the new equipment, which greatly increases hunters' mobility and travel speed (previously discussed), **allows** these workers to harvest wildlife in the evenings and on weekends while still employed. Finally, it is the current high **levels** of local **employment** which enables so many villagers to purchase the desired new equipment.

Although not every hunter owns **all** four major pieces of equipment, **the** expanded employment opportunities and resulting financial rewards have provided individuals with wider access to them in recent years. Most **of** the hunters who were interviewed worked (or had in the recent past and were temporarily unemployed), owned a **snowmachine**, an aluminum **skiff**, an

outboard motor and a three-wheeler. In many cases, a household had more than one **snowmachine** or three-wheeler because of younger hunters who lived there.

The relatively high costs associated with the purchase, maintenance and operation of boats, outboard motors, **snowmachines** and three-wheelers has probably resulted in a higher financial cost of harvesting a given amount of meat than twenty years ago. Thus, although hunting is more efficient in terms of the effort necessary to harvest meat, it is less efficient in terms of the amount of money it costs. Under present circumstances of high local employment opportunities, the cost of subsistence harvesting is not a disadvantage. -Hunters in the study communities are presently able to earn the necessary money but this **will** not necessarily continue to be the case.

Subsistence Leave

From the villager's perspective, local employers generally allow adequate leave time for employees to pursue subsistence activities. For example, the North Slope Borough provides two types of leave which employees may use for this purpose: subsistence leave and personal leave. Under the Borough's subsistence leave policy, any full-time permanent employee is entitled to 10 working days of non-paid leave per fiscal year to pursue subsistence activities. Borough personal leave accrues on a monthly basis and is based on the length of employment.

Previous employment for the federal government and the State counts as years of service when the employee begins to work for the Borough. If

an employee **has** worked **for** the Borough for less than two years, he or she accrues 2.5 days of annual leave per month, or 30 days of paid leave per year. This leave expands into **45** days per year for employees who have worked for the Borough for **10** years or more. Thus, North **Slope** Borough employees who work the entire year have between 30 and 45 days of paid annual leave per year.

Workers often take this leave in smaller chunks of time to coincide with various subsistence pursuits. For example, if an hunter had 36 days of personal leave and **10** days of subsistence leave, he might take two or three weeks for spring whaling, two weeks for spring sea mammal hunting, two weeks for **fall** fishing and caribou hunting and occasional days throughout the winter for caribou hunting. In addition, he **would** probably hunt on weekends and evenings when the weather permitted. Because **of** increased mobility afforded by improved travel technology, hunters waste little time traveling to the harvest area and are more mobile. Thus, by manipulating employment, leave time and free time (**i.e.** evenings and weekends), **allowing** for seasonal wildlife availability, as well as taking advantage of improved **technology**, local hunters participate in the major harvests of the year and generally harvest as much meat as they desire (except when regulations or quotas limit hunting).

Generally, construction contractors in the villages do not have any formal subsistence leave policy for **local** workers, but they indicated that they let villagers go hunting and fishing when they so desired. This absence from the job, however, was without pay. **When** the hunters

return to the village, they have a job if one is available. There are no limits on the length of time a worker can be gone. All of the contractors noted that absenteeism was highest during the spring whaling season. In many other cases, employees went hunting for a weekend and took an extra day or two. Most village corporations and their subsidiaries do not have formal subsistence leave policies, but leaders said they were very flexible, especially during whaling season.

In conclusion, considering the cash requirements for contemporary subsistence activities, the availability of local jobs, the seasonal and/or temporary nature of much of the employment and the generous policies related to annual and subsistence leave for permanent workers, the recent employment opportunities in the North Slope are compatible with current subsistence activities.

Changes in Target Species

Because of changes in resource population abundance and migration patterns, as well as fluctuating and unpredictable weather and ice conditions, a viable subsistence economy must be flexible and capable of adapting from season to season as well as from year to year. A change in one or two of a number of variables can result in a change in target species hunted in a particular area. Consequently, a healthy subsistence economy in the Arctic relies not on just a few species, but rather is based on a broad range of available wildlife resources to allow hunters to select species as availability and other conditions change. An example of how new hunting technology interacts with

employment and other variables to change the hunting emphasis of specific resources is the decline of **winter** seal hunting in the study area.

With the replacement of **sled** dogs by **snowmachines**, it was no longer necessary for villagers to harvest vast quantities of wildlife for dog food. Prior to the use of **snowmachines**, sled" dogs, which consumed an average of 2-3 pounds of meat per day per dog, often outnumbered people in the village and hence doubled the harvest requirements of the local hunters. Although the disappearance of dog traction has greatly reduced the amount of meat needed by subsistence hunters, it has not affected the hunting of **all** species equally. In many coastal villages (including the study communities), seal, walrus and, to a lesser extent, fish provided the bulk of food for the sled dogs. Walrus were large and therefore efficient to hunt **and** not a preferred human food, and seal and fish were generally available year-round. In particular, seal was readily available in the winter.

Not only a lack of dogs but a combination of factors contributed to the decline in winter seal hunting. **Snowmachines** are not very compatible with sea ice hunting as they are heavy and do not offer the weight distribution advantages of dog teams. Dogs are **able** to individually **climb** over ice ridges and the hunter can then **lift** and push the **sled** over while the dogs **pull**. The heavy **snowmachine** does not offer this advantage and rough sea ice often forms an impassable **barrier**. On the other hand, **snowmachines** are very useful for hunting caribou inland. Thus, when snowmachines replaced dogs, hunters tended to spend more time

inland hunting. The recent abundance (*i.e.* past five years) and availability of caribou has also encouraged hunters to concentrate on this species during the winter. Caribou is also a more preferred meat for human consumption than seal (Alaska Consultants, Inc. and Stephen Braund & Associates, 1983). In Point Hope, the three-wheeler also enhanced inland hunting for caribou as villagers can easily travel along the beach and inland in pursuit of this species. Furthermore, the need for winter seal meat as a staple is not presently as vital to the villagers because of the recent availability of both store-bought meat and local employment opportunities to provide the necessary money to purchase the meat if needed. Thus, the reduced demand for dog food, new technology which favored inland travel, presently abundant terrestrial alternatives and the availability of local employment, money and store-bought meat reduced the need to continually hunt seal during the winter.

● As explained above, while snowmachines facilitated inland hunting, they are unwieldy and difficult to use on winter sea ice. On the other hand, the availability of sturdy aluminum and wooden boats and more powerful outboard motors facilitated the spring (and summer if ice is present) marine mammal hunt. This more efficient equipment, presently available to increased numbers of North Slope villagers because of recent employment opportunities, has increased hunters' mobility and concentrated sea mammal hunting during this period. Hunters now concentrate on larger and therefore more efficient species (*i.e.* *ugruk*). Finally, without dogs to feed, local hunters only need to harvest half as much meat and can do so in much less time because of the more efficient equipment available (boats, motors, snowmachines and

three-wheelers). Both of these factors allow villagers more time to devote to presently available wage employment. However, if **local** wage employment opportunities **fall** off and/or the caribou population decreases, **local** hunters may resume more active winter **seal** hunting efforts. Flexibility **is** a necessary component of any subsistence economy.

Conclusion

In summary, increased supplies **of** cash provided by local economic opportunities have changed the harvest techniques and the timing of the harvests of many marine mammals. Because of wage employment, free time is an increasingly scarce commodity which local residents use to the fullest. High levels of **local** employment have resulted in greater use, if not dependence, on the three-wheeler, snowmachine and wooden or aluminum boats with outboard motors. These modern subsistence tools have minimized "down time" normally spent in preparation for and traveling to and from harvest areas. This increase in mobility has made weekend and evening hunting feasible and productive. North Slope residents stated that not **only** does employment have little effect on hunting participation but **also** that weekends and evenings, in combination with a few longer seasonal trips (**i.e.** bowhead whaling, **fall** fishing), provide sufficient time to harvest the desired amount of wildlife resources. Thus, increased cash provided **by** employment is seen as a complement to subsistence pursuits. **As** one village hunter stated:

"The best mix is half and half. **If** it was all subsistence, then we would have no money for snowmachines and ammunition. **If** it was **all** work, we would have no Native foods. Both work **well** together."

The successful mix of cash and subsistence presently visible in the study communities is dependent on a few variables which could change in the future. First, the most important aspect of current village **employment** opportunities is that the jobs are local. Working at Prudhoe Bay or some other site outside a community would not provide village hunters with as much flexibility as local employment and leave time would not necessarily coincide with the availability of the specific resource which the hunter would like to harvest. Furthermore, hunting on weekends and in the evenings would be impossible and the flexibility to hunt when the weather, ice conditions and local availability of resources were favorable would be lost. Villagers prefer to work in their own communities. Second, the recent abundance of caribou in the study communities enables local hunters to have successful hunting trips in a relatively short time. Caribou populations and migration routes fluctuate greatly over time. During periods of lower local abundance, villagers **would** probably have less hunting success during short trips (i.e. evenings and weekends).

Political Organization

FORMAL POLITICAL ORGANIZATION

North Slope Borough

The North Slope Borough is considered a municipality under Alaska law. It was incorporated on July 1, 1972 as a first class borough and a home rule charter was adopted on April 30, 1974. A resolution calling for

the formation of a charter commission to propose a unification charter, the nomination of charter commission candidates and setting an election date for charter commission members and the question of unification was approved by the Borough assembly on August 9, 1983. These matters will be voted upon by Borough voters in the regular Borough election scheduled for October 1984.

Governing Bodies and Offices. The Borough executive and administrative power is vested in the Mayor who is elected for a term of three years. The legislative power is vested in the Assembly which is made up of seven members. Management and control of the schools is provided by a seven member school board. The membership of each elected for staggered terms of three years. The Borough's home rule charter provides that operating budget of the school board is subsumed in the operating budget submitted annually by the Mayor to the Assembly.

The North Slope Borough currently exercises the following areawide and non-areawide powers within its jurisdiction:

o Areawide Powers

Assessment and Collection of Taxes. AS 29.33.030 states:

"Boroughs shall assess and collect property, sales and use taxes levied within their boundaries, subject to Chapter 53 of this title. Taxes levied by a city and collected by a borough are returned in full to the levying city."

Education. AS 29.33.050 states:

"Each borough constitutes a borough school district and establishes, maintains, and operates a system of public schools on an areawide basis as provided in AS 14.14.660. . ."

Planning, Platting and Zoning. AS 29.33-070 states:

"a) First and second class boroughs **shall** provide for planning, platting and zoning on an areawide basis."

In addition to mandatory areawide powers assumed by the North Slope Borough upon its incorporation on July 1, 1972, the following areawide powers were assumed as a result of a Borough election held April 30, 1974.

- (1) sewage and sewage treatment facilities;
- (2) watercourse and flood control facilities;
- (3) health services and hospital facilities;
- (4) telephone systems;
- (5) light, power and heat;
- (6) water;
- (7) transportation systems;
- (8) streets and sidewalks;
- (9) airport and aviation facilities;
- (10) libraries;
- (11) garbage and **solid** waste collection and disposal services and facilities;
- (12)** housing and urban renewal, rehabilitation and development;
- (13) preservation, maintenance and protection of historic sites, buildings and monuments.

Since that time, the areawide police power was transferred to and assumed by the North Slope Borough as the result of an election held July 1, 1976. In addition, fire protection powers were transferred to the North Slope Borough from the cities in late 1980, with the Borough assuming **full** operational responsibility in FY 1981/82.

Certain local government powers have not been assumed by the Borough, most notably the power of recreation. Thus, except for recreation facilities associated with its schools, the Borough cannot expend capital improvements program funds for that purpose.

Several services for which the Borough has assumed areawide responsibility, such as hospital facilities and telephone services, are already provided by other agencies. Hospital services are presently furnished by the U.S. **Public Health** Service. Telephone services are owned and operated **by** the Arctic Slope Telephone Associated **Co-op**, Inc. or private for-profit firms.

o Non-Areawide Powers and Duties in the Area Outside Cities

As specified by AS 29.38.010:

"The first class borough may exercise in the area outside cities any general **law** municipal power. Before exercising a power outside the cities only, the borough shall seek to have the identical power transferred from **cities** within the borough or propose joint borough-city exercise of the power."

Per Ordinance 73-10, the Borough assumed **al** the general law municipal powers in the area outside the cities. **In** addition, in the same ordinance, it provided for the exercise of any power within any city transferring the power **to** the Borough if said powers are transferred from less than **all** cities of the Borough.

The North **Slope** Borough, in seeking to protect the environment and subsistence resources of the North **Slope**, has used a variety of

strategies. Mineral Management Service's Technical Report Number 85 (ISER) discusses these strategies as they relate to offshore oil and gas development.

Insofar as OCS development is concerned, the Borough finds itself without jurisdiction beyond the three-mile limit and constrained by overlapping State and federal jurisdictions ashore and within the three-mile limit. The Borough is seeking to utilize federal and State coastal zone planning legislation to assert its influence out to the three-mile demarcation line through the development of its own Coastal Management Program. Official adoption of the Coastal Management Program would strengthen the Borough's legal standing to influence development activities in the coastal zone by establishing the Borough's right to monitor for violations of federal and State laws and regulations. However, the Borough's function would remain a monitoring one. Continuing observation by the Borough can lead to increased State and federal accountability, but no transfer of enforcement powers to the Borough can take place.

The effectiveness of the Coastal Management Program is further restricted in that it **would not apply** to federally controlled coastal lands such as those in the National Petroleum Reserve-Alaska and the Arctic National Wildlife Refuge. The Coastal Management Program would bolster the Borough's regulatory efforts related to subsistence resources where OCS development was

necessarily coupled with development in the coastal zone area and onshore where the Coastal Management Program was applicable.

Technical Report Number 85 (ISER) concluded that the Borough's opportunities to protect the offshore environment and its subsistence resources are indeed limited. The Borough does have the option to pursue political alliances with federal and State government agencies with mandates which most closely parallel those of the Borough in resource protection. However, it appears that the present orientation of executive **policy** in federal and State government is toward further offshore development.

The Borough **also** has access to the courts to **alter** or prevent offshore development, challenging such development under existing federal and State legislation and regulation in its efforts to protect subsistence resources. The Borough's success in such litigation has been limited to date.

Arctic Slope Regional Corporation

The 1971 Alaska Native Claims Settlement Act (ANCSA) established **twelve Native** regional corporations (with provision for a thirteenth) and a **large** number of village corporations. The Act set forth certain responsibilities for the corporations and provided for the distribution of benefits in the form of **lands** and cash to these entities and their shareholders. The Arctic Slope Regional Corporation is the regional entity for the North **Slope**. It is incorporated as a private, for-profit

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organization under Alaska statutes. It is to receive and disburse money distributed to it under the Act, to select, own and manage land made available under the Act (presently estimated to be approximately 5 million acres) and to conduct business for profit, all for the benefit of its shareholders.

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Ownership of the regional corporation rests with those Alaska Natives entitled to enroll in the Corporation under terms of the Claims Act. Each owner received 100 shares of the Corporation's stock which may not be sold, pledged, assigned or otherwise alienated, except in certain circumstances by court decree or death until December 18, 1991. As of June 30, 1982 the Arctic Slope Regional Corporation had 3,820 shareholders. The Corporation has received its full cash entitlement of \$46,888,936. It has allocated \$24,217,600 for redistribution to its shareholders and to village corporations.

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Included in the lands to which the regional corporation was entitled under Section 12(a) and 12(b) of the Claims Act were lands to be selected for its own account (to which it receives both surface and subsurface rights), plus title to the subsurface estate of lands selected by villages in the region. The latter includes "in-lieu" lands since several North Slope villages (**Atkasuk, Barrow, Nuiqsut, Wainwright** and Kaktovik) are located either within the former Naval Petroleum Reserve #4 (now National Petroleum Reserve-Alaska) or within the Arctic National Wildlife Refuge where subsurface selections are not normally permitted. As a result, the Arctic Slope Regional Corporation has selected "in-lieu" lands elsewhere in the region. However, Section

1431(0) of the Alaska National Interest Lands Conservation Act (**ANILCA**) passed in **1980** gave the Corporation the option, under certain conditions, to exchange "in-lieu" subsurface lands for an equal acreage of subsurface estate beneath village corporation **lands** in the National Petroleum Reserve-Alaska (**NPR-A**) or in the Arctic National Wildlife Refuge.

As of June 30, 1982 the Corporation reported ownership of approximately 4.6 million acres of **land**, of which about **1** million acres were "in-lieu" and village subsurface lands. The Arctic Slope Regional did exercise the option under Section 1431(0) of **ANILCA** to acquire a small but important parcel of land in the Cape **Halkett** area in 1982. In August **1983**, the Corporation also completed a land swap with the Secretary of Interior (as provided for under **ANILCA**) involving the transfer of approximately 101,272 acres of the Corporation's surface estate located within the Gates of the Arctic National Park and Preserve for **92,160** acres of subsurface estate located in the Arctic National Wildlife Refuge. The latter consists of the subsurface estate to lands to be transferred to the Kaktovik **Inupiat** Corporation plus Native allotment applications within the village corporation's selection area.

While the Arctic Slope Regional Corporation legally is a private for-profit corporation, its **large** and widespread resident shareholder body, its extended ownership of surface and subsurface estates on the North Slope and its numerous business activities on the **Slope** do, in fact, make it a significant political force within the North **Slope** Borough. In the summer of 1983, four of the seven Borough Assembly

members were either officers or employees of the regional corporation, although this changed later in the **year**:

The Arctic Slope Regional Corporation has not established an official policy regarding OCS development generally. However, a policy adopted by its Board of Directors in 1979 relating to the Beaufort Sea Lease Sale provides an insight to corporate thinking on the subject. That policy:

- o Supported the Beaufort Sea lease **sale**;
- o Encouraged local planning and management of development activities by **local** institutions;
- o Advocated that all development be conditioned upon the unique experience and understanding of **local** people and local corporations relating to the environment and resources;
- o Joined the Arctic Slope Regional Corporation with government and industry in efforts to safely develop those resources necessary to sustain a healthy Borough and State and to ensure that the development proceeded in ways benefiting the local economy, lifestyle and subsistence;
- o Opposed (at that time) development of the resource potential in areas where obvious risks were posed in light of existing technology and knowledge, such as outside the-barrier islands in the Beaufort Sea, and urged that onshore exploratory programs precede exploration outside the barrier islands; and
- o Encouraged research on the bowhead whale being continued, urging that the U.S. government have the **Alaska** Eskimo Whaling Commission participate in this research.

The Arctic Slope Regional Corporation's capability to exercise Inupiat influence related to offshore development in its business relationships with the oil and gas industry is limited by the competitive nature of that industry. While there are advantages for the industry to contract with and/or joint venture with Native-owned companies, there are also limits to the additional economic costs (if any) which can be absorbed from such relationships. These economic limitations when combined with the Corporation's needs to be a part of the North Slope oil and gas development, do limit its leverage in advancing Inupiat causes. It would seem that the Corporation's greatest opportunity to do so would be where it is leasing much sought after land to the industry.

w Community of the Arctic Slope

The Inupiat Community of the Arctic Slope (ICAS) was established with the ratification of its constitution and bylaws on August 26, 1971 by qualified Inupiat electors. It was organized in accordance with the U.S. Indian Reorganization Act of 1934 (48 Stat. 378), as amended in 1936 to include Alaska (49 Stat. 1250). The legislation enabled Alaska Native groups under certain conditions to organize as business units and/or governments.

The Arctic Slope Native Association was the parent organization of ICAS, both representing Alaska Native people north of the Brooks Range. The Association encouraged establishment of ICAS for the positive tribal powers and authorities perceived flowing to ICAS under the federal IRA legislation. These authorities included contracting to administer

Bureau of Indian Affairs and Indian Health Service programs such as education, **social** services, business assistance and health aid. Additionally, there were tax exemption possibilities as a business entity and other potential advantages, not the least being the powers of "tribal sovereignty".

ICAS has in the past contracted to administer several federally funded programs on a Borough-wide basis. However, the possibility of ICAS receiving additional federal contracts is now in question, since the Bureau of Indian Affairs has alleged that ICAS cannot provide an adequate accounting for certain funds received under prior contracts in 1982 and 1983. In September 1983, the Alaska Area Director for the Bureau of Indian Affairs officially announced that he would not authorize a recontracting of Bureau services by ICAS for FY 1984. During the next year, the Bureau has said that it **will help** ICAS to develop management systems which would allow ICAS to reapply for its contractual services in FY 1985.

A more significant political issue than **ICAS's** present contractual difficulties is that of "tribal sovereignty", a matter which has been raised Statewide regarding the legal relationships between Alaska IRA organizations and **ANCSA** corporations, between the IRAs and the State (as well as the State's political subdivisions) and between the IRAs and the federal government. What special relationship exists between Alaska Native peoples and the federal government? How does this relationship affect State jurisdiction, ANCSA corporate authority and future federal funding of Native programs? **ICAS** has interpreted "tribal sovereignty"

to mean **Inupiat** sovereignty over **all** lands of the North Slope **as well** as offshore over the Beaufort Sea and other ocean waters beyond the three-mile zone, a challenge to the State-created North Slope Borough, to the State and to some federal agencies. **The** divergence of opinion as to the meaning of "tribal sovereignty" among legal authorities is significant.

In May 1983, State tribal organizations formed the United Tribes of Alaska as an advocacy group for the sovereign rights of the **IRAs**. This resurgence of interest in **IRA** rights and powers **could** have profound and far reaching results, but the ultimate impact appears to rest with the courts and perhaps in legislation. **ICAS's** request in federal court for a legal determination of **Inupiat** rights beyond the three-mile limit was dismissed in 1983.

Inuit Circumpolar Conference

The **Inuit Circumpolar** Conference (ICC) is an international **Inuit** (Eskimo) organization with representatives from Alaska, Canada and Greenland. Its membership and operations are governed by a charter adopted at the 1980 Greenland conference and subsequently ratified by its 20 member organizations, six of which are from Alaska, including the North Slope Borough.

The ICC's primary aims are to strengthen unity among the **Inuit** of the **circumpolar** region, to promote **Inuit** rights and interests at the international level, to ensure adequate **Inuit** participation in relevant

political, economic and social institutions, to ensure the endurance and growth of the **Inuit** culture and societies and to encourage nations to develop Arctic policies which focus on the wise management and use of non-renewable resources in a manner which protects Arctic and sub-Arctic wildlife, environment and biological activity and also benefits **Inuit** economies.

The ICC's General Assembly is made up of an equal number of **Inuit** delegates (18) from each participating country. It meets regularly every two years, alternating the location among the three countries.

The General Assembly elects a President and Executive Council, establishes policy, receives and expends funds and approves the Conference's budget, directs reports and studies, establishes commissions, committees and working groups related to formulation and implementation of policy, and makes recommendations to member or international organizations regarding matters pertaining to the purposes of the Conference. The Executive Council is made up of the President and six executive members, two from each country. The Executive Council establishes the Secretariat to carry out administrative and program functions. It also seek funds for the Conference, consults with qualified persons on questions relative to the Conference's objectives and draws up a provisional agenda for each conference of the General Assembly. The ICC President is elected for a two-year term by a two-thirds majority vote of each country's delegation. The President presides over General Assembly meetings, **calls** special meetings of the Executive Council, approves expenditures of funds and directs the administrative functions of the Secretariat.

The General Assembly establishes ICC commissions, committees and working groups. The Executive Council defines the functions and powers of these groups and establishes the frequency of **the**r meetings. Typical of the groups established to date are the **International** Committee of **Inuit** Education, Culture and Language; the Arctic Coastal **Zone** Management Committee and the **Circumpolar** Whaling Commission.

The ICC receives no funds from national governments but has derived funds from some **local** governments, including the North Slope Borough (**\$300,000** in 1982) and the home rule government of Greenland.

On May 21, **1983** the **Economic and Social** Council of the United Nations gave its final approval to the **ICC's** application to become a Non-Governmental Organization in consultative status. This arrangement enables the Council to secure expert information or **adv**ice from organizations having special competence in the subjects for which consultative arrangements are made and enables organizations which represent important elements of opinion in a number of countries to express their **views**.

The North **Slope** Borough has been a significant force in organizing and supporting the ICC, with the first conference having been held **at** Barrow in **1977**. In 1983, the ICC established the **Alaska** Native Review Commission with the charge to analyze the consequences of the Alaska Native Claims Settlement Act (**ANCSA**). **While** the Commission's findings are intended primarily for the international **Inuit** community and the United Nations, the review will undoubtedly be of assistance to Alaska

Native **organizations** in submitting their own findings at the time of the Secretary of the Interior must submit a status report on **ANCSA** to the first session of the U.S. Congress in 1985.

At this stage of its development, ICC has not mobilized strong international support of the **Inupiat** position relating to OCS oil and gas development and particularly that development off the North Slope.

INFORMAL POLITICAL ORGANIZATION

While a great deal has been written about traditional **Inupiat** organization, it is not intended to repeat that information in this report. Instead, attention was limited to one organization which, because of the composition of its membership, exerts considerable political influence and commands a great deal of respect. That organization is the Alaska Eskimo Whaling Commission.

Alaska Eskimo Whaling Commission

The Alaska Eskimo Whaling Commission (**AEWC**) is an organization representing the nine **Inupiat** and **Yupik** villages which have traditionally included the taking of bowhead whale as a part of their subsistence harvest activities. The **Commission's** board of directors is made up of nine Eskimo whaling captains, each elected by the whaling captains of their respective village. The **AEWC's** organization resulted from the attention given by the International Whaling Commission (**IWC**) to the subsistence harvest of bowhead whales, prompted by an historic

decline in the bowhead whale population and by the present lack of adequate knowledge regarding bowhead **whale** population size and dynamics.

The National Oceanic and Atmospheric Administration (NOAA), which has primary responsibility **w**thin the federal government for management and enforcement programs **ass**ociated with the bowhead whale, had established regulations covering **the** harvest of the bowhead by Alaska Eskimos as a **result** of the International Whaling Commission's concerns over a possible continuing decline in the bowhead whale population. In the spring of **1981**, NOAA contracted with the **Alaska** Eskimo Whaling Commission to oversee the whaling activities of its nine member villages. This was to be done in accordance **with** a management **plan** drafted by the Commission which preserves traditional Eskimo methods of harvesting the bowhead **whale** while observing the agreement reached between NOAA and the Commission on the **total** number of whales taken and the total number of strikes allowed in a given season. Quotas for whales taken and struck are allocated among the nine villages, but there may be transfers among the villages under certain circumstances once a season is underway. **All** active whaling captains must register with the Alaska Eskimo Whaling Commission.

The Alaska Eskimo Whaling Commission provides NOAA and **the** whaling captains of each member village with daily reports once the season **is** underway on the number of whales taken and strikes made in each village. **In** turn, the whaling captains keep the Commission current on whaling activities in their respective villages. The Commission has the power, subject to NOAA review, to levy fines against whaling captains or **to**

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suspend the right of individual captains (and their crews) to whale if
- captains are found guilty by the Commission of violating the management
plan.

● The Alaska Eskimo Whaling Commission also assists NOAA in that agency's efforts to gather data on the bowhead whale and its harvest, including the contracting by the Commission for related research and services. In addition, the Commission sponsors scientific conferences on the bowhead whale and has also undertaken a program of public education regarding the significance of bowhead whale in the Eskimo subsistence economy and
- the traditional harvest practices. Since the **Commission** is so concerned about the environment of the bowhead whale, as well as activities which might affect the Eskimo harvest of this species, it has sent representatives to observe and advise the International Whaling Commission. The Commission has also taken strong **public** stances in Alaska against those activities, particularly those related to the oil and gas industry, which it believes could interfere with the traditional
● **harvest** of bowhead whales or negatively impact the **whale** population.

- **Traditionally**, the whaling captain's position has been a respected one in the Eskimo community. The Alaska Eskimo Whaling Commission board therefore has the respect of the Eskimo community, not only as a
● representative group of whaling **captains**, but **also** one whose members have a broad knowledge of Eskimo culture and traditions.

Land Use

LAND STATUS

State and federal lands, regional and village corporation lands, North Slope Borough lands and Native allotment applications are the major forms of land tenure in the North Slope Borough area. More detailed land status information for individual communities in the study area is discussed separately under the land status section for each village.

Federal Lands

The largest area of federal land within the North Slope Borough is the National Petroleum Reserve-Alaska (NPR-A). This 23.7 million acre reserve was established in 1923 by President Harding and was called Naval Petroleum Reserve No. 4 (NPR-4). With the transfer of the Petroleum Reserve in 1977 from the Navy to the Department of the Interior through passage of the Naval Petroleum Reserves Production Act, the name was changed to National Petroleum Reserve in Alaska (NPR-A). Of the eight Borough villages, three (Wainwright, Barrow and Atkasuk) are located wholly within NPR-A, while Nuiqsut is partially within the Reserve. This has had an impact on Native land selections pursuant to the Alaska Native Claims Settlement Act of 1971 because the Act reserved the subsurface estate of lands within the Petroleum Reserve for the federal government. Section 1431(o) of the Alaska National Interest Lands Conservation Act (ANILCA) has, however, made subsurface selections within the Petroleum Reserve possible under certain conditions. This

is discussed in more detail in the Alaska Native Claims Settlement Act Corporations portion of the sector analysis section.

Another large federal land holding within the North Slope Borough is the Arctic National Wildlife Refuge which was established in 1960 by Public Land Order 2214. At that time, the Arctic National Wildlife Refuge occupied a total of approximately 8.9 million **acres**. An addition of approximately 9.16 million **acres** was made to the Refuge in 1980 pursuant to Section 303(2)(A) of **ANILCA**, while the Secretary of the Interior accepted another addition of approximately 991,800 acres from the State in October 1983. The Refuge thus now encompasses approximately 19.03 million acres, with an estimated two-thirds of this acreage being located within the Borough.

One of the eight North Slope Borough villages (**Kaktovik**) is located within the Arctic National Wildlife Refuge. Although the Claims Act restricted Native selections within the Refuge to the surface estate only, a land swap agreement with the Department of the Interior has made the subsurface estate of village lands available to the Arctic Slope Regional Corporation. Land swaps between the federal government and Native corporations were made **possible** by Section 22(f) of **ANCSA** and Section 1302(h) of **ANILCA**.

By signing the land trade agreement, the federal government agreed to exchange approximately 92,160 acres of the subsurface estate of land in the Arctic National Wildlife Refuge for approximately 101,272 acres of the surface estate of Arctic Slope Regional Corporation lands located

within the Gates of the Arctic National Park and Preserve. Although the approximately **92,160** acres of subsurface estate involved in **the land** swap seems insignificant in comparison with the total Refuge acreage, it is located within the coastal plain and thus has a high potential -for oil and gas development. This land is, however, subject to a variety of restrictions concerning oil and gas and other natural resource development.

The Gates of the Arctic National Park and Preserve was established in 1980 pursuant to Section 201(4)(a) of **ANILCA**, and encompasses approximately 7,952,000 acres. This park is located in the Brooks Range west of the Arctic National Wildlife Refuge, with roughly **one** third of its area being located within the boundaries of the North **Slope** Borough.

Another national interest land area located partially within the Borough's boundaries is the **Noatak** National Preserve which was established in 1980 pursuant to Section **201(8)(a)** of **ANILCA**. This preserve is located **directly** west of the Gates of the Arctic National Park and Preserve, with over **half** of its area falling within the Borough. The **total** acreage of the Preserve is approximately 6,460,000 acres.

In addition to national parks, preserves and refuges and **the** National Petroleum Reserve-Alaska, there are other federal **lands** on the North Slope **still** withdrawn for purposes of classification, plus some **small** parcels of land set aside for military purposes. **These** national defense **lands** are classified as Distant Early Warning (**DEW**) sites, with the

exception of one classed as an Aircraft Control and Warning (AC&W) site. Active DEW line stations are located at Point Lay (LIZ-2), Wainwright (LIZ-3), Point Barrow (POW-Main), Lonely (POW-I), Oliktok (POW-2) and Barter Island (Bar-Main). An inactive DEW Line site at Bullen Point is still held by the Air Force and is currently under lease to the North Slope Borough which has been evaluating its potential as a base to service oil and gas exploration activities in that area. The AC&W site is located at Cape Lisburne.

Regional and Village Corporation Lands

The Alaska Native Claims Settlement Act (ANCSA) of December 1971 established Native village and regional corporations entitled to select specified acreages of land. The Arctic Slope Regional Corporation was established under terms of this legislation and is the regional corporation with the largest land holdings within the Borough's boundaries. According to its 1982 annual report, approximately 4.6 million acres of land is currently owned by the Arctic Slope Regional Corporation, including about one million acres of "in lieu" and village corporation subsurface lands.

The Alaska Native Claims Settlement Act placed some restrictions on regional selections within the Arctic National Wildlife Refuge and NPR-A which have subsequently been changed by Section 1431(0) of the Alaska National Interest Lands Act (ANILCA). This section enables the Corporation, at its option, to obtain subsurface rights to lands selected by a village corporation in the Arctic National Wildlife Refuge

or **NPR-A** if public lands are opened for the purpose of commercial development of oil and gas within 75 miles of the lands selected by **the** village through Section **12(a)(1)** of the **Claims Act**. The regional corporation would then be required to exchange in lieu subsurface **lands** which it had selected earlier under Section 12(a)(1) of the **Claims Act**. **To** date, the Arctic Slope Regional Corporation used this amendment during 1982 to acquire a small but important parcel in the Cape Halkett area. The corporation is also pursuing the possible acquisition of other **lands** through the same amendment.

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Another opportunity for exchanging lands was afforded by Section 1302(h) of **ANILCA** and Section 22(f) of the **Claims Act** which authorize the Secretary of the Interior to make land exchanges. Under this legislation, the regional corporation has exchanged approximately **101,272** acres of surface estate within the Gates of the Arctic National Park and Preserve for 92,160 acres of subsurface estate in the coastal **plain** of the Arctic National Wildlife Refuge.

Village corporations organized under provisions of the Alaska Native **Claims Settlement Act** are also entitled to select specified acreages of **land**. Exact acreage figures and a discussion of village corporation land holdings are included in land **status** discussions for individual -villages in the **Chukchi** Sea area.

The **only** other regional corporations with valid selections in the North **Slope** Borough area are the Northwest Alaska Native Association (NANA) and **Doyon** Limited. Section 1418(a) of **ANILCA** withdrew some of these

lands for selection under Section 14(h)(8) of the Claims Act. NANA has selected lands under this section and both NANA and Doyon Limited have selected historic and/or cemetery sites within the Borough under Section 14(h)(1) of the Act. The NANA selections within the boundaries of the North Slope Borough have all been in the vicinity of Point Hope, while those by Doyon have been concentrated in the southeastern section of the Borough.

State Lands

Although the federal government is the largest land owner in the North Slope Borough, through its ownership of the Prudhoe Bay, Kuparuk and other oilfields, the State of Alaska controls what is presently the most commercially valuable property in the region. As of December 1, 1983, the State of Alaska had patent to 3,347,169 acres, tentative approval to 3,928,481 acres and had selected an additional 4,872,188 acres of land within the North Slope Borough. State patented and tentatively approved selections are concentrated in the area between the Canning and Colville Rivers and extend south to the borders of the Arctic National Wildlife Refuge and the Gates of the Arctic National Park and Preserve.

Additional lands have been applied for in the vicinity of Nuiqsut. On the western side of the Borough, tentatively approved State land selections are concentrated in the Icy Cape/Point Lay area. Large amounts of land in this and the Point Hope area have also been applied for by the State.

In addition to onshore lands, the State of Alaska is the owner of offshore lands out to the 3-mile limit. The probability of commercial oil discoveries in some of these offshore areas, especially those in portions of the Beaufort Sea, is judged to be very high. However, because of differing federal and State interpretations of whether or not certain areas qualify as uplands (i.e. lands from which the three mile limit is measured), the ownership of certain offshore areas is disputed. In the case of the December 1979 joint federal-State lease sale in this area, for example, a total of 104,765 acres (17,605 acres currently managed by the State and 87,160 acres managed by the federal government) is still in dispute.

North Slope Borough Lands

Aside from individual parcels which it has acquired for the construction of housing and community facilities, the North Slope Borough is presently not a significant land owner. However, this will probably change in the near future as a result of an agreement signed on September 22, 1983 by the Borough and the Department of the Interior. Under that agreement, which must be ratified by Congress, the Department of the Interior would convey to the North Slope Borough the right to explore for and remove fluid hydrocarbons within the Barrow gas fields and the nearby Walakpa discovery site. In addition, the Department of the Interior would convey the surface estate to lands at the former Cape Simpson DEW Line site and other lands west of the Canning River, not to exceed a further 320 acres, to the North Slope Borough. The Department also agreed to make certain other sources of fluid hydrocarbons

available to the population of the North Slope Borough. In return, the Department of the Interior would no longer be required to provide gas service to Barrow or to other communities at or near Barrow after October 1, 1984 and would pay \$30 million to the Borough for the purposes of satisfying the energy demands of North Slope residents once that agreement had been approved by the U.S. Congress.

Native Allotments

Native allotments are essentially homesteads of up to 160 acres of non-mineral land which were granted to Alaska Natives, generally for subsistence purposes. However, because the former Naval Petroleum Reserve No. 4 was withdrawn by the federal government in 1923, the only potential allottees in this area were those who could prove use and occupancy of sites prior to that time. Despite this, a significant number of Native allotments were filed within the Reserve and a court suit (Leavitt vs. **Andrus**) challenging the validity of allotment rejections in this area was instituted. An attempt to rectify the issue was made by **ANILCA** but a January 1983 ruling by the Regional Solicitor found that **ANILCA** did not adequately address the problem and suggested that the original court suit be reinstated for a final determination on this issue.

Indian allotment authority in Alaska was **cancelled** with passage of the **Alaska Native Claims Settlement Act**. However, applications which were pending at the time of passage of the Claims Act are still eligible for consideration. Like restricted Indian lands, Native allotments are not

subject to taxation or **local** or State regulation. There are Native allotments scattered throughout the Borough but they are primarily concentrated **along** the coast and inland along rivers.

SUBSISTENCE LAND USE PATTERNS

For the purposes of this study, subsistence land use patterns involved a review of **local (Chukchi Sea village Inupiat)** use of coastal lands and offshore areas for subsistence activities. Furthermore, because this study is related to offshore oil and **gas** development, this discussion and associated subsistence maps are marine oriented with little attention given to terrestrial resource use. The subsistence maps accompanying descriptions of individual communities identify **marine** and coastal harvest ranges **by** species for key marine resources (*i.e.* bowhead whales, **belukha** whales, seals, **ugruk**, walrus, fish and birds) in each of the various **Chukchi** Sea villages. Available subsistence information for these villages was uneven. For example, considerable data were available for **Wainwright** (see John Muir Institute 1983 and Nelson 1981) and therefore no additional subsistence fieldwork was done for this village. Some data were available for Point Hope, but relatively little subsistence range information existed for Point Lay, **Atqasuk** or Barrow. Consequently, fieldwork efforts related to mapping **coastal** subsistence harvest ranges concentrated on **Point Hope, Point Lay, Atqasuk** and Barrow. As part of the subsistence mapping, coastal areas of critical subsistence importance (*i.e.* intensive use areas) were identified. **In** the discussion of marine resource use, the harvest seasons for each species are **also** identified.

An assessment of recent changes in the coastal harvest ranges of the **Chukchi** Sea villages indicated that recent technological improvements (i. e. snowmachines, powerful outboard motors and three-wheelers) have allowed subsistence hunters to travel to harvest areas much faster and cover more area while hunting. Hunters can now **travel** in a few hours what used to take a day or longer. Thus, although they may spend less time hunting than twenty years ago, they are much more efficient (i. e. it takes less time to harvest the same amount of meat) and the harvest ranges have not diminished. Discussions with elders indicated that present ranges are similar to traditional use areas. In some cases, the range has expanded (i. e. fall whaling in Barrow).

Although the fieldwork indicated recent technological improvements have not altered the range of species harvested, in some cases there was a shift in the intensity of utilization among species. For example, as discussed in the regional overview of the subsistence economy, a combination of variables, including the replacement of dog traction by the **snowmachine** and the present abundance of caribou led to an increased emphasis on caribou hunting in the winter and a reduction in overall winter hunting effort for seal. In addition, more powerful outboard motors have facilitated an increased hunting emphasis on large sea mammals, especially during the spring and summer sea mammal season. Thus, snowmachines and powerful outboard motors have changed the emphasis of particular species during certain seasons.

Limited fieldwork time necessitated the collection of subsistence resource data by interviews with knowledgeable subsistence harvesters in

each community. **Active** harvesters between the ages of **20** and 60 were interviewed. Harvest areas of inactive or retired hunters were not mapped. The number of interviews is identified under each community discussion. Each interview consisted of a checklist of marine and coastal species, the timing or **seasonality** of harvest activities, the **level** of effort and mapping of the area used to harvest each species. Because the focus was on present land use patterns, **local** harvesters were asked to concentrate their responses on the activities of the past five **years**. Hence, the intensive use areas identified on each map depict this focus and do not represent an historical **land** use inventory. The maximum areal extent used for harvesting each species is a dynamic factor which is affected by species abundance and range and changes in harvest technologies, as well as physical parameters such as weather and ice conditions. As a result, the maximum use boundary does not correspond with the intensive use areas, but represents the furthest **limits** respondents remembered going for the harvest of a particular species. **In** addition to the **field** interviews, materials from the scientific literature and agency documents were reviewed.

Subsistence land use patterns are delineated on **1:500,000 scale** maps for the villages of Point Lay and Point **Hope**. Barrow and **Wainwright** land use patterns are presented on **1:1,000,000** scale maps. This is because the **areal** extent of land use patterns in Barrow is greater, a result of both the **larger** population of this community as **well** as the greater diversity in the seasonal round among Barrow residents. **In Wainwright's** case, the **1:1,000,000** map **scale** was dictated by the **large** area used by

Local subsistence hunters, in contrast to the concentration of effort by Point Hope hunters within a relatively **small** area.

Community Facilities and Utilities

BOROUGH PROGRAMS

The North Slope Borough is a home rule municipality which has adopted a wide range of local government powers and, through the use of those powers, provides a broad spectrum of local government services. Prior to the Borough's existence, North Slope communities had few amenities. There was no high school in the region except for a junior high school program at Barrow. Although there was a hospital at Barrow, health care facilities and services in the smaller villages were rudimentary; police protection was limited; fire protection was non-existent; and utility services were generally deficient or lacking.

The provision of a broad range of community facilities and services in the traditional North Slope villages by the North Slope Borough has brought lasting change in village life. Children no **longer** have to leave the region to attend high school; each village has (or will shortly have) modern, state of the art health clinics staffed by trained aides; two trained public safety officers are stationed in each of the smaller villages, with considerably more in Barrow; fire stations equipped with a fire truck and tanker have been built in each village and the two fire stations in Barrow upgraded; superior recreation facilities are available at the schools, including swimming pools in **all**

but the smallest villages; **cable** television is being installed in all villages; and the range of utilities services has been much improved. In addition, the North **Slope** Borough has constructed a **large** number of housing units in each village which are designed to provide safe, sanitary and decent housing for village residents.

CULTURAL IMPACTS

Because of the wide ranging nature of Borough programs and the changes in village life that they have encouraged, some attention was given as part of the 1983 fieldwork to finding out how people felt about these changes. Questions centered around education and housing since these two areas appeared to have been associated with the most dramatic changes.

The construction of new education **facilities**, especially the addition of high schools, in each North Slope village has raised concerns over the impacts which these new schools are having on village **life**. These **concerns** related to the rate of attrition in the student body prior to graduation from high school, to the number of students moving on for post-secondary education or technical/vocational training and to the adequacy of the basic education the village students are now receiving.

The limited time permitted for fieldwork in this study did not permit a detailed evaluation of these questions. Furthermore, the information gained is not sufficient to conclude that an increasing proportion of young people are now completing high school. Discussions with the

director of the Arctic Education Foundation (sponsored by the Arctic Slope Regional Corporation), which provides scholarships for most Native students attending college, tend to indicate that more Alaska Native students are now attending college and graduate schools. Six years ago, only 10 or 12 scholarships were granted by the Foundation. In 1983, 36 were issued, with only 4 students dropping out before the school year ended. A total of 45 scholarships was granted for the 1983/1984 school year. Other scholarships are offered to students regardless of race by the City of Barrow.

An interview with a representative of the North Slope Borough School District confirmed that few Borough students were attending grade or high school outside the Borough (only 19 attended Mt. Edgecumbe during the 1982/83 school year), that more female than male graduates of North Slope Borough schools pursued advanced education or training beyond the high school level, and that about two-thirds of the students attending college came from Barrow. Other fieldwork confirmed that about 10 Point Hope graduates were currently attending college or graduate school and that 2 or 3 persons were attending college or graduate school from **Wainwright**. Respondents in Point Lay and **Atkasuk** said few students had ever gone to college from those villages.

The interviews with village residents and school officials indicated general agreement that so long as high paying temporary construction jobs were available in the village, there would be much less inspiration for young people to seek further education or technical/vocational training beyond high school. However, a recent **Nuiqsut** study

(Galginaitis et al. 1983) indicated that a greater number of Inupiat women completed high school and pursued advanced training or education out of necessity due to the types of jobs defined as women's work.

There were concerns that having students attend local high schools would result in fewer students completing high school, that students would not receive an adequate social education, that students would not get out to see more of the world and that it was more difficult to discipline students while attending school in the village than when they attended outside institutions. A more common concern was that students were not receiving an adequate academic education in local high schools, a perception generally shared by adults who had attended Mt. Edgecumbe as students.

Other respondents favored having local high schools in the villages as they believed it was difficult for students to adjust emotionally to being away for high school, that families were happier when the students were not separated, that students learned the Inupiat language better when they remained at home and that the basic education being provided was adequate, especially for a subsistence economy. Nelson (1982) also suggested that the recent increased interest in subsistence activities by young people can be at least partially attributed to their no longer having to leave the village to obtain a high school education.

Questions were asked during the fieldwork for this study about the impact upon the Inupiat society of the North Slope Borough's housing programs. Alaska Native respondents generally agreed, insofar as the

Inupiat tradition of the extended family was concerned, that the new housing had not weakened the larger family which had formerly occupied a single family dwelling but now was able to live in several units. The trend towards more homes with smaller households had not noticeably reduced the interaction within the extended family, especially in sharing foods and for cooperation in subsistence activities.

Improvements in local transportation and the addition of telephones have also aided in keeping the extended family ties intact within the village.

Concerns were expressed that the Department of Housing and Urban Development (**HUD**) program used by the Borough to sell the new homes to their occupants had not been utilized to the extent originally proposed, leaving too many families with only the option of renting the Borough units. Another area of concern was the rising cost of maintaining the new homes (a concern expressed for older homes as well). Certain features of the new homes' design were criticized, but there was general agreement that the new houses were far more comfortable than were the more traditional ones and that **Inupiat** residents generally preferred living in the new houses. Point Lay **Inupiat** respondents noted that the new housing had actually reinforced the extended family tradition by making possible the return to the village of former families which had been broken up several decades before when Point Lay's population had declined and its residents had dispersed to a number of places both within and outside Alaska.

Transportation

INTER-COMMUNITY LINKS

It is beyond the scope of this report to deal with transportation systems or services. However, as part of the 1983 fieldwork, people in the various **Chukchi** Sea villages were asked their opinions of formal land links between their **village** and other communities or other areas. This question was prompted by a request from the City of **Nuiqsut** to the North Slope Borough for a road linking that village to **Prudhoe** Bay. While construction of such a route is not now being seriously considered, the fact that the question was raised was of interest, given long-expressed views against formal connections with the outside world.

As expected, almost all people interviewed in the five **Chukchi** Sea villages generally opposed land links to other villages. Those who favored road development generally **did** so because they believed it **would** be easier to visit their friends or relatives. Those opposed generally expressed a wish to **live** in semi-isolation and believed that roads would have a negative impact on wildlife resources. Several people also thought that their village might have more problems with the importation of liquor if it became more accessible.

From a quick overview, it is apparent that the desire for greater accessibility to the outside **world** expressed by **Nuiqsut** is not shared by villages in the **Chukchi** Sea region. To some extent, the villages serve as a retreat from urbanized society and there is every indication that,

at least in the **Chukchi** Sea area, residents wish the status quo to continue.

Social Organization

TRADITIONAL SOCIAL ORGANIZATION

Traditional **Inupiat** society was strongly kinship oriented. Kinsmen were essential elements in the network of interpersonal relationships. Villages were also kinship units. Kinship formed "the axis on which the whole social world turned" (**Burch 1975:22**). Two or more local families formed the community. The communities formed the society which was composed of **all** the people in the region (**Burch 1975:235-245**).

Alliances in traditional **Inupiat** society were formed through both **actual** and ideal kinship ties. Such ties were formed through adoption, betrothal, namesake relations, spouse exchange, marriage, divorce and widowhood. Outside the **dimension** of kinship, **alliances** were formed through serious joking partnerships, feasts and trade fairs; meat sharing, dancing, singing and wrestling partnerships; amulet relationships and ritual sponsorship, work and hunting associations (**Guemple 1972:2**). These alliances provided a mechanism for the individual to adapt to the environment by reducing the threat from outside one's own regional group and by providing an important means for individuals to deal with crises within their own region, particularly in times of war but also in times of famine (**Burch 1971:28**). This social

organization served to extend and ensure cooperation within the society, thus reducing individual risk.

RECENT SOCIAL ORGANIZATION

As noted by **Burch** (1975), **Guemple** (1971), VanStone (1962) and Spencer (1959), the traditional **Inupiat** social organization has changed somewhat since the time of contact with European explorers. These alterations in the structure of **Inupiat** society have occurred as a result of changes in the economy, religion, education process and social welfare. Such changes in society have continued to occur in recent years. The major issues related to social organization considered in this study include: 1) the effects of new housing projects; 2) the effects of employment on cooperative subsistence hunting and fishing; and 3) identification of **intra-village** sharing networks.

The strength of kinship ties in **Inupiat** society has not abated. **Kinship** continues to be an adaptive mechanism for survival both in the Arctic environment and in a changing world. Kinship alliances and the security they offer continue to give an inner strength to the **Inupiat** which helps them adapt to their environment. The **Inupiat** society is cooperative with emphasis placed on sharing subsistence **resources** which enhances and strengthens **Inupiat** kinship structures.

With the construction in recent years of additional housing in all North Slope traditional villages, there has been a trend towards a predominance of local families rather than domestic families. The local

family occupies different dwellings but members generally operate as if they were still living under one roof. The family still continues to be the basic **social** and, to some extent, economic unit particularly through its sharing networks. The 1983 fieldwork indicated, as previously noted, that residents generally preferred living in separate houses.

Cooperation in **Inupiat** culture is enhanced by group efforts in hunting and fishing activities. Increased employment has the potential to decrease subsistence hunting and fishing effort and therefore lessen the cooperation which exists in hunting and fishing and ultimately weaken the social structure in **Inupiat** society. However, the whaling survey (Alaska Consultants and Braund & Associates 1983) indicated that even though the amount of time respondents spent hunting and fishing decreased in relation to the number of months worked, the amount of Native meats eaten did not **necessarily** decrease. In addition, 88 percent of the respondents in Point Hope, **Wainwright** and Barrow usually hunted and fished during the year. These data are consistent with the information obtained in this study which indicates that hunting and fishing have become more efficient in terms of the time necessary in order to harvest a given quantity of meat (see regional overview of the subsistence economy). Key seasonal harvests and weekend and evening hunting are presently very important in the study communities. Furthermore, greater efficiency in hunting and fishing enables fewer individuals to harvest **larger** quantities of subsistence resources. The fieldwork for both this study and the whaling survey indicated that key individuals often harvested a substantial amount of fish and game and, through distribution networks, provided meat **to other** members of the

community. Conversely, key wage earners in the family network provide **the** necessary cash to support **the** subsistence harvester. **In** these cases, a high degree of cooperation exists within the family network.

In some ways, improved transportation technology **has** increased cooperative hunting. For example, as discussed in the regional overview of the subsistence economy, the unreliability of **snowmachines** has caused hunters to hunt in pairs, especially on long distance hunting trips. This results in more cooperative teamwork than was the case in the past when solitary winter hunting by dog team was more common. Also, in Point Lay, increased economic opportunities have enabled past village residents to return to their community and have enhanced cooperative hunting of **belukha** whales. As discussed in the regional overview of subsistence land use patterns, Point Lay villagers now use aluminum boats with powerful outboard motors to herd and harvest **belukha whales**. This seasonal, communal harvest is time efficient and therefore allows villagers to return to work quickly. Although the **belukha** harvest does not compare in cultural significance with the bowhead **whale** hunt in other communities, it is an important cultural and community unification force because all members of the community are involved. Finally, there is no evidence, either from the fieldwork in this study or the whaling survey, that employment has disrupted the communal nature of **bowhead** whaling. The crews are **still** primarily comprised of kinsmen. Entire villages continue to participate in the whale butchering and **feasts** and whale meat and muktuk are widely distributed, not **only** within the **village**, but also among other communities (Alaska Consultants Inc. and Stephen Braund & Associates 1983).

Sharing subsistence resources occurs between family and friends within the village as well as with other villages. Based on fieldwork for this study, kinship ties and need continue to play a major role in the determination of sharing patterns. Successful harvesters share subsistence meats with extended family members within the village, in other villages and in more urban areas such as Anchorage and Fairbanks. Improved transportation networks throughout the North Slope, particularly the at least bi-weekly flights from Barrow to each **village**, as well as inter-village flights, have greatly enhanced sharing networks. Traditionally, sharing was primarily done upon arrival of friends or relatives in the village. Both the guest and host would share foods common to their area. Today, foods are often sent between villages without personal contact. For example, an **Atqasuk** man stated that he had received seal on several occasions from his son in Barrow, announced simply by a phone call for him to meet the next plane.

The whaling survey indicated that bowhead **whale** meat and muktuk is shared among all five of the study communities (Alaska Consultants and **Braund & Associates** 1983: Table 133). For example, Barrow residents shared bowhead with **Wainwright, Atqasuk, Point Lay** and Point Hope. **Wainwright** also sent meat and muktuk to all four of the other study communities, and Point Hope residents distributed bowhead to Point Lay, **Wainwright** and Barrow people.

The fieldwork for this study indicated that, because Point Lay's location is a favorable one for harvesting **belukha** whales, the village is able to provide **belukha** muktuk to other villages. Many Point Lay

residents said that during years when they harvest sufficient **belukha**, they **send** meat and **muktuk** to relatives and friends "all over **Alaska**". Point Lay **people** also indicated that during years when Barrow's harvest of **bowhead** is **low**, they send **belukha** meat and **muktuk there**. As noted in the discussion of Point Lay's **land** use patterns, a few **local** men currently go to **Wainwright** and Barrow to participate in whaling **crews**. Additionally, villagers **travel** to **Wainwright**, Barrow and Point Hope to **help** butcher landed whales. Because **Wainwright** bowhead whalers often hunt as far south as Icy Cape, it is convenient for Point Lay residents to **travel** to Icy Cape and help butcher whales for a share.

Atqasuk's inter-village sharing network is strongly oriented **towards** Barrow. A majority of **Atqasuk** residents **lived** in Barrow prior to the **re-establishment** of **Atqasuk** and virtually **all** Eskimo residents of **Atqasuk** have relatives in the **larger** community. As noted in the analysis of **Atqasuk's land** use patterns, residents from this village frequently **travel** to Barrow to visit relatives, to pick up supplies or to hunt sea mammals. A high **level** of sharing exists between these communities as a result of this continuous interaction. Sharing of bowhead whale is common among **Atqasuk**, Barrow and **Wainwright** and, in this case as **well** as others noted above, kinship ties are an important reason **for** the high **level of** sharing.

Values

TRADITIONAL INUPIAT VALUES

As described by **Lantis (1959:37-38)**, traditional **Inupiat** values were centered on the **Inupiat**'s close relationship with the natural resources, specifically to game animals, thereby creating an interconnection with their subsistence lifestyle. Traditionally, the **Inupiat** also had a close relationship to the supernatural with specific beliefs in animal souls and of beings who controlled the movements of animals. **Inupiat** placed an emphasis on the community and its needs; support of other individuals, especially those within the family; and self-reliance and individualism. Each of these spheres of values were of equal importance and were intertwined with one another.

Other values, or "model standards", listed by many authors including **Lantis (1959:37)**, **Chance (1966:22, 70-77)**, **Milan (1964)** and **Worl et al. (1981)**, describe the "ideal" **Inupiat**. Generosity, cooperation and hospitality were highly valued. From the time children were born they were taught to share with others. In addition **Inupiat** were taught to be industrious, honest, patient, able to accept suffering, to be modest, dignified, good humored, attentive to others, resourceful and to possess a sense of equality rather than superordination and subordination.

According to **Lantis (1959:43)**, the **only** forces powerful enough to alter the basic values of a society are:

"(1) a seriously disturbing change in the physical conditions of life, or (2) a fundamental cultural change imposed or induced from without, for example, when a conquering group requires acculturation of the conquered, or (3) when a series of fundamental

inventions changes the physical and **social** conditions, for example, as in the recent Industrial Revolution."

Material and **social** innovations of the past century have changed the cultural, social and physical conditions of the **Inupiat**. As a consequence, some change in **Inupiat** values as well as social organization have occurred. Such changes in values are often difficult to perceive in a short period of research because values usually change **slowly** and imperceptibly over more than one generation.

RECENT INUPIAT VALUES

Much of this report discusses recent changes which are visible in the study communities (**i.e.** increased employment opportunities, new housing projects, improved transportation and communication networks, new community facilities and utilities, **and** changes in subsistence technology). Despite these rapid changes, key elements of the **Inupiat** culture are persisting, including subsistence land use patterns, sharing, cooperative activity and strong extended family relationships. This section discusses current **Inupiat** values as they are reflected in participation in subsistence land use activities and increased wage employment sharing and extended family relationships.

The 1983 fieldwork indicated that the basis of the **Inupiat** system continues to be the environment and subsistence harvests. Although recent employment opportunities have significantly increased the number of residents who have jobs, villagers use a substantial portion of their income to pursue subsistence activities (see the regional overview of

the subsistence economy). Major investments in **snowmachines, three-wheelers, boats and outboard motors** to be utilized in hunting and fishing in traditional harvest areas for customary resources reflect a continuing value in subsistence activities. Despite the **availability** of store-bought meats, both the whaling survey (Alaska Consultants, Inc. and Stephen **Braund & Associates** 1983) and the 1983 fieldwork indicated a strong cultural preference for Native meats. Furthermore, considerable free time (including weekends, evenings and leave time from work) is used for subsistence hunting and fishing. Hence, cash is typically used to enhance more efficient subsistence pursuits (in terms of time and effort, if not cost).

The whaling survey indicated that over 88 percent of the **Inupiat** respondents in **Wainwright, Barrow and Point** usually hunt and fish during the year (Alaska Consultants, Inc. and Stephen **Braund & Associates** 1983: Table 85). Although North Slope whaling village respondents hunted and fished fewer months of the year than residents of whaling villages outside the Borough, this is probably a result of the present relationship between high wage employment in the Borough villages and corresponding time-efficient subsistence activities. Thus, many villagers spend less time hunting and fishing but, as discussed throughout the overview and individual village sections on the subsistence economy, subsistence pursuits remain an integral part of **Inupiat** life.

Cooperation in hunting and fishing activities also remains an important part of community life on the North Slope. For example, the whaling

survey **indicated** a high **level of** cooperative behavior through participation in bowhead whaling activities in Point Hope, **Wainwright** and Barrow. Over **93** percent of those respondents not on a whaling crew said they participated in whaling in some way (either through assistance in butchering the whale, or in hauling meat and **muktuk**, hauling supplies, cooking and other activities). Without the assistance of other village residents, whaling would **be** an extremely arduous task for the whaling crews **alone**. In addition, Point Lay's most important **sea** mammal harvest is a cooperative hunt of the **belukha** whale which involves the entire community.

Sharing wildlife resources creates cooperative bonds throughout both individual **Inupiat** villages and between communities. Through sharing, those who do not have the necessary hunting **skills** can obtain meat. Also, sharing enables hunters to distribute wildlife resources quickly after a sizable harvest. The **1983** fieldwork indicated that sharing of Native subsistence meats remains high in **all** of the study communities. According to the whaling survey data, nearly 98 percent of the respondents in Point Hope, **Wainwright** and Barrow shared (gave or received) Native meats in **1982**. However, the traditional sharing of food is limited primarily to Native wildlife resources.

Kinship and extended **family** relationships, evidenced primarily through sharing and cooperative hunting and fishing, remain strong despite rapid change in the study communities. Household size fluctuates as people come and go from the villages, but recent housing programs have **led** towards increasingly smaller households as more and more nuclear

families move into single family homes. Nevertheless, this pattern does not appear to have weakened extended family bonds. Nuclear families living in single family homes continue to interact with extended family members living in other houses, especially in sharing foods and cooperation in subsistence activities. Households do not operate independently from each other, but maintain traditional social and economic ties. This represents a conscious effort by villagers to maintain traditional social forms and values (i.e. kinship and "subsistence). Although there are many visible changes in the villages, fundamental **Inupiat** values persist and sharing and cooperation integrate the nuclear and extended families.

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POINT HOPE

Introduction

Point Hope is located near the **end** of a triangular spit which extends about 15 miles into the sea from the **Lisburne** Peninsula and is the westernmost extension of Northwest Alaska into the **Chukchi** Sea. The village is about **315** miles southwest of Barrow and **140** miles northwest of **Kotzebue**. It was first incorporated as a fourth class city in 1966 and was reclassified as a second class city in 1972.

Two gravel bars which converge to form the Point Hope spit enclose several large shallow lagoons. The **Kukpuk** River, the major river system in the Point Hope area, flows into one of these lagoons, Marrayat Inlet. Warm coastal currents flowing north from the Bering Sea through Bering Strait into the **Chukchi** Sea strike the **Alaska** coast a few miles south of Point Hope. These warmer waters support a wider variety of life forms than is normally the case for Arctic waters. The mainland from which the Point Hope spit extends is the westernmost foothill area of the Brooks Range. This setting, combined with a milder climate than that of more northern Eskimo villages on the **Chukchi** Sea, provided a favorable environment for supporting a population in the Point Hope area which historically was the largest in the Alaska Arctic.

The old village sites along the north side of the Point Hope spit were subject to steady erosion and sometimes flooding by storm surge tides. These conditions resulted in a decision to relocate the village. A new

site was selected to the east of the **old village** on somewhat **higher** ground between **Marryat** Lagoon and the southern edge of the spit. The new village site is thought to be generally free of flooding problems and sufficiently remote from the eroding areas to permit long term development of the new village. The movement of **village** structures from the previous site was accomplished in **1978** and **1979**.

Much of the information on Point Hope contained in the following pages was collected by Alaska Consultants, **Inc.** for the North Slope Borough and was published in the June **1983** report entitled "Background for Planning: Point **Hope**". That information was supplemented by fieldwork conducted specifically for this project during the summer of 1983 and by observations from ongoing work in this village being conducted for the North Slope Borough. Information on the subsistence economy and subsistence land **use** was collected in the **field** in 1983 specifically for this **study**.

Population

PAST POPULATION TRENDS

Point Hope's population had stabilized at about **140** people in the decade between 1920 and 1930 (see Table **18**). From this plateau **it** rose to 257 by **1939**, confirming the reported consolidation of **people** from very **small** outlying settlements into the **larger** village as reindeer herding efforts declined and the trapping of furbearers became less lucrative. Point Hope's population remained stable through the decade of the 1940's,

TABLE 18 "

POPULATION TRENDS
POINT HOPE
1939 - 1983

<u>Year</u>	<u>Population</u>	<u>Percent Change</u>
1920	141	
1929	139	- 1.4
1939	257	84.9
1950	264	2.7
1960	324	22.7
1970	386	19.1
1980	464	20.2
1983 a/	570	22.8

a/ 1983 population based on a July 1983 count by the North Slope Borough.

Sources: U. S. Bureau of the Census.
North Slope Borough.

totaling 264 in **1950**. However, during the next twenty **years**, the village's population grew steadily at a rate of 2 percent a year, reaching 386 in **1970**. This growth rate was about that of natural increase.

A Borough-sponsored census in **July 1975** counted 384 residents in Point Hope, close to the 386 reported in **1970**, suggesting that some out-migration **had** offset growth from **natural** increase after **1970**. The 1980 **U.S.** Census found 464 Point Hope residents, indicating a jump of 80 persons in the latter portion of the 1970's. Such a rapid change could only have resulted from an in-migration of people to the **village**.

Point Hope's annual growth rate averaged about 4 percent **during** the last half of the 1970's. A Borough-sponsored census in July 1982 found 544 residents, indicating that the average **annual** growth rate had risen to 8 percent between 1980 and **1982**. A July **1983** census, again sponsored **by** the North Slope Borough, counted 570 people in the village, representing a further 4.8 percent population increase. **It** appears that expanded employment opportunities, coupled with new housing and improved government services, have provided increasingly stronger incentives for people to move to or back to Point Hope.

POPULATION COMPOSITION

The most striking feature of Point Hope's population composition is that most residents of this community are Eskimos. According to the **1980**

Census, 94 percent of the village's total population was listed as Alaska Native.

The continuing influence of strong family and other ties among today's Point Hope residents is reflected in the stability of the community's population. According to the 1980 North Slope Borough housing survey, about 71 percent of the Alaska Native heads of household had lived in Point Hope since before 1960 (see Table 19).

A review of the age and sex characteristics of Point Hope's population was undertaken, based on information collected by Alaska Consultants, Inc. as a part of a Boroughwide housing survey conducted during the summer of 1980 (see Figure 2 and Table 20). This survey found that Point Hope's population was the youngest of any village in the North Slope Borough. The median age for Point Hope males was 20.9 years while that for females was 18.1. When non-Natives were excluded, the median age of the population changed slightly to 20.3 years for males and 18.2 years for females, the lowest for Alaska Natives in all of the North Slope villages. The median ages of Point Hope residents were also well below those of the State (26.1 for males and 26.3 for females) and of the nation (28.8 for males and 31.3 for females) in 1980.

A closer look at the age breakdown of Point Hope's 1980 population indicated that there were relatively more children in this village than the other smaller North Slope villages (i.e. excluding Barrow).

Children under 15 years of age made up 36.6 percent of Point Hope's population in 1980 compared with 31.9 percent in the smaller villages.

TABLE 19
 LENGTH OF RESIDENCE OF HEADS OF HOUSEHOLD a/
 POINT HOPE
 JUNE 1980

<u>Length of Residence</u>	<u>Race</u>		<u>Total</u>
	<u>Alaska Native</u>	<u>Non-Native</u>	
1975-1980	6	2	8
1970-1974	2	0	2
1960-1969	4	0	4
Before 1960	66	0	66
No Response	15	10	25
<u>TOTAL</u>	<u>93</u>	<u>12</u>	<u>105</u>

a/ For purposes of the housing survey, the adult Alaska Native in combination Alaska Native/non-Native households was always designated head of household.

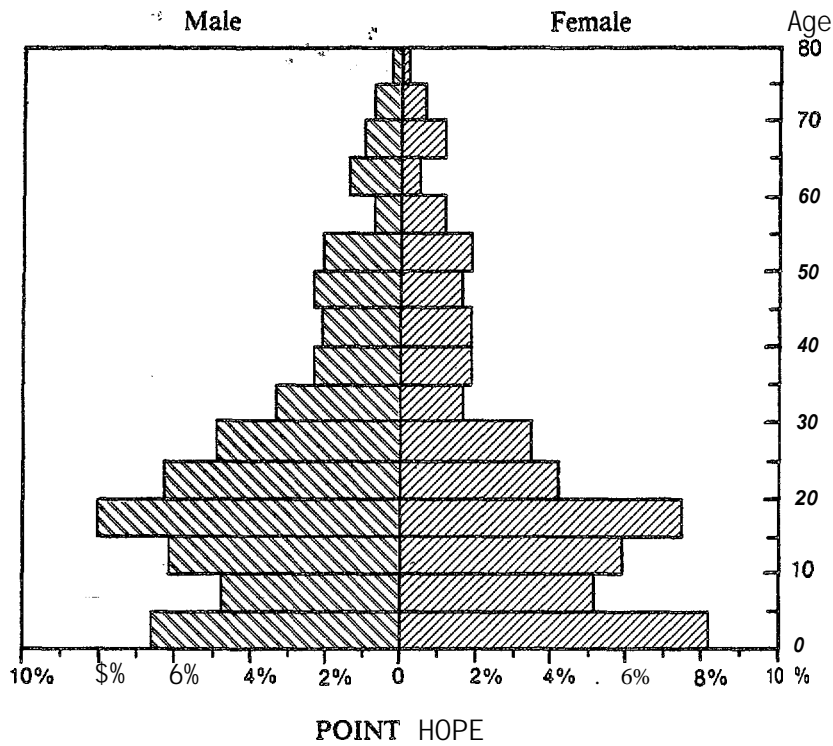
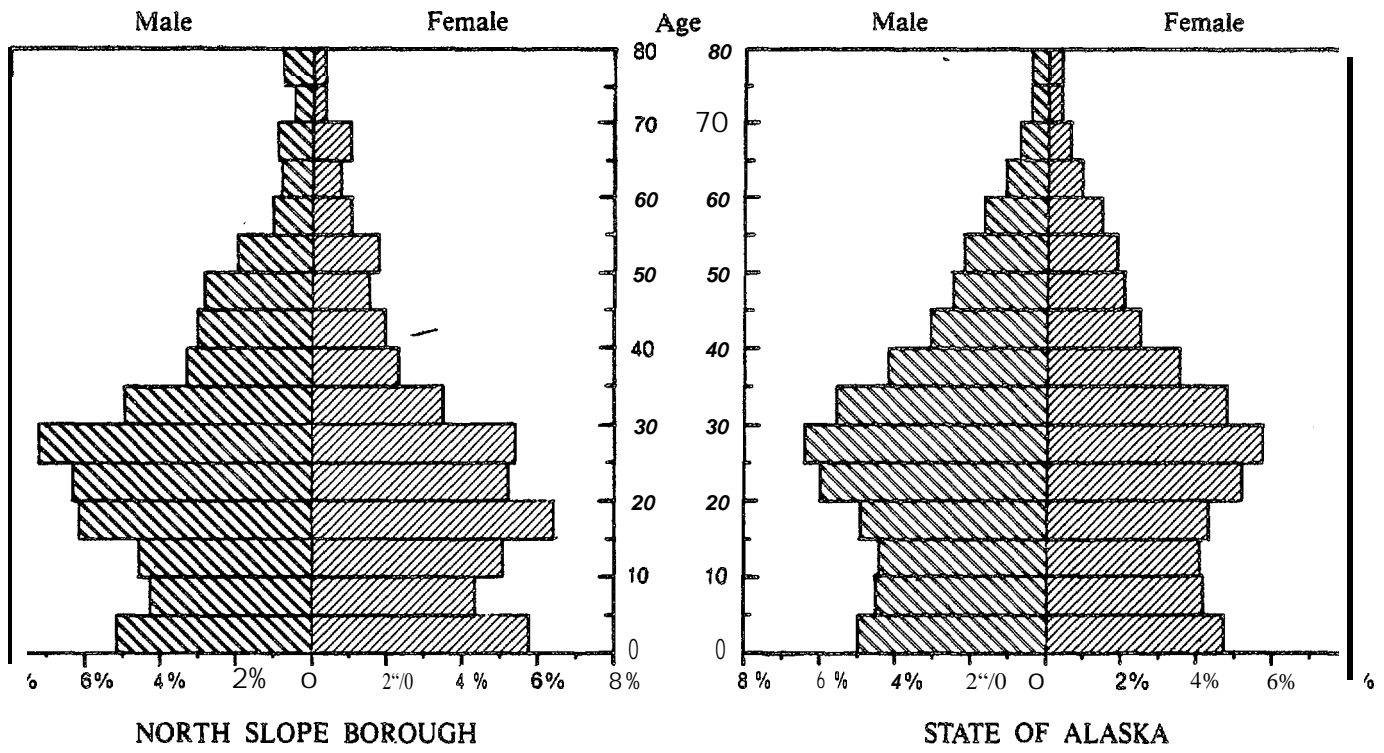
Source: Alaska Consultants, Inc. North Slope Borough Housing Survey, prepared for the North Slope Borough, Public Works Department. Anchorage. September 1980.

TABLE 20
POPULATION COMPOSITION BY RACE AND AGE a/
POINT HOPE
1980

<u>Age</u>	<u>Native</u>			<u>Non-Native</u>			<u>Total</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
0 - 4	28	33	61	0	2	2	28	35	63
5 - 9	20	22	42	0	0	0	20	22	42
10 - 14	24	24	48	2	1	3	26	25	51
15 - 19	34	30	64	0	2	2	34	32	66
20 - 24	27	18	45	0	0	0	27	18	45
25 - 29	20	14	34	1	1	2	21	15	36
30 - 34	11	6	17	3	1	4	14	7	21
35 - 39	9	7	16	1	1	2	10	8	18
40 - 44	8	8	16	1	0	1	9	8	17
45 - 49	9	7	16	1	0	1	10	7	17
50 - 54	9	7	16	0	1	1	9	8	17
55 - 59	3	5	8	0	0	0	3	5	8
60 - 64	5	2	7	1	0	1	6	2	8
65 - 69	4	5	9	0	0	0	4	5	9
70 - 74	3	3	6	0	0	0	3	3	6
Over 74	1	1	2	0	0	0	1	1	2
<u>TOTAL</u>	<u>215</u>	<u>192</u>	407	10	<u>9</u>	19	<u>225</u>	<u>201</u>	426
<u>Median Age</u>	<u>20.3</u>	<u>18.2</u>	<u>19.3</u>	<u>31.0</u>	<u>17.5</u>	<u>30.2</u>	<u>20.5</u>	<u>18.1</u>	<u>19.5</u>

a/ Figures exclude a total of 54 persons (17 Alaska Native males, 18 Alaska Native females, 10 non-Native males and 9 non-Native females) for whom no age information was provided.

Source: Alaska Consultants, Inc. North Slope Borough Housing Survey, prepared for the North Slope Borough, Public Works Department. Anchorage. September 1980.



COMPOSITION OF POPULATION
1980

Sources: U. S. Census
North Slope Borough Housing Survey, Alaska Consultants, Inc., 1980

Figure 2

Furthermore, the under 5 age group accounted for 14.7 percent of Point Hope's total population compared with 12.8 percent in the smaller villages. A review of the age composition of Point Hope's population recorded by a July 1982 Borough-sponsored census suggests that Point Hope's population continues to be very young. In 1982, 16.8 percent of the village's population was under 5 years of age, compared with the 14.7 percent in this age group in 1980.

The 1980 North Slope Borough housing survey found that Point Hope males outnumbered females by a 52.8 to a 47.2 percent margin. The 1982 Borough-sponsored census did not indicate that any significant changes in local male to female ratios had occurred since 1980.

SOCIAL INTERACTION

According to the 1980 North Slope Borough housing survey, 38 of the 480 people (7.9 percent) then living in the village were non-Native. The survey included transient white construction workers. As a result, it found the proportion of non-Natives to be slightly higher than did the 1980 Census (6.5 percent). The proportion of non-Native residents at Point Hope is not believed to have changed significantly since 1980 because much of the community's recent growth has been derived from Inupiat^s moving back to the village and because Point Hope has not had the large transient construction worker population experienced by several other villages in the region.

In an effort to view how the different groups at Point Hope interacted with each other, questions were asked about relationships between **Inupiat** and whites in the village as part of the **1983** fieldwork. While there were some negative feelings on this subject, they were obviously not universal. The Point Hope city council has one white member and several other non-Natives who were permanent village residents appeared to be generally well accepted. Generally, people interviewed in Point Hope in **1983** felt that there were very few jobs held by whites in the village which would be better held by local **Inupiat**s. In fact, hostility directed toward certain non-transient white residents tended to be based more on personal animosity than racial bias.

As in other **villages**, some resentment was expressed over the presence of transient white construction workers. However, this was less of a problem in Point Hope where most projects in recent years have been built by **Tikigaq** Construction, a subsidiary of the local village corporation. One community leader interviewed in **1983** thought there were too many Alaska Natives from other villages holding jobs in Point Hope, suggesting that resentment against "outsiders" might not **always** be restricted to whites.

MIGRATION

Since **1980**, there has obviously been a good **deal of** in-migration to Point Hope as the community's 22.8 percent growth rate between **1980** and **1983** is well in excess of what could be expected from natural increase. Much of the increase during that period is believed **to** have been derived

from the return of former village residents to Point Hope in response to the increase in local construction employment opportunities. Several city councilmen indicated to Alaska Consultants, Inc. in May 1983 that this was the case. They tended to view the growth positively, seeing it as a trend back toward Point Hope's old population level.

At the time of the 1980 North Slope Borough housing survey, one person in each household was asked how long he or she had lived in Point Hope. Fully 82.5 percent of these people indicated that they had lived in the village since at least before 1960. Only 8 persons (6 of them Alaska Native) said they had moved to the village between 1975 and 1980. Thus, most migration into Point Hope has occurred since 1980.

Given the relatively short duration expected for North Slope Borough capital improvements program construction employment and the lack of other comparable economic activity to fill the void which will be left when scheduled construction projects are completed, Point Hope residents were queried about their mobility as part of the 1983 fieldwork. These questions were framed in terms of past or present employment on the Pipeline and at Prudhoe Bay/Deadhorse and what such persons liked most and least about such experiences.

In September 1983, 3 persons from Point Hope (including at least one non-Native) were working at Prudhoe Bay. None of these people were interviewed as part of the 1983 fieldwork. However, 6 of the 25 persons interviewed in 1983 had worked on construction of the Pipeline and 5 (including some of those who had worked on the Pipeline) had worked in

the **Prudhoe Bay/Deadhorse** area. When asked about their motives for seeking these jobs, the answer was universally "the money". The **length** of time that these people were employed in petroleum-related occupations was not **clear**. However, when asked their main reason for leaving, **all** indicated that they had left mainly because they missed their families and their village. Some also mentioned the difficulty in traveling between Deadhorse and Point Hope (jet flights to **Kotzebue/Point** Hope now **all** originate in Anchorage) and others indicated that they had felt a need to be home during key subsistence seasons. Few **people** expressed interest in working in these types of jobs again, mainly because well paying construction jobs are readily available in the village. However, such sentiments **could** very well change as the Borough's capital improvements program winds down.

RECENT TRENDS AND CHANGES

As previously indicated, Point Hope's population underwent a significant amount of growth (22.8 percent) between 1980 and **1983**, much of it related to in-migration of former village residents in response to construction employment opportunities in the village. These jobs, although temporary, have been **mainly** derived from the North Slope Borough's ongoing capital improvements-program. **In** Point Hope, a high proportion of Borough construction projects have been funneled through **Tikigaq** Construction, a subsidiary **of** the local village corporation. The Borough's capital improvements program has **also** resulted in the addition of a smaller number of permanent jobs associated with the operation and maintenance of new Borough facilities.

Major Borough construction projects underway **during** the summer of 1983 included new housing, **gravel** crushing and road construction, a new fuel tank, clean-up of the village dump and development of a new water source and water transmission line. Although there are a **couple** of construction camps in Point Hope (one of them operated by the village corporation), transient workers are less of a factor here than they presently are in the other smaller villages in the Chukchi Sea portion of the North Slope Borough.

Economy

The Point Hope spit is the largest continuously occupied Eskimo site in the Alaska Arctic. The local subsistence area had a combination of physical and climatic features which favored the substantial harvest of marine and terrestrial mammals, as well as fish and waterfowl, on a sustained basis. It was Point Hope's favorable location for the harvesting of bowhead whales which led to the village's initial contacts with the whaling fleets in the mid-1800's and to subsequent disruptions in the local Eskimo society which occurred as the exposure to Western culture--including new diseases, alcohol and the aggressive harvest of natural resources for commercial purposes--became more extensive and continuous.

Point Hope's population stabilized during the 1940's at about 260 and then grew slowly to 386 persons by the 1970 Census. However, the local economy remained heavily oriented to subsistence harvesting and, even

today, the village's **Eskimo** residents continue to **give this** portion of their local economy significant attention.

While Point Hope is accessible by water during **the** short ice-free summer period, development of regularly scheduled air service has significantly reduced the community's isolation on a year-round basis. Initial development of air services emphasized the linkage between Point Hope and Kotzebue (a distance about half that between Point Hope and Barrow) and Point Hope residents were also attracted by temporary employment opportunities in the **Kobuk** region, by government services such as those offered by the **Public Health** Hospital in **Kotzebue**, and by the availability of direct air service out of Kotzebue to other Alaska cities.

The discovery and development of the Prudhoe Bay **oil** fields and associated construction of the **oil** pipeline to **Valdez** provided job opportunities for interested Point Hope workers. More significantly, these activities led to the incorporation of the North **Slope** Borough in **1972**. Since its incorporation, the Borough has assumed responsibility for a wide range of local government services and has embarked on an ambitious capital improvements construction program. Together, these activities have led to the creation of a **number** of **service** and temporary construction jobs for village residents.

Passage and implementation of the **Alaska Native Claims** Settlement Act (**ANCSA**) in **1971** has also had an impact on the local economy. This legislation, with its **land** and financial settlements, has provided

additional economic leverage for village residents through the creation of village and regional profit corporations. In Point Hope, the **Tigara** Corporation has been a very active force in the community's non-government business activities. It acquired and now operates the community store. **Tikigaq** Construction, a subsidiary of Tigara, has been heavily involved in building Borough capital improvement projects in both Point Hope and Point Lay. The village corporation has also invested in business ventures outside the community, particularly those which generate employment opportunities for the corporation's stockholders.

COMPOSITION OF EMPLOYMENT

Employment statistics published by the Alaska Department of Labor cover the North Slope Borough as a whole, including **Prudhoe Bay**, and therefore do not provide meaningful employment data for individual communities.

To understand local employment conditions in Point Hope, a special count of employment was undertaken here in September 1982.

The September 1982 employment count identified a total of about 113 jobs in Point Hope on an annual average full-time basis (see Table 21). This included 3 jobs held by local residents at Prudhoe Bay as well as jobs held by itinerant construction workers then residing in Point Hope.

Government employment provided 50 jobs or 44 percent of the total.

Except for the postmaster's position and a part-time magistrate, all government positions in the village were provided by the North Slope

TABLE 21
 AVERAGE ANNUAL FULL-TIME Employment_
 POINT HOPE

<u>Industry Classification</u>	<u>Number</u>	<u>Percent of Total</u>
Agriculture, Forestry and Fishing	0.0	--
Mining	3.0	2.7
Contract Construction	38.0	33.8
Manufacturing	0.0	--
Transportation, Communications and Public Utilities	0.0	--
Trade	9.0	8.0
Finance, Insurance and Real Estate	7.0	6.2
Services	5.5	4.9
Government	50.0	44.4
Federal	(1.0)	(0.9)
State	(0.0)	{ -- }
Local	(49.0)	(43.5)
<u>TOTAL</u>	<u>112.5</u>	<u>100.0</u>

a/ Includes three local residents employed in construction activities at Prudhoe Bay.

Source: Alaska Consultants, Inc.

Borough. However, the role of the Borough as an employer was even greater if the 38 jobs (34 percent of the total) in temporary contract construction were considered, since all of this construction employment was derived from Borough capital improvements projects then being built in Point Hope. (Of these 38 temporary construction jobs, 27 were provided through Tikigaq, the construction arm of the Tigara Corporation). Thus, 88 of the 112.5 full-time job equivalents in the village (or 78 percent of all employment) were directly related to Borough service or construction programs.

The Point Hope store was the largest non-government employer in 1982, providing about 9 jobs in the trade sector. The Tigara Corporation's central office provided another 7 jobs in the finance, insurance and real estate sector.

There were about 6 full-time jobs in the services sector, most related to the operation of camps for temporary construction workers and other itinerants. Finally, 3 persons worked regularly at job sites away from Point Hope. There were no local jobs in agriculture, forestry, fishery or manufacturing activities. The local Wien Air Alaska agent's duties were handled by the village store but did not consume enough time to be shown separately under the transportation category.

UNEMPLOYMENT AND SEASONALITY OF EMPLOYMENT

There are no reliable statistics which document rates of unemployment in Point Hope or other North Slope Borough villages. The data published by

the Alaska Department of Labor for the Borough **are** regional totals only, including **Prudhoe** Bay where most jobs in the region are located and where everyone is employed. As a result, conditions in the region's traditional villages are **obscured**.

Despite the lack of firm statistics, it appears that there may have been at least some under-employment in Point Hope in 1982. A July 1982 census sponsored by the North Slope Borough identified 269 persons in Point Hope between the ages of 18 and 65, including 157 males. When this is compared with the **113** full-time job equivalents counted here in September 1982, the gap between population and jobs seems large. However, a significant proportion of Point Hope females is **outside the** labor force (**i.e.** they are not seeking work) and many **local** males in the same age range choose to engage in temporary construction activities rather than in full-time year-round work.

A factor which must be taken into account in assessing the amount of unemployment in Point Hope and other North **Slope** villages is the amount of time that working age persons devote to subsistence activities. Such activities are very important in the lives of **local** residents but appear to fit **well** with temporary employment such as is provided by construction work. Occupations associated with the **Prudhoe** Bay area which feature long hours of work plus extended leave periods may also be **fairly** compatible with subsistence activities.

A key determinant in the **level** of **local** employment has been the North **Slope** Borough which is the source not **only** of steady jobs associated

- with the provision of services such as education and utilities but also
- of temporary construction employment arising from its ongoing capital
- improvements program. Once the major capital improvement projects in
- Point Hope have been built, however, the opportunities for temporary or
- seasonal construction employment in the village will be greatly reduced.
- At that time, local unemployment levels can be expected to rise unless
- other economic opportunities are present.

- Weather conditions cause some seasonal variations in local temporary
- construction employment. The main variations in temporary construction
- employment, however, are related to the number and type of capital
- improvements projects being constructed locally. Uneven scheduling of
- construction work from year to year can result in local unemployment or
- it may necessitate the importing of labor for jobs which otherwise could
- have been filled by local residents.

INCOME LEVELS

• The 1980 Census found the median household income for the North Slope
Borough to be \$31,378. The median household income Statewide in 1980
was \$25,421, while the mean household income for all Alaska Natives
Statewide was \$21,865. The same census indicated a median household
income of \$23,929 for Point Hope.

• While household income levels at Point Hope do not appear to be much
• lower than those recorded Statewide, the purchasing power of the dollar
in remote and isolated communities such as Point Hope is greatly

diminished **by** high local prices for goods and services. Most freight and **all** commercial passengers move into the village by air, the major exceptions being fuel and some heavy or **bulky** materials which arrive **by** barge during the short summer season. Because of the great distances involved as well as the mode of transport, store-bought food prices are probably about double those in Anchorage and subsistence activities remain an economic necessity for most **local** residents.

Housing costs in Point Hope, especially for fuel, are high, absorbing a significant portion of household income. Heating oil cost **\$110** per **55-gallon** drum in 1982. The average home reportedly uses about 3 drums per month during the coldest winter periods, placing the household heating cost **at** about \$330 per month for a substantial part of the year.

ECONOMIC GROWTH PROSPECTS

Point Hope presently has a relatively simple economic base. The primary driving force in the **local** cash economy in recent years has been government spending, particularly by the North Slope Borough. Another force has been the **Tigara** Corporation, the local village corporation established under terms of the Alaska Native Claims Settlement Act.

The North **Slope** Borough is the major employer of Point Hope residents. **In 1982, it** directly provided 44 percent of the identified full-time **job** equivalents in the village. Another 34 percent of village jobs was directly related to contract construction for the Borough's capital improvements program in Point Hope.

Borough employment in Point Hope and other North Slope villages can be divided into two types. The first is services associated with the operation and maintenance of Borough facilities such as the school, the health clinic, utilities and the public safety building. The second type is employment associated directly with the construction of capital improvement projects. It is important to recognize the difference between these two types of Borough-related employment. Jobs associated with operations and maintenance are permanent and relatively few in number, whereas construction jobs are temporary and their number can fluctuate considerably from year to year.

In addition to relocation of the village, major capital improvement projects at Point Hope have recently included the new school, new housing units, a new generator plant, a central water facility and washeteria, a sewage lagoon, a public safety building and local road improvements. New projects either underway or scheduled include additions and modifications to the generation plant and power distribution system, additional housing, improvements and additions to the central water system, additions to the school, warehousing facilities and a new vehicle maintenance and warm storage building. However, in the longer term the level of construction employment derived from the North Slope Borough capital improvements program in Point Hope can be expected to level off and even decrease as community capital needs are met. Unless other economic activities can pick up the "slack" at that time, some reduction in Point Hope's economic growth can be expected.

The **Tigara** Corporation received a cash distribution and rights to select the surface estate of 138,240 acres of land in the general vicinity of Point Hope under terms of the Alaska Native Claims Settlement Act. **Tigara** acquired and now operates the community store. It also distributes all fuel consumed in Point Hope, including that used by Borough-operated facilities. **Tikigaq** Construction, a subsidiary of the **Tigara** Corporation, has been active in contracting directly or through joint ventures for the construction of Borough capital improvement projects both in Point Hope and Point Lay. **Tigara** is also a stockholder in Pingo Corporation, a construction management firm organized by several North Slope villages which has operated primarily in the Prudhoe Bay area. The **Tigara** Corporation, through a subsidiary, is also active in developing and managing a sizable real estate project in Anchorage. Finally, **Tikigaq** Construction maintains an office in Anchorage which provides employment for several Point Hope people now residing there.

There are presently no oil and gas exploration activities underway, either onshore or offshore, along the Chukchi Sea coast which could provide Point Hope residents with employment or offer business opportunities to the **Tigara** Corporation in contract construction, service or supply activities. Furthermore, concern has been expressed by Point Hope residents--about the possibility of damage to subsistence resources resulting from petroleum exploration activities and from the possible development of oil and gas resources if they are discovered in commercial quantities.

The Department of the Interior's Outer Continental **Shelf** leasing program for petroleum development, as currently scheduled, contemplates offshore **sales** in the **Chukchi** Sea area (Barrow Arch) in 1985 and 1987.

Historically, exploration work preceding such offshore sales has had limited economic spinoffs for communities near or within the areas being explored. Furthermore, estimates of the probability of discovering commercial oil and gas resources along the Alaska coast of the **Chukchi** Sea are much lower than those for the Harrison Bay area in the Beaufort Sea. Nevertheless, the probability of oil and gas development in the Chukchi Sea is still high enough to make the area one of considerable interest to the petroleum industry.

Future exploration and perhaps development of oil and gas resources in the Point Hope area may present residents with difficult decisions as to economic development, particularly because such development could impact subsistence resources. (The ability of Point Hope residents to control offshore exploration and development is limited but still significant). Once the North Slope Borough capital improvement projects scheduled for Point Hope have been built, the level of local employment will probably decline. At that time, Point Hope residents may have greater interest in obtaining employment with the petroleum industry either in the **Chukchi** Sea region or elsewhere in order to meet the increasing cash requirements of maintaining their homes in Point Hope.

There are significant coal deposits in the general Point Hope area. However, further exploration of these resources and more careful

consideration of their development on a commercial scale are dependent on long term worldwide energy market conditions.

The long-term association of Point Hope people with those from the Kobuk region and the community's proximity to the Kobuk region could encourage villagers to consider employment opportunities that could develop if the several major mineral prospects being investigated on NANA Corporation lands are moved to production. One such prospect is located within the North Slope Borough in the Wulik River area to the northeast of Kivalina.

SUBSISTENCE ECONOMY

Since the establishment of the new village site in the late 1970's, Point Hope residents have enjoyed a relatively steady source of local employment opportunities. As of September 1982, only three of the 112 employed residents of Point Hope worked outside the village (see Table 21). This is substantially different than previous employment patterns where residents seasonally (i.e. summer) left the village to work (Foote and Williamson 1966). As discussed in the overview of the region's subsistence economy, this increase in local employment opportunities has affected subsistence activities in two ways: it has increased the amount of cash available for investment in subsistence equipment and it has reduced the overall amount of time available for subsistence pursuits. These two factors have altered the harvest schedules for some subsistence resources, increased the use of technologically advanced harvest tools and have reduced the amount of time spent in subsistence

activities. Nevertheless, Point Hope residents stated that they are still able to harvest the desired amount of subsistence resources.

The technological advances in harvest tools and techniques presently used by Point Hope residents are integral to the success of this new subsistence/cash economy. The introduction of the snowmachine has probably had the most dramatic effect in Point Hope as well as throughout the Arctic. The parameters of the subsistence economy which have been altered by the **snowmachine** are presented in the overview and include a reduction in the amount of meat harvested (no dog food), increased mobility, and increased speed to and from harvest areas. These factors have facilitated weekend hunting by allowing Point Hope residents to gather sufficient game in shorter periods of time. The benefits of the **snowmachine** are balanced by the expense of both the initial purchase (between \$2,800 and \$4,500) and operating and repair costs. In addition, the **snowmachines'** unwieldiness on the ice has been a major factor in **re-directing** winter subsistence activities inland toward caribou.

- Although three-wheelers are widely used, their use is more pervasive in Point Hope than in any other community in the study area. Virtually every family has at **least one** three-wheeler. Villagers commonly use these vehicles for travel within the village: to and from the store, to the airport or to a neighbor's home across town. However, the most important reasons that three-wheelers have become so common in the past ten years is the access which they have provided to subsistence use areas. The barrier beaches in the Point Hope area are natural roadways

and **villagers** note that one can travel from Cape Thompson **in the south** to **Sinuk** in the north without interruption. In addition, three-wheelers are now used in the Kemegrak Hills during the summer and fall, providing access to caribou hunting areas which snowmachines **could** not reach at that time of year.

The general consensus in the **village** was that three-wheelers are better **built** than **snowmachines**, require fewer repairs and are more affordable (\$2,000 to \$2,400). Because they can be used year-round, many families find them more practical than snowmachines which cannot be used during the summer. According to the interviews, three-wheelers **last** approximately two to three **years**.

The use of three-wheelers has had an effect similar to snowmachines on subsistence activities; they have reduced the amount **of** time spent traveling to and from harvest areas. These machines have become very important during the spring marine mammal hunt as they **allow** Point Hope residents quick access to their camps located **along the beach**. Many families spend the evenings at their hunting camps rather than in the village. This **allows** people who are employed the opportunity to participate in both the subsistence and wage economies. Three-wheelers are **also** used by summertime fishermen to check their nets. **In** conclusion, the popularity of three-wheelers is due to their versatility, relatively inexpensive price, durability and to their speed which reduces traveling time to subsistence use areas.

Outboard motors and wooden or aluminum boats have become increasingly common in Point Hope in the past ten years. Like the **snowmachine** and the three-wheeler, these boats and motors have enhanced the relationship between the subsistence and wage economies. Hunters spend less time traveling between the **village** and harvest areas and increased speed has allowed productive evening and weekend hunting. In addition, unlike the skin boats formerly used, which had to be continually maintained and dried after each trip, the new equipment can be left on the shore ready to go at short notice. After years of use in harsh, ice-ridden, Arctic conditions, these new boats become unsafe and must be replaced. Point Hope hunters indicated that the speed and flexibility of this equipment provides justifies the \$1,222 average yearly cost of owning outboard motors and boats (see section on regional subsistence economy).

The equipment used by Point Hope residents in their seasonal round of subsistence activities requires considerable amounts of cash to purchase and maintain. As noted in the section on the regional subsistence economy, the average Chukchi Sea village hunter must be prepared to spend \$7,727 annually for fuel, ammunition, equipment purchasing and repairs. If the hunter takes on the added responsibility of being a whaling captain, his subsistence costs rise to \$12,227 each year.

