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HOPE BASIN SOCIOECONOMIC BASELINE STUDY

Volume I

Submitted to Minerals Management Service U.S. Department of the Interior

by

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in association with

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NANA Elders Conference and Interview Transcripts Hope Basin Socioeconomic Baseline Study Volume III

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FOREWORD

The Hope Basin Socioeconomic Baseline Study comprises three separate documents:

- 1. this <u>Final Technical Report;</u>
- the <u>Final Technical Report Summary</u>, which is a summary of the full Technical Report; and
- 3. the <u>NANA Elders Conference and Interview Transcripts</u>, a set of ten transcripts of NANA Elders Conference meetings and interviews with selected elders. Under Steven McNabb's direction, these transcripts were developed from audiotapes that were translated from the original Iñupiat mainly by Rachel Craig, assisted by Bertha Jennings and Barbara Armstrong.

The Final Technical Report was prepared by a multi-disciplinary team of social scientists under the overall direction of Kevin Waring as project manager. The lead authors and support task for the individual chapters of the Final Technical Report were:

Chapter 1. Analysis of the Regional Economy - Kevin Waring.

- Chapter 2. Education and Employment Lee Gorsuch and Paul Ongtooguk who also conducted field interviews, Linda Rinaldi who evaluated field interviews and historical materials, Teresa Hull who researched the statistical database, and Linda Leask who edited this chapter.
- Chapter 3. Subsistence Robert Gal, assisted by Steven McNabb.
- Chapter 4. Inupiat Values, the Elders Council, and Economic Development Steven McNabb, assisted by Ernest Burch, Jr., Rachel Craig and Ed Busch.

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Chapter 5. Institutional Analysis - Ed Busch, assisted by Steven McNabb and Kevin Waring.

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CHAPTER 1. ANALYSIS OF THE REGIONAL ECONOMY¹

I. HISTORIC OVERVIEW OF POST-1900 REGIONAL ECONOMIC DEVELOPMENT The Northwest Arctic Borough's² present economy is the culmination of a lengthy and faltering process of economic modernization that began at the end of the nineteenth century. Earlier, Russian and Euro-American explorers gave the region its first passing introduction to western economic interests and goods. Whalers followed in the last decades of the nineteenth century. Though not so well situated as Port Clarence, Wales, Point Hope for whaling outposts, the region's coastal and upriver settlements supplied labor for the whaling enterprise (Ducker, 1985).

Near the end of the nineteenth century, the Kobuk Valley saw a mining stampede come and go, just before Nome's great 1889 gold rush. Hundreds of goldseekers, as many as two thousand according to some sources (Heiner, 1968), flooded into the Kobuk Valley. When the region failed to yield major gold deposits and when more promising discoveries soon surfaced in the Nome region, most interest quickly dissipated. Nevertheless, gold mining continued as a minor industry, producing some wealth and cash employment for indigenous workers, particularly

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^{1.} This chapter was written by Kevin Waring and critically reviewed by Gunnar Knapp.

^{2.} After the 1970 decennial census and until the Northwest Arctic Borough's June 2, 1986 incorporation, most federal and state statistics for the region were compiled under the Kobuk census division or the Kobuk labor area. The borough's boundaries are practically coterminous with these earlier regions. For the sake of uniformity, we have referred to the region as the Northwest Arctic Borough, even when treating data series that predate borough incorporation. This anachronism seemed harmless and clearer than fastidious adherence to different regional terms favored by different sources at different times. The term "NANA region" has been reserved for contexts related to NANA Regional Corporation's interests and activities.

on the northeast Seward Peninsula and near Kiana and Shungnak. A few Natives even ran their own gold mining operations (Ducker).

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James H. Ducker (1985) documented the region's early economic development in his encyclopedic study of historic uses of the region's navigable waterways. His study was undertaken to assist navigability determinations for land conveyances under the Alaska Native Claims Settlement Act. He focussed on historic use of waterways for travel and commerce, exhaustively describing the travels and activities of Native hunters, explorers, travellers, miners, trappers, traders, shippers, roadbuilders and trailclearers, herders and churchmen throughout the region.

Ducker (p. 39) describes a busy era of thriving, enterprising Alaska Native adaptation during the first two decades of this century.

Many of the Natives at Deering worked at the mines up the Inmachuk. Clarence Andrews, who taught at the village, reported that, "some of the best (hydraulic) nozzle men were Eskimos. Natives were most closely involved in mining in the Kobuk drainage. Brooks of the USGS observed in 1908 that Eskimos in the valley were "very largely employed, and are said to make very good workmen." Shungnak Natives were among those who rushed to the Squirrel River placers in 1910. In that year one native in the village cleared \$1,400 from his own claim. Seven years later there were three Shungnak native-owned mining companies operating much like those of neighboring white firms.

Whites also hired Natives for non-mining jobs. Winter freighting and wood-cutting were common occupations which drew Natives to the white settlements. Others served as pilots on boats working out of Kotzebue, or provided a variety of service for the Bureau of Education, including cutting lumber and building schoolhouses as that agency expanded into numerous villages between 1907 and 1910. Villagers learned to make western goods, including boats, which some sold to whites. White traders hired Natives as clerks at some outposts, while other Natives maintained their own stores.

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The Eskimos also partook in the western economy through fur trapping. The market in the first three decades of this century motivated Natives to expend greater effort in gathering furs. Prices rose so that a white fox skin brought \$1 in 1900, \$10 in 1910, and over \$50 in 1929. Natives eagerly sought furs which could yield them annual incomes into the thousands of dollars. The teacher at Shungnak in 1919 noted that many villagers left the community earlier than usual after breakup so they could kill a maximum number of muskrat which were bringing very good prices. . .

Between 1907 and 1910 the Bureau of Education instituted schools in scores of Alaskan Native villages and took over teaching responsibility from mission schools. When the agency decided on a school site, it often determined the location of a village. Natives, especially those living on the region's rivers, led peripatetic lives. However, Native families quickly congregated around the schools to afford their children an education. Eli M. Myers, who built the log schoolhouse at Shungnak in October 1907, reported that thirty to forty families quickly converged on the area and built cabins. Similarly, Noatak owed its origins to a Bureau school placed at the site in 1908, as was the case with Noorvik, where the government put a school in 1915. The schoolhouses placed on the Buckland and Shaktoolik rivers prompted Natives to build a cluster of cabins around them. . .