Because of the high price of this equipment, more money is expended to obtain the desired amount of subsistence food than in the past. At the same time, hunting **techn**iques have become less time consuming and more efficient.

Perhaps the single most important factor in the-compatibility of the wage and subsistence economies is the local nature of the employment. Residents who had worked out of the village in the past repeatedly indicated their preference for the present system. **The** short-term rotation schedule common in oil-related industries often results in the worker/hunter being in the village at inopportune hunting times due to inclement weather or the migration patterns and seasonal nature of most game resources. Presently, residents can hunt evenings and weekends when game is available, weather permitting. Furthermore, close to half of all jobs in Point Hope in **1982** were provided by the North Slope Borough which has a generous leave program that is often used for subsistence activities. The other **major** source of employment in Point Hope is temporary construction jobs which also allow residents ample time for subsistence activities.

In summary, the present high level of employment in Point Hope provides the necessary amount of cash for **local** residents to harvest the desired amount of fish and game without having to leave the village to work. Foote and Williamson (**1966**) noted that Point Hope residents in the **1960's** were able to obtain the necessary cash for their subsistence lifestyle by leaving the village in the summer for a few weeks to several-months. Traditionally-, the summer was less important than other seasons for subsistence activities. However, the recent concentration on broken-ice sea mammal hunting **for** seals, walrus and **ugruk** has resulted in the early summer (**i.e.** June) becoming an increasingly important period in the seasonal round of Point Hope residents. Consequently, as local employment opportunities decline after the

conclusion of the Borough's capital improvements program, Point Hope residents will be forced to look elsewhere for employment. If this occurs, subsistence harvest patterns will be likely to change and again show the adaptability of Point Hope hunters.

Political Organization

FORMAL POLITICAL ORGANIZATION

There are two primary political or quasi-political organizations in Point Hope. These are the City of Point Hope and the **Tigara** Corporation, the local village corporation established under terms of the Alaska Native Claims Settlement Act. Although the latter is not a public body, its board is elected by corporate stockholders and the corporation is in fact a potent political force in the community. In addition, the North Slope Borough **has an** appointed village coordinator in Point Hope and the village also has an inactive IRA (Indian Reorganization Act) tribal government plus a local representative of the regional IRA government, the **Inupiat** Community of the Arctic Slope (ICAS).

North Slope Borough

The North Slope Borough has an appointed village coordinator in each North Slope Borough village except Barrow whose job is to maintain a liaison between the village and the Borough mayor's office. The effectiveness of the coordinators varies widely, depending on their

position in the village and the diligence of particular individuals. Several cities, including Point Hope, indicated that it was often more effective for them to deal directly with the Borough administration. They also noted that the Borough **itself** often bypassed the coordinators **and** dealt **directly** with the cities. Village coordinators work out of their homes since no office space is provided for them in any Borough facilities.

Point Hope IRA Council

The Point Hope **IRA** (Indian Reorganization Act) council is a recognized tribal government entity. However, according to information collected as part of the 1983 fieldwork, the local IRA council was inactive from 1975 until the early **1980's** when it was able to operate for a time with very limited grant monies. The council was unsuccessful in obtaining additional funding from the Bureau of Indian Affairs which, at that time, was funneling tribal funds for the North **Slope** through the **Inupiat Community of the Arctic Slope (ICAS)**. Although the Point Hope IRA council received financial support from the **Tigara** Corporation for a limited period, it has since been inactive. However, the current funding problems of **ICAS**, coupled with a feeling by some in the village that such programs **would** be better managed locally, **could well** result in the reactivation of the local IRA council. The issue was raised at a May **1983** city council meeting attended by Alaska Consultants, Inc. when the **local ICAS** representative requested that Point Hope designate the regional entity as its official IRA representative.

City of Point Hope

The City of Point Hope was first incorporated as a fourth class city under Alaska law in 1966 and was reclassified as a second class city in 1972. Funds for **the city's** operation are derived from a 2 percent local sales tax, State shared revenue and occasional State or federal grants.

The city's present corporate limits take in approximately 1,260 acres extending eastward from the end of the Point Hope spit. However, since the relocation of the village in the 1970's, about half of the village has been outside Point Hope's corporate limits. The city petitioned the Alaska Department of Community and Regional Affairs in November 1982 to annex an area east of its present boundaries to a line coinciding with 166° 35' **West** longitude but the earliest that the proposed incorporation can be finalized is 1984.

Consistent with State law for second class cities, Point Hope has a 7-member city council. However, while second class cities are normally empowered to undertake a wide range of **local** government functions, Point Hope has few municipal powers since most have been assumed by the North Slope Borough on an areawide basis. Despite this limitation, the city government is the so-called "voice" of Point Hope and is the **group** which represents local desires for community improvements to the North Slope Borough. It is helped in this by having a **local** North Slope Borough assembly member.

The City of Point Hope and the **Tigara** Corporation have **not yet** reached a " 14(c)(3) agreement, i.e. lands to **be** conveyed to eligible municipalities under terms **of** Section 14(c)(3) of the Alaska Native Claims Settlement Act, as amended. In fact, there is **still** some question over ownership of certain lands conveyed to the **Tigara** Corporation because of pending Native allotment claims, including a portion of the new townsite area. As a result, although it reviews sites for proposed Borough facilities, the city does not normally receive financial benefit from the sale of land for such facilities.

The city government maintains a permanent office which is staffed by a full-time clerk and often by the mayor. Council meetings are held in the same building.

When asked if the city had developed any formal positions on offshore **oil** and gas development, the answer was "no". The subject has not been a major issue in the village since no offshore leasing activity has yet been proposed in the immediate Point Hope area. However, five councilmen who were interviewed as part of the 1983 fieldwork nevertheless expressed concern over the possible effects of offshore oil and gas development on the marine environment and resulting potential impacts **on subsistence** lifestyles. The mayor added that oil companies would first have to be able to convince the village that offshore development would not adversely impact marine subsistence resources before the community would be **willing** to consider such activities in the Point Hope area.

Individuals questioned on the subject of possible oil and gas development were generally negative but were more receptive to onshore than offshore petroleum activities. One villager expressed concern that no public hearing on the subject had yet been held in Point Hope.

Tigara Corporation

The **Tigara** Corporation was created under terms of the Alaska Native Claims Settlement Act and is the major land owner in the Point Hope area. Its stockholders are persons who enrolled as Point Hope residents and this, its landholdings and its ownership of the local store, a construction company and the local fuel dealership (aside from its activities outside the village), make it a strong political as well as economic force in the community.

Tikigak Corporation, a subsidiary of the **Tigara** Corporation with offices in both Point Hope and Anchorage, has been particularly successful in participating in Borough construction projects in the village. It has also been involved in constructing Borough projects at Point Lay.

Unlike some other village corporations in the North Slope Borough, the **Tigara** Corporation is presently **also** a strong political force in the region outside the village. The chairman of the **Tigara** Corporation board is currently president of the North Slope Borough assembly. In addition, a former corporation president is now president of the Pingo Corporation, a construction and service firm owned by several North

Slope village corporations and which operates primarily in the **Prudhoe** Bay area.

Like the City of Point Hope, the **Tigara** Corporation has thus far taken no official position on offshore oil and gas development. However, the corporation did indicate to Alaska Consultants, Inc. in May 1983 that it had opposed a proposal by the Arctic Slope Regional Corporation about 5 years ago to have Chevron conduct a **stratigraphic** test on land between the present village site and the airport and had held a public meeting on the subject. No drilling ever took place.

INFORMAL POLITICAL ORGANIZATION

Aside from the City of Point Hope, the village IRA council and the **Tigara** Corporation and its subsidiaries, there are a number of other groups in Point Hope which have some political significance. These include the Episcopalian church, the National Guard, the Local Alaska Eskimo **Whaling** Commission, the Lions and Lioness clubs, a dog mushers' **club**, a health committee and a recreation committee, plus the search and **rescue/firefighting** group.

The dominant religious group at Point Hope **is** the Episcopalian church. In addition, a small number of people attend the Assembly of God and at **least** one person was actively attempting to establish the Church of Christ here during 1983. The present Episcopalian minister is **Inupiat** but is retiring this **year**. He is scheduled **to** be replaced by a younger **Inupiat** from Point Hope.

The National Guard has long been an important organization in Point Hope, with local Guard leaders being accorded a certain amount of status. According to the Alaska Department of Military Affairs, there are about 30 guardsmen in the village. People interviewed as part of the 1983 fieldwork felt that the Guard's importance in the community had lessened in recent years. This probably reflects the length of time since World War II when Guard units were first established in this area plus the fact that income received by guardsmen for drills is now very minor when compared with that being earned by village residents in construction activities.

The local Alaska Eskimo Whaling Commission is an important group in the community. Prior to the whaling season, the local Commission holds meetings to discuss management of the hunt in relation to agreements with the full Alaska Eskimo Whaling Commission and the federal government. Federal regulations require that all whaling captains be registered with the Alaska Eskimo Whaling Commission. All whaling captains in Point Hope are members of the local Commission, with one member also serving on the full Commission. Given the importance of subsistence whaling activities, the local Commission is accorded a certain amount of influence and status. While that influence and status does not necessarily transfer to individual whaling captains, being a captain is nevertheless a strong political asset.

Search and rescue is a significant group in the village, as it is in other North Slope communities. Search and rescue functions have recently been assumed by the North Slope Borough and search and rescue

and firefighting volunteers are now one and the same group. Despite the changes in organization, search and **rescue/firefighting** remains a volunteer group and its members continue to be accorded status.

Of the remaining groups in the village, the Health Committee is probably the most active. It is involved in a memorandum of agreement for operation **of** the village health clinic, a memorandum which also includes the **Mauneluk** Association Health Division and the North Slope Borough Health and Social Services Agency. Funding for the second **health** aide in the village, **plus** supplementary travel funds for patients needing medical care and/or hospitalization, are raised locally by weekly bingo games sponsored by the Point Hope Health Committee. Bingo sessions are also sponsored by several other groups in the village.

Land Use and Housing

LAND STATUS

City of Point Hope

The present Point Hope village site was selected **to** minimize the threats of sea erosion and storm surge flooding. **The** actual-move from the old village took place in **1978** and **1979**.

Land for the new townsite was part of that selected **by** the **Tigara Corporation** under terms of the Alaska Native Claims Settlement Act (**ANCSA**). Under Section 14(c)(3) of the Claims Act legislation, as

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amended, the village corporation is required to reconvey up to 1,280 acres of land to the City of Point Hope for community development purposes. No agreement has yet been reached by **Tigara** Corporation and the City of Point Hope on this subject.

The **Tigara** Corporation's land selections on the Point Hope spit include the **entire** area embracing the old village site and the new townsite.

-
The corporation has received interim conveyance to this land, except for the airport tract which is patented to the State of Alaska and a Bureau of Indian Affairs school reserve located in the old village area. If
-
the Bureau of Land Management determines that this school reserve is not actually used in connection with the administration of any federal installation, the reserve is eligible for selection by and conveyance to
-
the **Tigara** Corporation.

Land ownership in the immediate vicinity of the present Point Hope townsite, including portions of the surveyed townsite area, is complicated by the existence of Native allotment applications covering lands which have already been interim conveyed to the **Tigara**
● Corporation. Passage of **ANILCA** in 1980 reopened certain Native allotment applications which had previously been relinquished. The validity of these applications must be determined before such lands can
-
be patented to the **Tigara** Corporation. Furthermore, the **precise** location of lands covered by Native allotment applications cannot be determined until official surveys are made. To date, lands covered by these applications have been the subject of field investigations by the

Bureau of Land Management. Only rough sketches of the sites were prepared as part of the field investigations.

Native allotments are essentially homesteads of up to 160 acres of non-mineral lands which were granted to Alaska Natives, generally for subsistence purposes. Indian allotment authority in Alaska was cancelled with passage of the Alaska Native Claims Settlement Act. Like restricted Indian lands, Native allotments are not subject to taxation or to local or State regulation.

Point Hope's municipal boundaries were established before the village moved to its present site. These municipal boundaries do not include all of the new Point Hope townsite, leaving the eastern portion of the village outside the city. In November 1982, the City of Point Hope filed a petition with the Alaska Department of Community and Regional Affairs to annex an additional area, including that portion of the new village townsite now lying outside the municipality. However, the earliest that these lands can be formally annexed is 1984. The requested annexation would move the municipality's eastern border to a line coinciding with 166° 35' West longitude as it intersects the Point Hope spit between Marrayat Inlet and the Chukchi Sea. The area proposed to be annexed takes in about 1,200 acres.

A portion of the land selected by the Tigara Corporation at the end of the Point Hope spit was included in U.S. Survey 3515. This survey anticipated establishment of a Native Townsite at Point Hope. However, although the survey was completed and recorded, approval of a Native

Townsite here by the Bureau of Land Management was never given. In 1981, the Point Hope City Council passed a resolution requesting that the Bureau consider the petition for a Native Townsite revoked since there was no longer a need for a townsite in that area.

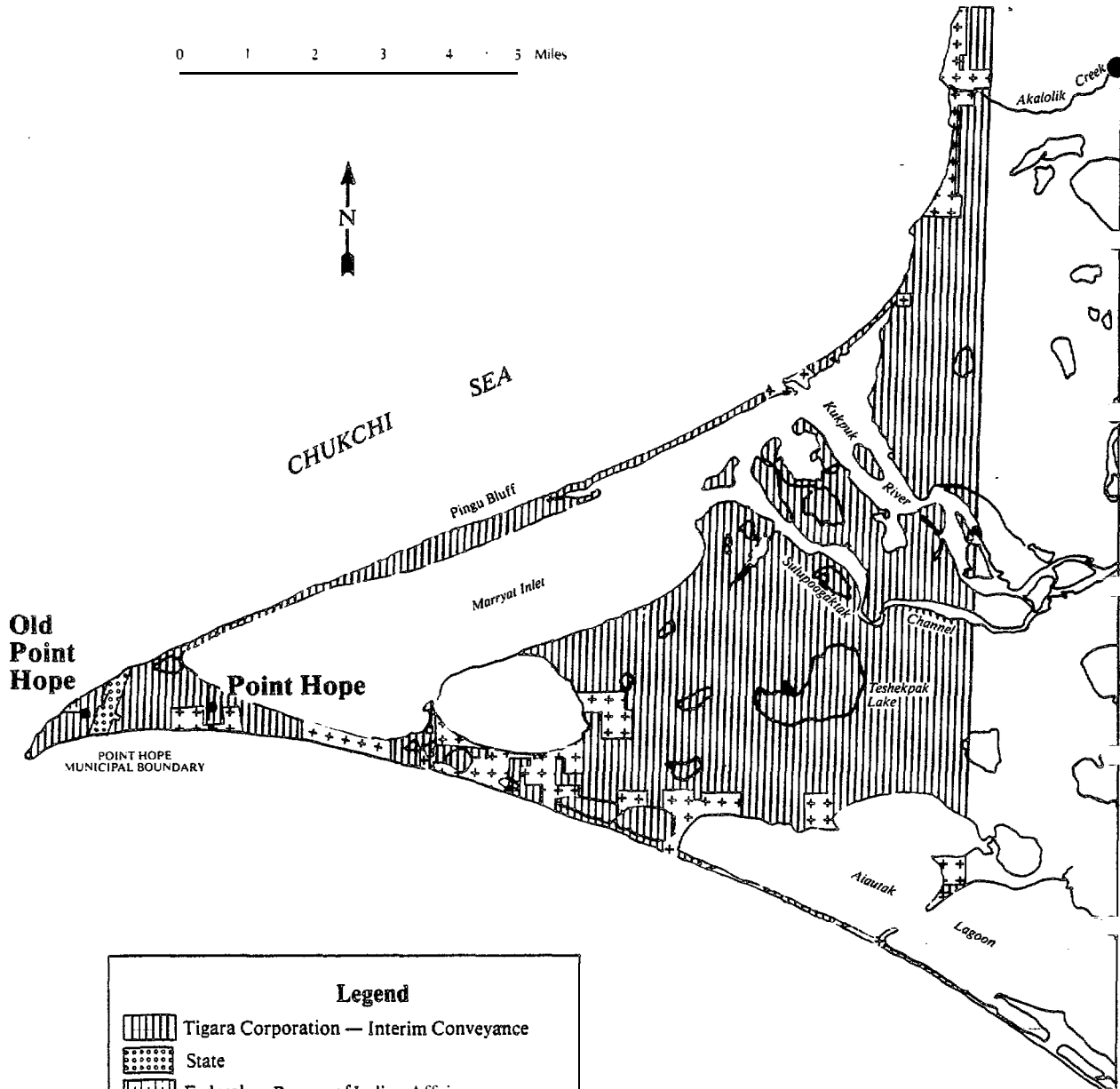
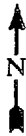
Point Hope Area

Lands on the Point Hope spit outside the city's present municipal boundaries were selected by the **Tigara** Corporation under Section 12(a) of the Alaska Native Claims Settlement Act (**ANCSA**) (see Figure 3). That legislation entitled the **Tigara** Corporation to select the surface estate to 138,240 acres in the Point Hope area. To date, the corporation has received interim conveyance to approximately 134,143 acres of the lands it has selected.

A number of Native allotment applications are on file for sites on the spit other than those abutting the present Point Hope townsite. These applications are for land which has already been conveyed to the **Tigara** Corporation, a predicament arising from a provision of the Alaska National Interest Lands Conservation Act (**ANILCA**) which reopened certain previously relinquished Native allotment applications. As in the case of these Native allotment applications abutting the present townsite, only field investigations have yet been made. The validity of these Native allotment applications remains to be adjudicated and official surveys need to be made before their impact on the **Tigara** Corporation's selections will be fully known. If the applications are determined to be valid, the **Tigara** Corporation would be permitted to select other

Land Tenure Point Hope Area 1983

0 1 2 3 4 5 Miles



Legend

	Tigara Corporation — Interim Conveyance
	State
	Federal — Bureau of Indian Affairs
	Native Allotment Applications
Ipiutak National Historic Landmark Boundary	

Alaska Consultants, Inc.
Anchorage, Alaska

Adapted from cartography by
Northwest Cartography, Inc.
Seattle, Washington

Figure 3

lands in the Point Hope area in order to make up its total entitlement of 138,240 acres.

The existence of the Native allotment applications complicates community development in Point Hope in that the construction of roads or utility lines across such lands must be preceded by the obtaining of easements or rights-of-way from the applicants.

A portion of the Point Hope spit is classified as a federal National Historic Landmark. The area under this classification extends from the tip of the spit eastward to include Jabbertown, encompassing the old village site, the airport and the present village townsite. This federal classification officially recognizes the historical significance of the Point Hope spit but has little other impact on land development except when federal funds are involved.

SUBSISTENCE LAND USE PATTERNS

This section **describes** contemporary subsistence land use patterns of Point Hope residents. **While Point** Hope villagers enjoy a diverse resource base, including both terrestrial and marine animals, this discussion concentrates on **marine-oriented** subsistence activities. Thus, subsistence activities which revolve around land-based or riverine resources are considered to be outside the present scope of work and have therefore not been addressed. The subsistence land use maps for Point Hope are based on interviews with 12 local hunters and fishermen.

A description of the **field** methodology is given in the overview of the region's subsistence land use patterns.

Before describing the current subsistence use patterns of Point Hope residents, a brief discussion of the physical setting is useful. Point Hope is located on a **cusplate** spit which is the westernmost point of land on the **Chukchi** Sea. The spit, formed by the merging of two opposing long shore drift systems, juts out into the **Chukchi** Sea over ten miles from the associated headlands to the north and south. This location provides several physical advantages to the **local** residents who harvest marine resources. These advantages are associated with the seaward extension of the spit, currents and prevailing winds.

First, because most of **the** marine mammals which Point Hope hunters harvest are migratory, the point forms a natural barrier in the animals' migration route and places hunters in a strategic location. On the annual migrations north **to** summer feeding grounds, the animals are concentrated **in** the waters off the point as they pass around this natural barrier. Traditionally and, according to local residents, presently the most important sea mammal which Point Hope residents harvest is the bowhead whale, the yearly migration patterns of which demonstrate the **significance** of Point Hope's **location**. Each year, bowhead **whales** migrate through open **leads** in the pack ice of the Bering and **Chukchi** seas to summer grounds in the Canadian arctic. **The** leads through which these animals migrate do not parallel the Alaska coastline but are often many miles from shore. At Point Hope, the leads are **closer** to shore than at any other place south to Cape Prince of **Wales**,

placing **local** hunters in an ideal location to harvest this immense species.

A second advantage for **local** subsistence users results from the currents around Point Hope. The dominant surface currents which flow north through Bering Strait are relatively warm Alaskan coastal waters. These currents generally flow north along the coast and are rich with a wide variety of marine life. This is **unlike** the Beaufort Sea which is dominated by currents of the Arctic Ocean. The warmer waters of the **Chukchi** Sea, as **well** as their northerly direction, result in a shorter period of continuous ice cover, averaging seven to eight months rather than the nine to ten months of the Beaufort Sea. Furthermore, the ice which does form is **generally** only seasonal and, as a result, has a greater frequency of **polynyas** and leads than are present further to the north or east. This open water allows marine mammal populations to exist in greater numbers than in the Beaufort Sea. In summary, the combination of currents, water temperature, nutrients and ice conditions allows Point Hope residents to harvest marine mammals for longer periods of time and in greater numbers than is possible in areas further to the north.

A final important factor related to Point Hope's strategic location is the position of the spit in relation to prevailing winds. Considerable marine mammal harvesting occurs in the open leads of pack ice which surround the spit for an average of seven to eight months each year. Because Point Hope is situated on a narrow spit, local hunters have access to suitable leads which open on either the north or south side of

the spit, depending on wind direction. **Thus**, when the north wind blows, open water forms on the south side of the spit; the opposite is true during a south wind. This phenomenon doubles the hunters' opportunities of finding suitable open water in which to hunt.

The same condition works equally well during the few ice-free months of the year. If strong southerly winds result in rough seas to the south side of the spit, fishermen set their nets in the lee north of the spit; the reverse being true for a north wind. The distance from shore that one can safely hunt differs from the north and south shore and will be discussed later in this section in relation to the **seal** harvest.

These physical characteristics and the large number of sea mammals which congregate and migrate past the point have enabled Point Hope to be continuously inhabited for at least the last two thousand years (Larsen and Rainey 1948). The "index finger", as the Eskimos describe this point, provides ready access to a **large** variety of sea mammals, the traditional primary source of food in this village.

Bowhead Whale

Beginning in late March or early **April**, the **prevailing** north wind opens a large lead south of Point Hope. It is along this lead, which is wide enough to accommodate large animals, that **belukha** and bowhead whales, as **well** as other marine resources, become **locally** available in **early** spring as they migrate north. As previously discussed, Point Hope's strategic location close **to** this lead has made the village uniquely situated to

hunt bowhead whales. The establishment of approximately 15 to 18 spring whaling camps along the edge of the **landfast** ice marks the beginning of Point Hope's **annual** ocean based spring hunting pattern.

Because the spring leads are relatively confined, the present bowhead harvest area is smaller than that of any other marine resource.

Although the actual harvest area varies from year to year depending on where the open leads form, the whaling camps in the recent past have all been situated south and southeast of the point (see Figure 4). Camps as far south as Cape Thompson were reported, but in recent years they have tended to be located closer to the village. Historically, whaling camps were also located off Cape **Lisburne (Burch 1981:25)**, but Point Hope hunters stated that establishment of an **AC&W** (Aircraft Control and Warning) site at Cape **Lisburne** resulted in decreased whaling activity in that area.

The intensive use area delineated in Figure 4 indicates the location of the leads and the corresponding harvest areas over the past few years. The distance of the lead from **shore** varies from year to year. For example, in 1982 hunters indicated that the south shore lead was five miles from the village, whereas in 1983 the lead was only one mile from shore. The lead is rarely more than six or seven miles offshore **but** hunters interviewed remembered having to travel to over the ice as much as ten miles from the village to find the necessary open water for spring whaling.

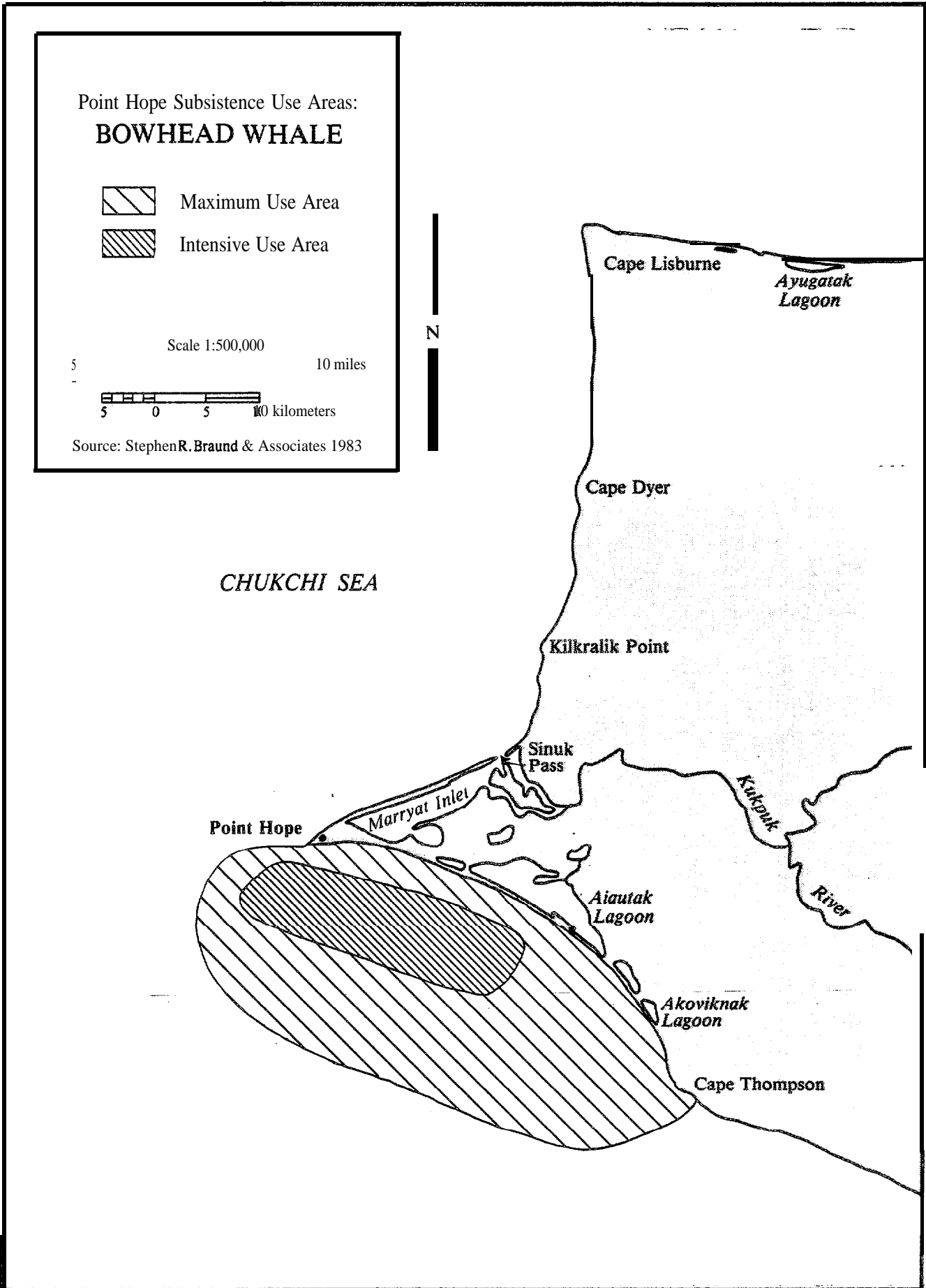


Figure 4

Although **Point** Hope has open water for a long time during the whaling season, the lead is generally narrow. Sometimes two narrow leads develop, one where the Point Hope hunters are camped and another one further offshore. This presents a problem for the whalers because the whales may travel in the furthest lead and therefore be inaccessible to them. Or, the hunters may strike a whale in the nearby lead and the wounded **animal** will sound and resurface in the second **lead**, again out of the hunters' reach. These ice conditions can result in a poor struck and lost ratio for Point Hope. But, if Point Hope whalers wait too long for more open water, the whales will have already passed and the landfast ice will probably be too rotten to land a whale.

Prior to implementation of the International Whaling Commission's (IWC) bowhead quota system beginning with the 1978 whaling season, spring whaling in Point Hope began in late March, the earliest a suitable lead formed, and lasted until the first part of May. By that time, the majority of **bowheads** have passed and the **landfast** ice margin is deteriorating so rapidly that landing a bowhead would be impossible. During this traditional six week spring whaling season, hunters remained on the ice and hunted bowheads, as well as **belukha**, seal, **ugruk**, eider ducks and **murre**s when the bowheads were not running. Since the implementation of the quota on bowhead whales, the spring whaling season is often curtailed to **less** than three weeks. Once Point Hope hunters have exhausted what they consider to be an inadequate opportunity (four strikes per season for 1982 and 1983), many whaling captains cannot justify the high cost of maintaining a whaling crew on the ice. Seal

and **ugruk** hunting can continue from **closer** spring **camp**s along the south shore.

Despite the limited nature of both of the season and the harvest area, no other marine mammal is harvested with the intensity and concentration of effort as is the bowhead **whale**. The enormous size, as **well** as the difficult nature of the harvest, necessitates both cooperation among **whaling** crews and members **of** the community in order to return the animal to the landfast ice, haul it up and butcher it before spoiling.

Extensive sharing (both inter-village and **intra-village**) of whale meat and **muktuk** is associated with the bowhead harvest (Alaska Consultants/ Stephen R. **Braund & Associates 1983**) and Point Hope provides crew space to residents from several other villages (**i.e. Kivalina**, Kotzebue and **Noatak**).

Of all the marine resources harvested by Point Hope hunters, the bowhead whale is the most important in the subsistence economy, accounting for **22.3** percent of the subsistence harvest over the past twenty years (Stoker **1984**). The harvest of any wildlife resource **varies** from one year to the next and Point Hope hunters' harvest of the **bowhead** is no exception, their success varying from 0 **to 14** animals in the past 20 **years**. The only year **any resident could** remember Point Hope **not** harvesting a whale was in 1980 and, according to the fieldwork, this failure was not only very sad but it also resulted in some food hardships **in** the community. **In 1982 and 1983**, Point Hope whalers landed one **bowhead** each year.

In summary, the actual location of the open leads is different each year, but the present bowhead harvest area is **always** located south of the spit. The imposition of the quota has curtailed the bowhead harvest period which is now concentrated in April when ice conditions are most favorable. In Point Hope, as in other whaling communities, the harvest of no other marine mammal is undertaken with so much community enthusiasm, participation and support. As the **last** of the bowhead whales migrate past the point and the landfast ice becomes dangerous, Point Hope hunters establish spring camps along the south shore of the spit for seal and **ugruk** hunting. For a more **complete** discussion of Point Hope **whale** hunting see **Lowenstein** (1981).

Seal and **Ugruk**

Point Hope residents' subsistence use patterns for hair seals and bearded seals (**ugruk**) are presented in Figure 5. The most salient feature is the clear orientation of these activities south of the point. Point Hope villagers generally indicated a **clear** preference for hunting on the south shore, saying that it was both safer and more profitable. Winds from the north open leads suitable for hunting, while the prevailing onshore currents prevent hunters from drifting off or being separated from land by open water or leads. According to Lowenstein (1981:17), in good conditions (i.e. an inshore current) it is usually safe for a hunter to go out 10 to 15 miles or more on the south side. Villagers interviewed for this study indicated that while distances of this magnitude were not unusual, it was normally not necessary to travel so far for successful **ugruk** or seal hunting. As discussed earlier in

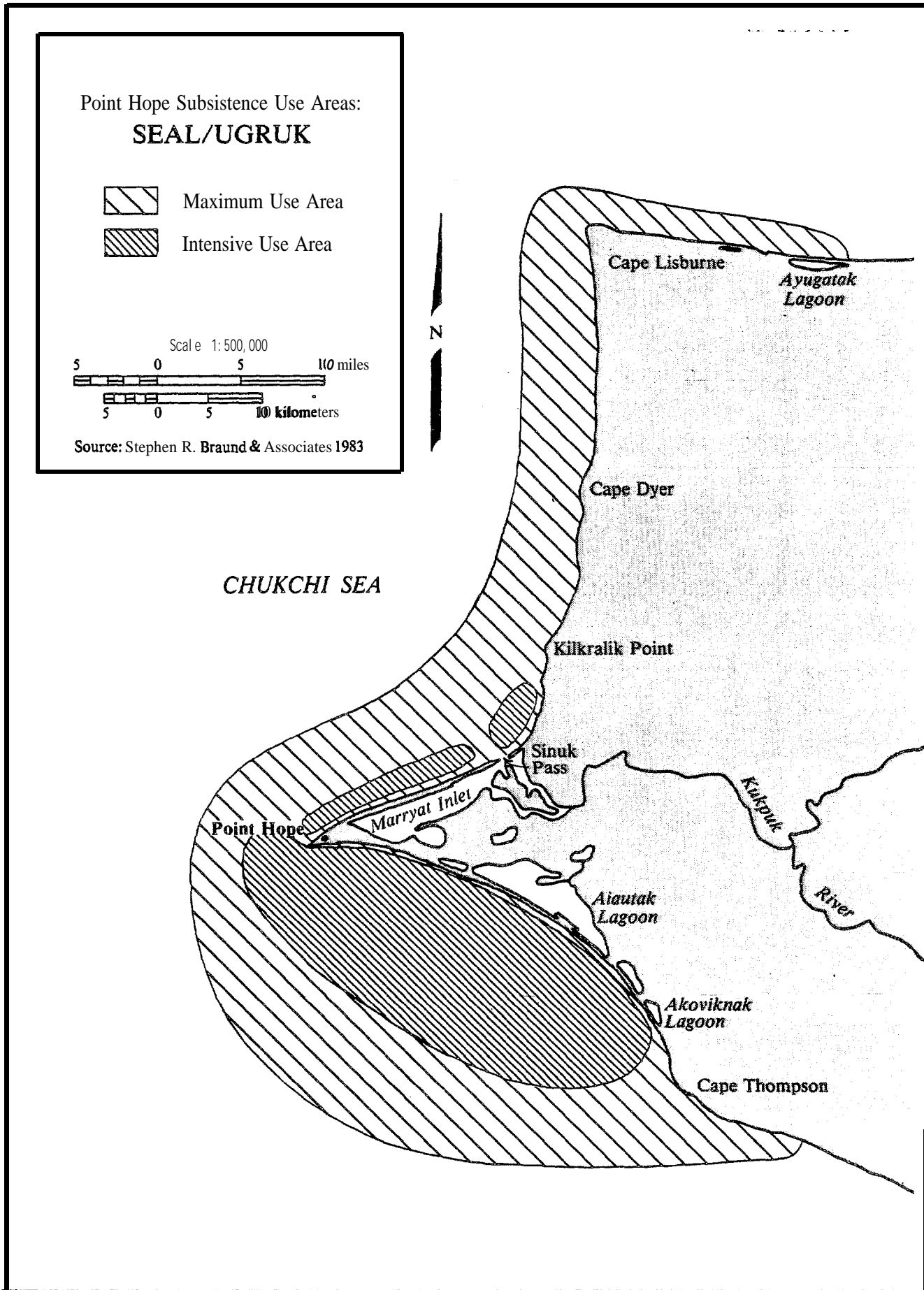


Figure 5

the subsistence economy section, changes in hunting technologies as well as economic conditions affect harvest areas and effort for these and other subsistence resources.

Hair seals are generally available from October through June and occasionally during the remaining summer months. However, because of the availability of preferred or more energy efficient resources (bowhead, **ugruk** and caribou) during various times of the year, seals **are** primarily harvested during the winter months from November through March. Both traditionally and presently, the most common hair seal species taken is the ringed seal, and the single most concentrated harvest period remains the month of February. The longer days at that time of year allow more time to harvest this species along open **leads** in the pack ice.

Although Point Hope hunters generally prefer the south shore (i.e. from the point to Cape Thompson) for seal hunting, this activity also takes place north of the village (**Lowenstein** 1981 and fieldwork for this study). Because of the dangers of the ice, north shore hunting for ringed seal generally occurs close to shore and is most successful at **Sinuk** (the mouth of the **Kukpuk** River) and the numerous small points between the village and Cape **Lisburne** where open water is found (i.e. **Kilikralik** Point and Cape Dyer). Ringed seal hunting off the south shore is generally concentrated within five miles from shore on the ice pack between the point and **Akoviknak** Lagoon. In addition, some hair seal hunting takes place directly off the point as the ice is first forming in October and early November.

Ringed seals are also an **important** resource at spring whaling camps where, along with **belukha** and eiders, they **supply** food for the crews. Spotted seals are more common than ringed seals in the open **water** months of summer and early **fall**. They **are** occasionally taken **along** the north shore and at **Sinuk** as they feed on anadromous **fish**. Ribbon seals are rare and are seldom harvested.

The harvest of bearded seal or **ugruk** has always been an important subsistence activity in Point Hope, because it is a preferred food and because of its use as covers for the whaling **umiaks**. If a whaling captain was unlucky or did not have time to harvest enough **ugruk** to cover his **umiak**, he must buy the skins before the following whaling season. While some **ugruk** are taken during spring whaling or in the winter, the major harvest of this species is concentrated during May and June (to as **late** as mid--July in some years) as the **landfast** ice breaks up into numerous pans and **floes**.

Open lead hunting has become the most common form of seal and **ugruk** hunting since the introduction of the rifle and, in recent years, large outboard motors and aluminum boats have facilitated this practice. With the first signs of open water and **lead** formation in the landfast ice and adjacent pack ice, hunters begin to search the ice for **seals**, **ugruk** and walrus. Because of the need for **ugruk** skins, as **well** as the **larger** size of this species, **local** hunters concentrate on this species over the smaller hair seals. As the ice continues to deteriorate and break up into smaller pans, residents begin to travel in wooden and aluminum boats amongst the floes looking for seals and **ugruk**. **While** this had

been traditionally practiced in large skin-covered **umiaks** with paddles and later small outboards, these boats are no longer used. Much larger engines now power wooden and aluminum boats which **allow** hunters to cover a much larger area in equal or less time than in the past. **One** resident stated that as long as there is ice there will be **ugruk**, and captains who need more skins will continue to hunt this species until the last remnants of ice are gone, usually in **July**. In addition, because these wooden and aluminum boats have powerful motors, areas both north and south of the point can be covered with equal safety when sea ice conditions permit boat travel.

Almost all of the marine mammal harvesting **which** takes place at this time of year is initiated from the spring camps along the south shore. These camps stretch from just in front of the village all the way along the coast to **Akoviknak** Lagoon. With quick access to town (it takes **only** one hour to travel to Cape Thompson from the village on a **three-**wheeler), residents are now going to their camps after work and on weekends rather than for continuous occupation.

Walrus

While walrus have always been a resource used by the **Eskimos** of Point Hope, their local abundance has fluctuated with the overall population and distribution of this species in the North Bering and **Chukchi** Seas. During the past decade, walrus have taken on increased importance in Point Hope as the locally available number of animals increased.

The most important time **for walrus** hunting is **during** the spring sea **mammal** hunt based **along** the south shore of the spit (see Figure 6). Thus, the **major walrus** hunting effort in Point Hope coincides with **the** spring **ugruk** harvest. The same spring camps, stretching from the village to Akoviknak Lagoon, are used for both activities. Because of the easy access to the village which three-wheelers now provide, these camps can provide access and shelter to hunters during the evenings after work and on weekends. Some camps are **still** occupied in the traditional manner of the entire family moving to camp for several weeks, with only occasional trips to town for supplies and storing the catch.

June and early July is the primary season for both walrus and **ugruk** hunting at Point Hope. The estimated harvest for **village** consumption of walrus ranges from **10** to 30 animals during the month of June. The harvest technique, described above, involves boat travel among the ice **floes** of the broken ice pack and shooting **walrus** as they are on the ice. When the ice is gone, the **walrus** too have disappeared.

Although the most significant walrus harvest occurs during June and early July, Point Hope residents also hunt them during the rest of the summer along the north shore, especially along the rocky capes and other points where the animals tend to **haul** out. Harvesting at this time is often done in conjunction with other subsistence activities such as eggging, fishing or traveling the shores in search of caribou. Powerful outboard motors and boats have increased **summer** access to this area in

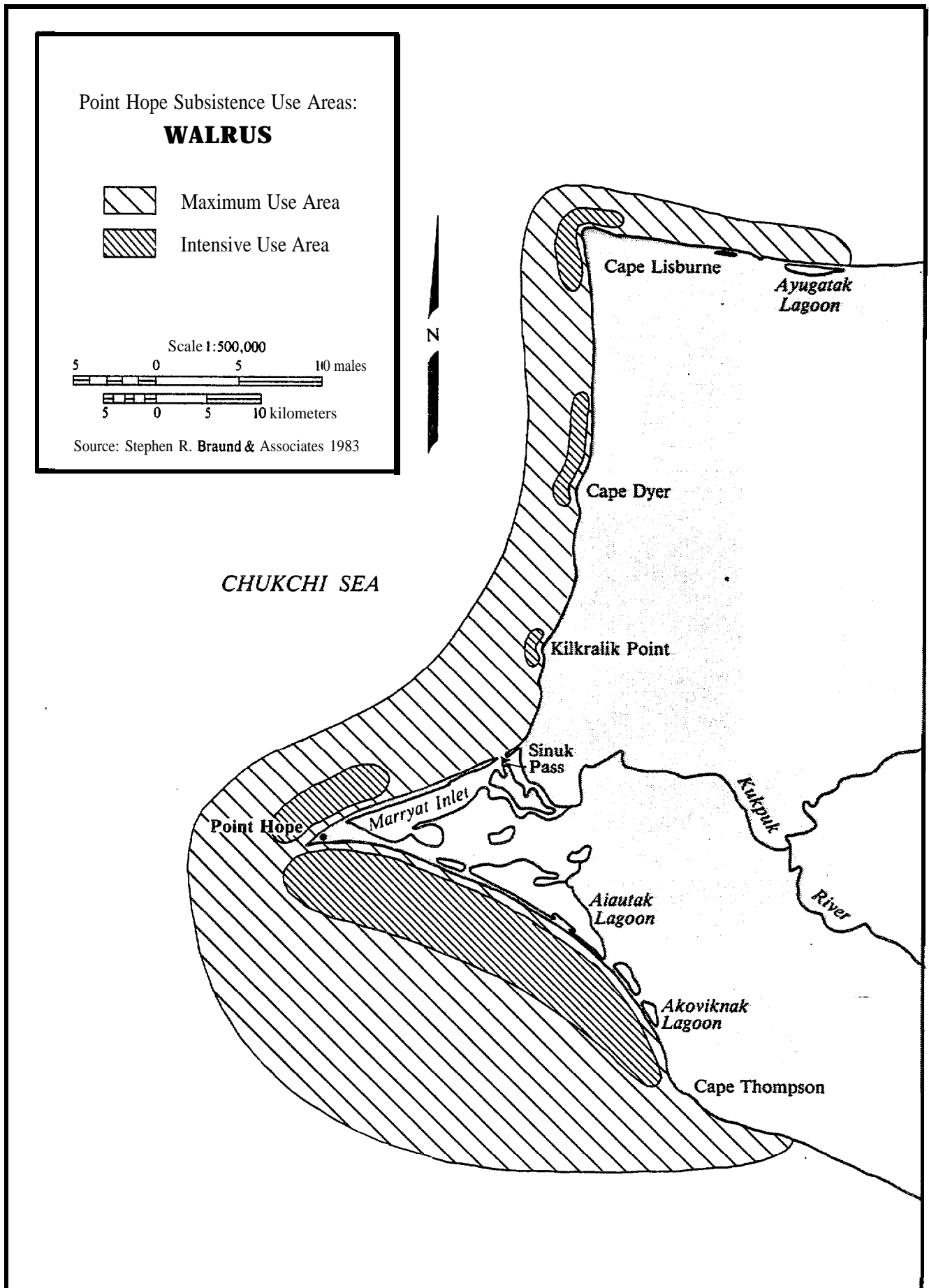


Figure 6

recent years. The last walrus hunting occurs during September and October as they pass by the point on their southward migration.

Belukha

Point Hope hunters actively pursue and harvest **belukhas** during two distinct seasons: during offshore spring whaling and along the coast later in the summer. The first and larger harvest occurs during the spring bowhead whaling season. Significant numbers of **belukha** migrate through the same open leads as the **bowheads**, and **local** residents use the **belukha as** an indicator species for the **bowhead**. When the first **belukha** are sighted in the leads, villagers know that the bowheads are not far behind. At this time, **local** hunters harvest **belukha** from the ice edge with rifles during periods when no bowheads are present.

The number of white **whales** harvested at Point Hope whaling camps varies from season to season and among the different crews. **At** least one crew in 1983 harvested four **belukhas** (fieldwork for this study), and Lowenstein (1981:61) indicated that it was rare that a crew will not take at **least** one **belukha** during the whaling season. **In** addition to providing food for the village, **belukha** harvested at this time help feed the whaling **crews**.

The area of intensive use south of the village is representative of **belukha** harvesting at this time (see Figure 7). It is **only** during the spring **belukha** harvest that Point Hope hunters go way offshore for this

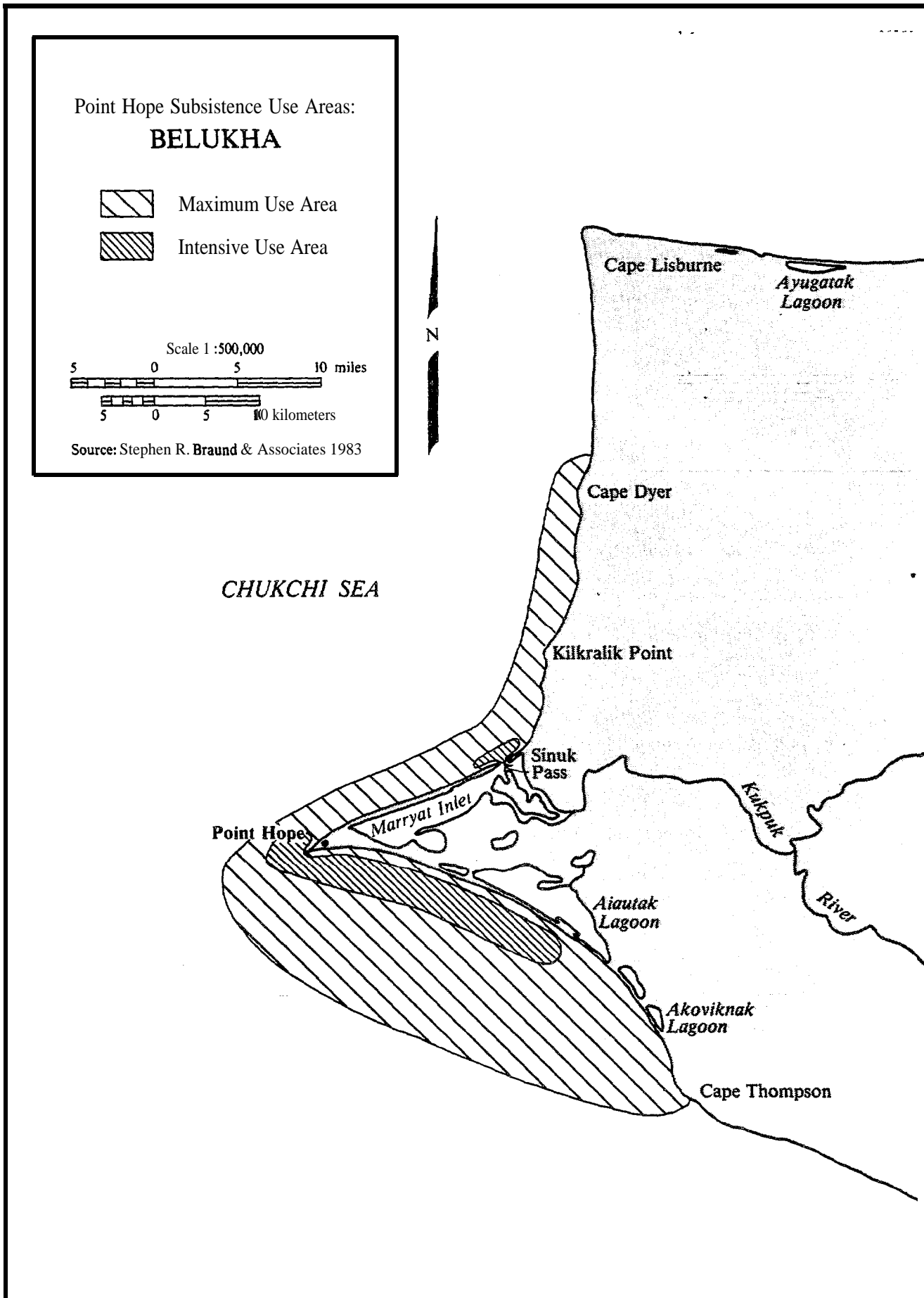


Figure 7

species. Coincidental with bowhead whaling, this **belukha** harvest extends from approximately late March to early June.

While not as common as during whaling season, **belukha** are also harvested throughout the summer open water season. At this time, Point **Hope** hunters concentrate their effort on the south shore in **close** proximity to the beach as **well** as coastal areas 'on the north side of the point as far north as Cape Dyer. Hunters are particularly successful near **Sinuk**, a **result** of **belukha** feeding on **anadromous** fish of the **Kukpuk** River.

In summary, **belukha** are available as **early** as the end of **March** through the end of August. The Point Hope harvest of this resource **is** concentrated offshore during the whaling season and again along the coast during the open water months, particularly in July. **Although** the animals migrate past the point in May and June, villagers do not harvest them at that time because of deteriorating ice conditions along the **landfast** ice margins as **well** as the greater availability of **ugruk** and **walrus**. The total **belukha** harvest area extends from Cape Dyer on the north to Cape Thompson on the south. Usually Point Hope residents hunt **belukha** from the shore except during whaling when, depending on ice conditions, whaling camps may be 6 or 7 **miles** offshore.

Fish

Point Hope residents harvest a variety of fish throughout the **year**. As soon as the **landfast** ice breaks free from the shoreline (generally in mid to late June), villagers use set nets and beach seines to catch

Arctic char and three species of salmon: pink, coho and chum. This activity takes place from coastal fish camps located along the shore from Cape Thompson north to Kilikralik Point (see Figure 8). While some Point Hope residents fish outside this area, it is generally done in conjunction with other subsistence activities, such as eggng or caribou hunting. The summer fishing season extends from mid to late June when the ice breaks free from shore through the end of August, with July being the most important month. Summer fishing provides the village with a fresh meat supply at a time of year when other marine resources are scarce.

Similar to the spring ugruk and walrus camps along the coast (which often convert to summer fish camps), three-wheelers are currently the most common means of transportation to and from summer fish camps which are often occupied by whole families. The sandy beaches of the spit provide excellent natural passageways during the summer, and one can travel from Cape Thompson all the way to Sinuk inlet north of the village on an uninterrupted roadway.

According to the 1983 field interviews, the first species to appear in the summer is Arctic char which are traveling north. These fish are followed by pink, coho and chum salmon. In August, the char again pass the village and are harvested for several days off of the point and along the north beach as they migrate south to overwintering rivers such as the Wulik River near Kivalina.

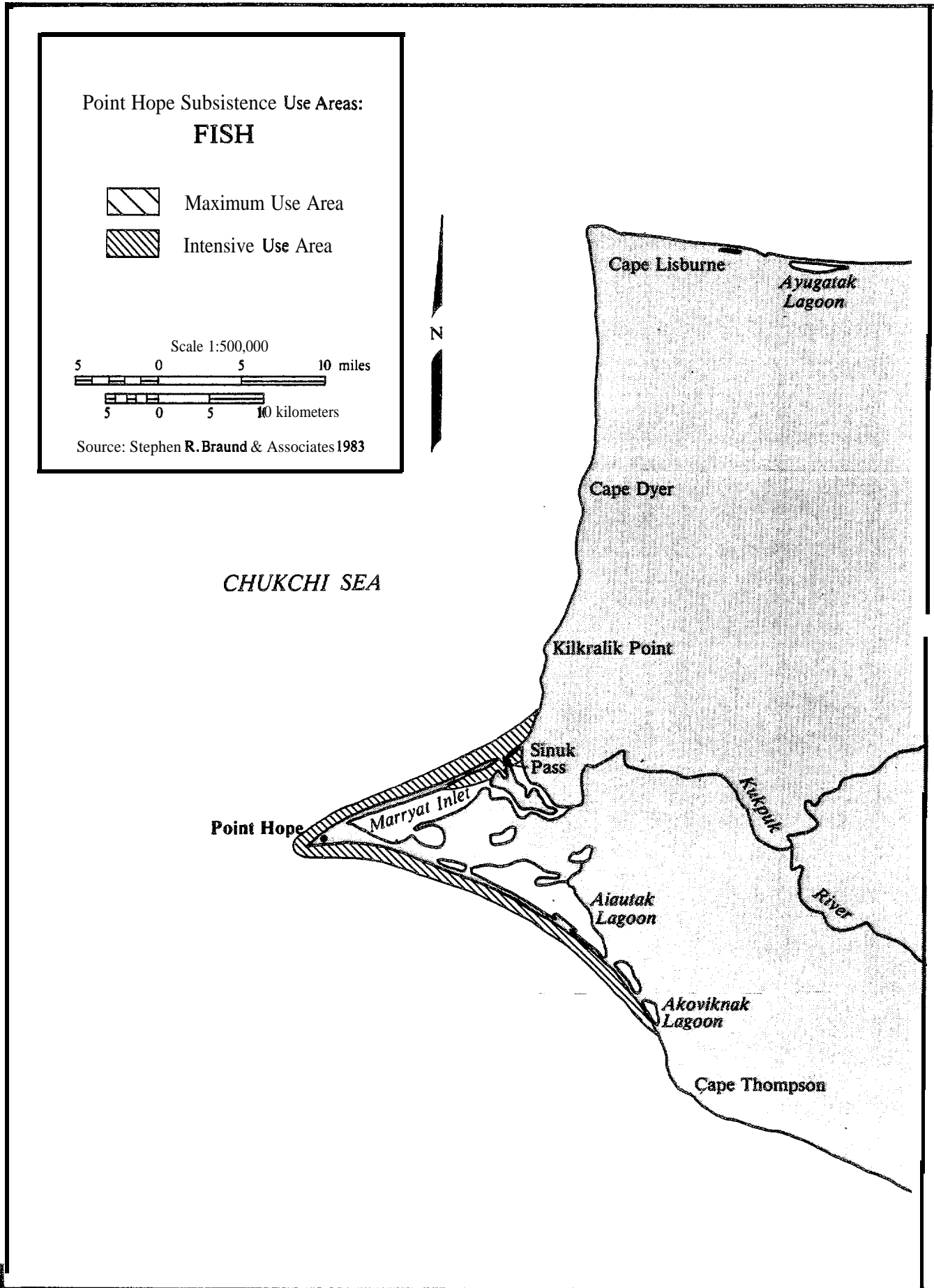


Figure 8

- As with sea mammal hunting, the physical setting of the Point Hope spit is also advantageous for summer fishing. During strong northerly winds, fishermen are able to set their nets in the lee of the wind on the south side of the point; the opposite is true during a south wind.

● Other fish species which Point Hope residents harvest include whiti fish, **grayling, tomcod** and an occasional flounder. Sometimes flounder appear as an incidental catch in the beach seine and **gill** net fishery during the summer and, in the fall, villagers harvest **grayling** and whiti fish on the **Kukpuk** River during the October upriver fishing period. From December through February, villagers fish for tomcod and through the ice near the point. January is the most important month for this fishing.




- Migratory Birds and Eggs

● Waterfowl and other migratory birds also provide a source of food for Point Hope residents (see Figure 9). Eiders and other ducks, **murres, brant**, geese and snowy owls are all harvested **at** various times of the year. In addition, Point Hope residents still harvest **murre** eggs from **the** cliffs at Cape Thompson and Cape **Lisburne**.

- Eiders are fairly common during the **whaling** season and are harvested as they fly along **the** open "cads, providing a fresh meat source for the whaling camps. Later in the spring, Point Hope residents harvest a significant number of eider, geese, **brant** and other migratory waterfowl, hunting along both shores of the point as well as the numerous lakes and lagoons. Geese are harvested from the middle of May **until** the middle of

Point Hope Subsistence Use Areas:

MIGRATORY BIRDS

-  **Maximum** Use Area
-  Intensive Use Area
-  Egg Gathering Area

Scale 1:500,0041

10 miles

5

10 kilometers

Source: Stephen R. Braund & Associates 1983

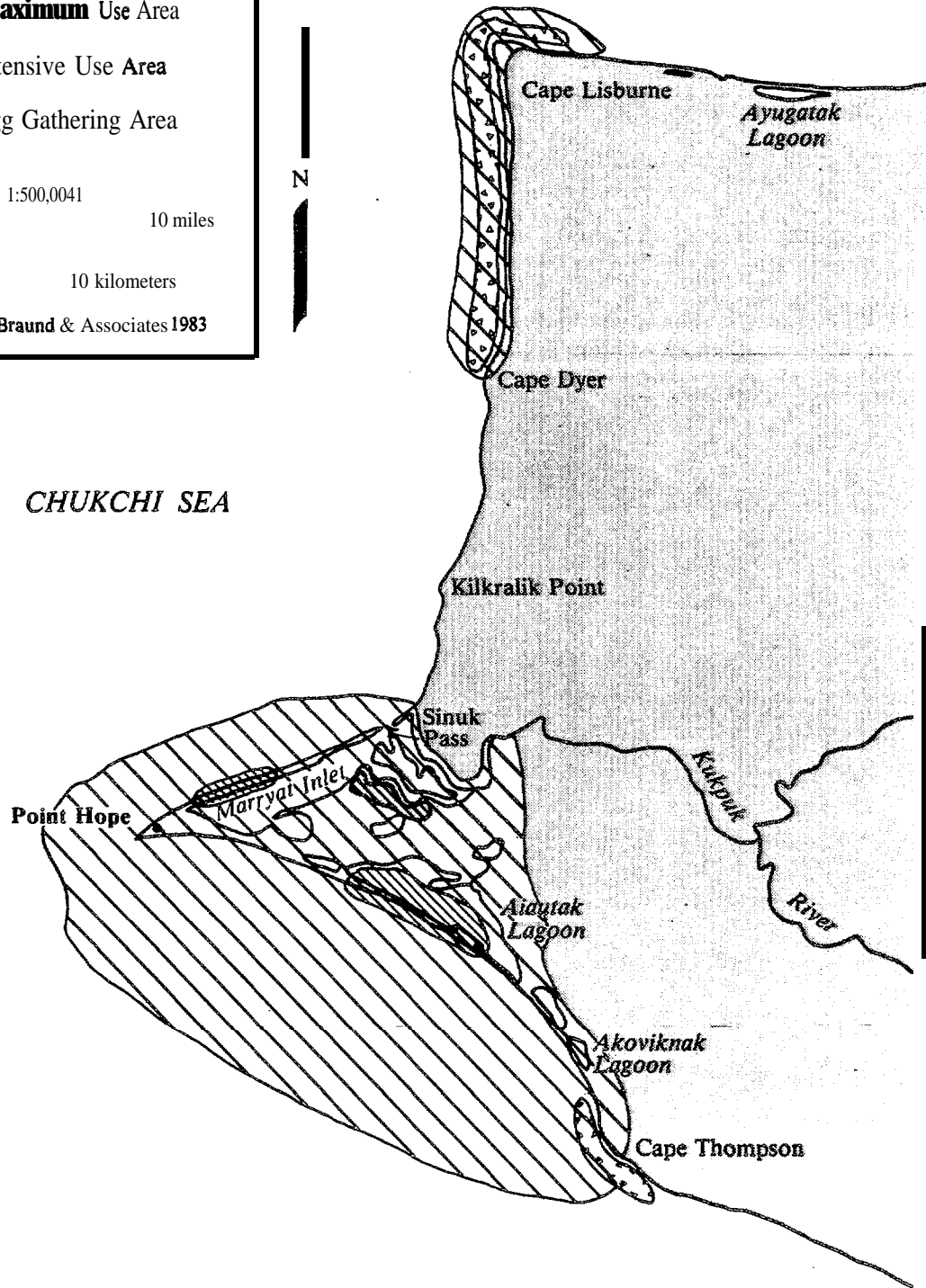


Figure 9

-
-
● June, while **brant** are harvested at this time as **well** as during September as they migrate from their summer breeding grounds. Snowy owls are occasionally trapped **later** in the **fall** (October) on their southward migration.

● Polar Bear

-
- Point Hope hunters **also** harvest polar bears, primarily during the winter from January to April. Because seals comprise a large part of polar bears' diet, these bears are often taken during winter seal hunting. Polar bear are mainly harvested south of the village, generally in the area of intensive hunting.






VILLAGE LAND USE PATTERNS

● The new Point Hope townsite is located east of both the old village and the present airport, away from eroding areas along the north side of the spit which threatened the **old** village site. It is also on somewhat higher ground which affords more protection from periodic storm surge flooding of the Chukchi Sea.

● The configuration of the survey for the present community-was that of a square approximately centered on **a large** keyhole-shaped tract designated for public use (see Figure 10). Expansion of the village is possible only to the east or west since the spit is not wide enough here to accommodate further expansion of the community to the north or south.
● An additional row of blocks was surveyed at the eastern edge of the new

Existing Land Use Point Hope September 1982

Legend

-  Single-family Residential
-  Multi-family Residential
-  Public and Semi-public
-  Commercial
-  Industrial and Storage

0 500 1000 Feet


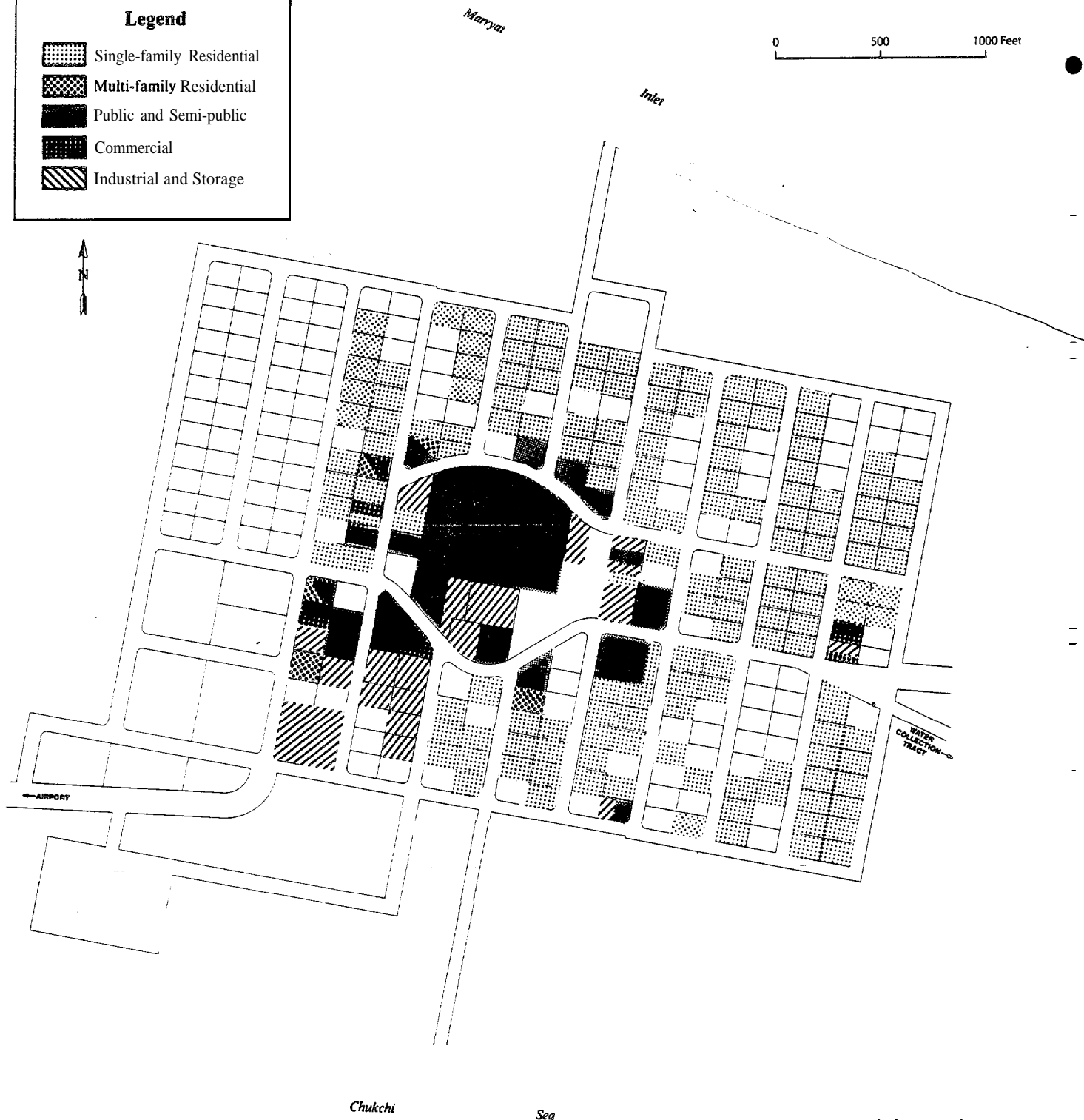



Figure 10

Alaska Consultants, Inc.
Anchorage, Alaska

Adapted from cartography by
Northwest Cartography, Inc.
Seattle, Washington

townsite to accommodate the construction of housing funded through the North Slope Borough's capital improvements program. In addition, lands immediately beyond the western edge of the village have been surveyed for more new housing plus planned Borough warehousing and vehicle storage facilities.

The concept of a central area within the Point Hope townsite for the concentration of public facilities and services has continued to be observed. That central tract now contains the new school complex and auxiliary buildings, the health clinic, the fire station, the community washeteria/shower facility, the post office and the senior citizens' center, plus the village water treatment and storage facility, the village power plant and a sewage treatment unit. Immediately across the perimeter street which encircles the central tract are a number of other public and semi-public facilities including the public safety building, the city office and two churches plus the village's general store. Several camp operations providing room and board for itinerants are also located close by.

The village fuel storage dump was originally located in the southwest corner of the new townsite. The Public Works Department's warm storage building, the village corporation's offices and several warehouses are also located in this southwest sector of the village.

A road leads west from the village to the airport and the old village site beyond the landing strip. En route it passes the sewage lagoon and the old and new solid waste disposal sites. The new village tank farm

TABLE 22
EXISTING LAND USE
POINT HOPE TOWNSITE a/
1982

<u>Land Use</u>	<u>Land Area (acres)</u>	<u>Percent of Devel oped Area</u>	<u>Percent of Surveyed Area</u>
Residential	41.7	17.4	16.1
One and Two Family	(31.4)	(13.1)	(12.1)
Trailers	(0.4)	(0.2)	(0.2)
Multi -Family	(0.5)	(0.2)	(0.2)
Vacant Units	(6.2)	(2.6)	(2.4)
Under Construction	(3.2)	(1.3)	(1.2)
Commercial	2.0	0.8	0.8
Utility and Storage	31.6	13.1	12.2
Public and Semi -Public	8.3	3.5	3.2
Public	(7.6)	(3.2)	(2.9)
Semi -Publ ic	(0.7)	(0.3)	(0.3)
Developed Streets	49.6	20.6	19.1
Outlying Streets b/	(19.4)	(8.0)	(7.4)
Airport Tract	107.3	44.6	41.3
<u>TOTAL DEVELOPED AREA</u>	<u>240.4</u>	<u>100.0</u>	<u>92.7</u>
Vacant Land	18.5		7.1
Undeveloped Streets	0.4		0.2
<u>TOTAL LAND AREA</u>	<u>259.3</u>		<u>100.0</u>

a/ Excludes ~~the~~ road leading east of ~~the~~ village water collection cells and also ~~the~~ undeveloped but surveyed area proposed for a new solid waste disposal site.

b/ Includes the airport road and the road to the village water collection cells.

Source: Alaska Consultants, Inc.

is also visible from the airport road. Another road leads east of the village to the city's former water source. Ocean cargo is landed directly onto the beach just south of the village, and some villagers' boats are drawn up on the shore of Marryat Lagoon immediately north of the community.

The traditional village cemetery site, located west of the present townsite near the airstrip, is still being used although it lacks an improved access road.

Developed land in the Point Hope townsite in 1982 amounted to about 133 acres, including the sewage lagoon area and roads to the airport and to the water collection cells (see Table 22). The airport tract itself contains another 107 acres, bringing the total developed land area at Point Hope to 240 acres. Developed residential land accounts for about 42 acres, while utility and storage uses take up another 32 acres, and developed streets in the populated area occupy a further 30 acres. Lands used for public and semi-public purposes in 1982 amounted to 8 acres and another 2 acres were occupied by commercial uses. The townsite also includes 18.5 acres of vacant but surveyed lots.

HOUSING CONDITIONS

With the exception of several camp operations, a **four-plex**, a duplex and an apartment in a church, **all** residential development in Point Hope in September 1982 was in single family structures.

The September 1982 survey conducted by Alaska Consultants, Inc. for the North Slope Borough counted a total of 162 housing units in the village (see Table 23). About half (79) of the units had been constructed under Borough housing programs, including 43 being purchased by low income families under the Mutual Help program. Another 25 Borough-constructed housing units were rented to low income families but will be purchased by HUD for the Mutual Help program under a 1983 commitment, while 11 others were Borough employee housing units. (The construction of a further 13 Borough single family housing units was underway in September 1982 but these units were not included in the total housing count). Of the remaining village homes, 23 units had been constructed by the Alaska State Housing Authority and another 60 units had been privately built.

There is a sharp contrast between Borough-constructed housing and other housing in Point Hope in terms of condition of the units. All Borough-built structures were considered to be in acceptable condition, i.e. they are standard structures. On the other hand, all Alaska State Housing Authority units in the village were classed as substandard, a condition established through litigation which required that these units be replaced because they did not meet standards considered by the court to be essential for village life. Of the 60 privately constructed housing units, only 10 were judged to be in acceptable condition.

Substandard housing, some of it vacant, in Point Hope tends to be more centrally located in the townsite than Borough-constructed housing. This resulted from the movement of housing units from the old village site to the new townsite prior to the construction of Borough housing.

TABLE 23

POINT HOPE HOUSING INVENTORY a/
SEPTEMBER 1982

<u>Housing Program</u>	<u>Condition of Units</u>				<u>Total</u>
	<u>Occupied</u>		<u>Vacant</u>		
	<u>Acceptable</u>	<u>Substandard</u>	<u>Acceptable</u>	<u>Substandard</u>	
Arctic Slope Regional Housing Authority Mutual Help	43	0	0	0	43
North Slope Borough Rentals	25	0	0	0	25
North Slope Borough Employees <u>b/</u>	10	0	1	0	11
Alaska State Housing Authority	0	19	0	4	23
Privately Constructed <u>c/</u>	10	29	0	21	60
<u>TOTAL</u>	<u>88</u>	<u>48</u>	<u>1</u>	<u>25</u>	162

a/ At the time **the** survey was taken, 12 of these single family rental units were being inspected for final acceptance by the Borough and were occupied shortly thereafter, a change which may have left additional old units unoccupied.

b/ Includes one 4-plex and one School District unit used for itinerant staff.

c/ Includes three units used as bunkhouses and the NARL quarters.

Source: Alaska Consultants, Inc.

A series of empty lots suitable for residential use **also** remains undeveloped in the central portion of the village. These lots have **closer** access to public facilities (such as the school and **health** clinic) and to the village general store than do most of the Borough-built housing **units**.

As part of the 1983 fieldwork, an effort was made to find out if people in Point Hope felt that the construction of new homes by the North Slope Borough and others had resulted in social dislocation by making it possible for younger (or older) people to move into separate housing. Almost everyone interviewed preferred the new arrangement. The only **ones** who expressed some dissatisfaction were either persons caring for an elderly or sick relative or they were single men who normally ate at their parents' homes. No one expressed any **fear** that extended families were being broken up as a result of the new housing and people generally preferred the privacy afforded by separate accommodations. Family ties are maintained through visiting and, even more recently, by **use** of the telephone.

Several Point Hope residents indicated that they did not like the new village site. The main objection was the gravel surface which is difficult to walk on and a feeling that the old **village** site, which has a grass surface cover, was much prettier.

Community Facilities and Utilities

ADMINISTRATIVE AND MISCELLANEOUS PUBLIC BUILDINGS

Administrative and miscellaneous public buildings in Point Hope include the city offices, a National Guard armory, a senior citizens center and a Borough heavy equipment storage building.

The city offices occupy a structure which was moved from the old village site and which functioned as a public safety building until 1981 when the new public safety facility was completed. It is operated and maintained by the City of Point Hope as both a city office and a council meeting place and is a single story wood frame structure about 480 square feet in area which is undivided internally except for a partitioned storage area **at** the rear. It is located **across** from the central area of town, northeast of the elementary classroom wing of the school . No plans have been made for altering or adding to the building. However, it is not large enough to accommodate city council meetings with more than minimal public attendance.

The Point Hope National Guard armory is owned and operated by the Alaska Department of Military Affairs. **It was** also moved from the old townsite and now occupies a site across from the village store in the southwest portion of town. The building is a 1,200 square foot **metal** structure similar in design to armories in **Wainwright** and Barrow and is divided internally into a large activity room and two offices. According to the Alaska Department of Military Affairs, the Point Hope unit is made up of

30 guardsmen. An even older Alaska Territorial Guard building which was used before the present armory was built is also located in the village. However, it is in disrepair and is not used.

The Point Hope senior citizens center is located at the southwest corner of the school tract in the central area of town. It was built and is owned by the North Slope Borough but responsibility for its operation rests with the City of Point Hope. The building was designed to serve both as a base facility for assistance and as a social center for older people in the village. It has about 900 square feet of usable space including an entryway, an activity room, a kitchen and a storage area. Although it is in generally good condition and was built as recently as 1980, the senior citizens center was not in use during the summer of 1983 because the City of Point Hope does not have enough funds for its operation and the city has been unable to obtain such funds from either the North Slope Borough or the State.

The North Slope Borough maintains a heavy equipment storage building at Point Hope, as it does in other North Slope villages. The Point Hope facility is a single story wood structure (40 by 80 feet) with a gravel floor and is located in the southwest corner of the village. It has five equipment bays. Internally, the structure is unpartitioned except for a small office and parts storage area. The building has no plumbing and is in need of repair.

PUBLIC SAFETY

Police Protection

As elsewhere in the North Slope Borough, police protection services in Point Hope are provided by the North Slope Borough which currently has two officers stationed in the village. The public safety building is located across from the central area of town, southeast of the health center. It is a 1,995 square foot one story wood frame structure which includes an entry, a multi-purpose room, a kitchen, two holding cells, a magistrate's office, a TOY room, secure storage with an evidence locker, a bathroom and a garage. The main office is used as a magistrate's office, when needed.

The building is structurally sound except for heating and plumbing system problems. There is also some concern over having holding cells in a wood frame building.

Borough public safety officers in Point Hope and other North Slope villages spend a great deal of their time in non-criminal activities (see Table 24). Law enforcement problems here are primarily related to alcohol abuse. As a means of helping deal with that issue, the City of Point Hope adopted an ordinance in 1982 which prohibited the importation of liquor into the village as well as its sale. Another law enforcement problem was apparent when only one public safety officer was stationed in the village. When that officer was sick, on leave, traveling on official duty, or otherwise away from the community, there was no police

TABLE 24
 PUBLIC SAFETY DEPARTMENT ACTIVITY
 POINT HOPE
 1980 - 1982

	<u>1980</u>	<u>1981</u>	<u>1982</u>
Homicide and Negligent Homicide	0	0	1
Rape and Sex Offenses	4	1	2
Robbery	0	0	0
Assault	16	32	19
Burglary	2	5	6
Larceny	7	11	7
Motor Vehicle Theft	12	14	14
Vandalism	13	17	22
Narcotics	0	1	4
Driving While Intoxicated	0	2	5
Liquor Law Violations/Disorderly Conduct	6	13	19
Traffic Accidents	2	0	1
Animal Problems	18	21	21
Domestic Problems	5	29	24
Premise Security	0	5	3
Disturbing the Peace/Noise	4	12	19
Other <u>a/</u>	68	126	75
	157	289	242
<u>TOTAL</u>			

a/ This category identifies non-criminal **public** safety activities. It includes service **requests**, agency assists, **public assists**, transport of the sick or injured and other responses to non-criminal situations. The **public** safety officer may be called upon for a wide variety of activities ranging from chaperoning dances to helping a sick person to the clinic.

Source: North Slope Borough Department of **Public** Safety.

● authority in Point Hope. This problem, common to all of the smaller villages in the Borough, should be remedied now that two public safety officers are again stationed here. In addition to the two officers, Point Hope also has a locally based magistrate, the only North Slope village to have one outside of Barrow. The presence of a magistrate facilitates arraignment procedures.

● Fire Protection/Search and Rescue

● The North Slope Borough has provided fire protection services on an areawide basis since 1980. Since assuming this power, the Borough has constructed fire stations in each of its villages outside Barrow and has embarked on a program to train firefighting volunteers. Although the Search and Rescue division is part of the Public Safety department for administrative purposes, volunteer firefighting and search and rescue personnel in the villages are one and the same group, with both functions being housed in the new fire station.

● The Point Hope fire station was completed in 1983 and is identical to "fire stations built in other small Borough villages at that time. It is located immediately east of the central area of town and is a prefabricated metal structure 72 feet in width and 65 feet in depth (4,680 square feet) set on pilings, with access provided via a metal grating ramp. The central portion of the station is a large apparatus room sized to house two fire trucks, an ambulance and two snowmachines, plus a boat (with motor) belonging to the Borough Search and Rescue division. The building also houses a utility room, a furnace/generator

room, two large storage rooms (one designed for use as a training area under heavy smoke conditions), a training/meeting area, an office/communications center, a small **bunkroom** for transient Borough Fire department personnel, a small kitchen, lockers, showers and **toilet** facilities, plus additional storage space.

Rolling stock housed in the fire station includes an engine company truck with a mounted 2,000 gallon water tank, a 500 gallon per minute pump, fire hose and appropriate nozzles, ladders and cabinets for personnel gear and air-packs; a tanker truck mounted with a 3,000 gallon water tank, a 500 **gallon** per minute pump, hose and nozzles; and a Chevrolet Suburban modified for ambulance use with a raised roof and stretcher racks, equipped with stretchers, splints, a trauma box and an oxygen unit. Search and Rescue equipment is also housed here.

Firefighting personnel are members of the North Slope Volunteer Fire Department/Search and Rescue force. Training programs have been begun by the North Slope Borough, with initial emphasis being on use and maintenance of the new equipment in a manner which meets basic criteria for prompt and effective fire response.

- Four major **fires** have occurred at Point Hope during the past three to four years. In **1980**, a fuel oil explosion in the armory killed two men although it did no major damage to the structure. **In 1981**, an older residence was destroyed by fire and in **1982**, the old **clinic and** another residence were destroyed. No loss of life from a fire has been recorded in the village **since** 1980. However, as elsewhere in the arctic, Point

● Hope's harsh climate **places** a steady, heavy load upon heating equipment, increasing the probability of fire incidence from equipment malfunction or misuse. Furthermore, **low** temperatures and prevalent strong winds make firefighting extremely difficult once a fire gains headway.

● While all **firefighting/search** and rescue personnel in Point Hope and the other villages outside **Barrow** are volunteers, the Borough has permanent staff for both functions in Barrow. The Borough Search and Rescue division also maintains two helicopters and a fixed wing aircraft in Barrow for use in search and rescue and **medi-vac** situations.

HEALTH

Primary health care services in Point Hope are provided by the **Mauneluk** Association Health Division and the North Slope Borough Health and Social Services Agency through the Community Health Aide program. These services are supplemented by regular visits to the village by doctors, dentists, nurses and other health care providers. When needed, Point **Hope** residents may use either the Public Health Service hospital in Kotzebue or the Alaska Native Medical Center facility in Anchorage for in-patient or out-patient services.

● Operation of the Point Hope **clinic** differs from **all** of the other North Slope Borough villages in that it is subject to a memorandum of agreement **involving** the Point Hope Health **Committee**, the **Mauneluk** Association Health Division and the North Slope Borough Health and Social Services Agency. The clinic building is owned by the Point Hope

IRA council; the Public Health Service's health delivery system for Point Hope is the Kotzebue Service Unit; and the **Mauneluk** Association Health Division is the tribal organization which contracts to provide **health** care services in **the** Kotzebue Service Unit. The North Slope Borough Health and **Social** Services Agency provides Point Hope with **all** programs and benefits offered to other Borough villages which are not provided in Point Hope by the federal government.

The health clinic is located at the south end of the school tract in the central area of town. **It** was built in **1978** with assistance from the **U.S.** Economic Development Administration and is a **28** by 32 foot structure which includes a waiting room, two examination rooms, an office with counter opening to the waiting area, a room for the storage **of** drugs, medications and supplies plus communications equipment, a mechanical room, toilet and shower rooms plus a janitor's closet. The building is in good condition and is staffed by two primary health aides and two alternate aides. The salary of the second aide, plus supplementary travel **funds** for patients needing doctor's care and/or hospitalization, are raised locally by bingo games sponsored by the Point Hope Health Committee. Daily patient loads at the clinic reportedly average about 9 persons. The **telehealth** communication system being **installed** in other North Slope **villages** will also be provided for the Point Hope **clinic.**

EDUCATION

Education services from Early Childhood Education (ECE) through the 12th grade in Point Hope are provided by the North Slope Borough School District. The **Tikigak** School is located within the school tract on an 8.39 acre site in the center of town. It was constructed during 1979 and 1980 except for four portable classroom units which were moved from the old village site. Only one of the portable units was in use as classrooms during the 1982/83 school year.

- The main portion of the school is constructed in three wings (the elementary, secondary and multi-purpose areas), with the vocational education building being separate from the main building. The elementary wing includes five multi-purpose classrooms and an art room which was being used as an ECE classroom during the 1982/83 school year. The secondary wing contains a multi-purpose classroom and rooms for business, home economics and science. In addition, a portion of the main library and the conference room were being used as general secondary classrooms during the 1982/83 school year and the teacher's aide room off the library was being used for special education. The vocational education building contains three shops (wood, metals and small engine) and an emergency generator unit. Finally, one of the portable classroom units was being used for instructional purposes.

Aside from classrooms, other facilities in the main school building include a gymnasium and swimming pool plus associated lockers, dressing rooms and showers. Also within this building are administrative

offices, a library, a commons area and a kitchen. Storage space is **also** provided, both within this building and in trailers and portable classrooms units **on** the school site.

During the 1982/83 **school** year, the professional staff of the **Tikigak School** consisted of 16 positions, 3 of which were **filled** by local residents. The staff included the principal, six elementary teachers (**ECE** through grade 6), seven secondary teachers (grades 7 through 12), one bilingual teacher and one special education teacher. In addition, there were seven classified teacher aides. Other school staff included three kitchen employees, four custodial personnel, three maintenance persons, a night watchman and a secretary.

Excluding **ECE/kindergarten**, final enrollment in 1982/83 was **131** students (see **Table 25**). During the 1982/83 school year, the student body included 8 non-Natives.

Although the **Tikigak** School is relatively new, a number of problems exist which necessitate repair or renovation. The North Slope Borough has plans to correct these problems and also to add both classroom and storage space. The proposed additions would affect the two classroom wings and the vocational education **building**. The elementary addition would include a kindergarten room and **an** art room, **while** the secondary addition **would** include two classrooms, enlargement of the existing business room for future use as a band room, enlargement of the science room and the provision of bathrooms. Modifications to the vocational

TABLE 25
SCHOOL ENROLLMENT TRENDS BY GRADE a/ b/ c/
POINT HOPE
1959/60 - 1982/83

School Year	Final Enrollment by Grade												Total Excluding ECE/Ki ndergarten <u>f/</u>
	1	2	3	4	5	6	7	8	9	10	11	12	
1959/60 <u>d/</u>													82
1960/61 <u>d/</u>													92
1961/62 <u>d/</u>													91
1962/63 <u>d/</u>													88
1963/64 <u>d/</u>													92
1964/65 <u>d/</u>													103
1965/66 <u>d/</u>													104
1966/67	10	17	9	12	10	7	13	8					86
1967/68	6	8	16	9	10	11	6	14					80
1968/69	15	9	8	17	9	10	11	6					85
1969/70	16	17	9	9	17	9	10	12					99
1970/71	28	15	13	7	11	14	7	0					95
1971/72	12	25	10	18	7	8	11	2					93
1972/73 <u>e/</u>													
1973/74 <u>e/</u>													
1974/75 <u>e/</u>													
1975/76	8	9	11	21	10	22	10	11	17	7	6	3	135
1976/77	9	7	10	10	16	12	19	9	11	16	6	2	127
1977/78	8	7	5	8	11	18	14	17	12	11	14	8	133
1978/79	14	7	15	6	7	15	23	13	15	15	5	12	147
1979/80	15	6	11	4	7	15	23	13	15	9	6	12	136
1980/81	9	13	14	6	10	9	7	11	10	15	19	10	133
1981/82	11	9	11	14	5	11	10	10	14	9	14	13	131
1982/83	14	10	11	11	12	7	10	12	8	11	10	9	125

a/ Final enrollment figures.

b/ Education in Point Hope provided by the Bureau of Indian Affairs through 1969/70, by the State during the following two school years and by the North Slope Borough School District thereafter.

c/ ADM (Average Daily Membership) for school years 1980/81, 1981/82 and 1982/83 was 139.30, 143.90 and 138.19 respectively.

d/ No breakdown of enrollment by grade available prior to 1966/67 school year. Totals reported are for grades K-8.

e/ No data available.

f/ The 1982/83 initial enrollment for ECE/Ki ndergarten was 11 students.

Source: Alaska Department of Education.

education **wing** would include **an** addition for storage space and installation of a dust collection system.

As part of the 1983 fieldwork, an attempt was made to find out if **local** high school graduates were going to college and if people **were** satisfied with the present **school** system. According to the **school** principal, 2 of the 13 1981/82 high school graduates attended college the following year, one at Anchorage Community College and one at Sheldon Jackson. Also according to the principal, one **local** student currently at the University of Alaska (Fairbanks) would be starting his last year of **college** in the fall of **1983**. The number of 1982/83 graduates who would be attending college was not known at the time of the 1983 fieldwork.

An opinion expressed by many in Point Hope was that the current **availability** of **well** paying Borough construction jobs in the village made college **less** attractive to **local** students. Some village elders also **felt** that a high school education alone was not enough to ensure adequate employment opportunities and that vocational training was **also** needed. They further indicated that training opportunities had not been provided for more than a handful **of people** in the village.

RECREATION

Regular, organized recreation activities in Point Hope are centered around use of the school gymnasium/multi-purpose center which is available for community recreation purposes during the school year for four nights each week and on Saturdays. In addition, classrooms and

shops are available in the evenings for community school and adult education courses. Finally, a play area adjacent to the school is the only site in the village specifically prepared for and dedicated to outdoor recreation use. A senior citizens center (described previously) is not currently in use.

Annual events observed **villagewide** at Point Hope include Easter, Fourth of July, Thanksgiving Day, Christmas Week and **Nalukataq** (if the village's whaling crews have been successful the prior whaling season). The events are marked variously by religious activities (where appropriate) and by feasting, dancing and games. The games and dancing incorporate both **traditional Inupiat** and modern western activities. The feasting is not only traditional in form (where deep seated sharing customs are evident) but also incorporates both subsistence and store-bought foods.

Point Hope residents also participate in a variety of informal recreation activities such as visiting and picnicking with relatives and friends. Three-wheeled vehicles and snowmachines are used for pleasure as well as other activities. While hunting, fishing, trapping and other subsistence harvest activities combine both labor and pleasure and are tied closely to the culture of Point Hope's **Inupiat** residents, they are not viewed from the **Inupiat** perspective as being of a recreational nature.

UTILITIES

Water

The provision of water services in Point Hope is the responsibility of the North Slope Borough Department of Public Utilities. A new water source was developed at **Qaqiaq** Lake, about **6 miles** east of the village, during the summer of 1983. A polyethylene line was used to transfer water from the lake to a 2.7 million storage tank in town. Development of the new source resolved a water shortage problem in Point Hope as the previous gravel collection **cells** from an infiltration field a short distance east of town were not able to meet community demands.

Furthermore, an attempt to increase the production of the collection **cells in 1982** resulted in salt contamination of the water. Some Point Hope residents **still** use ice for drinking water during the winter. The new houses in the village have been equipped with water tanks which can **be** filled by thawing ice in a heated reservoir specifically designed for that purpose.

Water is filtered and chlorinated prior to storage in the tank. The water treatment plant, the tank and associated **washeteria** are located on the school tract in the central area **of** town, just **south** of the **school complex**. Treated water is distributed by pipeline through a **utilidor** to the school complex, the **washeteria**, the **health** clinic and the generator **plant**. The **utilidor** also houses waste water **lines**. For other village users, water is delivered via a heavy tank truck, while a Bombardier equipped with a tank, pump and hose can also **be** used in emergencies.

As of September 1982, there were 137 occupied housing units in Point Hope. Other water users included the school complex, the village **washeteria** (estimated by the Department of Public Utilities to use in excess of 30,000 gallons per month if operated on an unrestricted basis), a **couple** of construction camps, a store, the health clinic, the new fire station, the public safety building and village corporation and city offices. Meaningful statistics for water use were not available since the village was on rationing prior to the recent completion of the line to the new water source. However, studies of other North Slope villages indicate that a school complex can consume an amount of water equal to that delivered to all non-government consumers when the total **daily** consumption of the village is around 10 gallons per capita.

Sewage

Sewage collection and disposal services in Point Hope are the responsibility of the North Slope Borough Department of Public Utilities. The village currently has two distinct sewage disposal systems. The school complex, the washeteria, the health clinic and the power **plant** are linked to a **utilidor** which houses both water and sewer lines. The sewage gathered here is discharged through an outfall line **into** a two-celled sewage **lagoon** located a short distance southwest of town. Elsewhere in the village, sewage is collected in honeybuckets lined with plastic sacks. The sacks are stored in 55-gallon drums and are picked up at least twice a year for disposal at the dump. The drums' contents are usually frozen. This and the non-biodegradable

nature of **the** plastic sacks precludes the wastes being dumped into the sewage lagoon.

The **utilidor** sewage service involves a dual **graywater/blackwater** system which was developed to conserve water. Shower and laundry effluent from the school complex and washeteria is reclaimed and stored in a 25,000 **gallon** tank **at** the sewage treatment building. The **graywater** is then filtered and chlorinated and used as **flush** water in the school toilets, the washeteria and the power **plant**. The resulting backwater is held in a **1,500** gallon tank in the sewage treatment building where it is batch discharged through an outfall **line** into the sewage lagoon. The **utilidor** housing the lines is an above ground, insulated, wooden structure roofed with aluminum sheeting and which is in need of repair.

Graywater generated by **all buildings** not connected to the **utilidor** system is discharged onto the ground under or by the structures. **It** accumulates as ice during the winter months and poses a sanitation problem. Furthermore, it is a growing problem since the volume of discharge will continue to increase as the water delivery system is upgraded and as more houses with internal plumbing are **built**.

As of September **1982**, there were **137 occupied** housing units in Point Hope. Honeybucket wastes were also being collected from several camp facilities, a store, the public safety building, the new fire station and from village corporation and city offices.

Solid Waste

Solid waste disposal services in Point Hope are the responsibility of the North Slope Borough Department of Public Utilities which provides periodic pick-up services and transports the wastes to the village landfill site. Garbage and other trash are also hauled to the dump by individuals.

The North Slope Borough developed a new landfill site in the summer of 1983 to replace an unsurveyed, unfenced and unsightly dump located a short distance southwest of the village. The new landfill site is located further from town, close to the road to the airport. Unlike most North Slope villages, there is no shortage of gravel for covering solid wastes at Point Hope. However, development and maintenance of a landfill here is difficult because even shallow excavations on the spit tend to serve as gathering cells for water.

Electric Power

Electric power **generation** and **distribution** services at Point Hope are the responsibility of the North Slope Borough Department of Public Utilities. **Like other** North Slope Borough-villages outside of Barrow, all electric power in Point Hope is diesel generated. At present, the village power plant contains five generator units with a combined rated capacity of 930 KW (see Table 26). The generators are equipped with engine governors to permit their operation in parallel. The present distribution system is a 4,160 volt overhead pole line installation. A

TABLE 26

FIRM AND PEAK GENERATING CAPACITIES
POINT HOPE
OCTOBER 1982

Unit No.	Prime Mover		Nameplate Capacity (KW)	Generator Unit		Hours Operated_/ /
	Make	Horse- power		Make	Voltage	
1	CAT	135	90	CAT	480	1,980
2	CAT	305	210	CAT	480	11,817
3	CAT	305	210	CAT	480	9,230
4	CAT	305	210	CAT	480	8,238
5	CAT	305	210	CAT	480	7,168
<u>TOTAL</u>			<u>930</u>			

a/ Per North **Slope** Borough Department of **Public Util** ities Village Operations Manager, October 26, **1982**.

Source: North **Slope** Borough Department of **Public Uti** ities (Barrow and Point Hope).

- three-phase power loop encircles the village, with single phase legs extending into the village to service individual loads.

● Point Hope has experienced rapid growth in electric power demand during the past few years due both to community growth and to the construction of major facilities. Department of Public Utilities records show the peak power demand for fiscal year 1979/80 at 190 KW, that for 1980/81 at 220 KW and that for 1981/82 at 400 KW. Department records also indicate that sales of power in the village totaled 725,596 KWH for the six month period from July 1 through December 31, 1982. As of the latter date, there were 153 meters in service. New housing construction and planned major public facilities should ensure a continued growth in average and peak power demands.

- Point Hope's generator units are reportedly in good repair other than normal wear. Construction of the generator building was completed in 1980, making this a relatively new facility. Reconstruction of the distribution system was completed in 1982. Except for a vibration problem, the major problems associated with the village power plant are related to maintenance. A turnover of operators compounds this situation.

- **Fuel Storage**

● All fuel used in Point Hope is purchased and distributed by the Tigara Corporation, an arrangement which is unique among North Slope villages. Fuel is delivered once a year by barge and is transferred from a

Lighterage barge at the beach to storage tanks **by** means of pumps and a fixed delivery line. The Tigara tank farm has been located within the village **at** the south end **of** town. However, the North **Slope** Borough has recently constructed a new village tank farm in a more appropriate location a short distance west of the village.

The old **Tigara** tank farm included three large tanks of 150,000, 250,000 and 350,000 gallon capacity, **plus** 27 tanks in the 5,000 to **10,000** gallon range. However, the site has no protective berms or fencing and was poorly located from a **public** safety standpoint. **During** 1983, the 250,000 and the 350,000 gallon tanks were moved to the new Borough tank farm and a new 500,000 gallon tank was erected prior to the annual barge **re-supply** operation. Movement of a 150,000 gallon tank to the new site for the storage of gasoline was also planned. Thus, the new Borough tank farm will contain a **total** of 1,100,000 gallons of diesel fuel storage capacity, plus tankage for gasoline supplies. The site is to be properly bermed and fenced. A fixed line leading from the beach to the new tank farm permits transfer of fuel from the barge to the storage tanks, while a pump station at the tank farm **de** **ivers** fuel via a fixed line to a dispensing station in the village.

Fuel consumption records for Point Hope are **sketchy**. Prior to construction of the new 500,000 **gallon** tank, the village had a **total** diesel storage capacity of about 807,000 gallons. Estimated **village** usage in 1981/82 was 384,00 gallons and that for 1982/83 was 432,500 gallons. Current and planned Borough construction projects **will** ensure further increases in **local fuel** consumption demands. The new 500,000

gallon tank added in the summer of 1983 will not increase the village's total fuel storage capacity by the same amount as this major facility will permit some of the **small** tanks in the village to be phased out.

COMMUNICATIONS

Telephone services in Point Hope and other small North Slope villages are provided by the Arctic **Slope** Telephone Associated Co-op, Inc. (**ASTAC**), a non-profit cooperative corporation. Seed money for the organization of the cooperative and the preliminary work needed to obtain a certificate of convenience and necessity from the Alaska Public Utilities Commission was provided by the Arctic Slope Regional Corporation. Once the certificate was obtained, loans for plant acquisition and installation were obtained from the U.S. Rural Electrification Administration. The building housing the **switchgear** was built by the North Slope Borough and is leased to **ASTAC** which owns the **switchgear**, telephone cable and other system support equipment.

The provision of local dial telephone service was a major advance over the previous bush telephone system. According to information provided by **ASTAC** in February 1983, Point Hope had a total of 124 residential and 28 business telephone subscribers.

POINT LAY

Introduction

- Point Lay is located on the **Chukchi** Sea coast, protected from the open ocean by **Kasegaluk** Lagoon. A DEW Line station with its supporting airstrip is at the village's southern perimeter. Point Lay is 188 miles southwest of Barrow, 521 miles northwest of Fairbanks and 26 miles from the western boundary of the National Petroleum Reserve-Alaska. It is the only traditional village in the North Slope Borough which has not incorporated as a city under Alaska law.

• Most Point Lay Eskimo residents are descendants of **Inupiat** people who traditionally used the area south **along** the **Chukchi** Sea coast to Cape Beaufort and north to Icy Cape. These people also fished and hunted the local river systems which provided access to the foothills and the western margin of the Brooks Range. The village was established in the late 1920's around a **school** and a trading post on the barrier spit. Its population expanded gradually through the 1930's but then faded away.

- The village was not included in the 1960 Census. Reindeer herding, which had augmented the subsistence economy, declined during the 1940's and had disappeared by **1949**.

- The area's exposure to western civilization was broadened with construction of the DEW Line system. Three DEW Line stations were built within the Point Lay subsistence area but only the Point Lay station is now operating.

The village of Point Lay was re-established in the early 1970's at the original site on the barrier spit. However, most village facilities were moved from the spit to a nearby island site in the Kokolik River delta in 1977. This location proved unsuitable because of erosion, flooding and transportation problems. The village was again moved in 1981 to the present Point Lay townsite adjacent to the DEW Line station. Several buildings and a fuel tank are still located on the original barrier spit village site.

Much of the information on Point Lay contained in the following pages was collected by Alaska Consultants, Inc. for the North Slope Borough and was published in the June 1983 report entitled "Background for Planning: City of Point Lay". That information was supplemented by fieldwork conducted specifically for this project during the summer of 1983 and by observations from ongoing work in this village being conducted for the North Slope Borough. Information on the subsistence economy and subsistence land use was collected in the field in 1983 specifically for this study.

Population

PAST-POPULATION TRENDS

Point Lay was re-established after the 1970 Census. It was enumerated for the 1980 Census at its interim site in the Kokolik River delta. At that time there were 68 residents. A State-supervised North Slope Borough census taken in January/February 1982 counted 105 persons at

TABLE 27
 POPULATION TRENDS
 POINT LAY
 1939 - 1983

<u>Year</u>	<u>Population</u>	<u>Percent Change</u>
1939 <u>a/</u>	117	
1950 <u>a/</u>	75	-35.9
1960	--	
1970	--	
1980 <u>b/</u>	68	
1983 <u>c/</u>	126	85.3

a/ The 1939 and 1950 Censuses counted people at the old-Point Lay village site on the barrier spit.

b/ The 1980 Census was taken at the interim village site in the Kokolik River delta.

c/ 1983 population based on a July 1983 count by the North Slope Borough.

Sources: U. S. Census.
 North Slope Borough.

Point Lay, while a North Slope Borough village census in July 1983 found 126 local residents (see Table 27). The three year change in population from 1980 to 1983 was 85.3 percent, but **the** rate of change was decelerating over that period.

ORIGIN OF POPULATION

Point Lay was **re-established** mainly **by** families with traditional ties to the area who returned here from a widely scattered assortment of places. This was confirmed by the 1980 North Slope Borough housing survey which asked Point Lay residents to name their prior **place** of residence. **Of** the 9 Alaska Native households responding, 3 had **come from** Barrow, 2 from **Wainwright** and 4 from out of State. The one non-Native household which responded to that question had come from **Alaska** but from outside the Borough.

The 1983 fieldwork confirmed local residents' traditional ties to the Point Lay area. Of the 9 people interviewed who indicated where they were born, 5 were born in Point Lay, 2 in **Kotzebue** (1 of a mother who lived **in Point** Lay but was in **Kotzebue** for the birth), and 2 were born along the coast near Point Lay. The people interviewed had returned from **Barrow, Kotzebue,** Fairbanks, Anchorage, Seattle, Arizona and California.

The dominant theme expressed by the returnees was **well** phrased by one villager who **said, "We** never abandoned this place. We were just gone for a while. People came back to hunt and stock up during the years **no**

one lived here". The initial returnees in the early 1970's were motivated by concerns for their lands and the attractiveness of a subsistence lifestyle. These concerns were subsequently bolstered by the Native corporations created under terms of the Alaska Native **Claims Settlement Act** which, in the case of the Arctic Slope Regional Corporation, had a vested interest in re-establishing its traditional villages. The subsequent incorporation of the North **Slope** Borough, development of the Borough's capital improvements program and the accompanying expansion of public services provided villagers with expanded employment opportunities plus new housing and public facilities. These conditions, together with the area's hunting and fishing opportunities, served to attract additional returnees to Point Lay as well as a few new residents to the area. **Nearly** everyone in Point Lay who was interviewed as part of the 1983 fieldwork expressed a desire to remain in the village. This near unanimous attitude had also been recorded in the 1980 North Slope Borough housing survey.

As elsewhere in the North Slope Borough, the main reasons most non-Natives moved to Point Lay appear to be related to opportunities for professional and financial rewards. **However, there** are several non-Native residents of long standing who are well integrated into the community and who participate in local development discussions.

POPULATION COMPOSITION

The outstanding feature of Point Lay's population composition is that most residents of this community are Eskimos. The North Slope Borough

housing survey in April 1980 found that 77 of the community's 86 residents (89.5 percent) were Alaska Native (see **Table 28**).

The same housing survey found the median age of **all** Point Lay residents to be **23.0** years, marginally lower than the 23.7 year median age for all residents of smaller villages in the North Slope Borough (i.e. villages outside Barrow). When non-Natives were excluded, the median age in Point Lay dropped to 20.2 compared with 21.2 for Alaska Natives of the smaller Borough villages as a whole. This was well below the 1980 median age Statewide of 25.8.

The median age of Point Lay **males** and females in 1980 was 24.0 and 20.0 respectively. For local Alaska Natives, however, the median dropped to **21.0** for **males** and 19.5 for females, slightly younger than the median ages of Alaska Natives in the **small** Borough villages in 1980 (22.6 for males and 19.8 for females). The Point Lay median ages, whether weighted by non-Native residents or not, were **well** below the **1980** Statewide median ages of **26.1** for males and **26.3** for females and those of the nation (**28.8** for males and **31.3** for females).

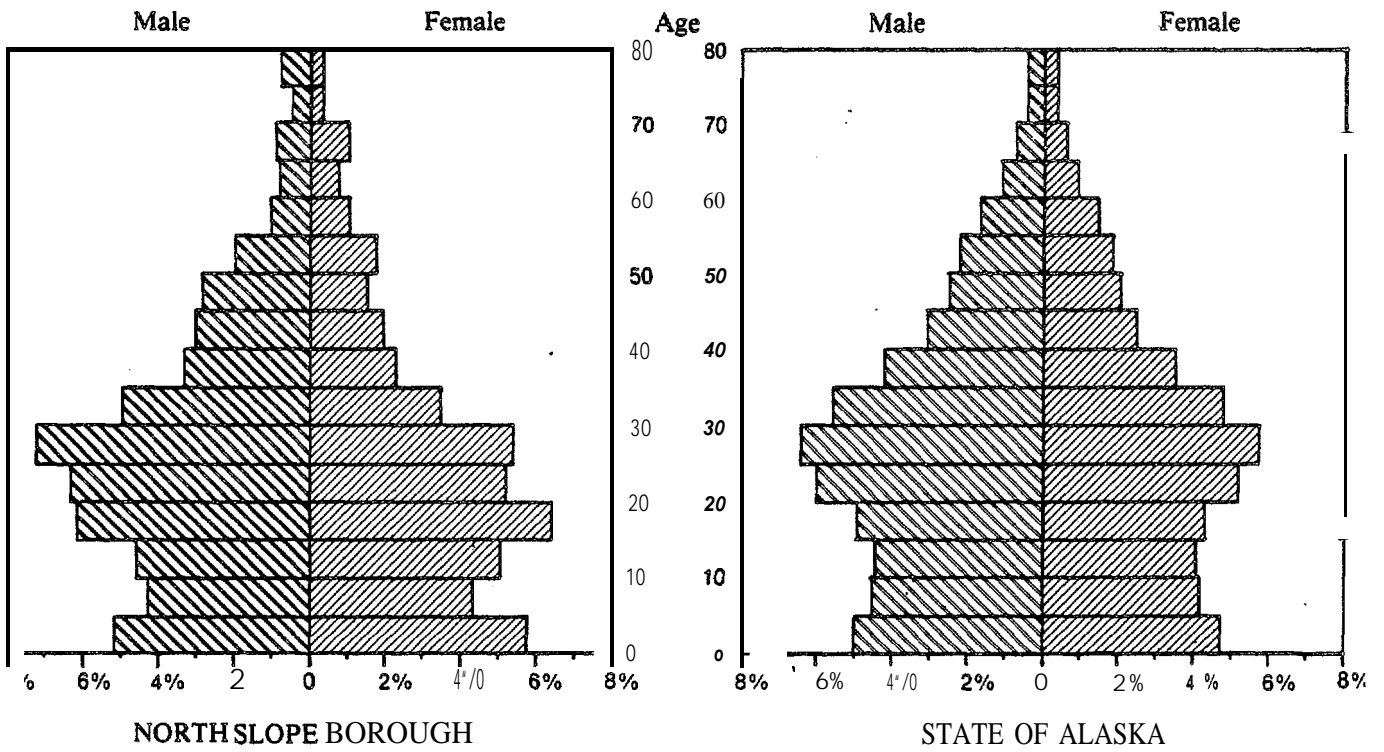
The age breakdown of Point Lay's **1980** population suggests that this will **remain** a young village during the next decade **unless** a significant amount of in-migration or out-migration takes place (**see Figure 11**). Children under the age of five made up **14.0** percent of Point Lay's population in **1980**, compared with **12.8** percent in this age group in the smaller villages of the Borough. Furthermore, Point Lay's 5 through 9

TABLE 28
POPULATION COMPOSITION BY RACE AND AGE a/
POINT LAY

Age	Alaska Native			Non-Native			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0 - 4	8	4	12	0	0	0	8	4	12
5 - 9	8	5	13	0	1	1	8	6	14
10 - 14	3	2	5	0	0	0	3	2	5
15 - 19	2	6	8	0	0	0	2	6	8
20 - 24	3	2	5	1	1	2	4	3	7
25 - 29	3	4	7	2	0	2	5	4	9
30 - 34	3	5	8	2	0	2	5	5	10
35 - 39	6	3	9	0	1	1	6	4	10
40 - 44	4	0	4	0	0	0	4	0	4
45 - 49	0	1	1	1	0	1	1	1	2
50 - 54	1	0	1	0	0	0	1	0	1
55 - 59	0	1	1	0	0	0	0	1	1
60 - 64	1	0	1	0	0	0	1	0	1
65 - 69	2	0	2	0	0	0	2	0	2
70 - 74	0	0	0	0	0	0	0	0	0
Over 74	0	0	0	0	0	0	0	0	0
TOTAL	44	33	77	6	3	9	50	36	86
Median Age	21.0	19*5	20.2	30.0	24.5	29.5	24.0	20.0	23.0

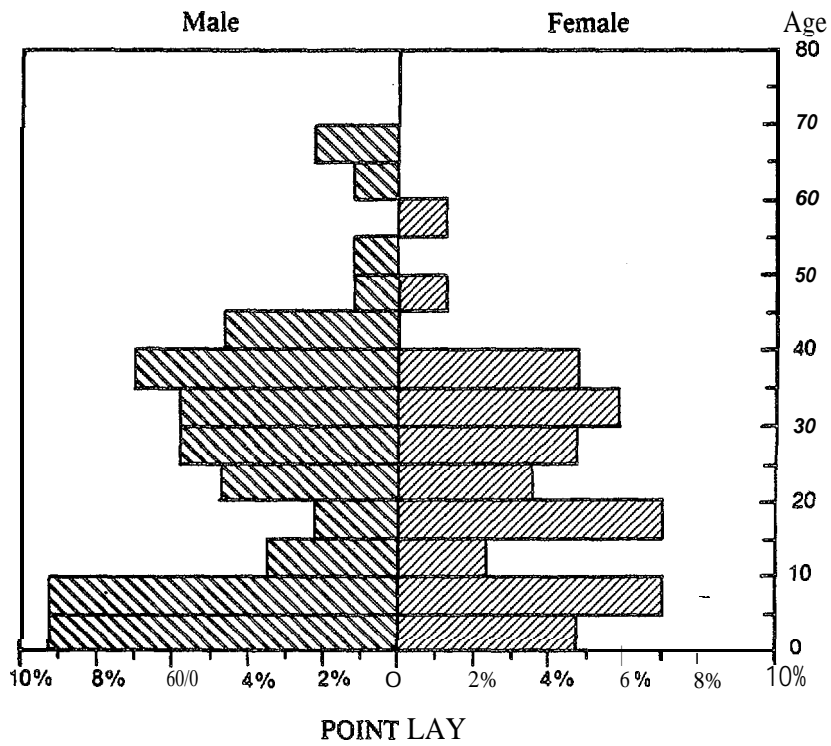
a/ Figures exclude a total of 5 persons (all non-Native males) for whom no age information was provided.

Source: Alaska Consultants, Inc. North Slope Borough Housing Survey, prepared for the North Slope Borough, Public Works Department. Anchorage. September 1980.



NORTH SLOPE BOROUGH

STATE OF ALASKA



POINT LAY

**COMPARISON OF POPULATION
1980**

Sources: U.S. Census
North Slope Borough Housing Survey, Alaska Consultants, Inc., 1980

Figure 11

age group made up 16.3 percent of the community's 1980 population, well above the 9.0 percent recorded for the other small Borough villages.

- In 1980, 28 percent of Point Lay's population was in the 15 through 29 age group, slightly below the 34.1 percent in the same age bracket recorded for the smaller North Slope villages. Aside from migration, the childbearing decisions made by this group will determine the rates of internal population growth at Point Lay during the next few years.

The 1980 housing survey found that **males** in Point Lay outnumbered females by a 58.1 to a 41.9 percent margin. Even when non-Natives were excluded, males still accounted for 57.1 percent of the village's 1980 population. This male to female imbalance was more extreme at Point Lay than any village on the North **Slope** in 1980 except for Kaktovik and was particularly evident in the under 5 and the 5 through 9 age groups.

- A State-supervised census taken in early **1982** provided no age data for Point Lay's population, nor did the Borough census taken in July 1983. However, the latter did determine that 55.6 percent of the 126 village residents in 1983 were male, compared with the 58.1 percent recorded by the 1980 housing survey.

SOCIAL INTERACTION

The 1980 North Slope Borough housing survey indicated that 9 out of the 86 Point Lay residents (10.5 percent) were non-Natives. If transient construction workers are excluded, it appears that the proportion of

non-Native residents in this village has not changed significantly since 1980.

Questions were asked about relationships between **Inupiat** and whites in Point Lay as a part of the 1983 fieldwork. **Inupiat** responses indicated that **while** people felt that there were too many non-Natives in the village, most were considered transient workers who **would** be gone when the Borough's capital improvements program ended. The transient workers did not integrate well with village residents. No mention was made of non-Native personnel stationed at the nearby DEW Line station.

Local Alaska Native perceptions of construction company hiring policies" varied as to company. Considerable resentment was evident over the **local** hiring practices of the contractor building the school. The establishment of a **Cully** Corporation construction organization appears to be, at least in part, a reaction to perceived local Native hire problems. **Cully** had labor agreements with **all** contractors except that for the school to supply labor. By aggressively seeking such agreements, **Cully** can influence local hire policies of prime contractors for Point Lay construction projects and can also provide **local** workers to the contractors in a more orderly fashion.

-

Alaska Native responses to fieldwork questions in 1983 generally recognized that some construction work required job **skills** and experience which local residents did not possess. This recognition **also** extended to the professional and administrative **skills** and training of the **truly** resident non-Natives, most of whom were associated with the

local school. In addition, the new superintendent of the revived **Cully** construction organization was a white who had previously supervised construction for another North Slope Native village corporation.

The absence of strong **Inupiat** resentment against the 10 percent non-Native portion of Point Lay's permanent population may also be accounted for in part by the presence of several whites in the village who had melded well into the local society over a number of years and who were permanent, active participants in village life. Also, the local school principal had just completed a five year stint in Point Lay, during which period he appeared to have impressed the Eskimo residents as to his dedication to the village.

MIGRATION

Most Point Lay **Inupiat** residents, as noted earlier, have traditional ties to the old village on the barrier spit and the coastal areas extending both north and south of that site. Nearly every **Inupiat** interviewed in 1983 expressed a strong desire to remain in this area. There was general recognition that jobs, homes, a new school, as well as other public facilities and services were now available in Point Lay and that this area also provided good hunting and-fishing opportunities. Little interest was evidenced by people interviewed in 1983 in working at places other than Point Lay. However, there are no quantitative data available relating to the mobility of local workers if there was a need and/or desire to seek temporary employment at other work sites.

Only one of the 11 **Inupiat**s interviewed in 1983 had worked either on the Pipeline or at **Prudhoe** Bay. That individual had been an assistant welder, thought the job "fun while it lasted" but had accumulated his earnings to finance a return to Point Lay. However, as noted earlier, some of the working age males of families which returned to **re-establish** Point Lay had previously lived either outside the Borough or Alaska and had skills which **could** qualify them for jobs other than those in Point Lay.

The field interviews and other contacts made by Alaska Consultants, Inc. personnel with Point Lay leaders and residents have left the impression of a village whose residents are appreciative of the new public facilities, homes and **public** services but are not overwhelmed by them and who are quite determined to remain in the **village** even when the anticipated decline in **local** temporary construction employment occurs. However, there is little discussion as to how this long term objective will be achieved.

RECENT TRENDS AND CHANGES

Point Lay's population increased 85.3 percent between 1980 and **1983**. During that period, the **village** was moved from an **island** site in the **Kokolik** River delta to a new site adjacent to **Kasegaluk** Lagoon, just north of the DEW Line station. The move was financed by the North **Slope** Borough which subsequently **built** new homes and a number of **public** facilities at the new Point Lay townsite. The Borough also expanded its **local** employment base to operate and maintain the facilities it was

building. However, temporary local construction employment on Borough funded projects expanded even more rapidly than did permanent jobs provided directly by the Borough.

During the summer of 1983, the new Point Lay school was being completed. A large health clinic was under construction, as was the village water storage tank and water treatment plant, a summer intake line to a water source, a year-round water line connecting the school to the storage tank, and a sewage treatment facility for the school. The large fire station, with its equipment complement of a fire engine, tanker truck and ambulance, had been completed the prior winter. A village community building funded by a State grant funneled through the Borough was also in the final stages of construction.

Given Point Lay's **small** labor force, the magnitude of the 1983 construction program necessitated the maintenance of two construction camps in the village to house itinerant construction workers (mainly non-Native), supervisors and other technicians. The only local unemployment identified were several women who had worked previously as painters or as camp **bullcooks**.

Point Lay emerged as a modern village in the **late 1920's** when a consolidation of families living along the **Kasegaluk** Lagoon took **place**. **In 1930**, a school building was moved from Icy Cape to Point Lay, and a trading post was established there at about the same **time**. The village

site was then on the barrier spit opposite the mouth of the **Kokolik** River. The 1939 Census recorded 117 residents at Point Lay.

The early Point Lay economy was basically a subsistence one although reindeer herding and trapping for cash augmented the natural resource harvest. The Western Arctic caribou herd was the most significant single natural resource. No bowhead whale and few walrus were taken in the immediate area and extended trips north to the Icy Cape area were necessary if these marine mammals were to be harvested to supplement the village harvest. **On** the other hand, **Kasegaluk** Lagoon yielded **belukha**, seal, waterfowl and fish, **while** local river systems opened the way to the interior for hunting, trapping and some fishing. This interior resource area included the foothills and western edge of the Brooks Range.

The introduction of the airplane to the Arctic and the gradual development of air service brought about major changes in communication and transportation systems **in** the far north. This change was accelerated by the construction **of DEW** Line stations and their supporting airstrips. One such station was constructed on the mainland across the lagoon from Point Lay in 1955 and **1956**. This station did not provide **permanent** jobs for **Point Lay residents** but its airstrip **could** be used, with Air Force permission, to service the village.

The importance of fur trapping as a source of cash for Point Lay residents began to fade in the late **1930's** as fur prices declined. **In** addition, reindeer herding, which had augmented the area's subsistence

economy, began to decline during the same period. This decline continued into the 1940's and all local herding had ceased by 1949. The 1950 Census counted 75 residents at Point Lay, a substantial decline from the **117** recorded in 1939. Point Lay was not enumerated as a village in the 1960 Census because it was too small and the village was also omitted by the 1970 Census.

The year 1970 marked a resurgence of interest among former residents of Point Lay, some of whom were living in **Wainwright** and Barrow, in re-establishing their village. Enough families returned to the Point Lay area to justify resumption of classroom teaching at the old school on the barrier spit in February **1971**. The resettlement of Point Lay occurred at a time when the **snowmachine**, the aluminum boat and the outboard motor had made it possible to undertake wide ranging subsistence harvest efforts in relatively short periods of time. This change in technology favored Point Lay's resettlement as there was a very heavy reliance by returning residents upon the subsistence economy.

Discovery and development of the **Prudhoe** Bay oil fields and associated construction of the Pipeline to **Valdez** provided new employment opportunities for North Slope residents although the 1983 fieldwork indicated no significant participation in such work by Point Lay residents. More important, discovery of these oil resources led to incorporation of the North Slope Borough in 1972. Borough-funded programs have led to the creation of a number of service and temporary construction jobs in Point Lay for village residents. The economic impact of North Slope Borough expenditures for public services and

construction activities at Point Lay has been particularly **strong** since the village was moved to its present site in **1981**.

Passage and implementation of the Alaska Native **Claims** Settlement Act (**ANCSA**) in **1971** has also impacted the village economy. This legislation, with its land and financial settlements, provided additional economic leverage for village residents through the creation of village and regional profit corporations. In Point Lay it was the Arctic Slope Regional Corporation, working with the **Cully** Corporation, which financed and otherwise supported the move of Point Lay from the old barrier spit to a site in the **Kokolik** River delta. Very recently, the **Cully** Corporation activated a construction arm which is currently participating in the construction of several Borough capital improvement projects in Point Lay. Prior to this, both the Point Hope and **Wainwright** village corporations had been contractors on Point Lay construction projects.

COMPOSITION OF EMPLOYMENT

Employment statistics published by the Alaska Department of Labor cover the entire North Slope Borough, including Prudhoe Bay, and therefore do not provide meaningful information for **individual** villages. To understand **local** employment conditions in Point Lay, a special count of employment was taken by Alaska Consultants in October **1982**.

The October 1982 employment count identified about 70 jobs in Point Lay on an annual average full-time basis (see **Table 29**), including several

TABLE 29
 AVERAGE ANNUAL FULL-TIME EMPLOYMENT
 POINT LAY
 1982

<u>Industry Classification</u>	<u>Number</u>	<u>Percent of Total</u>
Agriculture, Forestry and Fishing	0.0	0.0
Mining	0.0	0.0
Contract Construction	39.5	56.8
Manufacturing	0.0	0.0
Transportation, Communications and Public Utilities	0.0	0.0
Trade	3.0	4.3
Finance, Insurance and Real Estate	0.0	0.0
Services	3.0	4.3
Government	24.0	34.5
Federal	(0.5)	(0.7)
State	(0.0)	(0.0)
Local	(23.5)	(33.8)
 <u>TOTAL</u>	 <u>69.5</u>	 <u>100.0</u>

Source: Alaska Consultants, Inc.

jobs held by persons temporarily based in the village for construction activities. Over half (56.8 percent) of **all jobs** counted were in contract construction. Another 34.5 percent were in government occupations. Only **8.6** percent of the jobs counted were in the private sector, and half of these were associated with the operation of the construction camp.

The 39.5 full-time job equivalents in contract construction were **all** related directly to North Slope Borough capital improvement projects then being **built** in Point Lay. The 3 jobs associated with the operation of **the** construction camp were also derived from Borough construction activities.

In addition to temporary construction jobs, the North Slope Borough accounted for **23.5** full-time job equivalents in local government services such as the school and utility operations. Thus, 66 of the 69.5 full-time job equivalents in Point Lay in October 1982 were Borough-related. The 3 jobs at the Point Lay community store represented the **only** private sector jobs not directly related to Borough operations, **while** a part-time position at the post office was the only non-Borough government sector job.

No Point Lay residents were employed regularly in the **Prudhoe** Bay area in **1982**, indicating a reluctance of local **people** to work away from the village for extended periods. However, to some extent this situation could also have reflected the high **level** of temporary construction employment in Point Lay during 1982 which provided residents with

opportunities for combining temporary employment in the village with subsistence harvest activities.

UNEMPLOYMENT AND SEASONALITY OF EMPLOYMENT

There are no reliable statistics available which document rates of unemployment in Point Lay or any of the other North Slope Borough villages. Figures published by the Alaska Department of Labor for the North Slope Borough include Prudhoe Bay where everyone is employed and where most jobs in the region are located. As a result, conditions in the region's traditional villages are obscured.

Despite the lack of firm statistics, it appears that there has been relatively little unemployment in Point Lay since North Slope Borough capital improvements projects to relocate the village and expand housing and public facilities at the new townsite have been underway.

A 1980 Boroughwide housing survey undertaken by Alaska Consultants, Inc. for the North Slope Borough counted 86 Point Lay residents of whom 48 were between the ages 18 and 65, including 24 males. However, a significant proportion of Point Lay females is outside the labor force (i.e. they are **not** seeking employment). In **addition, many local** men prefer to work in temporary construction activities rather than in full-time, year-round occupations as the former enable them to participate more fully in subsistence activities. A State-supervised special census in January/February of 1982 counted **105** Point Lay residents, a 58 percent increase over the number counted in **1980**.

Although the State census provided no age distribution information, **it** is assumed that the increase in population was accompanied **by** a proportionate increase in the size of the local labor force. Nevertheless, Point Lay's maximum available resident **workforce** in 1982 was **still small**.

A factor which must be taken into account when assessing the amount of unemployment in Point Lay and other North Slope Borough villages is the amount of time devoted to subsistence activities. Such activities are very important in the **lives** of Point Lay residents, but fit in well with temporary employment such as is provided by **local** construction work. Employment associated with the **Prudhoe** Bay area which features long hours of work plus extended leave periods may also be fairly compatible with subsistence activities but such jobs have not thus far proven attractive to Point Lay residents.

The June 1983 fieldwork, admittedly limited in scope, found **only** women (painters and **bulldozers**) unemployed. However, once the major capital improvement projects at Point Lay have been built, the opportunities for temporary or seasonal construction employment **will** be greatly reduced. At that time, **local** unemployment **levels** could be expected to rise unless other economic opportunities are **present**.

Weather conditions can cause some seasonal variations in temporary construction employment at Point Lay, but the major employment variations are related to the number and type of construction projects underway. For example, uneven scheduling of construction work from year

to year can result in local unemployment, or, at the other extreme, can necessitate the importing of labor for jobs that otherwise could have been filled by local residents.

INCOME LEVELS

The 1980 Census found the median household income for the North Slope Borough to be \$31,378. The median household income Statewide in 1980 was \$25,421, while the mean household income for all Alaska Natives in Alaska was \$21,865.

A comprehensive housing survey conducted by Alaska Consultants for the North Slope Borough in 1980 obtained income information for individual families. In Point Lay, this information was based on a sample of 9 out of a total of 26 households. The median household income for Point Lay was found to be \$26,667, with all of the households surveyed being Alaska Native.

While the median household income for Point Lay is slightly higher than that recorded Statewide by the 1980 Census, the purchasing power of incomes in remote and isolated areas such as Point Lay is greatly reduced by high living costs. Except for freight reaching the village by barge (mainly items of great **bulk** or weight), most goods move into Point Lay by air, a situation which adds significantly to landed costs. As a result, store-bought food prices here are probably double those in Anchorage and subsistence hunting and fishing activities therefore remain an economic necessity for most local residents.

Housing costs in Point Lay, especially those for utilities, are also extremely high and serve to further reduce the spending power of household incomes. In 1982, heating oil cost \$94.60 for a 55-gallon drum while propane, which is used for cooking, cost \$115.54 per 100 pounds (with a return bottle). The average home in Point Lay reportedly uses 3 to 4 drums of heating oil per month during the colder months of the year. The average family thus spends more than \$300 per month for much of the year just for heating its home and for cooking. Electric power costs can also accumulate rapidly, despite minimum charges for the first 600 kilowatt hours consumed. Borough-constructed housing is more fuel efficient than other housing, but these units are normally associated with higher electric power consumption rates.

ECONOMIC GROWTH PROSPECTS

Point Lay has a relatively simple economic base. The primary driving force in the community's economy has recently been government spending, particularly by the North Slope Borough. The hunting and consumption of subsistence resources is also a significant element in the village economy from the local residents' perspective.

Borough employment in Point Lay can be divided into two types: service jobs associated with operation and maintenance of Borough facilities such as the school, clinic and utility systems; and temporary jobs directly associated with construction of capital improvement projects. It is important to recognize the difference between these two types of Borough jobs. Jobs associated with the operation and maintenance of

public facilities are relatively permanent, whereas construction jobs are temporary and their number fluctuates from year to year.

Construction activities in Point Lay associated with the Borough's capital improvements program gained momentum with the move of village facilities from the **Kokolik** River delta site and have remained at a high **level** with the construction of **additional** housing and public facilities at the present village site just north of the **DEW** Line station. Major projects to date have included the electric generation plant and distribution system, a vehicle maintenance and storage facility, renovation of the school buildings moved from the **Kokolik** River delta site, a number of new housing units, local road improvements, a fire station and a new school. The 1983 additions also included a public health clinic, a central water storage facility and a community hall. Planned Borough projects here during the next several years include a gravel dredging operation, a public safety building, a combined warehouse and shop facility, additional houses, expansion of the electric power generation and distribution system and a larger structure for the maintenance and housing of vehicles. However, several of these projects have been deferred beyond the current six-year capital improvements program period.

Certainly in the longer term, the level of construction employment generated by the North Slope Borough capital improvements program in Point Lay can be expected to taper off as community needs are met.

Unless other economic activities can pick up the "slack" at that time, some decline in the **village's** economic activity can be expected since

the number of Borough jobs associated with the operation and maintenance of the new facilities will not be nearly as large as the number needed to construct them. The more operation and maintenance jobs which are held by **Inupiat** residents, the **less impact will be felt from jobs lost** in temporary construction activities. As a result, the education and training of local residents to meet job requirements in **local** service and maintenance activities becomes increasingly important.

No Point Lay residents are employed at the nearby DEW Line station. The station's staff of about **14** civilians is rotated on a regular basis by an operator under contract to the Air **Force**. Furthermore, the **DEW** Line stations are being modified for more automated operations so that the number of personnel required in the future will be reduced.

The **Cully** Corporation received a cash distribution and rights to select the surface estate of 87,535 acres of land in the general vicinity of Point Lay under terms of the Alaska Native Claims Settlement Act. The future economic value of the lands which the **Cully** Corporation has selected, aside from their subsistence value, **will** be determined by the economic uses which can be generated for that surface estate. In turn, this is likely to depend primarily on the possible discovery and development of sub-surface resources. ~~Cully did organize~~ a construction division in 1983 to seek participation in Point Lay construction projects. To the extent that it is successful in this effort, **Cully will** assure more local participation in project profits and increased emphasis upon local hire.

No Point Lay residents were employed in petroleum-related activities in June 1983. An exploratory **well** was drilled in 1981 on Arctic Slope Regional Corporation lands about 25 miles northeast of Point Lay, but only one Point Lay resident worked on that project. The **well** was declared dry and was plugged and abandoned. The closest test well to Point Lay drilled in the National Petroleum Reserve-Alaska, **Tunalik #1**, was located a few miles inland to the southeast of Icy Cape. It was drilled in 1978 and 1979 and was also plugged and abandoned.

The U.S. Department of the Interior's leasing program for possible petroleum resources on the outer continental shelf includes scheduled lease sales for the northern **Chukchi** Sea (Barrow Arch) area in 1985 and 1987, an area which includes waters off Point Lay. Generally, oil and gas exploration activities have very limited economic spin-offs for nearby communities. Furthermore, little information is now available for use in assessing the possibilities of such activities occurring near Point Lay, but initial scenarios for possible OCS development in the **Chukchi** Sea assume it will occur north of Icy Cape.

The development of petroleum resources near Point Lay, if discovered in commercial quantities, would provide Point Lay residents with more economic options than they now have. In addition, if such activities did take place here, they would probably occur after the North **Slope** Borough's major capital improvements scheduled for the village had been completed and temporary employment in **local** construction had declined.

The Point Lay area also has significant coal reserves and a few village households burn some coal for heat. However, the exploration and development of this resource is not considered likely in the foreseeable future.

SUBSISTENCE ECONOMY

The **re-establishment** of Point Lay in 1970 coincided with the development of a new type of subsistence lifestyle based on technologically advanced, cash intensive harvest equipment. **While** the new harvest tools are more energy and time efficient, **the** cash outlays necessary to purchase, maintain and operate this equipment necessitates relatively high levels of employment. Furthermore, because of the variable nature of both the wildlife resources, which are the foundation of the subsistence economy, and the weather in northwest Alaska, local hunters **must** adapt their own timetables to take advantage of wildlife migration patterns and suitable weather conditions. **In** order to comply with the resource and weather variables, the hunters' cash needs are best met by **local** employment. Point Lay residents **still** depend on locally available wildlife resources for a substantial portion of their food supply. They have found that the present **level** of **local** employment provides sufficient income to meet the **cash demands of their subsistence economy**, allowing them to harvest the desired quantity of game.

Point Lay residents use advanced harvest **tools**, particularly the **snowmachine**, three wheeler, and aluminum boat with outboard motor in their seasonal round of subsistence activities. However, several **unique**

factors differentiate the subsistence economy of this village from that of other communities of the study area. First, Point Lay's location on the **Kasegaluk** Lagoon has resulted in **local** hunters adopting this new equipment only to the degree that it conforms to the particulars of their local environment. Second, Point Lay, the smallest village on the North Slope, does not participate in activities which require a large number of people (i.e. bowhead whaling), further reducing the variety of equipment used by local residents. Finally, because of the **small** population size, there is a low density of hunters per unit area contributing to the successful subsistence economy.

Point Lay residents' limited range of new equipment is best demonstrated by boat and outboard motor use. Point Lay hunters presently use aluminum boats between 16 and 18 feet in length and virtually all of the outboard motors are 35 horsepower. This homogeneity results from the importance of **Kasegaluk** Lagoon in the subsistence activities of local hunters. The lagoon is very shallow. More powerful outboard motors tend to draw too much water; smaller motors would limit the effectiveness of local **belukha** herding techniques (see Point Lay subsistence land use patterns) and would be unsafe for sea mammal hunting outside the lagoon. Outboard motors last approximately the same amount of time as those in other villages in the study **area** (2 to 5 years), but Point Lay hunters spend more money on propellers because of the shallow lagoon. There are no skin boats in Point Lay. The small population of this village and its physical location eliminates the possibility of an effective bowhead whale hunt, presently the single most important use of skin boats in the study area.

The physical setting of Point Lay is also important in determining **the use** of three-wheelers in this village. **The** shallow lagoon results in wide beaches and easy travel along the lagoon margins, especially when water **levels** are low. Furthermore, Point Lay hunters stated that the ridges of the windswept northern foothills of the Brooks Range were clear **of** snow all winter and provided good traveling surfaces for these vehicles. Consequently, not all Point Lay hunters own **snowmachines**, and they instead use three-wheelers for caribou hunting all winter, uncommon in other villages of the study **area**.

As discussed in the regional overview of the subsistence economy, the use of this technologically advanced harvest equipment requires a substantial amount of cash for its purchase, operation and maintenance. However, Point Lay residents' cash outlays are lower than the regional averages presented in **Table 17** for three reasons. First, not all Point Lay residents own both a three-wheeler and a snowmachine, a circumstance which reduces their equipment costs. Second, Point Lay residents are **able** to use one type of boat for lagoon, river and ocean subsistence activities. Finally, because of its physical setting and small population, Point Lay does not participate in locally based bowhead whaling, a very expensive subsistence activity. Although more money is being spent on subsistence activities than in the past, the-availability of **local** employment has made this dual economy viable.

Currently, employment opportunities in Point Lay are high. There is evidence that the rapid growth of this community (more than could be attributed to natural increase) is largely a result of increased

employment opportunities generated by the North **Slope** Borough. No one from this village was employed outside the village in June **1983**. Most employed Point Lay residents presently work on temporary construction projects which allow them considerable flexibility for their subsistence pursuits. Furthermore, almost **all** non-construction jobs in this community are also Borough-related. The Borough's provisions for personal leave and subsistence leave for its permanent employees allow substantial time away from the job for subsistence harvest activities (see regional overview of the subsistence economy). The availability of cash through local employment is also demonstrated by the fact that there are no active trappers in this village.

An important aspect in determining the success of a wildlife resource based economy is the availability and relative abundance of the resources. The marine harvest areas used by Point Lay residents are larger per capita than the harvest areas for any other community in the study area. This is largely the result of a less advantageous physical setting. The only marine resource for which Point Lay is ideally suited is **belukha** whale, and the 28 harvested in July of 1982 **demonstrated** this availability as well as the importance of this species to the subsistence economy. Since the present village population is probably well below the carrying capacity of the local environment, the relatively small population and the low density of hunters per unit area probably contribute to the success of Point Lay's subsistence economy.

Political Organization

FORMAL POLITICAL ORGANIZATION

There are two primary political or quasi-political organizations in Point Lay. These are the Point Lay IRA (Indian Reorganization Act) tribal government and the **Cully** Corporation, the **local** village corporation established under terms of the **Alaska** Native Claims Settlement Act. The IRA government is incorporated **only** in accordance with federal legislation while the **Cully** Corporation is incorporated as a profit organization under State statutes. Both organizations, and the IRA government in **particular**, are potent political forces in the village and their importance is magnified by the absence of a municipal government.

Point **Lay** is not an incorporated municipality under State statutes, nor is there presently any village effort to change the status quo. However, the North **Slope** Borough has a village coordinator in Point Lay and the **Inupiat** Community of the **Arctic Slope (ICAS)** also has a Point Lay resident as its local tribal employment officer.

North Slope Borough

The North **Slope** Borough has a coordinator appointed by the Borough mayor in each village (except Barrow) whose job is to maintain a liaison between the village and the Borough mayor's office. The effectiveness of the village coordinators varies widely, depending on their position

in the village and the diligence of particular individuals. Their effectiveness is also determined by the extent to which the Borough mayor's office and other Borough departments use the coordinators when dealing with village problems and prospects. Village coordinators work out of their homes **since** no office space is provided for them in any Borough facilities. As there is no city government in Point Lay and the IRA government does not maintain an office, the village coordinator can be a particularly **useful** Borough link with the village. Point Lay's present village coordinator is also a member of the village IRA council.

Point Lay does not have one of its residents on the North **Slope** Borough assembly although a former community resident was recently appointed to that body. However, a member of the Point Lay IRA council is vice chairman of the Borough Planning Commission.

Point Lay IRA Council

The Point Lay **IRA** government was incorporated under federal law and possesses certain **tribal** government powers and authorities like those previously described for the **Inupiat** Community of the Arctic **Slope (ICAS)**. Membership and voting rights are restricted to adult American Indians (including Eskimos and **Aleuts**) who are registered as **village** residents. From the perspective of the Point Lay IRA council, the IRA's "tribal **sovereignty**" over Point Lay's subsistence region is immediate and dominant. Further, the residents of Point Lay view their IRA council as the village's representative political body empowered to deal with the Borough, State and federal governments. For example, it was

IRA council members who expressed **village** policy in the **1983 field** interviews.

Several of the IRA council members shared certain characteristics: they or their parents had been born in the Point Lay area, they were graduates of Mt. **Edgecumbe**, they had military training and they were active subsistence hunters and fishermen. They also shared similar opinions regarding oil and gas-related development in the Chukchi Sea region. **While** the IRA council has no formal written policy on this subject, **its** members expressed firm opposition to further oil and gas-related exploration and development, especially offshore. This opposition had been reinforced by observation of past seismic and exploration drilling activities of the Arctic Slope Regional Corporation and its contractors in the Point Lay area.

IRA council members interviewed as part of the **1983** fieldwork remarked upon the lack of communication with the Arctic Slope Regional Corporation and **ICAS** but appeared more satisfied with the village's relations with the North Slope Borough. The liaison between the IRA government and the **Cully** Corporation **also** appeared satisfactory, with some IRA council members being on the board or officers of the village corporation.

Cully Corporation

Cully Corporation, the for-profit Point Lay organization created under terms of the Alaska Native Claims Settlement Act (**ANCSA**), had been

inactive ~~for~~ the past several years. However, this changed in **1983** with the activation of a construction arm to seek labor agreements with contractors undertaking construction projects in Point Lay and thus provide **Cully** Corporation with an opportunity to participate in the local economy as well as providing its Point Lay stockholders with better chances of obtaining local construction jobs.

Another reason for the **Cully** Corporation remaining as an active village organization is the need to manage or dispose of lands which **Cully** has or **will** receive under the Claims Act legislation. The North Slope Borough has a particular interest in acquiring some **Cully** lands within the present village since it must acquire land on which it constructs capital improvements.

Reference has already been made to **Cully** Corporation and the Point Lay IRA council having several of the same individuals as board members or officers. However, there is a **legal** distinction between the two organizations which could be important insofar as certain transactions between these organizations are concerned. A member of the Point Lay IRA need not be a stockholder in the **Cully** Corporation or vice versa. As a result, the members/stockholders of the two organizations may not be identical.

Unlike other ANCSA village corporations on the North Slope, the **Cully** Corporation has not sought joint ventures or corporate ownership of firms to secure participation in business activities outside Point Lay.

INFORMAL POLITICAL ORGANIZATION

Aside from the Point Lay IRA government and **the** Cully Corporation, there do not appear **to** be other organizations in Point Lay which actively exercise political power. One explanation of this is the village's **small size**. Most residents are already enrolled in **the** IRA and the **Cully** Corporation. Furthermore, as in other small villages, the leadership of such organizations tends to be drawn from the same small group of residents. Finally, subsistence harvest activities demand substantial blocks of time which, if combined with the demands of a job, leave residents little time or energy for organization meetings and related activities.

There is no **church** in Point Lay, nor is there **a** full-time minister or priest although **local lay** ministers are active. **In** addition, the National Guard does not have an active unit at present in Point Lay although several local men have had military training. Two **IRA** councilmen expressed the opinion that more **local** people **would like** to be in the Guard if there was an active unit in the village.

The volunteer search and rescue organization has in the past literally involved the entire village. As **one leader** described the activity, "The village is so **small** that once a search and rescue **alert** is sounded, **all** available active men become involved with **the** support of **all** others in the village." Search and rescue functions have recently been consolidated by the North **Slope** Borough with those for volunteer **firefighting**, the combined organization **being** based in and supported by

the new fire station and its communications **and mobile** equipment. **It** appears at this time that the new volunteer group in Point Lay **will** retain the support and respect given earlier to search and rescue efforts and that the village will also have a much more effective volunteer fire protection system.

Land Use and Housing

LAND STATUS

Village of Point Lay

The village of Point Lay has been moved twice in the past seven years. Originally located on the barrier spit northwest of the present community, the village was moved in 1977 to an island location at the mouth of the **Kokolik** River. This site was abandoned in 1981 for the present townsite immediately north of the **DEW** Line station. Land for the new townsite had already been selected by the **Cully** Corporation as a part of its entitlement under the Alaska Native Claims Settlement Act and that land has since been interim conveyed to **Cully**. Some land in the present townsite has, in turn, been **quitclaimed** by **Cully** to the North Slope Borough as sites for Borough capital improvement projects.

Section 14(c)(3) of the Claims Act required village corporations to reconvey land to incorporated cities or **to** the State to be held in trust for unincorporated villages. Although the Claims Act stipulated that the 14(c)(3) acreage entitlement be not less than 1,280 acres, the

Alaska National Interest Lands Conservation Act (ANILCA) has made it possible for an agreement to be made between the village corporation and the city or State to reduce the total acreage to be reconveyed. Since Point Lay has yet to incorporate as a city under Alaska law, reconveyances of land by the village corporation for community development may be held in trust by the State Municipal Lands Trustee. Should the village incorporate, however, the State is required to turn over to the new city all 14(c)(3) lands held in trust. In order to transfer 14(c)(3) lands, the village corporation should receive a "waiver of interest" from the Trustee which can be accomplished either by holding a public meeting in the village with a representative from the Municipal Lands Trustee program or by obtaining the approval of an "Appropriate Village Entity". The "Appropriate Village Entity" is a village organization recognized by the State as being representative of the will of the villagers. It appears that the State has recognized the Point Lay IRA government as an "appropriate village entity" and that, if the IRA Council approves, the Cully Corporation can transfer its interest in a specific piece of land to the North Slope Borough when the latter needs that land for a capital improvement project.

Point Lay Area

Except for DEW Line property, all lands in the immediate vicinity of Point Lay are subject to an interim conveyance issued to the Cully Corporation for the surface estate and to the Arctic Slope Regional Corporation for the subsurface estate (see Figure 12). The status of lands beyond the immediate Point Lay area is varied, including: land

Land Tenure Point Lay Area 1983

	Cully Corporation — Interim Conveyance
	Cully Corporation — Selection
	Arctic Slope Regional Corporation — Interim Conveyance
	Arctic Slope Regional Corporation — Selection
	State — Tentative Approval
	State — Selection
	Federal
	Native Allotment Applications

0 55 Miles

Alaska Consultants, Inc.
Anchorage, Alaska

Adapted from cartography by
Northwest Cartography, Inc.
Seattle, Washington

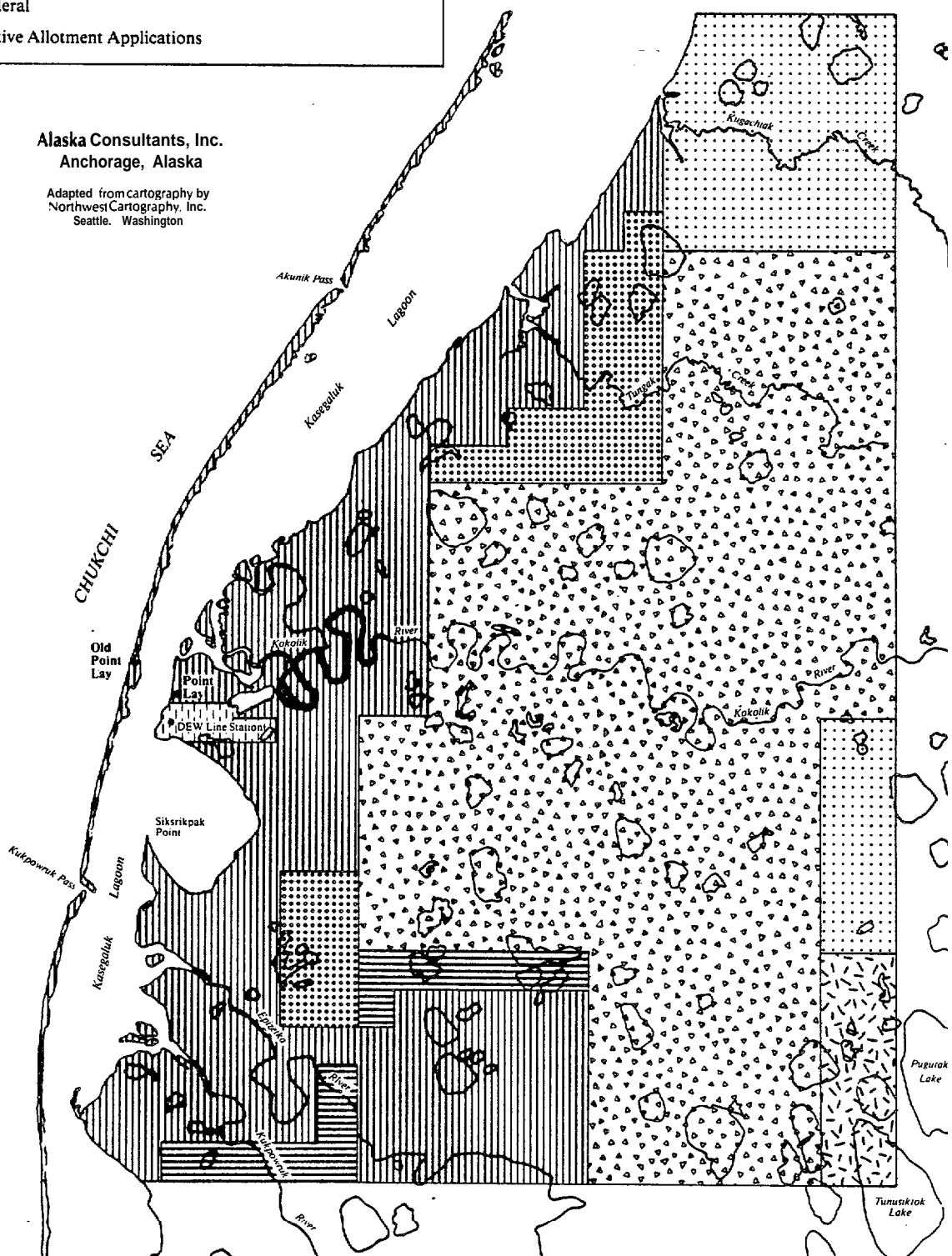


Figure 12

interim conveyed to the Cully Corporation, land interim conveyed where both the surface and subsurface estate will pass to the Arctic Slope Regional Corporation, land tentatively approved for conveyance to the State of Alaska, land selected by the State and lands which the State has selected or which were tentatively approved for conveyance to the State but on which the Cully Corporation has now top-filed. There are also two pending Native allotment applications for land on the barrier spit across from the present village site.

The land for the DEW Line station, which abuts the Point Lay townsite, was withdrawn on December 26, 1957 through the issuance of Public Land Order 1571. This Public Land Order withdrew 2,875 acres, reserving it for the Air Force. On May 14, 1959, Public Land Order 1571 was amended by Public Land Order 1851 which increased the acreage withdrawn to 2,892 acres. The additional 17 acres was on the barrier spit, immediately north of the old village, and was withdrawn for the unloading of DEW Line station fuel and supplies. The total land withdrawn was reduced by 1,450 acres on December 11, 1974 by Public Land Order 5455, leaving approximately 1,442 acres at the Point Lay DEW Line station under Air Force control.

The DEW Line station and the village of Point Lay share a common water source. The village also uses the station's solid waste disposal site, although there is concern that the present site will soon be filled. In addition, the DEW Line station's airstrip is the only maintained airport in the Point Lay area.

Section 12(a) of the Alaska Native Claims Settlement Act entitles the Cully Corporation to the surface estate of 69,120 acres in the Point Lay area, with the subsurface estate accruing to the Arctic Slope Regional Corporation. To date, 67,385 acres have been interim conveyed to the Cully Corporation. The Cully Corporation was also entitled to 18,415 acres under Section 12(b) of the Claims Act and this acreage has also been interim conveyed.

There are also State selected lands or lands tentatively approved for transfer to the State in the Point Lay area. Prior to passage of the Alaska Native Claims Settlement Act, the State had made some land selections in the Point Lay area. The Claims Act voided some of these State selections although those located outside the Cully Corporation's entitlement area were not affected. In addition, there are some lands in the Point Lay area which have been selected by the Cully Corporation but which have not been interim conveyed. These remaining village selections have been top-filed on land previously selected by the State or on lands which had been tentatively approved for transfer to the State.

Two pending Native allotment applications on the barrier spit immediately north of the old village site appear to be on land withdrawn for use by the Air Force. The legality, location and size of these allotment applications is still being reviewed by the Bureau of Land Management.

Native allotments are essentially homesteads of up to **160** acres of non-mineral land which were granted to Alaska Natives, generally for subsistence purposes. Indian allotment authority in **Alaska** was **cancelled** with passage of the Alaska Native Claims Settlement **Act**. However, applications which were pending at the time of passage of the Claims Act are eligible for consideration. Like restricted Indian **lands**, Native allotments are not subject to taxation or local and State regulation.

SUBSISTENCE LAND USE PATTERNS

The environmental setting of Point Lay is uniquely different from the other villages of the study area, resulting in different local land use patterns. Point Lay, formed by the delta of the **Kokolik** River, is a much more **subtle** physical feature than Cape **Lisburne** or **Icy** Cape and is not comparable to the spit formation at Point Hope or Barrow. The most significant effect this has had on land use patterns is the conspicuous absence of local bowhead whaling in the current seasonal round of subsistence harvesting by Point Lay residents.

The **Kukpowruk, Kokolik** and Utukok rivers, as well as many smaller rivers and streams which **flow** out **of the** northern foothills of the Brooks Range, deposit enormous amounts of **fluvial** material in the **Chukchi Sea**. These deposits have formed a series of barrier islands and bars **along** the coast which enclose the large **Kasegaluk** Lagoon, the most important environmental feature in the Point Lay region. The lagoon, which stretches from north of Icy Cape to south of Point Lay, plays an

important role in the marine resource harvest patterns of Point Lay residents.

The North Alaska littoral current is the dominant physical factor affecting sea ice conditions **in** the offshore area adjacent to Point Lay. This current runs parallel to the coast from southwest to northeast and brings relatively warmer waters from the southern Chukchi Sea. During the spring marine mammal harvest, Point Lay residents usually start hunting south of the village where the first broken ice appears. Once the sea ice has broken into numerous pans and floes, hunting activity continues south of the **village** and in the waters directly adjacent to the village site. This allows successful hunters to dress their **kill** as they drift north toward the village. If the hunters are unsuccessful near the village or do not get the desired quantity at this time, they can travel north to Icy Cape. **In** the Icy Cape region shoals ground the ice, concentrating both ice floes and marine mammals in this area after the ice has disappeared further south.

The general area which Point Lay residents use for marine resource hunting extends from Cape Beaufort in the south to Icy Cape in the north. Point Lay hunters harvest game outside of this area, but it is usually done while traveling to or from another village. Because subsistence hunting is opportunistic by nature, hunters take advantage of wildlife resources they encounter **while** traveling. It should be noted that the majority of Point Lay residents have returned to this village only in the past 10 to 12 years. During this period, a relatively large number of **local** construction jobs have been available

as a result of the North Slope Borough's ongoing capital improvements program. Because Point Lay's labor force is **small** and because **local** employment has been at a high level, the area of maximum use by Point Lay hunters for marine mammals may not yet have reached its potential. Point Lay residents indicated that their most important subsistence resource is caribou. However, marine **mammals**, fish and migratory birds play an important role in the local subsistence economy. They provide the necessary seal oil, a welcome change in diet, and most importantly are available during the spring and summer months when traveling conditions inland limit access to caribou. The most important marine resources are **belukha** and fish which are harvested in large numbers.

The following presentation of Point Lay subsistence land use patterns is not comprehensive since **only** those land use patterns which are marine oriented are discussed. Seven **local** resource specialists were interviewed in depth, as **well** as other important members **of** the community. (A description of the field methodology is provided in the regional overview of subsistence **land** use patterns).

Belukha

Belukha whale is the most important marine **resource** presently **harvested** by the residents of Point **Lay**. For the past several years, **th**'s species has provided a greater quantity of food to the village economy than any other marine resource. The harvest of **be' ukha**, and the subsequent dressing and storage, is the only **communa**' subsistence activity currently practiced in this village.

Belukha harvesting is usually concentrated in the first two weeks of July. The whales, traveling in schools as they migrate north, stop and feed in the passes of **Kasegaluk** Lagoon. Point Lay residents concentrate their hunting effort in Naokok and **Kukpowruk** passes, south of the village (see Figure 13). When the **belukhas** are sighted, villagers use as many boats as they have available to drive the animals into the lagoon. Once inside the lagoon, the **belukhas** are herded into shallow water near the old village site where they are shot with rifles. This **belukha** drive serves two purposes. First, the animals are closer to their final destination, the village ice cellars. Second, the shallow water allows the hunters to retrieve the whales after they sink. One Point Lay resident noted that during a particularly heavy ice year the **belukhas** entered the lagoon on their own accord, but this is uncommon.

Advances in technology, especially high powered outboard motors, have improved the efficiency of this hunt. Point Lay residents are now able to control a large number of animals and herd them substantial distances with relatively few boats (usually three or four). Most importantly, the hunters are able to provide the village with a large quantity of meat with very few **belukhas** being lost once they have been shot.

In 1982, **Point** Lay hunters harvested 28 **belukhas** during the **July** hunt. Local residents stated that more whales could have been harvested if there were more people available to process the meat. The relatively hot July sun requires that all the meat be put in ice cellars or preserved in another manner immediately after harvest. **All** able bodied members of the community participated in this activity. As noted above,

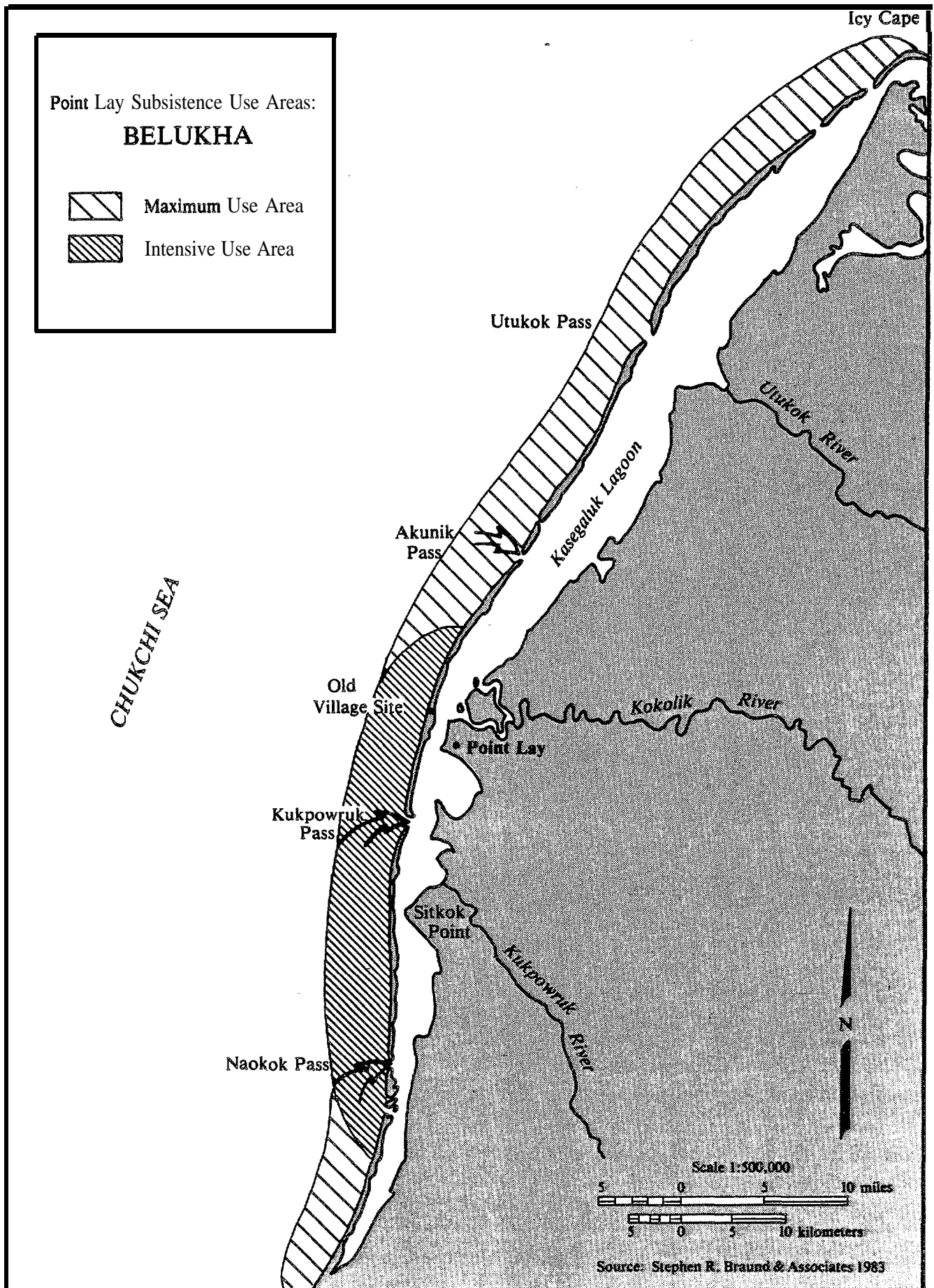


Figure 13

the animals are herded to the old village site to minimize the distance that the meat must be carried before being stored.

If the **belukha** harvest has been unsuccessful in the passes south of the village, Point Lay hunters travel to passes north of the village in search of whales (especially **Akunik** Pass). In some years, Point Lay hunters continue to harvest **belukha** throughout the month of July and early August, ranging in rare cases as far as Icy Cape in their search for the whales. Hunters occasionally try to harvest **belukha** south of the village prior to the major community effort in July, traveling south by **snowmachine** down the coast towards Cape Beaufort where the ice is the first in the region to break up.

While the Point Lay **belukha** harvest does not compare in cultural significance with the bowhead hunt in other villages, it is an important cultural and community unifier in Point Lay because it involves **all** members of the village. Because the **belukha** harvest is so important, residents who are employed take time off to participate in this activity. The meat and **muktuk** is shared with friends and relatives throughout the region and State, and this sharing ties the village with other North Slope communities.

Fish

Fish are an important supplement to the summer and fall diet of Point Lay residents. Species harvested include chum, pink and king salmon, Arctic char, Pacific herring, whiti fish, **flounder** and **grayling**. Most of

the marine fishing is done with set **gill** nets **along** the **barrier** islands **and** mainland coast during the months of **July** and August. **In** addition, Point Lay residents fish upriver, especially the **Kukpowruk** and **Utukok** rivers, during the fall months **of** September and October.

The harvest area for marine fishing by Point Lay residents includes that portion of **Kasegaluk** Lagoon south of **Icy** Cape, the outer shore of **all** the barrier islands which enclose **this** lagoon and a small portion of the **Chukchi** Sea near the southern end of **Kasegaluk** Lagoon (see Figure 14). Most of the set netting occurs around **Naokok** Pass, on both sides of the barrier island upon which the **old** village is located and along the shores of the mainland near the present village site. The area in the immediate vicinity of **Icy** Cape was repeatedly identified as an excellent fishing area during August, **but** Point Lay residents stated that they **seldom** went this far any more because **local** fishing had been successful and there were conflicts with their **jobs**. Some younger residents stated that they now fish for salmon on rod and **reel** several **miles** from shore off the southern end of **Kasegaluk** Lagoon.

August is the best month for marine fishing. The proximity to the village of good fishing locations allows those residents who are employed to check their nets after work, minimizing any conflicts between subsistence activities and employment. Residents stated that there have recently been more fish available than in the past. Because fishing is not **labor** intensive and because fish are readily available, this resource plays an important **role** in the subsistence economy.

e

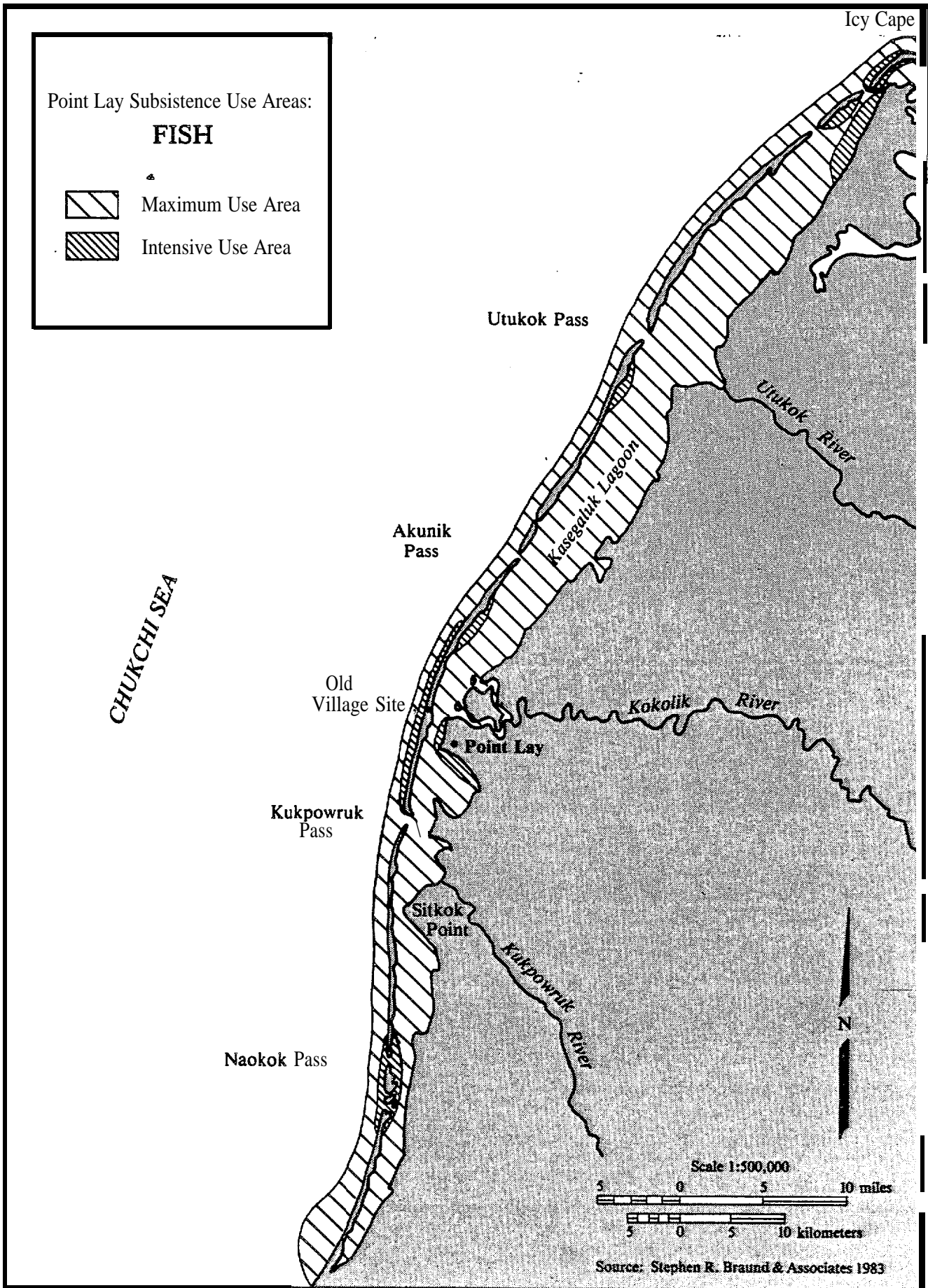


Figure 14

Walrus

Although the importance of walrus as a subsistence resource has declined in recent **years**, Point Lay residents' hunting range for this species is greater than that of any other marine mammal. Traditionally a primary **source** of dog food, **walrus** is now only occasionally harvested for human consumption. The amount of walrus available for human use is dependent on the varying success of the spring **hunt**. Local hunters reported that during years of favorable ice conditions they may harvest as many as **10 to 15 walrus** (1983 was such a year), whereas in a year of difficult harvest conditions (i.e. heavy **local** ice restricting offshore access), no walrus are taken. Point Lay hunters stated that walrus numbers have increased recently but that they had harvested few because of difficult hunting conditions.

Point Lay residents' walrus hunting range extends the entire length of **Kasegaluk** Lagoon south of Icy Cape and as far offshore as twenty miles (see **Figure 15**). The walrus are generally associated with ice floes and are found as they ride the ice north during their annual migration. Point Lay hunters have observed that approximately **15** miles offshore there is a north flowing current (North Alaska littoral current) with large concentrations of marine **mammals**. Harvesting **walrus** this distance offshore in broken and moving ice can be extremely dangerous and a change in wind direction can trap the hunter among the floes. **In** addition, if the inshore ice is too heavy, it **blocks** villagers' access to the walrus. At the present time, the preferred hunting area for walrus is between 10 and 20 miles directly offshore from the village.

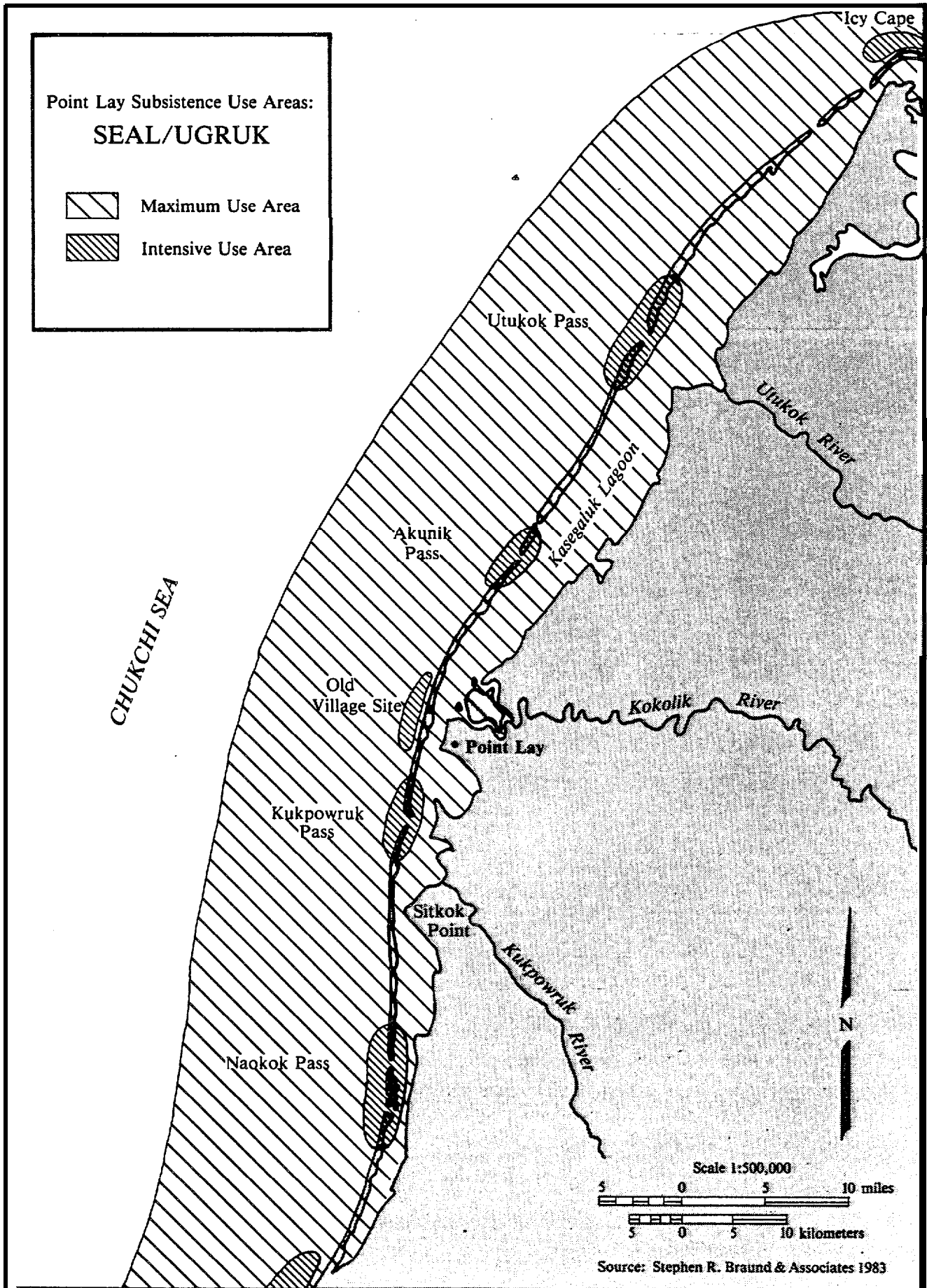


Figure 16

Point Lay residents harvest two species of hair seal, the ringed seal and the spotted or harbor seal. The ringed seal **is** available almost the entire year, rare only during the ice-free months of **July** and August. Point Lay residents usually harvest ringed **seal** during the spring (April, May and June). They **rarely** harvest seals prior to this time as they are busy hunting caribou and trapping furbearers. The first ringed seal harvest of the year generally occurs in April near Cape **Beaufort**. Point Lay residents stated that people go down to Cape **Beaufort** as **early** as March because open water appears there first. Seal hunting takes place near the village as spring progresses and the animals sun themselves on the ice. Several residents indicated that they also harvest seals at Icy Cape. **In** addition, ringed **seals** are occasionally taken from boats as Point Lay hunters **travel** among the **floes** looking for **ugruk** and walrus in June and July.

Spotted seals feed in the lagoon during **the** summer and are occasionally harvested as they rest on the shore adjacent to the numerous passes of **Kasegaluk** Lagoon. These seals have desirable **pelts** and can be hunted in the **late** summer in open water because they are fat and do not sink when shot (North Slope Borough Contract Staff **1979: 116**).

Ugruk hunting begins soon after seal **hunting in** the spring in the same harvest areas. The most concentrated **ugruk** hunting by Point Lay residents takes place in June, but the season can extend as late as August if the hunters **follow** the ice north. **In** June, the ice has already begun to break up and hunters **look** for **ugruk** among the floating **ice**. Usually the hunting takes place 5 or 6 **miles** offshore but, **later**

in the month, Point Lay hunters may go out further as they look for walrus and **ugruk**. As is the case with all marine mammals hunted by Point Lay residents, the season can be extended if the hunters are willing to travel north toward Icy Cape where ice is present for a longer period of time.

All seals except the spotted **seal** generally disappear once the ice is gone. Villagers stated that ringed seal and **ugruk** are occasionally seen and harvested in the lagoon in September. In recent years, Point Lay hunters have taken a total of 2 to 10 **ugruk** per year, while the harvest of ringed seal has averaged three or four per family (1983 fieldwork findings).

Migratory Birds and Eggs

Migratory birds and their eggs are important subsistence resources in Point Lay, providing a desired change in diet at a time of year when fresh meat can be scarce. Eiders, geese, brants, loons and ducks are all harvested, primarily in the spring. What is not eaten immediately is stored in ice cellars for the following winter. The harvest range for birds is as large as any of the other marine resources because bird hunting is often done in conjunction with other marine resource harvesting (see Figure 17). As one resident stated: "I **always** take my shotgun with me when I am out hunting seals, **belukhas**, walrus, even fishing." **Waterfowl** hunting is often done from the edge of leads during the month of May when Point Lay residents are hunting seal and **ugruk**. Successful hunting often depends on the wind direction.

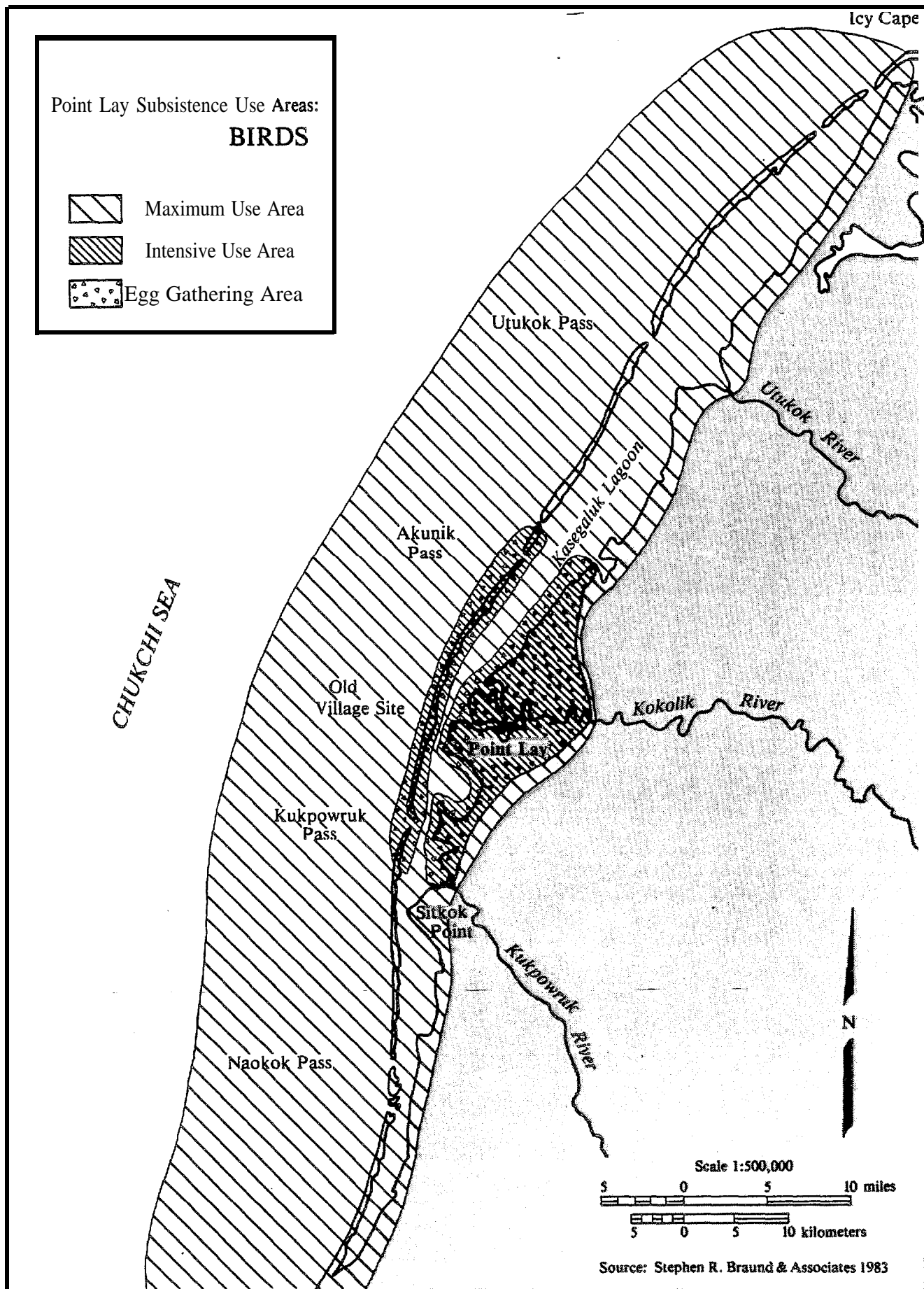


Figure 17

Bowhead Whale

Although Point Lay had whaling crews in the past, the village no longer sends out any crews. Historically, whaling occurred primarily at Icy Cape as ice conditions near Point Lay **were** not usually conducive to bowhead whaling. One long-time resident recalled that Point Lay harvested two bowhead whales in the 1930's, one at Icy Cape and one near the old village site. The subsequent **reduction in** village population **is** one reason for the decline of locally based whaling.

At the present time, a few Point Lay men go to **Wainwright** and Barrow to participate on whaling **crews**. Villagers also travel to these two communities and to Point Hope to **help** butcher landed whales. Villagers indicated that Point Lay receives a share whenever **Wainwright** gets a whale. **Wainwright** notifies Point Lay by citizens band radio, and Point Lay people **travel** to **Wainwright** to **help** pull the whale onto the ice and butcher it for a share. In 1981, **Wainwright** whalers harvested a bowhead at Icy Cape and Point Lay villagers helped butcher it. There is some evidence that employment of local people on village construction projects is currently restricting the number of Point Lay people who go to other villages during whaling season. Villagers indicated that more --- people would be likely to go once construction employment in Point Lay ended.

Polar Bear

Point Lay residents occasionally hunt polar bear during the winter along the coast. Villagers reported that while they have seen few polar bear during the past year, more were available in past years. The distance hunters travel offshore in pursuit of this species rarely exceeds two miles.

VILLAGE LAND USE PATTERNS

The location and platting of the present Point Lay townsite was directed by the North Slope Borough after consultation with area residents. The surveyed area currently takes in about 71 acres, of which 39 acres were still vacant in October 1982.

Kasegaluk Lagoon forms the western border of the townsite (see Figure 18). Most of the lagoon beach is relatively steep and the bluff area is also eroded by surface drainage. As a result, it is unlikely that the bluff area will support much construction.

Qasigialik Street is the main village thoroughfare, extending through town on a north-south-axis paralleling Kasegaluk Lagoon. At its southern end, it becomes the access road to the DEW Line station and airstrip, while its northern end terminates at the beach. Tuttunnigvik Street, which runs parallel to Qasigialik Street, establishes the present eastern edge of the village's surveyed area. DEW Line station land abuts the village to the south.

Existing Land Use Point Lay October 1982

0 200 400 Feet

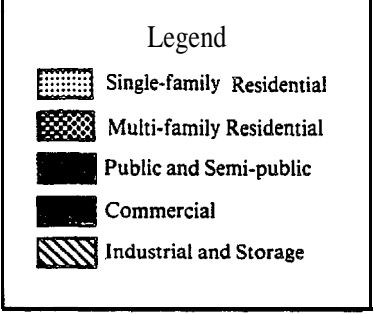
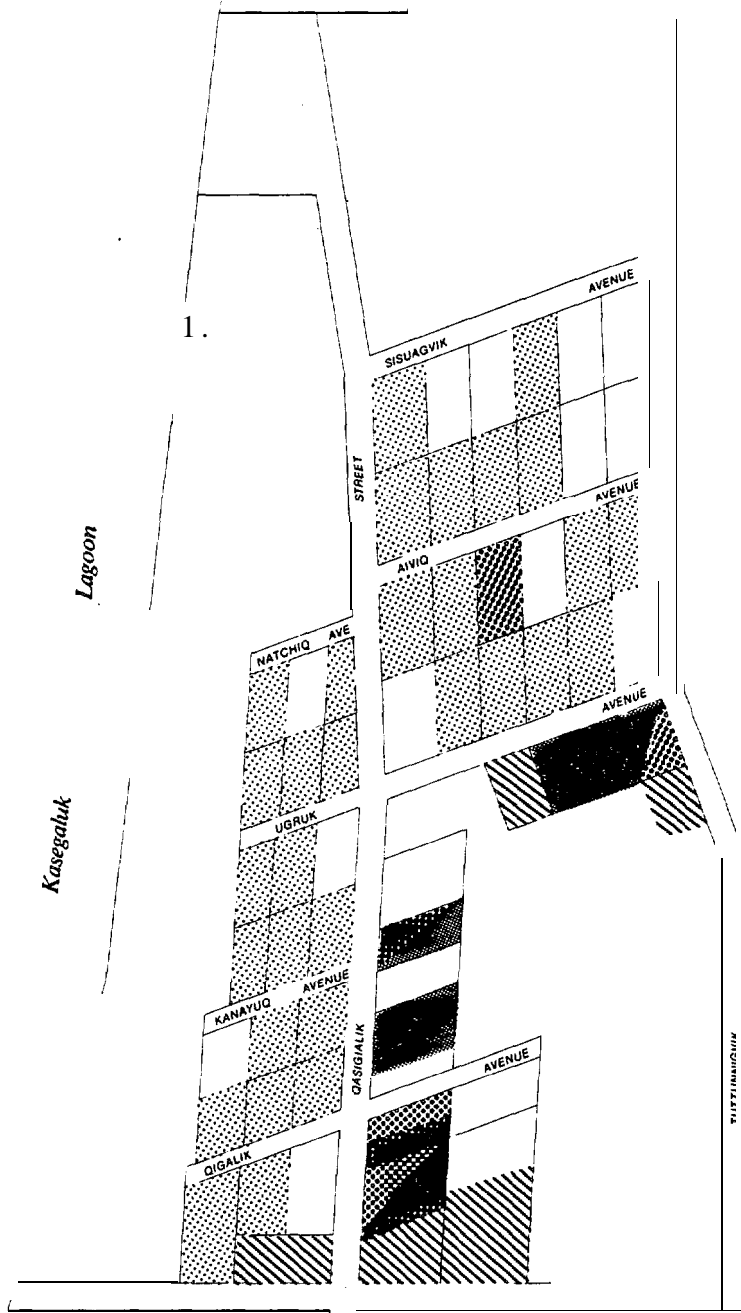


Figure 18

Alaska Consultants, Inc.
Anchorage, Alaska

Adapted from cartography by
Northwest Cartography, inc.
Seattle, Washington



DEW LINE STATION AND AIRPORT

The area between **Qasigialik** Street and **Kasegaluk** Lagoon is exclusively residential except for two lots occupied by the new **clinic** and by the satellite receiving dish and **switchgear** building. Unfortunately, the short cross-streets leading west off **Qasigialik** Street to serve this residential area are **all** dead-ended at the beach **bluff** and **little** turning area for larger vehicles is available.

In the southern portion of town to the east of **Qasigialik** Street is a **large public use area**. All public buildings in Point Lay except for the new clinic and satellite receiving dish and associated **switchgear** building are located in this area, as are the village store and the construction camp. Surveyed lands north of the public use area are **all** in residential use except for one **lot** across from the school which is being developed as a covered **play** area. In addition, one residential **unit** here was being used as a bunkhouse in October **1982**. Further north is a **large**, unsubdivided tract available for future residential development.

The power plant and the Department of Public Works warm storage building are located at the southern edge of the public use area, sufficiently distant from school facilities and most housing to minimize any associated traffic-hazards-for school children and other pedestrians. **All fuel** storage tanks in the townsite are also located in the public use area and are **bermed** for protection against spills, although **only** the new **Cully School** tank site is fenced. The **village** water treatment **plant** and attached water storage tank have been constructed just east of the power **plant**.

TABLE 30
EXISTING LAND USE
POINT LAY TOWNSITE
1982

<u>Land Use</u>	<u>Land Area (acres)</u>	<u>Percent of Devel oped Area</u>	<u>Percent of Surveyed Area</u>
Residential	13.2	42.5	18.6
One and Two Family	(11.0)	(35.4)	(15.6)
Mul ti -Fami ly	(0.1)	(0.3)	(0.1)
Bunkhouses	(0.7)	(2.3)	(1.0)
Vacant Units	(0.6)	(1.9)	(0.8)
Under Construct ion	(0.8)	(2.6)	(1.1)
Commercial	0.7	2.2	1.0
Utility and Storage	3.3	10.6	4*7
Public and Semi -Public	3.3	10.6	4.7
Public	(1.5)	(4.8)	(2.1)
Semi -Public	(1.8)	(5.8)	(2.6)
Devel oped Roads and Corridors	10.6	34.1	15.0
<u>TOTAL DEVELOPED AREA</u>	<u>31.1</u>	<u>100.0</u>	<u>44.0</u>
Vacant Land	39.0		55.2
Undevel oped Roads	006		0.8
<u>TOTAL SURVEYED' AREA</u>	<u>70.7</u>		<u>100.0</u>

Source: Alaska Consultants, Inc.

The tundra on which Point Lay is situated is poorly drained. Summer thawing penetrates about 18 inches, leaving a soft, saturated surface which will not support vehicle traffic. The thin, peaty mat on the tundra surface is easily disturbed or destroyed. When this occurs, it can lead to further surface degradation and result in structural failure. Use of deep-set piling is essential in the design of most facilities, and thick gravel beds are necessary for roads and other areas which are heavily used. The use of road culverts is also necessary to avoid unintended diking or damming of the natural surface drainage. However, keeping the culverts clear is sometimes a difficult task, particularly in the spring when frozen culverts can result in severe erosion and street washouts.

Of the 31.1 acres of land in use in the Point Lay townsite area in October 1982, 42.5 percent was occupied by residential units, 34.1 percent was taken up by developed roads, 10.6 percent was occupied by public facilities, and utilities and storage facilities accounted for another 10.6 percent (see Table 30). Only 2.2 percent was in commercial use.

HOUSING CONDITIONS

An October 1982 housing inventory conducted by Alaska Consultants, Inc. counted 30 completed housing units at Point Lay, all of them single family homes except for an apartment in the school (see Table 31). Of these 30 units, 12 had been constructed by the North Slope Borough, including 8 rentals and 4 units occupied by Borough employees. Another

TABLE 31

POINT LAY HOUSING INVENTORY a/
OCTOBER 1982

<u>Housing Program</u>	<u>Condition of Units</u>				<u>Total</u>
	<u>Occupied</u>		<u>Vacant</u>		
	<u>Acceptable</u>	<u>Substandard</u>	<u>Acceptable</u>	<u>Substandard</u>	
North Slope Borough Rentals	8	0	0	0	8
North Slope Borough Employees	4	0	0	0	4
Cully Corporation	5	0	0	0	5
Arctic Slope Regional Corporation	8	0	1	0	9
Bureau of Indian Affairs	<u>3 b/</u>	0	0	0	<u>3</u>
School Apartment	1	0	0	0	1
<u>TOTAL</u>	<u>29</u>	<u>0</u>	<u>1</u>	<u>0</u>	30

a/ Excludes the construction camp, a North Slope Borough housing unit used as a bunkhouse, a trailer used as a bunkhouse and a trailer used as a construction office. Also excluded are buildings at the old village site on the barrier spit.

b/ Excludes 2 units near completion and 2 others on plots where only pilings were in place in October 1982.

e Source: Alaska Consultants, Inc.

9 units had originally been provided by the Arctic Slope Regional Corporation, while the Cully Corporation had provided the initial funding for an additional 5 units. Still another 3 units in the village had been financed through the Bureau of Indian Affairs. Finally, there was an apartment unit in the school building although it was being used for classroom purposes in October 1982.

Only one house in Point Lay was vacant in October 1982. This vacancy rate was one of the lowest in all of the North Slope Borough villages. In addition, all of the housing in the village was considered to be in acceptable condition (i.e. standard or better). The lack of substandard housing in Point Lay is believed to be directly related to the two village relocations as the cost of moving structures from one site to another was so high that it made the transferring of substandard units uneconomical.

The difficulty and cost of shipping construction materials to the village, plus problems in obtaining long term financing, severely limit the ability of private individuals to construct standard housing. Any major expansion of Point Lay's housing stock would therefore probably depend on the further use of government programs.

There were 2 houses and 2 trailers at the old Point Lay site on the barrier spit in October 1982. These units were not included in the housing inventory for the present village. One house and one trailer were each occupied by an adult couple.

The Borough's program for providing new housing in Point Lay has not led to local concern regarding stress which the new homes might place upon family ties. Field interviews suggest that village residents consider the new housing to have been useful in uniting the families returning to Point Lay who had become separated at the time that the old village's population moved away. Residents interviewed found the new homes more comfortable and less crowded than former housing. There was concern that some Borough housing occupied by local families had remained as rental units and had not been placed under an occupant purchase plan as first proposed by the Borough. (The North Slope Borough program to sell such houses has been contingent on HUD commitments to purchase the units under the Mutual Help program. However, funds for the HUD program have been severely restricted in the past year or so).

Inupiat family ties have been retained as Point Lay has grown. The townsite remains relatively confined. Where family houses are not adjacent to each other, the new telephone system and the growing number of privately owned vehicles (three-wheelers, **snowmachines** and trucks) have facilitated the maintenance of daily contacts and the sharing of meals, as well as participation in subsistence harvesting activities.

Community Facilities and Utilities

ADMINISTRATIVE AND MISCELLANEOUS PUBLIC BUILDINGS

Point Lay's community building **was** completed in September **1983**. It was funded by a State appropriation which was passed through the North **Slope** Borough because there is no municipal government at Point Lay. However, the management and day to day maintenance of the facility will rest with the **village**. The facility **will** serve as a community center for dancing, games, feasts and other village events or meetings and will also be available as a conference **center** when State or federal personnel visit the village to contact individual residents.

The community building is a single story wood frame structure mounted on piling. **It** is located just south of the fire station. The Borough **will** not use the building for any of its programs but the design of the facility **would** permit some village organization to establish a permanent office **there**.

The North Slope Borough maintains a heavy equipment storage building at Point Lay, as it does in other North **Slope** villages. The Point Lay **facility** was **built** in **1981** and is located at the southern edge of the village. **It** is a **single** story wood structure (40 by 80 feet) **with** a concrete floor and with four equipment **bays**. Internally, the structure is unpartitioned except for a **small** office and parts storage area. The building has no plumbing.

PUBLIC SAFETY

Police Protection

Police protection services in Point Lay are provided by the North Slope Borough, as is the case for all North Slope villages. However, there is no public safety building in Point Lay and the public safety officer's home is presently also being used for that purpose, something it was not designed to do. The space available for public use is limited, there are no detention facilities and storage space for supplies, equipment and case evidence is inadequate.

Preliminary plans for the new Point Lay public safety building call for a two-story metal exterior building containing about 4,300 square feet of floor space. The ground floor of the new facility would include three cells, a booking area, a central office with a secure closet for the safekeeping of records and evidence, a kitchen/laundry area, storage space, a mechanical room, sleeping quarters for personnel temporarily assigned to the village, and a garage. The second floor would house a public safety officer's apartment and additional storage space.

Borough public safety **officers** assigned to North Slope villages spend a great deal of time in non-criminal activities (see Table 32). Law enforcement problems in Point Lay are primarily related to liquor abuse. Only one public safety officer is now stationed in the village. When that officer is sick, on leave, traveling on official duty or otherwise away from the village, there is no police authority in Point Lay unless

TABLE 32
PUBLIC SAFETY DEPARTMENT ACTIVITY
POINT LAY
1980 - 1982

	<u>1980</u>	<u>1981</u>	<u>1982</u>
Homicide and Negligent Homicide	1	0	0
Rape and Sex Offenses	0	2	0
Robbery	0	0	0
Assault	0	4	2
Burglary	0	1	1
Larceny	0	0	2
Motor Vehicle Theft	0	2	3
Vandalism	0	5	4
Narcotics	0	1	1
Driving While Intoxicated	0	0	0
Liquor Law Violations/Disorderly Conduct	0	1	6
Traffic Accidents	0	0	0
Animal Problems	3	1	0
Domestic Problems	0	1	6
Premise Security	0	0	0
Disturbing the Peace/Noise	0	1	3
Other <u>a/</u>	11	23	7
 <u>TOTAL</u>	 <u>15</u>	 42	 <u>35</u>

a_/ This category identifies non-criminal **public** safety activities. It includes service **requests**, agency **assists**, **public** assists, transport of the sick or injured and other responses to non-criminal situations. The public safety officer may be **called** for a wide variety of activities ranging from chaperoning dances to helping a sick person **to** the clinic.

Source: North **Slope** Borough Department of Public Safety.

another officer can be assigned there on temporary duty. The Borough has adopted a policy to maintain two public safety officers in each village. To implement this policy in Point Lay would require the provision of housing by the Borough for the new officer.