Missions, paid employment, and government schools altered Natives' lives in a variety of ways. The Eskimos generally adopted Christianity readily. Wages permitted purchase of more white goods. Not only did Eskimos acquire such basic trade items as flour, tobacco, firearms, and ammunition, they also bought stoves, furniture, and sewing machines. By 1919 nearly every family in Shungnak had a sewing machine and one had an organ. With these innovations, the Native women adopted the new techniques of bread-baking and sewing. .

Ducker also notes that, "for all the changes brought on by the intrusion of white society in the wake of the gold rush, most Natives continued to gain a large measure of their livelihood from traditional sources."

The imprint of this first decade of intensive economic interaction is evident in early census data. Information compiled for the 1910 decennial census revealed that Alaska Natives of the Kobuk River Valley and Kotzebue Sound perimeter ranked among the highest of all Alaska Native tribal groups outside

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southeast Alaska in rates of school attendance, English fluency and literacy (U.S. Bureau of the Census, 1915). It is also noteworthy that the region's indigenous population gravitated toward stable, permanent settlements earlier perhaps than any other region of western Alaska and much sooner than peoples of the Lower Yukon and Kuskokwim rivers and coasts.

The developmental impetus prevalent in the opening years of the century did not last. Mining and trapping were the foundation of the region's incipient commercial economy. When those industries slumped, the region's private economic development lapsed. Gradually, the basis for the region's economic evolution shifted from commercial enterprise toward reliance on governmental services. Ducker (p. 43), citing Foote and Williamson (1966), writes that,

(A)fter 1910 there was a shift in the role of whites in the Eskimo communities of Northwest Alaska. The white population which depended upon Natives to supply commercial commodities for market was gradually replaced by one dedicated more to servicing Native needs. The whalers vanished and the mining forces shrank. In their stead were teachers, missionaries, and a number of traders and shippers who brought goods to the villages.

Thereafter, government steadily became the dominant economic force exclusive of traditional subsistence. The region's economic fortunes fluctuated according to the stimulus of governmental domestic and defense activities, plus its access to short-term seasonal employment in other regions with busier economies. Thus, Ducker (p. 42) writes that,

Wage employment, especially that outside the villages, rose in the 1950s. Even in the depression years of the thirties, Noatak men got longshoring work late in the summers at Kotzebue. In the fifties construction of the Distant Early Warning defense sites provided nearly every able-bodied man in Point Hope with seasonal work at good wages. Noatak men took jobs in the canneries of southern Alaska as well as construction and interior mining employment. In 1960, over 80 percent of physically capable Noatak men pursued wage labor. Roughly equal numbers worked in the canneries; in Fairbanks, primarily in the mines; and in Kotzebue. Most of the latter worked

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for B&R Tug and Barge, which at times during the summers of the 1960s employed over 250 Natives in northern Alaska. . .

This pattern of seasonal or temporary work away from home is still a vital element of the region's work habits. Firefighting and many business activities of the NANA Regional Corporation perpetuate the pattern. The expected economic benefits of the Red Dog Mine to the region depend in part on the willingness of resident workers to commute to mine work on a rotation schedule.

A key feature of the region's economic development was the post-World War II emergence of Kotzebue as its administrative, commercial and transportation hub (Kevin Waring Associates, 1988). Kotzebue is now the center of the regional governmental apparatus and dominates the region's commercial economy.

II. STRUCTURE OF WAGE EMPLOYMENT AND INDUSTRY

This section summarizes trends in wage work and cash income for the Northwest Arctic Borough from 1970 to the present. Economic statistics are used to illustrate the region's developing economy and how its economic status has changed compared to the state's other regions and to Alaska and the nation as a whole.

The year **1970** represents a statistical benchmark for charting the Northwest Arctic Borough's contemporary economic development. The subsequent era reflects a momentous series of events that transformed the state and regional economies, including:

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- Alaska Native Claims Settlement Act established private land ownership and modern management techniques through Native regional and village corporations;
- Trans-Alaska pipeline construction boom and ongoing development and production of North Slope oil fields;
- Development of the rural secondary school system;
- State of Alaska's oil income boom/bubble/bust;
- Massive federal and state investment in community infrastructure and human resources; and
- "Nativization" of political and administrative control of rural governmental institutions.

Regional employment and income statistics from 1970 to the present show increasing reliance on wage work and the cash economy in the Northwest Arctic Borough as these events unfolded. Following is an analysis of wage employment trends and cash income components.

1. Wage Employment Trends, 1970-1987

Data from the Alaska Department of Labor and the U.S. Census Bureau have been combined to chart gross trends in wage employment for the Northwest Arctic Borough. Table 1-1 relates the post-1970 growth of wage employment to total population, working age population, and number of households. (Several post-1970 revisions in estimation procedures invalidate longitudinal comparisons of official figures for labor force size and unemployment rates.³ This is

3. The Statistical Abstract 1988, p. 362, explains the nature of and reasons for these highly technical revisions.

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unfortunate, since historic comparisons of labor force and employment trends would be instructive.)

Table 1-1 shows that wage employment growth in the Northwest Arctic Borough substantially exceeded the growth of population, working age population, and number of households. Between 1970 and 1987:

- Wage employment grew 170 percent;
- Population grew 47 percent;

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- Working age population up 70 percent; and
- Number of households increased 73 percent.

During this same period the disparities in wage employment conditions between the Northwest Arctic Borough's developing economy and the more mature state and national economies narrowed. Table 1-2 and Figures 1-1 through 1-3 compare several wage employment indicators for the Northwest Arctic Borough, state, and nation: persons per job; working age (16 years+) persons per job; and jobs per household. In each category the Northwest Arctic Borough lagged far behind state and national percentages in 1970, but during ensuing years each employment ratio for the Northwest Arctic Borough improved markedly. By 1987 the figures for the Northwest Arctic Borough show that compared to 1970:

- More residents worked for wages; the ratio of persons per job fell from
 6.3 to 3.4 persons.
- More working-age people joined the wage labor force; the ratio of working-age persons per job fell from 3.4 to 2.2 persons.
- Wage work contributed to the livelihood of more households; the ratio of wage earners per household rose from .8 to 1.2 wage earners.