Fire Protection/Search and Rescue

The North **Slope** Borough has provided fire protection services on an areawide basis since 1980. To implement this power, the Borough has constructed identical fire stations in each of its villages outside Barrow and has established a system of volunteer village **firefighting** forces. While the Borough's Search and Rescue division is part of the Public Safety department for administrative purposes, the volunteer **firefighting** force and search and rescue personnel have been combined into a single unit in the villages outside Barrow to increase their effectiveness. The new village fire stations are used to house the needs of both activities.

The Point Lay fire station was completed in **1983**. It is a prefabricated metal structure **72** feet wide and 65 feet in depth (4,680 square feet) set on piling, with access provided by a metal grating ramp. The **central** portion of the station is a large apparatus room sized **to** house a fire engine, a tanker truck, an ambulance and search and rescue equipment. The building also contains a utilities room, a furnace/generator room, two large storage rooms (one designed for use as a training area under heavy smoke conditions), a training/meeting area, an office/communications center, a small **bunkroom** for transient Borough

Fire department personnel, limited kitchen facilities, and shower and toilet facilities.

Rolling stock housed in the fire station includes an engine company truck mounted with a 2,000 **gallon** water tank, a 500 **gallon** per minute pump, fire hose and appropriate nozzles, ladders and cabinets for personnel gear and air-packs; a tanker truck mounted with a 3,000 gallon water tank and a 500 **gallon** per minute pump **plus** hoses and nozzles; a Chevrolet Suburban modified for ambulance use; and two **snowmachines and** a boat with an outboard motor for search and rescue operations.

Training programs have been initiated **by** the Borough with initial emphasis being placed upon use and maintenance of the new equipment in a manner which meets basic criteria for prompt and effective fire response.

Two major fires have occurred since Point Lay moved to its present site. A **1981** fire destroyed the Arctic **Slope** Regional Corporation office building and a residence was gutted in the spring of **1983**. No injuries or deaths were involved in either **fire**.

While all **firefighting** and/search and rescue functions in Point Lay and other Borough villages outside of Barrow are on a volunteer basis, the Borough maintains a permanent staff for both functions in Barrow. The Borough's Search and Rescue division **also** maintains two helicopters and

a fixed wing aircraft in Barrow for areawide use in search and rescue and **medi-vac** efforts.

Health

Primary health care services in Point Lay are provided by the North Slope Borough Health and Social Services Agency through the Community Health Aide program. These services are supplemented by regular visits to the village by doctors, dentists, nurses and other health care providers. When needed, Point Lay residents may use Public Health Service hospitals in Barrow, Anchorage or even **Kotzebue**. The remoteness of **Point** Lay and the uncertainty of flying weather can dictate the routing of patients, particularly in emergency situations.

The clinic now in use is a very **small** building (280 square feet) which was relocated from the prior village site on the **Kokolik** River. The facility is totally inadequate for its assigned use and is poorly equipped. Construction of a new 4,400 square foot health clinic is currently underway with identical facilities being constructed in all other North Slope villages except Barrow and Point Hope. The **clinic** portion of the new of the new building will include four examination rooms, a **laboratory**, a film processing room, a secured medicine storage room, a waiting/training area, a **consulting**/telehealth room, office space, toilet facilities and storage areas. **Also** included are itinerant quarters with two double bedrooms, a kitchen/dining/living area and a bathroom. There is also a mechanical/electrical room, a janitor's closet and a garage/storage area. The garage area is designed to

provide direct access from the ambulance to an examination room equipped to handle entry/trauma demands.

The new clinics are being provided with a wide range of equipment, including limited X-ray facilities. The **consulting/telehealth room will** be provided with slow-scan TV equipment linked through satellite telephone circuits to similar units in the Barrow headquarters of the Health and Social Services Agency, the Barrow **Public** Health Service hospital and the Alaska Native Medical Center in Anchorage. This equipment will **be** used for consultations between **local** community **health** aides and doctors, consultations within the medical professions, for the continuing education of the aides and for other uses such as the follow-up of clients/patients. An ambulance for transporting patients within the village is housed in the fire station, **while** a three-wheeler and trailer **will be** stored in the **clinic** garage.

The Borough **Health** and Social Services Agency attempts to maintain two **health** aides in each village. **It** is hopeful that the new clinics' better working environment **will** encourage aides **to** hold their positions for longer periods and-that it **will** encourage greater public appreciation of the aides' position.

Borough records indicate the current average patient **daily** load for the Point **Lay** clinic is about 2 patients. Much greater use of the new clinic is anticipated, not **only, because** of the potential for improved service but also because of the broader emphasis which the Borough

Health and Social Services Agency is placing upon **health** practices and conditions.

EDUCATION

The North Slope Borough School District provides education services in Point Lay from Early Childhood Education (**ECE**) through the 12th grade. The new **Cully** School complex has about 14,000 square feet of floor space, including storage and mechanical areas. It is designed to accommodate about 50 students, with provision made for the addition of more classrooms and other areas as needed. The complex consists of two buildings linked by an enclosed corridor and with an attached **playdeck**. A separate structure houses the school's sewage treatment plant. The complex is constructed on deep-set piling. A crawl space below the school's floor serves as a warm air plenum and provides space for piping, cables and other conduits. The exterior finish is mainly of **natural** cedar.

The larger of the two school buildings houses the teaching areas, a library/media center, administrative offices and the multi-purpose activity center. The activity center includes a gymnasium, a kitchen **complex**, toilet **and** shower **facilities** **and** storage areas. The smaller building houses vocational shops, the furnace room, an emergency power generator and tanks for water storage.

The elementary school teaching area includes two classrooms **for** grades 1 through 6 and a room for ECE/kindergarten activities. The teaching area

~
for grades 7 through 12 includes a classroom **and** a multi-service room **equipped** for science and business classes plus a photo laboratory. There is a library/media center located centrally to the elementary and upper grade teaching areas. **It** is adjacent to the administration center which includes an office for the principal and a records storage room. This area also includes a conference/special education room. The several main corridors of the school complex terminate in a central commons area. **A** small wind driven power generator has been mounted on a tower adjacent to the school. **Its output is** fed into the school's electric system and monitoring equipment has been placed in the science classroom.

The smaller **school** building houses two vocational education shops, one for wood and metalwork and the other for **small** engine repair and welding. There is a boiler room, and a room for the standby emergency power generator and a 16,200 **gallon** tank for water storage. The latter includes 10,000 **gallons** of water reserved for emergency fire use in the sprinkler system which is installed throughout the complex.

During the 1982/83 school year, the professional staff included a principal and 4 teachers, **all** of whom were certified. There was **also** a **bilingual** teacher and a part-time aide. A part-time position for coordinating a community school/adult vocational education program remained **unfilled**. The non-teaching staff included a cook and 2 maintenance/janitorial persons. The position **of** maintenance supervisor for the new school complex was filled in the spring of 1983 to permit

TABLE 33

SCHOOL ENROLLMENT TRENDS BY GRADE a/ b/ c/
 POINT LAY
1977/78 - 1982/83

School Year	Final Enrollment by Grade								Total Excluding ECE/Kindergarten	
	1	2	3	4	5	6	7	8		
1977/78	1	3	2	1	1	2	1	0	1	14
1978/79	0	4	2	2	1	1	3	0	3	16
1979/80	4	4	2	1	3	1	2	1	2	25
1980/81	4	4	0	6	5	1	2	2	6	34
1981/82	5	2	3	1	3	4	1	0	1	25
1982/83	3	2	2	3	1	3	3	0	0	21

a/ Final enrollment figures. Attendance records for prior years are not available.
b/ Education in Point Lay has been provided by the North Slope Borough School District since 1973.
c/ ADM (Average Daily Membership) for school years 1980/81, 1981/82 and 1982/83 was 35.33, 30.00 and 27.53 respectively.

Note: The 1982/83 final enrollment for ECE/Kindergarten was 1 student.

Source: Alaska Department of Education.

him to observe the final stages of the school's construction and prepare appropriate plans for the facility's operation and maintenance.

Final enrollment for the 1982/83 school year, excluding ECE and kindergarten, was 21 students, including two non-Natives (see Table 33). The principal had indicated some concern about the regularity of attendance in junior/senior classes.

As part of the 1983 fieldwork, opinions were sought on the subject of the quality of the local school system. Two IRA council members questioned the standards set for local high school students as not being high enough, particularly with reference to skills. (Both council members had attended Mount Edgecumbe in Sitka). Few Point Lay high school graduates apparently go on to college. There was comment that the availability of local construction jobs had discouraged residents from seeking college or other forms of education and training. One council member noted that those Point Lay residents who did seek additional education and training had favored technical/vocational schools or courses, noting "We can spend six months in a technical school and return to the village with a \$35/hour job. Or we can go to college for four years and return to a \$13/hour job."

RECREATION

Construction of the Point Lay community building, completion of the Cully School and erection of an enclosed play area across the street from the school has provided the village with a set of recreation

facilities not found in other small North Slope villages. The community building will accommodate village meetings, dances, games and feasts. The **Cully** School multi-purpose center offers a gymnasium, kitchen facilities and toilet and shower facilities designed to meet the needs not only of students but the village as a whole, as well as a larger area for dances, games, feasts and other village-wide recreation activities which cannot be housed in the community building. The new enclosed play-area across from the school, while not heated, accommodates roller skating and offers an **alternative**, although small, gym-like facility which can probably be used regularly except during cold weather. The outdoor play platform attached to the school can **also** be used by younger children, weather permitting.

While Borough schools in other North Slope villages have offered adult vocational and special interests classes in the evenings or when not in conflict with regular **school** activities, the lack of space in the old school and the apparent disinterest of villagers had discouraged establishment of similar education courses in Point Lay. The former school principal who had lived in the village for five years believed that this situation might change once the new **Cully** School was completed and the level of construction activities in the village had fallen off substantially.

Point Lay does observe some national holidays in addition to traditional **Inupiat** occasions. The week of Christmas Eve through New Year's Day is the most extended and well organized event, combining religious observances with dancing, feasting **and** games.

Point Lay Inupiat people attach great value to visiting with relatives and friends, including those people whose families once **lived** in **the** Point Lay area but who now **live** in **Wainwright**, Barrow, Point Hope or even more distant places. Subsistence activities such as **belukha** whale hunting and fall ice fishing involve family **or larger** groups. However, such activities are not viewed from the **Inupiat** perspective as being of a recreational nature.

UTILITIES

Water

The North Slope Borough Department of Public Utilities is responsible for the provision of water services **at** Point Lay. A **major** step in the development of a potable water system for Point Lay was taken by the Borough with the 1983 construction of a water treatment plant and the attached village water storage tank with a 1,000,000 gallon capacity. During the summer, water is pumped from a lake to the village treatment plant through a polyethylene **line** laid on the tundra. Once weather precludes further pumping, the reservoir of treated water is drawn upon for delivery in the village. Except for a planned pipeline to provide direct **delivery** of water to the new **Cully** School (and possibly **to** several other nearby public facilities), water **will** continue to be delivered by using a special heavy duty truck equipped with a 2,000 gallon tank and a pump and hose used to reach holding tanks in **public** facilities and private homes.

The delivery of water by truck is dependent on the construction and maintenance of adequate roads and upon the ability of the Public Utilities department to keep the truck operating, even in severe winter weather conditions.

In October 1982, Point Lay water customers included the occupants of 30 housing units, the two construction camps, the village store, the old health clinic and the new **Cully School**. The construction camps prove to be extremely heavy consumers of water, while the new school **will** probably be the largest consuming unit in Point Lay if experience in other small North **Slope** villages is an accurate indicator. However, several factors will act to control per capita water use in Point Lay now that the central water facility is in place. First, only a part of the water in the storage tank is available for delivery when water cannot be pumped from the lake, as some reserve must be maintained for firefighting and other emergencies. Secondly, delivered water costs **7¢** per gallon, presenting the average household with a monetary restriction. Finally, the efficiency and dependability of the truck delivery system throughout the year could be another limiting factor.

Sewage

Sewage collection services in Point Lay are the responsibility of the North Slope Borough Department of **Public** Utilities. However, the present system is not adequate from the viewpoint of public health. With the exception of wastes from the new **Cully School**, all sewage wastes- in the village are collected in honeybuckets lined with plastic

sacks. The sacks are then stored in 55-gallon drums located **near** each house or **public** building and the drums are periodically removed (usually on a monthly basis) to a more isolated site in the village where they accumulate **until** they can **be** moved **across** the frozen tundra by freight sled for disposal at an **old,** unimproved dump site which has no official sanction. A sewage treatment plant was constructed specifically to process the new **Cully** School sewage, but there is no approved disposal **site** for the **long** term disposition of this treatment plant's effluent.

There is no mobile equipment in the village designed for the pick-up of the waste **filled** drums. A heavy duty sewage truck equipped with a storage tank to be filled **by** vacuum action through a hose was sent to the village, but since the buildings are not equipped with sewage holding tanks, the truck **could** not be used as designed. The tank has been removed, converting it to a flatbed truck for utility uses.

Graywater from sinks and tubs in **all** buildings except for the new school is discharged directly onto the tundra under or adjacent to individual structures. This practice leads to accumulations of graywater ice in the winter months and adds to surface drainage problems in the summer.

The North **Slope Borough plans to build** a sewage **lagoon** in Point Lay although the village council has yet to indicate a preferred site. However, the present sewage collection system **for** honeybucket wastes has an inherent basic problem in that **the** contents of the plastic sacks cannot be dumped directly into a sewage **lagoon** and no efficient, acceptable means for doing so has been developed. The problem is even

more difficult when consideration is given to the many months of the year that the bags freeze once they have been placed in the 55-gallon drums.

Solid Waste

The North Slope Borough Department of Public Utilities is responsible for solid waste disposal services in Point Lay. **Garbage** is picked up from homes and other facilities on a regular basis unless the service is interrupted by severe weather or equipment failure. It is then taken to the DEW Line station dump site, located just behind the station's hangar at the airstrip. North Slope Borough Department of Public Works equipment is used, when necessary, to consolidate and compact the waste at the dump site. The site is not fenced and will soon be filled.

A new dump site and access road are needed. The site favored by Point Lay residents is in a depressed area located about 2 miles south of the village's present water source. A new access road to this site could utilize a portion of the existing water source access road. However, as this road would cross DEW Line station property, an agreement with the Air Force for its construction would first have to be reached. Point Lay does not have a gravel stockpile, so that materials needed to construct the access road and the solid waste disposal site **would** require a gravel dredging operation.

Electric Power

The North Slope Borough Department of Public Utilities **is also** responsible for the generation and distribution of electric power in Point Lay. All power **in** the village is produced by generators driven with diesel engines. Three such generators with a combined **total** rated capacity of 400 **KW** are located in a power plant which also has room for additional units (see Table 34). The generators units are equipped so that they can be operated in parallel, **while** the present distribution system is a 4,160 volt overhead pole line installation. The system supplies power successively to users from "service **drops**" as the system radiates away from the generation facility. The main "power trunks" are three-phase with single-phase lateral feeders to individual loads.

Point Lay has experienced a rapid growth in electric power demand since the village was moved to the present **townsite**. Department of Public Utilities records show that peak power demand rose from 135 **KW** in the **1981/1982** fiscal year to 230 **KW** in the following fiscal year. The department's records **also** show that Point Lay power sales totaled 316,499 **KWH** during the six month period from July 1, **1982** through December 31, 1982. There were 45 meters installed in the village as of January **1983**. Further **additions** to Point Lay's complement of housing and other facilities **will** necessitate a **parallel** expansion of the village's power generation and distribution system. A shortage of well trained operators has been a persistent **problem** common to all the smaller North Slope villages. Another problem arises from the fact that the **fuel** storage tanks now in **place** to **supply** the power **plant** do not

TABLE 34
 FIRM AND PEAK GENERATING CAPACITIES
 POINT LAY
 OCTOBER 1982

<u>Unit No.</u>	<u>Prime Mover</u>		<u>Nameplate Capacity (KW)</u>	<u>Generator Unit</u>		<u>Hours Operated a/</u>
	<u>Make</u>	<u>Horse-power</u>		<u>Make</u>	<u>Voltage</u>	
1	CAT	135	90	CAT	480	736
2	CAT	320	155	CAT	480	1,170
5	CAT	320	155	CAT	480	1,830
<u>TOTAL</u>			<u>400</u>			

a/ Per North Slope Borough Department of Public Utilities Village Operations Manager, October 26, 1982.

Source: North Slope Borough Department of Public Utilities.

have sufficient capacity to cover the power plant's current annual consumption of fuel oil.

Fuel Storage

Fuel oil is normally shipped to Point Lay by ocean barge during the short summer season when the Chukchi Sea is ice-free. **Lighterage** barges are used to transfer the **fuel** from the **large** barge to tanks located on the barrier spit or in the present **townsite**. The deliveries to the village itself are hampered by shallow waters at the entry to and within **Kasegaluk** Lagoon. Air deliveries of **fuel** by aircraft are possible in mid-winter only if an ice strip is constructed on the lagoon. The **DEW** Line station airstrip is too short to accommodate fully **loaded** large aircraft but it can **be** used, if necessary, to bring in smaller **loads**. The cost of delivering fuel by air **is** much higher than freight charges for barge deliveries.

While delivery of **fuel** to the storage tanks on the barrier spit can be accomplished more easily than to tanks at the present village on the mainland, the transfer of the **fuel** from the spit to Point Lay can be accomplished only in winter when the **lagoon** ice is strong enough to support a tank mounted truck.

Table 35 recaps the scattering of **fuel** storage tanks in the Point Lay area and **also** provides estimates of **fuel** consumption. The most critical tankage **shortage** is that for the power plant, the 84,000 **gallon** storage capacity of which is already too **small** to meet current power **plant**

TABLE 35
DIESEL FUEL STORAGE CAPACITY AND USAGE
POINT LAY
1983

(gallons)

<u>Major User or Distributor</u>	<u>Storage Capacity</u>	<u>Estimated 1981/1982 Usage</u>	<u>Projected 1982/1983 Usage</u>
North Slope Borough Department of Public Utilities	84,000	60,000	85,000
North Slope Borough School District	32,000 <u>a/</u> 167,000 <u>b/</u> (60,000) <u>c/</u>	25,000	60,000
North Slope Borough Department of Public Works	(60,000) <u>c/</u>	20,000	30,000 <u>e/</u>
North Slope Borough Fire Department	7,000	..	3,500 <u>f/</u>
Point Lay Community Store	(60,000) <u>d/</u>	50,000	55,000
<u>TOTAL</u>			
Point Lay	<u>290,000</u>	<u>155,000</u>	<u>233,500</u>
Barrier Spit	(180,000)		

- a/ Present school.
- b/ New Cully School complex.
- c/ Tanks available on barrier spit.
- d/ Tank on barrier spit at old village site.
- e/ Presumes use of Department of Public Works heavy equipment to haul gravel for CIP construction projects.
- f/ Initial one-half year's consumption.

Sources: Cully School
North Slope Borough Department of Public Works
North Slope Borough Department of Public Utilities
MMCW Architects/Engineers

consumption. In addition, there is no **large**, safe storage facility for gasoline in Point Lay. Finally, the village **store** must shuttle **all** the **fuel** which it **sells** to private consumers across the lagoon, an inconvenient and expensive operation.

COMMUNICATIONS

Telephone services in Point Lay and other **small** North Slope villages are provided by the Arctic Slope Telephone Associated **Co-op**, Inc. (**ASTAC**), a non-profit cooperative corporation. Seed money for the organization of the cooperative and for the preliminary work needed to obtain a certificate of convenience and necessity from the Alaska **Public** Utilities Commission was provided by the Arctic Slope Regional Corporation. Once the certificate was obtained, loans for **plant** acquisition and installation were obtained from the U.S. Rural Electrification Administration. The Point Lay building housing the **switchgear** was **built by** the North Slope Borough and is leased to **ASTAC** which owns the **switchgear**, telephone **cable** and other system support equipment. **Alascom** provides the satellite service linking Point Lay with in-State and out-of-State long distance connections.

The provision of **local** dial telephone service was a **major** advance over the previous bush telephone system. **ASTAC** reported that Point Lay had a **total** of **36** residential and **16** business telephone subscribers in February 1983.

MAI NWRI GHT

Introduction

Wainwright is named after the first lieutenant and navigator of the HMS Blossom, a British vessel which visited the north coast of Alaska in 1826 in search of the Northwest Passage. The community is located on the **Chukchi** Sea coast **about 3** miles northeast of the mouth of the Kuk River. In relation to other villages in the region, **Wainwright** is around 100 air miles southwest of Barrow and approximately the same distance northeast of Point Lay. **Wainwright's** closest neighbor is **Atqasuk**, about 80 miles to the northeast.

Many people in **Wainwright** today trace their heritage to the area **along** the coast from Point Lay to Peard Bay and along the drainages of the Utukok and Kuk Rivers. The present town of **Wainwright** has existed since shortly after the turn of this century, a development which followed construction of a school here. Except for reindeer herding, most people in this community lived a basic subsistence lifestyle through the early 1970's, although cash became increasingly important. Today, subsistence activities remain a major factor in the lives of **Wainwright** residents. However, the opportunities -for wage paying jobs--have greatly increased during the past ten years, mainly a result of the incorporation of the North Slope Borough and the subsequent Borough capital improvements program.

Much of the information on **Wainwright** contained in the following pages was collected by Alaska Consultants, **Inc.** for the North **Slope** Borough and was published in the June 1983 report entitled "Background for Planning: City of **Wainwright.**" That information was supplemented by fieldwork conducted specifically for this project during the summer of 1983 and by observations from ongoing work in this village being conducted for the North Slope Borough. Information on the subsistence economy and subsistence-land use for **Wainwright** has recently been compiled by Nelson (1982) and the John Muir Institute (1983). Rather than duplicating those efforts, their major findings have instead been summarized for the purposes of this study.

Population

PAST POPULATION TRENDS

According to the U.S. Census, **Wainwright's** population grew rapidly from the time it was established as a permanent community in 1904 through 1939 (see Table 36). Despite the fact that **Wainwright** was not generally considered to be a good location for whaling, the presence of a school plus its convenience for harvesting of other subsistence resources, the availability of coal and reindeer herding activities served to attract people here from the surrounding region.

Between 1939 and 1950, however, **Wainwright** lost a third of its people, mostly because of out-migration. The Navy's exploration program in the then Naval Petroleum Reserve No. 4 between 1944 and 1953 resulted in the

TABLE 36
 POPULATION TRENDS
WAINWRIGHT
1920 - 1983

<u>Year</u>	<u>Population</u>	<u>Percent Change</u>
1920	99	
1929	197	99.0
1939	341	73.1
1950	227	-33.4
1960	253	11.5
1970	315	24.5
1980	405	28.6
1983 a/	483	19.3

a/ 1983 population based on a July 1983 count by the North Slope Borough.

Sources: U. S. Bureau of the Census.
 North Slope Borough.

establishment of a large camp at Barrow and the **hiring** of as many as **125** Eskimos from Barrow and those who had moved to Barrow from villages such as **Wainwright**. In 1939, **Wainwright** and Barrow were approximately the same size. However, Barrow's population increased by 162 percent between **1939** and **1950** and that community has remained the dominant population center on the North Slope ever since.

Between **1950** and 1960, **Wainwright** experienced very **little** growth. Construction of the **DEW** Line system took place during the 1950's, including the **LIZ-3** station location 5 miles east of **Wainwright**. Since 1960, however, Wainwright has experienced faster rates of population growth, rates which have further accelerated since **1980**. In the 1960's, most of this growth is believed to have been the result of natural increase and a **decline** in rates of **outmigration** to other communities. Increased employment opportunities following passage of the Alaska Native Claims Settlement Act and formation of the North Slope Borough appear to be the main reason for community growth during the 1970's. A **July 1983** population count conducted by the North Slope Borough found 483 **local** residents, representing a 19.3 percent increase since 1980. This rapid growth can be directly tied to an upswing in Borough capital improvements program construction activities in the village.

POPULATION COMPOSITION

The outstanding feature of **Wainwright's** population is that this is a predominantly Eskimo community. According to the 1980 Census, **91.9** percent of **Wainwright's** population was Alaska Native. Nevertheless, the

proportion of non-Natives rose significantly between 1970 and 1980, due mainly to the addition of a local high school program and the provision of other specialized Borough services.

The continuing influence of strong family and other ties among today's **Wainwright** residents is reflected in the stability of the community's population. According to the 1980 North Slope Borough housing survey, close to 85 percent of the community's Alaska Native heads of household had lived here since before 1960 (see Table 37).

A review of the age and sex characteristics of **Wainwright's** population was undertaken, based on information collected by Alaska Consultants, Inc. as part of a Boroughwide housing survey conducted in **Wainwright** in April 1980 (see Figure 19 and Table 38). This survey found that **Wainwright's overall** population was younger than that of any other village in the region except for Point Hope. The median age of males in **Wainwright** was found to be 23.0 and that of females was **21.2**. When non-Natives were excluded, the median age of the population (22.9 for males and 20.7 for females) was marginally lower but was slightly above Alaska Native medians for all North Slope Borough villages (22.6 for males and 19.8 for females) at that time. Nevertheless, the median ages of male and female **Wainwright** residents were well below those of the State (26.1 for males and 26.3 for females) and the country as a whole (28.8 for males and 31.3 for females) in 1980.

A closer look at the age breakdown of **Wainwright's** population in 1980 indicates that there was a high proportion of children in the very young

TABLE 37
 LENGTH OF RESIDENCE OF HEADS OF HOUSEHOLD a/ b/
 WAINWRIGHT
 APRIL 1980

<u>Length of Residence</u>	<u>Race</u>		<u>Total</u>
	Alaska Native	Non-Native	
1975-1980	3	9	12
1970-1974	3	1	4
1960-1969	4	0	4
Before 1960	69	1	70
No Response	3	0	3
<u>TOTAL</u>	<u>82</u>	<u>11</u>	<u>93</u>

a/ For purposes of the housing survey, the adult Alaska Native in combination Alaska Native/non-Native households was always designated head of household.

b/ Includes one unit used as group quarters.

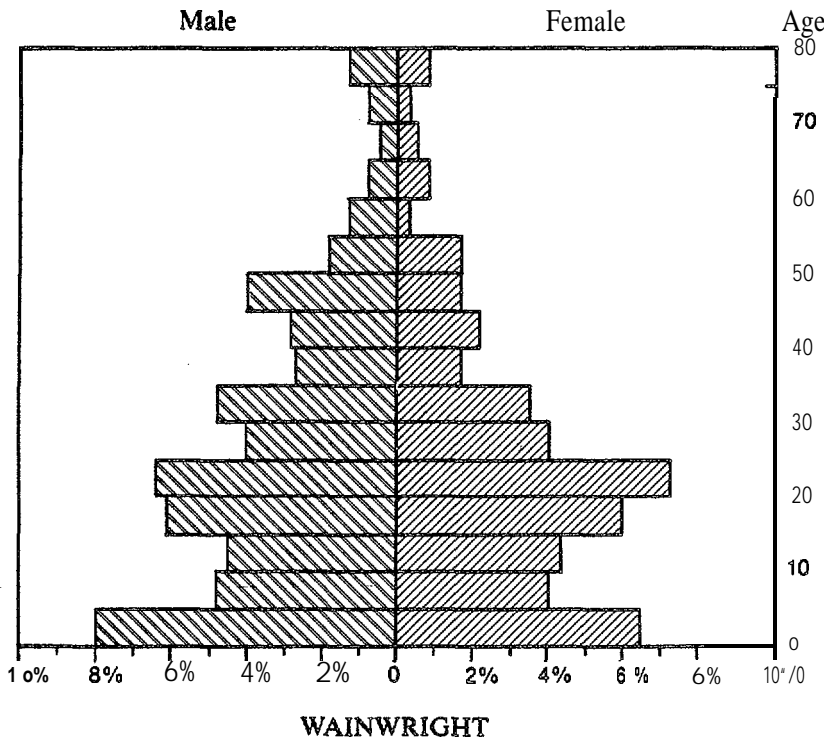
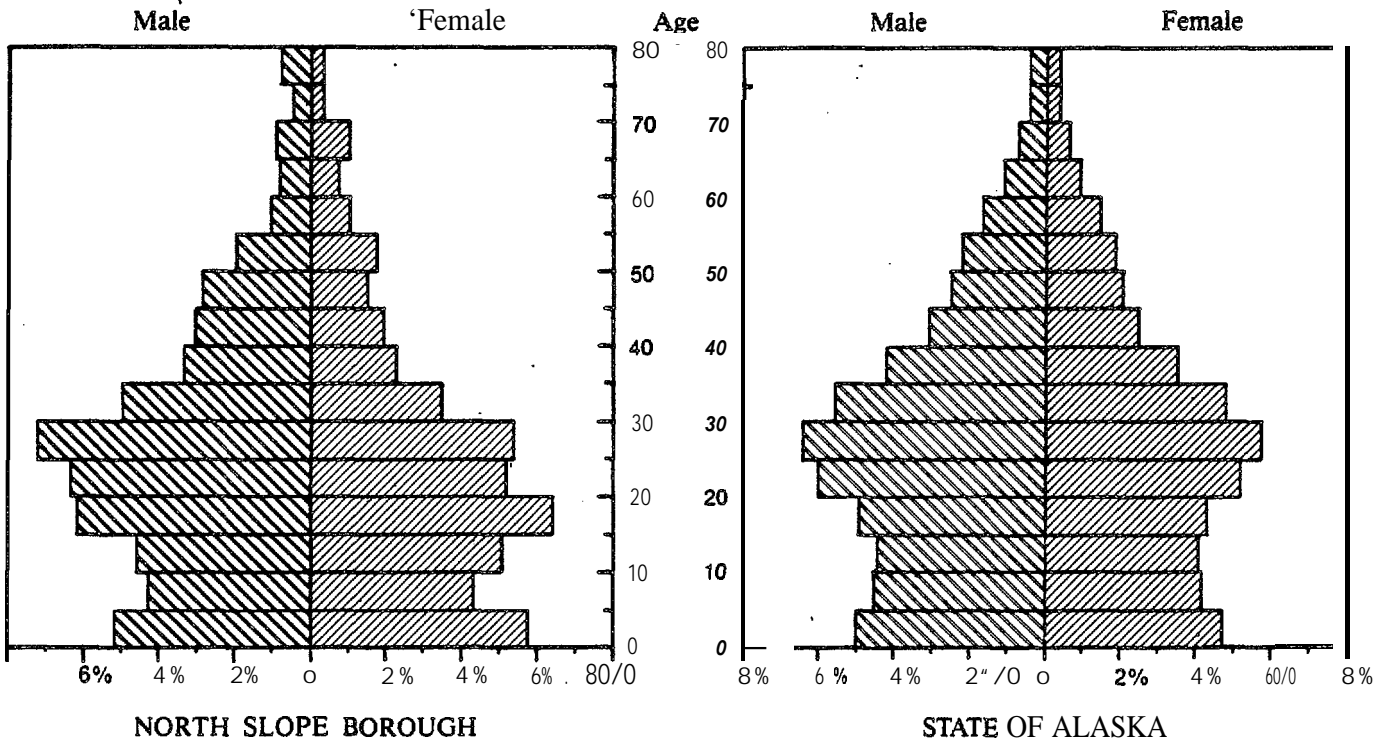
Source: Alaska Consultants, Inc. North Slope Borough Housing Survey, prepared for the North Slope Borough, Public Works Department. Anchorage. September 1980.

TABLE 38
 POPULATION COMPOSITION BY RACE AND AGE a/
WAINWRIGHT
 1980

<u>Age</u>	<u>Native</u>			<u>Non-Native</u>			<u>Total</u>		
	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>	<u>Male</u>	<u>Female</u>	<u>Total</u>
0 - 4	28	23	51	2	1	3	30	24	54
5 - 9	14	14	28	4	1	5	18	15	33
10 - 14	16	14	30	1	2	3	17	16	33
15 - 19	23	22	45	0	0	0	23	22	45
20 - 24	23	27	50	1	0	1	24	27	51
25 - 29	14	14	28	1	1	2	15	15	30
30 - 34	14	6	20	4	7	11	18	13	31
35 - 39	7	5	12	3	1	4	10	6	16
40 - 44	10	7	17	1	1	2	11	8	19
45 - 49	13	6	19	2	0	2	15	6	21
50 - 54	7	6	13	0	0	0	7	6	13
55 - 59	5	1	6	0	0	0	5	1	6
60 - 64	3	3	6	0	0	0	3	3	6
65 - 69	2	2	4	0	0	0	2	2	4
70 - 74	3	1	4	0	0	0	3	1	4
Over 74	5	3	8	0	0	0	5	3	8
<u>TOTAL</u>	<u>187</u>	<u>154</u>	341	<u>19</u>	<u>14</u>	<u>33</u>	<u>206</u>	168	374
<u>Median Age</u>	<u>22.9</u>	<u>20.7</u>	<u>21.7</u>	<u>31.5</u>	<u>32.0</u>	<u>31.8</u>	<u>23.3</u>	<u>21.2</u>	<u>22.2</u>

a/ Figures exclude a total of 21 persons (10 Alaska Native males, 7 Alaska Native females, 4 non-Native males) for whom no age information was provided. Thus, a total of 395 persons in Wainwright was surveyed by Alaska Consultants, Inc.

Source: Alaska Consultants, Inc. North Slope Borough Housing Survey, prepared for North Slope Borough, Public Works Department. Anchorage. September 1980.



COMPOSITION OF POPULATION
1980

sources: U.S. Census
North Slope Borough Housing Survey, Alaska Consultants, Inc., 1980

Figure 19

age brackets. Children under the age of 5 accounted for 14.4 percent of the community's population in 1980, a higher proportion than any other North Slope village except Anaktuvuk Pass and Point Hope. A July 1982 village census found that this age range accounted for an even higher 16.4 percent of the community's population.

The 1980 housing survey also found a high proportion of **Wainwright's** population to be in the 15 to 19 (12 percent) and the 20 to 24 (13.6 percent) age ranges. The **July** 1982 Borough census found that this was still true (11.8 percent in the 15 to 19 age group and 12.6 percent in the 20 to 24 range) although to a slightly **lesser** degree. The extent to which people in these age groups choose to remain in **Wainwright** will determine the community's future growth. In turn, these decisions will be influenced by the availability of jobs in the village.

According to the 1980 housing survey, males in **Wainwright** outnumbered females by a 55.1 to 44.9 percent margin. Although the disparity between the sexes was most noticeable among non-Natives, it was also true of **Wainwright's Alaska** Native population. While **Wainwright's** male to female ratio was similar to that of the State (53 percent males to 47 percent females) in **1980**, it was unlike that of the nation as a whole where females outnumber **males**.

Not surprisingly, given the high proportion of **Wainwright's** population which is in the younger age groups, the community has a large number of persons per household when compared with State and national norms. The **1980** housing survey found the average household size in **Wainwright** to be

4.2 persons, with Alaska Native households in the community a slightly larger 4.4 persons. This is well above the 2.93 and 2.75 persons per household for the State and the nation as recorded by the 1980 Census.

SOCIAL INTERACTION

According to the North Slope Borough housing survey, 37 out of the 395 people (9.4 percent) then living in **Wainwright** were non-Native. This was close to 1980 Census figures, which indicated that 9.2 percent of the village's population was non-Native.

Wainwright appears to be the most "Eskimo" of all North Slope villages. The only longer term white residents in the village in the fall of 1983 were the school principal and his family. In addition, unlike Point Hope, **Atkasuk** or Barrow, there are currently no non-Inupiat persons on the **Wainwright** city council. Essentially all whites presently living in the village are there for employment-related reasons, with the major employers of non-Natives in permanent positions being the North Slope Borough School District and the North Slope Borough Department of Public Safety. From time to time, the Assembly of **God** has a resident white minister and his family based in the village and the **Olgoonik** Corporation's construction arm also retains outside expertise. Finally, there have been non-Native women living in the village who are married to local Inupiat, but this number also fluctuates.

During 1982 and 1983, construction of the new elementary school, a new airport and road projects resulted in a significant influx of non-Native

-
workers into the village. This influx appeared to create a considerable
- amount of resentment among local residents, resentment which was openly
expressed at a city council meeting attended by Alaska Consultants, Inc.
in 1982. However, since **Olgoonik** and the prime contractor on the school
- project have subsequently participated in joint ventures, some of this
resentment may have been overcome.

In an effort to explore this issue further, people interviewed as part
of the 1983 fieldwork for this study were asked if they felt that there
were any jobs in **Wainwright** held by whites which should be held by
Inupiats. Of the 7 persons who expressed an opinion on this subject,
only one gave an unqualified "yes" although another three felt that this
was true for construction jobs. When asked why they felt that **Inupiat**s
had not been hired for such jobs, three of the four persons indicated
that the "bosses" believed that **Inupiat**s were less reliable in terms of
punctuality.

In summary, there was little overt resentment of non-Natives noted in
Wainwright except in the case of transient construction workers. On the
other hand, resident non-Natives appear to exert very little political
influence in this community.

MIGRATION

- Since 1980, there has obviously been some in-migration into **Wainwright**
as the community's 19.3 percent growth rate between 1980 and 1983 is
well in excess of what could be expected from natural increase. As in

the case of Point Hope, much of the increase at **Wainwright** is believed to be due to the return of former village residents in response to increases in local construction employment opportunities. Data collected by the John Muir Institute (1983) confirmed that there was a good deal of coming and going of **Inupiat**s between **Wainwright** and other villages for family and friendship reasons as well as employment.

The recency of this in-migration was confirmed by the 1980 North **Slope** Borough housing survey when one person in each household was asked how long he or she had lived in **Wainwright**. Slightly more than 77 percent indicated that they had lived in the village at least since before 1960. Only 3 Alaska Natives (and 9 non-Natives) said they had moved to the village since 1975. While some people who said they had always lived in **Wainwright** may have left periodically, these answers did indicate that no major influx of "outside" **Inupiat**s was taking place at that time.

Since the duration of construction employment associated with the North **Slope** Borough capital improvements program is expected to be relatively short and since there is presently a lack of alternative employment in the village, **Wainwright** residents were asked about their mobility as part of the 1983 fieldwork. These questions were framed in terms of past or present employment on the Pipeline--and at **Prudhoe Bay/Deadhorse** and what such persons liked most and least about such experiences.

At the time of the 1983 fieldwork, there were reportedly 2 or 3 local **Wainwright** persons who were employed at Prudhoe Bay although none were interviewed for this study. Local residents reported that only a

handful of persons from **Wainwright** had worked on the Pipeline. The motives for working there were said to be financial, as they were in other villages. People interviewed indicated that they preferred to work in their own village so that they could be close to their families and able to participate more fully in subsistence activities. As long as there were jobs available in **Wainwright**, residents generally felt little incentive to seek employment elsewhere. However, given the temporary nature of construction jobs and the fact that most major facilities in the village will have been built within the next two years, local sentiments could very well change as the Borough's capital improvements program winds down.

RECENT TRENDS AND CHANGES

Wainwright's population rose by 19.3 percent between 1980 and 1983. As previously indicated, much of this growth is believed to have been derived from the in-migration of former village residents in response to increased opportunities for temporary construction employment associated with the North Slope Borough's ongoing capital improvements program. The construction arm of the **Olgoonik** Corporation, the **local** village corporation established under terms of the Alaska Native Claims Settlement Act, has participated in a number of these projects, including the new elementary school, the fire station and the new airport runway. The Borough's capital improvements program has also resulted in the addition of a smaller number of permanent jobs associated with the operation and maintenance of new Borough facilities.

Major Borough construction projects underway in **Wainwright** during the summer of 1983 included the elementary school and additions to the high school, a new health clinic, gravel dredging and construction of a new airport runway. An influx of transient white construction workers associated with these projects has been accommodated in construction camps in town. A dredge camp is located out of town at the dredge site. Aside from Borough projects, an **hotel** built and owned by **Olgoonik** was completed in the village during 1983.

Economy

Wainwright's beginnings as a modern community go back to 1904 when the first schoolhouse was constructed here but there were people living in the general area long before that time.

Early economic activity in **Wainwright** centered around reindeer. Concern by the Bureau of Education over dwindling Native food resources led to the introduction of reindeer herds at all schools and church missions in western and northwest Alaska. By 1918, **Wainwright** had three herds with a total of 2,300 reindeer. By 1924, there were four herds with about 8,000 head of reindeer and by 1934, locally owned herds included 22,000 animals. However, a **combination of overgrazing, changes from individual to corporate ownership of herds, and the introduction of open herding led** to a dramatic decline in the number of reindeer. The surviving animals mixed with migratory caribou herds and today there are no domesticated reindeer on the Arctic coast.

- Coal was another community economic asset. Most coal was stripped from the north bank of the Kuk River about 6 miles inland, although some was taken from the beach. It provided a relatively inexpensive means of heating homes; but fuel oil was seen as being more efficient and little coal is now used in the village.

- At the time of the 1939 Census, **Wainwright's** population was only slightly less than that of Barrow. However, largely because of the Navy's exploration program in Naval Petroleum Reserve No. 4 between 1944 and 1953, Barrow grew rapidly between 1939 and 1950. By contrast, **Wainwright's** population declined by a third during that same period. This is believed to be mainly because a number of **Wainwright** families moved to Barrow and elsewhere in search of wage paying jobs.

- Today, the North Slope Borough is the major source of employment and income in **Wainwright**, as it is in all villages in the Borough. Since its incorporation in 1972, the Borough has assumed responsibility for a wide range of local government services and has embarked on an ambitious capital improvements program. Together, these activities have led to the creation of a number of service and temporary construction jobs for village residents.

● Passage and implementation of the Alaska Native Claims Settlement Act (ANCSA) in 1971 has also had an impact on the local economy. This legislation, with its land and financial settlements, has provided additional economic leverage for village residents through the creation of village and regional profit corporations. In **Wainwright**, the local

village corporation is an active force in the community's non-government business activities.

COMPOSITION OF EMPLOYMENT

Employment statistics published by the Alaska Department of Labor cover the entire North Slope Borough, including Prudhoe Bay, and therefore do not provide meaningful statistics for individual communities. To understand local employment conditions in **Wainwright**, a special count of employment was taken in August **1982**.

The August 1982 employment count identified a total of 138.5 jobs in **Wainwright** on an annual average full-time basis (see Table 39). This figure included local residents who worked at the nearby LIZ-3 DEW Line station but excluded on-base personnel. The count of employment also included an annual average of **13.5** non-local persons working on construction-related jobs for non-local contractors in **Wainwright** during **1982**, principally associated with the new elementary school.

Over half of the jobs counted in **Wainwright** in 1982 (51.3 percent) were in government occupations. Except for **1.5** jobs associated with the post office and another 1.5 with the City of **Wainwright**, all government employment in the community (i.e. 68 jobs) were with the North Slope Borough in **1982**. The North Slope Borough School District was the major Borough employer with an annual average of **29.5** full-time employees, followed by the Borough's Public Works department which had an annual

TABLE 39
 AVERAGE ANNUAL FULL-TIME EMPLOYMENT a/
 WAINWRIGHT

<u>Industry Classification</u>	<u>Number</u>	<u>Percent of Total</u>
Agriculture, Forestry and Fishing	0.0	0.0
Mining	0.0	0.0
Contract Construction	40.5	29.2
Manufacturing	0.0	0.0
Transportation, Communications and Public Utilities	3.0	2.2
Trade	15.0	10.8
Finance, Insurance and Real Estate	4.0	2.9
Services	5.0	3.6
Government	71.0	51.3
Federal	(1.5)	(1.1)
State	(0.0)	(0.0)
Local	(69.5)	(50.2)
<u>TOTAL</u>	<u>138.5</u>	<u>100.0</u>

a/ Includes two local residents employed at the LIZ-3 DEW Line station but excludes all personnel stationed on-base.

Source: Alaska Consultants, Inc.

average of **24.5** employees here **in 1982**, including the dredging program which got underway during that year.

After government, the largest number of employees counted in **August 1982** was engaged in construction activities. **The** major employer in this group was **Olgoonik** Construction, a subsidiary of the **Olgoonik** Corporation. This company was engaged in joint ventures on several Borough capital improvement projects during 1982 and was also building an **hotel**.

Wainwright has a relatively large trade sector **for** a village of this size, employing an **annual** average of **15** persons during **1982**. The largest single employer was the **Wainwright** Cooperative Store, followed by the **Olgoonik** Corporation tank farm. Two other stores, one operated by the village corporation, **mostly** sold groceries. **A** fourth store specializes in sporting **goods**.

An **annual** average of 5 jobs was identified in the services sector at **Wainwright in 1982**. These jobs were associated with the **Olgoonik** Corporation garage, the Presbyterian church and operation of the **Blackstock** camp.

Four jobs in the finance, insurance and **real** estate sector were counted at **Wainwright** in 1982, all of them associated with the **Olgoonik** Corporation's central office.

The transportation, communications and public utilities sector accounted for 3 jobs here in 1982. Two local persons were employed at the nearby LIZ-3 DEW Line station and the remaining job was divided between two taxi operators.

There were no jobs in the agriculture, forestry and fishing, the mining or the manufacturing sectors in Wainwright in 1982. Furthermore, no Wainwright residents were working outside the village at Prudhoe Bay or other oil or gas-related sites in August 1982.

Like other North Slope Borough villages, the employment situation in Wainwright has changed dramatically during the past few years.

According to a survey by the Alaska State Housing Authority in 1970, there were not more than a dozen Eskimo people in town at that time who were steadily employed. A count of employment in Wainwright by Alaska Consultants, Inc. in 1977 identified a total of 57.5 jobs on an average annual basis, with 60 percent of these being in government occupations. The 1982 count represents a 141 percent increase in total employment over the 1977 figure.

UNEMPLOYMENT AND SEASONALITY OF EMPLOYMENT

There are no reliable statistics available which document rates of unemployment in Wainwright or any of the other North Slope villages. Figures published by the Alaska Department of Labor for the North Slope Borough include Prudhoe Bay where everyone is employed and where most

jobs in the region are located. As a result, conditions in the region's traditional villages are obscured.

Despite the lack of firm statistics, it appears that there is some unemployment or, at least, some under-employment in **Wainwright**. An August 1982 census sponsored by the North Slope Borough counted 275 persons in **Wainwright** between the ages of 18 and 65, including 140 males. When compared with the total of 138.5 full-time job equivalents (which includes some non-local construction personnel) counted here in **1982**, the gap between population and employment is especially noticeable. On the other hand, a significant proportion of **Wainwright** females is outside the labor force (i.e. they are not seeking work) and many **local** males are engaged in temporary construction activities rather than in full-time, year-round occupations.

A factor that must be taken into account in assessing the amount of unemployment and under-employment in **Wainwright** and other North Slope villages is the amount of time devoted to subsistence activities. Such activities are very important in the **lives** of **local** residents, but fit in **well** with temporary employment such as is provided by construction work.

Given the above **conditions**, unemployment in **Wainwright** is probably not nearly as severe as suggested by a comparison of population and employment statistics. A key factor in **local** employment **levels** in recent years has been the North **Slope** Borough which is the source not only of steady jobs associated with the provision of services such as

education and utilities but also of temporary construction employment associated with its ongoing capital improvements program. Once the major capital improvement projects at **Wainwright** have been built, however, the opportunities for temporary or seasonal construction employment in the village will be greatly reduced. At that time, local unemployment levels could be expected to rise unless other economic opportunities are present.

Weather conditions can cause seasonal variations in local temporary construction employment. However, the main variations are related to the number and type of capital improvement projects being constructed locally. For example, uneven scheduling of construction work from year to year can result in unemployment or it may necessitate the importing of labor for jobs which otherwise could have been filled by local residents.

INCOME LEVELS

The 1980 Census found the median household income for the North Slope Borough to be \$31,378. The median household income Statewide in 1980 was \$25,421, while the mean household income for Alaska Natives was \$21,865.

A comprehensive housing survey conducted for the North Slope Borough in 1980 obtained income information for individual communities. In **Wainwright**, this information was based on a sample of 73 households. It

found the median household income in **Wainwright** to be \$23,958, with that for **local** Alaska Native households a slightly lower \$23,333.

Although household income levels at **Wainwright** in **1980** were below the Statewide median, there is ample evidence which demonstrates that incomes here have risen dramatically over the last ten to twelve years. In 1970, the Alaska State Housing Authority reported that less than 5 of the 50 Alaska Native families then **living** in **Wainwright** had incomes of over \$7,000. A **1974** survey of 51 **Wainwright** households by Dupere and Associates indicated that the median family income in the community had risen to \$5,833 in 1973. More recently, a 1977 survey by Alaska Consultants, Inc. found that the median household income in this community was \$10,000 in 1976.

Incomes in **Wainwright** in **1976** were relatively low because there were a temporary shutdown of most Borough capital improvement projects at that **time**. Nevertheless, the **1979** median household income figure derived from the **1980** North Slope Borough housing survey was more than double the **1976** figure, indicating gains in income beyond what could be explained by inflation. Although there are no statistics to document it, income levels in **Wainwright** in 1983 were doubtless higher than they were in **1980**, **mainly** because of the currently **high** level of construction activity in the village.

While household income levels at **Wainwright** have risen to a point where they do not appear to be much lower than those recorded Statewide by the U.S. Census, the spending power of incomes in remote areas such as

Wainwright is greatly diminished by high living costs. **Wainwright** is more easily accessible by water than most villages in the region. Nevertheless, a high proportion of freight into **Wainwright** is brought in by air, a situation which adds significantly to costs. As a result, store-bought food prices here are probably about double those in Anchorage and subsistence hunting and fishing activities remain an economic necessity for most local residents.

Housing costs in **Wainwright**, especially those for utilities, are also extremely high and serve to further reduce the spending power of household incomes. Heating oil cost \$2.45 per gallon here in 1983, or \$134.75 for a 55-gallon drum. The **average home Wainwright** reportedly uses between 4 and 5 drums per month during the winter months.

- Including delivery costs, the average family thus spends close to \$600 per month for much of the year just to heat its home.

ECONOMIC GROWTH PROSPECTS

Like other villages on the North Slope except for Barrow, **Wainwright** has a relatively simple economic base. The dominant economic force in the community is government spending, especially by the North Slope Borough. Other sources of economic strength include the **activities** of the

- **Olgoonik** Corporation (the local village corporation established under terms of the Alaska Native Claims Settlement Act) and, to a limited extent, the nearby LIZ-3 DEW Line station which employs a couple of local residents.

As in all North Slope villages, the major employer of Wainwright residents is the North Slope Borough. In 1982, direct Borough employment accounted for 49.1 percent of all full-time jobs in the community. This figure is very conservative as Borough-funded private construction activities accounted for a large share of the remaining jobs in the village. When those construction jobs are added, the North Slope Borough provided in excess of 70 percent of all jobs in Wainwright in 1982.

Borough employment in Wainwright and the other North Slope villages can be divided into two types. The first is jobs associated with the maintenance and operation of Borough facilities such as the schools, the health clinic, the public safety building and utilities systems. The second is jobs associated with the construction of capital improvement projects. It is important to recognize the difference between these two types of Borough jobs. Jobs associated with operation and maintenance are relatively permanent, while construction jobs are temporary and their number fluctuates from year to year.

Construction activities associated with the North Slope Borough's capital improvements program are currently at a high level in Wainwright. Major construction projects here include the new elementary school and modifications to the high school, a health clinic, a new airport runway and a dredging program. New projects scheduled to be added in the near future include a warehouse/maintenance building for use by the North Slope Borough School District and the Public Utilities department, a very large warm storage/maintenance building for Borough

mobile equipment, 14 new housing units, expansion of the water treatment plant, a new power plant and the addition of water tankage facilities. These and other scheduled Borough capital improvement projects should keep local construction employment levels high for the next few years. However, in the longer term, the **level** of construction employment generated by the North Slope Borough can be expected to taper off as community needs are met. Unless other economic activities can pick up the "slack", some decline in community growth can **be expected** at that time.

The **Olgoonik** Corporation received a cash distribution and rights to select the surface estate totaling 159,825 acres of land in the general vicinity of **Wainwright** under terms of the Alaska Native Claims Settlement Act. The corporation has become a major economic force in the village. Its activities currently center around ownership of a village store, the local fuel dealership, a garage and a construction company. **Olgoonik** Construction has been involved in a number of joint ventures on Borough construction projects in the village and has also been engaged in independent ventures such as construction of the new hotel during 1982 and 1983. In addition, the firm has participated in construction projects at Point Lay and **Kuparuk**. The **Olgoonik** Corporation is also involved in the Pingo Corporation, a construction management company made up of several North Slope villages and which operates primarily in the Prudhoe Bay area.

Two **Wainwright** residents presently work at **the** LIZ-3 DEW Line station. This facility had a total of **only** 15 employees in 1982. Thus, the

potential for additional employment opportunities for **local** residents here **is** very limited. Furthermore, the **lack** of a road connecting the **DEW** Line station with **Wainwright** makes **ready** access between the two entities difficult.

According to city officials, no **local** residents were employed in oil and gas exploration or development activities in the **Prudhoe** Bay, National Petroleum Reserve-Alaska (**NPR-A**) or other areas-during 1982. However, 2 or 3 persons from the village were reportedly working at **Prudhoe** Bay at the time of the **1983** fieldwork and more may do so in the future. The **U.S.** Bureau of Land Management held three oil and gas lease **sales** in the Reserve between January 1982 and **July 1983**. Additional offerings will be held in **July** through 1987, by which time most acreage of possible industry interest **will** have been made available. The **1983** sale did not include any tracts in the immediate vicinity of **Wainwright**, but this may not be true of future sales.

Offshore oil and gas exploration activities could also have an impact on **Wainwright** in the future. The federal government presently has two **sales** scheduled in the Chukchi Sea area, the first in February 1985 and a second in February **1987**.

The extent to which oil and gas **exp**'oration and/or development activities impact on **Wainwright** depends **on** the location of tracts to **be** leased, the extent of industry interest and the success of exploration efforts. These are all presently "unknowns" but should such activities take place in the vicinity of **Wainwright**, the community could be

impacted. Exploration companies might wish to use **Wainwright's** airport facilities, as has been the case at **Kaktovik**. However, job opportunities for local residents during the exploration phase are seen as being very limited since much of this work is highly specialized.

While oil and gas-related activities have not been major employers of **Wainwright** residents in the past, this may change in the future. Once the North Slope Borough capital improvement projects scheduled for **Wainwright** have been largely built, opportunities for jobs in the community are likely to decline. At that time, local people may decide to take oil and gas-related jobs outside their village in order to support the increasing cash requirements to maintain their homes in **Wainwright**. Such jobs have the advantage of combining long work hours with generous leave allowances and could provide time for workers to continue to pursue traditional subsistence activities.

SUBSISTENCE ECONOMY

Because of two recent **Wainwright** studies (**John Muir Institute 1983** and **Nelson 1981**), no additional subsistence field data were collected in this village. These sources demonstrate that the subsistence economy of **Wainwright** is similar to other villages of the study area. As Nelson (1981 :v-vi) states:

"Life in **Wainwright** today is patterned around a mixed subsistence and cash economy. Of the two, the subsistence base is more predictable and stable over the long run. Jobs come and go, but hunting is always there, so long as the integrity of the environment is not disturbed. In recent years the village has seen a major increase of cash and employment opportunities, yet people have maintained fairly intense subsistence activities. Many

individuals have changed the scheduling of these pursuits, but very few (if any) have given them up."

Wainwright hunters have adopted the same technologically advanced hunting equipment as the other communities of the study area, and the effects of this equipment on harvest areas, scheduling and hunting pressure are discussed by Nelson. **Wainwright** bowhead whale hunters are the only whale hunters on the North Slope who usually use aluminum boats for spring whaling. A few skin boats are still used in the early part of the whaling season when more ice is present. Later in the season when the leads are wide and bowheads travel further from shore, **Wainwright** hunters have had good success searching for and pursuing whales at higher speeds in their power-driven aluminum skiffs. For a complete discussion of bowhead whaling in **Wainwright** see Nelson (1981: 81-98).

That **Wainwright** residents have enjoyed the same increase in local employment opportunities as the other villages of the study area is demonstrated by a 141 percent jump in local employment between 1977 and 1982. Approximately half of these jobs are provided directly by the North Slope Borough and the subsistence leave policy described in the regional overview of the subsistence economy is therefore applicable. As is the case in the other villages of the study area, contract construction, almost all of it sponsored by the North Slope Borough, is the other major source of local employment. Typically, construction employment is temporary and allows village residents ample time for subsistence pursuits.

Because of the high levels of local employment, **Wainwright** hunters, like all other subsistence users of the study area, are presently able to afford the relatively high costs associated with the purchase, maintenance and operation of new equipment. Although harvesting a given amount of meat is more costly than **it** was in the past, present harvest techniques are more time and energy efficient. Consequently, the mixed economy presently active in **Wainwright** allows local residents to both work for cash and harvest the desired amount of subsistence foods.

Political Organization

FORMAL POLITICAL ORGANIZATION

There are two primary political or quasi-political organizations in **Wainwright**. These are the City of **Wainwright** and the **Olgoonik** Corporation, the local village corporation established under terms of the Alaska Native Claims Settlement Act. Although the latter is not a public body, its board is elected by corporate stockholders and the corporation is in fact a potent political force in the community. In addition, the North Slope Borough has an appointed village coordinator in **Wainwright**.

North Slope Borough

The North **Slope** Borough has an appointed village coordinator in each North Slope village except Barrow whose job is to maintain a liaison between the village and the Borough mayor's office. The effectiveness

of the coordinators **varies** widely, depending on their position **in the** village and the diligence of particular individuals. Village coordinators work out of their homes since no office space is provided for them **in** any Borough facilities. **The** coordinator in **Wainwright** has held his position since it was first established.

City of Wainwright

The City of **Wainwright** was first incorporated as a fourth class city under Alaska law in **1962** and was reclassified as a second class city in **1972**. Funds for the city's operation are derived from a **3** percent local sales tax, State shared revenue, land purchases by the North Slope Borough and by occasional State or federal grants.

Wainwright's corporate **limits** take in a semi-circle extending from Point Collie in an arc to a point south of the **Sinaruruk** River. The exact acreage which these limits encompass is unknown because the city's boundary description is so vague. Consistent with State **law** for second class cities, **Wainwright** has a 7-member city council. However, while second **class** cities are normally empowered to undertake a wide range of **local** government functions, **Wainwright** has few municipal powers since most have been assumed by the **North** Slope Borough on an areawide basis. Despite this limitation, the city represents the **people of Wainwright** and is the group which makes **local** desires for community improvements known to the North Slope Borough.

The City of **Wainwright** and the **Olgoonik** Corporation originally reached a 14(c)(3) agreement (i.e. lands to be conveyed to eligible municipalities under the terms of Section 14(c)(3) of the Alaska Native Claims Settlement Act, as amended) as far back as August **1977**. Under the original agreement, the **Olgoonik** Corporation transferred title to most lands outside the **Wainwright** townsite which were within the municipality's corporate limits. However, the original agreement was over-simplified and the city and the corporation were **re-working** the details of the agreement during September 1983. This was apparently proceeding with few problems.

The city government maintains a permanent office which is staffed by a full-time city clerk, with the mayor normally working at the office in the afternoons. Council meetings are held in the same building.

When asked if the city had developed any formal position on offshore oil and gas development, the city indicated that it had not yet done so although the subject has been discussed. While the city indicated that it was not necessarily opposed to offshore oil and gas development, it expressed concern over possible impacts on subsistence. A need for detailed studies was also mentioned.

Olgoonik Corporation

The **Olgoonik** Corporation was created under terms of the Alaska Native Claims Settlement Act and is the major land owner in the **Wainwright**

area. Its stockholders are persons who enrolled as **Wainwright** residents and this, its landholdings, its ownership of a store, an **hotel**, a construction company and the **local fuel** dealership (aside from its activities outside the village), make it a strong political as well as economic force in the community.

Olgoonik Construction, the construction arm of the **Olgoonik** Corporation, has been successful in obtaining Borough contracts in the village, often as part of a joint venture, for the past several **years**. Current projects in which this corporation is involved include the new elementary **school** and modifications **to** the high school, plus construction of a new airport runway. The corporation has also been involved in projects outside **Wainwright**, including the Point Lay fire station and **Kuparuk**.

The **Olgoonik** Corporation was asked if **it** had taken any official position in relation to offshore oil and gas development. According to corporation representatives, it had not but similar concerns to those voiced by the city were expressed.

INFORMAL POLITICAL ORGANIZATION

Aside from the City of **Wainwright** and the **Olgoonik** Corporation and its construction arm, there are a number of other groups in **Wainwright** which have some political significance. These include the Presbyterian and Assembly of God churches, the National Guard, the **local** Alaska Eskimo

Whaling Commission, the Mothers' Club, the Recreation Committee, the Motor Musers and the search and rescue/firefighting group.

The dominant religious group at **Wainwright** is the Presbyterian church.

- The minister is an **Inupiat** who has lived in **Wainwright** for many years and who is well respected in the village. Church services are held "twice a week and, according to local residents, attendance has increased in recent years. The Assembly of God has maintained a presence in **Wainwright** for many years and also holds twice weekly services but it has a much smaller congregation.

The National Guard has long been an important organization in this and several other North Slope villages, with local Guard leaders being accorded a certain amount of respect. According to the Alaska Department of Military Affairs, there is an authorization for 32 guardsmen in **Wainwright**. As in Point Hope, people interviewed as part of the 1983 fieldwork felt that the Guard had declined in importance in recent years, presumably for the same reasons.

- The local Alaska Eskimo Whaling Commission **also** exercises political influence in **Wainwright**. All whaling captains in the village belong to this group and one representative from **Wainwright** also serves on the **full** Commission. According to local sources, the **Wainwright** whaling captains at one time filed a **formal** complaint against seismic testing in the **Chukchi** Sea. As in other North Slope whaling villages, the importance of whaling in the subsistence economy gives the local Commission a certain amount of influence and status. Although that

influence and status do not necessarily transfer to Individuals, being a whaling captain is certainly a political asset.

Search and rescue has long been an important organization in **Wainwright** and one which attaches a good deal of prestige to **its** members. Search and rescue functions have recently been assumed by the North Slope Borough and search and rescue and **firefighting** volunteers are now one and the same group. Despite the changes in organization, search and **rescue/firefighting** remains a volunteer group and its members continue to be accorded status. (See John Muir Institute 1983: 257-263).

The Mothers' Club was started in 1982 by a **local** resident after attending a Statewide conference for Alaska Native women. This group **holds** bingos for a variety of social purposes **such** as helping with **plane** fares for persons accompanying relatives to hospital, helping with funeral costs for families who cannot afford them, contributing food and supplies to whaling crews, and helping people with their fuel costs if needed. Although the Mothers' **Club** is relatively new in **Wainwright** (the organization had existed in the community in the past but not in recent years), it appears to be a prestigious group.

The Recreation Committee-and the **Motor Musers both** raise funds through bingo games. The Recreation Committee sponsors games and other events, usually on special occasions such as July 4th, while the Motor Musers is a social service **club** organized around **snowmobiling**. According to the John Muir Institute (1983), the latter group organizes races and

provides food to churches at Thanksgiving and Christmas sharing ceremonies.

Land Use and Housing

LAND STATUS

City of Wainwright

Wainwright's corporate limits cannot be precisely described because of the vague description which accompanied the original petition to the State for incorporation of the **city**. The application for incorporation was approved in December 1962 and no clarification of the municipal boundaries has since been made. However, the original townsite survey is clearly within **Wainwright's** corporate limits.

The Wainwright townsite was patented to the Townsite Trustee in the U.S. Bureau of Land Management in 1976. At that time, **Wainwright** residents were able to apply for title to land on which their structures were located. Many chose to hold their land in a restricted status. This is an option available to Alaska Natives when they receive title to land in a Native **Townsite**. Restricted title retains some of the trust relationship between the federal government and Native citizens. Title conditions limit the Native owner's ability to sell or transfer his property. On the other hand, land **held** under this type of ownership is not subject to taxation, nor can zoning, housing, building or other regulatory codes be enforced. In 1983, 75 **lots** totaling 25 acres in

area were held in a restricted status in **Wainwright**. Many of the older homes in the community are on restricted **land**.

The remaining **lands** in the **Wainwright townsite** have been deeded in an unrestricted status to individuals, churches and government agencies. **Negotiations** are currently being finalized for transferring ownership of the **airport** tract within the **Wainwright** townsite from the State to the North **Slope** Borough and the **Olgoonik** Corporation.

Outside the original townsite area, the City of **Wainwright** is entitled to receive land under Section 14(c)(3) of the Alaska Native Claims Settlement Act where the **Olgoonik** Corporation is required to turn over up to 1,280 acres of its **land** to the **City of Wainwright** for purposes of municipal expansion, rights-of-way for public use and other foreseeable community **needs**. Title to most of this acreage was originally transferred to the city in February **1977**. However, the original agreement was **later** determined to be over-simplified and a new agreement was being worked out in September **1983**.

Wainwright Area

Land tenure outside the immediate **Wainwright** townsite and 14(c)(3) lands area includes land interim conveyed **to the Olgoonik** Corporation, **land** selected but not yet conveyed to the **Olgoonik** Corporation, land withdrawn for the Air Force and Native allotment applications.

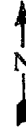
The **Olgoonik** Corporation's entitlement under terms of the Alaska Native Claims Settlement Act totals 115,200 acres of Section 12(a) and 44,625 acres of Section 12(b) lands. The conveyance of village selected lands is limited to the surface estate. Normally, the regional corporation would receive title to the subsurface estate of lands selected by village corporations in its region. However, the Claims Act retained for the federal government all subsurface rights in the National Petroleum Reserve-Alaska (**NPR-A**) while providing the Arctic Slope Regional Corporation with selection rights to alternative lands outside the Reserve. An exception to this rule was created by Section 1431(0) of the Alaska National Interest Lands Conservation Act (**ANILCA**) whereby the Arctic Slope Regional Corporation, at its option, may exchange subsurface lands it has already selected for subsurface rights to lands beneath village corporation land in **NPR-A** when public lands in **NPR-A** within 75 miles of lands selected by a village corporation are opened for purposes of commercial development (rather than exploration) of oil or gas. All lands selected by the **Olgoonik** Corporation are within **NPR-A** (see Figure 20).

The **Olgoonik** Corporation has yet to receive patent to its selected lands. However, the Bureau of Land Management has made an interim decision to convey surface title to the corporation for most of these lands.







The Air Force's DEW Line site, LIZ-3, is located inland about 5 miles east of town and has an associated tank farm at the **Chukchi** Sea coast northeast of the community. All told, this facility occupies close to

Land Tenure Wainwright Area 1983

0 1 2 3 4 5 Miles



Legend

-  Olgoonik Corporation — Interim Conveyance
-  Olgoonik Corporation — Selection
-  City of Wainwright — 14(c)(3) Reconveyance Area
-  Federal
-  Wainwright Native Townsite and USS 2401
-  Native Allotment Applications

Alaska Consultants, Inc.
Anchorage, Alaska

Adapted from cartography by
Northwest Cartography, Inc.
Seattle, Washington

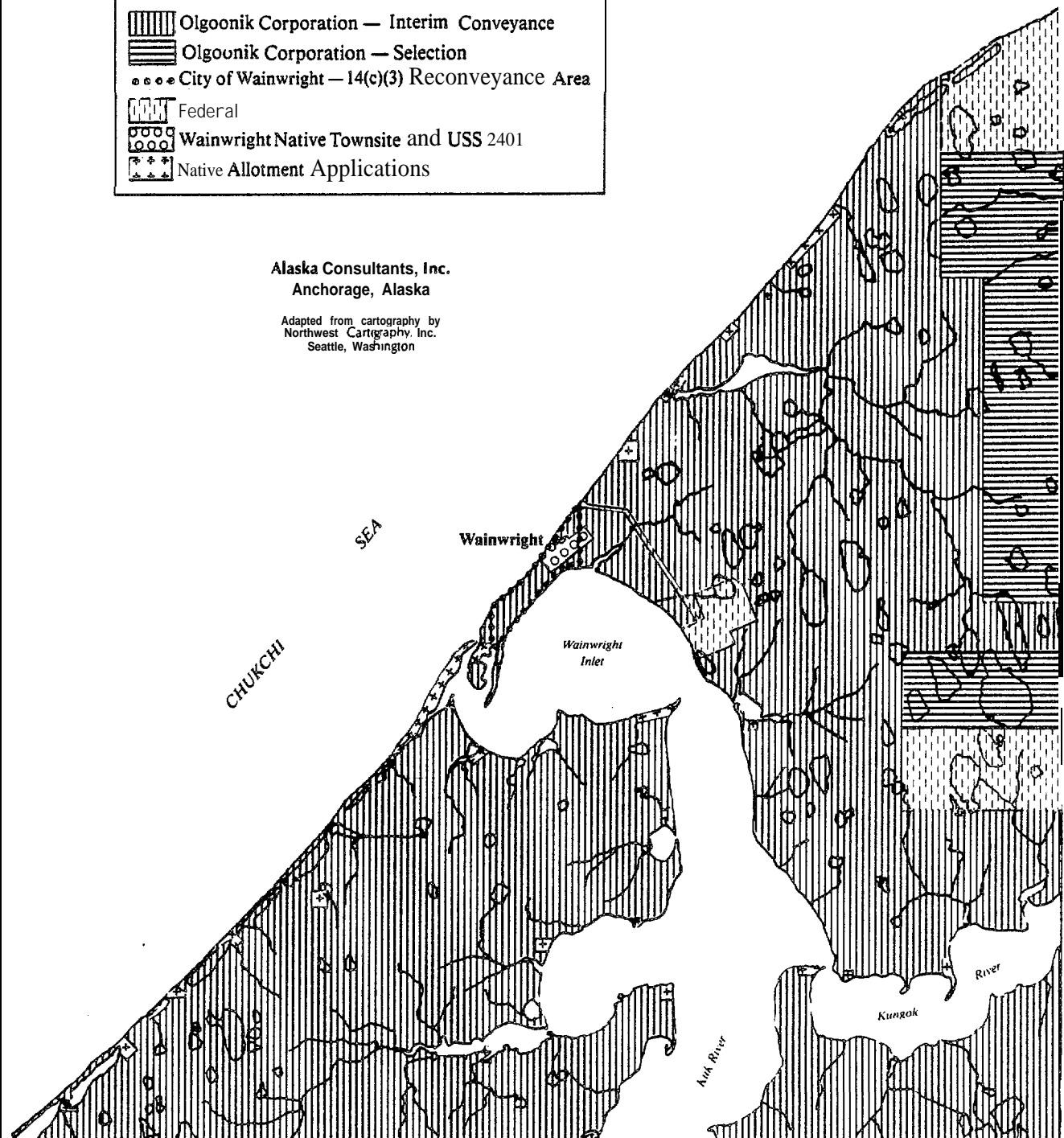


Figure 20

1,185 acres of land. The DEW Line site was originally withdrawn on December 26, 1957 through the issuance of Public Land Order (PLO) 1571. This PLO was later amended by PLO 1851 on May 14, 1959 and then partially revoked by PLO 5455 on December 11, 1974, leaving the current acreage of 1,185 acres.

Finally, some Native allotment applications exist within lands selected by the **Olgoonik** Corporation. None of these applications are in the immediate vicinity of the **Wainwright** townsite. Native allotments are essentially homesteads of up to 160 acres of non-mineral lands which were granted to Alaska Natives, generally for subsistence purposes. Indian allotment authority in Alaska was **cancelled** with passage of the Alaska Native Claims Settlement Act. However, applications which were pending at the time the **Claims** Act legislation was passed are eligible for consideration. This provision for pending Native allotment applications did not originally apply to what is now known as National Petroleum Reserve-Alaska (**NPR-A**) unless potential allottees could prove use and occupancy of sites prior to the withdrawal of the Reserve in 1923. An attempt to rectify this problem was made by Section 905(1) of **ANILCA** but a January 1983 ruling by the Regional Solicitor found that Section 905(1) of **ANILCA** did not adequately address the subject and suggested that a previous court suit (**Leavitt vs. Andrus**) be reinstated for a final determination on this issue. As in the case of restricted Indian lands, Native allotments are not subject to taxation or to local or State government regulation.

Subsistence Land Use Patterns

This section **briefly** describes the major fish and wildlife resources derived from the marine environment which are presently harvested by **Wainwright** residents. Two important locally harvested non-marine resources (caribou and freshwater fish) are not addressed. The following discussion of **Wainwright's** contemporary marine resource harvest patterns is based on recent work by **Nelson** (1981).

Wainwright is located on the **Chukchi** Sea coast about 100 miles southwest of Barrow. Local residents' marine subsistence activities are focused on the coastal waters from Icy Cape **in** the south to Point Franklin and Peard Bay in the north. The Kuk River Lagoon system, a major marine estuary, is also an important marine and wildlife habitat used by local hunters. Unlike Point Hope or Barrow, communities located on major geographic points, **Wainwright** is situated in the middle of a long bight which affects sea ice conditions as well as marine resource concentrations. The village is located **on** a small peninsula with the **Chukchi** Sea to the north and the Kuk estuary extending inland to the south. Presently, **over 450** people live in **Wainwright** and depend on both cash income and the continued harvest of subsistence resources for their economic well being.

Nelson (1981) summarized the seasonal round of **Wainwright** residents as follows:

"Fall. Fishing in the upper Kuuk and **Utugqaq** Rivers is a major activity, with many families staying in fish camps for periods of several days to two months or more. Caribou hunting intensifies as the **fall** migrations pass in September and October. Other **fall**

activities include waterfowl hunting before freeze-up, and hunting for polar bears when the pack ice first comes ashore.

Winter. Fishing activities shift from the upper river to the Kuuk Lagoon near **Wainwright**, where smelt and tomcod are abundant. Men travel widely inland and near the coast, trapping foxes and hunting caribou. Polar bears and seals are hunted during times favored by the right weather and sea ice conditions.

Spring. Whaling is the hallmark of this season and the most important subsistence activity of the year. Hunters in the offshore camps take bowhead whales, **belugas**, **polar** bears, seals, and waterfowl. Some **people** travel widely inland in the spring, searching for caribou, **moose**, fox, and other furbearers. These trips may take them as far as the Brooks Range.

Summer. Early summer is an important season for hunting seals and waterfowl, and families often move to traditional camping sites along the coast at this time. Camps may be occupied into mid-summer, when the main subsistence activities include sealing, fishing, and caribou hunting. Throughout the ice-free season, boats from **Wainwright** ply the coastal waters and especially the Kuuk River, mainly to set fishnets and hunt caribou. These activities intensify toward late summer and continue until **freeze-up** in the fall."

Fish

- Traditionally, fish were probably one of the more reliable and stable subsistence resources available to people in this area but after the area's population settled permanently on the coast at **Wainwright**, inland fishing trips declined and were at a low level by **1960** (Nelson **1981:17**). Over the past twenty years, however, fish have become an increasingly important local-food source. Although **Wainwright** residents fish in **most** marine and freshwater habitats (open coast, lagoon, estuary and **river**), the most important local fish harvest takes place in the **fall** (September through November) in freshwater. Villagers establish seasonal camps in the freshwater portions of the Kuk and other river drainages and fish

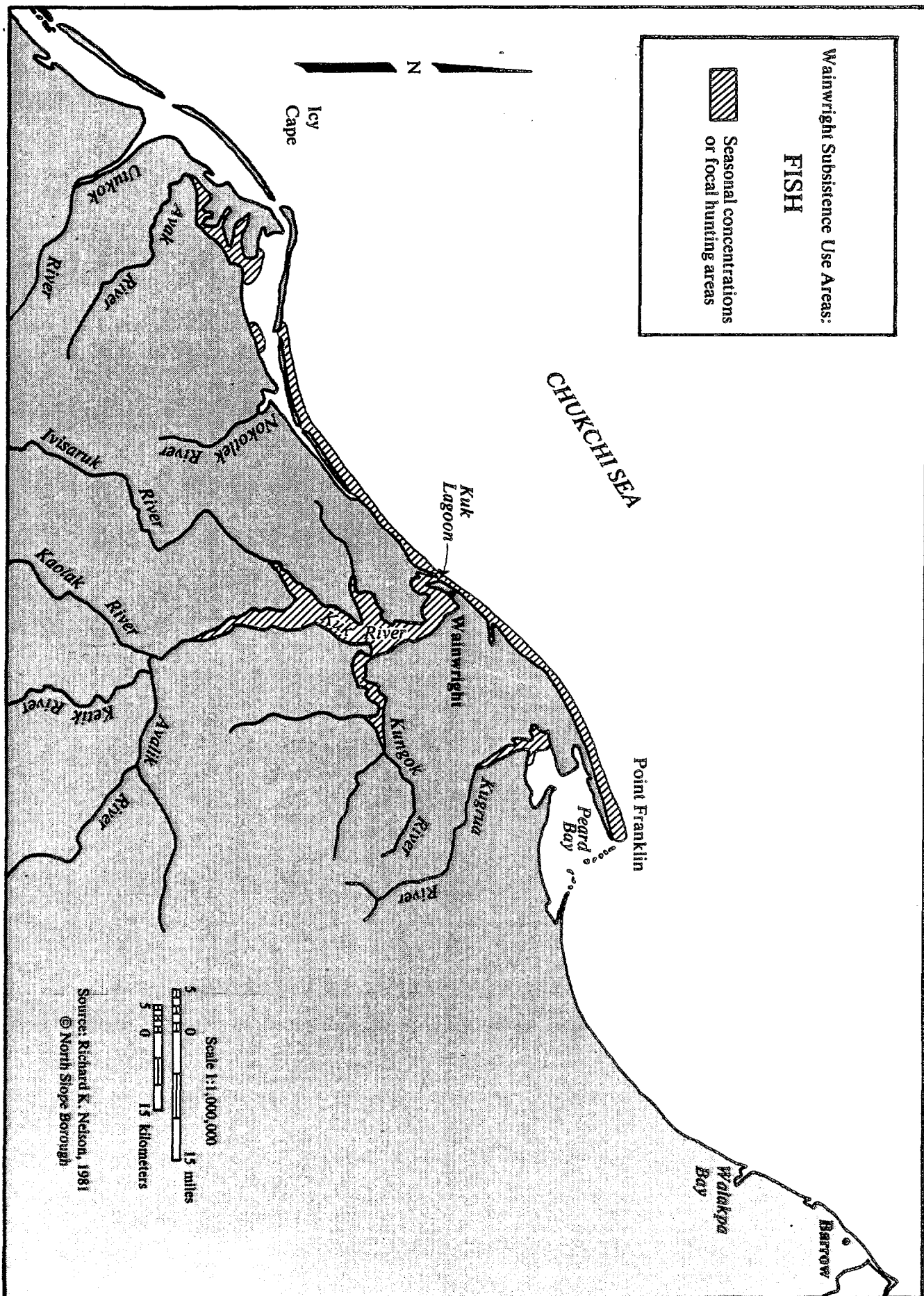


Figure 21

for several days to several months, depending on the needs and preferences of the family harvest network.

Ice fishing for smelt and "tomcod" in the vicinity of the village begins once the Kuk Lagoon has frozen but is most common in the winter months of January, February and March. During the summer, villagers use set gill nets to harvest fish along the coast and along the lower reaches of the Kuk Lagoon. Species harvested include Arctic char, chum and pink salmon, as well as Bering cisco and **sculpins**.

Marine fishing occurs from Peard Bay to Icy Cape and in the Kuk Lagoon (see Figure 21). Fishing, both freshwater and marine, provides an important food source for **Wainwright's** present residents. Finally, because both women and children are involved in this harvest, social and familial ties are strengthened and young **people** are introduced to the harvest activity.

Migratory Birds

Most bird species commonly harvested by **Wainwright** residents are migratory; the major exception being ptarmigan which are locally available throughout the year. Waterfowl hunting begins in May at bowhead whaling camps on the **landfast** ice. The northward migration of **murre**s, ducks, geese and cranes along the coast continues through June and hunting pressure is heavy (see Figure 22). The spring waterfowl **flyways** are narrow and the migration is concentrated in a short time span. Both of these factors facilitate local harvest success for

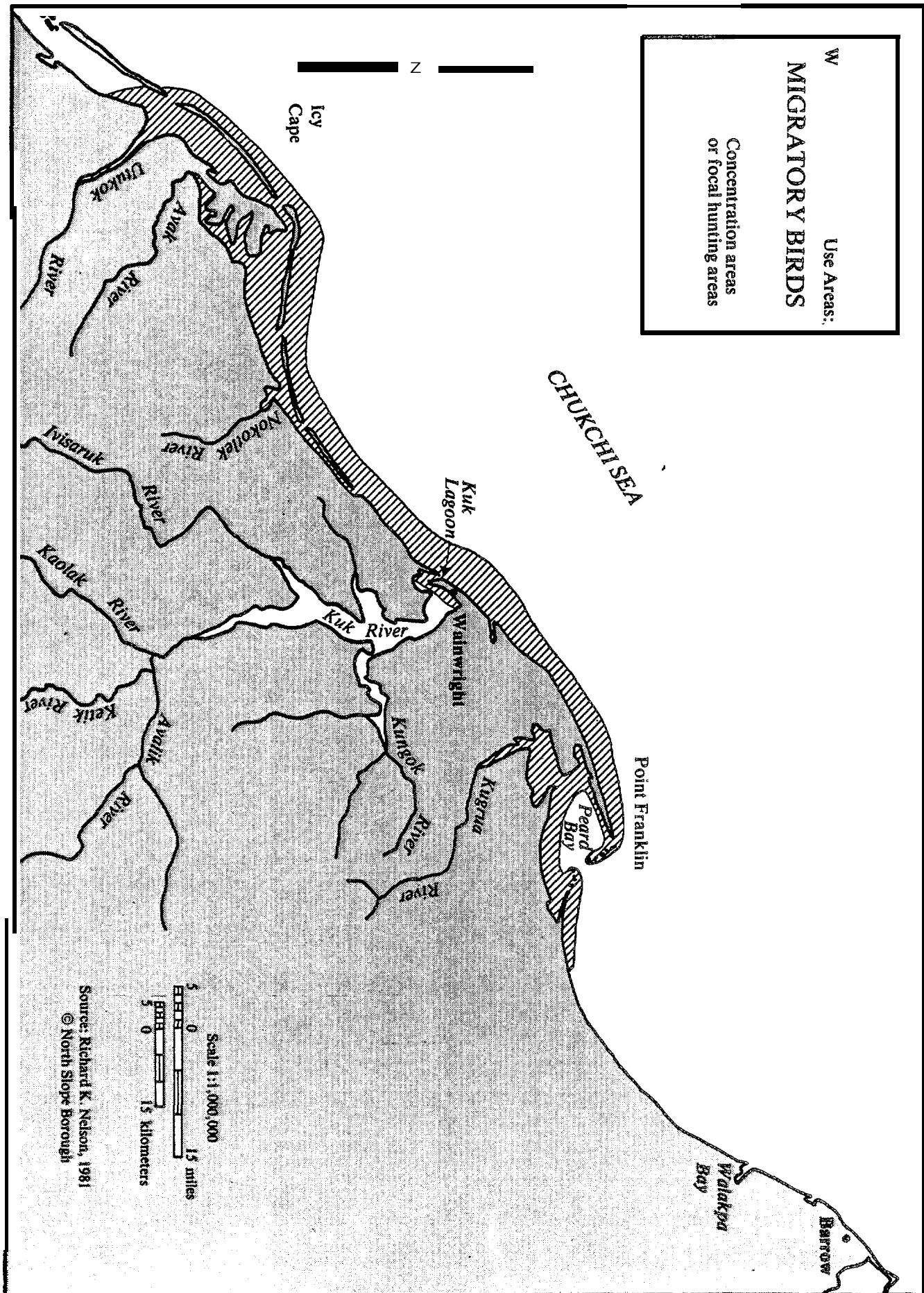


Figure 22

waterfowl . Once the bird populations disperse to summer ranges, however, harvesting decreases. Because the **fall** migration occurs over a wide area and continues for several months, harvest success at this time is also limited. The only location in the **Wainwright** harvest area where significant numbers of birds can be harvested in the **fall** is Icy Cape.

Waterfowl are a highly desired food in **Wainwright**. Although the volume of meat produced does not compare with other subsistence resources, waterfowl provide fresh meat and a needed change in diet when other resources are in short supply.

Seal and Ugruk

There are four species of seal present in the **Wainwright** area for all or part of the year: ringed, bearded, spotted and ribbon seals. The traditional and "contemporary importance of each of these seal species in **Wainwright's** subsistence economy is a function of their overall abundance. Ringed seal is the most common species and is generally available in all but the ice-free months. **Ugruk**, or bearded seal, is available during the same seasons as ringed seal, but not in equally prodigious numbers. These two species are the most commonly harvested seals in **Wainwright** today. Spotted seals are common in the coastal lagoons during summer and, until 1972 **(Marine Mammal Protection Act)**, were actively pursued for their pelts. Today, most spotted seals are taken in the Kuk Lagoon, with the pelts being used locally for fancy parkas. Ribbon seals are rare spring and summer visitors to this region

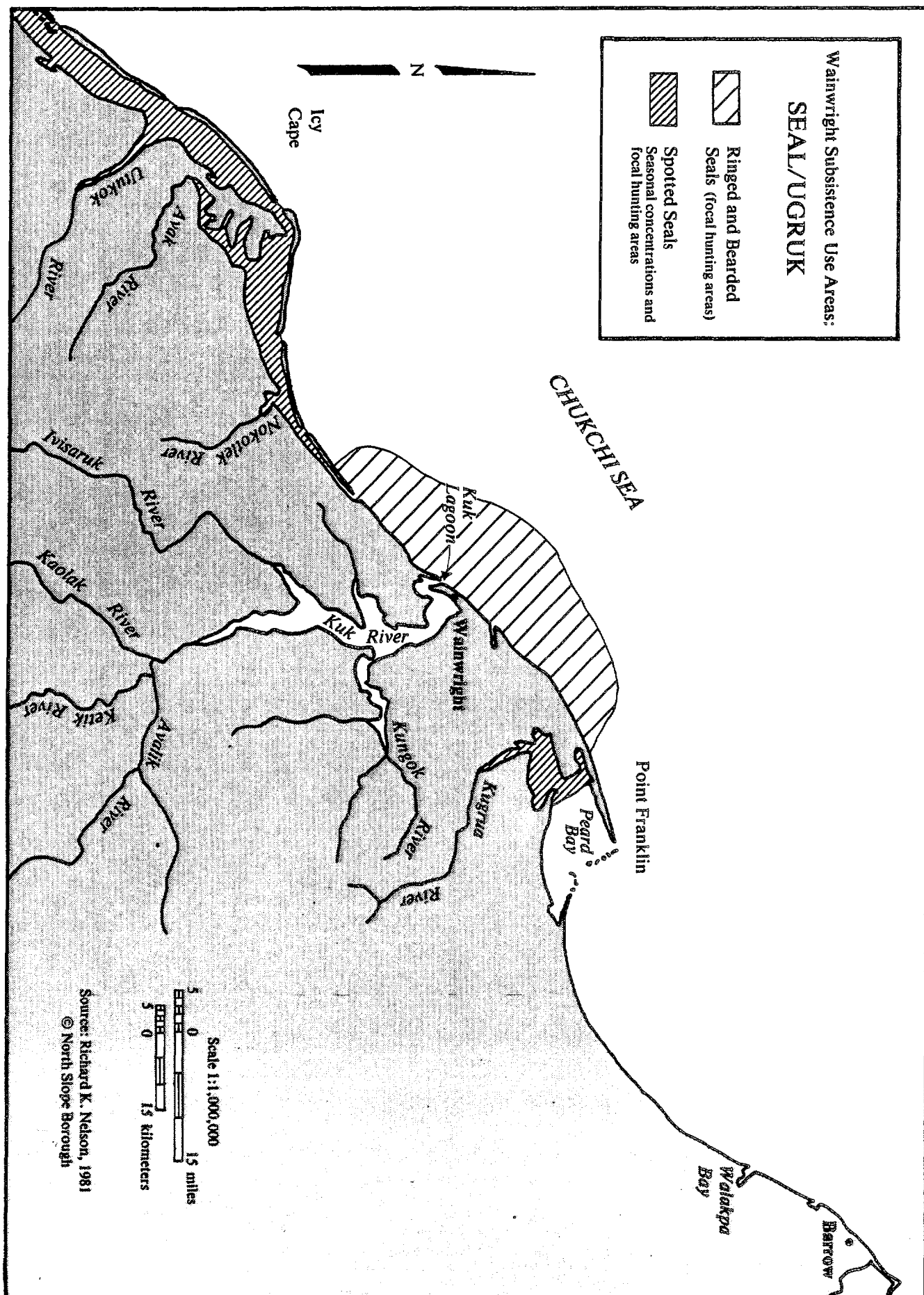


Figure 23

and few are presently harvested. Focal hunting areas are presented in Figure 23.

Concentrations of ringed and bearded seals are largest during June and July, coincidental with the dispersal of shore **ice**. With the replacement of the dog team by the **snowmachine** and the availability of other food sources (caribou and bowhead whale), seal hunting has decreased in importance. Today, most seal hunting takes place while the animals sleep on the ice or from boats in open water. Although the importance of seal meat has declined in recent years, seal oil is still a staple food source. Bearded seals are the preferred source of oil and, of all seals, an immature bearded seal is considered the most desirable as a subsistence food source.

Walrus

Although walrus occasionally overwinter in the **Wainwright** area, most are presently only seasonally. Walrus herds first appear in June, drifting north on ice pans. The greatest concentrations, and peak hunting, occur in July and August in association with the southern edge of the retreating pack ice. Hunters travel by boat among the ice floes, sometimes far offshore, in search of walrus. Focal hunting areas are presented in Figure 24. Walrus migrate south during the open water season (late August and September), and **Wainwright** hunters occasionally harvest them at this time when they **haul** out and rest on the beaches.

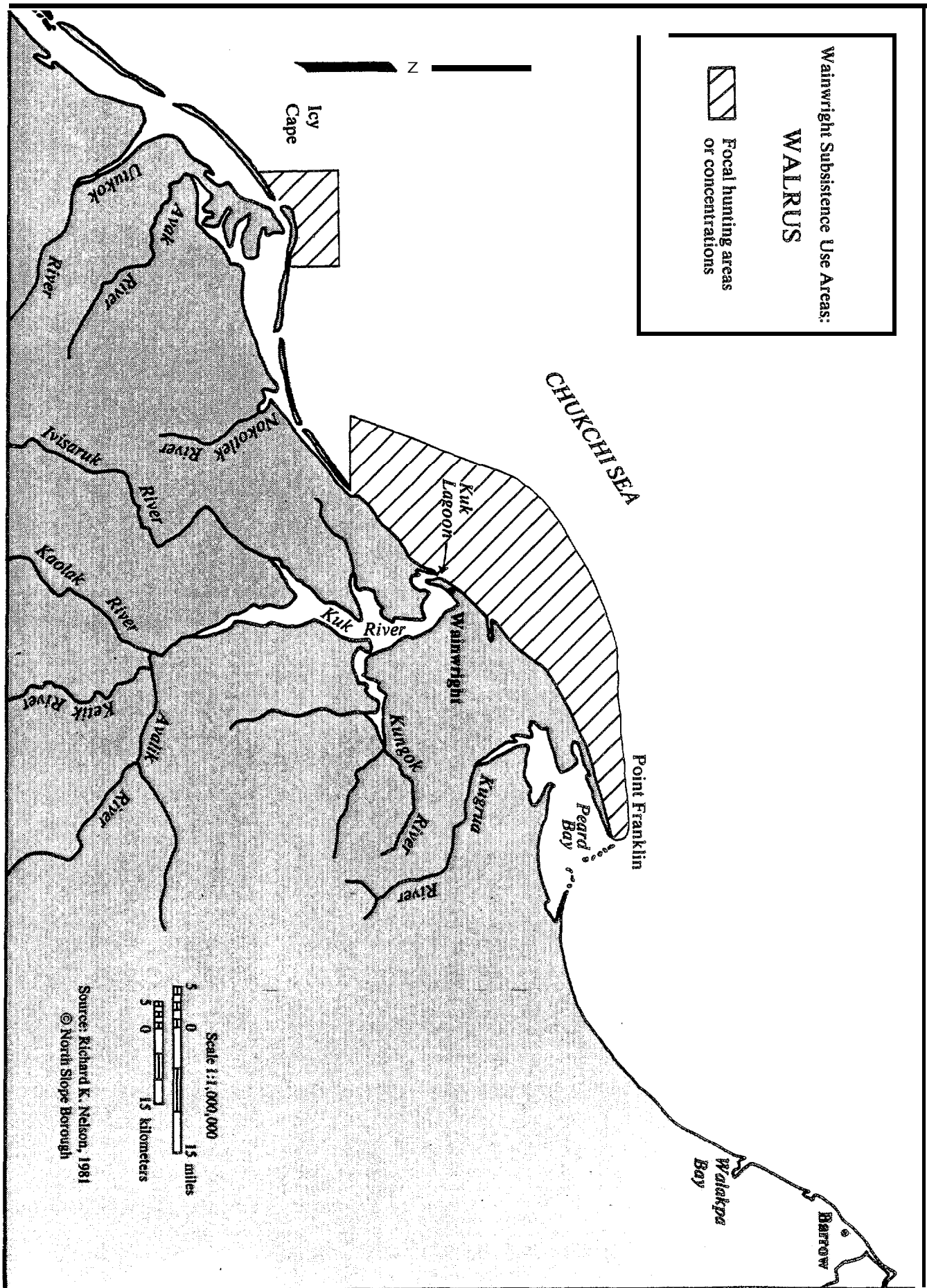


Figure 24

Traditionally, walrus was the main source of dog food in **Wainwright**. Today, harvest pressure on this species is limited because there are fewer dogs to feed. Walrus provide variety in the human diet, while continuing to be used for dog food. The tusks are saved and used for carving. The importance of this resource to **Wainwright** residents could change in the future if dog teams are **re-established**, the availability of other resources changes, or changes in the cash economy occur.

Belukha

Belukha is a desired resource in **Wainwright** but the harvest success and, consequently, the importance to the subsistence economy, is extremely variable from one year to the next. This species commonly migrates in the same leads as the bowhead whale and is effectively hunted by whaling crews out on the ice. However, harvesting **belukha** at this time can potentially jeopardize the bowhead whale harvest and therefore is only done if no bowheads are in the area.

During the summer, **belukha** are common visitors in the numerous lagoon systems on the **Chukchi** Sea coast. According to **Wainwright** elders, **belukha** were once regular visitors in the Kuk Lagoon but, because the animals are sensitive to disturbance and noise, their use of this estuary has diminished. During summer, local hunters are **occasionally** successful at herding significant numbers of **belukhas** into shallow water where they are shot and hauled to shore. This method, however, is not as reliable as harvesting **belukha** earlier in the year from whaling camps. Local harvest areas for **belukhas** are presented in Figure 25.

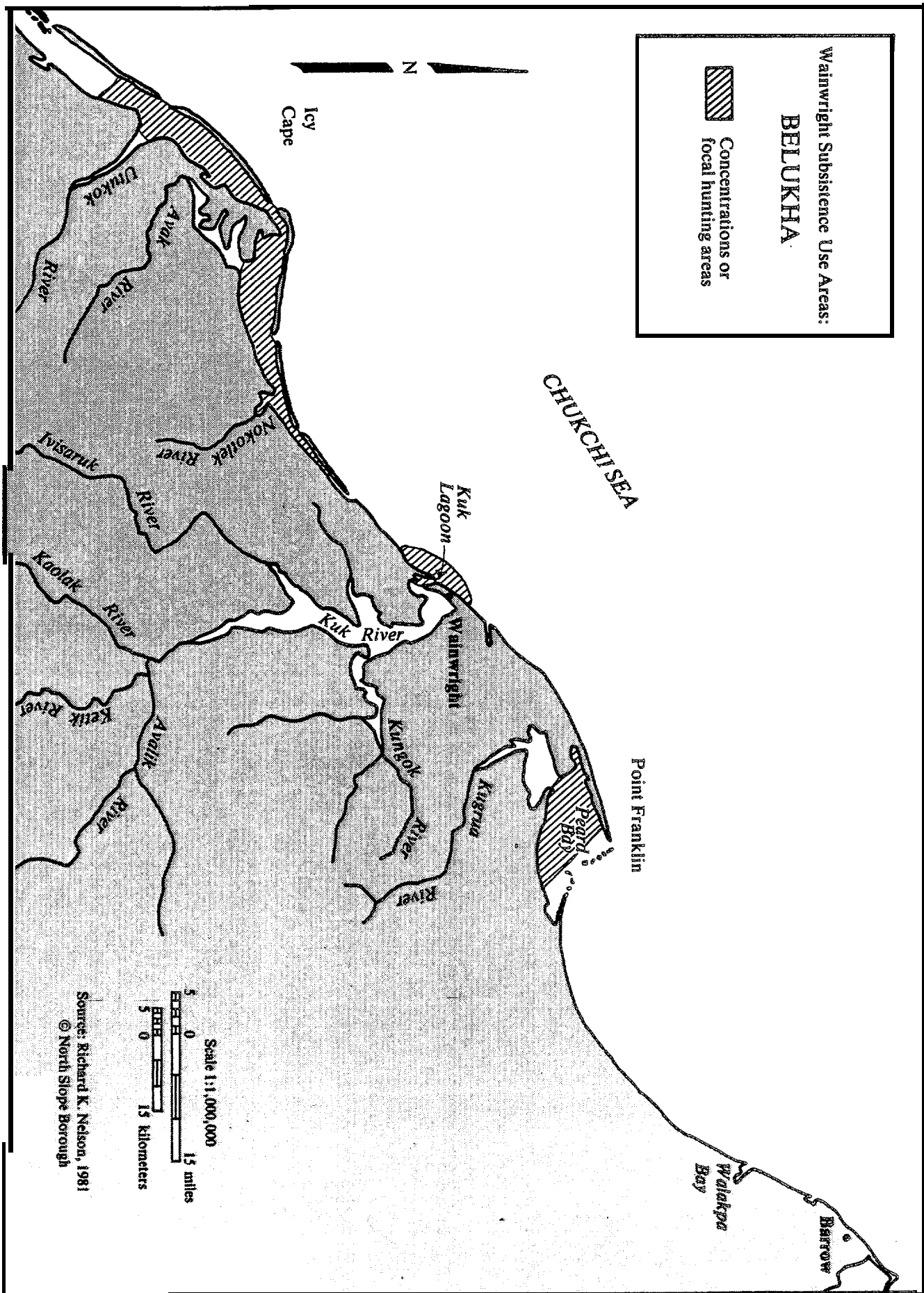


Figure 25

Desired for both their meat and muktuk, **belukha** are enjoyed by **Wainwright** residents when they are available. As with the bowhead whale, harvests of this animal are usually shared with all members of the community. Because **Wainwright** residents are reluctant to concentrate on **belukha** harvesting during the bowhead whaling season, they must rely on the unpredictable summer harvest for the major volume of this resource. Consequently, the importance of this species in the subsistence economy varies from year to year.

Bowhead Whale

The bowhead whale is the most important marine resource in **Wainwright's** subsistence economy. Culturally and socially, the importance of this species is unparalleled. **Wainwright** bowhead hunting occurs in late April and May as the animals migrate north to summer feeding grounds in the Beaufort Sea. The hunters establish camps along the edge of the landfast ice. During some seasons, these camps are 10 to 15 miles offshore. **Wainwright** residents do not hunt bowheads in open water during the fall migration south. In 1982 and 1983, **Wainwright** whalers landed two bowheads each year.

Nelson (1981:82) noted-three distinct phases of the bowhead's migration north. The first run usually takes place in late April or early May. This group, the largest in number, primarily consists of younger whales running with a few older whales. The second run, which occurs shortly after the first, is smaller and is comprised of various aged adults, as well as a few young whales, traveling in groups of two or three. The

final movement of northward migrating whales occurs in late May or early June and includes many larger whales. Depending on **ice** and weather conditions, these migrations can be widely dispersed or compressed into a shorter time period.

Ice conditions in the offshore area adjacent to **Wainwright** are not ideal for bowhead whaling. The leads often break far from shore and multiple **leads** are not uncommon. In addition, **leads** in this area are often much wider than those adjacent to Point Barrow or Barrow. Consequently, there have been changes in **Wainwright's** hunting patterns in recent years. Among the local adaptations for whaling is the use of aluminum skiffs with outboard motors. These are effective in the wide leads common later in the whaling season and allow **Wainwright** hunters to pursue and harvest bowheads far offshore. Skin boats, better adapted to sea ice (quieter and easier to **paddle** when whales are confined to narrow **leads**) are now primarily used during the early part of the season when more ice is present. **Wainwright** whalers hunt bowheads near their village and as far south as **Icy** Cape and as far north as Point Franklin (see Figure 26).

Bowhead whale is the favorite food source of most **Wainwright** residents (Alaska Consultants, Inc. and Stephen **Braund & Associates 1983**). No other harvest activity requires the entire community's participation and support, and whaling is integrated with many aspects of **Wainwright's social life**.

Wainwright Subsistence Use Areas:

BOWHEAD WHALE



Concentration areas
or focal hunting areas

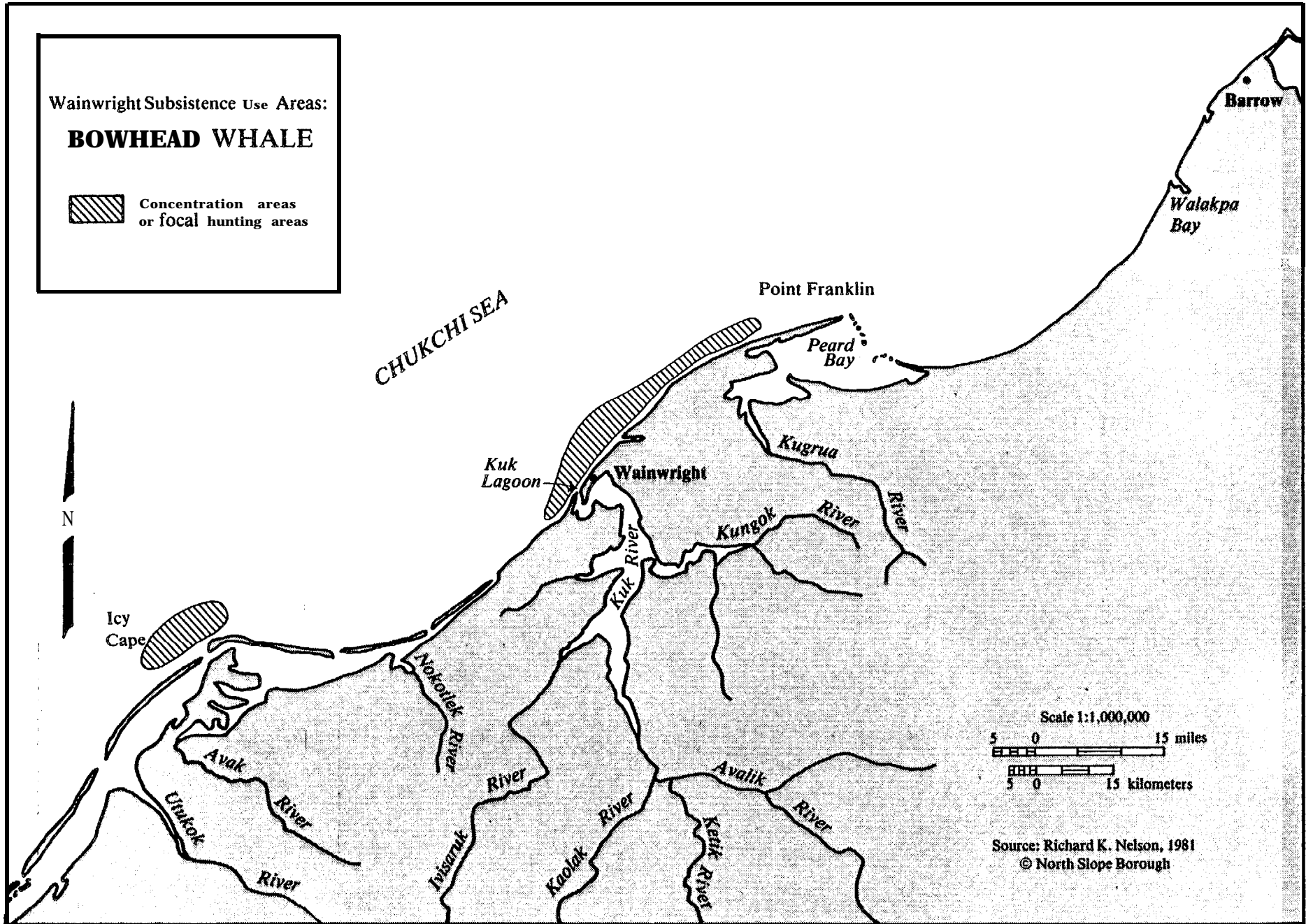


Figure 26

VILLAGE LAND USE PATTERNS

Like many Inupiat communities, Wainwright developed in a linear form along the coast. This form was accentuated by the original townsite survey and by the location of the airport parallel to the coast, immediately beyond the inland boundary of the town. Within town, development was originally centered around the old school. Until recently, that school, plus the adjacent co-op store, an old city hall and the National Guard armory served as the focus of community activity and most of the older buildings in the village are in this general area.

During the past ten years or so, however, the center of development in Wainwright has gradually shifted away from the old school. A new high school and an elementary school have been built in the southwest portion of town. In addition, most major facilities, including the post office, public safety building, community building, city offices, water treatment plant, fire station and the new health clinic are located along Airport Road (the road which leads to the airport), southwest of the old center of the village (see Figure 27).

There is no concentration of commercial uses in Wainwright. In August 1982, there were four stores in the village - the co-op store and a store run by the Olgoonik Corporations both of which sell groceries and a range of general merchandise; a small grocery store; and a store which specializes in the sale of sporting goods. Other commercial uses included an hotel owned by the Olgoonik Corporation which was being built by Olgoonik Construction during 1982 and has since been completed;

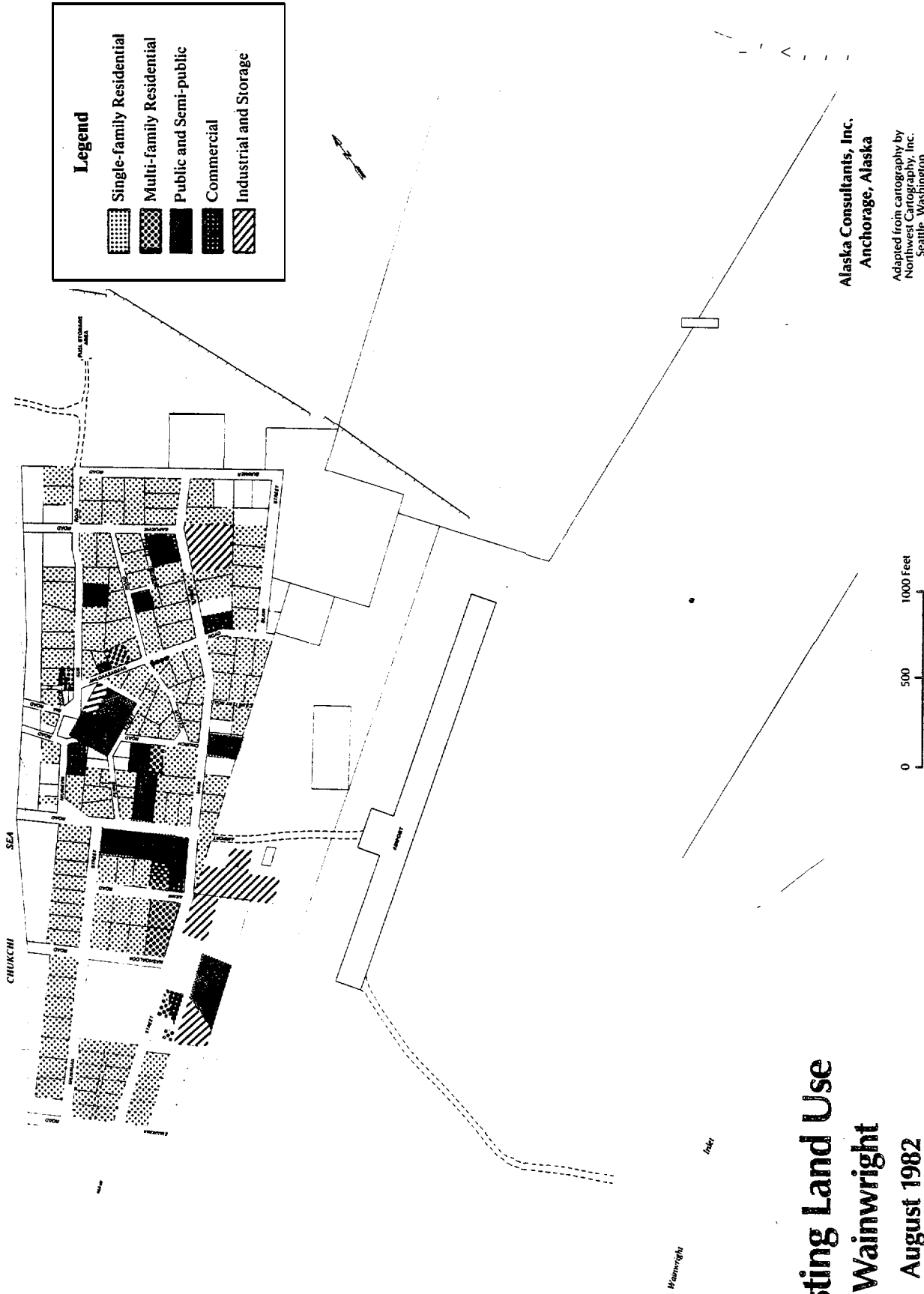


Figure 27

**Existing Land Use
Wainwright
August 1982**

the offices of the **Oigoonik** Corporation (in the same building as the corporation's store); two temporary buildings being used as construction offices; and kitchen facilities operated by two construction camps. (One construction **company active in Wainwright in 1982 had** personnel in several bunkhouses around town but maintained a single kitchen facility. That structure burned down in 1983).

Utility and storage uses in **Wainwright** in 1982 included the power plant located in the vocational education building of the high school and its associated fuel tanks; the water treatment plant along Airport Road and its associated water tanks; **fuel** tanks associated with the former elementary school in the old center of town; and the village corporation tank farm, shop and warehouse facilities located a short distance outside the northwest boundary of the **Wainwright townsite**. A Borough equipment storage building on Main Street between the water tanks and the high school was torn clown in **1982** to make room for the new elementary school. A new and much larger vehicle maintenance and storage building is to be built immediately beyond the northern boundary of the **townsite**, near the village corporation tank **farm**.

The options for village expansion are limited in **Wainwright**. Expansion to the north is limited by the presence of **snowfences** and several cemetery tracts prohibit expansion to the northeast. The alignment of the airport runway **also** limited expansion inland and squeezed development in the southern portion of town. Construction of a new airport runway which is more closely aligned to prevailing winds **should** alleviate some of this problem.

TABLE 41
WAINWRIGHT HOUSING INVENTORY a/
AUGUST 1982

Housing Program	Condition of Units				Total
	Occupied		Vacant		
	Acceptable	Substandard	Acceptable	Substandard	
Arctic Slope Regional Housing Authority Mutual Help	27	0	1	0	28
North Slope Borough Rentals <u>b/</u>	22	0	3	0	25
North Slope Borough Employees <u>c/</u>	7	0	0	0	7
Bureau of Indian Affairs	3	0	0	0	3
Alaska State Housing Authority	22	0	3	0	25
Veterans Administration <u>d/</u>	5	0	1	0	6
Privately Constructed	10	16	7	19	52
TOTAL	96	16	15	19	146

a/ Excludes five units used as camps/bunkhouses by itinerant construction personnel, a bunkhouse used by the North Slope Borough School District and three small NARL cabins. Also excluded are 14 units of North Slope Borough single family housing under construction.

b/ Includes seven units in the two 4-plexes.

c/ Includes a unit in the 4-plex and 2 apartments in the old elementary school.

d/ Includes a unit rented by the North Slope Borough School-District for employee housing.

Source: Alaska Consultants, Inc.

Of the remaining units in the village, 25 were **built** by the Alaska State Housing Authority in 1971, **6** were built with Veterans **loans**, 3 were built with Bureau of Indian Affairs funds administered through the **Inupiat** Community of the Arctic **Slope (ICAS)** and the remaining **52** units were privately constructed.

As in other North Slope villages, there is a sharp contrast in the condition of houses built by the North Slope Borough and other homes in the village. **All** Borough units were considered to be in acceptable condition in August 1982, i.e. they were standard structures. Units **built** with Bureau of Indian Affairs assistance are new but tend to be smaller than Borough homes. Housing built by the Alaska State Housing Authority was classed as being in acceptable condition. However, these units have a number of major deficiencies, as do units **built** with financial assistance from the Veterans Administration. **Only 17** of the 52 privately built houses in **Wainwright** were considered to be standard structures. Many privately built units are old and were built from makeshift materials since those were **all** that was available locally.

Substandard housing in Wainwright, much of it vacant, tends to be concentrated in the area around the old school. **While** some Borough units have been built in this area, most of the newer Borough units **have** been concentrated in the south end of town and have contributed to the further elongation of the village's development pattern. Several units **along** the coast appear to be threatened by beach erosion. The Borough had made some attempt to stop this through the placement of metal drums. However, the drums appear to be exacerbating the **problem**.

As part of the 1983 fieldwork, an effort was made to find out if people in Wainwright felt that the construction of new homes by the North Slope Borough and others had resulted in social dislocation by making it possible for younger (or older) people to move into separate housing. As in the case of Point Hope, almost everyone interviewed preferred the new arrangement. The only people who expressed some dissatisfaction were either persons caring for an elderly or sick relative or they were single men who normally ate at their parents' homes. No one expressed any fear that extended families were being broken up as a result of the new housing and people generally preferred the privacy afforded by separate accommodations. Family ties are maintained through visiting and, very recently, by use of the telephone.

Another impact of the new housing is that the village is now much more spread out and travel between different points in the village by snowmachine or truck has become more common. There were also two taxicab operations in Wainwright in the summer of 1982.

Community Facilities and Utilities

ADMINISTRATIVE AND MISCELLANEOUS PUBLIC BUILDINGS

Administrative and miscellaneous public buildings in Wainwright include a community building, a warehouse built by the Alaska State Housing Authority which is used as city offices, and a National Guard armory.

The community building is owned by the City of Wainwright. It was completed in 1978 and is located on Airport Road between the public safety building and the new fire station. The building is 1,872 square feet in area and was designed to provide city offices and a large multi-purpose area for both formal and informal meetings, including city council sessions. It was also used for a variety of community events such as bingo, Eskimo dancing, modern dances and indoor games. However, a June 13, 1982 fire destroyed the west wall of this structure and the city offices relocated to a former Alaska State Housing Authority warehouse across the street. Repair of the building was scheduled to get underway in late July 1983 and to be completed by the end of September 1983. According to the mayor, however, the city offices would not be moved back into the community building.

The former Alaska State Housing Authority warehouse, now used as city offices, was built in June 1975 and is located across Airport Road from the community building and the public safety building. It is a 768 square foot structure which was built by the Alaska State Housing Authority to store materials during the period when that agency was doing rehabilitation work on Alaska State Housing Authority units in the village. Between 1979 and 1982, the structure was used by the North Slope-Borough School District as a classroom for small motor repair. In its present use, the building is open between 9 am and 5 pm for city business and is staffed by a full-time city clerk and part-time by the mayor. The building is also used in the evenings for city council and other meetings. It is a one story wood frame Blackstock (pre-Borough construction program) home which is wired but has no plumbing.

The **Wainwright** National Guard armory is owned and operated by the Alaska Department of Military Affairs. It is a 1,200 square foot metal structure similar in design to armories in Point Hope and Barrow which is used for National Guard training sessions and for the storage of training gear which includes M-16 rifles, 2 **snowmachines**, sleds, skis, snowshoes, rucksacks, sleeping bags and other equipment. According to the Alaska Department of Military Affairs, there is authorization for 32 guardsmen in **Wainwright**.

PUBLIC SAFETY

Police Protection

As elsewhere in the North Slope Borough, police protection services in **Wainwright** are provided by the North Slope Borough which currently has two officers stationed in the village. The public safety building is located on Airport Road between the post office and the community building. It is an 880 square foot (20 feet by 44 feet), one story wood frame structure which includes an office, a kitchen, a storage/workshop area and two temporary holding cells.

The **Wainwright** public safety building was the prototype for others in the North **Slope** Borough villages outside Barrow although it is smaller. It was built in 1978 with funds from the U.S. Law Enforcement Assistance Administration which were channeled through the Criminal Justice Planning Agency in the Office of the Governor, plus some Borough funds. The building is in generally good condition. However, its small size

TABLE 42
PUBLIC SAFETY DEPARTMENT ACTIVITY
WAINWRIGHT
1980 - 1982

	<u>1980</u>	<u>1981</u>	<u>1983</u>
Homicide and Negligent Homicide		-	1
Rape and Sex Offenses		3	2
Robbery		-	-
Assault	9	13	22
Burglary	8	8	4
Larceny	10	11	1
Motor Vehicle Theft	6	4	5
Vandalism	19	14	7
Narcotics	4	1	2
Driving While Intoxicated	-	3	2
Liquor Law Violations/Disorderly Conduct	18	16	33
Traffic Accidents	-	5	1
Animal Problems	48	29	17
Domestic Problems	15	20	17
Premise Security	1	1	-
Disturbing the Peace/Noise	11	4	32
Other <u>a/</u>	60	33	62
<u>TOTAL</u>	<u>199</u>	<u>165</u>	208

a/ This category identifies non-criminal public safety activities. It includes service requests, agency assists, public assists, transport of the sick or injured-and other responses to non-criminal situations. The public safety officer may be called upon for a wide variety of activities ranging from chaperoning dances to helping a sick person to the clinic.

Source: North Slope Borough Department of Public Safety.

and the location of holding cells in a wood frame **building** are of concern to the Borough Public Safety department. The department has developed tentative plans to build a new public safety building in **Wainwright** and convert the existing facility to public safety officer housing but no final decision on this has yet been made.

Borough public safety officers in **Wainwright** and other North Slope villages spend a great deal of their time in non-criminal activities (see Table 42). Law enforcement problems here are primarily related to alcohol abuse. As a means of dealing with that issue, the City of **Wainwright** recently adopted an ordinance which prohibits the importation of liquor into the village, even for personal consumption. Another law enforcement problem was apparent when only one public safety officer was stationed in the village. When that officer was sick, on leave, traveling on official duty, or otherwise away from the community, there was no police authority in **Wainwright**. This problem, common to all of the smaller villages in the Borough, **should** be remedied now that two public safety officers are again stationed here.

Fire Protection/Search and Rescue

The North Slope Borough has provided fire protection services on an areawide basis since **1980**. Since assuming this power, the Borough has constructed fire stations in each of its villages outside Barrow and has embarked on a program to train firefighting volunteers. Although the Search and Rescue division is part of the Public Safety department for administrative purposes, volunteer firefighting and search and rescue

personnel **in** the villages are one and the same group, with **both** functions being housed in the new fire station.

The **Wainwright** fire station was completed in **1983** and is identical to fire stations built in other **small** Borough villages at that time. **It is** located on Airport Road, between the community building and the new **Olgoonik** Corporation **hotel**, and is a prefabricated metal structure **72** feet in width and 65 feet in depth (4,680 square feet) set on pilings, with access provided by a metal grating ramp. The central portion of the station is a **large** apparatus room sized to house two **fire** trucks, an ambulance and two **snowmachines**, plus a boat (with motor) belonging to the Borough Search and Rescue division. The building also houses a utility room, a furnace/generator room, two large storage rooms (one designed for use as a training area under heavy smoke conditions), a training/meeting area, an office/communications center, a **small bunkroom** for transient Borough Fire department personnel, a **small** kitchen, lockers, showers and toilet facilities, plus additional storage **space**.

Rolling stock housed in the fire station includes an engine company truck with a mounted 2,000 gallon water tank, a 500 **gallon** per minute pump, fire hose and appropriate nozzles, ladders and cabinets for **personnel** gear and **air-packs**; a **tanker truck** mounted **with** a 3,000-gallon water tank, a 500 gallon per minute pump, hose and nozzles; and a Chevrolet Suburban modified for ambulance use with a raised roof and stretcher racks, equipped with stretchers, splints, a trauma box and an oxygen unit. Search and Rescue equipment is **also** housed here.

Firefighting personnel are members of the North Slope Volunteer Fire Department/Search and Rescue force. Training programs have been begun by the North Slope Borough, with initial emphasis being on use and maintenance of the new equipment in a manner which meets basic criteria for prompt and effective fire response.

There have been no deaths or serious injuries resulting from fires in **Wainwright** in the past few years. Recent fires include a house and tent being used as a construction camp in 1983, the west wall of the community building in June 1982, destruction of a Borough housing unit in October **1981**, destruction of a North Slope Borough **12-plex** in July 1979 and destruction of the original water treatment plant in November 1963. A mutual help housing unit was damaged by fire in 1979 but has since been repaired. In **Wainwright**, as elsewhere in the arctic, the harsh climate places a steady, heavy **load** upon heating equipment, increasing the probability of fire incidence from equipment malfunction or misuse. Furthermore, low temperatures and prevalent strong winds make firefighting extremely difficult once a fire gains headway.

Search and rescue has a long history in **Wainwright**. Prior to Borough involvement, the **Wainwright** search and rescue group was organized with eight officers and with **all** able bodied men in the village as volunteers. Equipment was stored in a small metal building on **Ahloaksageak** Street in the old part of town and a boat was stored outside this building. Construction of the new fire station has provided this group with a much needed place to meet and search and rescue and firefighting personnel are now one and the same group.

While all firefighting/search and rescue personnel in **Wainwright** and the other villages outside Barrow are volunteers, the Borough has permanent staff for both functions in Barrow. The Borough **Search** and Rescue division also maintains two helicopters and a fixed wing aircraft in Barrow for use in search and rescue and **medi-vac** situations.

HEALTH

Primary health care services in **Wainwright** are provided by the North Slope Borough Health and Social Services Agency through the Community **Health** Aide program. These services are supplemented by regular visits to the village by doctors, dentists, nurses and other health care providers. When needed, **Wainwright** residents can use either the Barrow Public Health Service hospital or the **Alaska** Native Medical Center in Anchorage for in-patient or out-patient services.

The present village **clinic is** located on Kuk Road in the northern part of town. **It** is a **576** square foot one story wood frame **structure** which was **originally** a house. Internally, the building is divided into two examination rooms and a waiting room. The useful life of this structure as a health clinic **is** over and its replacement is necessary to carry out the comprehensive program which has been assumed by **the Borough's Health** and **Social** Services Agency.

Construction of a new 4,400 square foot health **clinic** located on Airport Road is currently underway and should be completed in late **1983**. The clinic portion of the new building **will** include four examination rooms,

a laboratory, a film processing room, a secured medicine storage room, a waiting/training area, a consulting/telehealth room, office space, toilet facilities and storage areas. Itinerant quarters with two double bedrooms, a kitchen/dining/living area and a bathroom are also included, as is a mechanical/electrical room, a janitor's closet and a garage/storage area. The entry from the garage area is designed to provide direct access from the ambulance to an examination room to meet entry/trauma requirements.

A wide range of equipment is to be provided for the new clinic, including X-ray equipment for use by itinerant professional staff. In addition, the consulting/telehealth room will be equipped with slow-scan TV equipment linked through telephone circuits to units in the Barrow office of the Borough Health and Social Services Agency, the Barrow Public Health Service hospital and the Alaska Native Medical Center in Anchorage. This equipment will be used for consultations between the local community health aides and doctors, consultations within the medical professions, for the continuing education of the aides and for other uses such as follow-up of clients/patients. Finally, an ambulance for transporting patients is already housed in the village fire station, while a 3-wheeler and a trailer will be kept in the garage area.

The North Slope Borough Health and Social Services Agency attempts to maintain a staffing level of two health aides in each village. It is hopeful that the new clinic's better working environment will encourage aides to hold their positions for longer periods and that it will encourage greater public appreciation of the aides' position.

Records maintained by the Alaska Area Native Health Service indicate an average of 10 patient visits per day to the present health clinic. Greater use of the new clinic is anticipated, not only because of the potential for improved service but because of a broader emphasis which is being placed by the Borough Health and Social Services Agency upon health practices and conditions.

EDUCATION

Education services from Early Childhood Education (ECE) through the 12th grade in Wainwright are provided by the North Slope Borough School District. The Wainwright school is located in the southern portion of town between Main Street and the edge of town. This site houses both the Alak high school and the new Wainwright elementary school. The old elementary school is more centrally located between Ahloaksageak Road and Church Road. Construction of the Alak high school was completed in 1979 and the new Wainwright elementary school was first occupied in August 1983, at the beginning of the 1983/84 school year. The old elementary school was built by the Bureau of Indian Affairs in the early 1960's.

The Alak high school includes six classrooms, including one used for home economics, one used as a typing room but also for other classes, and one used in the 1982/83 school year as a good attitude lounge for students, plus a library. The adjacent vocational education building includes two shops, one for metal and one for woodwork. Other facilities at the high school in the 1982/83 school year included a kitchen, locker rooms and an administration area. A 10,307 square foot

addition to the high school was completed in 1983 in time for occupation in the 1983/84 school year. This addition was designed to include a student store, an arts and crafts room, a swimming pool, a weightlifting room, a gym storage room, public rest rooms for persons using the pool and gymnasium, several small storage/mechanical rooms associated with the pool, plus a substantial addition to the kitchen storage area.

The new **Wainwright** elementary school is a 9,248 square foot structure designed to house five full size classrooms (1 for ECE, 1 for kindergarten plus 3 for remaining elementary school classes), a library, a special education room, a large work room which would serve as a teachers' lounge, an office and associated storage rooms. A new 2,160 square foot utility building was also completed in 1983 to include an emergency generator, water storage, a water treatment plant, sewage storage and a separate water tank for the school sprinkler system. Except for two teacher apartments, the old elementary school is now used only for the warm storage of school supplies.

During the 1982/83 school year, the **Wainwright** school had a principal and an assistant principal. The elementary **school** had four teachers who taught full-time (one for ECE/kindergarten, one for the first and second grades, one for the third **and** fourth grades and one for the fifth and sixth grades) plus a special education teacher who spent most of his time at the elementary school but who also taught some high school classes. The Alak high school had one teacher for **english/physical** education, one for **english/home** economics, one for science, one for Inupiaq and typing who worked half-days, one for vocational education

and the seventh and eighth grades, **plus** one who taught elementary **school** physical education, seventh and eighth grade education and who **also** spent half a day per week counseling and taught a high school geometry class. **Other** school staff included five aides at the elementary school, two cooks, a plant manager and four maintenance personnel **plus** a full-time janitor. The **school** occasionally also hires **local** residents **for** special projects such as skin sewing classes.

Excluding ECE/kindergarten, final enrollment in **Wainwright** for the 1982/83 school year **was 87** students (see **Table 43**). During that same year, the student body included 9 non-Natives. One **local** student instead attended school at Mount **Edgecumbe**.

As part of the **1983** fieldwork, people were asked what they thought of the local education system and if **it** was meeting the needs of the people. Assuming that the people interviewed were reasonably representative, there appears to be some dissatisfaction with the high school education which students are receiving **in** the village. Of the **10** people who expressed an opinion on this subject, five said they thought that children were **able** to get a better education when they went to **school** at Mount Edgecumbe, one person thought that children **would** be able to handle **college** more **easily** if they had gone outside the village to high school, one mentioned that more children dropped out when they stayed in the village for high **school** and yet another thought that children were not disciplined enough if they remained **in** the **village**. Only two **people** interviewed said that they preferred their **children** to

TABLE 43

SCHOOL ENROLLMENT TRENDS BY GRADE a/ b/ c/
WAINWRIGHT
 1959/60 - 1982/83

School Year	Final Enrollment by Grade												Total Excluding ECE/ Kindergarten
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	
1959/60 <u>d/</u>									-	-	-		69
1960/61 <u>d/</u>									-	-	-		59
1961/62 <u>d/</u>									-	-	-		60
1962/63 <u>d/</u>									-	-	-		72
1963/64 <u>d/</u>									-	-	-		74
1964/65 <u>d/</u>									-	-	-		83
1965/66 <u>d/</u>									-	-	-		94
1966/67	16	12	11	9	10	8	8	6	-	-	-		80
1967/68	10	16	12	10	9	10	9	6	-	-	-		82
1968/69	9	12	14	12	11	8	10	5	-	-	-		81
1969/70	18	9	12	14	12	12	8	9	-	-	-		94
1970/71	10	15	8	12	14	11	12	7	-	-	-		89
1971/72	11	10	14	8	13	14	9	5	-	-	-		84
1972/73	22	11	12	17	10	13	15	10	-	-	-		110
1973/74	15	18	13	12	13	8	13	15	-	-	-		107
1974/75	13	7	18	13	12	11	9	13	-	-	-		96
1975/76	11	9	7	20	14	8	16	8	13	9	-	-	115
1976/77	16	3	10	10	14	11	9	11	9	13	6	4	116
1977/78	7	14	7	9	11	14	12	9	15	10	10	7	125
1978/79	10	6	13	8	8	7	16	9	7	10	6	8	108
1979/80	9	7	13	8	10	9	16		9	9	8	8	117
1980/81	11	6	8	8	11	8			9	8	4	2	90
1981/82	6	11	5	10	7	12	7	6	10	8	8	4	94
1982/83	9	6	11	4	9	9	12	6	5	4	6	6	87

391

a/ Final enrollment figures.

b/ Education in **Wainwright** provided by the Bureau of Indian Affairs through 1974.

c/ ADM (Average Daily Membership) for school years 1980/81, 1981/82 and 1982/83 was 106.96, **107.50** and **110.5** respectively.

d/ No breakdown of enrollment by grade available prior to 1966/67 school year.

Source: Alaska Department of Education.

obtain their high school education in **Wainwright** and both cited **family** rather than quality of education reasons for their opinions.

4
RECREATION

Prior to construction of the community building and the high school gymnasium, formal recreation **facilities** in **Wainwright** were limited to a half basketball court at the old elementary **school**, while facilities for adults centered around a former movie theater, bingo games and activities associated with the **churches**.

Although **it** has not been used since a June **1982** fire, the community building is scheduled to be repaired by **late** September 1983 and will again be available for bingo, traditional Eskimo and modern dances, movies, games and community meetings. The **school** gymnasium is available to the general public after school hours for children and for adult activities. **In** addition, a swimming pool constructed as part of additions to the high **school** in **1983** is normally open to the public after school hours.

Community events receive strong support in **Wainwright**. These events center around the Fourth of July, Thanksgiving and Christmas/**New Year**. In addition, numerous feasts are held in connection with whaling activities, with the biggest being **Nalukataq** held each year at the end of the whaling season, usually in June. **Wainwright** residents also participate in a variety of informal recreation activities involving picnics and visiting with friends and relatives. The village has **long**

had an active Eskimo dance group and Eskimo dances and games are held several times each year.

UTILITIES

Water

- Prior to 1973, **Wainwright** residents obtained their water from a lake almost 2 miles southwest of the village near Point Collie. However, **Wainwright** was one of two villages in the State (the other was **Emmonak**)
- selected by the U.S. Environmental Protection Agency for a demonstration project during the early 1970's. As part of that-project, a plant designed to provide safe water, waste water disposal and human waste disposal, as well as laundry, toilet, bathing and sauna facilities was constructed at **Wainwright** in 1973. In association with that project, the U.S. Public Health Service built a 1 million gallon water tank to store raw water. The original EPA building was destroyed by fire in November of that same year. Reconstruction of the building was completed in 1975 and the North Slope Borough assumed responsibility for its maintenance and operation in 1979.

Wainwright has continued to use the same water source used by individuals prior to construction of the water treatment plant (name used by the Borough for the EPA building). The lake freezes to the bottom during the winter. As a result, a polyethylene hose is run out to the lake during the summer and water is pumped into two 1 million gallon storage tanks (the original Public Health Service tank and a

second tank built by the **North Slope** Borough) in town. To date, the village water source has proven to **be** reliable and capable **of** providing water in sufficient quantities for community needs. However, **Wainwright** has been plagued **by** water storage problems. The **Public** Health Service tank was built on pilings which have settled unevenly, **while** the second tank which was built on a gravel pad has also **settled** differentially.

Water is drawn from the water storage tanks and is filtered and chlorinated prior to being stored **in** a 5,000 gallon potable water storage tank in the water treatment plant. Service is provided to the old elementary **school** via an **arctic** pipe leading from the water treatment plant. However, service is frequently interrupted because of pipe **breakages**. The **Wainwright school** (**Alak** high school and the new elementary school) are connected to the water treatment plant via an above ground **utilidor** system. (The utilities building completed in **1983** as part of the school project will process **all** water to be used in the **Wainwright** school , including that for the swimming **pool**). All other water users in the village **rely** on water delivered by a Borough Public Utilities department heavy duty truck. with a 2,000 gallon holding capacity. Frequency of delivery varies according to demand and to the availability of Public Utilities department staff.

There have been a number of problems associated with the **Wainwright** water system. Aside from problems with the existing water tanks, there is a danger of cross--contamination in the water treatment building because of the proximity **of** waste treatment and water treatment processing operations. Delivery service has been subject to frequent

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-
interruption because of problems in maintaining the water truck, a problem made worse by the current lack of a warm storage building for the vehicle. In addition, the washeteria facilities have been out of service for much of the time, as have the toilet and shower facilities.

Planned upgrading of **Wainwright's** water system by the North Slope Borough includes increasing the village's water storage capacity and renovation of the water treatment building. Other improvements being considered include a permanent line to the village water source and corrosion protection for the water tanks. In addition, a vehicle maintenance and storage building will be built in the near future to accommodate all Borough equipment in the village, including utility vehicles. This should lead to more efficient operation of the water truck.

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As of August 1982, there were 112 occupied housing units in **Wainwright**. Other water users included the schools, the stores, the village corporation offices, the **health** clinic, the public safety building, the hotel, the new fire station and several construction camp facilities. Department of Public Utilities records for the period July 1 through December 31, 1982 indicate an average daily use of 3,445 gallons or 7.4 gallons per capita. Actual use rates would normally be significantly higher since the department's figures exclude water picked up at the tank free of charge plus water consumed by the showers, toilets, sauna and washeteria at the water treatment plant. For the July through December **1982** period, however, these facilities were seldom in operation

and the department's figures are therefore probably reasonably representative of actual consumption.

Sewage

Before **1973**, sewage disposal in **Wainwright** was handled on an individual basis. This was modified in 1973 (and later in 1975 when the first building burned **to** the ground) **by** the **U.S.** Environmental Protection Agency which built a water treatment plant in the village to provide **safe** water, waste water disposal and human waste disposal, as well as laundry, toilet, bathing and sauna facilities. The North **Slope** Borough assumed responsibility for the operation of this building in **1979**.

As in many other villages, there are two systems of sewage disposal at **Wainwright**. The schools and **washeteria** are connected to the sewage treatment' processing unit in the water treatment plant and the new fire station, the new health clinic and the new hotel are each equipped with holding tanks for the collection of backwater which can be emptied by the Borough sewage truck. However, most other public facilities and housing units in the village continue to rely on **honeybuckets**.

Within the water treatment plant, **sewage treatment consists** of flocculation and chlorination and the treated effluents are disposed of through an outfall **line** leading to the ocean. The old elementary **school** is connected to the water treatment plant by an arctic pipe which contains both freshwater and backwater lines, but that service is often disrupted because of line breakage. Service **lines** to the **Wainwright**

school are housed in an above ground **utilidor** which also contains freshwater and backwater lines. However, the sewage outfall line from the water treatment plant to the beach is currently broken and sewage is instead transported from the plant to the beach **by** the Borough sewage truck.

Disposal of sewage waste generated **by businesses** and residences not connected to the water treatment plant involves storage of the wastes in 55-gallon drums lined with plastic bags. These drums are then periodically picked up and transported to the village dump located about 1.5 **miles** northeast of the village. Because there is not yet a permanent road to the dump, access to that site is limited to a route along the beach in the summer or across the tundra in the winter. Neither route can be traversed by the Borough sewage truck.

The dumping of graywater under or near buildings during the winter months complicates sanitation problems as it leads to ice accumulations and adds to surface drainage problems after break-up. **In** addition, the volume of graywater discharged in the village increases as the water delivery system is upgraded and as new buildings with internal plumbing are built.

Wainwright's present system of sewage disposal is not satisfactory.

Improvements planned by the North Slope Borough include renovation of the present **utilidor** and arctic pipe, upgrading of the water treatment plant and repair of the outfall line. Complete separation of water treatment and sewage treatment processes in the water treatment plant is

also planned. Development of a road to the dump and a landfill facility will improve sanitation hazards in the village caused by the storage of large numbers of sewage-filled drums lined with plastic sacks. Finally, construction of a new vehicle maintenance and storage facility will permit housing of the sewage truck in a heated building which should make it easier to keep the vehicle operational.

Solid Waste

Solid waste disposal services in Wainwright are the responsibility of the North Slope Borough Department of Public Utilities. However, because of the lack of a road to the village dump which can be traversed by Borough equipment, solid waste disposal is done on an individual basis. The present dump site is located about 1.5 miles northeast of the village and can be reached along the beach in the summer or across the tundra in the winter.

As with sewage pick-up services, a major obstacle to solid waste disposal at Wainwright is the lack of a road to the dump. The absence of a formal dump site compounds this problem. One result of these problems is the accumulation of garbage (and sewage) in the village, a situation which is not only unsightly but which poses health hazards. The Borough has plans to build a road out to the dump site area and to develop a landfill near that location. Once access to the dump has been provided, pick-up of garbage by Borough Public Utilities vehicles will be possible and a major community annoyance will have been removed.

Electric Power

Electric power generation and distribution services at **Wainwright** are the responsibility of the North Slope Borough Department of Public Utilities. Like other North Slope Borough villages outside of Barrow, electric power in **Wainwright** is all **diesel-generated**. The present power plant is located in the vocational education **building** adjacent to the **Alak** high school and houses four generators with a combined total rated capacity of **1,010 KW** (see Table 44). Three of the generators have been equipped with engine governors to permit their operation in parallel. However, the largest generator cannot be paralleled with the remaining units. The present distribution system is primarily a 7,200/12,470 volt three phase loop feed system with single feed lateral feeders.

Like other North Slope Borough villages, **Wainwright** has experienced rapid growth in electric power demand during the past few years, due both to community growth and to the construction of major facilities. Department of Public Utilities records show the peak power **demand** for **fiscal** year 1979/80 at 290 KW, that for 1980/81 at 350 KW and that for 1981/82 at **410 KW**. Department records also indicate that sales of power in the village totaled 588,674 KWH for the six month period from July 1 through December 31, 1982. Total sales in January **1983**, excluding the schools, amounted to 157,001 KWH. As of that **latter** date, there were **141** meters in service. New housing construction and planned major public facilities **should** ensure a continued growth in average and peak power demands.

TABLE 44
 FIRM AND PEAK GENERATING CAPACITIES
WAINWRIGHT
 OCTOBER 1982

<u>Unit No.</u>	<u>Prime Mover</u>		<u>Nameplate Capacity (KW)</u>	<u>Generator Unit</u>		<u>Hours Operated a/</u>
	<u>Make</u>	<u>Horse-power</u>		<u>Make</u>	<u>Voltage</u>	
1	CAT	270	160	CAT	480	21,137
2	CAT	235	160	CAT	480	10,473
3	CAT	450	250	CAT	480	9,717
4	CAT	755	440	CAT	480	2,631
<u>TOTAL</u>			<u>1,010</u>			

a/ Per North **Slope** Borough **Public** Utilities Department Village Operations Manager, October 26, 1982.

Source: North **Slope** Borough Department of **Public** Utilities.

The **Wainwright** generators are reported **to** be in good condition except for normal wear. However, generation capacity is considered to be a problem. Current demands exceed the plant's generation capacity, even when the schools and the water treatment plant generate their own power. The existing distribution system is also considered to be in need of replacement and having the power plant housed in the vocational education building has proven to be unsatisfactory. Maintenance **is** a continuing problem, one which is compounded by a turnover of operators.

The Borough is currently studying the feasibility of utilizing natural gas from the **Prudhoe** Bay or Kuparuk areas, building a major power plant facility at one of those locations, and transmitting electric power to Barrow, **Nuiqsut, Wainwright** and **Atkasuk** via an overhead transmission **line**. The impetus for these investigations is the relatively short remaining life of the Barrow gas fields plus the high cost of diesel fuel.

Fuel Storage

Fuel storage at **Wainwright** is undertaken by the **Olgoonik** Corporation, the North Slope Borough School District and the North Slope Borough Department of Public Utilities. In addition, the fire station can store the equivalent of one year's supply of fuel and the new health clinic and vehicle maintenance and storage building will have the same capability.

There are four tank farm **sites** in **Wainwright**. The largest and the one which serves the **village** as a whole is operated by the **Olgoonik** Corporation and is located near the coast immediately north of the **Wainwright** townsite. A **small** tank farm used by the North Slope Borough School District is located at the **old** elementary school site. However, the main Borough tank farm is located west of the vocational education building of the Alak high school and includes tankage for both the Department of Public Utilities and the North **Slope** Borough School District. Another tank farm operated **by** the North Slope Borough Department of Public Utilities is located adjacent to the water treatment plant. The combined total storage capacity in these four tank farms plus the fire station (but excluding new tankage at the elementary school) in 1983 amounted to approximately 799,101 gallons.

Fuel is delivered to the village once a year by barge and is piped via intake lines which run from the ocean to three of the tank farm sites. The fourth site (near the water treatment **plant**) is filled by using a temporary hose.

The **Olgoonik** Corporation tank farm serves the village, teacher housing units and a portion of the North Slope Borough Department of Public Utilities' **needs**. The School **District** has general **ly** adequate tankage for its requirements, especially with the addition of four additional tanks at the new elementary school. However, teacher housing units are served by **Olgoonik** because the corporation has a delivery truck. By contrast, the Department of **Public** Utilities' **fuel** tank facilities are

inadequate to meet its needs and provision of additional tankage for that purpose is included in Borough construction **plans**.

Fuel consumption records for **Wainwright** are sketchy. In 1981/82, an estimated 597,000 gallons of diesel fuel was consumed in the community. This figure rose to close to 666,500 gallons in 1982/83. The amount of fuel consumed in the village will increase further as new facilities in the village are built.

COMMUNICATIONS

Telephone services in **Wainwright** and other small North Slope villages are provided by the Arctic Slope Telephone Associated **Co-op, Inc. (ASTAC)**, a non-profit cooperative corporation. Seed money for the organization of the cooperative and the preliminary work needed to obtain a certificate of convenience and necessity from the Alaska Public Utilities Commission was provided **by** the Arctic Slope Regional Corporation. Once the certificate was obtained, loans for plant acquisition and installation were obtained from the U.S. Rural Electrification Administration. The building housing the **switchgear** was built by the North Slope Borough and is leased to ASTAC which owns the **switchgear**, telephone **cable** and other system support equipment.

The provision of local dial telephone service was a major advance over the previous bush telephone system. According to information provided by ASTAC in February **1983**, **Wainwright** had a total of 104 residential and 34 business telephone subscribers.

ATQASUK

Introduction

Atqasuk is located inland from the Arctic Ocean on the Meade River and is within the boundaries of National Petroleum Reserve-Alaska (NPR-A). The village is about 60 miles south of Barrow, 58 miles east of **Wainwright** and 477 miles northwest of Fairbanks. It was incorporated as a second class city under Alaska law on October 25, 1982.

The present site of **Atqasuk** is not far from Old **Atqasuk** and **Tigaluk** which had been used traditionally as base camps for hunting, trapping and fishing. **Tigaluk** was also the site of a small underground sub-bituminous coal mine which began operations during World War II and continued until the early 1960's.

The **re-establishment** of **Atqasuk** at its present site was encouraged and sponsored by both the **Atqasuk** Corporation and the Arctic Slope Regional Corporation, the village and regional corporations established under terms of the Alaska Native Claims Settlement Act of 1971. Unlike the other two **re-established** villages on the North Slope (**Nuiqsut** and Point Lay), however, the **village** layout and initial development of **Atqasuk** was handled by the North **Slope** Borough rather than by the **Arctic** Slope Regional Corporation.

Much of the **information** on **Atqasuk** contained in the following pages was collected by Alaska Consultants, Inc. for the North Slope Borough and

was published in the June 1983 report **entitled** "Background **for** Planning: City of **Atqasuk**". That information was supplemented by **fieldwork** conducted specifically for this project during the summer **of 1983** and by observations from ongoing work in the village being conducted for the North Slope Borough. Information on the subsistence economy and subsistence land use was collected in the field in **1983** specifically for this study.

Popul ati on

PAST POPULATION TRENDS

Atqasuk was **re-established** during the mid-1970's, with the first residents living in tents **until** the first North Slope Borough housing units were built in **1977**. **The 1980** Census counted **107** Total residents. According to a Borough-sponsored census in **July 1982**, the community's population had reached **210**, almost double the **1980** figure. Another Borough-sponsored census in **July 1983** found that **Atqasuk's** population had risen still further to **231**, representing a **115.9** percent increase since 1980 (see Table 45).

ORIGIN **OF** POPULATION

The village of **Atqasuk** was **re-established** by Barrow residents. This was confirmed by the 1980 North Slope Borough housing survey which asked **Atqasuk** villagers to name their prior **place** of residence. Thirteen **of** the **14** Alaska Native households interviewed answered this question and

TABLE 45
 POPULATION TRENDS
 ATQASUK
1939 - 1983

<u>Year</u>	<u>Popul ati on</u>	<u>Percent Change</u>
1939	78 <u>a/</u>	
1950	49 <u>a/</u>	-37.2
1960	30 <u>a/</u>	-38.8
1970	e-	
1980	107	
1983 <u>b/</u>	231	115.9

a/ Old Atqasuk.

b/ 1983 population based on a July 1983 count by the North Slope Borough.

Sources: U. S. Bureau of the Census.
 North Slope Borough.

all had come from Barrow. By contrast, of the 5 non-Native households surveyed, 2 had come to **Atqasuk** from out-of-State and the remaining 3 had come here from Alaska locations outside the North Slope Borough.

The 1983 fieldwork further confirmed the findings of the 1980 housing survey. Over half of the people interviewed were born in the **Atqasuk** area, married to someone who was born there, or had traditionally spent their summers at fish camps in this area. According to local residents, the initial re-establishment of the village was undertaken almost entirely by people who had family ties to the area. Since then, in-migration of **Inupiat** from Barrow to **Atqasuk** who were attracted here by employment opportunities rather than by family ties has also taken place.

Two main reasons were given by **Inupiat** persons interviewed in 1983 for moving from Barrow to **Atqasuk**. The first was family ties to the **Atqasuk** area, while the second was more related to a desire to get away from Barrow. Reasons given for the latter primarily related to social changes which have been occurring in the larger community, including a significant increase in the proportion of non-Natives and a resulting feeling of cultural alienation. The selection of **Atqasuk**, aside from family ties, appears to be related to the current high level of construction activity in the village and convenience to Barrow. As elsewhere in the North Slope Borough, the main reasons given by "whites" for moving to **Atqasuk** were related to opportunities for professional and financial rewards.

According to the 1983 fieldwork, about two-thirds of the people interviewed planned to remain permanently in **Atqasuk**, with the remainder indicating that if they did move it would be to Barrow. Of all the North Slope villages, **Atqasuk** maintains the closest ties with Barrow. Over half of the people interviewed still owned houses in the larger city and there is a great deal of travel between the two communities.

POPULATION COMPOSITION

The outstanding feature of **Atqasuk's** population composition is that most residents of this community are Eskimo. According to the 1980 North Slope **Borough** housing survey, Eskimos made up 88 percent of the village's total population (see Table 46).

The same 1980 Boroughwide housing survey found the median age of the village's population to be 24.8, slightly older than the median of 23.7 for all smaller villages on the North **Slope**, i.e. excluding Barrow. **Atqasuk's** higher median age in 1980 in part reflected an unusually high number of residents aged 50 or older. Fully 18.9 percent of **Atqasuk's** 1980 population was in this age group, compared with 11.6 percent in the smaller Borough villages as a whole (see Figure 28).

A look at **Atqasuk's** age composition by sex is also revealing. The median age of male **Atqasuk** residents in 1980 was 30.2, compared with 21.7 for females. This disparity in age between males and females was still in evidence when non-Natives were excluded (28.2 years for males

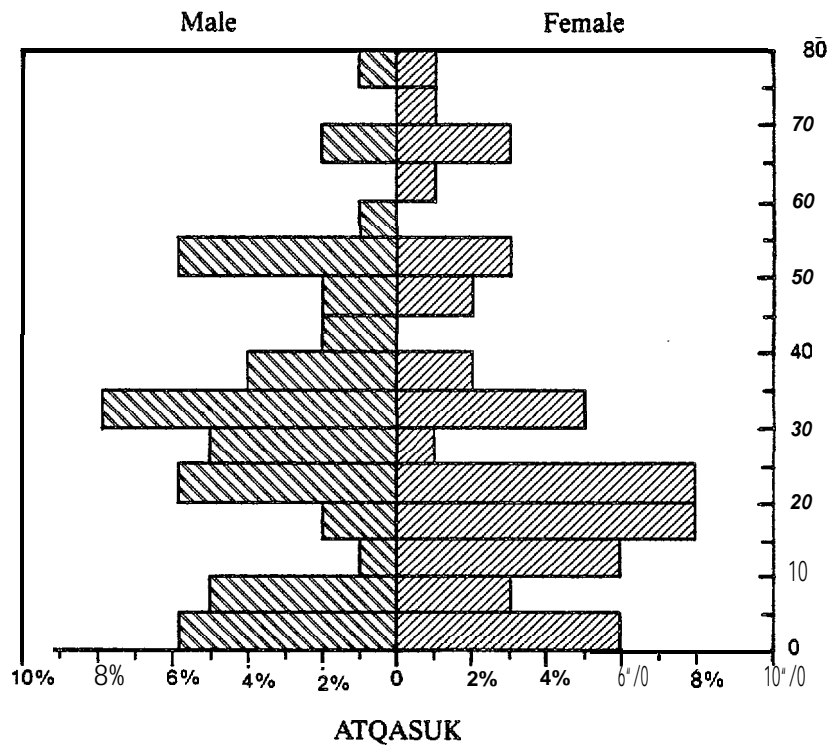
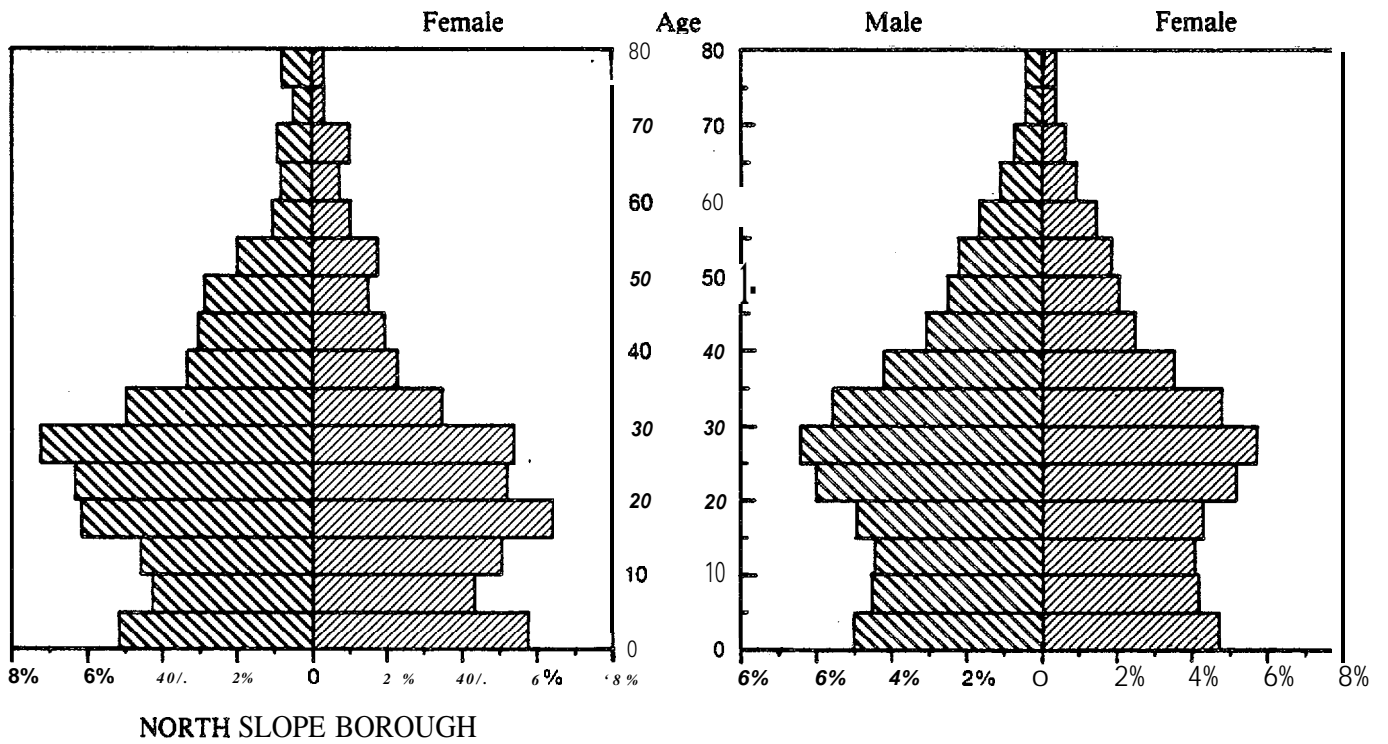
TABLE 46

POPULATION COMPOSITION BY RACE AND AGE a/
 ATOASUK

-4EL-	Alaska Native			Non-Native			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0 - 4	5	6	11	1	0	1	6	6	12
5 - 9	4	3	7	1	0	1	5	3	8
10 - 14	1	6	7	0	0	0	1	6	7
15 - 19	2	8	10	0	0	0	2	8	10
20 - 24	6	7	13	0	1	1	6	8	14
25 - 29	4	1	5	1	0	1	5	1	6
30 - 34	4	4	8	4	1	5	8	5	13
35 - 39	3	2	5	1	0	1	4	2	6
40 - 44	2	0	2	0	0	0	2	0	2
45 - 49	2	1	3	0	1	1	2	2	4
50 - 54	4	3	7	2	0	2	6	3	9
55 - 59	1	0	1	0	0	0	1	0	1
60 - 64	0	1	1	0	0	0	0	1	1
65 - 69	2	3	5	0	0	0	2	3	5
70 - 74	0	1	1	0	0	0	0	1	1
75 - 79	0	0	0	0	0	0	0	0	0
80 - 84	1	1	2	0	0	0	1	1	2
<u>TOTAL</u>	<u>41</u>	<u>47</u>	<u>88</u>	<u>10</u>	<u>3</u>	<u>13</u>	<u>51</u>	<u>50</u>	<u>101</u>
<u>Median Age</u>	<u>28.2</u>	<u>21.2</u>	<u>23.0</u>	<u>31.0</u>	<u>31.5</u>	<u>31.5</u>	<u>30.2</u>	<u>21.7</u>	<u>24.8</u>

a/ Figures exclude a total of 7 persons (4 Alaska Native males and 3 Alaska Native females) for whom no age information was provided.

Source: Alaska Consultants, Inc. North Slope Borough Housing Survey, prepared for the North Slope Borough, Public Works Department. Anchorage. September 1980.



COMPOSITION OF POPULATION
1980

Sources: U.S. Census
Slope Borough Housing Survey, Alaska Consultants, Inc., 1980
Figure 28

and 21.2 years for females). Statewide, the median age of Alaska Native males in 22.6, well below that found in Atqasuk. Even the overall Statewide median age for males in 1980 (26.1) was younger than in Atqasuk, although the Statewide median for females (26.3) was above that of the village. The national median ages in 1980 were 28.8 for males and 31.3 for females.

Not surprisingly, given the relative maturity of Atqasuk's population, the village had a smaller proportion of persons in the very young age ranges in 1980. According to the 1980 North Slope Borough housing survey, 11.9 percent of Atqasuk's population was under 5 years of age, compared with 13.3 percent for all of the Borough's smaller villages, i.e. excluding Barrow. All told, 36.6 percent of Atqasuk's 1980 population was under the age of 20, significantly less than the 47.7 percent in this age range in the smaller villages of the Borough.

Aside from in-migration or out-migration, the childbearing decisions made by the 15 to 29 year age group in Atqasuk will largely determine the community's rate of growth during the next few years. In 1980, 29.7 percent of Atqasuk's population was aged between 15 and 29, compared with 34.9 percent for all small North Slope villages and 32.5 percent for the State as a whole.

According to the 1980 housing survey, Alaska Native females in Atqasuk outnumbered Alaska Native males by a 52.6 to a 47.4 percent margin. This was unlike the North Slope Borough as a whole where Alaska Native males outnumbered Alaska Native females in 1980. (Nuiqsut was the only

other village in the region in 1980 where Alaska Native females were found to outnumber Alaska Native males).

Since 1980, the composition of **Atqasuk's** population is believed to have undergone a significant change. A July 1983 Borough-sponsored census indicated a 115.9 percent growth in the village's population since 1980, from 107 to 231 residents. Age information was collected as part of a July 1982 Borough census. According to those data, males made up 59.0 percent of all residents in the village. Although the July 1982 figures included some non-resident, temporary construction workers, it still appears that a significant proportion of migrants to **Atqasuk** after 1980 was made up of males attracted here by employment opportunities. These findings are consistent with those reported by the 1983 fieldwork which noted that earlier migrants to the village were those with family ties to **Atqasuk** area, while more recent migrants were those who came here because currently high levels of construction employment offered them an opportunity to leave Barrow.

SOCIAL INTERACTION

According to the 1980 North Slope Borough housing survey, 13 of the 108 people living in the village at that time (12 percent) were non-Native. While the number of non-Natives has increased since that time, so has the number of **Inupiat** residents. If transient white construction workers are excluded, the proportion of non-Natives in the village is not believed to have changed significantly since 1980.

Since at least some **Atqasuk** residents indicated that changing social conditions in Barrow had precipitated their move from that community, questions were asked about relationships between **Inupiat** and whites in **Atqasuk** as part of the 1983 fieldwork. In general, this did not appear to be an issue in the village. The vice-mayor of the city is a non-Native and he, as well as several other locally based "whites", appear to be generally well accepted by the community.

Some negative feelings were expressed about transient white construction workers who were perceived by some **Inupiat** residents to be taking jobs which could be filled by **local** people. Such negative feelings were not universal since several **Inupiat**s indicated that imported white workers were necessary to perform **skills** not possessed by local residents. On the other hand, it was apparent that there was **little** communication between white construction workers living in camp accommodations and village residents beyond that necessary in the workplace.

MIGRATION

The present community of **Atqasuk** is **less** than ten years old. However, although two-thirds of the people interviewed as part of the 1983 fieldwork indicated that they intended to remain permanently in the **village**, over half of the people interviewed continued to maintain residences in Barrow. **While** there are no quantitative data available, it is apparent that there **is** a great deal of coming and going between the two communities. For example, the village mayor at the time of the 1983 fieldwork has since moved, at least temporarily, back to Barrow.

Given the relatively short term duration of North Slope Borough capital improvements program construction employment and the lack of other economic activity to fill the void which will be left when scheduled construction projects are completed, **Atqasuk** residents were queried about their employment mobility as part of the 1983 fieldwork. These questions were framed in terms of past or present employment on the Pipeline and at **Prudhoe Bay/Deahorse** and what such persons liked most and least about such experiences.

No one interviewed in **Atqasuk** in 1983 was working in oil and gas-related occupations at **Prudhoe Bay/Deahorse** or elsewhere. This was consistent with Alaska Consultants' findings in 1982. However, several residents had previously worked as carpenters building Pipeline camps. These people said that they had stopped working when their jobs were completed except for one man who said he quit his job to be with his family more. The best thing that people associated with these jobs was the money. However, because of the current availability of well paid construction jobs in **Atqasuk**, village interest in moving elsewhere for employment is presently at a low level. **Atqasuk** residents also indicated that if they had to leave the village for employment, they would prefer to seek jobs in Barrow rather than at Prudhoe Bay.

RECENT TRENDS AND CHANGES

Atqasuk's population more than doubled (115.9 percent) between 1980 and 1983. While some of this growth can be attributed to the impetus of the

village's **re-establishment**, most **is** directly related to construction of housing and basic community amenities funded through the North **Slope** Borough capital improvements program. These activities have provided a local source, albeit a temporary one, **of well** paying construction jobs. They have also provided a smaller number of permanent jobs related to operation and maintenance of completed facilities.

Major Borough construction projects underway during the summer of **1983** included a gravel dredging program and construction of a new school and a health clinic. Given **Atqasuk's small** resident labor force, such jobs have attracted new **Inupiat** residents to the community from Barrow. They have also contributed to the maintenance of a sizable construction camp at **Atqasuk** which mainly houses non-Native workers. The dredge operation presently maintains a second camp facility in the village.

Economy

Traditionally, the upper Meade River area in which **Atqasuk** is located supported **Inupiat** groups whose subsistence activities were based on **inland** resources. These **people** had little direct use of the more distant ocean mammals except for those obtained through trading with "coastal **Inupiat**. Terrestrial **activities** were centered around camps " serving as bases for hunting, fishing and trapping. While caribou hunting was undoubtedly one of the most important activities, fishing and hunting of migratory **fowl** were also important to the subsistence regime.

- Today's **Atqasuk** is not far from the sites of Old **Atqasuk** and **Tigaluk**. A strong motivating force in the resettlement of the village of **Atqasuk** was the desire of many current residents to live again in the upper **Meade** River area where subsistence resources had once supported a permanent **Inupiat** population. Many families had members whose original homes were in the camps which served as bases for hunting caribou and migrating fowl, for river fishing and for the trapping of furbearers. These subsistence resources are still utilized by **Atqasuk** residents.

- A very significant development in terms of **Atqasuk's** economy was incorporation of the North Slope Borough in **1972**. Since that date, the Borough has assumed responsibility for a wide range of government services and has also undertaken an ambitious capital improvements program. This program was used to fund the construction of the new town of **Atqasuk**. Thus, the Borough not only provided housing and public facilities in **Atqasuk** but it also simultaneously provided a number of service and temporary construction jobs in the village.

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Passage and implementation of the 1971 **Alaska** Native Claims Settlement Act (**ANCSA**) was also a significant force in re-establishing the village of **Atqasuk** and contributing to its economy. This legislation, with its land-and financial settlements, has provided village residents with additional economic leverage through the creation of village and regional profit corporations. The Arctic Slope Regional Corporation encouraged the migration of interested **Inupiat** families to new **Atqasuk**, while the **Atqasuk** Corporation is active in the non-government sector of the local economy.

COMPOSITION OF EMPLOYMENT

Employment statistics published by the Alaska Department of Labor cover the entire North Slope Borough, including **Prudhoe** Bay, and therefore do not provide meaningful statistics for individual villages. To understand local employment conditions at **Atqasuk**, a special count of employment here was taken by Alaska Consultants in August 1982.

The August 1982 employment count identified about 71 jobs in **Atqasuk** on an annual average full-time basis (see **Table 47**). This total figure included several persons temporarily based in the village for contract construction employment. Direct North Slope Borough employment accounted for 28 jobs or 39 percent of all jobs in the village in **1982**. Contract construction employment totaled another 34 jobs (**47.5** percent of the total), **all** of it directly attributable to the construction of Borough capital improvement projects then underway in **Atqasuk**. Together, direct Borough jobs and temporary Borough-funded construction jobs accounted for **87.2** percent of **all** employment in the village in **1982**.

The trade sector of the **local** economy consisted of 2 jobs with the **Atqasuk** Corporation store, **while** the finance, **insurance** and real-estate sector was represented by 2 positions in the **Atqasuk** Corporation's general office. Four jobs were counted in the services sector, **all** related to operation of the **AIC** construction camp. The one remaining job was in the transportation, communications and **public** utilities

TABLE 47

AVERAGE ANNUAL FULL-TIME EMPLOYMENT
ATQASUK
1982

<u>Industry Classification</u>	<u>Number</u>	<u>Percent of Total</u>
Agriculture, Forestry and Fishing	0.0	0.0
Mining	0.0	0.0
Contract Construction	33.5	47.5
Manufacturing	0.0	0.0
Transportation, Communications and Public Utilities	1.0	1.4
Trade	2.0	2.8
Finance, Insurance and Real Estate	2.0	2.8
Services	4.0	5.8
Government	28.0	39.7
Federal	(0.5)	(0.7)
State	(0.0)	(0.0)
Local	(27.5)	(39.0)
<u>TOTAL</u>	<u>70.5</u>	<u>100.0</u>

Source: Alaska Consultants, Inc.

sector and was associated with the operation **of** a local air taxi business.

Employment opportunities afforded **by** the petroleum industry in exploration, development and operations activities **in the** Prudhoe Bay area did not attract any Atqasuk workers in **1982 (or in 1983)**. However, in the longer term, when the Borough's major capital improvements scheduled for **Atqasuk** have been completed and opportunities for temporary construction jobs in the community begin to decline, **local** residents may find employment opportunities in petroleum-related activities more attractive as a means of meeting the cash requirements to maintain their homes and support their families in the village. Such a transition would more easily be made if commercially developable quantities of **oil** and gas were found closer to **Atqasuk** than Prudhoe Bay.

UNEMPLOYMENT AND SEASONALITY OF EMPLOYMENT

There are no reliable statistics available which document rates of unemployment in **Atqasuk** or any other North **Slope** Borough village. The figures published by **the** Alaska Department of Labor for the North Slope Borough include **Prudhoe** Bay where everyone is employed and where most jobs **in the** region are located. **As** a result, conditions in the **region's** traditional villages are obscured.

Despite the lack of firm statistics, it appears that there may have been **at least** some under-employment in **Atqasuk** in **1982**. A **July 1982** census sponsored by the North Slope Borough counted 210 residents **in Atqasuk**,

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- including several persons who were not permanent residents but who were employed in temporary contract construction activities. The ages of 202 of the 210 persons were also recorded. Of the persons for whom age information was available, 114 were in the 18 to 65 year age range, including 71 men and 43 women. When this figure of 114 is compared to the 71 full-time job equivalents counted in August 1982, the gap between population and jobs seems large. However, a significant proportion of **Atqasuk** females is outside the labor force (i.e. they are not seeking employment), and many **local** men are engaged in temporary construction activities rather than in full-time, year-round occupations. As a result, unemployment in the village is not nearly as significant as suggested by a comparison of population and employment statistics.

- A factor not easily assessed when evaluating unemployment and under-employment in **Atqasuk** and other North Slope Borough villages is the amount of time that residents devote to traditional subsistence activities which temporarily remove them from the labor market. The availability of a worker at a given time is conditioned by that individual's perception of the need to spend time on a subsistence-related activity. Temporary construction work, particularly that which is close to home, provides the part-time employment and sufficient cash income to fit well in the cash/subsistence economy which now exists in **Atqasuk**. Occupations associated with the Prudhoe Bay area which feature long hours of work plus extended leave periods may also be fairly compatible with subsistence activities.

Weather conditions cause some seasonal variations in temporary construction employment in **Atqasuk**. The main variations in temporary construction employment, however, are related to the number and type of capital improvement projects being constructed locally. For example, uneven scheduling of construction work from year to year can result in **local** unemployment or it may necessitate the importing of labor for jobs that otherwise could have been **filled by** village residents.

INCOME LEVELS

The **1980** Census found the median household income for the North Slope Borough to be \$31,378. The median household income for Alaska was **\$25,421**, and the mean household income for Alaska Natives Statewide was \$21,865.

A comprehensive housing survey conducted for the North Slope Borough in **1980** obtained income information for individual communities. In **Atqasuk**, this information was based on a sample of 20 households. It found the median household income in **Atqasuk** to be \$24,167, with that for local Alaska Native households being a slightly lower \$23,333.

The **purchasing** power of the **dollar** in remote and **isolated** communities such as **Atqasuk** is greatly diminished by high **local** prices for goods and services. **All** freight normally moves into the village by air, adding significantly to the landed cost of **goods**. Because of the great distances involved, as **well** as the mode of transport, store-bought food prices here are probably **double** those in Anchorage. As a result,

subsistence hunting and fishing activities remain an economic necessity for most local residents.

Housing costs in **Atqasuk**, especially those for utilities, are also extremely high and serve to further reduce the spending power of household incomes. Heating oil cost about \$3.00 per gallon here in 1983. The average home in **Atqasuk** reportedly uses between 3 and 4 55-gallon drums of fuel oil per month during the winter months. As a result, the average family thus spends close to \$550 or more per month for much of the year just to heat its home.

ECONOMIC GROWTH PROSPECTS

Like the other smaller North Slope villages, **Atqasuk** has a relatively simple economic base. The primary driving force in the community's economy has recently been government spending, particularly by the North Slope Borough. The **Atqasuk** Corporation **also** has an economic impact. However, most of its construction and retail sales income depend on Borough construction contracts or upon the cash of local residents which is generated by Borough service employment or by temporary employment derived from Borough-funded construction activities.

Borough employment in **Atqasuk** and other North Slope villages can be divided into two types. The first is service jobs associated with the operation and maintenance of Borough facilities such as the school, the clinic, the public safety building and utilities systems. The second is temporary jobs associated directly with the construction of capital

improvement projects. It is important to recognize the difference between these two types of Borough jobs. Jobs associated with the operation and maintenance of facilities are permanent, **while** construction jobs are temporary in nature and their number fluctuates from year to **year**.

Construction activities in **Atqasuk** associated with the Borough capital improvements program have recently been at a high **level**. The North Slope Borough has constructed **all** major facilities in this community including housing, the public safety building, the new school, the new fire station and utilities systems. Other projects either underway or scheduled include a new health clinic, a new power plant, water and sewer facilities, a new vehicle maintenance and warm storage building, warehousing facilities, additional new housing and the dredging and stockpiling of gravel for use in constructing a new airstrip and **local** roads. However, in the longer term, the **level** of construction employment derived from the North Slope Borough capital improvements program can be expected **to level** off as community needs are met. **Unless** some other economic activities can pick up the "slack", some decline in community growth can be expected at that time.

The **Atqasuk** Corporation received a **cash** distribution and rights to "select the surface estate of **69,120** acres of **land** in the general vicinity of the village under terms of the **Alaska Native Claims Settlement Act**. To date, the Corporation's activities have centered upon construction ventures and operation of the local store. The Corporation has **also** recently formed a joint venture with Eskimos **Inc.**

to operate the village fuel dealership. Outside the village, the **Atqasuk** Corporation is involved with the **Pingo** Corporation, a construction and service firm owned by all but one of the North Slope village corporations and which operates primarily in the **Prudhoe** Bay area.

A review of the final environmental impact statement issued by the Bureau of Land Management for oil and gas leasing in the National Petroleum Reserve-Alaska (**NPR-A**), suggests that oil and gas resources are unlikely to be developed in the immediate area of **Atqasuk**. Inland development of oil and gas resources, if it takes place at all, appears more likely in the upper reaches of the **Utukok** River to the southwest of **Atqasuk** or in the **Peard** Bay/**Point Belcher** area close to the **Chukchi** Sea, northwest of the village. **Atqasuk** residents might be more willing to live temporarily away from home in oil and gas camps if work sites were closer to the village than those at **Prudhoe** Bay. (No **Atqasuk** residents now hold regular jobs in **Prudhoe** Bay). Once the North Slope Borough capital improvement projects now scheduled for **Atqasuk** have been constructed, the opportunities for employment in the community will almost certainly decline. At that time, local people may be more inclined to take oil and gas-related jobs outside their village in order to support the increasing cash requirements for maintaining their homes and families in **Atqasuk**.

SUBSISTENCE ECONOMY

For the past few years, **Atqasuk** residents have been **able** to rely on **local** employment opportunities necessary for **the** success of the intermixed economy now prevalent on the North **Slope**. Generally, the subsistence economy of **Atqasuk** is similar to the description provided in the regional overview of the subsistence economy. However, there are several important differences. These differences, a result of the inland orientation of most of **Atqasuk's** subsistence activities, **include:** the dominance of caribou in the subsistence diet, the limited use of three-wheelers, the specialized use of boats and outboard motors, and the unique relationship between the subsistence economies of this village and Barrow.

The single largest contributor to **Atqasuk's** subsistence economy is caribou. **Atqasuk's** inland location places **local** hunters in an ideal situation for the harvest of this resource. The **snowmachine** has greatly enhanced the efficiency of this activity **as it allows Atqasuk** hunters quick access to caribou hunting areas **as well** as the speed necessary to **be** selective in their harvest. Furthermore, hunters can harvest a significant amount of meat and haul it back **to** the village in far **less** time **than** it would take **to** harvest an equivalent amount **by dog team**. These advantages of **snowmachine** caribou hunting pertain **to all** of the study villages but, because of **Atqasuk's** disproportionate dependence on caribou, the **snowmachine** is especially important to **Atqasuk** hunters. **In** the coastal villages of the study area, the use **of** the **snowmachine** is

balanced by the use of three-wheelers and ocean-going boats, whereas in **Atqasuk** the **snowmachine** is the principal means of transportation.

Atqasuk residents' use of three-wheelers is limited because its inland location does not provide the natural roadways common along the beaches and lagoons of coastal areas. Continuous permafrost underlies the entire **Atqasuk** region, and the resultant tussock tundra makes for difficult traveling conditions. Furthermore, **Atqasuk** is a small village without developed roads and all the homes are in close proximity to each other and the present village airports, further reducing the usefulness of three-wheelers. Because of these factors, there are relatively few three-wheelers in **Atqasuk**, and they are commonly used only in and around the village. While the lack of three-wheelers would reduce the average equipment costs of **Atqasuk** hunters (as presented in Table 17), many households have more than one **snowmachine** which equalizes any discrepancy.

One of the primary food sources in **Atqasuk** is fish, and most families have boats and outboard motors to assist them in their subsistence fishing efforts. The initial purchase price of the aluminum boats used in **Atqasuk** is comparable to the other villages of the study area (\$1,800-\$3,000); however, these inland boats do not have the short life expectancy of boats used in the ice-ridden ocean waters common to the other villages. In addition, the outboards used in **Atqasuk** are substantially smaller (ranging from 4.5 to 15 horsepower) than those used on the coast. While these engines have a lower initial purchase price than the engines used on the coast, the shallow nature of the

Meade River and its tributaries often limits the **useful** life of the engines to 2 or 3 years. As noted **in** the section on **Atqasuk's** subsistence land use patterns, by August the rivers are so low that travel to and from fish camp **is** done overland. Some residents who go **to** fish camp at this time of year use their **snowmachines to haul** gear, leaving their boats at camp.

While the limited use of three-wheelers and longer **life** expectancy of boats reduce **Atqasuk** residents' cost for this equipment, several other factors increase local subsistence expenditures. First, the extensive use of **snowmachines**, occasionally even in summer, decreases the life expectancy of these machines. Second, **Atqasuk's** interior location results in increased shipping costs, especially for **fuel**, resulting in increased operating costs for **Atqasuk** residents as **well** as reducing their initial purchasing power. **Finally**, many **Atqasuk** hunters spend additional cash reserves pursuing marine mammals **in** the coastal areas around Barrow.

Advances in communication and transportation, as well as the close familial ties between **Atqasuk** and Barrow residents, are important factors in the continued use of sea mammals in **Atqasuk's** subsistence economy. As stated **in the** section on **subsistence land** use patterns for **Atqasuk**, frequent traveling occurs between the **inland** village of **Atqasuk** and the coastal community of Barrow. **It** is not uncommon for these trips to become spontaneous marine mammal hunting trips. Transporting marine mammals to **Atqasuk** either by **snowmachine** or airplane further increases the cost for **Atqasuk** hunters.

In summary, **Atqasuk's** subsistence economy, like all other villages of the study area, is enhanced by the current availability of local employment. **At** the present time, no **Atqasuk** residents work outside the village in the **Prudhoe** Bay area. Most work available in the village is in temporary construction activities, the on and off nature of which allows residents time for subsistence pursuits. The inland orientation of **Atqasuk** hunters limits the usefulness of three-wheelers and powerful outboard motors. However, increased transportation and operating costs, as well as an initial reduction in buying power, results in **Atqasuk** residents spending a comparable amount of cash on subsistence activities to other villages of the study area.

Political Organization

FORMAL POLITICAL ORGANIZATION

There are two primary political or quasi-political organizations in **Atqasuk**. These are the recently incorporated City of **Atqasuk** and the **Atqasuk** Corporation, the local village corporation established under terms of the Alaska Native Claims Settlement Act. Although the latter is not a public body, its board is elected by corporate stockholders and the corporation **is** in fact a potent political force in the community. **In** addition, the North Slope Borough has an appointed village coordinator in **Atqasuk**.

North Slope Borough

The North Slope Borough has an appointed village coordinator in each North Slope Borough village except Barrow whose job is to maintain a liaison between the village and the Borough mayor's office. The effectiveness of the coordinators varies widely, depending on their position in the village and the diligence of particular individuals. Village **coordinators work** out of their homes since no office space is provided for them in any Borough facilities.

City of Atqasuk

The City of **Atqasuk** was formally incorporated as a second class city under Alaska law in October 1982. At the same time that it was incorporated, village residents voted to initiate a 2 percent **local sales** tax. The city's boundaries take in approximately **42.875** square miles and include nearby hunting and fishing locations, old village sites in the immediate vicinity and lands which might be needed in the future for public purposes.

Consistent with State law for second class cities, **Atqasuk** has a 7-member city council. However, **while second class** cities are normally empowered to undertake a wide range **of local government functions,** **Atqasuk** has few municipal powers since most have been assumed by the North **Slope** Borough on an areawide basis. The major power remaining to the City of **Atqasuk** is recreation. Despite this limitation, the city government is the so-called "voice" of **Atqasuk** and is the group which

represents local desires for community improvements to the North Slope Borough.

In the brief period of its existence, the city has concentrated much of its attention on organizational issues and has also been active in working with the **Atqasuk** Corporation on a 14(c)(3) agreement, i.e. lands to be conveyed to eligible municipalities under terms of Section 14(c)(3) of the Alaska Native Claims Settlement Act, as amended. Assistance has been forthcoming from both the North Slope Borough and the Alaska Department of Community and Regional Affairs on this subject. The Department of Community and Regional Affairs has also been working with the city on organizational issues.

Thus far, the **Atqasuk** city government has maintained exceptionally good relations with the **Atqasuk** Corporation and work on a 14(c)(3) agreement has been progressing smoothly. Aside from a very modest organizational grant from the Department of Community and Regional Affairs, the city has received \$80,000 from the North Slope Borough from the sale of land for a generator building, water tanks and a warehouse facility. The city currently has no permanent office, nor does it maintain any **full-time** staff.

Prior to the city's incorporation, **Atqasuk** had a traditional council with 7 members. According to the vice mayor, four of the 7 traditional council members were elected to the city **council**, while two other city council members had been traditional council members in the past. Thus,

the transition from traditional council to State subdivision did not appear to involve any change in control from one group to another.

When asked if the city had developed any formal positions on offshore oil and gas development, the mayor indicated that the city had been too busy with organizational matters to consider such a subject. However, individuals expressed generally negative opinions on both onshore and offshore petroleum development. Comments about onshore development referred to both the Navy's 1944-53 exploration program and more recent exploration programs sponsored by both the Navy and the Department of the Interior.

Atqasuk Corporation

The Atqasuk Corporation was created under terms of the Alaska Native Claims Settlement Act and is the major land owner in the Atqasuk area. Its stockholders are persons who enrolled as Atqasuk residents and this, its landholdings and its ownership of the local store and a construction company, make it a potent political as well as an economic force in the village. More recently, in 1983, the village corporation entered into a joint venture with Eskimos, Inc., a subsidiary of the Arctic Slope Regional Corporation, to provide a fuel distribution service for Atqasuk, a service which had previously been provided on an ad hoc basis by the North Slope Borough's Public Works department.

As previously mentioned, there presently appear to be no significant differences between the village corporation and the city government.

Corporate board members tend to be well respected people in the village who have long standing family ties to the **Atqasuk** area. However, the operation of corporation subsidiaries, particularly that of the construction company, requires specialized skills. The president of the **Atqasuk** Company is an **Inupiat** corporation board member. However, the general manager is a non-Native, as are a number of other company personnel. The **Atqasuk** Company has participated in several North Slope Borough construction projects on a joint venture basis. Such projects include housing units, the village fire station and the new **Atqasuk** school .

INFORMAL POLITICAL ORGANIZATION

Aside from the City of **Atqasuk** and the **Atqasuk** Corporation and its subsidiaries, there are a number of other groups in **Atqasuk** which have some political significance. They include the Presbyterian church, the Mothers' Club and the search and **rescue/firefighting** group.

There is a Presbyterian church at **Atqasuk** although it was without a resident minister in 1983. Occasionally, a visiting minister conducts services here, with this function being assumed by congregation members at other times. As in most other North Slope villages (excluding Point Hope and Point Lay), Presbyterians are the dominant religious group. No other religion is currently represented in **Atqasuk**.

An offshoot of the Mothers' Club has been formed in **Atqasuk** and has reportedly been increasing in importance. According to people

interviewed as part of the 1983 fieldwork, all influential women in the village belong to this group. Although the Mothers' Club was not sponsoring bingos at the time of the 1983 fieldwork, the possibility of its doing so was being discussed at that time.

Search and rescue is a significant group in the village, as it is in other North Slope communities. According to the 1983 fieldwork, all able bodied adult males in Atqasuk were members of this group and its leaders are accorded a certain amount of status and prestige. Search and rescue functions have recently been assumed by the North Slope Borough and search and rescue and firefighting volunteers are now one and the same group. Despite the changes in organization, search and rescue/firefighting remains a volunteer group and its members continue to be accorded status.

Several Atqasuk residents have been associated with the National Guard in the past. There is no National Guard unit in Atqasuk, but this group has traditionally been accorded respect in the North Slope region.

Land Use and Housing

LAND STATUS

City of Atqasuk

Atqasuk's municipal boundaries take in an area of about 42.9 square miles, all of which (with one minor exception at the west end of

Imagruaq Lake) has been selected by the **Atqasuk** Corporation as a part of its land entitlement under terms of the Alaska Native Claims Settlement Act (ANCSA). The Bureau of Land Management has made an interim decision to convey surface title of these selections to the **Atqasuk** Corporation but the corporation must await final surveys before it can receive patent to them. Some lands within **Atqasuk's** surveyed area have been **quitclaimed** by the corporation to the North Slope Borough or to the Arctic Slope Regional Housing Authority. Several blocks or portions of tracts have been dedicated for public use by the **Atqasuk** Corporation subject to the provisions of Section 14(c)(3) of the Claims Act, as amended. Under this section, the **Atqasuk** Corporation must convey up to 1,280 acres of land to the City of **Atqasuk** for community expansion purposes. The corporation and the city have established committees to work cooperatively on the matter.

There are several pending Native allotment applications for certain lands within **Atqasuk's** municipal boundaries. These allotment applications are located both north and southeast of the city's surveyed area. Native allotments are essentially homesteads of up to 160 acres of non-mineral lands which were granted to Alaska Natives, generally for subsistence purposes. Indian allotment authority for Alaska was **cancelled** with passage of the Alaska Native Claims Settlement Act. However, applications which were pending at the time the Claims Act legislation was passed are eligible for consideration. This provision for pending Native allotment applications did not originally apply to what is now known as National Petroleum Reserve-Alaska (NPR-A) unless potential **allottees** could prove use and occupancy of sites prior to the

withdrawal of the Reserve in **1923**. An attempt to rectify this problem was made by Section 905(1) of ANILCA but a January 1983 ruling by the Regional Solicitor found that **ANILCA** did not adequately address the subject and suggested that a previous court suit (Leavitt vs. **Andrus**) be reinstated for a final determination on this issue.

Field surveys conducted by the Bureau of Land Management in August 1981 provide the current best estimates of the locations of these Native allotment applications. However, until an official survey has been made, their location is subject to possible change.

In **Atqasuk**, as in other North **Slope** Borough villages, accurate information regarding the status of **title** to individual lots is not always available. This can cause problems in **land** acquisition for public purposes.

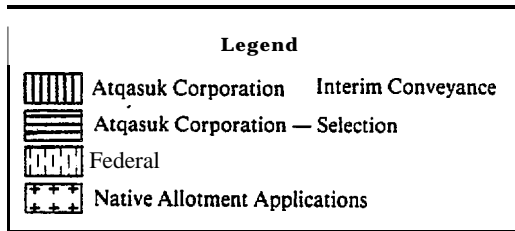
Atqasuk Area

The **Atqasuk** Corporation was established under terms of the Alaska Native Claims Settlement Act. That legislation enabled the corporation to select **69,120** acres of land in the **Atqasuk** area (see Figure 29). The subsurface estate of lands selected by the **Atqasuk** Corporation remains- with the federal government as subsurface title to lands within the National Petroleum Reserve-Alaska was not selectable by the Arctic Slope Regional Corporation. However, with passage of the **Alaska** National Interest Lands Conservation Act (**ANILCA**), the Arctic **Slope** Regional Corporation, at its option, is entitled to obtain subsurface rights to

Land Tenure Atqasuk Area

1983

0 1 2 3 4 5 Miles



Alaska Consultants, Inc.
Anchorage, Alaska

Adapted from cartography by
Northwest Cartography, Inc.
Seattle, Washington

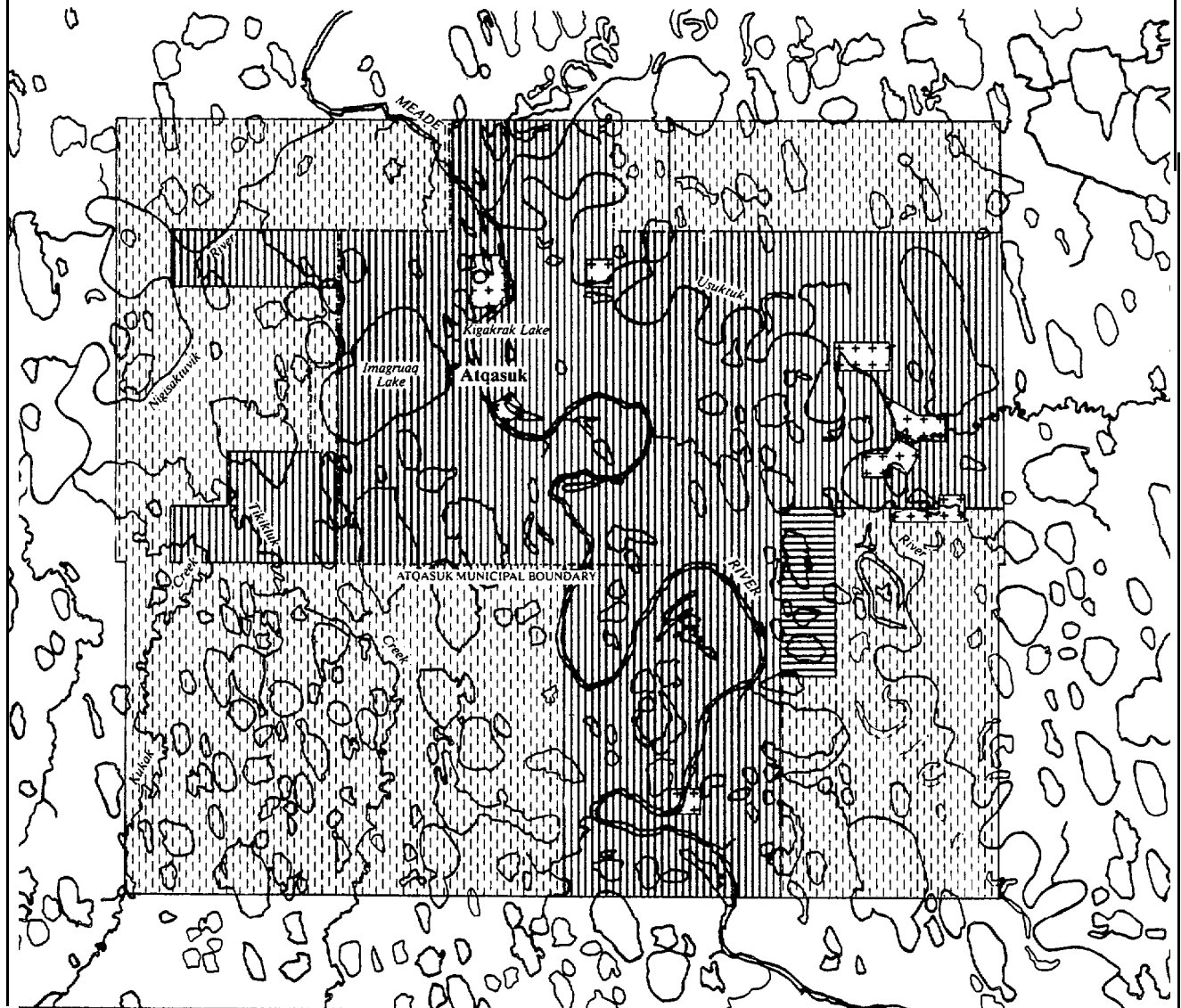


Figure 29

Lands selected by the **Atqasuk** Corporation in NPR-A **if** public **lands** in **NPR-A** are opened **for** commercial development (rather than exploration) of **oil** and gas within 75 miles of village-selected lands. The regional corporation would then be required to exchange in-lieu subsurface **lands** which it had selected earlier under Section **12(a)(1)** of the **Claims** Act.

The ownership of the subsurface estate of the **Atqasuk** Corporation's lands is important to the corporation in that this owner could establish the time and terms under which the petroleum industry could explore and possibly develop oil and gas reserves in this **area**.

As already noted, the **Atqasuk** Corporation has yet **to** receive patent to the lands it has selected, but the Bureau of Land Management has made an interim decision to convey surface **title** to the corporation for portions of these selections. The subject of pending claims for Native allotments within **lands** selected by the **Atqasuk** Corporation has been previously discussed.

SUBSISTENCE LAND USE PATTERNS

Atqasuk is the only inland village in the study area, consequently the inland-species important to the local subsistence economy are considered briefly. During the fieldwork, **twelve local** hunters and fishermen were interviewed as **well** as several other members of the community. The **land** use mapping considers only the marine and coastal species harvested by **Atqasuk** residents. Because the marine areas which **Atqasuk** residents use are inclusive of those used by Barrow residents, **range** and harvest areas

are discussed **in** relation to Barrow land use patterns. The following discussion considers only the timing of **Atqasuk** marine resource harvesting and the relative degree of marine orientation. For a discussion of the field methodology, see the North Slope Borough overview of subsistence land use patterns.

Atqasuk's interior **riverine** location does not preclude the use of marine resources by its residents. Even though the majority of **Atqasuk's** locally harvested food supply comes from inland resources, residents' close familial ties with Barrow Eskimos, as well as advances in transportation and communication technology, allow these inland villagers **to** include the use of marine mammals in their subsistence economy. Only a small portion of the marine resources used in this village are acquired on coastal hunting trips initiated from **Atqasuk**. Commonly, village residents travel to Barrow to go sea mammal hunting with their coastal friends and relatives. Because the vast majority of **Atqasuk** residents initiate their sea mammal hunting in Barrow, the harvest areas for bowhead, **belukha**, walrus, seal and **ugruk** are the same as those used by Barrow residents and are included in Barrow's subsistence land use maps. In addition, **Atqasuk** residents often receive gifts of sea mammal meat and oil from relatives in Barrow and other coastal villages of the North Slope. Only the species which **Atqasuk** residents harvest locally (i.e. caribou, fish and migratory **birds**) are hunted in areas completely different from those of Barrow.