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TABLE 1-1 POPULATION AND EMPLOYMENT, 1970-1987 NORTHWEST ARCTIC BOROUGH

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Year	Population	Working Age ¹ Population	Households	Wage Employment
1970	4,048	2,205	814	641
1975	4,549	n.a.	n.a.	1,042
1980	4,831	3,053	1,140	1,437
1985	5,705	3,643	n.a.	1,823
1987	5,962	3,756	1,407	1,732
Percent Change 1970-1987	+47%	+70%	+73%	+170%

1. Noninstitutional population 16+ years of age.

NOTE: After the 1970 decennial census and until the Northwest Arctic Borough's June 2, 1986 incorporation, most federal and state statistics for the region were compiled under the Kobuk census division or the Kobuk labor area. The borough's boundaries are practically coterminous with these earlier regions. For the sake of uniformity, we have referred to the region as the Northwest Arctic Borough, even when treating data series that predate borough incorporation. This anachronism seemed preferable to fastidious adherence to different regional terms favored by different sources at different times.

Sources: U.S. Bureau of the Census; Alaska Department of Labor.

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TABLE 1-2POPULATION AND EMPLOYMENT RATIOS, 1970-1987NORTHWEST ARCTIC BOROUGH, STATE OF ALASKA, AND UNITED STATES

Year	Population/Employment				
	NAB	State of Alaska	United States		
1970	6.3	3.2	2.6		
1975	4.4	NA	2.5		
1980	3.4	2.4	2.3		
1985	3.1	2.4	2.2		
1987	3.4	2.6	2.1		

	Workin	ng Age Population/E	mployment
Year	NAB	State of Alaska	United States
1970	3.4	2.1	1.8
1975	· NA	NA	1.8
1980	2.1	1.7	1.7
1985	2.0	1.7	1.7
1987	2.2	1.9	1.6

	Employment/Households				
		State of	United		
Year	NAB	Alaska	<u>States</u>		
1970	.8	1.2	1.2		
1975	NA	NA	1.2		
1980	1.3	1.3	1.2		
1985	NA NA	NA	1.2		
1987	1.2	1.2	1.3		

Sources: Statistical Abstract; U.S. Bureau of the Census; Alaska Department of Labor.

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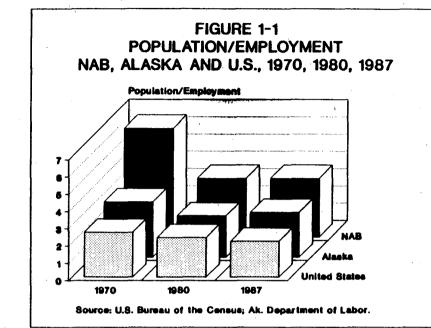
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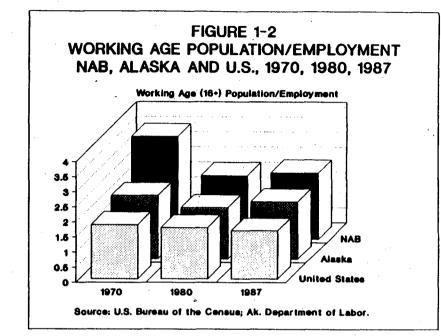
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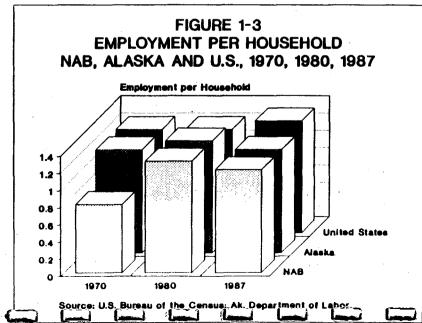
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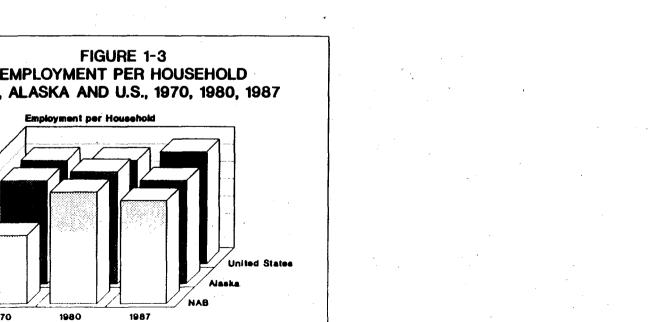
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These figures confirm three related trends in the Northwest Arctic Borough's economy: more wage work, more active participation in the wage economy, and more households dependent upon wage income. In comparison these wage employment indicators were relatively static at the state and national levels.

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By 1987 the Northwest Arctic Borough's ratio of wage earners per household approximated state and national figures. Because of its youthful population and much larger households, however, the Northwest Arctic Borough still trailed state and national norms in other respects. Its ratio of working-age population per job was somewhat higher than state figures and higher still than the national level, and its ratio of total persons per job was much higher than state and federal figures. In other words in the Northwest Arctic Borough more people depend on fewer jobs for cash income, at least through the late 1980s.

2. Employment Trends by Industry

Despite overall growth in wage employment, the basic composition of the Northwest Arctic Borough's economic structure changed little between 1970 and 1989. In particular, government was the dominant employer through this era, consistently accounting for about two-thirds of all wage work. Before examining detailed employment statistics, a digression on a potentially misleading quirk of Alaska Department of Labor official employment data is advisable.

The Alaska Department of Labor classifies employers and employees according to the Standard Industrial Code (SIC). The SIC classifies nonprofit public service corporations as service firms, not as governmental agencies. For rural Alaska, where many public services once provided by governmental agencies have been transferred to administration by nonprofit corporations, this practice produces

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statistics that invite misinterpretation. It skews trend analysis of service sector employment and of the split of private/governmental employment.

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The two largest nonprofit corporations in the Northwest Arctic Borough are Maniilaq Association and the Northwest Inupiat Housing Authority (NIHA). Since Maniilaq Association and NIHA are almost totally funded by state and federal governments, we think their employees are more aptly classified as government workers for purposes of this report's economic analysis. This adjustment permits more accurate analysis of the region's economic structure, particularly in regard to the split of private/governmental employment.

Therefore, we requested and got the approval of Maniilaq Association and NIHA to obtain the employment and payroll data they reported to ADOL during 1980-1989. We then adjusted ADOL published employment figures by reclassifying these agencies' employment from the service sector to the local governmental sector. The adjusted employment statistics were then used for sectoral analysis of NAB employment trends. (However, for regional, state and national comparisons, it was necessary to continue use of unadjusted figures, since it was not feasible to make comparable adjustments to reflect the role of quasi-public service corporations in other economic jurisdictions.)

Table 1-3 **shows** the growth in average annual employment and payroll for these two agencies over 1980-1989. In 1980, Maniilaq Association and NIHA had 85 and three employees respectively, with a combined payroll of \$1.6 million. By 1989, they had 260 and 41 employees, with a combined payroll of \$7.7 million. Together, they provided almost 15 percent of the region's total payroll and about three-fourths of all service employment. Indeed, Maniilaq Association is

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now the region's largest "service" employer and second largest employer overall, exceeded only by the Northwest Arctic Borough School District.

TABLE 1-3

EMPLOYMENT AND PAYROLLS, 1980-1989 MANIILAQ ASSOCIATION AND NORTHWEST INUPIAT HOUSING AUTHORITY

	Northwest Inupiat							
	<u>Maniilaq As</u>	sociation	Housing A	Total				
Year	Employment	Payroll	Employment	Payrol1	Employment			
1980	85	\$1,476,636	3	\$ 87,469	88			
1981	108	1,932,231	8	214,058	116			
1982	134	2,606,920	9	264,073	143			
1983	161	3,237,730	9	278,620	170			
1984	172	3,696,118	13	388,239	185			
1985	188	4,357,388	13	438,415	201			
1986	201	4,291,996	. 11	342,296	212			
1 987	208	4,297,375	22	590,951	230			
1988	214	5,019,495	30	587,410	244			
1989	260	6,822,052	41	891,759	301			

Source: Alaska Department of Labor confidential data, released by permission of Maniilaq Association and Northwest Inupiat Housing Association.

Tables 1-4 and 1-5 compare sectoral employment data, as compiled by standard SIC classifications and as adjusted⁴ to reflect reclassification of Maniilaq Association and NIHA employment. The adjusted figures show the public sector continuing to dominate wage employment in 1988, as it has since 1970. The public sector accounted for 63 percent of wage employment in 1970 and held near that level through 1989. Public sector employment peaked in 1985 at 73 percent, falling off to 65.8 percent by 1989. The adjusted data show a temporary loss of about 200 public jobs between 1985 and 1987, likely due to a drop in intergovernmental transfer payments supporting local government.

4. Several tables, figures and text passages in this chapter present data that has been "adjusted" from the original source data for analytic purposes. These adjustments are always noted in the appropriate tables, figures and text.

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	* -*	Una	djusted ¹			hA	justed ¹	
Industry Classification	1970	1980	1985	1989	1970	1980	1985	1989
Mining	*	*	*	*	*	*	*	*
Construction	*	5.6	*	1.7	*	5.6	* .	1.7
Manufacturing	0	*	0	0	0	*	0	0
Transportation, Communication and Public Utilities	16.6	8.7	6.6	8.4	16.6	8.7	6.6	8.4
Trade	15.6	9.4	10.3	9.2	15.6	9.4	10.3	9.2
Finance, Insurance and Real Estate	*	1.3	4.4	*	i *	1.3	4.4	*** *
Services	2.7	. 11.7	13.8	20.7	2.7	5.6	2.8	5.6
Government	63.0	61.5	62.0	50.7	63.0	67.6	73.0	65.8
Federal	46.7	15.2	7.5	4.5	46.7	15.2	7.5	4.5
State	16.3	4.2	5.1	4.3	16.3	4.2	5.1	4.3
Local	NA	42.2	49.4	41.9	NA NA	.48.3	60.4	57.0
Miscellaneous	*	*	*	*	*	*	· · · · · · · · · · · · · · · · · · ·	*
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	N=641	N=1,437	N=1,823	N=1,991	N=641	N=1,437	N=1,823	N=1,991

TABLE 1-4PERCENT DISTRIBUTION OF EMPLOYMENT BY INDUSTRY SECTOR
NORTHWEST ARCTIC BOROUGH, 1970, 1980, 1985, 1989

*Figures withheld to comply with disclosure regulations.

1. Unadjusted figures are based on actual ADOL employment data. Adjusted figures for 1980, 1985 and 1989 reflect reclassification of employment reported by Maniilaq Association and Northwest Inupiat Housing Authority from service to local government sector.

Source: Alaska Department of Labor.

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TABLE 1-5PUBLIC AND PRIVATE SECTOR EMPLOYMENTNORTHWEST ARCTIC BOROUGH, 1970, 1975, 1980-1989

· ·		·	Unadj	usted ¹	•
					Public Employment
	<u> Employ</u>	ment_by S		Percent	as Percent of
Year	Private	Public	Total	Public	<u>Total Population</u>
1970	236	405	641	63.2%	10.0%
1975	455	587	1,042	56.3	12.9
1980	554	883	1,437	61.4	18.3
1981	770	983	1,753	56.1	19.1
1982	774	1,106	1,880	58.8	20.6
1983	780	929	1,709	54.4	16.6
1984	732	1,047	1,779	58.9	18.4
1985	693	1,130	1,823	62.0	19.3
1986	719	1,104	1,823	60.6	18.8
1987	832	900	1,732	52.0	14.9
1988	853	932	1,785	52.2	15.3
1989	982	1,009	1,991	50.7	16.7
			Adjus	ted ¹	
			Aujus		Public Employment
	Fmploy	ment by S	lector	Percent	as Percent of
Year	Private	Public	Total	Public	Total Population
1970	236	405	641	63.2%	10.0%
1975	455	587	1,042	56.3	12.9
1980	466	971	1,437	67.6	20.1
1981	654	1,099	1,753	62.7	21.4
1982	631	1,249	1,880	66.4	23.2