The most important wildlife resource harvested by **Atqasuk** residents is caribou. Villagers hunt caribou throughout the fall, winter and early

spring, with the **fall** harvest being the most important. Caribou harvests decline during the late spring and summer, a result of migration patterns and limited hunter access. In recent years, the caribou population on the North Slope has been high, and residents of Barrow and **Atqasuk** have not generally had to travel far in order to successfully hunt this species.

Both historically and today, a common summer **activity** of the coastal Eskimos of this region is to travel **inland** and **establish** summer fish and caribou camps along the **Inaru, Meade, Topogoruk** and **Chipp** river drainages. Many of the people currently living in **Atqasuk** were either born or spent their childhood summers in this area. However, these local residents have not forgotten their ties to the coast and marine resources. As one resident stated:

"We use the ocean all the time even up here; the fish come from the ocean; **the whitefish** as well as the salmon migrate up here."

The **anadromous** nature of the fish species harvested by **Atqasuk** residents is an important factor when considering the marine orientation of this village.

Fish, while secondary to caribou in quantity harvested, is a preferred food in **Atqasuk**. Baited hooks, **gill** nets and jigging are the "common techniques used to harvest **ling** cod, salmon, whitefish and **grayling**. Fishing with set **gill** nets begins soon after the ice breaks up in the **Meade** River, **but** at this time strong currents and **large** quantities of debris in the main channel **limit** fishing to tributary streams. **Atqasuk** residents stated that the most successful fishing months are July and August when water **levels** in the **Meade** River have dropped, and the river

has become clearer (free of driftwood). This enables local fishermen to set their nets **in** close proximity to the village and to check them after work hours. By August, water levels in the Meade River limit boat travel and residents must travel overland to fish camps. Fishing continues in the fall and winter under the ice, both in deep pools of the Meade River and in nearby lakes.

Migratory birds are also an important part of **Atqasuk's** subsistence economy. This activity is concentrated during the spring months of late April, May and June, with a secondary season occurring in late August and September during the birds' southward migration. Local residents harvest these birds on the numerous nearby lakes and ponds as well as on the Meade River and its tributaries. They also gather eggs in the immediate vicinity of the village for a short time each June.

The constant interaction between **Atqasuk** and Barrow results in a continual interchange of people and **families** between the two communities. As noted previously, some **Atqasuk** residents own homes in both Barrow and **Atqasuk**, with family members divided between the two locations. With twice daily air service (weather permitting), and snowmachine access eight months of the year, there is a great deal of interchange between the two communities. Local employment opportunities have facilitated this interchange by providing the necessary cash supply for easy travel. **Atqasuk** families average at least one trip to Barrow a month and, during the appropriate seasons, often go marine mammal hunting. Many **Atqasuk** residents store their sea mammal hunting

—

equipment **with** relatives in Barrow so that any trip **to** that community can become an unplanned hunting trip.

Although caribou, fish and migratory birds are the major food sources in **Atqasuk's** subsistence economy, marine mammals continue to provide seal **oil** and other staples in the local diet. The importance of marine mammals in the village of **Atqasuk** is demonstrated by the local interest in the bowhead whale harvest. Between 6 and **10 Atqasuk** residents travel to Barrow each spring to join whaling crews. **Local** residents also desire to have their own crews, which further demonstrates local enthusiasm for this activity. Three **Atqasuk** men, who were whaling . captains when they lived in Barrow, expressed interest in establishing a bowhead whale quota for **Atqasuk**. These men stated that if given the opportunity, they would establish a whaling camp near **Nulavik**, the closest suitable point on the coast from **Atqasuk**. In addition to sending men to be crew members, **Atqasuk** residents provide caribou skins for sleeping mattresses and other supplies to Barrow crews. By helping in this way, they ensure themselves of a share of Barrow's whale harvest. Residents stated that they always receive a village share from Barrow and **Wainwright**, and these are divided among all members of the community.

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Atqasuk's harvest of **belukha, ugruk** and walrus is generally initiated from Barrow as the timing of hunting for these species prevents overland travel, thus limiting **Atqasuk's** access to the coast. Several **Atqasuk** residents have wooden and aluminum boats in Barrow which they use **to** hunt these sea mammals during the summer. **All** resources harvested at

this time are either stored in Barrow and retrieved in the winter by snowmachine or are air freighted to **Atqasuk**.

In addition, **Atqasuk** residents occasionally travel on **snowmachine** to the **Chukchi** Sea coast between **Nulavik** and Peard Bay in the spring for seal hunting. This is not common, however, because of conflicts with caribou hunting and trapping and because of limited daylight hours. Finally, many residents prefer the broken ice hunting for **ugruk** and walrus during the summer months. Seals are occasionally purchased from friends or relatives in Barrow and sent to **Atqasuk** by plane.

VILLAGE LAND USE PATTERNS

Although **Atqasuk's** corporate boundaries take in almost 43 square miles, the city's surveyed area as of August 1982 was a much smaller 46.9 acres, of which only 21 acres had been developed.

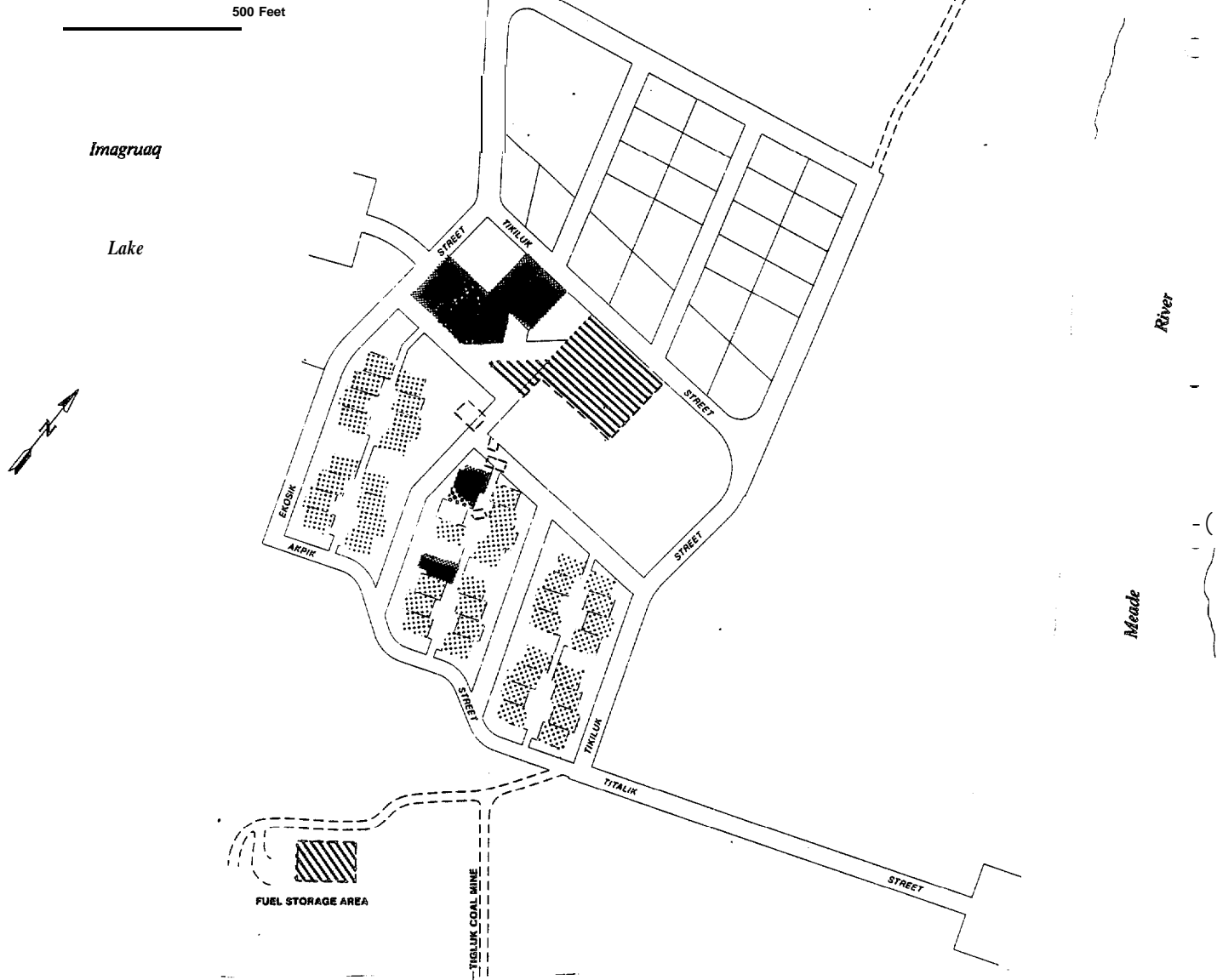
The village lies between **Imagruaq** Lake and the Meade River. At the village's eastern margin, a bluff descends about 80 feet to the river itself. The site was selected to take advantage of a stabilized sand dune flat which provides a better building area than adjacent land where the tundra soils are less compacted and are more poorly drained.

Atqasuk's development pattern is unlike that of other North Slope villages (see Figure 30). At the time of the 1983 fieldwork, all residential development in the village (except for that associated with construction camps) was concentrated in three tracts at the south end of

Use

Atqasuk

August 1982



Legend	
	Single-family Residential
	Multi-family Residential
	Public and Semi-public
	Commercial
	Industrial and Storage

Figure 30

Alaska Consultants, Inc.
Anchorage, Alaska

Adapted from cartography by
Northwest Cartography, Inc.
Seattle, Washington

town. Each tract included two clusters of eight lots, with each cluster containing two groups of four lots. Individual lots are small (55 by 75 feet) and are staggered, apparently to provide homes with greater privacy and more sunlight. Between the boundaries of individual lots and the edge of the three tracts is an unsubdivided area which Atqasuk residents must cross to reach their units. Access roads are platted around the perimeters of the three residential tracts but not through them. This area is exclusively in residential use except for a Presbyterian church, a four-plex used as a temporary school, some school-related buildings and a communications dish.

Immediately north of the three tract residential area are two large tracts which were initially surveyed to provide space for public, commercial, utility and storage purposes. The northwest tract has recently been subdivided to provide lots for the new fire station, the health clinic, the store/post office and the public safety building. The southeastern tract remains unsubdivided and presently houses the Borough's vehicle maintenance building, a smaller storage building, several generator units and two small office buildings used by the Borough Public Utilities and Public Works departments. The new Atqasuk school is being constructed on the eastern portion of this tract. Across Tikilik Street from the new school is the AIC construction camp. The dredge camp is also located on the east side of Tikilik Street but is further to the south.

North of the two large tracts is a more recently subdivided and, as yet, undeveloped area intended to accommodate future community growth.

TABLE 48

EXISTING LAND USE
ATQASUK TOWNSITE a/
1982

<u>Land Use</u>	<u>Land Area (acres)</u>	<u>Percent of Devel oped Area</u>	<u>Percent of Surveyed Area</u>
Residential	11.6	55.2	24.7
One and Two Family	(10.9)	(51.9)	(23.2)
Trailers	(0.0)	(0.0)	(0.0)
Multi-Family	(0.1)	(0.5)	(0.2)
Vacant Units	(0.6)	(2.8)	(0.2)
Commercial	0.2	0.9	0.5
Utility and Storage	2.3	11.0	4.9
Public and Semi-Public	4.6	21.9	9.8
Public	(1.4)	(6.6)	(3.0)
Public - Under Construction b/	(3.0)	(14.2)	(6.4)
Semi-Public	(0.2)	(1.0)	(0.4)
Developed Roads and Corridors	2.3	11.0	4.9
<u>TOTAL DEVELOPED AREA</u>	<u>21.0</u>	<u>100.0</u>	<u>44.8</u>
Vacant Land	13.8		29.4
Undeveloped Streets	12.1		25.8
<u>TOTAL LAND AREA</u>	<u>46.9</u>		<u>100.0</u>

a/ Includes Tikiluk Street leading to the Meade River and the recently platted subdivision encompassing Blocks 1, 2 and 3. All areas within Tracts E, G and H are considered to be developed. Tracts D and I are excluded.

b/ The new school was under construction in August 1982.

Source: Alaska Consultants, Inc.

Outside the village's subdivided area to the south is the community fuel tank farm. **Atqasuk** presently has no permanent airstrip. Two small temporary strips, one involving the use of **Tikiluk** Street and the other located a short distance north of town, are used for much of the year, while an ice strip on **Imagruaq** Lake which is capable of accommodating Hercules-type aircraft is used when conditions permit during the winter months.

Only **21** acres of land (47 percent of the surveyed area) was classified as developed in August 1982 (see Table 48). The remainder was either vacant land (including the new school site) or platted but undeveloped streets. Of the developed land, 55 percent (11.6 acres) was in residential use, 22 percent (4.6 acres) was in public and semi-public use, 11 percent (2.3 acres) was used for utility or storage purposes, another 11 percent (2.3 acres) was in roads that could be considered at least partially developed, and **less** than 1 percent (0.2 acres) was in commercial use.

HOUSING CONDITIONS

Except for the AIC construction camp and one apartment in the **four-plex** (the remainder of this structure was used for the school), **all residential** units in the village in August 1982 were single family structures. A second construction camp has since been added to meet the needs of the dredging program.

The August 1982 survey counted a total of 45 housing units (excluding the **AIC** construction camp) in **Atqasuk**, all of them **built** under the North Slope Borough capital improvements program. Eight units were designated as Borough employee housing, **including** a unit which until recently had been used as a construction bunkhouse and was to be converted back for use as a single family unit (see Table **49**). Twenty-three units were being purchased by their occupants under the HUD Mutual Help program and another 14 units were Borough rentals. This latter group included one unit being rented by the **Atqasuk** Corporation for use as an office and two units in the very **final** stages of construction. The Borough has subsequently been successful in obtaining a HUD commitment to purchase 9 of its **rental** units in **Atqasuk**. All units in the village were considered to be in acceptable (**i.e.** standard] condition although the apartment in the school **four-plex** is very small.

As part of the **1983** fieldwork, an effort was made to find out if the North Slope Borough's housing program has resulted in the **splitting** up of extended family groups as additional units are made available. In **Atqasuk's** case, this effort revolved around differences in household composition before and after the move from Barrow.

Of the **12** households interviewed in 1983, only one had moved as a unit from Barrow. In some other cases, **only** the **adults** had moved to **Atqasuk** (presumably people with **family** ties to the **Atqasuk** area) and had left their **adult** children in Barrow. When asked why this had occurred, several people interviewed indicated that young adults did not want to move to **Atqasuk** because they **felt** that there would be **little** for them to

TABLE 49

ATQASUK HOUSING INVENTORY a/
AUGUST 1982

<u>Housing Program</u>	<u>Condition of Units</u>				<u>Total</u>
	<u>Occupied</u>		<u>Vacant</u>		
	<u>Acceptable</u>	<u>Substandard</u>	<u>Acceptable</u>	<u>Substandard</u>	
Arctic Slope Regional Housing Authority Mutual Help	23	0	0	0	23
North Slope Borough Rentals	12	0	2	0	14 b/
North Slope Borough Employees	6	0	2	0	8 c/
<u>TOTAL</u>	<u>41</u>	<u>0</u>	<u>4</u>	<u>0</u>	<u>45</u>

a/ Excludes construction camp facilities.

b/ Includes two units in the final stages of construction in August 1982 and one unit rented by the **Atqasuk** Corporation as an office.

c/ Includes one unit in the school **four-plex** and one unit formerly used as a bunkhouse which is to be renovated for use as a single family residential unit.

Source: Alaska Consultants, Inc.

do in the smaller village. In two other cases, one marriage partner lived in **Atqasuk** and his or her spouse lived in Barrow, resulting in a good deal of commuting.

Over half of the persons interviewed in the 1983 fieldwork had houses in both **Atqasuk** and Barrow. The Barrow houses are usually occupied either by family members or they are rented out. The latter provides a significant source of income for some village households.

People were also asked about preferences for owning versus renting their units. Not surprisingly, all persons who were interviewed expressed a preference for purchasing units under the HUD Mutual Help program over renting Borough housing.

Community Facilities and Utilities

ADMINISTRATIVE AND MISCELLANEOUS PUBLIC BUILDINGS

There are presently no city or Borough administrative buildings in **Atqasuk**. City council meetings are now held in the fire station, while the North Slope Borough village coordinator works out of his house. The city plans to construct a building which would serve both as a community center and as administrative offices. However, such plans have yet to be formalized.

The North Slope Borough maintains a heavy equipment storage building at **Atqasuk**, as it does in other North Slope villages. The **Atqasuk** facility

is a single story wood structure (40 by 80 feet) with a gravel floor and is located northwest of the new school site. **It** has five equipment bays. Internally, the structure is unpartitioned except for a small office and parts storage area. The building has no plumbing and is in need of repair.

PUBLIC SAFETY

Police Protection

As elsewhere in the North **Slope** Borough, police protection services in **Atqasuk** are provided by the North Slope Borough which currently has two officers stationed in the village. The public safety building is located next to the new fire station in the northern portion of town. It is a 1,200 square foot (28 feet by 44 feet) one story wood frame structure which includes an office, a kitchen, a storage/workshop area and two temporary holding cells. The structure is now on temporary cribbing, a result of having been moved from its original site to make room for the new fire station.

The present public safety building was badly racked when it was moved and the North Slope Borough has plans to replace it with a two-story metal exterior building containing about 4,300 square feet of floor space. As presently designed, the ground floor of the new structure includes three cells, a booking area, a central office with a secure closet for the safekeeping of records and evidence, a storage area, a mechanical room, a garage and sleeping quarters for personnel

TABLE 50
PUBLIC SAFETY DEPARTMENT ACTIVITY
ATQASUK
1980 - 1982

	<u>1980</u>	<u>1981</u>	<u>1983</u>
Homicide and Negligent Homicide	0	0	0
Rape and Sex Offenses	1	2	0
Robbery	0	0	0
Assault	2	9	7
Burglary	1	5	8
Larceny	1	7	2
Motor Vehicle Theft	0	2	0
Vandalism	3	4	4
Narcotics	0	1	0
Driving While Intoxicated	0	2	1
Liquor Law Violations/Disorderly Conduct	2	20	10
Traffic Accidents	0	2	0
Animal Problems	3	11	5
Domestic Problems	2	31	16
Premise Security	0	7	0
Disturbing the Peace/Noise	5	9	13
Other a/	108	130	61
<u>TOTAL</u>	<u>128</u>	<u>242</u>	<u>127</u>

a/ This category identifies non-criminal **public** safety activities. It includes service requests, agency assists, public assists, transport of **the** sick or injured and other responses to non-criminal situations. The public safety officer may be called upon for a wide variety of activities ranging from chaperoning dances to helping a sick person to the clinic.

Source: North Slope Borough Department of Public Safety.

temporarily assigned to the village. The second floor houses a public safety officer's apartment and additional storage space.

Borough public safety officers in **Atqasuk** and other North Slope villages spend a great deal of their time in non-criminal activities (see Table 50). Law enforcement problems here are primarily related to **liquor** abuse. No ordinance related to liquor **sales** or possession has yet been enacted since **Atqasuk** became a second class city in October 1982.

Another law enforcement problem was apparent when only one public safety officer was stationed in the village. When that officer was sick, on leave, traveling on official duty, or otherwise away from the community, there was no police authority *in Atqasuk*. This problem, **common to** all of the smaller villages in the Borough, should be remedied now that two public safety officers are again stationed here.

Fire Protection/Search and Rescue

The North Slope Borough has provided fire protection services on an areawide basis since 1980. Since assuming this power, the Borough has constructed fire stations in each of its villages outside Barrow and has embarked on a program to train firefighting volunteers. Although the Search and Rescue division is part of the Public Safety department for administrative purposes, volunteer firefighting and search and rescue personnel in the villages are the same group, with both functions being housed in the new fire stations.

The **Atqasuk** fire station was completed in **1983** and is identical to fire stations **built** in other small Borough **villages** at that **time**. **It is** located next to the public safety building and is a prefabricated **metal** structure **72** feet in width and **65** feet in depth (**4,680** square feet) set **on** pilings, with access provided via a **metal** grating ramp. The central portion **of** the station is a large apparatus room sized to house two fire trucks, an ambulance and two **snowmachines**, plus a boat (with motor) belonging to the Borough Search and Rescue division. **The** building also houses a utility room, a furnace/generator room, two large storage rooms (one designed for use as a training area under heavy smoke conditions), a training/meeting area, an **office/communications** center, a **small bunkroom** for transient Borough Fire department personnel, a **small** kitchen, lockers, showers and toilet facilities, plus additional storage space.

Rolling stock housed in the fire station includes an engine company truck with a mounted 2,000 gallon water tank, a 500 gallon per minute pump, fire hose and appropriate nozzles, ladders and cabinets for personnel gear and air-packs; a tanker truck mounted with a 3,000 gallon "water tank, a 500 **gallon** per minute pump, hose and nozzles; and a Chevrolet Suburban modified for ambulance use with a raised roof and **stretcher** racks, equipped with stretchers, **splints**, a trauma box and an oxygen **unit**. Search and **Rescue** equipment is also housed **here**.

Firefighting personnel are members of the North **Slope** Volunteer Fire Department/Search and Rescue force. Training programs have been begun by the North **Slope** Borough, with initial emphasis being on use and

maintenance of the new equipment in a manner **which** meets basic criteria for prompt and effective fire response.

No serious fires have been reported in **Atqasuk** since the village's **re-establishment**. However, **Atqasuk's** harsh arctic climate places a steady, heavy load upon heating equipment, increasing the probability of fire incidence from equipment malfunction or misuse. Furthermore, low temperatures and prevalent strong winds make firefighting extremely difficult once a fire gains headway.

While all **firefighting/search** and rescue personnel in **Atqasuk** and the other villages outside Barrow are volunteers, the Borough has permanent staff for both functions in Barrow. The Borough Search and Rescue division also maintains two helicopters and a fixed wing aircraft in Barrow for use in search and rescue and medi-vac situations.

HEALTH

Primary health care services in **Atqasuk** are provided by the North Slope Borough Health and Social Services Agency through the Community Health Aide program. These services are supplemented by regular visits to the **village** by doctors, dentists, nurses and **other** health care providers.

When needed, **Atqasuk** residents may use either the Barrow **Public Health** Service hospital or the Alaska Native Medical Center in Anchorage for in-patient or out-patient services.

The present clinic was **built** in 1978 with materials salvaged from Borough building projects and is located near the village store in the northwest portion of the village's developed area. **It** is a **small** (320 square foot) wood frame structure mounted on skids. Internally, the building is divided into a waiting area, an office/examination room and a toilet area. Although the building is considered to be sound, it has a number of deficiencies and is inadequate to carry out the comprehensive program which has been assumed **by** the Borough's Health and Social Services Agency.

Construction of a new 4,400 square foot **health clinic** is currently underway and should be completed in late **1983**. The clinic portion of the new building **will** include four examination rooms, a laboratory, a film processing room, a secured medicine storage room, a waiting/training area, a **consulting/telehealth** room, office space, toilet facilities and storage areas. Itinerant quarters with two double bedrooms, a kitchen/dining/living area and a bathroom are also included, as is a mechanical/electrical room, a janitor's closet and a garage/storage area. The entry from the garage area is designed to provide direct access. from the ambulance to an examination room to meet entry/trauma requirements.

A wide range of equipment is to be provided for the new clinic, including X-ray equipment for use by itinerant professional staff. **In** addition, the **consulting/telehealth** room **will be** equipped with slow-scan TV equipment linked through telephone circuits to units in the Barrow office of the Borough **Health** and Social Services Agency, the Barrow

Public Health Service hospital and the Alaska Native Medical Center in Anchorage. This equipment will be used for consultations between the local community health aides and doctors, consultations within the medical professions, for the continuing education of the aides and for other uses such as follow-up of clients/patients. Finally, an ambulance for transporting patients is already housed in the village fire station, while a 3-wheeler and a trailer **will** be kept in the clinic garage area.

*

The North **Slope** Borough Health and Social Services Agency attempts to have two health aides in each village. It is hopeful that the new clinic's better working environment will encourage aides to **hold** their positions for longer periods and that it will encourage greater **public** appreciation of the aides' position.

Borough records currently indicate an average of 2 to 3 patient visits per day to the health clinic. Greater use of the new clinic is anticipated, not only because of the potential for improved service but because of a broader emphasis which is being placed by the Borough Health and **Social** Services Agency upon health practices and conditions.

EDUCATION

Education services from Early Childhood Education (**ECE**) through the **12th** grade in **Atkasuk** are provided by the North Slope Borough School District. The Meade River school is presently housed in temporary quarters in a **four-plex** in the **northcentral** portion of the village's residential district. This five classroom facility was completed in

1977 and is in average condition but it is too small and too crowded to be satisfactory as a school.

A new school is currently under construction immediately north of the village residential district on an approximately 3 acre site located on a consolidated sand dune. The new facility is scheduled for completion in early 1984 and will have about 27,600 square feet of floor space designed to accommodate 95 students. It consists of two major structures connected by an enclosed corridor. The larger structure contains the classroom wing and activity center, while the other contains vocational education shops, a mechanical/boiler area and an area containing water storage and sewage retention tanks. In addition, 40,000 gallons of fuel storage capacity will be provided at the school site and a playdeck will extend out from the classroom area at the south side of the building.

The classroom wing will contain seven classrooms, two of which are designed specifically for teaching science and home economics courses. A resource area central to the classrooms will house the library and has back-up work and storage areas. There is also provision for a photo laboratory, a storage room and a janitorial center.

The activity center will include a full gymnasium, an exercise room, storage space and a kitchen/food storage/laundry complex on the first floor. Mezzanines on either side of the gymnasium will provide additional storage space.

The second building will include a 28 foot by 64 foot vocational education area housing woodwork and metalwork shops, with the remainder of this structure being in storage and utilities use.

During the 1982/83 school year, the professional staff of the Meade River school included a principal, 6 certified teachers and 2 teacher aides (one of whom was part-time). The assignment of classrooms was one for ECE, one for kindergarten and grades one through three, one for grades four through six, one for grades seven and eight, and one for grades nine through twelve. However, according to the principal, teaching and related assignments in such a small school require that the staff be flexible. Non-teaching staff included the principal's secretary, a cook, a cook's assistant and 2 maintenance/janitorial positions.

Excluding ECE/kindergarten, final enrollment in 1982/83 was 37 students (see Table 51). During that same school year, the student body included 6 non-Natives.

As part of the 1983 fieldwork, people were asked what they thought of the local education system and if it was meeting the needs of the people. Assuming that the people-interviewed were reasonably representative, there appears to be a perception on the part of village residents that the school has a drop-out problem. Since the construction company will not hire persons under the age of 18, there is little for drop-outs to do if they remain in the village. Two people mentioned Mt. Edgecumbe as offering students a wider variety of courses

TABLE 51
 SCHOOL ENROLLMENT TRENDS BY GRADE a/ b/
 ATQASUK
 1977/78 - 1982/83

School Year	Final Enrollment by Grade												Total Excluding ECE/ Kindergarten
	1	2	3	4	5	6	7	8	9	10	11	12	
1977/78 <u>c/</u>	4	2	2	4	5	6	3	4	4	2	0	0	36
1978/79	3	4	2	1	1	5	4	1	4	3	0	0	28
1979/80	2	4	2	2	2	6	4	3	2	3	0	0	30
1980/81	1	0	1	4	1	1	1	6	3	2	1	0	25
1981/82	4	2	2	3	6	4	2	5	6	6	2	1	45
1982/83	2	4	2	2	3	8	3	2	6	3	2	0	37

a/ Final enrollment figures.
b/ ADM (Average Daily Membership) for 1982/83 school year was 58.48.
c/ Initial year of operation.

Source: Alaska Department of Education.

"than the local school is able to do. One person also mentioned that the Borough paid for two **Atqasuk** residents to go to a welding school so that they **could** work on the water tank project in the village.

RECREATION

The village presently has no community hall or school activity center for organized recreation activities. However, this should change with completion of the new school complex when regularly scheduled, supervised **use of** the school's activity center by the community as a whole will be possible.

There is currently no improved outdoor play area in the village. This **will** also change in the near future as the new school will have a playdeck for elementary school children. Furthermore, it is possible to make surface improvements to an area adjacent to the school for use as a general playground.

Several general interest courses were taught in the school during 1982/83 under community school and vocational education programs administered by the School District. These included Eskimo dancing and skin **sewing.**

Village-wide activities center around holidays. The Fourth of July is marked by contests and Eskimo games. This past Thanksgiving was marked by a village feast staged in the apparatus room of the fire station then under construction. In addition, the Christmas-New Year week involves

not only religious programs **but** also a series of games, contests and dancing which involve the children and **adults in** a much more extended fashion than during the rest of the year.

Atqasuk residents also participate in a variety **of** informal recreation activities such as picnicking, visiting within the village and **travel** to other communities. **The snowmachine** is essential to winter subsistence activities, but its use also has an element of pleasure. Hunting, trapping and fishing combine elements of both subsistence harvest and pleasure, activities that are tied in significant ways to the culture of **Atqasuk's Inupiat** people. However, they are not viewed from the **Inupiat** perspective as being of a recreational nature.

UTILITIES

Water

The provision of water services **in Atqasuk** is the responsibility of the North **Slope** Borough Department of **Public Utilities**. **Water** is presently obtained from several different sources, depending **on** the condition of access roads and on water quality, and is then pumped into a tank mounted-on **a** Bombardier vehicle for **delivery in** the **village**. --

Atqasuk's existing water system is inadequate as **it lacks** the controls essential **to** ensure **the** delivery of uncontaminated water **to** village consumers. There is presently no central watering point with **a** reservoir **tank**. Chlorination, when undertaken, is handled by treating

each tankful when drawn from the source by the Bombardier. In addition, Bombardier equipment has not always proven to be reliable. A 2,000 gallon water truck delivered to the village in the spring of 1983 has thus far seen limited use because of inadequate access roads to water sources and because streets in the village are so poor.

Upgrading of **Atqasuk's** water service will take place with the planned construction of a central water plant which will draw water from **Imagruaq** Lake, filter and chlorinate it and then store it in two reservoir tanks, each with a 1.5 million gallon capacity. The same project also includes construction of a village washeteria and extension of a water line to the school complex now under construction. However, the institution of an adequate water delivery service is dependent on the use of scarce gravel resources for the construction of village roads. This is **essential** as the few existing "roads" are constructed on a sandy soil material which deteriorates rapidly once it is thawed.

As of August 1982, there were 41 occupied housing units in **Atqasuk**. Other water users include the AIC and the dredge construction camps, the school, the old health clinic, the store, the new fire station and the public safety building. Department of Public Utilities records show a total of 169,900 gallons of water was sold in **Atqasuk** from July 1, 1982 through January 31, 1983. This average daily consumption rate is less than 4 gallons per capita based on a population of **210** persons. However, completion of the new school complex and the planned washeteria should double this consumption rate if **Atqasuk's** experience conforms to that of **Nuiqsut** and Point Hope.

Sewage

Sewage collection services in **Atqasuk** are the responsibility of the North **Slope** Borough Department of Public Utilities. Currently, all sewage wastes in the village are collected in honeybuckets lined with plastic sacks. The sacks are placed in 55-gallon drums located near each house or building and the drums are then hauled to a solid waste disposal site on a sporadic basis.

Two disposal sites north of the village have been used. The preferred site is located about a **mile** away, was constructed by the Borough and is fenced. The second site is located along **Kigakrak** Lake, about half a **mile** from the village. However, because of poor road conditions, the more distant site is virtually unreachable during the summer months and even the closer site is difficult to reach after break-up. Pick-up services within the village are also difficult. Bombardier equipment may be used to move drums away from **individual** buildings where they can be picked up by a Department of Public Works front-end loader which moves them to the most remote disposal site, access permitting. Individuals are also encouraged to move their own drums to the disposal sites via freight sleds.

A heavy duty sewage truck identical to that in **other** smaller North **Slope** villages was recently shipped to **Atqasuk**. The truck is equipped with a tank and vacuum system for the pick-up of sewage from holding tanks but only the new school and health **clinic** have such tanks. In other villages, this has led to removal of the sewage tanks so that the

vehicles can instead be used as flatbed trucks. Like the new water truck, however, effective use of this equipment in **Atqasuk** must await the construction of adequate local streets. In addition, vehicle maintenance is a constant problem although it will be greatly facilitated with the planned construction of a combined warehouse structure which includes heated space for the storage and **maintenance** of utility vehicles.

In short, the present collection system which uses honeybuckets and drums has inherent basic sanitation problems. Sewage is subject to spillage in the village and the wastes are difficult to move during the summer months when they are not frozen and access to disposal sites is poorest. Although disposal in a sewage lagoon is considered to be preferable, the technical problem of separating frozen wastes from the bags and drums to avoid clogging a lagoon has not been resolved.

The dumping of graywater under or near buildings during the winter months complicates sanitation problems as it leads to ice accumulations and adds to surface drainage problems after break-up. In addition, the volume of graywater discharged in the village increases as the water delivery system is upgraded and as new buildings with internal plumbing are built.

Planned improvements to **Atqasuk's** sewage system include the development of a sewage collection system serving the new school complex and the planned village **washeteria**. An insulated, heated gathering line will bring the school sewage to the central water facility where, together

with the **washeteria** wastes, it will move through an insulated, heated outfall line to a sewage lagoon at Kigakrak Lake. An access **road** to the lagoon **will** be built as part of this project.

Solid Waste

Solid waste disposal services in **Atqasuk** are the responsibility of the North Slope Borough Department of Public Utilities. No regular garbage pick-up service is currently provided although the Department of **Public** Utilities occasionally uses a Bombardier and trash trailer for this purpose. Emphasis is instead placed on a spring and fall clean-up by village residents.

As with sewage pick-up services, a major obstacle to solid waste disposal in **Atqasuk** is the **lack** of adequate roads in the village and to the two disposal sites located north of town. The lack of **gravel** materials for covering the garbage has **also** been a problem. Maintenance of the disposal sites has occasionally been a problem. Maintenance of the disposal sites has occasionally been undertaken **by** the Borough **Public Works** department. However, even the **closer** site can be reached only with great difficulty during the summer months and, **at** that time, garbage accumulates **rapidly in** the village--

Electric Power

- Electric power generation and distribution services **at Atqasuk** are the responsibility of the North Slope Borough Department of Public

Utilities. Like all North Slope Borough villages outside of Barrow, electric power in **Atqasuk** is diesel-generated. The present power plant is made up of three Arctic Pac facilities containing a total of five diesel generator units with a combined total rated capacity of **840 KW** (see Table 52). Recent modifications permit operation of the largest units in parallel. The present distribution system is a 4,160 volt overhead pole line installation. The main power trunks are three-phase, with single-phase lateral feeders to individual loads.

Atqasuk has experienced rapid growth in electric power demand during the past few years due both to community growth and to the construction of major facilities. Department of Public Utilities records show the peak power demand for fiscal year 1979/80 at 60 KW, that for 1980/81 at 90 KW and that for 1981/82 at **125 KW**. **Department** records also indicate that sales of power in the village totaled 510,000 KWH in the six month period from July 1, 1982 through December 31, 1982. Sales in January 1983 alone amounted to 129,141 KWH. In that same month, the Department reported a total of 65 meters installed.

To date, **Atqasuk's** power system has been characterized by situations where demand has regularly outstripped the installed generating capacity. The need for an immediate response to such-situations has dictated the emergency use of Arctic Pats rather than developing an overall plan for a plant with units sized to accommodate projected growth and flexible enough so that average and peak demands could be met in an efficient manner. A shortage of trained operators compounds village power problems.

TABLE 52
FIRM AND PEAK GENERATING CAPACITIES
ATQASUK
OCTOBER 1982

<u>Unit No.</u>	<u>Prime Mover</u>		<u>Nameplate Capacity (KW)</u>	<u>Generator Unit</u>		<u>Hours Operated a/</u>
	<u>Make</u>	<u>Horse-power</u>		<u>Make</u>	<u>Voltage</u>	
1	CAT	81	55	CAT	480	2 {rebuilt}
2	CAT	135	90	CAT	480	20,000
3	CAT	230	155	CAT	480	25,000
4 <u>b/</u>	CAT	305	210	CAT	480	
5 <u>c/</u>	CAT	480	330	CAT	480	
<u>TOTAL</u>			<u>840</u>			

a/ Per North Slope Borough Department of **Public** Utilities Village Operations Manager, October 26, 1982.

b/ Arctic Pac moved from Point Lay in 1982. A new generator unit has been installed.

c/ Arctic Pac flown to **Atqasuk** in spring of 1983.

Source: North Slope Borough Department of **Public** Utilities.

Another electric power-related problem in **Atqasuk** is fuel supplies. Fuel deliveries are presently restricted to the winter months when the ice on **Imagruaq** Lake is thick enough to support a temporary ice strip for Hercules-type aircraft. Tanks for the Public Utilities department are located at the tank farm a short distance south of town except for a 10,000 gallon tank adjacent to the Arctic Pats for use in emergency situations.

Construction of a new generator building at **Atqasuk** is planned and some of the materials have already been delivered to the village. For the longer term, however, the North Slope Borough is investigating the feasibility of using energy sources other than expensive diesel fuel for power generation. One option currently under study involves the generation of natural gas from the **Prudhoe Bay** or **Kuparuk** areas, building a major power plant facility at one of those locations, and transmitting electric power to Barrow, **Nuiqsut**, **Wainwright** and **Atqasuk** via an overhead transmission line. The impetus for these investigations is the relatively short remaining life of the Barrow gas fields plus the high cost of diesel fuel.

Fuel Storage

All fuel for **Atqasuk** is delivered by air, with deliveries being limited to that period during the winter when the ice on **Imagruaq** Lake can support an ice strip designed to accommodate Hercules-type aircraft. The village tank farm was constructed by the North Slope Borough on a site immediately south of town and contains eight 30,000 gallon tanks,

one for gasoline and **the** remainder for diesel **fuel**. In addition, **the** School District has two "Here" tanks with a combined capacity of 30,000 gallons which are located **close** to the present school and the new fire station has an adjacent **7,000** gallon tank for its operations.

The amount of fuel tankage **at Atqasuk** underwent a significant increase during April and May of 1983 when **ten** additional tanks, each with a 10,000 gallon capacity, were delivered to the village by the North Slope Borough. **these** tanks was placed near the Public Works department's warm storage building, another was located close to the **village** generation facilities, and the remainder were located near the tank farm. Also, the dredge operation brought in twenty 10,000 gallon tanks, eighteen of which are sited near the tank farm and the remainder **are** located by the area being dredged in **1983**.

The amount of fuel storage in **Atqasuk** will further increase as new facilities in the village are completed. The new school will have an associated 40,000 **gallon** tank farm, the new central water **plant will** have nearby diesel fuel storage tanks, plans for a new power plant provide for a tank farm and the new health clinic will have a tank for its use with a capacity of one year's supply.

Fuel consumption records for **Atqasuk** are sketchy. Excluding tanks used for the dredge operation, the village currently has 347,000 gallons of fuel storage capacity. Estimated 1982/82 usage was 172,000 gallons. This rose to around 225,500 gallons in 1982/83, necessitating the

shipment of an additional " 10,000 gallons of tankage capacity to the village in the spring of 1983.

Until very recently, responsibility for management of the **Atqasuk** tank farm, including the dispensing and delivery of fuel, was assigned to the Borough's Public Works department. However, this responsibility is being transferred to a Native-owned joint venture organized by the **Atqasuk** Corporation and Eskimos Inc. Fuel deliveries in the village are made difficult by the lack of an adequate access road to the tank farm and by the lack of village streets. The timing of fuel deliveries to the village will be less critical when a planned 5,000 foot runway is built.

COMMUNICATIONS

Telephone services in **Atqasuk** and other small North Slope villages are provided by the Arctic Slope Telephone Associated **Co-op**, Inc. (**ASTAC**), a non-profit cooperative corporation. Seed money for the organization of the cooperative and the preliminary work needed to obtain a certificate of convenience and necessity from the Alaska Public Utilities Commission was provided by the Arctic Slope Regional Corporation. Once the certificate was obtained, loans for plant acquisition and installation were obtained from the **U.S.** Rural Electrification Administration. The building housing the **switchgear** was built by the North **Slope** Borough and is leased to **ASTAC** which owns the **switchgear**, telephone cable and other system support equipment.

The provision of local dial telephone service was a major advance over the previous bush telephone system. According to information provided by ASTAC in February 1983, Atqasuk had a total of 36 residential and 16 business telephone subscribers.

BARROW "

Introduction

9 Barrow is located on the **Chukchi** Sea coast about 7.5 miles southwest of Point Barrow, the northernmost point of land in the United States. The community lies 330 miles north of the Arctic circle and about 500 miles north of Fairbanks, the closest of the State's major population centers. Within the North Slope region, Barrow's closest neighbor is the recently resettled village of **Atkasuk** about 60 miles to the southwest. Other nearby towns include **Wainwright** approximately 100 miles to the southwest and **Nuiqsut** about 150 miles to the southeast. Prudhoe Bay, Alaska's major producing oilfield, lies 200 miles to the southeast. None of these settlements is connected to each other by formal land routes and passenger access between them is possible only by air or **snowmachine**.

Barrow's corporate limits take in a 21 square mile area **which** includes three distinct areas of settlement - the traditional Eskimo community of Barrow, the former **Navał** Arctic Research Laboratory (NARL) military reservation and portions of the POW-Main (Distant Early Warning) DEW Line station. Most people live within the traditional community of **Barrow** which is generally confined to a relatively small area between the **Chukchi** Sea to the west, the Barrow airport to the south and **Isatkoak** Lagoon and the former NARL reservation to the east. Within the Barrow townsite, **Isatkoak** and **Tasigarook** Lagoons divide the community into two distinct areas - Barrow proper to the south and **Browerville** to the north. Beyond **Browerville** to the northeast and connected to it by

road is the former NARL camp and, beyond that, the POW-Main DEW Line station. For the most part, personnel associated with these two facilities live **on**base.

Much of the information on Barrow contained in the following pages was collected by Alaska Consultants, Inc. either directly or indirectly for the North Slope Borough and was published in the December **1983** report entitled "Background for Planning: City of Barrow" and in the "Barrow Energy Study" published in April 1983. That information was supplemented by fieldwork conducted specifically for this project during the summer of 1983 and by observations from ongoing work in this community being conducted for the North Slope Borough. Information on the subsistence economy and subsistence land use was collected in the field in 1983 specifically for this study.

Population

PAST POPULATION TRENDS

Although there is a long history of settlement in the Barrow area, this was not the clearly dominant community on the North Slope until the period of oil and gas exploration activities in ~~the~~ **then** Naval Petroleum Reserve **No. 4** (now **NPR-A**) between **1944** and **1953** and construction of the Naval Arctic Research Laboratory (NARL) and the POW-Main DEW Line station in the 1950's. Largely as a result of these activities, Barrow grew rapidly between **1939** and 1950 (**162** percent) and continued to show healthy growth (38.2 percent) between 1950 and **1960** (see Table **53**).

TABLE 53
 POPULATION TRENDS
 BARROW, ALASKA
 1890 - 1982

<u>Year</u>	<u>Population</u>	<u>Percent Change</u>
1890	152	
1910	446	193.4
1920	322	- 27.8
1929	330	2.4
1939	363	10.0
1950	951	162.0
1960	1,314	38.2
1970	2,104	60.1
1980 <u>a/</u>	2,207	4.9
1982 <u>b/</u>	2,882	30.6

a/ 1980 Census excluded population based at the Naval Arctic Research Laboratory.

b/ Special 1982 census taken by the City of Barrow.

Sources: U. S. Census
 City of Barrow

Barrow has continued to experience significant population growth since 1960. During the 1960 to 1970 decade, the number of people living in this community rose from 1,314 to **2,104**, an increase of 60 percent. The range of government services in Barrow underwent a major expansion during this period with the construction of new hospital and school facilities which served to attract some new residents from outlying villages. Another factor was a growth in the rate of net natural increase as a result of declining infant mortality rates and increased life expectancy during a period when birth rates remained relatively high.

Between 1970 and 1980, passage of the Alaska Native Claims Settlement Act in 1971 and incorporation of the North Slope Borough in 1972 led to major social and economic change in Barrow. The Arctic Slope Regional Corporation and the Borough opened up a range of new employment opportunities for local residents and also contributed to an influx of whites into the community. On the other hand, the planned out-migration of Eskimos from Barrow to resettle the traditional villages of Atkasuk and Nuiqsut and, to a lesser extent, Point Lay was the major factor in a decline in the number of Eskimos living in Barrow during the 1970 to 1980 decade. Their place has been taken by whites, most of whom are either single or are married couples without dependents. As a result, despite a boom in economic activity and greatly increased demands for housing, Barrow's population grew only 4.9 percent between 1970 and 1980, slower than at any time since the 1930's. According to the 1980 Census, Barrow had a civilian population of **2,207**. A house to house

count conducted by Alaska Consultants, Inc. in July of the same year recorded a total of 2,389 local residents.

Since the 1980 Census, economic activity in Barrow has continued at a high level. A special 1982 census conducted by the City of Barrow counted 2,882 local residents, representing a 30.6 percent increase since 1980. This increase would have been even greater were it not for the "mothballing" of NARL by the U.S. Navy. The number of personnel based at NARL declined from 156 in 1980 to a reported 64 in 1982 and still further to about 30 in 1983.

POPULATION COMPOSITION

The outstanding feature of Barrow's population composition is that most residents of this community are Eskimos. However, the proportion of non-Natives has risen in recent years. In 1970, 90.5 percent of the people in this town were Alaska Native. By contrast, the 1980 Census found that although Eskimos remained the dominant ethnic group, Alaska Natives accounted for a much lower 77.9 percent of the community's population. A housing survey conducted in the summer of the same year and which included temporary construction employees found an even lower proportion (71.2 percent) of Alaska Natives (see Table-54). If the population of the former Naval Arctic Research Laboratory (NARL) and the DEW Line station are included, the proportion of Alaska Natives in Barrow is now probably closer to 70 percent.

TABLE 54
POPULATION COMPOSITION BY RACE AND AGE a/
BARROW

Age	Alaska Native			Non-Native			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0 - 4	92	92	184	11	22	33	103	114	217
5 - 9	78	83	161	14	16	30	92	99	191
10 - 14	85	101	186	18	9	27	103	110	213
15 - 19	122	117	239	19	21	40	141	138	279
20 - 24	107	88	195	43	33	76	150	121	271
25 - 29	101	87	188	85	55	140	186	142	328
30 - 34	63	53	116	65	32	97	128	85	213
35 - 39	45	31	76	25	19	44	70	50	120
40 - 44	38	33	71	28	10	38	66	43	109
45 - 49	38	23	61	28	9	37	66	32	98
50 - 54	29	26	55	10	12	22	39	38	77
55 - 59	21	21	42	9	2	11	30	23	53
60 - 64	17	13	30	4	3	7	21	16	37
65 - 69	16	21	37	1	2	3	17	23	40
70 - 74	9	5	14	2	0	2	11	5	16
Over 74	15	7	22	1	0	1	16	7	23
Total	876	801	1,677	363	245	608	1,239	1,046	2,285
Median Age	23.1	20.3	21.8	29.3	26.8	28.4	25.8	22.7	24.5

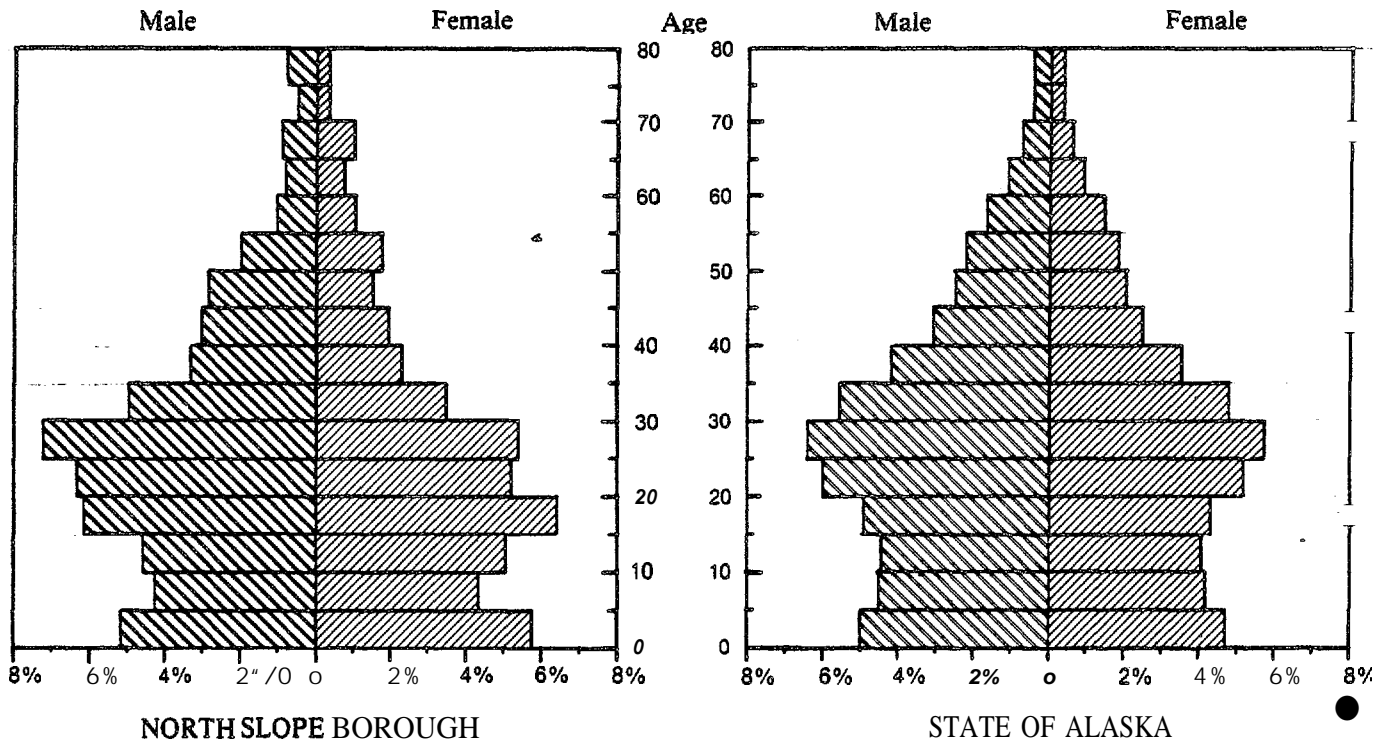
a/ Figures exclude a total of 104 persons (16 Alaska Native males, 9 Alaska Native females, 56 non-Native males and 23 non-Native females) for whom no age information was provided. Population at the Naval Arctic Research Laboratory (NARL) and the DEW Line station is also excluded.

Source: Alaska Consultants, Inc. North Slope Borough Housing Survey, prepared for the North Slope Borough, Public Works Department. Anchorage. September 1980.

The increased proportion of non-Natives in Barrow is due both to an out migration of Eskimos and to an influx of whites. During the 1970's, three former traditional villages (**Atqasuk, Nuiqsut** and Point Lay) were **re-established**, mainly by Eskimos from Barrow. Largely as a result, the Eskimo population of Barrow declined between 1970 and 1980. The **U.S.** Census had counted 1,905 Alaska Natives in Barrow in 1970, 185 more than the 1,720 recorded in 1980. This decline in Alaska Native population was offset by an influx of whites, primarily in response to increased employment opportunities afforded by the North Slope Borough and the Arctic Slope Regional Corporation.

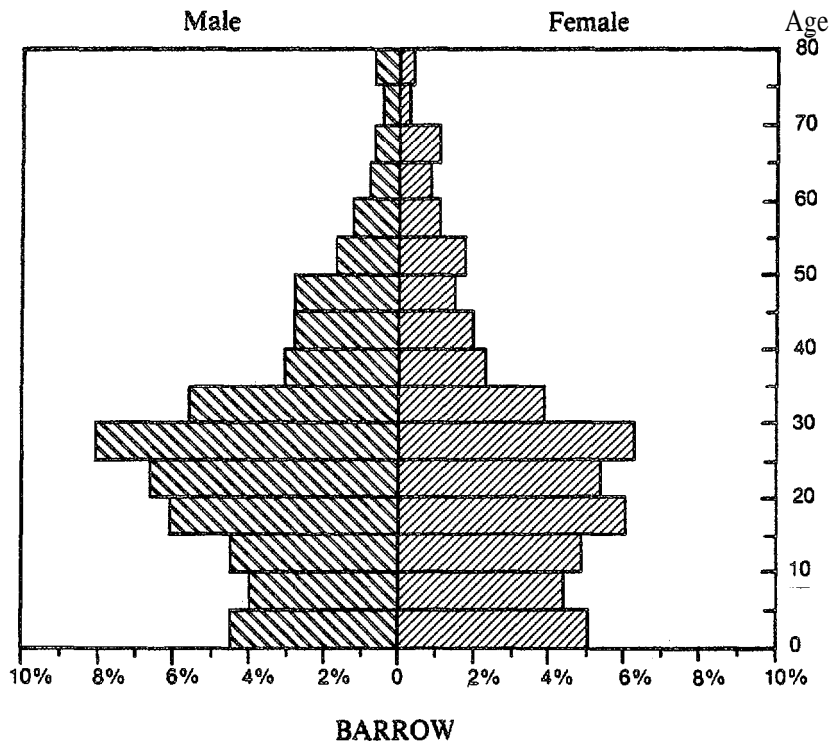
A comparison of age and sex characteristics of Barrow's population in 1980 indicates that this community possesses some peculiarly Alaskan characteristics to an exaggerated degree. According to the 1980 North Slope Borough housing survey, males in Barrow outnumbered females by a 55 to 45 percent margin although **this** disparity was less marked among the community's Native (52 to 48 percent) than its non-Native (61 to 39 percent) population. The 1980 Census also found a continued predominance of males (53 percent) over females (**47** percent) Statewide, unlike the nation as a whole where females outnumber males (see Figure 31).

Barrow's population is very young. According to the North Slope Borough housing survey, the median age of males in Barrow was 25.8 in 1980 and that of females was 22.7, slightly lower than the 26.3 and 25.8 recorded by the **1980** Census for males and females Statewide. The Alaska Native component of Barrow's population was significantly younger than



NORTH SLOPE BOROUGH

STATE OF ALASKA



BARROW

COMPOSITION OF POPULATION
1980

communitywide norms, with the median age of males being 23.1 and that of females being 20.3. Both Barrow and the State are unlike the nation as a whole where the median age of the population was a much older 30.0 in 1980.

To a large degree, the youth of Barrow's population is related to higher birth rates characteristic of predominantly Alaska Native areas of the State. The average number of persons per household recorded in Barrow in 1980 by both the North Slope Borough housing survey and the Census was 3.4, a dramatic decline from the 5.6 persons per unit recorded here in 1970. However, some of the steepness of this decline is related to changes in the community's racial composition. The 1980 housing survey found that Barrow's Alaska Native households averaged 4.2 persons compared with a much lower 2.6 for non-Natives. Many of Barrow's non-Native households are made up of single **people** or couples without children, a situation which results in their average household size being **lower** than overall Statewide (2.93) or national (2.75) figures in 1980. The decline in the size of **Alaska** Native households in Barrow is believed to be due to a combination of falling birth rates and a lessening of overcrowded housing conditions, the **latter mainly** resulting from the North Slope Borough's housing construction program.

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SOCIAL INTERACTION

It is estimated that about 30 percent of Barrow's present population is non-Native. For the community's **adult** population, the proportion of non-Natives is even higher since people in this group typically have few

dependents. The proportion of non-Natives in Barrow is much greater than in any of the smaller villages (provided that the Barter **Island DEW** Line station **is** not counted as being part of Kaktovik) since this is the administrative center for the North Slope Borough general government, **the North** Slope Borough School District, the Arctic Slope Regional Corporation and other government and non-government agencies providing services in the North **Slope** region. Such employers require specialized skills which are either not available locally or are not available in sufficient numbers, a situation which results in **the** hiring of significant numbers of non-Natives.

Non--Natives in Barrow are not a homogeneous group, although they may sometimes be perceived as such by some **Inupiat** individuals. There appear to be at **least four** distinct groups, some with sub-classes. Further refinement of such groups, however, would take more fieldwork than provided for this study. With that qualification, Barrow's **non-Inupiat** population **can** be divided into permanent residents, semi-permanent residents, transient residents and temporary residents.

The permanent **resident** group is made up of persons who have made **Barrow** their permanent home. Most people in this group are male, with many of them having originally come here to work for Holmes and **Narver** or ITT, both former Navy contractors at **NARL**. Many persons in this group have married **local Inupiat**s and basically **lead** a modified **Inupiat** lifestyle. Others not linked with the **Inupiat** culture **through** marriage are nevertheless active participants **in** community affairs and mix socially with **Inupiat** residents. Some members of this group hold responsible

jobs with the North Slope Borough, while others are involved in the business sector. The Barrow city council often includes a member of this group, indicating that these **people** are thought of as "Locals" by **Inupiat** residents.

Semi-permanent non-Native residents are those who come to Barrow with a plan to remain in the community for several years, to save money, and to then move out of the region. This group includes a high proportion of professional people such as teachers, doctors, nurses and administrators. Since about 1980, this group has also included a significant number of blue collar employees such as food service workers, janitorial workers and laborers, plus government workers with less specialized skills. Traditionally, this non-Native group had been almost exclusively made up of whites. However, this is no longer true and Barrow **now** has a contingent of Filipinos, Mexicans and Koreans.

The semi-permanent non-Native group tends to have few dependents in Barrow and to spend relatively little money in the community. Money earned locally is usually invested outside the region (or the State). As a result, little of that money is circulated in Barrow. Another characteristic of this group is the high proportion of people living in employer-provided housing. **While** some semi-permanent non-Natives **in** Barrow mix socially with **Inupiat**s, such contacts are usually limited outside the workplace.

Transient non-Native residents include a large proportion of construction workers. This group comes from outside the region and

usually stays **in** Barrow for a shorter period of time than do the semi-permanent residents, with the actual **length of** stay normally related to the duration of a particular project on which an individual is working. Many of these people live in construction camp accommodations where meals as **well** as sleeping quarters are provided, with the result that this group spends almost no money in Barrow. Rest and recreation (R and R) time is almost **always** spent outside the region. In general, this group is primarily white, almost exclusive male and was attracted to Barrow by the opportunity to earn high wages. Transient non-Native residents in Barrow have few contacts with other groups in the community, Alaska Native or non-Native,

The last major group of non-Natives in Barrow can be characterized as temporary residents. These people **live** outside the region, mainly in Fairbanks, Anchorage or Seattle and periodically travel to Barrow to provide professional services, primarily for the North **Slope** Borough. Although this group cannot strictly be classed as "residents", they are significant in the **local** economy since most stay in **local** hotels and eat in **local** restaurants. This group is **almost** exclusively white and is predominantly male. It is the primary reason for the recent proliferation of **hotel** accommodations and restaurants in Barrow. **However, it** has **few** social contacts with Barrow's Inupiat population outside the workplace.

It should be stressed that the above characterization of non-Natives **in** Barrow is highly generalized and that the various groups are not static, i.e. there is movement from group to group. **Nevertheless, it does**

convey the overall character of the various non-Native groups in the community. In terms of how these various groups are perceived by **Inupiat**, it can be generally said that there is essentially no resentment expressed over the presence of permanent non-Native residents. In addition, little real resentment is expressed against the highly skilled component of the semi-permanent non-Native population, i.e. doctors, dentists, teachers and so forth. However, a considerable amount of resentment can be heard over the presence of persons in the community who are perceived as taking "**Inupiat**" jobs, i.e. jobs which could be filled by local residents. This resentment appears **to** be most extreme against the non-white component of the semi-permanent non-Native group.

Relationships between **Inupiat** and transient white construction workers are essentially non-existent outside the workplace, especially when construction workers live in camp accommodations. In general, this latter group has no real interest in Barrow except in terms of employment and associated financial rewards, a situation which is strongly resented by much of the town's **Inupiat** population. By contrast, while the temporary residents group undoubtedly includes some individuals who are resented by local people, this group is generally not **viewed** as being-a threat to **Inupiat** lifestyles since its members travel to Barrow for specific purposes and leave shortly thereafter.

The population at the POW-Main DEW Line station and the former NARL base have little contact with either whites or **Inupiat** in Barrow. Both of these facilities are essentially self-contained. The only real point of

contact between the DEW **Line** station and village residents is the station's bar and even that contact is limited **since** admittance is by invitation only. Some contact is maintained between the operators **of** the **NARL** base and Barrow since the primary mission **of** the base is **to** run the Barrow gas **fields** and the base also employs a few local residents. However, there probably more contacts between the DEW Line station and **NARL** than there are between either of those facilities and the **village** of Barrow.

MIGRATION

While good data to substantiate trends are limited, it is apparent that there has been a great deal of migration into and out of Barrow **during** the past ten years. This has involved an in-migration of non-Natives into the community, primarily **in** response to opportunities for **well** paying jobs. **It** has also involved an out-migration of **Inupiat**s to smaller villages of the region, primarily to **re-establish** **Nuiqsut** and **Atqasuk** and, to a lesser extent, Point Lay. Some out-migration **of** **Inupiat**s to urban centers such as Fairbanks is **also** believed to have taken place.

The significance of **these** various migrations is **suggested** by comparisons **of racial** composition **in** Barrow as measured by the **1970** and **1980** Censuses. In **1970**, a total **of 1,905 Alaska** Natives (or 90.5 percent of of the city's population) was counted as **living in** Barrow. In **1980**, **only 1,720** Alaska Natives (or **77.9** percent **of** the city's population) were counted here, **185** fewer than had been recorded in **1970**.

Even though there are indications that the 1980 Census figure for Barrow's total population was low, a count by Alaska Consultants, Inc. in the summer of 1980 in conjunction with the North Slope Borough housing survey recorded only 1,702 Alaska Native residents here out of a total population of 2,389. This would tend to indicate that if the 1980 Census count was low, it was primarily non-Natives who were missed.

As part of the 1980 housing survey, people were asked how long they had lived in their present community. These answers were later disaggregated by race. In Barrow, almost three-quarters (74.9 percent) of the Alaska Natives who answered this question had lived in Barrow since before 1960. By contrast, 87 percent of the non-Natives interviewed who gave responses had moved to the community during the prior five years (see Table 55).

Since 1980, the population of North Slope Borough villages has grown at a rate well in excess of that of natural increase. Although there are no supporting data, at least a portion of that growth has probably been achieved as a result of a continuing exodus from Barrow. The permanence of that out-migration from Barrow, however, is likely to be tested in the near future as the Borough's capital improvements program starts to wind down.

The in-migration of non-Natives into Barrow has taken place during the same period as the out-migration of Alaska Natives to the villages (and, possibly, also out of the region). This in-migration accelerated during the late 1970's and has continued through the early 1980's in response

TABLE 55
 LENGTH OF RESIDENCE OF HEADS OF HOUSEHOLD a/ b/
 BARROW
 JUNE 1980

<u>Length of Residence</u>	<u>Race</u>		<u>Total</u>
	<u>Alaska Native</u>	<u>Non-Native</u>	
1975-1980	55	161	216
1970-1974	17	27	34
1960-1969	27	5	32
Before 1960	295	2	297
No Response	53	71	124
<u>TOTAL</u>	<u>447</u>	<u>256</u>	<u>703</u>

a/ For purposes of the housing survey, the adult Alaska Native in combination Alaska Native/non-Native households was always designated as head of household.

b/ Excludes three occupied units without permanent residents and one bunkhouse with 27 occupants.

Source: Alaska Consultants, Inc. North Slope Borough Housing Survey, prepared for the North Slope Borough, Public Works Department. Anchorage. September 1980.

to new job opportunities provided by the North **Slope** Borough and, to a lesser extent, by the Arctic Slope Regional Corporation **and** others. This new migrant group is typically made up of single persons or married couples without children. The earlier non-Native migrants were primarily professional people or people with specialized skills. This has been less true of more recent arrivals, a group which has included a significant number of non-whites.

Since 1980, the proportion of non-Natives in Barrow is believed to have further increased. A census conducted in 1982 by the City of Barrow counted 2,882 village residents. Although no information on race was collected as part of that census effort, given the amount of growth which occurred in the smaller villages between 1980 and 1983, a large proportion of Barrow's growth is believed to have resulted from the continuing in-migration of non-Natives. This rate of in-migration has further accelerated since 1980, primarily because of a corresponding acceleration of the Borough's capital improvements construction program.

As part of the 1983 fieldwork, Barrow residents were asked about their willingness to migrate for employment. Barrow's larger size made it impossible to determine the total number of local residents who worked at Prudhoe Bay and only one person interviewed as part of the 1983 fieldwork currently worked in that area. He had just begun working there and professed to be quite satisfied with his two weeks on, two weeks off schedule which he felt would enable him to spend more intensive time with his family **and still** allow time for subsistence hunting and fishing. However, this person appeared to be an exception.

Other Inupiat interviewed thought that there were not more Alaska Natives working at **Prudhoe Bay** because the **value** that the **Inupiat** culture places on **family** relationships makes it difficult for them to stay away from their families for extended periods. Three other **Inupiat** interviewed said that they would not work at **Prudhoe Bay** as a matter of principle since they did not want to be associated **with** the petroleum industry in any **form**.

Only one **Inupiat** interviewed in Barrow in **1983** had ever worked on the Pipeline. She indicated that the only reason for working there was the money and that she would never do it again because of the hardships it had created in her **family life**.

In summary, **Inupiat** interviewed generally showed **little** interest in migrating to petroleum industry sites **for** employment. **As** elsewhere, this was in part doubtless due to the current availability of jobs in Barrow and a **preference** for moving to another Borough village for employment rather than to a "foreign" environment such as is afforded by the **Prudhoe Bay** area. However, these attitudes **could** change as construction employment associated with the North **Slope** Borough capital improvements program winds down.

RECENT TRENDS AND CHANGES

After a sluggish (**4.9** percent) rate of population **growth** between **1970** and **1980** due primarily to a shift in the community's **racial** composition, Barrow has undergone a period of major population growth since **1980**. A

1982 census conducted by the City of Barrow counted 2,882 residents, representing a 30.6 percent increase over the 1980 Census figure. Given the rate of North Slope Borough capital improvements program ' construction activity in 1983, some further increases in population doubtless also took place during that year.

As indicated above, the major contributor to recent rapid rates of population growth in Barrow has been the North Slope Borough's capital improvements program. The largest non-Borough construction project in Barrow in the past few years has been burial of the community gas distribution system, a project funded by the Bureau of Indian Affairs and built by a subsidiary of the Arctic Slope Regional Corporation. A significant proportion of Borough-generated construction activity in Barrow has involved subsidiaries of both the regional corporation and Ukpeagvik Inupiat Corporation (UIC), the local village corporation. However, much of the construction work has also been done by outside firms, a situation which has resulted in the establishment of a major construction camp on the south side of the airport runway, as well as a number of other smaller facilities scattered throughout town.

Major Borough construction projects underway during the summer of 1983 in Barrow included the water and sewer utilidor system, dredging of a sewage lagoon, development of roads in the Browerville addition #2, construction of a hangar for the Borough's helicopters and fixed wing aircraft, construction of the new high school, the addition of new single family housing units, expansion and upgrading of the water treatment plant and an addition to the Browerville fire station.

As the Borough seat, a **large** number of Borough general government and **School** District administrative personnel are based in Barrow. **Their** number has increased as the level **of** services **being** provided regionally has grown. Furthermore, as the largest traditional community on **the** North **Slope**, the Borough generally provides a higher **level** of service and employs a much greater number of operations and maintenance personnel in Barrow than it does in the smaller villages. Finally, as a result of the rapid pace of the Borough's capital improvements program during the past few years, Barrow **has not only** seen an increase in the number of construction workers but also a corresponding growth in the number of personnel (and consultants) needed to monitor capital improvements program construction activities.

Economy

Prior to **World War II**, Barrow was about the same size as **Wainwright** although even then it had more amenities. After the decline of the commercial whaling industry in the the Arctic, other activities such as reindeer herding and trapping had become important in the local economy. However, reindeer herding had collapsed **by** the early 1940's and the national **depression** of the 1930's **had** resulted in **the "bottom" falling** out of **the** fur market. These unfavorable conditions, together with a high incidence **of** tuberculosis and other diseases plus high infant mortality rates, were reflected in a virtual stagnation of Barrow's population between **1920** and **1939**.

The decision by the **U.S.** Navy in 1944 to undertake an extensive petroleum exploration program in the then Naval Petroleum Reserve **No. 4** (now NPR-A) led to major and lasting change in Barrow and clearly established this as the major village in the region. The exploration program continued through 1953. During that period, a camp was built at what later became the Naval Arctic Research Laboratory (**NARL**) site, a short distance north of the village of Barrow and a road linking the two settlements was constructed. There were normally 300 to 500 men at the camp during the exploration program period. In addition, a conscious effort was made by Navy subcontractors to hire as many Eskimos as possible, provided that they could meet required health standards. At peak, more than 100 Eskimos were employed in the **NPR-A** exploration program, with the availability of jobs being a major factor in the 162 percent growth in population recorded for Barrow between 1939 and 1950.

Despite the cessation of the NPR-4 exploration program in 1953, Barrow's population continued to grow during the 1950s. Construction of the DEW Line system across the Alaska arctic got underway during this period. In Barrow, the Air Force took over operation of the old Navy base in **1954**, except for the research laboratory portion of the facility, and operated it through a series of civilian contractors. While the number of jobs afforded local residents was less than had been available during the exploration program, the facility nevertheless provided a significant source of local employment.

In 1971, the camp again reverted to Navy control. However, over the years, of the facility by the Navy steadily declined and it was

decommissioned in June **1981** and placed in a caretaker status in September of the same year. (All research at the facility **had** ceased in September **1980** when the University of Alaska's contract was canceled). Today, the only function **of** NARL is limited maintenance of the base and operation of the gas **fields, a** task which currently employs about 30 people.

While the **NARL** base was a **major** factor in Barrow becoming the dominant community in the North Slope region, **the** primary contributors **to** the city's economy today are the activities of government agencies and firms operating under government contracts. **In** addition, **the** operations of **locally** based Native corporations, the Arctic **Slope** Regional Corporation and the **Ukpeagvik** Inupiat Corporation (**UIC**), also make important contributions to local employment and income.

This community has undergone a fundamental change since **1970**. Passage of the Alaska Native Claims Settlement Act in **1971** and incorporation of the North **Slope** Borough (with Prudhoe Bay as its primary tax base) in **1972** have resulted in the development of a locally based economy, replacing one which had been almost entirely dependent on decisions made **by** a remote federal bureaucracy. Accompanying this change has been a **major** growth--in employment opportunities (not **all** of them **permanent**),--resulting not only **in** new jobs for **local people** but also in an in-migration of new, primarily white, residents into the Barrow area.

COMPOSITION OF EMPLOYMENT

Employment statistics published by the **Alaska** Department of Labor cover the entire North Slope Borough, including **Prudhoe** Bay, and therefore do not provide meaningful data for individual communities. A survey of employment in Barrow was therefore conducted by Alaska Consultants, Inc. in August **1982**.

Each employer in Barrow was contacted and asked to indicate the type of business in which that establishment was engaged and the annual average number of persons employed. Employment was then assigned to the appropriate standard industrial categories used by the Alaska Department of Labor (and throughout the United States).

When converted to average annual full-time employment, a total of 1,345 jobs was counted in Barrow in 1982, an increase of almost 36 percent over the 992 jobs counted here by **Alaska** Consultants, Inc. in 1978 (see Table 56). **Almost** half of the community's jobs in 1982 were in government occupations, most of them with the North Slope Borough. The next largest sector was contract construction which accounted for almost 20 percent of the city's jobs in 1982, mostly derived from North Slope Borough construction- projects. - The only **other** employment sector to account for more than 10 percent of total employment in Barrow in 1982 was transportation, communications and public utilities (13.2 percent), followed by services (5.9 percent), trade (5.2 percent), finance, insurance and real estate (4.5 percent) and mining (2.4 percent). The agriculture, forestry and fishing sector was not represented locally.

TABLE 56

ANNUAL AVERAGE FULL-TIME Employment_
BARROW
1982

<u>Industry Classification</u>	<u>Number</u>	<u>Percent of Total</u>
Agriculture, Forestry and Fishing	0	0.0
Mining	32	2.4
Contract Construction	260	19.3
Manufacturing	0	0.0
Transportation, Communications and Public Utilities	177	13.2
Trade	70	5.2
Finance, Insurance and Real Estate	60	4.5
Services	79	5.9
Government	667	49.6
Federal	(58)	(4.3)
State	(13)	(1.0)
Local	(596)	(44.3)
<u>TOTAL</u>	<u>1,345</u>	<u>100.0</u>

a/ Excludes **local** persons working in the Prudhoe Bay area.

Source: **Alaska Consultants, Inc.**

A total of 667 full-time job equivalents was identified in the government sector, of which 596 were in local government. Of these, the general Borough government accounted for 419 jobs and the North Slope Borough School District for 170. The only other local government jobs in Barrow in 1982 were 7 with the City of Barrow. All told, 44.3 percent of the full-time job equivalents counted in **Barrow** in 1982 were in local government. No other community of any scale in the State has such a high proportion of its total employment in this government sub-sector.

Only 13 State jobs were identified in Barrow in 1982, exactly the same number as were counted here in 1978. Another **58** jobs were derived from the federal government. By far the largest federal employer in Barrow is the U.S. **Public** Health Service which operates the Barrow hospital and serves most of the North Slope region. Other federal agencies represented locally include the Federal Aviation Administration, the National Weather Service and the Post Office. The total number of federal employees in Barrow in 1982 was **lower** than in 1978, due both to a scaling down in staffing **levels** of some agencies and to the closure of the Public Health Service's Office of Environmental Health locally, as well as the departure of all military personnel from NARL.

After government, most jobs identified in Barrow in 1982 were in the contract construction sector. A total of 260 full-time job equivalents was counted in this sector, representing twenty different contract construction firms and several other miscellaneous construction employers. Major construction activities underway in Barrow in **1982**

included completion of the buried gas distribution system, continued work on the Barrow high school, work on the water and sewer **utilidor** system and **public** housing, **plus** a number of smaller Borough and other projects.

In all, **177** jobs were identified in the transportation, communications and public utilities sector in Barrow in 1982. This was significantly **lower** than the 233 jobs counted in this sector here in **1978**. However, the apparent decline is derived directly from the "**mothballing**" of NARL and other employment in this sector actually increased during the 1978-1982 period, especially **in** air transportation activities.

The services sector accounted for a total of 79 jobs on an annual average full-time basis in Barrow in **1982**. This was less than the 97 jobs counted here in **1978** because of the cessation of the University of Alaska's research management function at NARL. **In** fact, other service employers in Barrow have experienced significant growth during the 1978-1982 period, especially in the provision of hotel/construction camp services.

Barrow has a relatively small trade sector when compared with other **Alaska** communities **of a similar** size, probably a reflection of a **very** high amount of **mail** order buying and deferred purchases. Nevertheless, the 70 jobs counted in this sector in Barrow in **1982** represented a 27 percent increase over the number counted in **1978**. Exactly half of Barrow's **1982** jobs in trade were associated with the operation of three

stores which primarily sell groceries. Another 23 jobs were derived from the operation of restaurants and food stores.

Barrow has an unusually large finance, insurance and real estate sector for a community of its size. However, aside from a branch bank and a minor amount of employment associated with rentals, all of these jobs are derived from Native organizations established under terms of the Alaska Native **C**laims Settlement Act, i.e. the Arctic Slope Regional Corporation and the **U**kpeagvik Inupiat Corporation. Total employment in this sector in 1982 is lower than it was in 1978, mainly because these corporations have subsequently formed subsidiaries which are covered under other industrial categories.

The only other employment sector which was represented locally in 1982 was mining. Both ARCO and **S**ohio had liaison personnel based in Barrow. However, most employment in this sector in 1982 was derived from construction activities associated with the Barrow gas fields and with clean-up work in **NPR-A**.

UNEMPLOYMENT AND **S**EASONALITY OF EMPLOYMENT

There are no reliable statistics available which document rates of unemployment in Barrow or any other North Slope Borough community. The figures published by the Alaska Department of Labor for the North **S**lope Borough include **P**rudhoe Bay where everyone is employed and where most jobs in the region are located. As a result, conditions in the region's traditional villages are obscured.

As part of **the** Barrow employment survey, employers were asked to indicate **if** the number of **jobs** in their individual operations changed seasonally. Except for jobs derived from tourism and construction, Barrow **appears to** have a low degree of employment **seasonality, mainly** because such a **large** share of the jobs in this community are in government and government-sponsored occupations or are associated with the Arctic Slope Regional Corporation's central office. The number of jobs in these occupations does not change significantly from season to season. (School teachers are counted as year-round employees, even though most are not physically present in Barrow in the summer months, because they are paid on a year-round basis).

Unemployment data specifically for Barrow is generally sketchy. **In 1982**, there were **2.1** persons for every job in the Barrow urban area, a relationship suggesting that there is very **little** unemployment here. However, a significant proportion of Barrow's non-Native population is made up of persons living in institutional housing or construction camps who have almost no dependents locally. **In** addition, a **large** share of the remaining whites who **live** in town are here strictly for job-related reasons and also have few dependents, with the most extreme example being Federal Aviation Administration employees whose families live in Fairbanks and who **are** rotated **in** and out of Barrow every few weeks. **If** whites were excluded, the relationship between population and employment would probably be closer to 4 persons for every **job**, indicating at **least** some under-employment for a segment of Barrow's Eskimo population.

Two factors should be taken into account when assessing apparent discrepancies between **Inupiat** population and employment in Barrow (and other North Slope villages). First, a significant proportion of Barrow females is outside the labor force (i.e. they are not seeking employment), although this proportion is believed to be **lower in** Barrow than in the smaller villages. Another factor which must be taken into account is the amount of time devoted to subsistence activities. Such activities can temporarily remove individuals from the labor market. The availability of a worker at a given time is conditioned by that individual's perception of the need to spend time on a **subsistence-**related activity. Temporary construction work, especially that which is close to home, provides the part-time employment and sufficient cash income to fit well into the cash/subsistence economy which exists for a segment of Barrow's population.

Weather conditions cause some seasonal variations in temporary construction employment in Barrow, as they do in other villages in this region. However, the main variations in this type of employment are related to the number and type of capital improvement projects being constructed locally. For example, uneven scheduling of construction work from year to year can result in local unemployment. Or, the use of contractors **who bring** in-much of-their own labor rather than **hiring** locally can also lead to a loss of jobs for Barrow residents.

INCOME LEVELS

The 1980 Census found the **median** household **income** for the North Slope Borough to be \$31,378. The **median** household income for Alaska was \$25,421, and the mean household income for Alaska Natives Statewide was \$21,865.

A comprehensive housing survey conducted for the North Slope Borough in 1980 obtained income information for individual communities. In Barrow, this information was based on a sample of **405 out** of a total of 703 households surveyed. It found the median household income in Barrow to be \$30,137, with that for **local** Alaska Native households being \$26,277 compared with \$37,357 for non-Native households (see **Table 57**).

The purchasing power of the dollar in remote communities such as Barrow is greatly diminished by high local prices for goods and services. Barrow is more easily accessible by water than most villages in the region. However, this accessibility is limited to a very short season because of ice conditions and a high proportion of freight into Barrow is brought **in by** air, a situation which adds significantly to costs. As a result, store-bought food **prices** here appear to **be** about double those in Anchorage and subsistence hunting and fishing activities remain an economic as well as a cultural necessity for most **local Inupiat** residents.

Housing costs in Barrow are unlike those in the smaller villages of the region in that utilities costs are generally **low** because gas **prices** are

TABLE 57

HOUSEHOLD INCOME DISTRIBUTION a/
BARROW
1980

<u>Household Income</u>	<u>Race</u>		<u>Total</u>
	Alaska Native	Non-Native	
Under \$1,000	4	0	4
\$ 1,000-\$ 1,999	3	0	3
\$2,000-\$2,999	4	2	6
\$3,000-\$3,999	4	2	6
\$4,000-\$4,999	1	2	3
\$5,000-\$5,999	4	2	6
\$6,000-\$6,999	6	2	8
\$7,000-\$7,999	5	1	6
\$8,000-\$ 8,999	5	3	8
\$9,000-\$9,999	3	0	3
\$10,000-\$10,999	7	5	12
\$11,000-\$11,999	2	1	3
\$12,000-\$14,999	16	6	22
\$15,000-\$19,999	27	9	36
\$20,000-\$24,999	27	12	39
\$25,000-\$34,999	47	26	73
\$35,000-\$49,999	43	35	78
\$50,000-\$74,999	35	35	70
\$75,000 or more	5	14	19
<u>TOTAL</u>	<u>248</u>	<u>157</u>	<u>405</u>
Median Income	\$26,277	\$37,357	\$30,137
Mean Income	\$29,156	\$39,473	\$33,155
Standard Deviation	\$19,202	\$25,280	\$22,350

a/ Figures exclude 298 households (199 Alaska Native and 99 non-Native) for which no income information was obtained.

Source: Alaska Consultants, **Inc.** North Slope Borough Housing Survey, prepared for the North Slope Borough, Public Works Department. Anchorage. September 1980.

currently heavily subsidized by the federal government. However, for people who rent units or who construct their own homes **using** standard materials, housing costs can be high. For example, the cost of three bedroom homes currently being built **in** Barrow by the North Slope Borough is slightly in excess of \$300,000 per unit. Private rentals in the **\$1,000 to \$2,000** per month range are not uncommon. Such costs further reduce the spending power of household incomes in this community.

ECONOMIC GROWTH PROSPECTS

Barrow has the most complex economy of any of the North Slope Borough's traditional villages. Nevertheless, **as in the** other communities, the dominant economic force in Barrow is government spending, especially that by the North Slope Borough. Other sources of economic strength include the activities of the Arctic **Slope** Regional Corporation and the **Ukpeagvik Inupiat Corporation (UIC)**, the regional and **local** village corporations established under terms of the Alaska Native Claims Settlement Act; other government agencies, primarily the U.S. Public Health Service which operates a regional health facility in Barrow; and a modest amount of tourism during the summer months. The operation of the former Naval Arctic Research Laboratory (**NARL**), once a major **employer** in the Barrow area, is now a minor **element** in the community's economy.

As in **all** North Slope villages, the major employer in Barrow is the North **Slope** Borough. However, unlike the smaller villages, a large number of Borough employees in Barrow are permanent administrative

personnel, both for the general Borough government and the North Slope Borough School District. In addition, the Borough maintains a relatively large operations and maintenance staff in Barrow since it provides a higher level of service here.

Some analysis of the composition of Borough employment is necessary in order to assess prospects for future economic growth. In 1982, direct Borough employment in Barrow (including the North Slope Borough School District) amounted to 589 full-time job equivalents. Approximately **115** of these jobs were held by construction workers whose salary was paid directly by the Borough. Operations and maintenance personnel, including people involved in clean-up work, road maintenance, dredging, transit services, housing maintenance, utilities and local police protection services, plus teachers and culinary, maintenance and other jobs associated with the Barrow schools, employed another 219 persons on an average annual full-time basis in 1982. The remaining 255 jobs were essentially administrative, although there is some overlap between administration and operations in several departments.

In the future, while the number of administrative and operations and maintenance positions **could** show some decline, such jobs are considered relatively permanent. By contrast, the number of persons employed directly by the Borough in construction fluctuates according to the level of construction activity in the community and the type of contract awarded for a particular project. Once the Borough's capital improvements program winds down, however, this portion of Barrow's local government sector employment should show a corresponding decrease.

Other government employment in Barrow is expected to remain at a relatively stable **level** in the future. **The major** government employer in the community after the North Slope Borough is the **U.S. Public** Health Service which operates a regional hospital facility here. While responsibility for management of this facility could change in the future, it is assumed that current staffing levels **will** continue to be maintained.

Contract construction employment in Barrow was second only to government in **1982**. Aside from burial of the community gas distribution system, almost **all** construction employment in the community in **1982** was derived from North **Slope** Borough capital improvements projects. **As** a result, this sector of Barrow's economy can **be** expected to undergo a **major** decline in the future as the capital improvements program winds down. **The** three major Borough projects underway in Barrow in both **1982** and 1983 were the water and sewer **utilidor** system, the Barrow high school and public housing construction.

The activities of both the Arctic **Slope** Regional Corporation and the **Ukpeagvik Inupiat** Corporation (**UIC**) are significant elements in Barrow's economy and can be expected to become more so in the future, although the **winding** down of **Borough capital** improvements program construction activity is likely to have an impact on **the** construction subsidiaries of both corporations.

The Arctic **Slope** Regional Corporation employed an **annual** average of about **40** persons in its central office in Barrow in **1982**. Corporation

activities in Barrow in 1982 included operation of the community gravel pit, a heavy duty equipment repair service, rental of heavy construction equipment, operation of a service station and local storage and distribution of fuel oil, gasoline and other petroleum products. One of its subsidiaries, Eskimos Inc., was engaged in a range of construction activities in 1982 in conjunction with two other firms which are now also wholly owned subsidiaries of the regional corporation. **Tundra Tours, Inc.**, another subsidiary, owns and operates the 40-room Top of the World Hotel (although it contracts out the operation and management of the hotel restaurant).

The Arctic Slope Regional Corporation has no land holdings in the Barrow area except for a few lots in town. However, through its ownership of surface and subsurface estate elsewhere in the region, it has the potential to capitalize on future oil and gas development activities and, thus, contribute to future economic development in Barrow. As of June 30, 1982 the Corporation reported ownership of approximately 4.6 million acres of land, including about 1 million acres of "in lieu" and village subsurface lands. More recently, in August 1983, the Corporation completed a land swap with the Secretary of the Interior involving the transfer of 100,000 acres of surface estate adjacent to the **Gates** of the Arctic National Park and Preserve for 92,160 acres of subsurface estate underlying selections of the Kaktovik **Inupiat** Corporation in the Arctic National Wildlife Refuge. Industry interest in the petroleum potential of the Arctic National Wildlife Refuge is high and the regional corporation has reportedly received a number of proposals from companies wishing to undertake exploratory drilling

there. While petroleum development would require Congressional approval, the Corporation stands to benefit from any petroleum activity involving its lands in that area.

The activities of the **Ukpeagvik** Inupiat Corporation (**UIC**) will **also** have an impact on Barrow's economy in the future. This corporation is the major landowner in the Barrow area and, as such, essentially controls development outside the original Barrow **townsite**. Aside from development of its lands, this corporation is involved in several local ventures including the main community store (**Stuaqpak**), management of which is presently contracted to the **Alaska** Commercial Company. Other **local** investments include a lumber products distributorship (**Qiruktagvik** and Company) and a construction firm (**UIC** Construction). The corporation is also involved in a tug and barge service joint venture (Bowhead Transportation) and a number of other activities outside the Barrow area. Depending on the success of these ventures, UIC could **play** a much larger role in Barrow's economy in the future.

Tourism **is** a **highly** seasonal element in Barrow's economy, with the tour season being essentially confined to the period between the beginning of June and the end of August. Almost **all** tourists visiting Barrow travel on organized-tours marketed by Alaska Tour and Marketing Services. Three different tour packages which include Barrow are currently offered, two of which require tourists to spend a night in Barrow. Local transportation of tourists in the community is provided by a **bus** operated by Alaska Tour and Marketing Services.

No current statistics on the number of tourists who visit Barrow are available but they are believed to be in the range of 4,000 to 5,000 per year. Few tourists visit the community independently of tour groups. However, according to the Top of the **World** operators, some individuals do come to the community throughout the year, including a small number in winter who are attracted by phenomena such as total darkness and the northern lights.

There is a potential for increased tourism in Barrow. Nevertheless, it is likely to remain a significant but highly seasonal element in the **local** economy.

Although tourism has contributed to the recent proliferation of hotel space and a growth in the number of restaurants in Barrow, the primary contributor has been the presence of outsiders in the community, **mainly** those traveling to Barrow to do business with the North Slope Borough.

As the North **Slope** Borough capital improvements program winds down, the number of these visitors can be expected to decrease and, with it, the number of persons employed in hotel and food service occupations.

Activities associated with the operation of the POW-Main DEW Line station **are** not expected to change although staffing at that facility could decrease as a result of a higher level of automation. The future of NARL, on the other hand, is still a question mark. In 1982, aside from clean-up operations in **NPR-A** being conducted by Husky Oil (and which have since been completed), **NARL's** only functions were maintenance of the base and operation of the Barrow gas fields. These functions

will cease on October 1, 1984 when ownership of the gas **fields and** responsibility **for** their operation will be transferred **to** the North Slope Borough. Possible options **fo the re-use** of the **NARL** base are currently being examined by the **Ukpeagvik Inupiat** Corporation.

SUBSISTENCE ECONOMY

Since the 1930's, Barrow's subsistence economy has evolved somewhat differently than was the case in the smaller villages of the North Slope region. These differences can be largely attributed to Barrow's more rapid rate of population growth **and** a concurrent growth in local employment opportunities. The larger population of Barrow, as well as the availability of **local** employment over a longer period of time, has resulted in important differences in the subsistence economy. (The growth **of Barrow** as a regional center and, subsequently, as the seat of **local** government for the **region** is described elsewhere in this report).

As discussed in **the** overview of the region's subsistence economy, the technological innovations now commonly used on the North Slope for subsistence harvesting activities reflect significant increases in the purchasing power of the region's **Inupiat** residents as a result of improved **local** employment opportunities. These innovative **tools**, which **led** to a revolution in subsistence transportation techniques and patterns, have generally been available to most Barrow residents at an earlier date and in greater numbers than was the case for residents of other **North Slope** villages because the latter did not enjoy increased local job opportunities until more recently. **As** a result, some Barrow

families have accumulated more equipment than the residents of other villages, equipment which has enabled them to exploit their large, diverse harvest areas.

Because Barrow is the **only** community on the North Slope which actively hunts bowhead whales during both the spring and fall migrations, subsistence costs are higher for those whaling captains than captains in other villages (see Table 17). **According** to the interview data, the operational costs for a spring whaling captain average \$4,500 a year. In Barrow, a whaling captain who **also** hunts bowheads in the fall must, on the average, add a further \$3,000 to his subsistence costs. These figures represent the average operational costs for whaling under the quota system which began in **1978**. If spring whaling continued **until** the end of May as it did prior to the quota, operating costs would be even higher as more food and fuel **would** be consumed. One added cost for **fall** whalers is the extra fuel required to tow a dead whale the long distance to shore. This can consume three drums of **fuel**. Thus, a Barrow whaling captain who hunts both in the spring and fall has the highest subsistence costs of any hunter in the study area, approximately \$15,227 per year (see Table 17).

One expense peculiar to whaling **captains** is maintenance of the skin boats, now used **almost** exclusively for whaling. Aluminum boats are presently used for many activities which were previously undertaken in **umiaks**. Because the **umiaks** are now used only for whaling, it is not necessary to replace the skins as often and the maintenance costs for these boats have thus been reduced. One whaling captain stated that he

now only changed skins every four years as opposed to every year in the past. If possible, whaling captains hunt their *ownugruk* to cover the boat frames. However, **if** they do not have time or are unsuccessful, they must purchase the skins. **It** takes from **six to** nine **ugruk skins** to cover an **umiak** frame. Because the skins cost between **\$100** and \$200 each, their purchase further increases a whaling captain's subsistence costs .

One important factor when considering the differences in Barrow's subsistence economy and that **of** the other villages of the study area is Barrow's **large Inupiat** population (the 1980 Census counted **1,720** Alaska Natives in Barrow). This large population affects Barrow's subsistence economy in several ways. First, there is diversity among families as to species they prefer to hunt **which**, in turn, affects timing and equipment costs. Second, the **areal** extent of subsistence use areas is greater for Barrow than any other study village, increasing operating costs and reducing equipment life. Finally, the **large** population of Barrow results in a wide range **of** economic and subsistence strategies among families and individuals.

The number **of** wildlife resources available to Barrow residents is not necessarily greater than **those** of the other **study** villages. However, " Barrow's unique physical setting and large population affects familial and individual harvest patterns. One important factor in determining the target species for an individual or **family** is taste preference, which varies considerably in such a **large** community. Other **equally** important factors include cultural significance, species availability

and abundance, weather, ice conditions and the availability of employment. The variable nature **of** most of these factors demonstrates how the target species for a family or an individual may differ from year to year. The importance of Barrow's unique physical setting is demonstrated by the two season bowhead whale harvest. Barrow is the only village on the North Slope which can hunt the bowhead whale in both " the **fall** and spring. The varying level of effort for these two harvest periods (discussed in Barrow's subsistence land use patterns) is largely the result of the above **listed** variables.

Barrow's large population also contributes to the enormous size of the overall harvest area used by village residents. The **areal** extent of Barrow residents' marine harvest area extends from Peard Bay in the west to Pitt Point in the east and as far as thirty miles offshore. Coastal activities do occur outside this area but usually in conjunction with trips to other coastal communities. While improvements in transportation technology have facilitated the use of such a large area, Barrow's large population necessitates a bigger harvest area than is required in the smaller study villages so that hunters do not exceed the carrying capacity of the local environment. For example, a local area can be fished out if there is too high a density of fishermen. One resident stated that he had to go far afield from Barrow in order to find a suitable fishing location which was not already occupied by a Barrow or an **Atqasuk** family. **While** the **highly** migratory nature of caribou and most sea mammals minimizes this problem, variations in weather and ice conditions require a large area for these species as well. This large area results in more wear and tear on subsistence

harvesting equipment, particularly boats, outboard **motors** and **snowmachines**, which increases subsistence costs.

Barrow's large population supports considerable variety in terms of economic and subsistence strategies within the community. Not **all** working age residents of Barrow are employed. Some prefer to spend **all** of their time engaged in subsistence activities. Other family members who **are** employed may supply these hunters with the **necessary** equipment and cash in trade for a share **of** the harvest product. As discussed below, other hunters who do not work are **able** to keep **their** expenses down by maintaining traditional harvest patterns. **All** 18 of the Barrow subsistence harvesters who were interviewed as part of the **1983** fieldwork were involved in the wage economy at least on a part-time basis. The following three examples from Barrow demonstrate different solutions to the high costs of subsistence activities:

- o Two brothers alternate years as whaling captains to compensate for the high costs of operating a whaling **crew. While** many Barrow residents are able to earn the necessary cash to place a crew on the ice each spring, others find the costs prohibitive. By alternating years as captain, these two brothers are **able** to save money for other household and subsistence needs.
- o **One young** hunter who was interviewed did not own a boat, **three-**wheeler or a **snowmachine**. Instead, he used his father's equipment. If both he and his father went hunting, they divided the operating costs for the trip. If the son went out **by** himself, he paid for the **fuel** and other expenses. In return for the use of his father's equipment, this **young** man supplied **all** of the meat for his parents'

household, resulting in a mutually agreeable division of subsistence costs. This agreement allows the young hunter to spend his money on house and land payments and other costs relating to his own nuclear family. In addition, his parents store food for his family in their ice cellar.

- o A final example demonstrates how costs of expensive items are distributed among family members. In this instance, a father and his sons have formed a collective subsistence hunting team and distribute the costs equally among themselves. All of the equipment is stored in a shed at the father's home, and each son has particular responsibilities. One takes care of the **snowmachines** and their repairs, another tends to the sleds and camping gear, and so forth. In this situation, not all members of the group own **all** of the necessary subsistence harvest equipment, and each has reduced his own costs while, at the same time, maintaining access to the equipment.