1981	654	1,099	1,/53	62./	21.4	
1982	631	1,249	1,880	66.4	23.2	
1983	610	1,099	1,709	64.3	19.7	
1984	547	1,232	1,779	69.3	21.6	
1985	492	1,331	1,823	73.0	22.7	
1986	507	1,316	1,823	72.2	22.4	
1987	602	1,130	1,732	65.2	18.7	
1988	609	1,176	1,785	65.9	19.4	
1989	681	1,310	1,991	65.8	21.7	
		-	•			

1. Unadjusted figures are based on actual ADOL employment data. Adjusted figures for 1980, 1985 and 1989 reflect reclassification of employment reported by Maniilaq Association and Northwest Inupiat Housing Authority from service to local government sector.

Source: Alaska Department of Labor.

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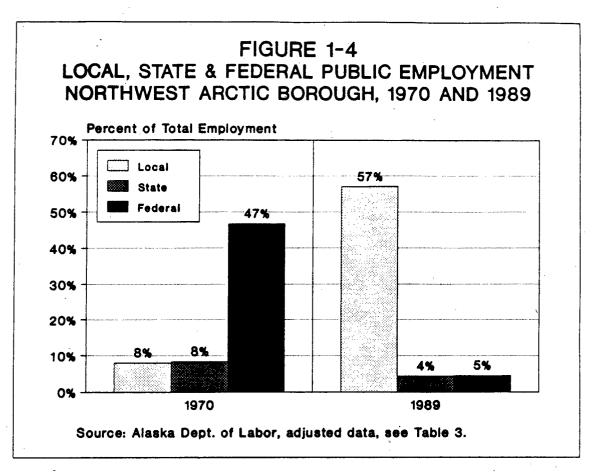
The unadjusted "official" figures in Table 1-5 suggest that the overall share of public sector employment shrank after 1980. The adjusted figures show that this decrease mostly reflects transfer of certain public functions from governmental to nonprofit corporation administration. The adjusted figures show essentially no change in government's share of employment. Since 1980, public sector employment has held virtually constant at two-thirds of all employment and at about 20 percent of total population.

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In sum, though wage employment nearly tripled from 1970 to 1988, the public sector continued to dominate the job scene. Nearly two decades of unprecedented public investment in community infrastructure, human resources and economic development did not stimulate emergence of a private economy.

At the beginning and end of this period, private employment in the basic industries of mining and manufacturing was noteworthy mainly for its virtual absence. Relatively minor shifts occurred in the private sectors of transportation/communications/public utilities, trade and finance/insurance/real estate, despite massive investment of public funds in the 1970s and early 1980s to stimulate economic development in the region. Operation of the Red Dog Mine, however, made feasible in part by state finance of transportation facilities, does hold potential to stimulate substantial basic and support sector growth in the private economy.

The most prominent structural change from 1970 to 1988 occurred within the public sector. Federal and local governments reversed their relative employment roles. In 1970 the federal government accounted for nearly 47 percent of all wage employment and nearly 75 percent of all public sector employment (Figure 1-4).



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By 1989 the federal government provided only about 4 percent of all employment and less than 7 percent of governmental employment.

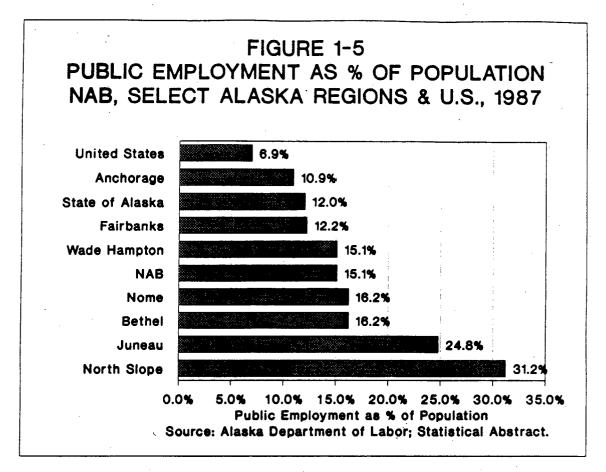
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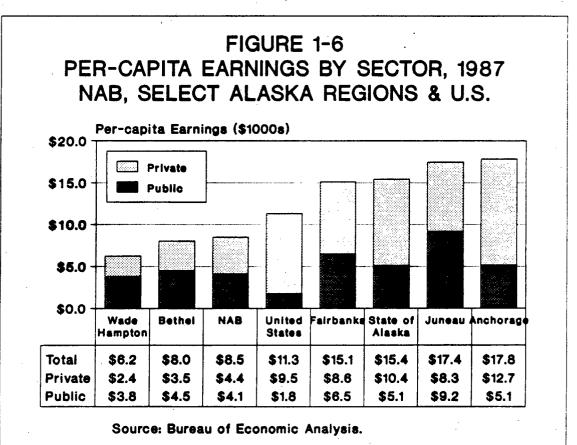
Meanwhile, local government employment jumped from an estimated 8 percent of the total in 1970 (the combined figure for state/local government employment was 16 percent, of which perhaps half was local government) to about 57 percent of total employment in 1989. By then, local government (counting nonprofit corporation staff performing public functions) accounted for seven-eighths of all public sector employment.

These economic statistics exemplify three fundamental politico-administrative changes that have transformed federal/state/local governmental relationships over the past two decades: more state and federal funds to support local government; transfer of educational authority first to state, then to local administration; and shift of numerous programs once managed by federal and state agencies to local or regional administration with grant or contract funds.

The public sector dominated the region's wage employment during this entire period (Table 1-5). Nevertheless, compared to the population base it serves, the percentage of governmental workers is actually below some other urban and rural regions of the state. (Note that the following geographic comparisons are based on unadjusted ADOL employment data, since it would be misleading to compare adjusted NAB data with unadjusted data for other jurisdictions.) For example, the Northwest Arctic Borough's total public employment in 1987 amounted to 15.1 percent of its population (Figure 1-5). This figure exceeded the statewide average (12.0 percent) but was typical of western Alaska census divisions and well below percentages for the North Slope Borough (31.2) and Juneau (24.8).

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After allowance is made for its youthful population and that group's need for labor-intensive educational and health services, public service employment in the Northwest Arctic Borough resembles the statewide profile.

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Figure 1-6 supports the conclusion that the region's public sector is not inflated compared to other Alaska regions. It shows that the region's per-capita public sector earnings (\$4,100) lags behind the statewide average (\$5,100) and well behind the figure for such urban regions as Fairbanks (\$6,500) and Juneau (\$9,200). But the region lags even further behind these jurisdictions in private sector earnings, again reflecting the relative dominance of its public sector The gross imbalance in public/private employment (Table 1-5), however, is not because government jobs are so abundant, but because private jobs are so exceedingly scarce. Post-1970 public sector growth did not stem from private sector, supported by governmental fund transfers from wealthier regions, drove private sector growth.

3. Cash Income Trends, 1971-1987

The federal Bureau of Economic Analysis's (BEA) personal income data series provides another record of the emergence of a cash economy in the Northwest Arctic Borough. Whereas ADOL data discussed above cover only wage employment and earnings, BEA data encompass all sources of personal cash income, including earned and unearned cash income and transfer payments.

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Generally, BEA income data paint a mixed picture of the Northwest Arctic Borough's economic progress over the past two decades.⁵ Table 1-6 shows that the region's per-capita personal income nearly doubled (+87 percent) from \$5,761 to \$10,800 between 1971 and 1987.⁶ Progress was by no means steady or cumulative. Most of the real income gain actually occurred in the early 1970s, when percapita personal income rose from \$5,761 in 1971 to \$9,723 in 1975 with irregular gains and losses thereafter. According to BEA statistics, real per-capita personal income peaked in 1985 at \$11,924, then fell to \$10,800 by 1987, a drop of nearly 10 percent in two years.

Since 1971 the income gap between the Northwest Arctic Borough and the state and nation has narrowed (Figures 1-7 and 1-8). In 1971 Northwest Arctic Borough percapita personal income levels lagged well behind state (47 percent) and national

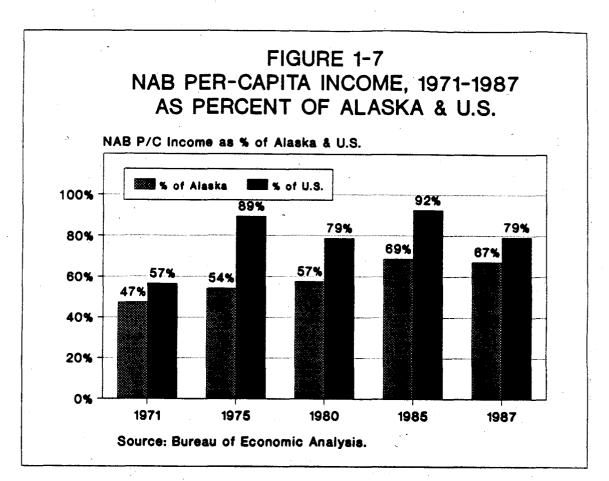
6. The personal income figures in this section have been adjusted to discount national inflation. According to the U.S. Bureau of Labor Statistics' Consumer Price Index (1982-1984=100), the inflation-adjusted value of a 1970 dollar (\$2.57) was triple a 1987 dollar (\$0.88). These adjustments do not, however, take into account the level or rate of regional inflation in the Northwest Arctic Borough. Clearly, the region's higher cost of living depresses the purchasing power of cash income compared to state and national markets, but it is not known whether the region's rate of inflation has been higher or lower than state and national rates.

Here and in later discussions of regional inflation, it is essential to distinguish between national price inflation over time, measured by the U.S. Department of Labor's Consumer Price Index (CPI), and regional inflation, measured by instant place-to-place comparisons in regional cost-of-living differentials. For a explanation of how these different measures of inflation apply to Alaskan regions, see Wilson and Rae, " A Guide to Measuring Alaska's Cost of Living", Alaska Department of Labor (1990). The true importance of consumer price inflation in rural Alaska and the Northwest Arctic Borough is badly clouded by the large volume of in-kind goods and services supplied by government.

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^{5.} Note that payroll data compiled according to federal standards by ADOL is the main source for the wage earnings component of BEA personal income data. Thus, these are not independent data series. BEA, however, covers all sources of earned (including non-wage earnings) and unearned income and is more comprehensive than ADOL payroll data in that respect.



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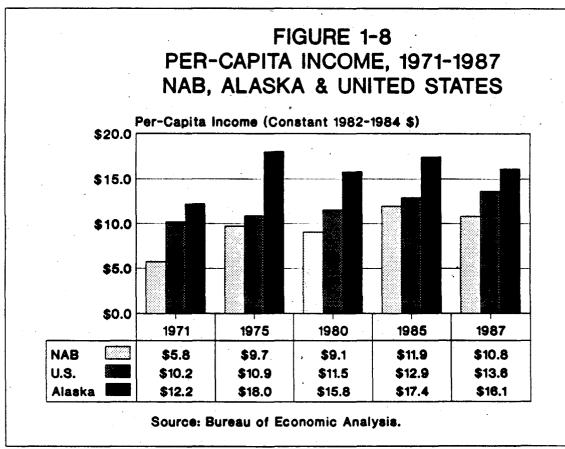


TABLE 1-6 PERSONAL INCOME TRENDS, 1971-1987 NORTHWEST ARCTIC BOROUGH

	Total Pers	onal Income	Per Capita	Personal Income
Year	Nominal \$	Constant \$77	Nominal \$	Constant \$"
1971	9,635	23,760	2,336	5,761
1975	24,904	46,297	5,230	9,723
1980	36,241	44,033	7,472	9,078
1985	69,270	64,283	12,849	11,924
1987	72,622	63,907	12,273	10,800
Percent 1971-19	Change 987	+169%	•	+87%

 $^{1/}$ To discount national inflation, the nominal personal income figures were adjusted according to the U.S. Bureau of Labor Statistics' Consumer Price Index (1982-1984=100) to yield a real or constant dollar equivalent.