One of the negative aspects of Barrow's growth on local subsistence practices is the effects of urbanization on meat drying. High winds, relatively common in the area, now carry considerable amounts of silt and dust due to construction-disturbed permafrost and peat layers. This wind-blown material has made it difficult to dry meat in the community, forcing some families who used to stay in Barrow for spring and summer sea mammal hunting to establish camps along the coast. While this has increased the cost of subsistence activities for some residents, it is noteworthy that they are willing to expend the extra time and money to establish camps rather than discontinue the activity.

Barrow and **Atqasuk** are the only communities in **the** study area **which** have residents who **rely** on airplanes for subsistence activities. **Atqasuk** residents use the daily air service to travel to and from Barrow. Because some of these trips to Barrow are for sea **mammal** hunting, airplanes could be considered a subsistence tool for **Atqasuk** hunters. The extent of airplane use in **Atqasuk** is covered in the discussion of **Atqasuk's** land use patterns. Barrow residents' most common use of airplanes is for travel to and from **inland** fish camps. These inland camps play an important **role** in the subsistence activities of Barrow residents and are commonly used throughout the summer and early **fall** for fishing and caribou hunting.

Traditionally, there were two ways to get to fish camp. Barrow residents either traveled overland **early** in the summer when there was **still** sufficient snow cover, or, if their camp was in the lower portion of one of the **larger** rivers, they waited until later in the summer when the ocean was free of ice and then traveled by boat. However, each of these methods is limited in its flexibility. Those who travel overland must **leave** early in the summer and must remain in fish camp until there is snow cover in **the fall** or return to Barrow by boat. Those who wait until they can travel by boat are also dependent on the weather because they have to wait for **the** sea ice to leave the shore. While these methods are still practiced by some Barrow residents, the time constraints resulting from conflicts with employment necessitate some families using airplanes. These families are unable to spend the amount of time required by the vagaries of the weather in traveling to and from fish camp.

The airplane is a convenient method for solving time conflicts between employment and subsistence activities in Barrow. Knowing that the best fishing occurs in the fall, an employed hunter may decide to take two weeks of subsistence leave from his Borough job in the month of September but, because onshore winds hold the ice near the shore, he is unable to leave Barrow by boat. Rather than miss this important subsistence harvest, he **will fly** his family to camp. Unlike the other villages of the study area where there is relatively easy access to fishing areas, Barrow fishermen's access to their camps can be restricted by the proximity of ocean ice. While traveling to fish camp by airplane is expensive (the average one-way charter is \$300), the high value which residents place on this activity justifies the cost.

Political Organization

FORMAL POLITICAL ORGANIZATION

There are two primary local political or quasi-political organizations in Barrow. . These are the City of Barrow and the **Ukpeagvik Inupiat Corporation (UIC)**, the local village corporation established under terms of the Alaska Native **Claims** Settlement Act. Although the latter is not a public **body**, its **board** is elected **by** corporate stockholders and the corporation is in fact a potent political force in the community. The North Slope Borough, the Arctic Slope Regional Corporation and the **Inupiat** Community of the Arctic Slope (**ICAS**) are **all** headquartered in Barrow and are also important political forces in the community. However, these organizations and their activities have been previously

described in the overview section of this report since they each have a regional mandate. Unlike other North **Slope** villages, the North Slope Borough does not have a village coordinator in Barrow.

City of Barrow

The City of Barrow was first incorporated as a fourth class city under **Alaska** law in 1959 and was reclassified as a second class city in **1972**. In **1974**, Barrow voters approved upgrading of the city to first class status in the same election that they approved the transfer of most municipal powers to the North Slope Borough. Funds for the city's operation are derived from a 3 percent local **sales** tax, State shared revenue, land purchases or lease agreements with the North Slope Borough and by occasional State or federal grants.

Barrow's corporate limits take in a **21** square **mile** area which includes three distinct areas of settlement - the traditional Eskimo community of Barrow, the former NARL base and portions of the POW-Main **DEW** Line station. The city has adopted the council-manager form of government although it was temporarily without a city manager in the summer of **1983**. The council consists of six **councilmembers** (one current member is a **non-Native**) and a mayor, **all elected at large**. **Councilmembers** are elected to three-year terms **while** the mayor's term is two years. The city manager, who is hired by the council and serves at its pleasure, directs day to day city operations, with **policy** direction from the mayor and council. A special election in the summer of **1983** was held to ask Barrow voters if they would rather have a mayor-council or a

council-manager form of government. Voters chose the latter and the city recruited and hired a new city manager later in 1983.

Like other North Slope traditional villages, the City of Barrow has few municipal powers since most have been assumed by the North Slope Borough on an areawide basis. Nevertheless, the city does provide a variety of recreation services and is also involved in scholarship programs for young persons wishing to attend college. (The city program is open to all Barrow residents since, as a State subdivision, the city cannot legally discriminate by race). The city mayor usually attends North Slope Borough assembly meetings so that he can keep apprised of Borough activities. However, relations between the two government entities have sometimes been strained, mainly over land issues.

City offices are located in the **Browerville** fire station, a building constructed by the city when it still retained fire protection powers. In 1982, the city had 7 employees, made up of a city manager, an administrative assistant, a finance director, a recreation director, a recreation aide, a city clerk and a receptionist.

Ukpeagvik Inupiat Corporation

The **Ukpeagvik Inupiat Corporation (UIC)** was created under terms of the Alaska Native Claims Settlement Act and is the major land owner in the Barrow area. Its stockholders are persons who enrolled as Barrow residents and this, its landholdings and its business activities (both

inside and outside of the community) make it a strong political as well as an economic force in the city.

Aside from the development of its lands, UIC now owns, has an interest in or is joint venturing with others in a number of business ventures. Wholly owned UIC subsidiaries include UIC Construction, Umialik Insurance Company (a property insurance agency which operates Statewide) and Shontz, Inc. (which, while presently inactive, is considering the establishment of an operation to provide services to village stores). UIC is also active in the transportation industry through its joint ventures in Bowhead Transportation (a tug and barge service) and Alaska Terminals (which provides consolidating and warehousing services in Seattle). The corporation has interests in the communications industry through its participation in Kuparuk Communications and Prudhoe Communications firms. In addition, UIC is involved in the trade sector of Barrow's economy through a joint venture in Qiruktagvik and Company (a lumber products distributor) and Stuaqpak (the largest grocery and general merchandise store in Barrow). The latter is currently leased to the Alaska Commercial Company under an agreement providing UIC with a share of the operation's profits.

Other ventures of UIC include an interest in Boatel/Ukpeagvik which provides it with an entry into the catering industry. Also, UIC has recently joined with the Arctic Slope Regional Corporation and Pingo to organize the Piquiniq Management Corporation which will provide management services for the Kuparuk industrial complex now under construction by the North Slope Borough. Finally, UIC is a participant

in **Geo-Source/Ukpeagvik**, a firm organized to develop compact transportable LNG plants to liquefy natural gas for consumption by North Slope villages. The State has provided a \$200,000 grant for the firm to assess the feasibility of such an undertaking.

In 1982, UIC had 9 full-time and 6 part-time employees. At that same time, UIC Construction had an annual average of about 24 full-time employees and **Stuaqpak** employed about 20 persons on a full-time basis. UIC recently moved its offices from the second floor of the court building in downtown Barrow to new quarters on the outskirts of **Browerville**.

INFORMAL POLITICAL ORGANIZATION

Aside from the City of Barrow and the **Ukpeagvik Inupiat** Corporation and its subsidiaries and other business ventures, there are a number of groups in Barrow which have some political significance. These include the Presbyterian and Assembly of God churches, the National Guard, the Barrow Whaling Commission, the Mother's **Club**, the volunteer firefighting and search and rescue groups, the Chamber of Commerce and the Lions Club.

As in most other North Slope communities, the dominant religious group in Barrow is the Presbyterian church. The present minister is a white who lives in the manse adjacent to the church. According to an **Inupiat** leader within the church, the Presbyterian church in Barrow played an important role in village dynamics from the turn of the century until

recently, but this role has since declined. There **is** a group **of 100 to 200** people who regularly attend services at the Presbyterian church, **with** about one-third **of** these being whites. Barrow **also** has **an** Assembly **of God** church which has a resident white minister and has regularly scheduled services, although it has a smaller congregation than does the Presbyterian church. In addition, there is a Roman Catholic church served periodically by a priest from Fairbanks. Other sects in town include the **Baha'i Faith**.

The National Guard has long been an important organization in Barrow, as it has in several other North Slope villages. **In** the early years of its establishment, the Barrow unit was reportedly very active and membership was **highly** valued. Over time, interest in the Guard waned but it has apparently revived recently. The older generation of Barrow leaders generally had connections with the National Guard but this is not true of the younger leaders. **It** was suggested to Alaska Consultants, Inc. during the **1983** fieldwork that even greater interest in the Guard might result from decreases in capital improvements program construction employment. Draft registration requirements could also be a factor.

The Barrow Whaling Commission is an influential group in Barrow as it represents all whaling captains in the community. Furthermore, one representative from Barrow also serves on the full **Commission**. Meetings are held **prior** to the whaling season to discuss management **of** the hunt according to the agreements between the Alaska Eskimo Whaling Commission (**AEWC**) and the federal government. According to federal regulations, whaling captains must be registered with the **AEWC** in order for them to

be **able** to hunt the bowhead whale. Generally, the leaders within the community are also whaling captains. They are not necessarily more powerful or more respected simply because they are whaling captains, but captaincy certainly enhances their role within community political organizations (Alaska Consultants, Inc. 1983).

The Mothers' Club is a long standing and respected group of Barrow **Inupiat** women. Money is raised through bingo and is contributed to good causes in the community, including assistance to the needy. Women who are active in the Mothers' Club are generally "straight, good **women**" who exert considerable moral influence in Barrow. It would be difficult for a person to win political office in the community if he or she were strongly opposed by the Mothers' Club. Although individuals who are active in this organization are not necessarily respected in the community because of their membership, membership does enhance public respect for them and thus increases their power. In addition, membership in the Mothers' Club gives women a platform from which they can speak and present their ideas. Barrow's "macho" male-dominated "Sot"ety provides few such opportunities.

Firefighting services in Barrow are provided by about 35 volunteers plus a salaried fire chief and two other staff who are **North** Slope Borough employees. Being a volunteer firefighter in Barrow is a highly valued position, with the result that a significant proportion of influential persons under the age of **about.40**, both **Inupiat** and white, are members of the force. Volunteers are issued with special royal blue parkas and

many wear them on a **daily basis**, suggesting a certain amount of pride of ownership.

The Barrow Search and Rescue organization **is a** volunteer group which operates in support of the activities of the North Slope Borough Search and Rescue division in this community. The organization has between **35** and **40** members and owns the building **in** which the Borough Search and Rescue division's administrative offices are presently located. Like the volunteer firemen, search and rescue is regarded as a desirable "macho" group and it **also** includes a high proportion of influential persons as its members. **Many** of these people are also volunteer firemen.

The Barrow chamber of commerce had been inactive for a number of years before it was reactivated in **1982**. At present, the local chamber has about **30** members and holds a luncheon meeting once a month. Its objectives are **to** promote Barrow generally and to promote Barrow's local businesses. **In 1982**, it organized the Barrow "Spring Festival", a 3-day event which featured a parade, dog races, **snowmachines** races and other competitions. **It plans to** hold similar festivals again, with the addition of cross-country skiing.

The Barrow Lions Club is a very active service organization. **It** currently has 22 active members, including both whites and **Inupiat**s, and meets regularly once a week. The Lions have a clubhouse in **Browerville** which is used for meetings and bingo, the latter being the **club's** primary source of income. Money raised goes toward a variety of

activities including purchase of a **pre-natal medi-vac** unit, eye and ear clinics, the purchase of eye glasses and hearing aids, support for a Barrow **Inupiat** U.S. Olympic diving candidate in California, provision of emergency funds for **fire** and disaster victims, funding to send the **Wainwright** dancers to the Lower 48, sponsorship of groups such as a softball team and boy and girl scouts, development of the Barrow **ballfield** behind the post office (including the installation of bleachers), and providing financial backing for installation of the Wiley Post memorial located across from the airport terminal.

Land Use and Housing

LAND STATUS

City of Barrow

Barrow's corporate limits take in approximately 21 square miles which include the original 1963 townsite survey, previous and subsequent subdivisions, Townsite Trustee **land**, land interim conveyed to the **Ukpeagvik Inupiat** Corporation, land withdrawn for the Navy, State airport property and Native allotment applications.

Before the Barrow townsite was surveyed, the only surveyed parcels of land in the community were those associated with federal installations (the hospital, the old Bureau of Indian Affairs school and **the Weather Bureau**) and a former trading and manufacturing site originally owned by the legendary Charlie Brewer. The Barrow townsite was patented to the

Townsite Trustee in the Bureau of Land Management in **1965**. At that time, Barrow residents were able to apply for title to land on which **their** structures were located. (In Barrow, many structures were moved from their original locations so that they **would** be on a separate **lot** in the new townsite and to permit the development of streets). A **large** number of Barrow residents chose to hold their land in a restricted status. This is an option available to Alaska Natives when they receive **title** to land in a Native **Townsite**. Restricted **title** retains some of the trust relationship between the federal government and Native citizens. Title conditions **limit** the Native owner's ability to **sell** or transfer his or her property. On the other hand, **land** held under this type of ownership is not subject to taxation, nor can zoning, housing, building or other regulatory codes be enforced without the agreement of the Bureau of Indian Affairs.

Slightly in excess of 200 lots, accounting for about 34 acres of land, are presently **held** in a restricted status in Barrow. The remaining lands in the original townsite have been deeded by **the** Townsite Trustee in an unrestricted (i.e. fee simple) status to individuals, churches and government agencies.

Immediately outside **the** Barrow **townsite** to ~~the~~ south--i% the State-owned Barrow airport property. **South** of the airport, **along** the **Chukchi** Sea coast, is another portion of the Barrow **townsite** known as **Block "B"**. At the present time, this **424.3** acre tract **is still** owned by the Townsite Trustee although he was ordered to convey the property **to** the City of Barrow in **August 1981**. He has **still** not done so because of the **issue of**

unsubdivided lands in Native townsites raised by the **Aleknagik** case.

The **Ukpeagvik Inupiat** Corporation filed suit in U.S. District Court in March 1983 to obtain title to Block "B". The same suit challenged the right of the Townsite Trustee to convey a total of 242 lots and 3 blocks to the City of Barrow or the North Slope Borough (and, subsequently, to the Arctic **Slope** Regional Housing Authority) which were vacant and/or unoccupied on December 18, **1971**, claiming that these lands plus those still held by the Townsite Trustee (Block "B" and portions of Block 11A) should instead be conveyed to **UIC**.

Another land status issue within the Barrow townsite area involves the old Bureau of Indian Affairs school site. This site is subject to a 3(e)(1) determination under the Alaska Native Claims Settlement Act. As a result, the Bureau of Land Management is charged with responsibility for determining if the Bureau of Indian Affairs school reserve in Barrow should be transferred to the **Ukpeagvik Inupiat** Corporation as a portion of its entitlement or if it should be retained in federal ownership. In addition, there is an agreement between the North Slope Borough and the Bureau of Indian Affairs to transfer title of the school site to the Borough.

Outside the Barrow townsite but within Barrow's corporate limits are two areas covered by Native allotment applications. Native allotments are essentially homesteads of up to 160 acres of non-mineral lands which were granted to Alaska Natives, generally for subsistence purposes.

Indian allotment authority in Alaska was **cancelled** with passage of the Alaska Native Claims Settlement Act. However, applications which were

pending at the time of the Claims Act's passage are eligible for consideration. The provision for pending Native allotment applications did not originally apply to what is now known as National Petroleum Reserve-Alaska (**NPR-A**) unless potential **allottees** could prove use and occupancy of sites prior to the withdrawal of the Reserve in **1923**. An attempt to rectify this problem was made by Section 905(1) of **ANILCA** but a January **1983** ruling by the Regional Solicitor found that **ANILCA** did not adequately address the subject and suggested that a previous court suit (**Leavitt vs. Andrus**) be reinstated for a final determination on this issue.

None of the Barrow Native allotment applications here **has yet** been officially surveyed. However, the most recently recorded Bureau of Land Management **field** surveys indicate the existence of a Native allotment application adjacent to the southern border of the airport and two Native allotment application parcels abutting upper **Isatkoak** Lagoon, the community's water source. The State has **filed** a protest against the allotment application near the airport to ensure that its interests are represented if the **final** location of that allotment application is determined to be on **land** patented to the State.

Other-lands **within** Barrow's corporate **limits** include those **interim** conveyed to the **Ukpeagvik Inupiat** Corporation, **lands** conveyed to **UIC** under the terms of **ANILCA** and **lands still** owned by the Navy. These **lands** are discussed in the following section which covers land status in the general Barrow area.

Barrow Area

Land tenure in the vicinity of Barrow but outside its corporate limits includes land interim conveyed to the **Ukpeagvik Inupiat** Corporation, land selected but not yet conveyed to the **Ukpeagvik Inupiat** Corporation, land withdrawn for the Navy and Native allotment applications.

The **Ukpeagvik Inupiat** Corporation's entitlement to land under terms of the Alaska Native Claims Settlement Act, as amended, **totals** 161,280 acres under Section **12(a)** and 48,130 acres under Section 12(b). The conveyance of village selected lands is limited to the surface estate. Normally, the regional corporation would receive title to the subsurface estate. However, the Claims Act retained for the federal government all subsurface rights in the former Naval Petroleum Reserve No. 4 (now NPR-A) and, instead, provided the Arctic **Slope** Regional Corporation with selection rights to alternative lands outside the Reserve. An exception to the rule was created by the Alaska National Interest Lands Conservation Act (**ANILCA**). Section 1431(0) of this legislation enables the regional corporation, at its option, to exchange subsurface estate of lands it has previously selected for subsurface rights beneath village corporation lands in NPR-A, provided that public lands in the Reserve within 75 **miles** of lands **selected** by a village corporation have been opened for purposes of-commercial development (not merely exploration) of oil or gas. The Arctic Slope Regional Corporation took advantage of this provision of ANILCA to obtain subsurface rights to an area near Cape Halkett. However, the opportunity has not yet arisen near Barrow.

Three tracts of **land** in the immediate Barrow area were withdrawn by the Navy to conduct "arctic research and associated purposes" on April 24, **1961**. One of these parcels, totaling approximately 422 acres in area, is a portion of the Barrow **gas** fields and was transferred from Navy to Interior jurisdiction in 1976. The status of portions of the remaining 4,551 acres under Navy control will change as a result of **ANILCA** which instructed the Secretary of Interior to convey portions of the surface estate of the Navy withdrawal **to** the **Ukpeagvik Inupiat** Corporation (see Figure 32). An Air Force withdrawal for military purposes in this same area was originally issued on August 5, **1959** and was excluded from the Navy withdrawal, although 3 of its original 268 acres were subsequently transferred to the Navy on December **27, 1971**. These Air Force lands **are** still occupied by the POW-Main **DEW** Line station.

The **final** disposition of remaining Navy properties in the Barrow area is **still** not **clear**. The Navy has contracted for planning services to undertake an environmental documentation for the possible demolition of the **NARL** base. However, the Navy has indicated that no action **will** be taken to begin actual dismantling the base **until** March **1984**. In the meantime, the **Calista/ITT** joint venture has had its contract for operation of the base and the gas fields for another year, **until** such time as responsibility for operation of the gas **fields** is **scheduled** to be assumed **by** the North **Slope** Borough. The **Ukpeagvik Inupiat** Corporation is actively pursuing acquisition of the **NARL** property as **it** **feels** that the facilities **could** be put to some type **of** community use.

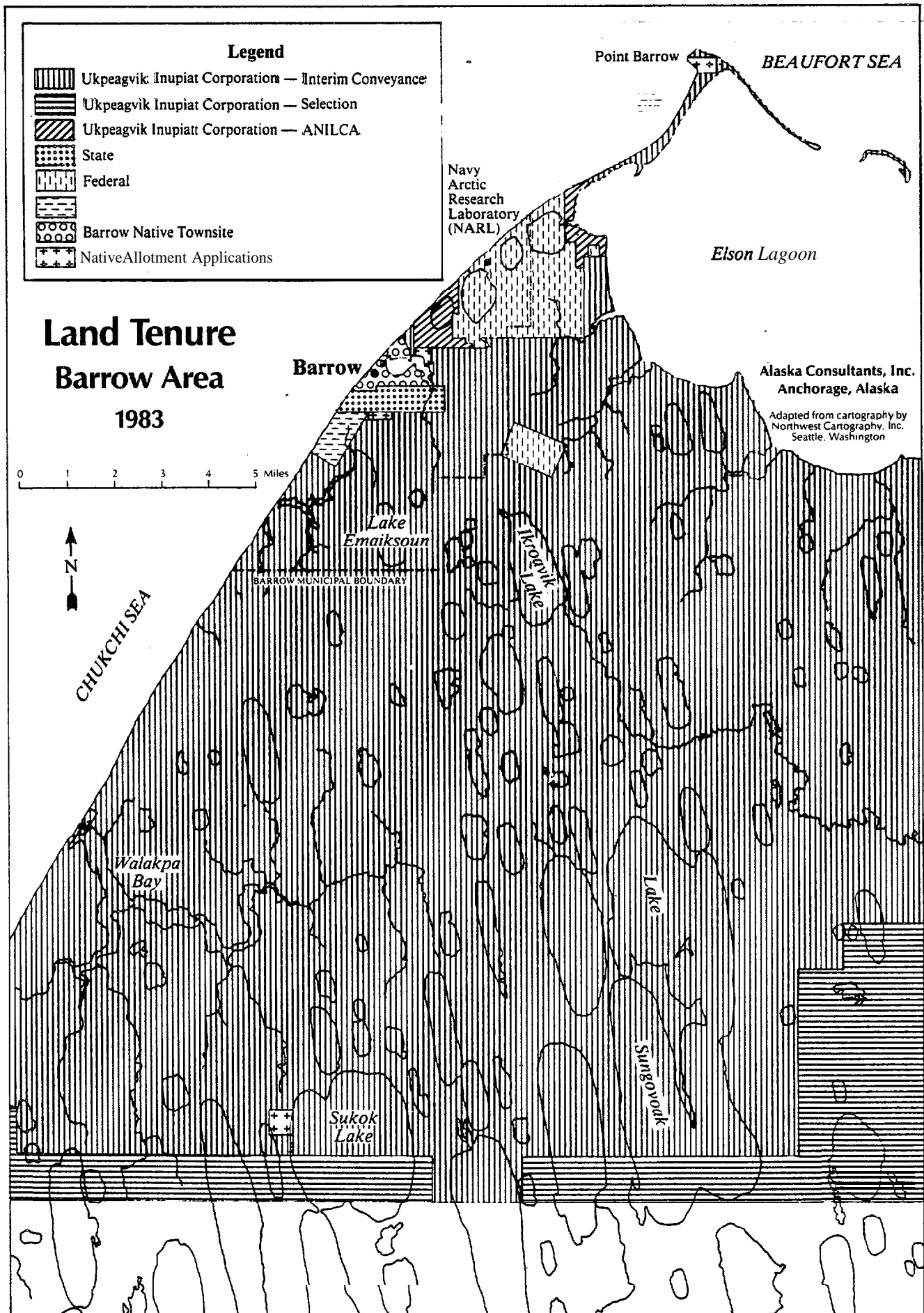


Figure 32

Under terms of an agreement between the Secretary of the Interior and the North Slope Borough in September 1983, subsurface rights to the Barrow gas fields and the Walakpa gas discovery site will be transferred to the Borough. Under the same agreement, sand and gravel subsurface rights to these gas fields will be conveyed to the Ukpeagvik Inupiat Corporation. This agreement, which has yet to be ratified by the U.S. Congress, is part of a settlement with the North Slope Borough which has agreed to assume responsibility for operation of the gas fields on October 1, 1984.

Other lands in the immediate Barrow area outside the city include several Native allotment applications. This type of land holding was described in the previous section covering land status within the City of Barrow. Beyond lands selected by the Ukpeagvik Inupiat Corporation, both the surface and subsurface estate remains with the U.S. Department of the Interior.

SUBSISTENCE LAND USE PATTERNS

Barrow's physical setting is unique among all villages of the study area. The community is only a few miles southwest of Point Barrow, the demarcation point between two distinct physical provinces of the North Slope - the Beaufort and Chukchi Seas. The morphology of the marine and coastal environment east of Point Barrow is dominated by the Beaufort Sea while the environment west of the Point is governed by the Chukchi Sea. The unique location of Barrow allows local residents to exploit a diversity of environments unavailable to other communities within the

study area. These include: two seas, a vast lagoon system, and four major as well as numerous minor rivers and streams.

Sea ice, the most important physical parameter in the marine subsistence patterns of Barrow residents, is largely controlled by the effects of wind and ocean currents. The North Alaska littoral current, the pervasive northwest shore current of the **Chukchi** Sea, continues up the coast as far as Point Barrow. The warmer waters of this current are instrumental in the annual deterioration of the pack ice in the **Chukchi** Sea but are unable to invade the Beaufort Sea because of colder opposing currents. The Beaufort Sea is dominated by colder onshore currents of the Arctic Ocean which limit the melting of the pack ice and **hold** the ice much closer to shore. The proximity of the colder ice-covered waters of the Beaufort Sea limits the extent to which the **Chukchi** Sea becomes ice-free in the Barrow area. For example, the extent of open water north of Point Hope during a summer of average ice retreat is several hundred miles, whereas the ice is rarely more than 20 to 30 miles offshore at Point Barrow. Thus, the area of open water during the brief summer months increases from Barrow south towards Point Hope.

Wind also affects the pack ice. While the direction and velocity of the wind does not vary dramatically from the Beaufort to the **Chukchi** Sea side of Point Barrow, the effect of the wind is different because of the nature of the ice in these two seas. The perennial ice of the **Beaufort** Sea is generally thicker and more stable than the seasonal ice of the **Chukchi** Sea. Consequently, the Beaufort Sea is less susceptible to **lead** formation or movement due to shifting winds. This results in fewer

leads and areas of open water in the Beaufort Sea. **During** the summer, sections of broken pan ice are moved by the prevailing winds and, because of the proximity of the pack ice, are often driven to the coast by onshore breezes. Thus, **summer travel** is very unpredictable as ice sufficient to **block** travel is never more than a day away with a strong onshore wind (**Sonnenfeld 1956:6**).

Sea mammal as well as human distribution patterns are affected by the different physical characteristics of the **Chukchi** and Beaufort Seas. Both the scientific community as well as **local** hunters have noted that the availability and concentration of marine resources are greater in the **Chukchi** Sea than in the Beaufort **Sea**. The seasonal nature of the ice in the **Chukchi** Sea results in a greater number of leads and open water for use by marine mammals throughout the year. Similarly, the warm currents of the **Chukchi** Sea transport many of the marine mammals into the area each spring. **As** a result, human population densities have traditionally been greater along the shores of the **Chukchi** Sea.

The physical differences between **the Chukchi** and **Beaufort** Seas also affects the adjacent coastal areas. That part of **the Chukchi** Sea coast utilized by Barrow residents (i.e. from Point Barrow to Peard Bay) consists **of** an extremely **regular** series of **bluffs** which have a southwest bearing. Although the continental **shelf of** the **Chukchi** Sea is wider than that of the **Beaufort**, strong coastal currents have scoured the bottom and, because there are few **inflowing** streams, a minimal amount of sediment is deposited. Consequently, the **Chukchi** Sea coast has relatively narrow beaches which drop off into fairly deep **water**,

conditions conducive to near-shore lead formation. On the other hand, the Beaufort Sea coast east of Barrow consists of a highly irregular shoreline enclosed by a series of barrier islands. These islands form **Eelson** Lagoon, the most extensive lagoon system (other than **Kasegaluk** Lagoon near Point Lay) on the North Slope. **Fluvial** sediments from the numerous rivers which flow into the Beaufort Sea provide source material for the barrier islands. The combination of onshore currents which hold the Beaufort ice near shore and the annual flooding of these rivers, makes the Beaufort Sea shallow in the near-shore area. **Eelson** Lagoon and the associated **Dease** Inlet and Admiralty Bay provide Barrow residents with access to a vast inland area with four major river systems. The Lagoon is also an important transportation link; during the summer it allows residents to travel even when the ice has been pushed onshore and in the winter it provides a smooth roadway for **snowmachines**.

In summary, Barrow residents are strategically located at the juncture of the Beaufort and **Chukchi** Seas. The **Chukchi** Sea, with its seasonal ice and warm currents, provides access to sea mammals throughout the year. **With** the exception of **fall** bowhead whaling, Barrow sea mammal hunting activities are generally concentrated in the **Chukchi** Sea west of Point Barrow. The Beaufort Sea, while not as important in terms of sea mammals, provides Barrow hunters with access to numerous salt and fresh water fishing areas, waterfowl areas, caribou areas and a safe summer route for travel. This diversity of environmental features allows **individual** Barrow residents to vary their seasonal subsistence cycle more than most villages.

Bowhead Whale

Bowhead whale is the preferred food of the majority of **Barrow** residents (**Alaska Consultants, Inc.** and **Stephen Braund & Associates 1983**).

Unlike the other villages of the study area, Barrow residents hunt bowheads during two distinct seasons, during the whales' annual migration north through open leads in the spring and again in the **fall** as **the** animals migrate south, usually **in** open water. The areas used to hunt the bowhead and the intensity of effort are different for each season. **In 1982**, Barrow hunters did not land any bowheads, while in 1983 they landed two.

Spring Whaling. Spring whaling from open leads in the pack ice was traditionally the high point in the **yearly** subsistence cycle of Barrow residents. Prior to the imposition of the bowhead quota in 1978, Barrow residents set up whaling camps on the ice as early as the third week of **April** (several weeks later than Point Hope hunters) and stayed at these camps until the first week of June when the passage of most of the bowheads and deteriorating ice conditions ended the season. Presently, due to the International Whaling Commission quota **on** strikes which limits Barrow residents **to fewer** strikes **than** they desire, **the whaling** season is much shorter and usually lasts **only** several weeks.

The general harvest area for the spring bowhead whaling season is in the **Chukchi** Sea and extends from **Point** Barrow to the **Skull Cliff** area (see Figure 33). The distance offshore depends on the **lead**

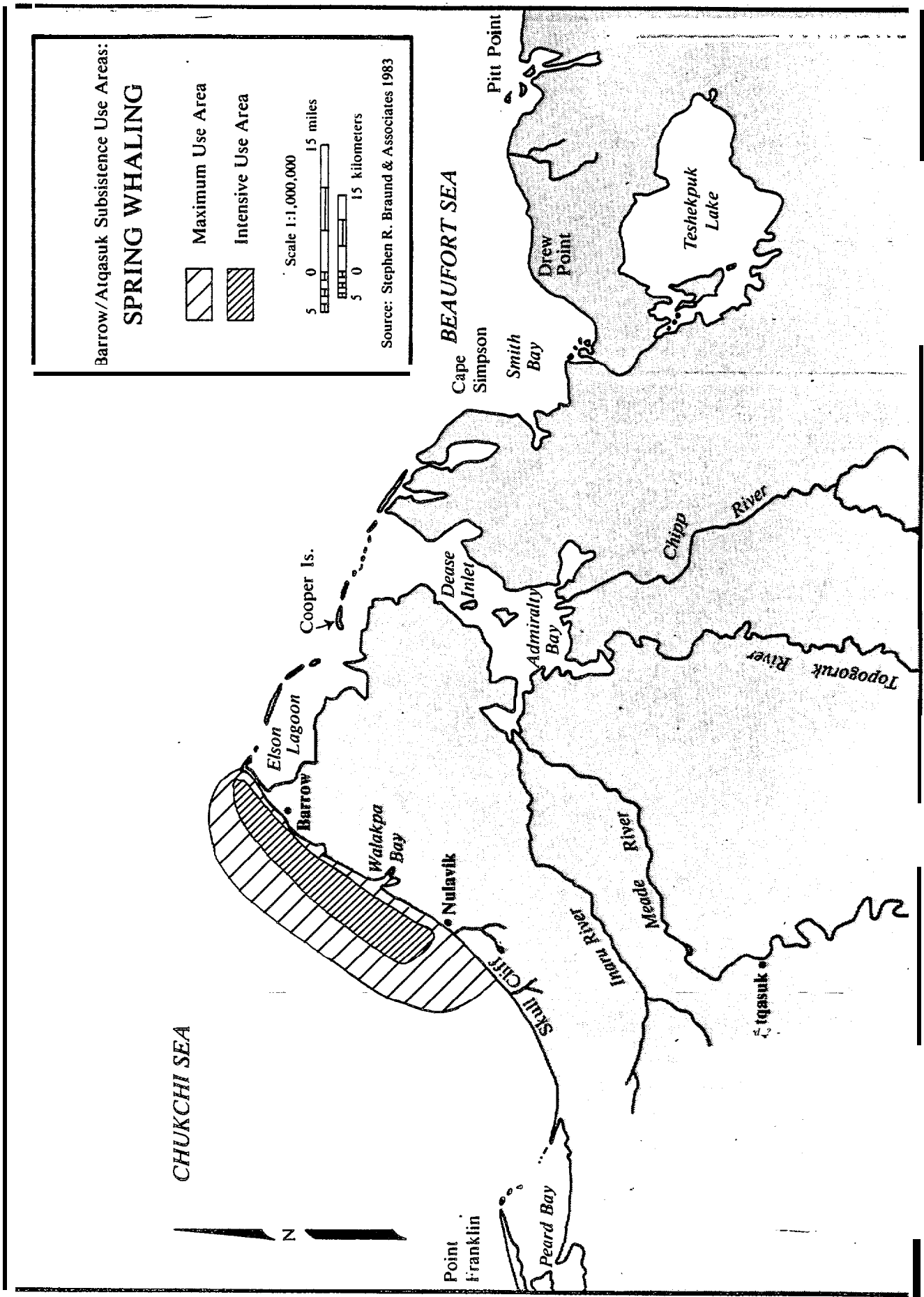


Figure 33

formation which **is** different each year. **While** the lead commonly **runs** parallel and **close** to the **coast**, occasionally **it** breaks directly from Point Barrow to Point Franklin forcing Barrow residents to travel **as** far as ten miles offshore **to** find the necessary open water. Barrow hunters' intensive use area for bowhead whaling **is** smaller and **closer to** shore than the general use area. In most years, the lead breaks from Point Barrow parallel to the coast and is only **1** to 3 miles from shore. Prior to the bowhead quota, Barrow spring whaling camps extended from near the Point to **Nulavik**, with groups of four or five crews setting up camp in close proximity **to** one another. Due to the limited number of strikes now available, approximately 30 Barrow crews currently concentrate their hunting effort in one area in order to minimize the chances of **losing a whale** once struck. The location **of** whaling camps depends on ice conditions and current and, because of the strong currents and numerous leads which often form near the Point, crews rarely **locate there**. Instead, they presently camp adjacent to and south of the community as far south as **Walakpa** Bay. Once a whale is struck, however, hunters will chase the animal in either direction along the **lead**.

-- Recent changes in technology have nondramatically **affected** Barrow's spring **whale** hunt. Skin boats are **still** the predominant means of transport and, **while snowmachines** have increased access to the whaling camps, they have not affected the **actual** harvest. The narrow leads in which Barrow residents hunt during the spring are not conducive to the use of aluminum boats with powerful outboard

motors which are presently used with success by **Wainwright** whalers. However, once Barrow hunters have killed a whale, they sometimes use boats with outboard motors to retrieve the animal and tow it to shore.

Barrow residents also **harvest** other wildlife species while at whaling camp. However, the hunters realize that the bowhead is extremely sensitive to noise and use citizens' band radios to collectively limit extraneous hunting activity to periods when there are few bowheads in the **area**. **Belukha** whales, while generally available at this time, are rarely harvested because their migration usually coincides with the migration of bowheads, and local hunters do not want to jeopardize their bowhead chances with unnecessary noise. Seal and **ugruk** are occasionally taken **while** at whaling camp, but the majority of the **ugruk** hunting occurs later in the summer when this species becomes more abundant. The major hunting activity which takes **place** in conjunction with whaling is waterfowl hunting, specifically for eider. During periods when there are no whales migrating, hunters actively pursue these migratory birds to supplement the food supply at camp.

There is some evidence that the-present shortening of the whaling season has altered harvest patterns for other marine species. When whaling continued until the first few weeks of June, other sea mammals, especially **ugruk**, became readily available and were harvested at whaling camp. Now, most residents leave the ice after the quota has been reached and harvest **ugruk** later in the summer in

conjunction with **walrus**. Other residents, once relieved of **their** obligations as whaling crew members, spread out **along** the coast **in** smaller family groups to hunt **seal, ugruk** and waterfowl. **Still** others **travel** inland immediately after the shortened whaling season **to** hunt geese which return at this time and are more abundant along the rivers.

In summary, **spring** bowhead whaling continues to be an integral part of Barrow residents' seasonal round. Despite the quota and the resultant abbreviated whaling season, no other activity enjoys the community participation and support given to spring whaling. The number of participants necessary to man thirty crews demonstrates the intensity of this hunt. Finally, the shortened season has reduced the amount of time available for the harvesting of other marine species at whaling camps.

Fall Whaling. Barrow residents also hunt bowhead whales **in** the **fall**. While the fall whaling effort is rarely as successful as the spring whale hunt, it **is** an important aspect of many Barrow residents' seasonal round. Unlike the spring bowhead harvest season, other wildlife resources (i.e. caribou and fish) are **also** 'available during the fall season,' and some residents-concentrate on these species rather than on whales. The harvest area used **by** the **fall** whalers is generally east of Point Barrow (see Figure 34). According to the 1983 fieldwork, recent technological advances (aluminum boats and powerful outboard motors) as **well** as a lack of

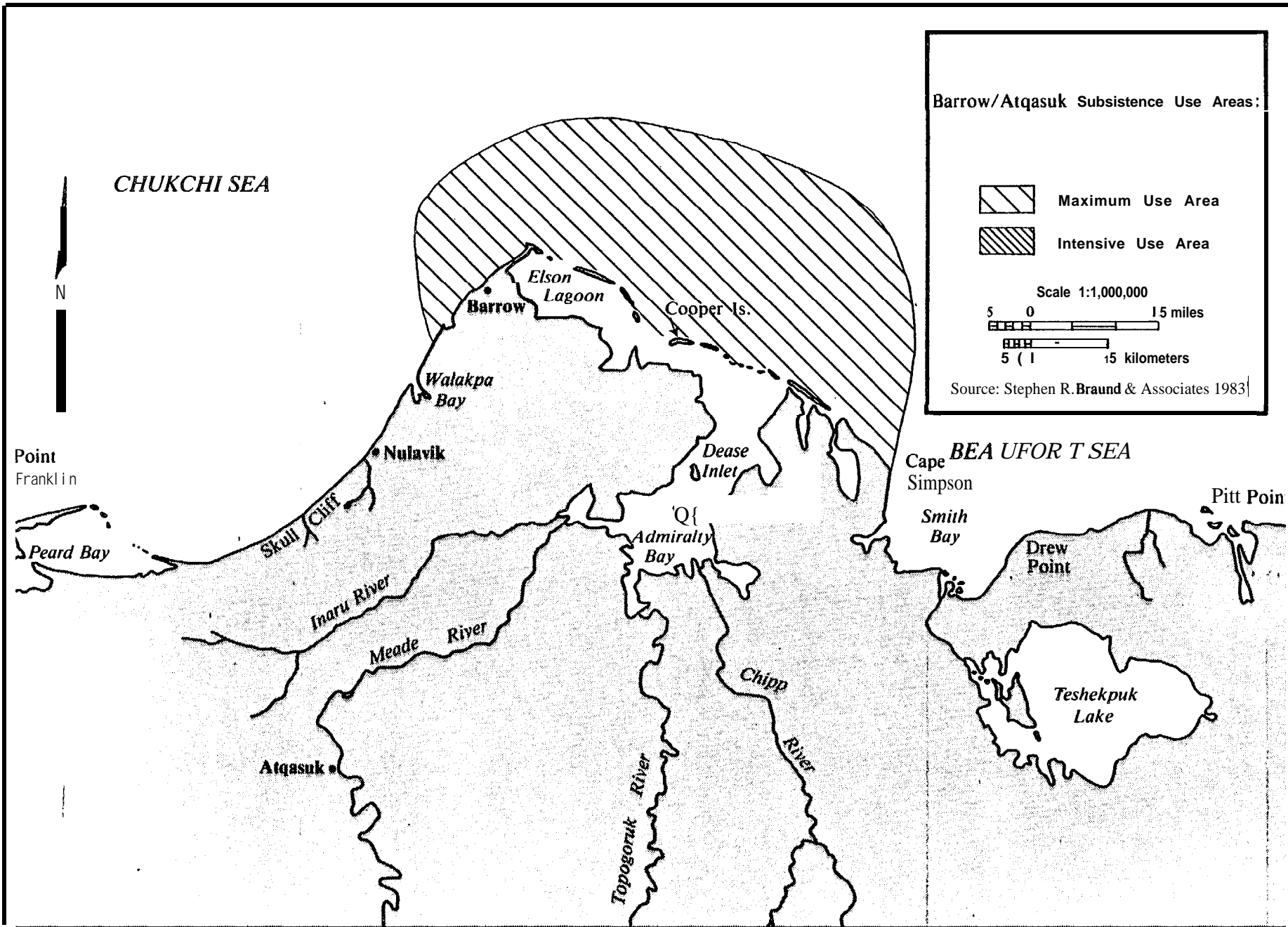


Figure 34

whale sightings near shore (i.e. **along** the barrier islands **which** form **Elson** Lagoon) have expanded the harvest range in recent years.

The **level** of effort and success of **fall** whaling in Barrow is limited by several factors, including the availability of other wildlife resources, the reduced number of crews which participate, the diffused nature of the fall whale migration and the restrictions of **the** quota system. The **large** population of Barrow, combined with the smaller crew size of fall whaling (three to four crew members per **boat**), enables Barrow residents to **launch** a **viable** whale hunt without the entire community's participation. **As** stated above, Barrow residents engage in a variety of subsistence activities each **fall** and not **all** whaling crews participate in fall whaling. Based on the data collected in the whaling survey (Alaska Consultants, Inc. and Stephen **Braund** & Associates 1983), as many as **11** to **15** crews may participate in **fall** whaling under good conditions. As this number is significantly lower than the approximately 30 crews which participate in the spring whaling effort, the chance of success is decreased. **In** addition, the **whales** migrating south to wintering grounds are dispersed over a large area of open water, further reducing the probability of a successful strike. Finally, since the initiation of the quota system, the potential for a successful **fall whale** harvest has become dependent on the number of approved strikes remaining. This has resulted in a complete curtailment of the **fall** season in some years when no strikes are available.

The timing of the fall whale harvest is dependent on the migration schedule of the bowhead as well as on weather conditions. The fall whaling effort usually begins during the last few days of August or the first week of September and continues until ocean boat travel is made impossible by the final encroachment of the pack ice, usually around the first of October. The actual number of days that whalers are able **to** hunt often is less than this entire period as drifting and wind-blown ice **can** force them to shore at any time. In fact, because of the variable nature of the ice conditions at this time of year, fall whaling can be extremely dangerous. The success of this harvest is therefore dependent on both the timing of the animals' migration and on ice and weather conditions during the month of September.

The harvest area and hunting techniques for **fall** whaling are entirely different than those used during the spring. The fall bowhead migration usually occurs in open water as opposed to the narrow leads in which the animals are forced to travel during the spring migration. Consequently, the fall whale hunters use aluminum and wooden boats powered by outboard motors in order to travel freely over large areas in search of whales, an entirely different technique than the man-powered **umiaks lined** up on the edge of the narrow lead during spring whaling. The area used for fall whaling extends from the Barrow vicinity in the **Chukchi Sea** to Cape Simpson in the Beaufort Sea (see Figure 34), with hunters traveling as far as 30 miles offshore. Because most of the hunting range is in the Beaufort Sea, they are in close proximity to the

pack **ice**. In this case, the limited amount of open water in the **Beaufort** Sea is an advantage to whale hunters as it tends to limit the dispersion of the **bowheads**. Once the whales have reached **the Chukchi** Sea, they **beome** hopelessly spread out, minimizing any chance of a successful hunt. For this reason, **fall** whaling is the only Barrow marine mammal hunting activity concentrated in the Beaufort Sea.

Technological changes in the boats used for **fall** whaling have markedly extended the hunting range for bowheads at this time of year. **While** **wooden** boats have been used for fall whaling since the turn of the century (**Sonnenfield** 1956), recent changes in the type of boats and motors used have provided **fall** whalers with more flexibility and speed. The typical **fall** whaling boat today is an **18** to 22 foot aluminum boat with a **50** to **75** horsepower outboard motor as well as a small "kicker" or auxiliary motor for emergencies. Lighter than the launch with an inboard engine used in the 1950's, these aluminum boats are better adapted (**i.e.** faster) to the variable ice conditions common **at** this time of year. Traditionally, and currently, the fall whaling effort has been a land based activity; the hunters search for whales during the day and return to land-based camps at **night**. Historically these **shore** camps were located at the very tip of Point Barrow, but in the more recent past they have been situated on Cooper and **Tapkaluk Islands**, two of the islands which form **Elson** Lagoon. During the **1983** fieldwork, Barrow whalers noted that **bowheads** are no longer migrating near shore but now pass by Point Barrow **well** offshore.

The high-powered, quick motor boats are ideally suited for hunting **at** this time of year because the hunters can cover large distances and still hasten back to shore if ice conditions and weather become unfavorable.

In summary, because fall whaling occurs during the month of September when other resources are available and many residents have been able to stock up considerable amounts of other foods during the summer, it is not as communally important as the spring bowhead hunt. However, if the spring whale hunt was unsuccessful or Barrow has some strikes left on its quota, the fall hunt can be an important source of the highly preferred bowhead **whale** meat and **muktuk**. In addition, Barrow residents hunt bowheads primarily in the Beaufort Sea in the fall, and recent technological improvements in boats and motors have increased the hunting range.

Belukha

Unlike the village of Point Lay which relies upon the harvest of **belukha** whales each spring as a major source of food, Barrow residents consider this species to be of secondary importance. As a result, the harvest of **belukhas** is opportunistic in nature rather than the planned organized hunt practiced in Point Lay. As noted previously, **belukha** whales commonly migrate with the bowheads during April and May but, because of the shortened whaling season as well as the unofficial community decision to limit **belukha** harvesting at this time (for fear of scaring bowheads), few are taken.

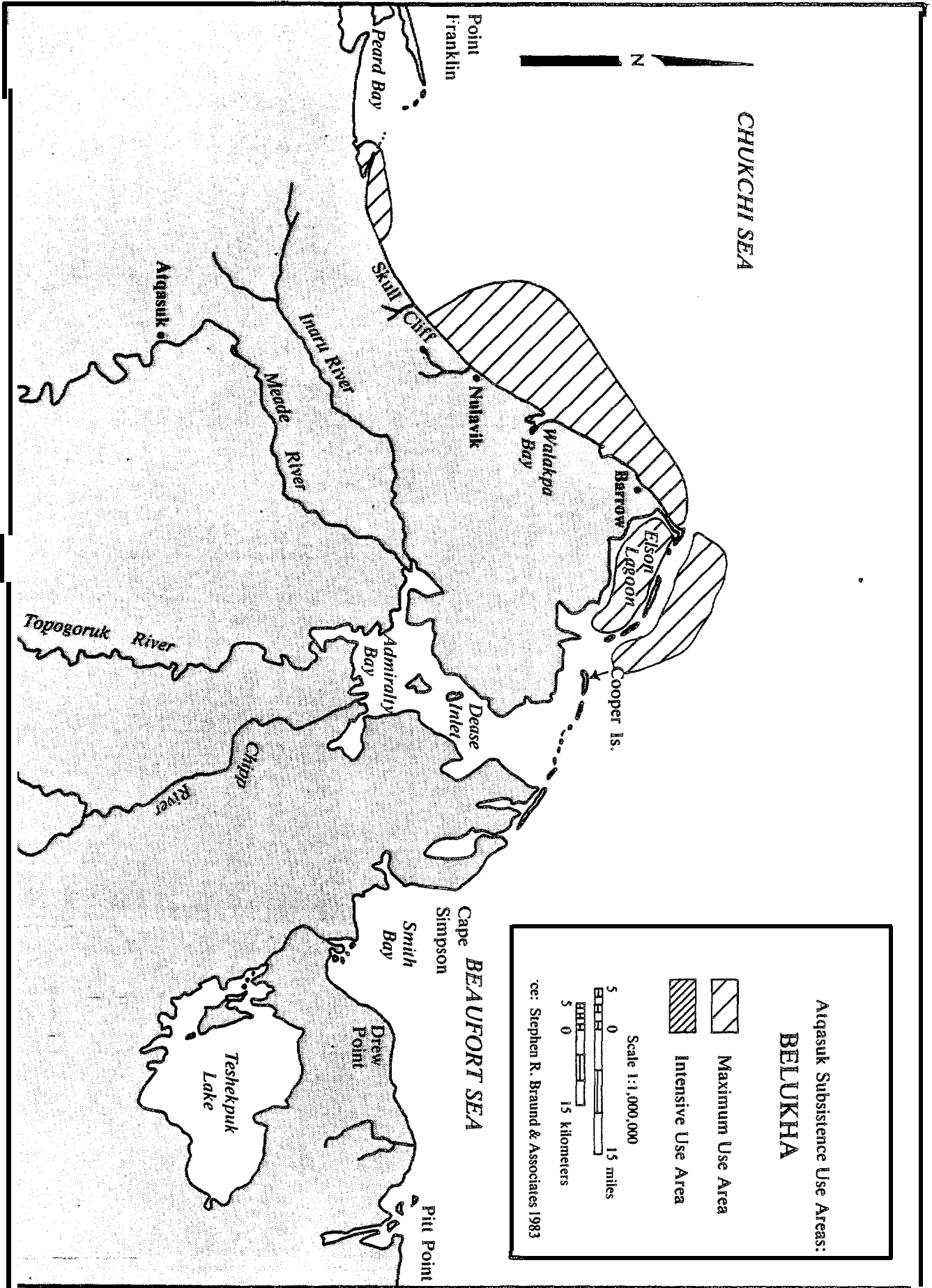


Figure 35

Belukha are commonly available from the beginning of whaling season through the month of June and are occasionally spotted in the ice-free months of July and August. The **belukha** which Barrow residents harvest are usually taken after the bowhead whaling season has ended when some families may stay out on the ice or establish seal, **ugruk** and waterfowl camps in the latter part of May and

Harvest areas for **belukha** include the area used for spring **whale** hunting, as the animals are occasionally taken at this time, or by families who remain out on the ice (see Figure 35). In addition, **belukha** hunting occurs from spring camps established along the shore of the **Chukchi** Sea between Point Barrow and Skull Cliff. Some families establish spring camps near Peard Bay and harvest **belukha** in this area. Later in the summer, **belukha** are occasionally harvested on both sides of the barrier islands of **Elson** Lagoon as they feed on **anadromous** fish. Unlike **Kasegaluk** Lagoon near Point Lay, the numerous passes as well as the large size of **Elson** Lagoon make herding **belukha** difficult. In summary, the Barrow residents' harvest of **belukha** whales usually occurs incidental to other activities. In addition, because **belukha** are available at the same time as more desired-species (seal, **ugruk**, bowhead and waterfowl), they are of secondary importance in the local subsistence economy.

Seal and Ugruk

Barrow residents' harvest area for hair seals and **ugruk** is shown in Figure 36. The maximum use area for these species is greater than that

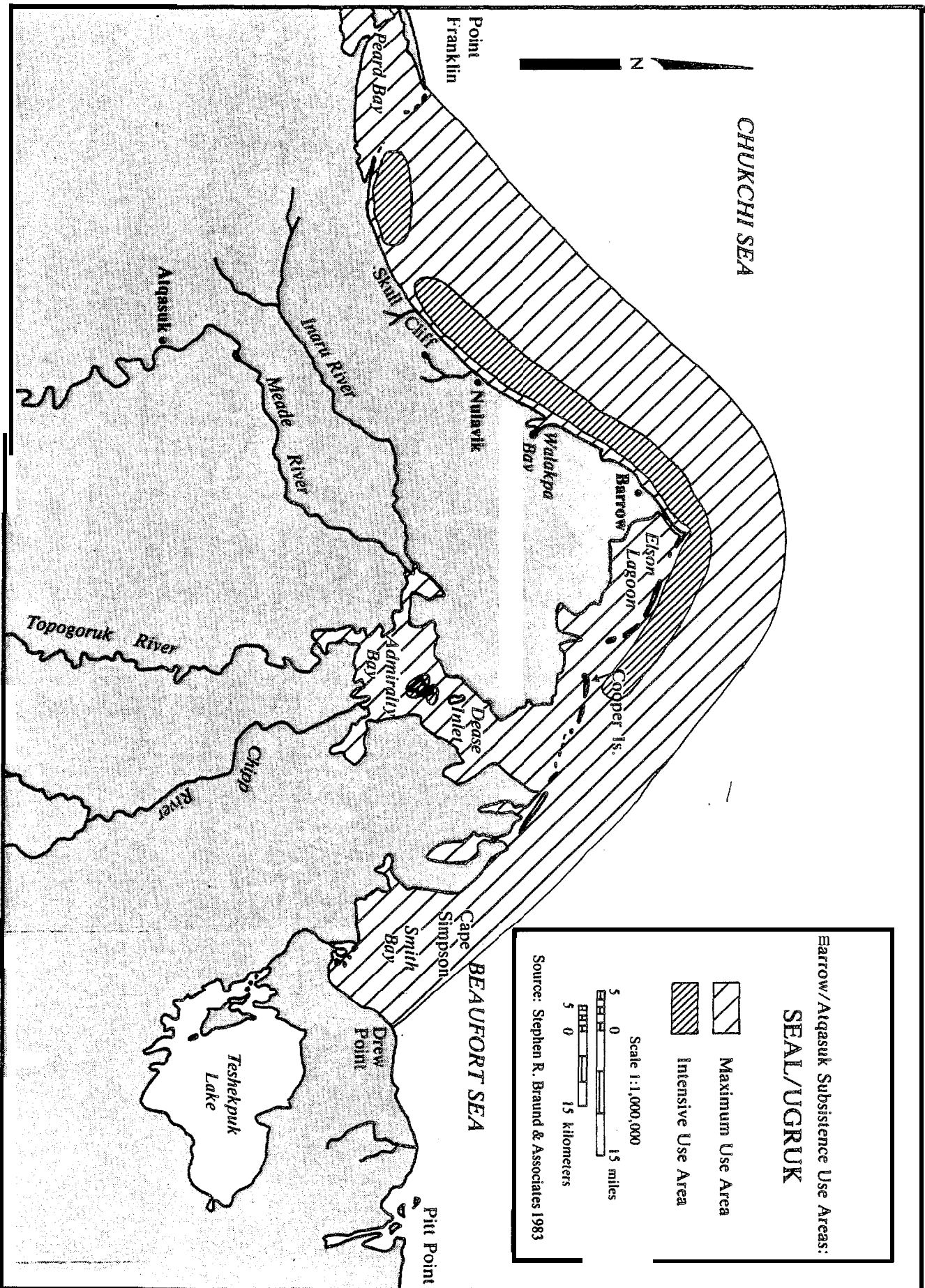


Figure 36

of any other marine resource harvested by Barrow hunters. However, the size of the harvest area is largely a result of the opportunistic nature of the **Inupiat** hunters, who commonly harvest these animals while they are engaged in other subsistence activities. The intensive use areas discussed below are more representative of the harvest areas commonly used for these species. Barrow residents hunt two species of hair seals on a regular basis, the ringed seal common throughout the winter and present in proximity to ice, and the spotted seal which is only available during the ice-free summer months.

Use of hair seals has declined for several reasons which include the limited need for dog food, the limited effectiveness of **snowmachines** on the ice, and the abundance of alternative resources, i.e. caribou, in the region (see the discussion of the subsistence economy in the regional overview). The **ugruk** or bearded seal remains an important marine mammal resource, important as food and necessary for **umiak** covers. Despite the reduced level of use for these species at the present time, the harvest area has remained large because of improved hunter mobility resulting from technological **advances** such as the **snowmachine** and outboard motor.

Traditionally, hair seals, particularly the ubiquitous **ringed seal**, were the main staple of the Eskimo diet, a desired source of meat and oil for both humans and dogs, as well as an important source of fuel. One important reason for seals' prominence in the Eskimo diet was their general abundance; they were readily available throughout the year. However, changes in technology as well as the recent abundance of other

resources have changed both **the** quantity of seals harvested as **well** as the timing of the harvest. **While** some **Barrow** residents continue to harvest ringed seal throughout **the** winter, especially during February and March when sufficient **light** has returned to the area, many **Barrow** hunters now engage in caribou hunting at this time of year. Some ringed seals are taken each year from the **ice** during spring whaling, but the majority of sealing now takes **place** in the late spring and early summer. Spotted seals are harvested throughout the summer and early fall incidental to other subsistence activities.

In general, ringed **seal** hunting is concentrated in the **Chukchi** Sea, but some seal hunting takes place directly off of Point Barrow and along the barrier islands which form **Elson** Lagoon (see Figure 36). After spring whaling, many families move to camps along the **Chukchi** Sea coast as far as **Peard** Bay. At these camps, **local** hunters harvest waterfowl and, when ice **conditions** are favorable, seal and **ugruk**. The intensive use areas directly off of Point Barrow and the nearby barrier islands are good for seal hunting later in the summer. At this time, the necessary ice pans and floes are more abundant in this area than along the **Chukchi** Sea. **Winter** lead formation in the area immediately adjacent to Barrow north to the Point makes this area a favorable sealing location during the winter. Those families who continue to **harvest** a significant number of **seals during** the winter harvest more ringed seals **than** the spring and summer hunters who concentrate on **ugruk**. Spotted seals are also occasionally taken off of Barrow and the barrier islands of **Elson** Lagoon. The most important spotted seal harvest area identified by

hunters interviewed in 1983 was Oarlock Island in Admiralty Bay, a common feeding area for these animals during the summer.

The ugruk, or bearded seal, always an important subsistence resource because of its dual **role** both as food and in the equipment and clothing of coastal Eskimos, presently appears to be the most important seal harvested in Barrow. This probably results from the change in winter subsistence emphasis from seal to caribou and fish, as **well** as the present importance of spring and early summer waterfowl and sea mammal hunting camps. **Ugruk** are not usually available in significant numbers during the winter. They are more common during the spring and summer because they are associated with broken ice margins of pack ice. For this reason and because of the larger size of **ugruk** (resulting in a higher catch per unit effort), Eskimo hunters concentrate on this species at their early summer camps **along** the Chukchi Sea coast. In addition, Barrow whaling captains need six to nine skins each for their skin boats. **Ugruk** are also harvested on sea mammal hunting trips initiated in Barrow throughout the summer. The large harvest range is made possible by the improved speed and durability of modern boats. Barrow-based **ugruk** hunting continues throughout the open water season. Walrus hunters as well as **fall** whaling crews often harvest **ugruk**. **Ugruk** are also available in **Dease** Inlet and Admiralty Bay on occasion.

In summary, seal and **ugruk** are present throughout the Barrow hunting range and are often harvested incidental to other activities. With the changes in hunting emphasis, **ugruk** has become the more important seal resource. The quantity of seal or **ugruk** harvested varies from family to

family, but all Barrow residents interviewed expressed a continued need and desire for seal oil. Barrow whaling captains, who must regularly replace the skin covering of their **umiaks**, harvest **ugruk** in greater numbers than most residents who need only a few **to** supplement their diet and to provide the necessary seal oil. Dependence on **seals could** change with fluctuations in the population and local availability of caribou and other inland resources.

Walrus

Although the **walrus** harvest has declined since replacement of the **dog** team by the **snowmachine**, it remains an important wildlife resource for some Barrow families. Barrow's large population, as **well as** the diversity of resources available, has resulted in differences in dependence on particular resources among **family** groups within the community. Thus, while some families are harvesting walrus, others are at inland fish camps stocking up on whitefish, salmon and **grayling**. The average harvest of the eight hunters interviewed in Barrow who indicated that they regularly go walrus hunting was one to three animals per **hunter** per year. One hunter who was also a **fall** whaling captain stated that he usually harvests **six walrus** a season. According to Stoker (1984), Barrow's nine year average harvest for **walrus (1970-1979)** was 57 animals per year. Thus, while some families spend considerable **time-and** effort pursuing walrus, other families do not participate in this activity.

Barrow residents hunt walrus from boats, often the same ones used for fall whaling. The hunters travel in and among the ice floes searching for walrus resting or sleeping on the ice. The timing and **seasonality** of this harvest is therefore dependent on broken ice conditions and, as the boats must be launched from the shore, upon the dispersal of the shorefast ice. The landfast ice usually breaks free during mid-July, and the potential walrus hunting period continues from this time until September when the last of the walrus migrate south. Similar to fall bowhead whaling, the success of the walrus hunt depends on ice conditions which vary from year to year. For example, if onshore winds bring the pack ice in close to shore, it limits the hunters' range; or worse, if the ice is driven to the shore, the hunters are not even able to **launch** their boats. Thus, the timing and success of walrus hunting depends on good weather and ice conditions. Barrow hunters noted that ice conditions were generally best suited for walrus hunting during the month of August, particularly the middle two weeks.

The harvest area which Barrow residents use for walrus is immense, second **only** to the area used for seal and **ugruk** (see Figure 37). Barrow hunters stated that they generally travel further in the pursuit of walrus than they do for **ugruk** and seal but noted that the latter are often taken when hunters are pursuing walrus. Walrus hunting rarely occurs east of Point Barrow, but the range extends west of the Point all the way to **Peard** Bay. The distance offshore varies from hunter to hunter, depending on the individual's knowledge of the ice as well as the reliability of his boat. However, most hunters stated that 15 to 20 miles offshore was usually the maximum distance necessary for walrus.

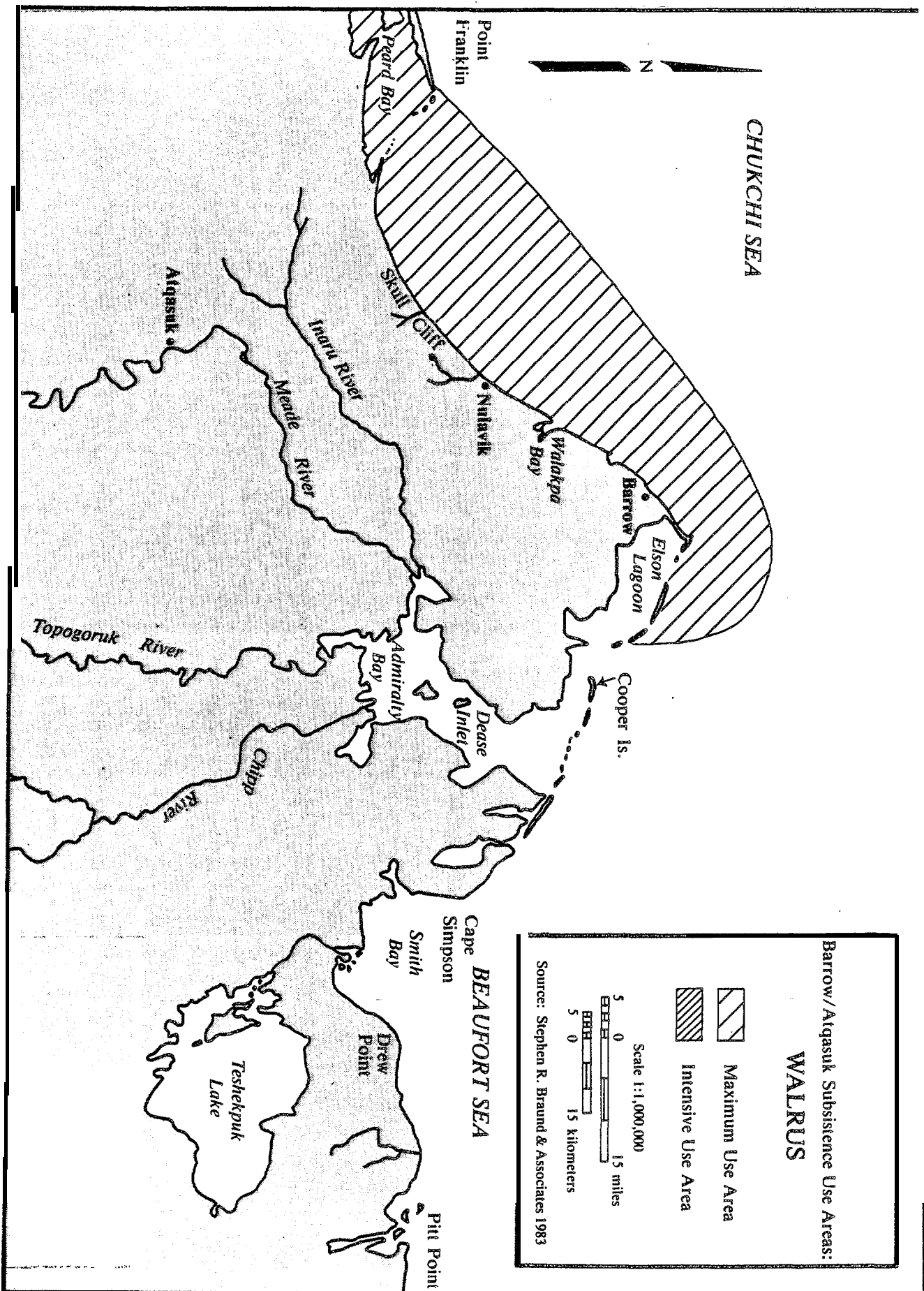


Figure 37

Because of the variable concentrations of both ice and walrus within this area, the hunters did not note any intensive use areas. Similar to **fall** whaling, the walrus harvest area has increased in recent years. The modern boats and powerful motors which hunters now use enable them to cover greater expanses of walrus habitat and still return to the village by evening.

In summary, walrus hunting usually begins in July once the ice has broken free from shore and continues until mid-September when the last of the walrus migrate from the area. The harvest is not concentrated **areally** but is seasonally concentrated in the month of August. The harvest area extends from Point Barrow to Peard Bay and to a distance of 20 to 25 **miles** from shore. Finally, not all Barrow residents participate in walrus hunting as it coincides with inland fishing.

Fish

Barrow residents' dependence on fish fluctuates with the availability of other more desired resources. **While** both coastal and riverine fishing activities regularly take place, Barrow residents rely on freshwater fish to a greater extent than marine fish. Much of the marine fishing which does take place is the harvesting of **anadromous** fish at inland locations. Fish which Barrow residents harvest include **capelin**, char, cod, **grayling**, salmon, **sculpin**, trout and whitefish. As in the case of many other wildlife resources, dependence **on** fish as a food resource varies among family groups.

Most fishing takes place during **the** summer and fall months, with the greatest concentration of activity occurring from September through October. Marine fishing is often done in the summer in conjunction with other subsistence activities. For example, residents who have established coastal camps for **ugruk** and **seal** during July and August often set a gill net near their camp, checking **it** daily when they return from marine mammal hunting. Fishing is also a common secondary activity during fall caribou hunting. Barrow residents traveling by boat **along** the shores of **Eison** Lagoon and other coastal areas often set a net when they camp. Barrow residents also take fish during the winter months (December through March) by jigging through the ice.

The subsistence use area for fishing is extensive, primarily because it is a common practice among local residents to supplement their camp food supply with fish whenever they are out hunting. The marine fishing use area extends from **Peard** Bay west of Barrow to east of Pitt Point on the **Beaufort** Sea coast (see Figure 38). Fishing along the coast between Barrow and **Peard** Bay is a common secondary subsistence activity at the spring and summer waterfowl and sea mammal hunting camps concentrated in this area. Fishing along the Beaufort Sea coast and within **Eison** Lagoon, **Dease Inlet** and Admiralty Bay occurs during the summer and **fall** from caribou hunting camps, fall whaling stations and other temporary camps as residents travel to and from the rivers which flow into Admiralty **Bay**. **In** addition, there are some families who annually establish fish camps at traditionally important coastal areas. These camps are usually located on points of **land**, at the mouths of rivers or other strategic fishing locations.

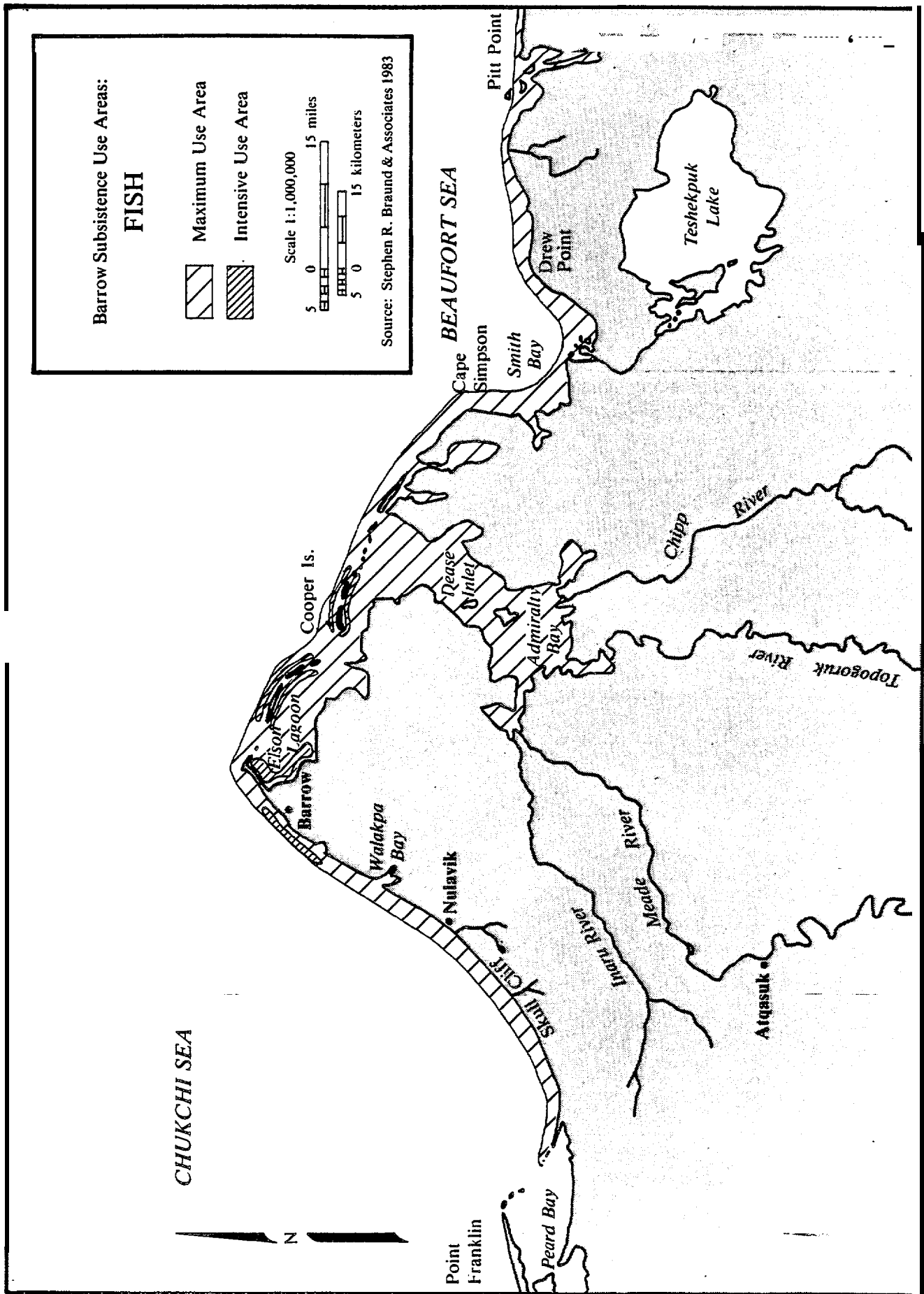


Figure 38 "

The intensive marine fishing spots are primarily **in** the Barrow vicinity. The area of the **Chukchi** Sea immediately adjacent to Barrow is heavily used for fishing. **During** the summer months, **people jig** for fish in the small cracks and breaks **in the ice**, and during **the** winter they fish from ice **holes** in the same area. The shore of **Eelson** Lagoon nearest **Barrow** and both sides of the barrier islands which enclose this lagoon are **also** intensive marine fishing **areas**. Gill nets are **placed** in these areas during late summer and **fall to** harvest salmon, char and whitefish. **During** the fall when fishing **is best**, some residents engage in fishing as their primary subsistence activity.

While marine fishing can be an important source of fish, especially for those families whose seasonal rounds are more marine oriented, most fishing, both in terms of quantity and effort, occurs at inland fish camps. Some families spend their entire summer and **fall** at fish camps in the **Inaru, Meade, Topogoruk** or **Chipp** river **drainages**. These inland fish camps are often traditional **family** sites located to take advantage of plentiful fish resources. Commonly, these camps are located at **the** mouth of tributary streams or at deep sections of the major rivers so that as the fish migrate out of the numerous lakes and shallow streams to winter in areas that **will** not freeze, they can be harvested in **quantity**. In addition to offering successful fishing, these **inland** camps **also** provide Barrow residents with access **to** caribou and migratory birds.

In summary, marine fishing is not as important **in** the subsistence economy of Barrow as **inland** freshwater fishing. **Most** marine fishing

takes place in conjunction with other subsistence activities during the summer and fall. Concentrated use areas for marine fishing are relatively close to Barrow and the common fishing techniques used are set gill nets and jigging.

Migratory Birds

Migratory birds, especially eider ducks and geese, are an important part of Barrow's subsistence economy. Local residents noted that the harvest of geese was more successful inland along open rivers, whereas eider and other ducks were most successfully harvested on the coast. As noted in the section on spring whaling, waterfowl often provide an important food supplement at whaling camps. Snowy owls, once harvested in substantial numbers, are now rarely taken. Eggs are still gathered occasionally, especially on the offshore islands where fox and other predators are less common. The extent to which waterfowl hunting is pursued differs among family groups, with this hunting being most zealously practiced by the younger **male** members of the community.

Migratory bird harvesting begins out on the ice at whaling camps during late April or early May. Once the bowhead whaling season is over, the harvest of waterfowl **increases** as do the number of birds migrating through the area. Both geese and ducks are heavily hunted during the second half of May and the month of **June**. **Some birds are harvested** during the rest of the summer, but usually incidental to other subsistence activities. Hunting pressure increases during a brief period in late August and early September as the ducks and geese migrate

south. When the last of the waterfowl migrate out of the area in late September, migratory bird hunting is over until the following spring.

Figure 39 shows Barrow's harvest area for migratory birds. As noted above, migratory bird hunting is divided into general areas, depending on the species desired. Most goose hunting occurs inland, while most eider and other ducks are hunted on the coast. The coastal hunting area for migratory birds extends from Point Franklin (southwest of Barrow) to the waters of Admiralty Bay. Once spring whaling is over, families disperse and some go inland to concentrate on geese while others spread **out along** the coast. Waterfowl are initially the most important resource **at** the numerous spring camps **along** the Chukchi Sea coast, with ugruk and seal becoming more important **later** in the season. **While** most birds harvested in this area are ducks, some geese are **also** taken along the coast. **In** addition, Barrow residents take waterfowl **along** the shores of **Dease Inlet** and Admiralty **Bay** as they engage in other subsistence activities. Concentrated harvest areas occur **along** both shores of the major barrier islands of **Eilson** Lagoon. Depending on the wind direction, ducks and geese can **be** harvested by hunters traveling in this area.

The most important coastal migratory bird hunting area is the "shooting **station**" located at the narrowest point of the barrier spit which forms Point Barrow and separates the **Chukchi** Sea from **Eilson** Lagoon. During both the spring migration north and the **fall** migration south, this area is a highly successful hunting area. The proximity of this area to **Barrow** makes it readily accessible to **all** members of the community.

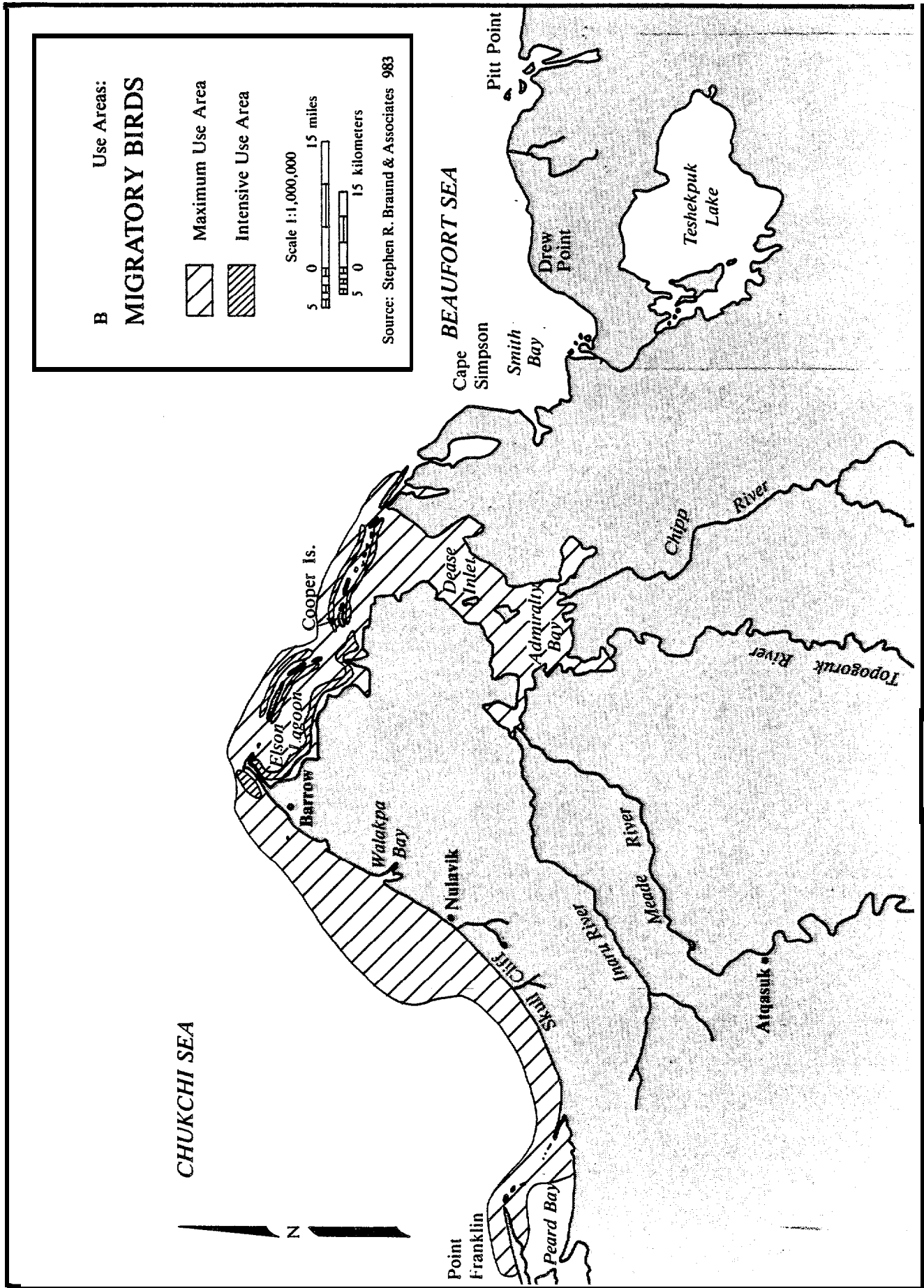


Figure 39

Many families have cabins in this **area** and spend evenings and weekends there during the bird migrations.

In summary, migratory birds, especially geese and eider, are important supplements **to** the meat **supply** for many Barrow families. **While** bird hunting is ancillary to other activities in most of the harvest area, the "shooting station" and nearby barrier islands are concentrated waterfowl harvest areas. The most important migratory bird hunting occurs in May and **early** June and again in the first two weeks of September.

VILLAGE **LAND** USE PATTERNS

Although Barrow is located at the edge of a large, **almost** featureless Arctic plain, land is a commodity in short supply in this community. The Barrow townsite is hemmed in by the Arctic Ocean to the west, by **Tasigarook** and **Isatkoak** Lagoons to the north and east respectively, and by the State airport to the south. **Browerville** lies across **Tasigarook** Lagoon to the north of Barrow proper and has recently seen a good **deal** of development. However, expansion of **Browerville** has been restricted by the presence of water on three sides and, **until** very recently, by federal **withdrawals**, such as that for the former Naval Arctic Research Laboratory, on the fourth.

Barrow's overall **land** use pattern has changed dramatically since the early 1960's. At that time, the town's development was tightly clustered between the **Chukchi** Sea coast and the government hospital and

school complexes. Very **little** development had taken south of the Weather Bureau property or in **Browerville**.

Since the early 1960's, several events have promoted changes in Barrow's overall **land** use pattern. The first was the 1963 townsite plat which established a system of streets and individual lots in the community for the first time. One result was a more dispersed development pattern as structures were removed from street rights-of-way and relocated on separate lots. However, although the 1963 plat resulted in a major expansion of the amount of land in use, most of this growth took place in Barrow proper. According to the Barrow Community Development Study (1964) prepared by the University of Alaska, of the 607 lots then platted, about 50 percent were either occupied or spoken for, compared with only 16 percent of the lots in **Browerville**.

● Installation of the community gas distribution system in 1964/65 also had an impact on land use patterns. The availability of "cheap" gas heat made it financially possible for parents and their adult children **to** live in separate housing. As a result, the number of housing units in the community underwent a significant increase; the average number of persons per unit began to decline and additional land was needed for residential use.

By 1970, development in Barrow had spread southward to the northern boundary of the airport. Some additional development had also taken place in **Browerville** although most lots in that area remained vacant.

Since 1970, additional **infilling** of development **in the** original Barrow **townsite** has taken place so that almost the **only** lands now vacant here are unused portions of the Weather Bureau property and portions of **Block A, plus** lands **along** the **Chukchi Sea** coast **which** are either subject to erosion or are part of an historic site. Except for some single family units and **two** apartment buildings constructed by the North **Slope** Borough in Block A, most residential development in Barrow since the mid **1970's** has taken **place** in **Browerville** and in new subdivisions immediately northeast of **Browerville**.

Because most of **Barrow/Browerville** has only recently been developed for urban use, lot sizes in the community are generally **fairly large**. **Except** in the **older** sections of town where there are a number of very small **lots**, almost **all lots** in Barrow proper are more than 7,000 square feet in area. **Browerville** has no lots smaller than **6,000** square feet except for the Borough subdivision south **of** the **12-plexes** where single **family homes** have been **built** on **3,000** to 4,500 square foot lots.

In terms of relationships between the various land uses, Barrow has a **fairly simple** overall land use pattern (see Figure 40). Agvik Street has become established as the commercial center of the community. Most of the **town's** institutional (Borough office, hospital, **BUECI** and school) uses are immediately east of the business district and extend to the shore of **Isatkoak** Lagoon. The remainder of Barrow proper is primarily residential although there are commercial uses scattered throughout town and there is a concentration of industrial storage activities at or adjacent to the airport. **In fact**, the only major **land** use anomalies in






Land use

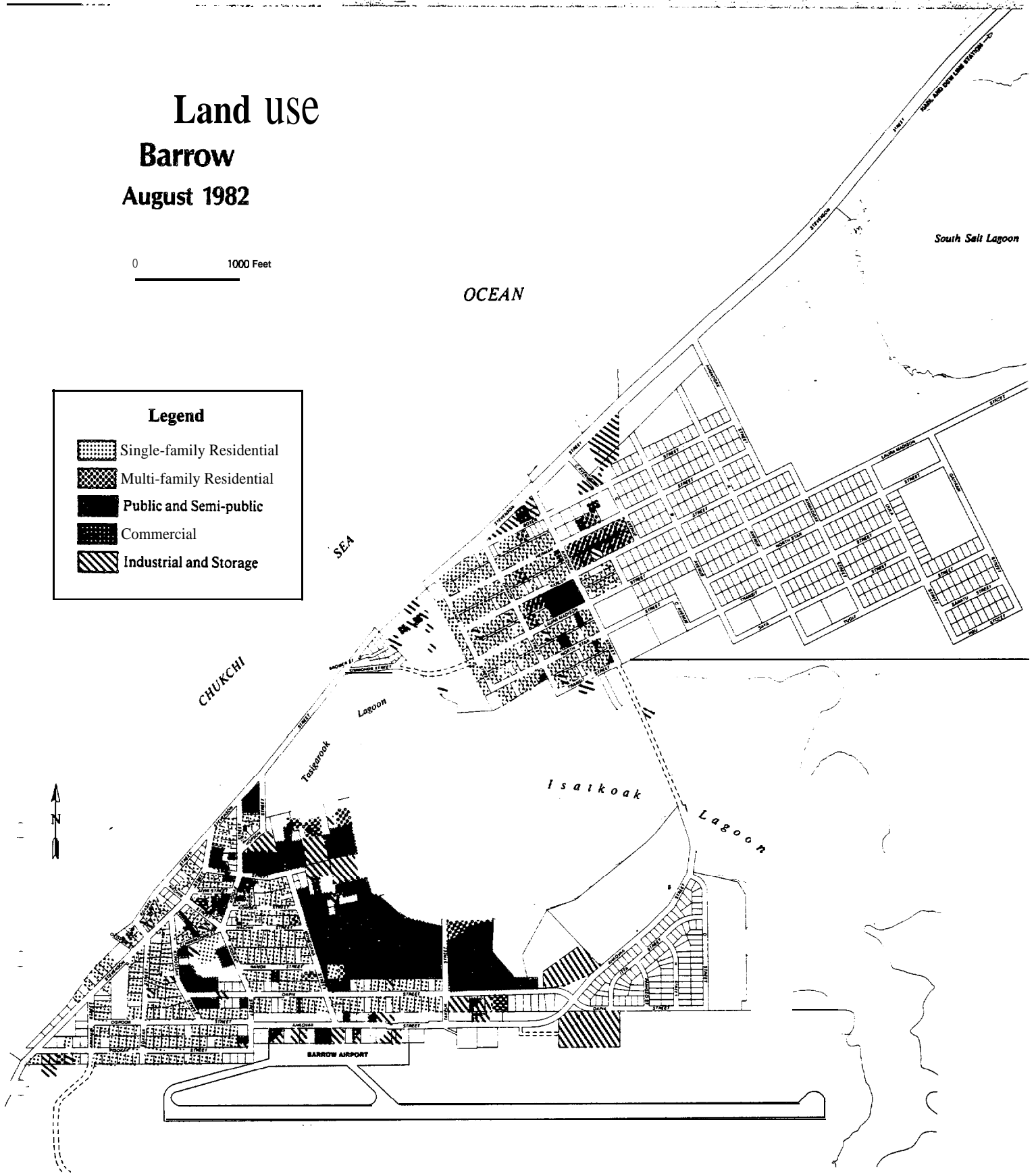
Barrow

August 1982

0 1000 Feet

Legend

-  Single-family Residential
-  Multi-family Residential
-  Public and Semi-public
-  Commercial
-  Industrial and Storage



Alaska Consultants, Inc.
Anchorage, Alaska

Adapted from cartography by
Northwest Cartography, Inc.
Seattle, Washington

Figure 40

Barrow proper are the Weather **Bureau** property and the cemetery. Both of these uses were originally located on the outskirts **of** town but have been surrounded by residential development during **the** past fifteen years. **Browerville** is **almost** exclusively residential except for fuel distribution and heavy equipment storage and maintenance facilities operated by the Arctic **Slope** Regional Corporation and the Borough. However, a significant share of the housing in **Browerville** is in rental **single** and multi-family units constructed by the North Slope Borough.

A tabulation of occupied land in the **Barrow/Browerville** surveyed area (defined as including **all** subdivided areas of Barrow and **Browerville** north of the airport, the new **UIC** subdivisions and the warm storage subdivision northeast of **Browerville**, the airport and related property, and Block B south of the airport runway) indicates that a total of close to **871** acres was in use during August **1982** (see Table 58). Of this, **almost** 85 percent was occupied by industrial and storage uses, primarily the Barrow airport plus gravel extraction and other industrial activities in Block **B**. The largest share of the remaining lands in use in August 1982 was taken up by residential development (**80.7** acres), followed by public and semi-public uses (46.4 acres). Commercial development accounted for a relatively insignificant area (8.7 acres).

The August **1982** land use survey indicated that slightly more-than 40 percent of Barrow's surveyed area was vacant. However, **well** over **half** of this area is located within Block B south of the airport runway, an area where heavy industrial development activities (gravel extraction and drying and oil tank farms) are concentrated and where no residential

TABLE 58

EXISTING LAND USE a/
 BARROW - SURVEYED AREA b/
 AUGUST 1982

<u>Land Use</u>	<u>Land Area (acres)</u>	<u>Percent of Developed Area</u>	<u>Percent of Surveyed Area</u>
Residential	80.7	9.3	5.4
One and Two Family	(69.9)	(8.0)	(4.7)
Multi-Family	(10.8)	(1.2)	(0.7)
Commercial	8.7	1.0	0.6
Industrial and Storage	735.3	84.4	49.4
Airport	(662.7)	(76.1)	(44.5)
Block B	(51.9)	(6.0)	(3.5)
Other	(20.7)	(2.4)	(1.4)
Public and Semi-Public	46.4	5.3	3.1
Cemetery	(15.6)	(1.8)	(1.0)
Other	(30.8)	(3.5)	(2.1)
<u>Total Developed Area</u>	<u>871.1</u>	<u>100.0</u>	<u>58.5</u>
Vacant Land	617.5		41.5
Airport-Related Property	(36.4)		(2.4)
Block A	(66.4)		(4.5)
Block B	(371.3)		(24.9)
Browerville Addition	(45.2)		(3.0)
Other	(98.2)		(6.6)
<u>TOTAL SURVEYED AREA</u>	<u>1,488.6</u>		<u>100.0</u>

a/ Existing land use figures exclude streets except in Block A, within the airport property and access routes within Block B.

b/ Barrow surveyed area includes the Barrow townsite, U.S. Surveys within the Barrow townsite, Block A, Block B, the Barrow airport and related property, and additions to the Browerville subdivision, including the warm storage subdivision.

Source: Alaska Consultants, Inc.

development except for a construction camp has taken place. Another 36 acres of vacant land are related to the airport and are therefore not available for conventional community development. Of the remaining 210 acres, a significant share is dedicated as a municipal reserve and is also not available for general community development. With a portion of the remaining vacant lands in the Block A and the Browerville addition areas scheduled for residential development by the North Slope Borough in 1982, Barrow actually had a paucity of available vacant and developable land until the Ukpeagvik Inupiat Corporation held lotteries in 1982 and 1983 and distributed 68 and 207 lots in Browerville Subdivisions #2 and #3 respectively to its stockholders. In each case, one additional lot was also awarded as a door prize.

HOUSING CONDITIONS

It was not possible to undertake a detailed housing survey in Barrow specifically for this study. As a result, data from the 1980 North Slope Borough housing survey have been used, supplemented where possible by observations of development since that time.

Although no units were built in Barrow by the Alaska State Housing Authority (as they were in Point Hope, Wainwright, Kaktovik and Anaktuvuk Pass), a number of different groups have constructed homes in this community in the past. The most notable of these were units financed through the Farmers Home Administration and what are referred to locally as Capp homes and Lampert homes. Federal agencies, primarily the Public Health Service, the Bureau of Indian Affairs and the Weather

Bureau also made substantial investments in Barrow to provide housing for their employees. However, most individuals in Barrow lived (and continue to do so) in privately constructed units, a significant proportion of which were inadequately constructed or were **built** from makeshift materials.

At the time of the 1980 housing survey, a total of 747 housing units was counted in Barrow. **Only** 41 of these units (0.05 percent) were vacant, with all but **10** of the vacant units determined to be severely substandard and unsuitable for human habitation (see Table 59).

Of the 706 occupied units counted in 1980, 315 were judged to be in good condition. Included in that category were all 152 North Slope Borough rentals and 71 low rent units built by the Borough which were completed at that time. Most of the remaining units in good condition were associated with federal government facilities (the Public Health Service hospital, Barrow Utilities **and the** Weather Bureau). However, this group **also** included a number of privately built units. Another 115 units were judged to be in average condition and a further **105** in fair condition. Most units owned by the Arctic Slope Regional Corporation fell into these two categories, as did the Capp and Lampert homes and those financed through the Farmers Home Administration, - plus a large number of individually constructed units.

Not surprisingly, Barrow has a much wider range **of** housing types than do the smaller villages of the region. At the time of the 1980 housing survey, slightly more than one-third (270) units of the **community's**

TABLE 59
 EXISTING HOUSING CONDITIONS a/
 BARROW
 JUNE 1980

	<u>Condi ti on</u>					<u>Total</u>
	Good	Average	Fair	Poor	Very Poor	
Occupi ed	315	115	105	106	65	706
Vacant	3	6	1	11	20	41
<u>TOTAL</u>	<u>318</u>	<u>121</u>	<u>106</u>	<u>117</u>	85	<u>747</u>

a/ Excluded 6 private units under construction and 120 Borough units planned or under construction in 1980.

Source: Alaska Consultants, Inc.

housing stock was in multi-family units. Traditionally, housing associated with the hospital and school has been in multi-family structures. However, the North Slope Borough has greatly increased the proportion of this type of housing in the community. The Arctic Slope Regional Corporation has **also** built several multi-family structures as have some private concerns, the most notable being the 19-unit Barrow Apartments.

Also unlike the smaller villages of the region, Barrow has a relatively high proportion of whites, many of whom do not intend to become long term community residents and prefer rental housing to home ownership. On the other hand, most Eskimos in Barrow who were interviewed as part of the 1980 housing survey indicated that they would prefer to own their housing rather than to rent, an option which has been available only on a very limited basis under Borough housing programs in this community.

The North **Slope** Borough has had a major impact on the number and type of housing units available in Barrow. Since it began constructing housing in this community, it has built 22 **single** family units and 49 multi-family units (one 29-unit and five **4-plexes**) of low rent housing, and 21 single family units and 145 multi-family units (a second 29-unit, nine **12-plexes** and an **8-plex**) of general rental accommodations. An additional 76 units of single family housing, of which at least 25 will qualify for the HUD Mutual Help program, are currently nearing completion, while materials for a further 72 units of multi-family housing (two 32-units and an **8-plex**) were shipped to Barrow in the fall of **1983**.

As part of the 1983 fieldwork, Barrow residents were asked about their perceptions of housing conditions in the community. Comments made by persons in 1980 during the housing survey were also considered. In general, a high proportion of non-low income rental units built by the North Slope Borough in Barrow are occupied by non-Native Borough or School District employees. Most Inupiat in Barrow profess not to be interested in living in multi-family units, especially those with children. A great deal of resentment was expressed to Alaska Consultants, Inc. in 1980 over the construction of housing which appeared to Inupiat to be built for whites rather than the community's long term residents. (It should be noted that HUD's Mutual Help program was not made available in Barrow until very recently because top priority was given to the smaller Borough villages where previously existing housing was more inadequate and where the incomes of most residents were low enough or temporary enough for them to qualify under this program).

While established Inupiat families have generally not moved into Borough rental units, this is less true of younger Inupiat, especially single persons or married couples. These people are usually glad to have the opportunity to move away from the rest of their families. However, they -- view living in Borough rentals as merely a step toward eventual ownership of a single family unit.

Community Facilities and Utilities

ADMINISTRATIVE AND MISCELLANEOUS PUBLIC BUILDINGS

Barrow has a large number of administrative and miscellaneous public buildings, only a few of which are described here. The major structures include the North Slope Borough administration building, the North Slope Borough School District central office, the **Matsutani** building occupied by the Borough Health and Social Services Agency, the Borough Housing department administrative offices, the Science building used by the Borough's Environmental Protection Office, City of Barrow offices and several buildings used to house other Borough employees or used for heavy equipment storage and maintenance functions.