Source: Bureau of Economic Analysis.

(57 percent) averages (Figure 1-7). The region's income rose steadily to about 67 percent of the state figure by 1987. But regional income moved fitfully compared to the national figure, up to 89 percent of the national average by 1975, dropping to 79 percent by 1980, surging to 92 percent by 1985, ebbing again to 79 percent by 1987. These inconsistent trends simply reflect that the Northwest Arctic Borough's economy resounds more to the uneven beat of the state economy's erratic pulses (pipeline construction, pump-priming expenditures of state petrodollars) than steadier national economic trends.

The Northwest Arctic Borough, along with other rural regions of Alaska, is often characterized as "in transition" from a subsistence to a cash economy. This notion is belied by the fact that in 1985 the Northwest Arctic Borough ranked in the 43rd percentile (1,784th of 3,139) of U.S. counties in per-capita cash income (U.S. Bureau of the Census, County and City Data Book, 1988). Subsistence may be a vital element of this rural region's socioeconomy, but the statistics

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indicate that the region can no longer be meaningfully characterized as "in transition" to a cash economy.

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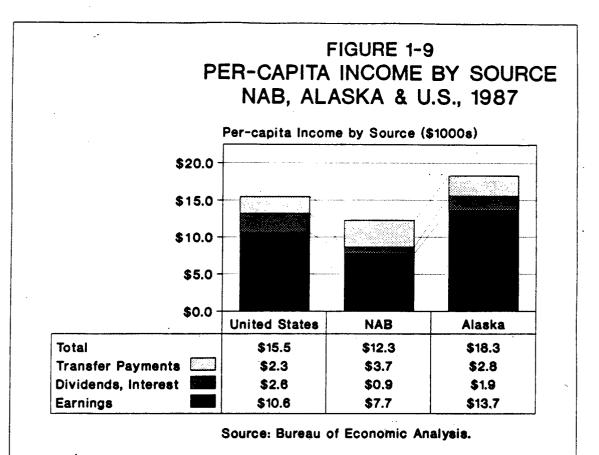
In summary, since 1971 the region's personal cash income has risen in real terms and in comparison to state and federal income norms, but a substantial cash income gap persists.

4. Sources of Cash Income

Analysis of the sources of the region's income growth exposes certain basic features and trends in its economy. Figure 1-9 presents a comparative snapshot of the importance of three sources of personal cash income (earnings, transfer payments, and dividends and interest) at the regional, state, and national level in 1987. In each jurisdiction, earnings are far the most important income source. In the Northwest Arctic Borough, transfer payments are relatively more important; dividends and interest relatively less important.

Table 1-7 shows changes in the composition of personal income between 1971 and 1987 by type of income (earnings, transfer payments, and dividends and interest), the distribution of earnings by sector (public or private), and the distribution of earnings by component (wages and salaries, proprietors' income and other labor income), as reported by the Bureau of Economic Analysis.⁷

^{7.} BEA data are the most comprehensive historic income data available at the census division level, however, certain data items are statistical estimates, not empirical findings.



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TABLE 1-7

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DISTRIBUTION OF PERSONAL INCOME, BY SOURCE, 1971-1987 NORTHWEST ARCTIC BOROUGH

Type of Income

	Net Earnings	Divi- dends	Transfer Payments
1971	73.8%	2.0%	24.2%
1975	63.6	2.6	33.8
1980	73.4	5.1	21.5
1985	66.9	7.0	26.1
1987	62.9	7.1	30.0

Earnings by Sector¹

		Private	Public
1971		32.5%	67.5%
1975		45.7	54.3
1980	. ' .	41.4	58.6
1985		45.7	54.3
1987		52.0	48.0

Earnings by Component

	Wages & Salaries	Other Labor Income ²	Prop- rietors' Income
1971	93.1%	3.3%	3.7%
1975	92.6	4.8	2.6
1980	93.3	4.7	2.0
1985	86.8	6.4	6.8
1987	84.2	6.7	9.1

See explanation in text of division of earnings by sector.
 Other labor income is estimated at the census division level.

Source: Bureau of Economic Analysis.

- With regard to <u>type of income</u>, earnings throughout contribute most, though a shrinking share of personal income. This is complemented by relative increases in transfer income (e.g., State of Alaska Permanent Fund dividend program) and dividend and interest income (largely from NANA Regional Corporation stock dividends).
- With regard to <u>earned income by sector</u>, BEA data show an apparent reversal in the relative importance of public and private sectors. BEA income data, however, derives partly from ADOL employment and payroll data which, according to SIC definitions, classifies employees and payrolls of nonprofit corporations (e.g., Maniilaq Association) as service workers/earners. Thus, the transfer of several important public services from governmental to nonprofit corporate administration seriously distorts the allocation of income between public and private sectors.
- With regard to the <u>components of earnings</u>, the most significant change is the abrupt fourfold increase in proprietors' income reported since 1980. This change may signal that independent small trade and service enterprises are starting to play a stronger role in the region's commercial economy. If so, this is a particularly positive trend when operation of the Red Dog Mine boosts resident incomes and purchasing power and creates opportunities for new local commerce. (Other labor income, which consists mainly of employer contributions to private pension and welfare funds, is estimated for census divisions and is not reliable.)

Table 1-8 records the distribution of earned income by each industrial sector.⁸ These earnings data, like ADOL employment data previously examined, suggest that the region's economic structure has been relatively static since 1971.

In 1971 and 1987 government earnings dominated. Government employment's total contribution to personal earnings appears to have declined, but the confusion of governmental and service earnings inherent in ADOL source data obscures reality. Unquestionably, the composition of governmental payrolls has shifted radically. In 1971, the federal government dominated civilian employment, and federal military employment accounted for another important sector. By the late 1980s the federal share had shrunk to about one-fifth its former share, and federal military employment had nearly vanished.