The North Slope Borough administration building is located on **Agvik** Street, next to the Christian Education building. This two story wood frame structure was **built** in **1975**. As originally designed, the building contained 24,034 square feet of floor space. Since then, the amount of space has been increased both internally and externally, with a **1,571** square foot structural addition being built in 1979. The building has **clerestory** lighting and provides space for Borough assembly and other meetings, as well as offices for Borough employees: The main problem with this building is a lack of space and a high proportion of Borough employees now work in other structures around town. This problem is planned to be resolved through the construction of a new and much larger administration building, beginning in the summer of 1985.

The North Slope Borough School District central offices house School District administrative personnel. This is a two story wooden building located at the corner of **Aivik** and **Kiogak** Streets. The structure contains approximately 7,000 square feet of floor space and has been occupied since June **1975**.

The **Matsutani** building is a one story wooden structure at the corner of **Kiogak** and **Nachik** Streets which was built in the **1960's** by the Barrow veterans as a post office and was **later** purchased by the North Slope Borough. **It** serves as administrative offices for the Borough's **Health** and **Social** Services Agency, **as well** as being used to provide certain health programs (which are discussed later).

The Borough's central housing office is located on Stevenson Street in what was originally a demonstration home **built** in **1976**. This 984 square foot wood frame structure provides office space for administrative personnel in the Borough Housing department. (Housing maintenance personnel offices are **in** the North Slope Borough administration building).

The Science building is located on Laura Madison Street **in Browerville**. It is a two **story** wood frame structure which is **1,600** square feet in area and was built in **1982** to provide space for scientific research and storage, primarily that related to **bowhead whale** issues.

City of Barrow offices are housed on the second floor of the **Browerville** fire station on Laura Madison Street. The building was **built** in 1979 and includes 1,280 square feet of office space for use by the city.

Other administrative or miscellaneous **public** buildings in Barrow include a National Guard armory, a quonset hut formerly owned by the Office of Environmental Health and now used by the Borough's dredging operation, two Borough equipment maintenance shops (one a light duty and the other a heavy duty shop), a Borough sanitation building and associated garage for the storage and maintenance of Borough utility and transit vehicles, a new Borough shipping and receiving warehouse, the **old** NARL incinerator building planned to accommodate Borough utility vehicles (the present sanitation building will then be taken over by the North Slope Borough School District) and a Borough parts storage warehouse and maintenance shop plus a gravel screening and drying plant. In addition, several privately owned buildings are currently rented by the North **Slope** Borough to provide additional office space for its employees or for storage.

PUBLIC SAFETY

Police Protection

Police protection services in Barrow are provided by the North Slope Borough Department of Public Safety. The public safety building is located on the corner **of Agvik and Kiogak** streets across from the Top of the World Hotel. The 13,224 square foot, two story wood frame building

was completed in 1981. The first floor houses a public lobby, an area for handling drivers tests, a communications room, a conference room, four private offices with an area for the secretarial pool, a storage area and a garage. The second floor includes five offices, locker rooms, a training room, temporary sleeping quarters for officers, a small lounge with a kitchenette, bathrooms, a jailer's office and a nine cell jail.

The original design for the public safety building included an elevator which was later deleted although space to accommodate one remains. This lack of an elevator has made the task of moving prisoners in and out of the second floor jail difficult. Further, the design of the jail itself makes it difficult to separate male and female inmates and to keep juvenile inmates isolated from all others. This problem has been made more difficult by a relatively high average daily inmate population (9.57 inmates per day for the fiscal year ending June 30, 1983).

The public safety staff in Barrow is made up of 13 officers (including the department's director and his deputy), an investigator and eight correctional officers, an administrative coordinator and eleven civilian support personnel (records, dispatch and maintenance). As is the case for officers in the other North Slope villages, all Borough public safety officers in Barrow meet the training requirements specified by the Alaska Police Standards Council. Borough officers are eligible for training at the State Police Academy in Sitka.

TABLE 60
 PUBLIC SAFETY DEPARTMENT ACTIVITY
 BARROW
 1980 - 1982

	<u>1980</u>	<u>1981</u>	<u>1982</u>
Homicide and Negligent Homicide	1	<i>0</i>	<i>2</i>
Rape and Sex Offenses	29	46	52
Robbery	0	2	4
Assault	85	180	209
Burglary	100	59	65
Larceny	123	133	118
Motor Vehicle Theft	205	182	177
Vandalism	89	114	90
Narcotics	<i>40</i>	26	22
Driving While Intoxicated	55	94	82
Liquor Law Violations/Disorderly Conduct	297	416	419
Traffic Accidents	77	96	<i>99</i>
Animal Problems	371	286	56
Domestic Problems	285	369	516
Premise*Security	179	212	<i>68</i>
Disturbing the Peace/Noise	451	556	<i>589</i>
Other <u>a/</u>	4,066	3,541	<i>2,066</i>
<u>TOTAL</u>	<u>6,453</u>	<u>6,312</u>	<u>4,634</u>

a/ This category identifies non-criminal public safety activities. It includes service requests, agency assists, public assists and other responses to non-criminal situations.

Source: North Slope Borough Department of Public Safety.

While a city ordinance prohibits the sale of liquor in Barrow, the Department of Public Safety reports that law enforcement problems here are primarily related to liquor abuse. Table 60 summarizes the Department's activities in Barrow between 1980 and 1982, indicating that a substantial portion of time is spent on non-criminal activities.

As of January 1, 1984, all persons arrested in the Prudhoe Bay area will have to be arraigned in Barrow. A State Trooper is scheduled to be assigned to Barrow, replacing an officer who was stationed at Deadhorse until about May 1983.

Fire Protection

The North Slope Borough has provided fire protection services on an areawide basis since 1981. However, in Barrow the Borough contracts with the City of Barrow for fire protection services. The city, in turn, contracts with the Barrow Volunteer Fire Department.

There are two fire stations in Barrow, a three bay unit located on Kiogak Street adjacent to the National Weather Service facilities and the Browerville station on Laura Madison Street adjacent to the city playground. The Browerville station was expanded to a three bay capacity in 1983. (The City of Barrow's administrative offices are located on the second floor of the Browerville station). The station on Kiogak Street houses a 1982 tanker equipped with a 3,000 gallon water tank and a 500 gpm pump; a 1971 tanker with a 1,000 gallon water tank and a 1,000 gpm pump; plus a 1982 ambulance. The Browerville station

houses a 1979 tanker with a 4,000 gallon water tank and a 1,000 gpm pump; a 1978 tanker with a 4,000 gallon water tank and a 500 gpm pump; plus a 1983 ambulance. An older ambulance which is still in working condition is being assigned to the Search and Rescue division for storage at its new hangar.

The Alaska Department of **Transportation** and Public Facilities also maintains two vehicles at its Barrow airport maintenance shops for emergency response to plane **incidents**. Equipment includes a crash truck and a small quick response vehicle. The crash truck carries 500 pounds of dry chemicals, 500 gallons of water and 30 gallons of other suppressants. The quick response vehicle carries 500 pounds of dry chemicals and 50 gallons of **pre-mix** light water under pressure. The Borough has an agreement with the State to support the State's crash and fire response at the airport.

The Barrow Volunteer Fire Department attempts to keep a total of 35 trained volunteers to man the **firefighting** equipment and provide ambulance service. (About 15 of the **volunteers** are EMT trained, the training being provided by the Borough's Health and Social Services Agency). The chief of the Borough Fire department is also chief of the Barrow Volunteer Fire department. **In** addition, membership in the **Barrow** volunteer group includes membership in the Borough's volunteer **firefighting** force, a technical arrangement providing Borough insurance coverage for the Barrow volunteers.

There have been a series of fires in the Barrow area in recent years, including the **old NARL** laboratory, the **old Top of the World** and Brewer's hotels, the **old co-op** building housing Al's **Eskimo** Cafe and the Arctic **Slope** Regional Corporation's offices, the Barrow Utilities and Electric Cooperative office building and a number of residences. **A total of 15** Barrow residents have died in building fires since **1970**, including 6 in 1973 alone. **No lives** have been lost in fires in Barrow since **1977**.

Search and Rescue

While the North **Slope** Borough has combined the volunteer firefighting and search and rescue organizations in the smaller villages (a move coinciding with the completion of new village fire stations housing both **firefighting** and search and rescue equipment), the Barrow search and rescue organization remains independent of the Barrow Volunteer Fire department. The Barrow search and rescue organization has **35** to 40 members. **It** owns a building in **Browerville** which presently houses the Borough Search and Rescue division's administrative offices. However, the Barrow search and rescue organization does receive financial support from the Borough.

The North Slope Borough Search and Rescue division is an organization within the Department of Public Safety **but** remains an independent unit insofar as administrative functions are concerned. **It** maintains a full-time **staff** in Barrow including **pilots** and mechanics for its two helicopters and its fixed wing aircraft. The Division is responsible for **all** Borough search and rescue activities, and it cooperates with the

Borough Health and Social Services Agency on emergency **medi-vac** cases. The Division is also responsible for providing training and support to the combined **firefighting/search** and rescue volunteer groups in the smaller Borough villages.

The division's aircraft are currently housed in a hangar rented from the DEW Line station at the NARL airstrip. Construction is underway on a new hangar facility at the Barrow airport which **will** provide space for the housing and maintenance of the division's aircraft and also provide it with administrative offices.

HEALTH AND SOCIAL SERVICES

Health Services

Primary health care services in Barrow are provided through the combined efforts of the Alaska Area Native Health Service (U.S. Public Health Service) and the North Slope Borough Health and Social Services Agency. The Public Health Service continues to operate the Barrow Public Health Service hospital, with assistance from the Borough, while the Health and Social Services Agency's present primary goal is to supplement existing health programs and provide needed new programs. Although the North Slope Borough assumed the areawide authority for health services and hospital facilities in 1974, its provision of health services has actually been a gradual development. It began in **1975** with management of the community health aide and emergency medical services programs. In 1978, the mental health, eye care, community **health** representative

and dental services programs were added and the health education program was implemented in 1979. In 1980, the Borough assumed responsibility for maintenance of the Barrow hospital, while the public health nursing program (State contracts) and environmental health services were added to the Borough's functions in 1981.

The Barrow Public Health Service hospital is the only hospital in the North Slope Borough. It is an accredited institution which provides acute care services including emergency care, internal medicine, pediatrics, minor surgery (lacerations), orthopedics, gynecology and normal obstetrics, plus X-ray, laboratory, pharmacy, social services and mental health services. The hospital does not provide emergency or elective surgery, diagnostic or therapeutic procedures. Alaska Native patients needing such services are flown to the Alaska Native Medical Center in Anchorage. Table 61 includes a listing of the services provided by this hospital. The North Slope Borough now provides a portion of the hospital's staffing. In fiscal year 1982, 15 of the 61 hospital positions were staffed by Borough personnel.

The primary emphasis of health care at the Barrow hospital is on outpatient services, with the outpatient clinic providing the only access to physician services in the community. Accidents and injuries, upper respiratory disease and otitis media are currently the leading causes of outpatient visits, while accidents and injuries, infant births and alcohol abuse are listed as the leading causes of hospitalization.

TABLE 61

HEALTH AND SOCIAL SERVICES PROGRAMS
BARROW

North Slope Borough	Barrow Public Health Service Hospital	
<u>Greist Center</u>	<u>Outpatient Clinic</u>	<u>Hospital</u>
Eye Care Dental Care Mental Health Environmental Health Alcohol and Drug Abuse WIC (Women/Infants/Children) Public Assistance Youth Services Social Services Public Health Nursing <u>Matsutani Building a/</u> Health Education/Media Arctic Women in Crisis Children's Receiving Home Community Health Aide Community Health Representatives Infant Learning Senior Citizens Emergency Medical Services	Ambulatory Care Emergency Care Standard Laboratory and X-Ray Services Pharmacy Services Specialty Clinics: Pediatrics Medicine Gynecology Orthopedics Surgery Ear-Nose-Throat Radiology Ophthalmology	Inpatient Care Primary Acute Care Emergency Care Internal Medicine Pediatrics Minor Surgery Orthopedics Gynecology Obstetrics (Normal) Medical Records Laboratory and X-ray Services Social Services Mental Health Pharmacy Services Labor/Delivery <u>Not Available:</u> Emergency or Elective Surgery Diagnostic or Therapeutic Procedures

a/ Administrative personnel only except for Senior Citizens.

Source: North Slope Borough Health and Social Services Agency.

The **21,450** square **foot** hospital **is** a one story wood frame **building**. It has **14** beds, **10 of which** are reserved for acute medical /surgical / pediatric cases, **2** for labor and another **2** for post-delivery **care**. **All** beds are in semi-private rooms. There is a **single** operating/delivery and emergency room. The outpatient department includes 4 examination rooms, an **X-ray** room and-laboratory, a pharmacy and an administrative area. Also attached to the hospital are staff housing and the Borough's **Greist** Family Services Center. The facility lacks adequate space both hospital and outpatient clinic functions. Associated problems include declining federal funding and a high staff turnover rate. A feasibility study was recently undertaken to assess the possible direct operation of the Barrow hospital by the North Slope Borough, a move which would be welcomed by the federal government. However, the Borough assembly has, after receiving the feasibility study, shown **little** enthusiasm for assuming the responsibility. A major concern is the increased financial burden that such a move would place on the Borough.

The **Greist** Family Services Center, which is attached to the Barrow hospital, was **built** in **1981**. It is owned and operated by the North Slope Borough and houses a number **of** health and **social** service programs administered by the Borough's Health and Social Services Agency (see **Table 61**). Included in the facility are the public **health** nurses' office, 3 offices **for social** workers, 2 mental **health** offices, a **public** assistance office, a corrections office, offices for optometry including an examination room and eye **glass** dispensary, a **dental** suite with 4 operatives, a laboratory, X-ray facilities and reception areas. Staffing of this facility includes 3 Borough public **health** nurses

(including a maternal/child care nurse), 2 Borough health aides (one of whom is an interpreter), 3 State social service workers and 2 Borough social service aides. The mental health program is staffed by a psychologist and a mental health clinician. The eye care unit is staffed on an itinerant basis by a Public Health Service optometrist or a private optometrist sponsored by the Lions Club, plus a Borough eye coordinator who is trained to repair and fit eye glasses. The dental care unit is staffed by two dentists.

Social Services

The North Slope Borough provides a series of social service programs, all administered by the Health and Social Services Agency (see Table 61). Like the health care programs, the social service programs were instituted gradually over a period of years. Assistance to Barrow senior citizens was initiated in 1977; youth services were added in 1978; the Arctic Women in Crisis program was adopted in 1979; the Women/Infants/Children (WIC) nutrition program began in 1980; and the alcohol referral and residential treatment program was started in 1981.

The main administrative offices of the Health and Social Services Agency are located in the **Matsutani Building**. This building also serves as the senior citizens activity center. Employees of the Health and Social Services Agency now number close to 90 in Barrow, with an additional 12 or so in other North Slope villages and 3 each in Fairbanks and Anchorage.

The Health and Social Services Agency's responsibilities include the operation of several facilities in Barrow other than **the Greist Family Services Center** and the **Matsutani** building. These include:

- o Barrow Animal Clinic. The clinic is located in a rented structure and houses the Borough **vetinarian** and his assistant who are responsible for environmental **health** education as **well** as animal control and care programs. These services are also provided **to** the other Borough villages on an itinerant **basis**.
- o Friendship House. The Friendship House is an adult center for counseling on substance abuse problems. Its activities include individual counseling, group therapy and other open meetings. No sleeping facilities are provided.
- o Youth Drop-in Center. The center provides recreation activities in a safe, alcohol-free environment for Barrow young people. Sponsored by Alternatives for **Youth**, activities include a **jail** diversion program which provides alternative sleep-off space for youths arrested for being intoxicated. Minimum security is provided, with juveniles being kept there on an honor system which, if violated, can lead to a return of the violator to **jail**. The **center** is open **until 10** pm each evening for regular recreation activities. The City of Barrow has a **curfew** for young people and an evening **patrol** is initiated at that time for curfew violators. The center also sponsors an Arctic survival program for youths who do not have an opportunity to go camping with **their** families.

- o Women in Crisis Center. The facility houses women who have been physically abused. It can house from 7 to 13 women who are allowed to stay up to **30** days, with extensions being granted when needed.
- o Children's Receiving Home. This facility is a State-licensed residential emergency shelter for children from birth to 18 years of age. The maximum stay is for 90 days. Unfortunately, there is no alternative shelter in Barrow after the 90 days have expired and, on occasion, 30-day extensions have been approved. The building is located in **Browerville** and is a single story, wood frame building about 2,214 square feet in area plus an addition for water storage. It includes six bedrooms (one of which is a nursery), a living/dining room, a study, a kitchen and pantry, a bathroom and a laundry, plus a utility room.
- o Day Care Center. Barrow presently has no government-sponsored day care facilities. However, a day care center designed to house 65 children is included in the North Slope Borough's capital improvements program, with construction scheduled to get underway in July 1984. This project has strong community support.

EDUCATION

The North Slope Borough School District provides education services from Early Childhood Education (**ECE**) and kindergarten through the 12th grade in Barrow, as it does in other villages of the region. In addition, adult education and community school programs are provided with State

funding assistance when school facilities are not **being** used for **regular** education activities.

Until the beginning of the 1983/84 **school year**, **all school** students in Barrow were housed in one school plant located on **Momegana** Street. However, as of September **1983**, students from grades 6 through 12 have been located in the new high school complex on **Okpik** Street, within Block **"A"**. The following discussion of Barrow school facilities describes the use of school space and staffing levels as of the 1982/83 **school** year; however, a description of the new high school complex is **also** provided.

During the 1982/83 school year, the **school** physical plant in Barrow was a disjointed one. A portion was **built** by the Bureau of Indian Affairs (**BIA**) when that agency was **responsible** for **local** education services, a few units were **intially** constructed for other purposes and then converted to school use, and **still** other buildings have been constructed by the Borough subsequent to its assuming responsibility for education services in **1974**.

The Bureau of Indian Affairs constructed a new Barrow school in 1965. The facility could accommodate **1st** through 9th grade students, **but** students continuing on through high **school** were obliged to attend education institutions either in other parts of **Alaska** or **in** other states. Grades **10** through **12** were first made available locally in the 1974/1975 school year by the North **Slope** Borough.

The Fred **Ipalook** Elementary School houses classrooms for kindergarten through grade 6, with two classrooms designated for the Early Childhood Education program (3 **and 4 year olds**). The facility is also used after school for recreation programs and continuing education programs sponsored by the community school program. The school lies between **Momegana** Street and the **Isatkoak** Lagoon. During the 1982/83 school year, its facilities included the primary classroom building, a kindergarten building, a multi-purpose/cafeteria facility, two other classroom buildings and an ECE building.

The elementary **school's** **professional** staff for the 1982/1983 school year totaled 34, including 22 classroom teachers, 4 special education teachers, 2 resource reading teachers, a music teacher, an enrichment program teacher, a special education counselor, a physical education teacher and 2 administrators.

In addition, the elementary school employed another 19 persons for administration and support services. It also received assistance from the 43 School District employees who provided maintenance and cooking services and student transportation for the Barrow school system.

The Fred **Ipalook** School has a number of physical problems. The north portion is close to the power generation plant which **is noisy**. There have also been continuing maintenance problems with the plumbing, heating and electrical systems. However, the transfer of 7th through **12th** grade students to new Barrow secondary school in the 1983/1984 school year will provide the School District with an opportunity to

better organize the elementary school's use of the old school complex in order to eliminate the most inadequate portions and **to** minimize maintenance and operation problems.

During the 1982/83 school year, the Barrow high school was housed in several buildings which **will** be made available for use by the elementary school or other public purposes by the transfer of 7th through 12th grade students **to** the new secondary school **in** the 1983/1984 school year. The old secondary school complex included the junior/senior high school building (built in **1965**) with classrooms and a gymnasium/multi-purpose facility, two temporary classroom buildings, a vocational education facility **built** in **1976** and a leased vocational education building. **All told**, the facilities housed **14** general classrooms, 2 bilingual rooms, 3 special education rooms and **5 vocational** education rooms, a business classroom, an art room, a science **lab**, a photo **lab**, a home economics room, a shop, and a gymnasium, band room and library which were shared with the elementary **school**.

Staffing for the Barrow secondary **school** in 1982/83 totaled 34 professionals, including 27 classroom teachers, 2 special education teachers, 2 counselors, a librarian and 2 administrators. The secondary school also received support from pool of 43 School District employees providing maintenance, cooking and student transportation services.

The gymnasium and multi-purpose room were in constant use after the regular **school** programs ended. Supervised by three part-time recreation

aides, the activities included basketball and volleyball for both youth and adults. The **weightlifting** room was also available to adults.

The vocational education building which had been constructed in 1976 at the site of the new Barrow high school was, because of structural problems, never fully used. It has since been modified and incorporated into the new high school complex.

The breadth of the community education, special interest and recreation programs offered through **adult** vocational programs and community school programs (funded by the State as **well** as by monies from the City of Barrow but administered by the School District and offered for the most part in school facilities) can best be illustrated by a listing of the activities. The School District has a community school coordinator on its staff to coordinate community school programming for Barrow and **other** North Slope villages. Staff for the adult education **and** special interest courses are drawn from the School District as **well** as from the community. Following is an incomplete listing of courses and activities offered through the school system to Barrow residents in the 1982/1983 school year:

<u>Adult Programs</u>	<u>Youth Programs</u>
Beginning and Advanced Inupiat	Basketball
Drivers' Education	Volleyball
Secretarial Skills	Eskimo Games
Shorthand	Gymnastics
Accounting	Soccer
Investments	Roller Skating
Skin Sewing/Jacket Making	Model Building
Beadwork	Rocketry
Aerobic Dancing	Hair Styling
Pottery	Cooking

Piano
Flight Instruction
Basketball
Volleyball
Library Night
Eskimo Games

Story Hour
Tae Kwon Do (martial arts)

Also included in the offerings for adults were General Education Development (GED) courses which, upon completion, provide a certification equivalent to that of a high school diploma. The Inupiat cultural heritage program, funded through federal Indian education grants, is also integrated into the Barrow school curriculum.

Instruction in the Inupiat language is required from the ECE level through 6th grade and is available on an optional basis for students in grades 7 through 12. The community school also offers instruction in Inupiat for adults. In addition, a cultural learning bank has been developed in the Barrow school system which has a variety of books, films, slides and other resource materials to assist the faculty with the task of integrating the subject of Inupiat culture into the regular curriculum.

The new secondary school (7th through 12th grades) will be available for occupancy during the 1983/1984 school year. It is the first Barrow school complex which will have been designed and constructed in its entirety by the North Slope Borough. Mounted on deep seated piling, the five wings are inter-connected by enclosed corridors. The buildings are of wood frame design, with two of the wings being single storied and the remaining three having partial second floors. The academic wing contains 17 classrooms, including 2 science laboratories; the "hub" wing houses a 299-seat auditorium with a raised stage, plus a kitchen/

cafeteria, the home science department, a band/choral department, a library and the administration area; and the sports wing houses a full sized gymnasium with a **1,000** person seating capacity, a 30 by 50 foot swimming pool, lockers and showers, a weightlifting room **and** a wrestling/gymnastics room. The vocational education wing was developed by renovating and expanding the former vocational technology building. It now contains a construction shop, 2 classrooms, a metal working shop, an automotive repair shop, a small engine shop and a 5,000 square foot warehouse on the first floor. The mezzanine floor of this building contains a small TV studio, a small control room, a photo lab, an arts and crafts room, a drivers' education room and a drafting room. Finally, the utility wing contains boilers, generators and a water storage tank. This wing also includes a training facility designed to serve as a regional training center for operation and maintenance of generator facilities in other villages within the North Slope Borough. The training facility includes classroom space, an office/workroom and two generators (a 90 KW and a 210 KW diesel driven unit). The secondary school complex is connected to the new Barrow **utilidor** which will provide both potable water and sewage service.

It is anticipated that the new secondary school complex will be used by the Barrow community school **program** for continuing education and recreation activities. Certainly the new-facilities could support a larger and more varied group of programs that has been offered to date.

Student enrollment in the Barrow school system reached a peak of 682 students in the 1972/1973 school year when the classes extended only

TABLE 62
 SCHOOL ENROLLMENT TRENDS a/ b/
 BARROW
1966/67 - 1982/83

<u>School Year</u>	<u>Grades K-6</u>	<u>Grades 7-12 c/</u>	<u>Total</u>
1966/67	404	151	555
1967/68	427 "	135	562
1968/69	380	112	492
1969/70	464	143	607
1970/71	508	138	646
1971/72	493 <u>d/</u>	141	634
1972/73	540 <u>d/</u>	142	682
1973/74	437	152	589
1974/75 <u>e/</u>	..	--	--
1975	401	210	611
1976/77	374	244	618
1977/78	291	281	572
1978/79 <u>f/</u>	295	276	571
1979/80	312	228	540
1980/81	281	239	520
1981/82	277	218	495
1982/83	289	191	480

a/ Final enrollment figures.

b/ ADM (Average Daily Membership) for school years 1980/81, 1981/82 and 1982/83 was 548.69, 523.3 and 513.05 respectively.

c/ High school classes 1966/67 through 1973/74 limited to the 9th grade.

d/ Elementary school enrollment includes students listed as ungraded.

e/ No enrollment data available for 1974/75.

f/ Figures for kindergarten enrollment estimated.

Sources: Alaska Department of Education.
 North Slope Borough School District.

through the 9th grade (see Table 62). That same year, the kindergarten through 6th grade enrollment peaked at 540 students. High school classes through the 12th grade were first offered in the 1974/1975 school year and student enrollment in the 7th through 12th grades peaked in the 1977/1978 school year.

The growth and decline of school enrollment in Barrow reflect the changes in the dynamics of Barrow's population. Since the early 1970's, there has been an out-migration of Alaska Native people from Barrow to the smaller villages of the North Slope and the total number of Alaska Natives in Barrow actually declined between 1970 and 1980. During the same period, non-Native community residents increased both in absolute numbers and as a proportion of total village population; however, this group tends to have few dependents.

Enrollment of non-Natives during the 1982/83 school year totaled 51 elementary and 38 high school students. There were also about 15 Alaska Native students from Barrow who attended high school at Mt. **Edgecumbe** in **Sitka** in that same year. The School District does not keep records for Barrow students attending other schools outside the Borough.

RECREATION

The City of Barrow retains the power of recreation and maintains an active recreation department, but the comprehensive recreation program now available to Barrow residents results not only from the city's

efforts **but** also from those of the North Slope Borough, as **well** as other organizations in the community.

Until very recently, the gymnasium and multi-purpose rooms **of** the **old** school complex constructed by the Bureau of **Indian** Affairs provided the central facilities for year-round indoor recreation activities in Barrow. However, the newly completed **Barrow** high school now provides additional recreation space, including a large gymnasium, a swimming pool and an indoor track. The gymnasium in the old school complex has been heavily used by the entire community after regular school hours during the school year and throughout the summer. Basketball is very popular locally and there is also an active volleyball program. The multi-purpose room in the **old** school complex has an elementary school size basketball court and can be used **for** roller skating and **other** informal indoor recreation activities. Both the old school complex and the new high school activity center have shower facilities which are open to the public during community recreation periods.

The Barrow Community Center (**also called** the Youth Center) is a recreation center open to Barrow residents of **all** ages. **It** is located on **Nachik** and Stevenson Streets and is used as a bingo **hall**, for club **meetings**, for special -programs Sponsored by **the city** such as movies for **adults** and children, and for Eskimo dances, church banquets and private receptions. The building was extensively renovated **in 1982** and was brought up to State fire code at that time. When the renovations were completed, a portion of the building was occupied as offices for the city Parks and Recreation department.

The Barrow Teen Center, located on **Kiogak** Street near the airport, is operated **by** the city Parks and Recreation department and is open to all young people in the community. It was converted for its present use from the city liquor store which was **closed** in 1978. The Teen Center is managed by the elected officers of a teen club which raises funds to support the Center's activities through dances and concessions.

Although it is not large (1,312 square feet), the Center houses a small snack bar as **well** as a large multi-purpose room with equipment which includes pool tables, a **foosball** table and audio equipment for tapes and records. The facility is operated as a drop-in center, and the city's Parks and Recreation department also sponsors classes here which emphasize activities related to **Inupiat** culture. The Center is open every night after school until 10 pm on weekends and during the summer. Teen dances are held here on the weekends.

An unusual recreation-related facility for Barrow young people is the **Uqpiksuu** summer camp located 45 miles from town. The camp is currently sponsored by the Mayor's Office of the North Slope Borough. Four two-week sessions are planned each summer, with 16 to **18** children participating in each session. The children are housed in tents and camp programs include training relating to the environment and living off the **land**, as **well** as more conventional recreation activities such as swimming in the shallow inland **lakes**.

In recent years, an effort has been made to develop outdoor recreation facilities in **Barrow**. Children's playgrounds have been constructed in both **Browerville** and Barrow, with the **Browerville** facility being

developed **with** assistance of the Barrow Women's **Club and** the State Division of Parks. Both are equipped with playground equipment.

Barrow **has** a very active men's and women's softball program, something which often surprises summer visitors. The program is sponsored **by** the **city** Parks and Recreation department but receives support from merchants and others in the community. The Lions Club leases an open area on National Weather Service property for **use** as a softball **field. It** is in constant use during the short summer, despite frequent inclement weather.

The City Parks and Recreation department, in addition **to** administering community **league** sports -- softball, basketball and volleyball -- also sponsors such **annual** events as the **ARCO** Jesse Owens games, the Hersey Track and **Field** meet and the **Claire Okpeaha Annual 10** Kilometer Run. **In** addition, the Barrow Chamber **of** Commerce has initiated a spring festival featuring, among other events, both dog and **snowmachine** races.

Barrow residents also participate in **a** variety of informal recreation events, often involving the **entire** family. Church groups and **local** civic clubs sponsor their own recreation-related functions. **The** Barrow Volunteer Fire-department and the Search and **Rescue** organization do likewise. While the **snowmach**ine is essential for **winter** subsistence activities, its **use also** has elements **of** pleasure. The three-wheeler is a popular vehicle for **local** transportation and it, too, **is used** for recreational purposes. Finally, hunting, fishing and other subsistence activities have elements of pleasure for Barrow **Inupiat**s although these

activities are not viewed from the **Inupiat** perspective as being of a recreational nature.

UTILITIES

Water

Barrow is the largest city in the State without a communitywide water system. There are presently several different water "systems" in the community. However, most Barrow residents purchase their water needs from private firms or they haul their own water in summer and melt ice in winter. A piped water system serves the hospital/BUECI/Fred **Ipa**ook school complexes. In addition, a **major** construction program is currently underway in Barrow to build a water and sewer **utilidor** system.

The **hospital/BUECI/school** piped water system was first developed in 1964. Originally, water from Lower **Isatkoak** Lagoon was pumped to a **plant** in town operated by Barrow Utilities and Electric Cooperative, Inc. (**BUECI**), where it was **distilled** and chlorinated prior to distribution. This system has since been upgraded. A dam was recently built across **Isatkoak** Lagoon and the Upper Lagoon is now used as the city's water source. From an intake building with a heating plant at the dam site, a 7,500 foot transmission line runs to the water treatment plant and water is then stored in a **BUECI** 100,000 gallon tank and a Public Health Service 600,000 gallon tank. This system became operational in January 1978.

Development of **the** new Upper **Isatkoak** Lagoon water source and the upgrading of water storage capabilities made up the first phase **of** an overall upgrading **of** Barrow's water (and sewer) system. Development of the Barrow **utilidor** system got underway **in** October **1981**. This is a multi-phase project, with construction currently scheduled to extend into 1990. **It** consists of a below ground **utilidor** system with associated water/sewage piping, force mains, electrical, telemetry and fire protection systems; plus a water **re-circulation plant** (and a number of other features described under sewage). **By** the end of the construction program, almost all of Barrow's presently subdivided area is proposed to be served by this system. No one **in** Barrow presently receives water service via the **utilidor** system as this will not be possible until completion of the water **re-circulation plant**, scheduled for the end of February **1984**. However, **130** units in the **Browerville** addition (primarily the Borough **12-plexes** and **8-plex** plus some Borough single family units); Borough-constructed units in Block "A", the new high school, two Borough **29-unit** apartment buildings, the North Slope Borough administration building and the old **hospital/BUECI/Fred Ipalook** school system will receive water via the **utilidor** early in 1984.

According to **BUECI**, water consumption rates in Barrow are presently very low, averaging about **35** gallons-per-person per day. For **persons** **receiving** their water via trucked delivery services, consumption rates are much lower, averaging around **9** gallons per person per day. **By** season, the summer is the "lowest" period of water consumption in the community, mainly because the school is **not** open during that period. During **1982**, October was the peak water consumption **month**, with a **total**

of 225,000,000 gallons sold by **BUECI**. The effect of the **utilidor** system on water consumption rates in the community is still a matter of speculation.

The main problem associated with Barrow's present water service is that there is no communitywide system. The reliance on trucked water supplies is not only inconvenient but is believed to be a factor in the spread of communicable disease. In addition, the raw water supply line from the upper lagoon to the **BUECI** treatment plant is in poor condition and is scheduled to be replaced during 1984. The capacity of the Upper **Isatkoak** Lagoon reservoir has also been questioned.

Sewage

As with water, Barrow presently has no communitywide sewage collection or disposal system. Most village residents still use honeybuckets, the contents of which are emptied daily and are transported to the local dump either by North Slope Borough Department of **Public** Utilities vehicles or by a private operator. Until very recently, a piped sewer system served the **hospital/BUECI/Fred Ipalook** school complexes. In addition, a major construction effort is currently underway in Barrow to build a water and sewer **utilidor** system. This latter program is being accompanied by development of a sewage **lagoon** and outfall.

The **hospital/BUECI/Fred Ipalook** school piped sewer system was constructed in 1964 to meet the needs of this government complex. Sewage from these facilities was treated by extended aeration,

chlorinated and dumped into an **outfall** lagoon only **10** feet away from lower **Isatkoak** Lagoon, which was the community's primary water source **until** 1978. However, this system was decommissioned in May **1983** when the complex was hooked into the sewer portion of the **utilidor** system.

As previously mentioned, development of the Barrow **utilidor** system got underway in October **1981**, with completion of the entire system currently planned for **1990**. As described by the project engineers:

"The system includes a **below ground utilidor system** with associated water/sewer piping, force mains, electrical, telemetry, and fire protection systems; sewage pumping (**lift**) stations; a water **re-circulation** plant; **an** above ground dam crossing; a buried outfall **line**, a sewage treatment lagoon with a trucked sewage **disposal** building, and a fabrication and maintenance **facility**. Also included **are lateral utiliducts** and service connect on boxes for hook-up to residential and commercial facilities."

The sewage portion of the **utilidor** system is currently **operational**. Users presently include **130** units in the **Browerville** addition (primarily the Borough **12-plexes** and **8-plex plus** some Borough **single** family units); Borough-constructed units in Block "A", the new high school, two Borough 29-unit apartment buildings, the North Slope Borough administration building and the old **hospital/BUECI/Fred Ipalook** school complex. **Wastes** are transported via the system to a **facultative** lagoon at South **Salt** Lagoon. The **lagoon** was dredged during the summer of 1983 to deepen it, to dig the lagoon cells and to **build** containment dikes. However, **until** a permanent outfall line into the lagoon **cells** is completed, scheduled for the spring of **1984**, no sewage treatment is provided.

Present Borough plans call for extension of the **utilidor** system in stages through about 1990, by which time all users within the developed

area of town (excluding Block "B") should be connected. Construction of a trucked sewage building to **eliminate** the present undesirable practice of dumping sewage wastes at the community **landfill** is scheduled to take place in 1984.

Solid Waste

The disposal of solid wastes in the arctic is inherently difficult, particularly when both sewage and garbage are dumped at the same site. Traditionally, wastes in Barrow were burned or were left out on the ice to be carried out to sea at break-up. However, that practice is no longer considered acceptable and the present dump site at South Salt Lagoon, which was originally developed by the Navy, has been used since 1958.

The Barrow dump has never been satisfactory as a landfill site, due in part to the dumping of sewage as well as garbage. In the early 1960's the dump was reportedly well maintained and wastes were covered with gravel and soil. However, a shortage of gravel subsequently resulted in wastes not being covered **and** dumping was uncontrolled beyond the leading edge of the lagoon. Prior to its being deepened in 1983 for use as a **facultative** sewage lagoon, the lagoon was only 3 to 4 feet deep and the entire lagoon had been used for dumping. The dump is also unfenced, with the result that wind-blown trash spreads over this area, including the nearby beach. According to Alaska Department of Environmental Conservation officials, the present dump constitutes a severe health and environmental hazard.

Construction of a trucked sewage building, currently scheduled for 1984, should eliminate some of the present hazardous conditions associated with the existing dump. In addition, some clean-up of the lagoon occurred during the summer of 1983 as part of the dredging program for development of a facultative sewage lagoon here. The State wants the present dump to be abandoned and a new landfill site, with a honeybucket trench, developed. The Borough is working on the problem and has developed tentative plans for a new dump site in the gravel pit in Block "B", south of the airport runway. In the meantime, it plans to fence the present site and it has acquired the necessary heavy equipment to maintain the dump in a more satisfactory manner.

Garbage is picked up regularly from individual homes and businesses in Barrow by the North Slope Borough. Equipment includes a compactor-type hydraulic garbage truck, a smaller compactor-type truck for emergency use and a 2.5 ton open dump truck and front end loader for the pick-up of bulky items. In addition, the Borough operates a range of equipment for operation of the dump itself.

Electric Power and Gas

Unlike other traditional North Slope villages, electric power in Barrow is gas-generated. The history of electric power and heating facilities in the immediate Barrow area is long and complicated. For many years, Barrow residents used driftwood or coal hauled from a mine near Atkasuk as their primary fuel source. However, following discovery of the South Barrow gas field by the Navy during its 1944-53 exploration program in

NPR-4 and the successful conversion from fuel oil to natural gas by NARL, several government agencies (Bureau of Indian Affairs, Public Health Service, Weather Bureau and the Bureau of Standards) requested permission from the Navy to use gas at their facilities in town.

Approval was granted and the conversion **to** natural gas was undertaken in **1958**.

The City of Barrow petitioned Congress in 1959 to request that the community be allowed to purchase natural gas from the Navy. Congress passed a bill making this possible in **1962** and the federal agencies in charge of the Barrow pipeline were authorized to transmit the gas for non-government consumption. Installation of the gas distribution system in town was carried out in 1964-65 by Barrow utilities, **Inc. (BUI)**, a non-profit utility corporation which was later renamed Barrow Utilities and Electric Cooperative, Inc. (**BUECI**). Also during this period, an electric distribution system was installed in the community by the Golden Valley Electric Association at the request of the City of Barrow. Thus Barrow residents obtained natural gas and electric power services at about the same time.

The Bureau of Indian Affairs assumed responsibility for operation and maintenance of the central utilities in Barrow in **1964**, while **BUI** purchased the local assets of the Golden Valley Electric Cooperative, Inc. in **1965** and became the sole distributor of electricity and gas for non-government areas of the community. Gas was purchased from the Navy and electricity was purchased from the Bureau of Indian Affairs.

Subsequently, **BUI** assumed responsibility for operating and maintaining **the** Bureau's utility facilities **in** Barrow on a cost-reimbursement. **basis.**

The availability **of** "cheap" fuel resulted in major social change in Barrow. Previously, it had not been uncommon for as many as **12 to 14** people to live in a one room house because **of** the high cost of heating. However, after natural gas became available, many families enlarged their homes and, because it became financially possible for parents and young **adults** to live separately, a building boom took place. This boom was accelerated by a severe storm in the fall of 1963 which damaged a number of structures in town and their replacement was assisted by low interest federal disaster funds. The **result was** a dramatic increase in energy consumption in Barrow.

Today, electric power and natural gas are provided by **BUECI** to **all** users in the immediate Barrow and **Browerville** area except **NARL** and the POW-Main DEW Line station. Gas from the South and East Barrow gas fields is purchased from the U.S. Department of the Interior and transported to Barrow **via** a **6** inch all-welded steel pipeline at a pressure of 200 **lbs** per square inch. Pressure is reduced in two stages using pressure reducing valves **to 80 lbs** per square inch and down to 20 **lbs** per **square** inch before entering the community-distribute-on system.

According to **BUECI** officials, the 6-inch gas transmission **line** is in good repair. However, the original community gas distribution system was constructed under the supervision of the Bureau of **Indian** Affairs with surplus Navy pipe mounted on top of **55-gallon** drums which were sawn

in half. Significant leakage problems were experienced and there was always a threat of interrupted service resulting from **snowmachines** and other vehicles crashing into the lines. Replacement of the entire community distribution system with a buried system was undertaken by the Bureau of Indian Affairs and was completed in the spring of 1982.

Barrow's electric power is gas-generated. However, **BUECI's** main generators are two 2,500 **KW** dual-fuel units which were purchased by the North Slope Borough and which permit a switch **to** liquid fuel if gas supplies are disrupted. The power plant also houses two 750 **KW** gas turbines which were added by the Bureau of Indian Affairs in 1968 and which are used for standby power. In addition, a 450 **KW** unit installed by the Bureau of Indian Affairs in 1964 is retained for use in emergencies. A third 2,500 **KW** dual-fuel unit was purchased by the North Slope Borough in 1983 and is currently being installed.

- NARL's electric power and natural gas distribution system are independent of those for Barrow. Gas is transmitted from the South Barrow field via a 4-inch **line** mounted on barrels and drums. The line is reportedly in poor condition. Electric power is provided by four 750 **KW** dual-fuel generators.

- The separation of federal government and community utilities systems in Barrow is no longer warranted. In June 1975, **BUI** agreed to operate and maintain the Bureau of Indian Affairs' Barrow facilities at no **charge** to the government except for major repairs. **In** September of the same year, - as a means of phasing the Bureau of Indian Affairs out of the utility

business in the community, a **tri-party** agreement between the Bureau, **BUECI** and the North Slope Borough was entered into. Under the **terms** of this agreement:

- o **BUECI** agreed to a voluntary foreclosure for the cancellation of **all debts** owed to the Bureau of Indian Affairs. (These debts were unrepaid **loans** made by the Bureau to **BUI** when the utility was first getting established).
- o The Bureau of Indian Affairs agreed to upgrade the Barrow gas distribution system.
- o The Bureau of Indian Affairs agreed to transfer the entire utility, once upgraded, to the North Slope Borough which, **in** turn, **will** contract with **BUECI** for the operation of these facilities. ,

The demands **on** Barrow's electric power system have increased rapidly during the past few years. **In** 1978 peak loads approached 1,850 **KW**. By **1982**, peak loads had more than doubled to around 4,000 **KW**. Continued rapid growth in power consumption in Barrow is expected over the next few years as planned and proposed Borough structures and housing units, **plus** pumping and heating facilities, associated with the planned Barrow water and sewer **utilidor** system come on **line**.

The adequacy of gas supplies to meet **long** term heating and electric power demands of both Barrow and **NARL** has long been a matter of concern. Current proven reserves in the South Barrow **fields** are located in two distinct areas about six **miles** apart and separated by an apparently unproductive, highly faulted area **called** a disturbed zone. **As** of

January 1, 1983, total production from the South field had amounted to 14.8 billion cubic feet, with remaining gas reserves estimated at 10.4 billion cubic feet. Total production from the East field as of January 1, 1983 had amounted to 0.7 billion cubic feet, with remaining gas reserves estimated **at** 11.6 billion cubic feet. Deliverability tests in these fields indicate a decline in production capabilities.

Projections of gas requirements to meet heating and electric power demands of the Barrow and NARL systems through the year 2002 were developed by **Coffman** Engineers, Inc. for the North Slope Borough in November 1983. Based on the findings of additional deliverability tests, **Coffman** estimates that peak monthly demand for gas supplies in Barrow will exceed supply by the third quarter of 1991 and that average "annual demand will exceed the available supply by mid 1992. These dates **could** be pushed out another couple of years with the addition of heat recovery equipment. Nevertheless, it is apparent that the remaining life of the Barrow gas fields is limited.

The North Slope Borough has been investigating alternative sources of energy. One option which is currently receiving further study is the possibility of obtaining natural gas from the Prudhoe **Bay/Kuparuk** area, constructing a power plant (probably at **Kuparuk**), and transmitting electric power from the plant to Barrow plus **Nuiqust, Atqasuk** and **Wainwright**. Development of the **Walakpa** gas discovery site near Barrow is another possibility; however, the reserves of this area have not been proven to be sufficient to meet community needs.

A further complicating factor **is the desire** of the **U.S.** Department of the Interior to cease operating the **Barrow** gas fields, a situation of concern to **all** Barrow residents since current rates for gas in the community are highly subsidized. In September 1983, the North **Slope** Borough and the Secretary of the **U.S.** Department of the Interior signed an agreement covering this issue. Subject to **ratification** by the U.S. Congress, the North **Slope** Borough agreed to take over operation of the gas fields on October **1, 1984**. In return, the **U.S.** Department of the Interior agreed not to raise gas prices in the interim, to transfer the actual Barrow gas fields and the **Walakpa** gas discovery site to North **Slope** Borough ownership, to transfer ownership of subsurface gravel resources in these areas to the **Ukpeagvik Inupiat** Corporation (**UIC**) and to pay the Borough a total of \$30 million to **be spent** for the purpose of satisfying the energy demands of North **Slope** Borough residents. Other clauses in this agreement **included** waivers of the National Environmental Protection Act (**NEPA**) regulations for rights-of-way for gas pipelines or the transmission of electricity across federal lands, a clause which **could** be significant if a transmission **line** system is built from the Prudhoe Bay area.

Fuel Storage

Unlike other traditional North **Slope** villages, Barrow does not have to **store large** quantities of fuel for power generation. Instead, **natural** gas is piped directly **to** the power plant and to space heating customers. The primary uses of stored **fuel** in Barrow have been for construction

projects and emergency power generation. Fuel is also stored for use by vehicles and airplanes.

Except for some aviation fuel, all fuel transported to Barrow is shipped by barge during the late summer. Fuel is dispensed to the tank farms via permanent fill lines from the beach. The major fuel distributor in the community is Eskimos Inc., a subsidiary of the Arctic Slope Regional Corporation. It sells fuel to individuals for use in vehicles, as well as bulk fuel to major consumers. Deliveries are made by truck.

There are several major tank farm facilities in Barrow. On State airport property, Wien Air Alaska, Cape Smythe Air Service and the Alaska Department of Transportation and Public Facilities each have associated fuel storage tanks for aviation gas, with only Wien storing any jet fuel.

Eskimos Inc. has two fuel storage tank farms in Barrow, one located in **Browerville** and other in Block "B", south of the airport runway. The **Browerville** tank farm is now used primarily to store gasoline. The tanks here are bermed and lined and in generally good condition. In March 1983, this tank farm included one 330,673 gallon tank of diesel fuel, one **330,673** gallon tank of regular gasoline, and one 145,000 gallon tank of unleaded gasoline. Three additional 25,000 gallon tanks normally used for unleaded gasoline were not filled and **were** possibly moved later in the year.

The Eskimos Inc. Block "B" tank farm is located near the Arctic Slope-Alaska General (ASAG) camp on the south side of the airport runway. In March 1983, this facility contained 14 tanks for storing diesel fuel, aviation gas and gasoline. The tanks are fully contained with berms and liners and are in good physical condition, but the site is not fenced. As of March, this tank farm housed two 350,000 gallon tanks of regular gasoline, two 350,000 gallon tanks of diesel fuel, two 308,377 gallon tanks of diesel fuel, three 49,000 gallon tanks of unleaded gasoline, two 49,000 gallon tanks of diesel fuel and three 49,000 gallon tanks of aviation gas.

The North Slope Borough tank farm, also located in Block "B", contains four recently constructed tanks for the storage of diesel fuel, each with a 250,000 gallon capacity. These tanks are fully bermed and lined and are in good condition, but this site is also not fenced.

Barrow Utilities maintains two 2,000 gallon storage tanks for diesel fuel. These tanks have occasionally been used in the past when work in the gas fields has necessitated switching the power plant over to the use of diesel fuel. Major fuel storage capabilities are maintained at the former NARL base and some fuel storage tanks are also located at the POW-Main DEW Line station.

COMMUNICATIONS

Local telephone service in Barrow is provided by the General Telephone Company of Alaska, with Alascom being responsible for long distance

telephone service (via satellite). Both NARL and the DEW Line station near NARL are served by General Telephone but are also served by the military communications network. General Telephone acquired the Barrow franchise for telephone service in 1966. There were less than 300 telephones in the community in the early 1970's but there has been a rapid expansion in the number of telephones in recent years, an expansion accompanying that of both the North **slope** Borough and the Arctic Slope Regional Corporation.

General Telephone constructed a new central office in **1978**, using digital equipment which eliminated the need for regular telephone operators. The plant is capable of handling over 3,000 telephone numbers if expanded. New underground cables were laid in Barrow and into **Browerville**. There has been some disruption of the underground cable system with construction of the Barrow **utilidor** system, necessitating the temporary construction of some overhead lines. Long distance telephone traffic into and out of Barrow is heavy. A total of 24 outgoing and 18 incoming local trunk lines are dedicated to long distance service. Presently there are more than 2,000 telephones in Barrow, with about 1,100 lines in use.

The **basic** charge for residential telephone service in Barrow is \$16.00 per month **while** that for commercial service is \$23.00 per month. However, there is considerable uncertainty over future local rates for **all** rural telephone systems in Alaska because of the changes now being considered nationally in the proportion of interstate telephone fees which **will** be allocated to the subsidy of local telephone systems,

particularly remote rural systems. The final impact of these changes upon the rates which must be charged by **Alaska** bush systems to consumers for local service will depend on federal legislation and upon regulations of the Federal Communications Commission.

Local telephone services for other North Slope villages are provided by the Arctic Slope Telephone Associated **Co-op, Inc. (ASTAC)**. This non-profit cooperative corporation was organized under State statutes with the encouragement of the Arctic Slope Regional Corporation. **ASTAC's** basic funding has come from the **U.S.** Rural Electrification Administration. In most of the small villages, its switching equipment is housed in facilities which are leased from the North Slope Borough. As part of its plan to provide improved telephone service throughout the North Slope region, **ASTAC** has proposed acquisition of the Barrow local telephone franchise.

Barrow is serviced by a private **TV** cable company which offers a number of channels. Barrow **TV** owners can also receive a State-funded education channel and a State-subsidized bush channel.

The North Slope Borough has instituted several innovative communications systems and has plans to implement other systems which will provide a broadly effective and less expensive alternative to travel of personnel and to other existing message transmission systems. The Borough has already established a manned "bridge" unit in Anchorage capable of handling teleconferencing links both within the Borough and from within the Borough to stations outside the Borough. In addition, the health

clinics in the smaller villages of the North Slope are being linked with the Borough's Health and Social Services Agency administrative offices in Barrow, the Barrow Public Health Service hospital and the Alaska Native Medical Center in Anchorage by a slow-scan TV system which **will** facilitate conferences on health care matters among these stations. The slow-scan system operates via telephone circuits.

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FORECAST METHODOLOGY

This study has attempted to identify and analyze in an integrated manner the major components of socioeconomic systems which structure economic processes in the **Chukchi** Sea region. The descriptive analysis has been provided in a manner which, hopefully, facilitates the development of a methodology for anticipating impacts and changes likely to occur as a result of the proposed Barrow Arch outer continental shelf lease sale, particularly the effects of increased economic activity and employment opportunities in the study area. What follows are suggestions for developing the methodology itself.

When Alaska Consultants, Inc. originally submitted its proposal for this project, it noted with respect to development of a forecast methodology that emphasis would be placed on North Slope Borough revenues which could be expected to accrue "with" and "without" OCS development in the Chukchi Sea area. These "gains" **would** then be viewed in terms of direct community impacts and in terms of subsistence lifestyles and traditional **Inupiat** values. Subsequent study and the fieldwork have sustained the validity of this emphasis upon changes in Borough revenues as an important and appropriate means for measuring the impact of oil industry activities on-the North **Slope generally** and in the **Chukchi** Sea area in particular. North Slope Borough revenues have been the primary factor in providing traditional villages of the North Slope with their new facilities, public services and improved local economies. Industrial development has been concentrated in established enclaves remote from the region's villages. The scenario currently envisaged by the Minerals

Management Service **for** petroleum development in the **Chukchi** Sea area **calls** for similar industrial enclaves, although located physically **closer** to **Wainwright** and Barrow than the **Prudhoe** Bay area development **is** to Kaktovik or **Nuiqsut**.

Direct participation of North Slope **Inupiat** residents in oil and gas-related activities has thus far been minimal. **In** the opinion of the Institute **for** Social and Economic Research (September 1983), "OCS development in general ... **is likely** to have relatively little effect upon **Inupiat** employment in the oil industry". Given the form of oil industry development anticipated for the **Chukchi** Sea area and noting the low probability of any major change in the degree of **Inupiat** employment in the industry, it is believed that the **flow** of revenues into the Borough coffers remains the most significant factor to be assessed and forecasted insofar as economic impacts of **oil** industry upon **Inupiat** life are concerned.

Projections of Borough property tax revenues do not hinge so much on forecasts of total assessed property values for the petroleum industry within the North Slope Borough's tax jurisdiction as they do on anticipating the impact of State-imposed restrictions which either directly or indirectly **limit the total** tax revenues which the Borough may collect. Such State-imposed restrictions now **limit** the **total** property taxes which **can** be collected per capita for Borough **operating** purposes and efforts are being made to **limit** the Borough's revenues for **capital** improvements purposes.

In addition to State-imposed limitations on the Borough's capability to manage its tax revenues, consideration also needs to be given to the Borough's ability to **sell** its bonds on the open market. The Borough's total outstanding bonded indebtedness and the rate at which it sells its bonds have a direct relationship to the bond rating bureaus' appraisal of the Borough's credit condition. (In making their credit appraisals, the rating bureaus are most certainly aware of the impact of State-imposed restrictions on the Borough's revenue raising capabilities and are sensitive to any efforts to impose more restrictive laws and regulations).

Assessment of socioeconomic change at the village level is severely handicapped by the absence of any system other than the U.S. Census for the regular measurement of phenomena. The State's system for measuring the **labor** force and employment does not provide detailed data at the village level, nor does **it** provide employment data by industry classification which shows the distribution of the workforce within the region. Further, the State system does not disclose any information as to resident participation, particularly that for **Inupiat**s. This situation necessitates the establishment of some consistent system for regular surveys of those conditions in each village which has been identified as being particularly sensitive to the impact of petroleum industry activities.

From an economic viewpoint, it is believed that the measurement of village employment is vitally important. Measurements in terms of

average **annual** full-time job equivalents provide the **best** insight into the average **Inupiat** family's annual cash receipts.

When employment surveys are being **made**, changes in **the** villages' physical plant, in **levels** of public service and in costs of household operation can also be noted. The North Slope Borough has been taking regular **annual** censuses of village populations (except for Barrow). If continued, these will provide **annual checks** on total population. Furthermore, these Borough censuses could be made more comprehensive in certain years to provide information as to changes in the composition **of** village populations.

Changes **in** income, population, physical plant and services can be measured in discrete units -- dollars, people, buildings, gallons of water, condition and **length** of roads -- but measurement of sociological change becomes much more subjective. What standards should be used in appraising the impact of additional personal income (whether derived from Borough spending or from participation in **oil** industry activities), of changing demands upon workers' time, of new facilities and homes, of **larger** populations, of changes in the composition of the population? Present community **values** (values shared by the entire **Inupiat** society), can serve as standards. **Although** community values are subject to change as the community grows, as the composition of the population changes and as economic opportunities vary, community values evolve **slowly** and are the **cultural** characteristics **least** susceptible to change. The **1983** field interviews confirmed that the present **Inupiat value** system remains oriented to the subsistence or **land** use of the surrounding environment

(and to associated kinship ties, sharing networks and cooperative hunting and fishing activities). It is believed that the significance of village change can be measured in terms of the opportunities which village residents have to realize their **Inupiat** objectives.

The present **Inupiat** subsistence economy is cash reliant, a reliance which has intensified as changes in hunting technologies, particularly in modes of transportation, have occurred over the past twenty years. Conflicts in use of time between work and subsistence pursuits are presently being resolved by evening and week-end hunting, by taking advantage of generous leave time provisions (paid or otherwise) and by capitalizing on the availability of temporary construction work. The present success of this dual cash/subsistence economy is dependent on the availability of well-paying local jobs. The **Inupiat**s are investing significant sums of money in adapting Western technology to achieve their subsistence lifestyles. It **will** be useful to observe how changes in personal income, in the availability of **local** versus remote employment opportunities, and in the utilization of technology influence the subsistence harvest effort.

Changes in subsistence land use patterns may reflect changes in **village** socioeconomic conditions and may also provide **clues to** more slowly changing **Inupiat** values. There are four variables pertinent to present subsistence land use patterns: maximum use **areas**, intensive use areas, harvest quantity and species availability. Maximum and intensive use areas **relate** to areas used by active hunters. The maximum use areas delineate the harvest areas for given species in the hunter's lifetime,

while the Intensive use areas represent the areas which the **hunter** has used **during the** past five **years**. Both **of** these **areal** boundaries are available: the maximum use area is on a time **scale** of generations, and intensive use areas vary from year to year. Land use evolves over time in reaction to physical changes, e.g. weather and ice conditions in reaction to biological changes (relative species abundance) and to sociological changes (settlement patterns, hunting techniques and changes in regulations).

Fieldwork conducted in the summer of **1983** documented present use areas for this report. Species availability **is** known in general terms. However, few data exist on present quantities of wildlife resources harvested in the study area. Periodic measurement of **all** of these variables **would** facilitate the forecasting and measurement of change.

To a large extent, species availability dictates area use patterns. As a species becomes more or less abundant, the cultural **value placed** on that species **will** vary. For example, after the establishment **of** a **limit** on the harvest of **bowhead whale**, the **Inupiat value** of whale meat and **muktuk** has increased. Caribou, now common in the study area, have replaced the seal (possibly on a temporary basis **only**) as the mainstay of the local diet. The fluctuating **nature of all wildlife** resources, **as well** as the variable **nature** of hunter access **due** to physical **conditions**, requires flexibility on the part of **the** subsistence **user**. Long-term fluctuations in **wildlife** populations are not predictable. Therefore, continued **re-appraisal** of hunting patterns is necessary if accurate forecasts are to be made.

In summary, the development of a methodology for forecasting socioeconomic change in the **Chukchi** Sea area is dependent on the establishment of reliable baseline information which should be periodically updated so that changes can be monitored, the reasons for those changes evaluated, and their probable impact on the region and its people assessed. Much of this baseline information is currently either not available or is available only to a limited degree.

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This report provides a description of the socioeconomic structure of Barrow, **Nuiqsut**, Kaktovik and the North Slope region, including Prudhoe **Bay**. It contains comprehensive analyses of population and economic data plus **local** facilities and services for the North Slope region generally, the **Prudhoe** Bay industrial area and Barrow, **Nuiqsut** and **Kaktovik**. Also included is a broad overview of the traditional culture of the North Slope region and recent modifications to that culture.

Alaska Consultants, Inc. 1978a. Alaska OCS Socioeconomic Studies Program: Beaufort Sea Region - Man-Made Environment. Prepared for Peat, Marwick, Mitchell and Co. under the sponsorship of the U.S. Department of the Interior, Bureau of Land Management, Alaska Outer Continental Shelf Office. Technical Report No. 8.

This report contains a description of the man-made environment of the **Beaufort** Sea region generally and of Barrow, Kaktovik, **Wainwright** and **Nuiqsut** in particular. An outline of the population and economy, selected community facilities and services, and **local** government organization is provided for the region, **plus** an indication of inter-regional and inter-community ties. Similar information is provided in detail for the communities. For **Wainwright** and **Nuiqsut**, additional information on **land** use, land status, utilities and transportation facilities and services is **also** included.

Alaska Consultants, Inc. 1978b. Alaska OCS Socioeconomic Studies Program: Beaufort Sea Petroleum Development Scenarios - Man-Made Environment Impacts. Prepared for Peat, Marwick, Mitchell and Co. under the sponsorship of the U.S. Department of the Interior, Bureau of Land Management, **Alaska** Outer Continental Shelf Office. Technical Report No. 19.

This report evaluates the impact of Outer Continental **Shelf** (OCS) development on the man-made environment in Barrow, Kaktovik, **Nuiqsut**

and **Wainwright**. Projections of population and employment were made under a **non-OCS** and four OCS scenarios. After estimating probable future community needs in a **non-OCS** case and taking Borough capital improvement **plans** into account, the added impact which each OCS scenario **could be expected** to have on **population** and employment, community facilities' and services, **plus Borough** finances, **was** calculated.

Alaska Consultants, Inc. September **1980**. North Slope Borough Housing Survey. Anchorage, Alaska.

This document presents the findings of a 100 percent survey conducted in **1980** of households in **all** eight North **Slope** Borough traditional villages. The data collected covered a profile of the respondents, housing preferences and existing housing conditions.

Alaska Consultants, Inc. **1983a**. Background for Planning: **Atkasuk**. Anchorage, Alaska.

This report, one volume in a series of nine prepared for each village in the North **Slope** Borough, is based on data collected in **1982** and **1983**. It was written as a **tool** for comprehensive planning in **Atkasuk**. Information is provided on the **local** population and economy, **land** use, community facilities and transportation services, as well as a description of the **village's** history, physical setting and climate.

Alaska Consultants, Inc. **1983b**. Background for Planning: Barrow. Anchorage, Alaska.

This report, one **volume** in a series of nine prepared for each village in the North **Slope** Borough, is based on data collected in 1982 and 1983. It was written as a **tool** for comprehensive planning in Barrow. Information is provided on the **local** population and economy, land use, community facilities and transportation services, as **well** as a description of the village's history, physical setting and climate.

Alaska Consultants, Inc. **1983c**. Background for Planning: Point Hope. Anchorage, Alaska.

This report, one volume in a series of nine prepared for each village in the North Slope Borough, is based on data collected in **1982** and 1983. It was written as a **tool** for comprehensive planning in Point Hope. Information is provided on the **local** population and economy; **land** use, community facilities and transportation services, as **well** as a description of the village's history, physical setting **and** climate.

Alaska Consultants, Inc. **1983d**. Background for Planning: Point Lay. Anchorage, Alaska.

This report, one volume in a series of nine prepared for **each** village in the North **Slope** Borough, is based on data collected in **1982** and **1983**. It was written as a **tool** for comprehensive planning in **Point** Lay. Information is provided on the local population and economy,

- land use, community facilities and transportation services, as well as a description of the village's history, physical setting and climate.

Alaska Consultants, Inc. **1983e**. Background for Planning: **Wainwright**. Anchorage, Alaska.

- This report, one **volume** in a series of nine prepared for each village in the North Slope Borough, is based on data collected in 1982 and **1983**. It was written **as** a tool for comprehensive planning in **Wainwright**. Information is provided on the local population and economy, land use, community facilities and transportation services, as well as a description of the village's history, physical setting and climate.

- Alaska Consultants, Inc. and Stephen R. Braund and Associates. 1984. Subsistence Study of Alaska Eskimo Bowhead Whaling Villages. Prepared for the U.S. Department of the Interior. Anchorage, Alaska.

- This study was conducted in response to questions raised by the International Whaling Commission on the cultural importance of bowhead whaling to Alaska Eskimos. The survey included a profile of respondents, experience and qualifications of whaling captains and crew members, meats eaten and meat preferences, as well as questions regarding the potential for substitution of the bowhead whale. The survey was conducted in 1982 in the bowhead whaling villages of **Savoonga, Gambell, Wales, Kivalina, Point Hope, Wainwright, Barrow, Nuiqsut and Kaktovik**.

Alaska Department of Labor, Research and Analysis, Population Studies. 1982. Special Census Results for Oil-Related Worksites in the North Slope Borough. Juneau, Alaska. Special Report No. 82-4.

- This report summarizes the results of a special State-supervised census in the Prudhoe Bay/Deadhorse/Kuparuk and Pipeline corridor area in January/February 1982. It provides information in tabular form **on** "normal" residence of workers in these areas by State and, within Alaska, by census division. It also provides information on the number of males and females at oil-related worksites, the number of persons by type of camp and **1980** Census-defined residency status.

Burch, Ernest S., Jr. 1981. The Traditional Eskimo Hunters of Point Hope, Alaska: 1800-1875. North Slope Borough. Barrow, Alaska.

- Based on data collected by a number of **ethnographers** from 1959 through 1978, this book presents a model of traditional Point Hope land use. The data were obtained from Point Hope residents 65 to **105** years after the study period had ended. Subsistence uses and **land use areas, as well as annual** subsistence cycles, are discussed. Also **included is a** description of the history of the Point Hope people.

- **Coffman Engineers, Inc.** April 1983. Barrow Energy Study. Anchorage, Alaska.

This study was commissioned by the North Slope Borough to evaluate the Barrow gas fields, to assess their ability to meet future energy requirements for the Barrow area and to determine economic impacts of North Slope Borough ownership of the gas fields. It also makes a survey of the Barrow gas fields and describes how they may impact Barrow's future needs for energy and the Barrow area economically.

Galginaitis, Michael et al. August 1983. Alaska OCS Socioeconomic Studies Program: Ethnographic Study and Monitoring Methodology of Contemporary Economic Growth, Sociocultural Change and Community Development in Nuiqsut, Alaska. State University of New York at Binghamton. Prepared for the U.S. Department of the Interior, Minerals Management Service, Alaska Outer Continental Shelf Office. Draft final report.

This ethnographic study presents the findings of fieldwork conducted during the fall and winter of 1982-83 in Nuiqsut, Alaska. The text includes a discussion of the interrelationship of the cash and subsistence economy, socio-political structures, values and social wellbeing as well as a history of Nuiqsut and a framework for assessing sociocultural/socioeconomic change.

Ivie, Pamela and William Schneider. 1979. Wainwright Synopsis. In: Native Livelihood and Dependence: A Study of Land Use Values Through Time. Prepared by the North Slope Borough Contract Staff. U.S. Department of the Interior, National Petroleum Reserve in Alaska 105(c) Land Use Study. Anchorage, Alaska.

In 1976 and 1977, Ivie and Schneider worked with residents of the Wainwright area who were knowledgeable about past and present land use and subsistence practices in that area. This report presents information on the annual subsistence cycle, land use patterns, subsistence activities, land use mapping and history of the area, as well as a description of historic sites in the Wainwright area.

John Muir Institute, Inc. 1983. Alaska OCS Socioeconomic Studies Program: Final Report of the Ethnographic Baseline: Wainwright. Prepared for the U.S. Department of the Interior, Minerals Management Service, Alaska Outer Continental Shelf Office. Technical Memorandum BSI-4.

This study, based on data collected in 1982, provides a framework for estimating the impact of harvest disruptions of naturally occurring subsistence resources caused by Outer Continental Shelf oil and gas development on the local economy, social structure and culture of Wainwright. Included is detailed information on subsistence resources harvested in the Wainwright area.

Kleinfeld, Judith et al. 1981. Different Paths of Inupiat Men and Women in the Wage Economy: The North Slope Experience. Man in the Arctic Program. Monograph No. 2. Institute of Social and Economic Research. University of Alaska, Anchorage.

In 1977, the University of Alaska's Institute of Social and Economic Research conducted a survey in six villages in the North Slope Borough. This volume is one of a series of four which came out of that survey. The study examines the responses of North Slope **Inupiat** to increased employment opportunities through the creation of the North Slope Borough and oil and gas development. Discussions include the general effects of new job opportunities on the North Slope Borough's **Inupiat** population, their participation in the labor force and particular adaptations to the wage economy.

Kruse, John A. 1982. Subsistence and the North Slope **Inupiat**: The Effects of Energy Development. Man in the Arctic Program. Monograph No. 4. Institute of Social and Economic Research. University of Alaska, Anchorage.

In 1977, the University of Alaska's Institute of Social and Economic Research conducted a survey in six villages in the North Slope Borough. This report, the last volume in a series of four, is centered around questions of whether energy development has reduced the economic and social roles played by subsistence activities of the North Slope **Inupiat**.

Kruse, John A., Judith Kleinfeld and Robert Travis. 1982. Energy Development on Alaska's North Slope: Effects on the Inupiat Population. Human Organization. Volume 41, Number 2, pp. 97-106.

This article examines the effects of **oil** development at Prudhoe Bay on the **Inupiat** population of Alaska's North Slope. It includes information on social and economic impacts of energy development on **Inupiat** individuals and households based on a survey conducted in six villages in the North Slope Borough in 1977.

Kruse, John A. et al. 1981. Energy Development and the North Slope **Inupiat**: Quantitative Analysis of Social and Economic Change. Man in the Arctic Program. Monograph No. 1. Institute of Social and Economic Research. University of Alaska, Anchorage.

One of four volumes, this report presents the findings of a survey conducted in six villages in the North Slope Borough in 1977 by the University of Alaska's Institute of Social and Economic Research. Analysis and interpretation of the findings are presented in other volumes. This volume concentrates on profiles of the **Inupiat** population, employment, income, hunting, fishing and village life.

Lowenstein, Tom. 1981. Some Aspects of Sea Ice Subsistence Hunting in Point Hope, Alaska. A Report for the North Slope Borough's Coastal Zone Management Plan. Barrow, Alaska.

In this document, Lowenstein presents patterns of sea and sea ice subsistence hunting among the Point Hope people from the turn of the century to the present. Subsistence use maps are given for each species, as well as a discussion of the annual subsistence cycle. Particular attention is placed on bowhead whale hunting and beliefs and ceremonies surrounding the whale **hunt**.

McBeath, Gerald A. and Thomas Morehouse. 1980. The Dynamics of Alaska Native Self-Government. Lanham, Maryland. University Press of America.

This study assesses Alaska Native self-government **within** the context of American politics. Considerable attention is given to the development of **Native** leadership, the development of a Native **land claims** movement in Alaska and the formation and experiences **of** the North Slope Borough.

Maynard and **Partch/Woodward-Clyde** Consultants. 1983. Review Draft, North **Slope** Borough Coastal Management Program: Background Report. Anchorage, Alaska.

This document presents background information **for** the North Slope Borough's coastal management program. It includes information on coastal area boundaries, coastal resource use, subsistence activities, village growth, industrial development, and biological, physical and socioeconomic conditions. It also identifies coastal management issues in the North **Slope** Borough and areas meriting special attention, and describes implementation procedures.

Milan, Frederick A. 1964. The Acculturation of the Contemporary Eskimo of **Wainwright**, Alaska. Anthropological Papers of the University of Alaska. Volume **11**, Number **2**.

Based on fieldwork conducted in **1955**, this study describes **Wainwright** village life and assesses acculturation resulting from contact with Western society. Topics included are a history of the area, a description of the population, and discussions of the **annual** subsistence cycle, government and economy.

Municipal Finance Officers **Association**, Government Finance Research Center. 1983. A Review of Debt Capacity and Debt Management for the State of Alaska. Report to the Legislative **Budget** and Audit Committee, State **of Alaska** Legislature. Washington, D. C.

This document reviews debt capacity and debt management for the State of Alaska. Included are discussions **of** the national tax-exempt municipal bond market and the bond issuance process: a profile **of** Alaska's outstanding debt; market performance and reception of State general obligation bonds; and analyses of the market performance and management of **local government debt**.

Naylor, Larry L. and Lawrence A. Gooding. 1978. Alaska Native Hire on the Trans-Alaska Oil Pipeline Project. Alaska **Review of Social** and Economic Conditions. Volume **15**, Number **1**.

This paper presents detailed information on **Alaska** Natives employed on the Trans.-Alaska **Oil** Pipeline project. Statistical information on the sex, ethnic group, regional group, village or town, **age, job levels**, type of employment, length of employment and reasons for **job** termination are provided for Natives employed on the Pipeline project.

Nelson, Richard K. 1969. Hunters of the Northern Ice. University of Chicago Press. Chicago, Illinois.

Nelson spent the winter of 1964-65 and the summer of 1966 at **Wainwright** studying the local Eskimo culture, with particular emphasis on their hunting techniques and the culture surrounding hunting. Also included is a detailed account of Eskimo life in **Wainwright**.

Nelson, Richard K. 1982. Harvest of the Sea: Coastal Subsistence In Modern **Wainwright**. Report of the North Slope Borough's Coastal Management Program. North Slope Borough. Barrow, Alaska.

This report summarizes the **Wainwright Inupiat** way of life, with a focus on marine subsistence, coastal uses and activities in the **Wainwright** region. The data were collected during periods of fieldwork from 1964 to 1981. Included are subsistence use maps and a detailed discussion of each marine resource.

Peat, Marwick, Mitchell and Co. 1978. **Alaska** OCS Socioeconomic Studies Program: Beaufort Sea Region Socioeconomic Baseline. Prepared for the U.S. Department of the Interior, Bureau of Land Management, Alaska Outer Continental Shelf Office. Technical Report No.

This report combines baseline information work undertaken between 1976 and 1978 by Alaska Consultants, Inc., CCC/HOK, Worl Associates and Dames and Moore to provide a basis upon which to project socioeconomic impacts of petroleum development on Beaufort Sea region villages. Villages described in detail in this study are **Wainwright**, Barrow, **Nuiqsut** and Kaktovik.

Pedersen, Sverre. 1979a. Regional Subsistence Land Use, North Slope Borough, Alaska. Anthropology and Historic Preservation Cooperative Park Studies Unit. University of Alaska, Fairbanks, Alaska and Conservation and Environmental Protection, North Slope Borough, Barrow, Alaska.

This document is a set of maps on a scale of 1:1,000,000 which synthesize information gathered on subsistence land use areas in the North Slope Borough.

Pedersen, **Sverre. 1979b.** Point Hope Synopsis. In: Native Livelihood and Dependence: A Study of Land Use Values Through Time. U.S. - Department of the Interior, National Petroleum Reserve in Alaska 105(c) Land Use Study. Anchorage, Alaska.

Since 1971, **Pedersen** has been working with residents in Point Hope who were knowledgeable about past and present land use and subsistence practices in the Point Hope area. Information is presented on the annual subsistence cycle, land use patterns, subsistence activities, land use mapping and history of the area, as well as a description of historic sites.

Schneider, **William** and **Ralph** Bennett. 1979. Point Lay Synopsis. In: Native Livelihood and **Dependence: A Study of Land Use Values Through Time.** U.S. Department of the Interior, National Petroleum Reserve in Alaska 105(c) Land Use Study. Anchorage, Alaska.

Schneider and Bennett began this research in the Point Lay area in **1977.** They worked with Point Lay residents who were knowledgeable about past and present land use and subsistence practices in the Point Lay area. This report presents information on the **annual subsistence cycle,** land use patterns, subsistence activities, land use mapping and history of the area, as **well** as a description of historic sites in **the** Point Lay area.

Schneider, William, **Sverre** Pedersen and David **Libbey.** 1980. The Barrow - **Atqasuk** Report. A Study of Land Use Values Through Time. Anthropology and Historic Preservation. Cooperative Park Studies Unit and North Slope Borough. Occasional Paper 24. University of Alaska, Fairbanks.

Schneider, Pedersen and **Libbey** combined **their** expertise with information gathered from residents in the **Barrow-Atqasuk** area to determine subsistence land use and annual subsistence cycles. Included is background information on the area, its history and its people. A description of historic sites is **also** provided.

University of Alaska, Institute of **Social** and Economic Research. 1983. **Alaska** OCS Socioeconomic **Studies** Program: A Description of the Socioeconomic of the North Slope Borough. Prepared **for** the **U.S.** Department of the Interior, Minerals Management Service, **Alaska** Outer Continental **Shelf** Office. Technical Report No. 85.

This report describes current and projected economic and social conditions within the North Slope Borough. Included is an analytical framework for assessing changes in socioeconomic conditions **due** to Outer Continental **Shelf** development in the **Diapir** Field Lease Area, **Sale** 87. Topics include analyses of North **Slope** Borough revenues and expenditures, **Inupiat** employment and **Inupiat** perceptions of potential threats to subsistence resources posed by petroleum development. A general discussion **of** resource use is also included.

VanStone, James W. 1962. Point Hope: An Eskimo Village in Transition. University of Washington **Press.** Seattle.

One of the earliest ethnographic descriptions of Alaska Eskimos, this book provides a detailed description of village **life** in Point Hope. The fieldwork was conducted from **1955** to **1966.** In this book, VanStone describes the seasonal subsistence **cycle,** housing, the life cycle of villagers, social structure, community **life,** village economy and religion of the Point Hope **people** as **it** existed in **1955.**

Wickersham and **Flavin.** 1983. Comprehensive **Plan:** North **Slope** Borough. Anchorage, Alaska.

The comprehensive plan serves as a decision making tool for the North Slope Borough and contains policy bases for land use decisions. Issues covered include subsistence and biological resources, land status, cultural and historic resources and socioeconomic development factors, transportation, government, and petroleum and mineral development.

Worl, Robert, Rosita **Worl**, and Tom Lonner. 1981. Alaska OCS Socioeconomic Studies Program: Beaufort Sea **Sociocultural** Systems Update Analysis. Prepared for the U.S. Department of the Interior, Bureau of Land Management, Alaska Outer Continental Shelf Office. Technical Report Number 64.

Utilizing previously collected information, this study presents an updated analysis of contemporary conditions in the **sociocultural** systems of Barrow and **Nuiqsut**. Discussion centers on their social organization, the cultural system, political institutional systems and village/regional institutions.

Worl Associates. 1978a. Alaska OCS Socioeconomic Studies Program: Beaufort Sea **Sociocultural** Systems. Prepared for Peat, Marwick, Mitchell and Co. under the sponsorship of the U.S. Department of the Interior, Bureau of Land Management, Alaska Outer Continental Shelf Office. Technical Report Number 9.

This report presents a description and analysis of the **sociocultural** dynamics of the Beaufort Sea region. The analyses are based on data collected on political structures, subsistence issues and patterns and inter-ethnic relations. A description of the history of the **Inupiat** from the aboriginal to the contemporary period is also provided.

Worl Associates. 1978. Alaska OCS Socioeconomic Studies Program: Assessment of Change in the North Slope, Beaufort Sea **Region: Sociocultural** Systems. Prepared for Peat, Marwick, Mitchell and Co. under the sponsorship of the U.S. Department of the Interior, Bureau of Land Management, Alaska Outer Continental Shelf Office. Technical Report Number 22.

This report analyzes the overall effects of offshore petroleum development on traditional values and **sociocultural** systems in the Beaufort Sea region to ascertain if the **Inupiat** can integrate modernizing influences without significant disruptions of their **sociocultural** system.

B. OTHER REFERENCES RELEVANT TO STUDY

Brøsted, Jens. 1975. **Ulgunik**. A Report on Integration and Village Organization in Alaska. Copenhagen, Denmark.

Prepared in **1973-74** to give the government of Greenland a view of an Alaska Eskimo village, this report includes a description of village

political organization, the natural environment, the village and its population.

Brewer, Charles D. 1963. Fifty Years Below Zero. **Dodd, Mead, and Co.** New York, New York.

Brewer originally arrived in Barrow as a commercial whaler in the late 19th century. This book is based on a journal kept throughout his lifetime in the Arctic. Information on bowhead whaling and Eskimo life in the Barrow area is included.

Burch, Ernest S., Jr. 1971. The Nonempirical Environment of the-Arctic Alaskan Eskimos. Southwestern Journal of Anthropology. Volume 27, Number 2, pp. 148-155.

On the basis of a decade of research on the Arctic Inupiat, Burch has written this article which describes Inupiat world view and belief systems.

Burch, Ernest S., Jr. 1975. Eskimo Kinsmen: Changing Family Relationships in Northwest Alaska. West Publishing Co. New York.

The research for this book is based on periods of fieldwork from 1960-1971 in ten Inupiat communities. The most definitive analysis of Inupiat kinship to date, this book describes and analyzes marital relationships, other-generation relationships, same-generation relationships, strategies of affiliation and patterns of affiliation.

Burch, Ernest S., Jr. and Thomas C. Correll. 1971. Alliance and Conflict: Inter-Regional Relations in North Alaska. In: Alliance in Eskimo Society. Lee Guemple, ed. Proceedings of the American Ethnological Society, 1971 Supplement.

This paper is an analysis of inter-regional relations in aboriginal North Alaska, with special emphasis on alliance mechanisms utilized by Alaska Natives to bridge the social gaps between regional groups.

Chance, Norman. 1960. Culture Change and Integration: An Eskimo Example. American Anthropologist. Volume 62, pp. 1028-1044.

This article is based on fieldwork conducted by Chance in the summer of 1958. The purpose of the research was to assess any changes which may have occurred in Kaktovik during the twelve years since an influx of whites into the area. Such aspects as changes in subsistence hunting and fishing activities, construction of community facilities, and social wellbeing were noted.

Chance, Norman. 1964. The Changing World of Government Among the North Alaskan Eskimos. Arctic Anthropology. Volume 2, Number 2, pp. 41-44.

This brief article is based on Chance's research in Kaktovik in 1958. Briefly described are the changes in government which Kaktovik Inupiat were then experiencing.

Chance, Norman. 1965. Acculturation, Self-Identification and Personality Adjustment. American Anthropologist. Volume 67, pp. 373-392.

The primary interest of this study, begun in 1958, was to determine the effect of rapid acculturation on self-identification and personality adjustment. A questionnaire, the Cornell Medical **Index**, was the instrument chosen to measure personality adjustment.

Chance, Norman. 1966. The Eskimo of North Alaska. **Holt**, Rinehart and Winston. New York, New York.

This book is a case study, based on research conducted from 1958 through the mid-sixties, of the modern North Alaska Eskimo. The setting in which they live and a history of their past is provided. Chance describes typical village life, **child** rearing, the **annual** subsistence **cycle**, cultural values and cultural change.

Coffman Engineers, Inc. 1983. North Slope Borough Energy Plan. North Slope Borough. Anchorage, Alaska.

The North Slope Borough Energy Plan grew out of the Barrow Energy Study which indicated that **local** gas resources would soon be depleted and a framework for finding regional solutions to local energy problems was instead sought. The Borough energy **plan** projects local energy demands; examines, evaluates and analyzes resource options; compares the more feasible options; and makes recommendations for a Borough energy program.

Draper, H. H., **F.A. Milan et al.** 1979. Report of the Nutrition Panel for the Aboriginal/Subsistence Whaling **Panel**. Meetings of the International Whaling Commission, 5-9 February 1979.

This article presents the issues surrounding bowhead whaling and discusses research on the nutritional values of Alaska Native foods.

Dumond, D. E. 1977. The Eskimos and **Aleuts**. Thames and Hudson. London.

In this book **Dumond** presents the aboriginal history of Alaska Eskimos and **Aleuts**. Included is a summary of early expeditions to the Arctic, a description of the physical environment, and a brief description of the **Eskimos/Aleuts and** their languages. -

Foote, Don and **H.A. Williamson.** 1966. A Human Geographical Study. In: Environment of the Cape Thompson Region, Alaska. United States Atomic Energy Commission. Washington, D.C. U.S. Government Printing Office. pp. 1041-1107.

The text is a chapter in a document prepared for the U.S. Atomic Energy Commission for Project Chariot. Started in 1958, the purpose of Project Chariot was to investigate problems and begin development of a nuclear excavation of an experimental harbor at the mouth of **Ogotoruk** Creek near Cape Thompson. The text is one of the

bio-environmental studies for the Project **which** was eventually suspended in 1962. The human geographic studies **deal** with the inhabitants of the region including the **Tigaraqmiut, Kivalingmiut, Naupaktomiut** and **Moatagmiut**. A description of their history and seasonal and subsistence activities from 1959-1961 is included.

Ford, James A. 1959. Eskimo **Prehistory** in the Vicinity of Point Barrow, Alaska. Anthropological Papers of the American Museum of Natural History. Volume 47, Part 1. New York, New York.

Ford conducted archeological **excavations** in Barrow, beginning in **1932**, after spending many years in the Arctic, primarily on the North-Slope. This book documents the artifacts excavated in the Barrow area. Summaries of other archeological expeditions and Eskimo **pre-history** are also included.

Giddings, J. Louis. 1967. Ancient Men **of** the Arctic. Alfred A. Knopf. New York.

From **1948** through 1964 **Giddings** conducted archeological expeditions in Alaska. **Major** excavations included those carried out in Point Hope, Cape Krusenstern, St. Lawrence Island, Onion Portage and Ambler **Island**. This book is a compilation of Giddings' major findings.

Guemple, Lee, ed. **1972.** Alliance in Eskimo Society. Proceedings of the American Ethnological Society, **1971**, Supplement. Washington Press. Seattle.

The papers assembled in this volume are the outgrowth of a symposium held in **1971**. These papers describe **and** analyze kinship and non-kinship usages which operate as alliances in Eskimo society.

Kleinfeld, Judith and Jack Kruse. **1977.** High School Views of North Slope Borough Students. Institute of **Social** and Economic Research, University of Alaska, Fairbanks.

Based on a survey conducted in **1977**, this document explores what Barrow high **school** students wanted from their high school education. **Areas** examined were: job and lifestyle **plans** and students' feelings of competency in pursuing these **plans**; curriculum priorities; interest **in** non-traditional high school education; and problems in the present high school programs.

Lantis, Margaret. **1947.** Alaskan Eskimo Ceremonialism. J.J. Augustin Publishers. New York, New York.

This book documents Alaska Eskimo ceremonialism, both religious and non-religious. **All** culture groups are included, with regional distinctions made where necessary. Ceremonies are described and analyzed on the basis of their content and function.

Lantis, Margaret. **1959.** Alaskan Eskimo Cultural Values. **Polar Notes.** Volume 1, pp 35-48.

Lantis' earlier work with the **Nunivak** Eskimos in the early **1950's** provided the data for this analysis of Alaska Eskimo cultural values. This article attempts to demonstrate the interrelationship of cultural behavior, cultural values and personality.

Larsen, **Helge** and **Froelich Rainey**. 1948. **Ipiutak** and the Arctic Whale Hunting Culture. Anthropological Papers of the American Museum of Natural History. Volume 42. New York.

Archeologists Larsen and Rainey, accompanied by **J. Louis Giddings**, made important archeological finds in the Point Hope area during 1939-42. The discovery of the **Ipiutak** culture dated man's presence in Arctic Alaska to **pre-historic** times. In addition to extensive information on the culture and artifacts found at the sites, a general account of **Nunatarmiut** history is presented.

MacLean, Bryan, et al. 1971. Point Hope Project Report. University of Alaska. Funded by the National Science Foundation Division of Student Originated Studies, Grant No. 2 Dec **1/Y50-4603**.

Written by a group of students, this report is based on field data collected in **1971**. The topics covered are varied and not necessarily integrated. These include a description of resource utilization, moose range analysis, pesticides analysis and a description of Point Hope's physical environment.

Murdoch, J. 1892. Ethnological Results of the Point Barrow Expedition. Ninth Annual Report of the U.S. Bureau of Ethnology, 1887-88. Washington, D.C. U.S. Government Printing Office.

Murdoch was a naturalist and observer on the International **Polar** Expedition to Point Barrow in 1881-1883. Murdoch's text includes information on the people, natural resources and culture and is illustrated with numerous drawings of artifacts.

Nelson, Richard K. 1973. Hunters of the Northern Forest. University of Chicago Press. Chicago, Illinois.

This study is based on a year's field research in 1969-1970 among the Kutchin and **Koyukon** Indians. The book focuses upon their knowledge and techniques associated with hunting, fishing, trapping and general survival as they relate to their adaptive skills in living in a marginal environment. Included is a chapter on **problems** in adaptation with a comparative discussion of Eskimo and **Athabaskan** cultures.

Oswalt, Wendell H. 1976. Alaskan Eskimos. Chandler Publishing Company. San Francisco.

This is a comprehensive description of the various Eskimo groups in Alaska. **Topics** covered include discussions of the **population**, cultural and linguistic boundaries, the environment, physiology, settlement patterns, subsistence, **clothing**, technology, community patterns, child rearing, kinship and **religious** patterns.

Porter, Robert P., ed. 1893. Report on Population and Resources of **Alaska** at the Eleventh Census: **1890**. Department of the Interior, Census Office, Washington, D.C.

In addition to providing Census data for **1890**, this volume includes miscellaneous **ethnographic** information regarding the population, lifestyle and culture of the North **Slope** and other Alaska **regions**.

Rainey, Froelich G. 1947. The **Whale Hunters of Tigara**. Anthropology Papers of the American Museum of Natural History. **Volume 41**, Number **2**. New York.

In 1939-42, archeologists **Rainey** and Larsen conducted major excavations in the Point Hope area and discovered the **Ipiutak** culture. After spending a winter in Point **Hope (Tigara)**, **Rainey** wrote this **article** describing village life with a **particular emphasis** on the annual subsistence **cycle**.

Ray, **P.H. 1885.** Report of the International Polar Expedition to Point Barrow, Alaska. U. S. Government Printing Office. Washington, D.C.

The purpose of this **1881** expedition to Point Barrow was to establish a permanent U.S. station to gather meteorological information. In addition, Ray has provided an ethnographic sketch of the Natives of Point Barrow, including a vocabulary and a list of ethnological specimens collected.

Rollins, **Alden M.**, compiler. **1978.** Census Alaska: Numbers of Inhabitants, 1792-1970. University of Alaska-Anchorage Library. Anchorage, Alaska.

This is a compilation of Alaska census data from 1792 to 1970.

Shinkwin, Anne and the North **Slope** Borough Planning Department. 1978. **A Preservation Plan for Tigara** Village. North Slope Borough Commission on History and Culture. Barrow, Alaska.

This report summarizes the setting of the Point Hope area and the history of previous anthropological investigations and their findings. Fieldwork, undertaken in **1977**, was focused on the remains of Tigara Village which had been abandoned in **1977** for the new Point Hope townsite 2 miles to the east. The relocation resulted in the abandonment of a number of historic dwellings. The main purpose of the fieldwork was to determine the village's feelings about potential **cultural** preservation efforts for **Old Tigara** and for **older** archeological resources in the area.

Sonnenfield, J. 1959. Changes in Subsistence Among the Barrow Eskimo. Unpublished **Ph.D.** Thesis. Johns Hopkins University. Baltimore, Maryland.

Sonnenfield spent mid-May through mid-September **1954** in Barrow investigating subsistence patterns of Barrow Eskimos. A week was also spent in **Wainwright** and **Meade** River respectively. An historical

account of subsistence activities is presented as well as present day seasonal subsistence activities.

Spencer, Robert F. 1959. The North Alaskan Eskimo: A Study in Ecology and Society. Smithsonian Institution, Bureau of American Ethnology, Bulletin 171.

The aim of this research was to examine patterns of contemporary social behavior among the Eskimo of northern Alaska. Fieldwork was carried out in the summer and fall months of 1952 and 1953. Included in the book are detailed descriptions of the people, environment, housing, family and kinship, law, economy, associations, values and belief systems and ceremonialism.

Spencer, Robert F. 1971. The Social Composition of the North Alaskan Whaling Crew. In: Alliance in Eskimo Society. Lee Guemple, ed. Proceedings of the American Ethnological Society, 1971, Supplement.

This paper, based on field research conducted in Barrow in the late 1950's, stresses alliances formed among maritime populations in the Arctic, specifically the whaling cultures. Alliances related to the whaling crew are described in detail.

U. S. Department of the Interior. 1980. Interim Report on Aboriginal/Subsistence Whaling of the Bowhead Whale by Alaskan Eskimos. June 24, 1980.

This is a summary report of the U.S. Department of the Interior's efforts to document the Eskimos' need for bowhead whaling. Discussion is centered around the following factors: importance of the bowhead in the traditional diet; possible adverse effects of shifts to non-Native foods; availability and acceptability of other food sources; historical take of the bowhead whale; the integration functions of the bowhead hunt in contemporary Eskimo society and the risk to the community identity from an imposed restriction on Native harvesting of the bowhead; and, to the extent possible, ecological considerations.

University of Alaska, Arctic Environmental Information and Data Center (AEIDC). 1978 - 1980. Northwest Alaska Community Profiles: A Background for Planning. Prepared for the U.S. Department of the Interior.

These documents provide background information on each village in the region. Included is information on village history, economy, land tenure, religion and community facilities. Also provided is information on environmental considerations for community development and an annual subsistence calendar. In addition, a land use map of each village is included.

University of Alaska, Arctic Environmental Information and Data Center (AEIDC). 1979. Status of Bowhead Whales, Bowhead Research and Alaska Eskimo Whaling. A report to the Alaska State Legislature. University of Alaska, Anchorage.

This report discusses the issues involved in the **bowhead** whale problem as **it** affects communities in rural **Alaska** which depend on whaling. **It** describes the formation and function of the **Alaska** Eskimo Whaling Commission and its activities. Also provided is a summary of the status of knowledge of the bowhead **whale**, important data gaps and research planned to provide the information necessary to protect the **whale** and the future of subsistence whaling in Alaska.

University of Alaska, Institute of **Social** and Economic Research. **1978**. **Alaska** OCS Socioeconomic Studies Program: Beaufort Sea Petroleum Development Scenarios - Economic and Demographic Impacts. Prepared for Peat, **Marwick**, Mitchell and Co. under the sponsorship of the **U.S.** Department of the Interior, Bureau of Land Management, Alaska Outer Continental Shelf Office. Anchorage, Alaska. Technical Report No. **18**.

Using the model of the Alaska economy and population developed in the Man in the Arctic Program, forecasts of the economic, fiscal and population impacts of four alternative petroleum development scenarios are presented in this report.

VanStone, **James W.** and **W. H. Oswalt**. **1960**. Three Eskimo Communities. Anthropological Papers of the University of Alaska. Volume 9, Number 1, pp. 17-56.

This paper is a descriptive and analytical study of three contemporary Eskimo communities: Point Hope, **Napaskiak** and Eskimo Point. Each of these communities **occupies** a very different ecological niche. **The** communities are described in terms of their **culture** and **society** today. A comparison is made of **the** similarities and differences of **the** acculturation process in each village.

Worl, Rosita. **1979a**. Assessment of the Impact of the **1978** International Whaling Commission Quota on the Eskimo **Community**. A Preliminary Report on the Village of Point Hope. Prepared for the **U.S.** Department of the Interior. June **1979**.

In response to the bowhead whaling quota instituted in 1977, this study was conducted to determine the effects of the quota on the community of Point Hope. Discussion concentrates on the impact on the harvest, distribution and utilization of the bowhead and a description of the cash and subsistence economies.

Worl, Rosita. **1979b**. **Sociocultural** Assessment of the Impact of the **1978** International Whaling Commission Quota on the Eskimo Communities. . . Arctic Environmental Information and Data Center. University of Alaska, Anchorage.

An expanded version of **Worl's** preliminary report of Point Hope (1979a), this report analyzes the impact of the bowhead whale quota on **all** of the bowhead whaling villages: **Gambell, Savoonga, Wales, Kivalina, Point Hope, Wainwright, Barrow, Nuiqsut** and **Kaktovik**. The impact categories used in this report **are** the harvest area, the distribution system and cultural values.

Worl, Rosita. 1980. The North Slope **Inupiat** Whaling Complex. **Senri**
Ethnological Studies 4, National Museum of Ethnology.

This paper focuses on the present day **Inupiat** whaling complex and describes the economic system of the bowhead whaling villages: **Gambell, Savoonga, Wales, Kivalina, Point Hope, Wainwright, Barrow, Nuiqsut** and Kaktovik. Also identified are the laws which govern the appropriation and ownership of the whale and the initial distribution patterns. The paper also reviews the inter-relationships between the subsistence and cash economies.