Meanwhile, the state's governmental system developed and matured. In 1971, barely a decade from statehood and financially struggling, Alaska was on the verge of unprecedented economic and governmental expansion. During the next 15 years, state and local governments (backed by state funding) supplanted the federal government as the mainstay of the Northwest Arctic Borough's governmental sector.

Support sector industries (trade, services, transportation/public utilities, finance/insurance/real estate) show modest payroll growth, but that partly reflects nonprofit public service agency payrolls recorded in the service sector.

^{8.} The BEA "earnings by industry" data are partly derived from ADOL employment and payroll data. The BEA earnings data is more comprehensive than ADOL payroll data. It covers some sources of earned income omitted by ADOL, plus unearned income and estimates the net inflow/outflow of earnings. BEA earnings data trends coincide with ADOL findings.

Industry	1971	<u>1975</u>	1980	1985	1987
Agriculture, Forestry & Fisheries	(L)	(L)	(D)	(D)	(D)
Mining	(L)	(L)	(D)	(D)	(D)
Construction	0.0	(D)	8.5	1.3	0.8
Manufacturing	(D)	(D)	(L)	0.0	0.0
Transportation & Public Utilities	18.3	21.0	14.0	11.2	15.1
Trade	5.7	6.8	7.4	7.6	8.4
Finance, Insurance & Real Estate	(D)	(D)	(D)	3.8	5.3
Services	6.6	9.1	9.5	14.7	17.3
Government & Govern-	67.5	54.3	58.6	54.3	48.0
ment Enterprises Federal Civilian Federal Military State & Local	(35.8) (10.2) (21.5)	(31.1) (6.7) (16.4)	(15.8) (1.5) (41.3)	(7.5) (0.5) (46.4)	(7.1) (0.7) (40.2)
Subtotal ¹	98.1	91.2	98.0	92.9	94.9
TOTAL	100.0	100.0	100.0	100.0	100.0
			-		

TABLE 1-8 PERCENT DISTRIBUTION OF EARNED INCOME, BY INDUSTRY, 1971-1987 NORTHWEST ARCTIC BOROUGH

1. Subtotal omits amounts not disclosed (D) or less than \$50,000 (L).

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(L) Less than \$50,000.(D) Not shown to avoid disclosure of confidential information.

Source: Bureau of Economic Analysis.

Chapter 1

The negligible role of private sector basic activities (agriculture/forestry/fisheries, mining and manufacturing) throughout the period evidences the long-standing fundamental weakness of the region's market production economy. Basic private sector production of goods for export, the wealth-producing activity which sustains the support sector and creates a tax base for local government was inconsequential before the Red Dog Mine project.

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Tables 1-9 and 1-10 and Figures 1-10 and 1-11 show the extent to which the region, as late as 1987, lacked industries that produce goods for export. Table 1-9 and Figure 1-10 compare the distribution of 1987 earnings by four industrial groups (commodity-producing, distributive, service, and government and government enterprises) for the Northwest Arctic Borough with five other arctic and western Alaska census divisions, the State of Alaska, and the United States. The commodity-producing industry is a rough proxy for market sector export production. The Northwest Arctic Borough's share of personal earnings from commodity-producing industry totalled about one-quarter the statewide average, about one-fifth the national average and much less than any other Alaska census division.

Table 1-10, which compares per-capita earning by industry group for many of the same geographic areas, is even more telling. Per-capita earnings in 1987 from commodity-producing industry for the Northwest Arctic Borough was \$502, the lowest figure for any of Alaska's 23 census divisions and less than half the level for Alaska's poorest census division (Wade Hampton).

TABLE 1-9 **PERCENT** DISTRIBUTION OF EARNINGS BY INDUSTRY GROUP, 1987. UNITED STATES, ALASKA & SELECT CENSUS DIVISIONS

	State of		Dill-	· .	North Slope	Northwest Arctic	Wade	United
Industry Group	Alaska	Bethel	ingham	Nome	Borough	Borough	Hampton	States
Commodity-produc- ing industry ¹	25.4%	11.4%	43.0%	15.7%	55.5%	5.9%	16.9%	30.3%
Distributive industries ²	20.4	12.9	12.1	19.3	11.1	23.5	13.0	22.8
Service industries ³	21.2	19.9	20.7	20.2	12.8	22.6	9.3	31.1
Government & govern- ment enterprises	33.0	55.8	24.3	44.8	20.5	48.0	60.8	15.7
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

1. Comprises agriculture, forestry, fisheries, mining, construction and manufacturing.

Comprises transportation; communication; electric, gas, and sanitary services; and trade.
 Comprises finance, insurance, and real estate; and services.

NOTE: Minor statistical interpolations, based on historic BEA income data and ADOL payroll data, were necessary to estimate undisclosed data.

Source: Bureau of Economic Analysis.

TABLE 1-10PER-CAPITA EARNINGS BY INDUSTRY GROUP, 1987UNITED STATES, ALASKA & SELECT CENSUS DIVISIONS

Industry Group	State of Alaska	Bethel	Dill- ingham	Nome	North Slope Borough	Northwest Arctic Borough	Wade Hampton	United States
Commodity-produc- ing industries ¹	\$ 3,927	\$ 915	\$ 5,119	\$ 1,655	\$38,792	\$ 502	\$1,048	\$ 3,438
Distributive industries ²	3,158	1,034	1,437	2,042	7,784	1,993	811	2,587
Service industries ³	3,269	1,600	2,465	2,127	8,948	1,921	578	3,520
Government & govern- ment enterprises	5,093	4,482	2,895	4,728	14,350	4,081	3,779	1,783
TOTAL	15,447	8,031	11,916	10,552	69,873	8,497	6,215	11,328
Population (1,000's)	525.3	12.7	5.8	7.7	5.3	5.9	5.4	243,396

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¹ Comprises agriculture, forestry, fisheries, mining, construction and manufacturing.

² Comprises transportation; communication; electric, gas, and sanitary services; and trade.

³ Comprises finance, insurance, and real estate; and services.

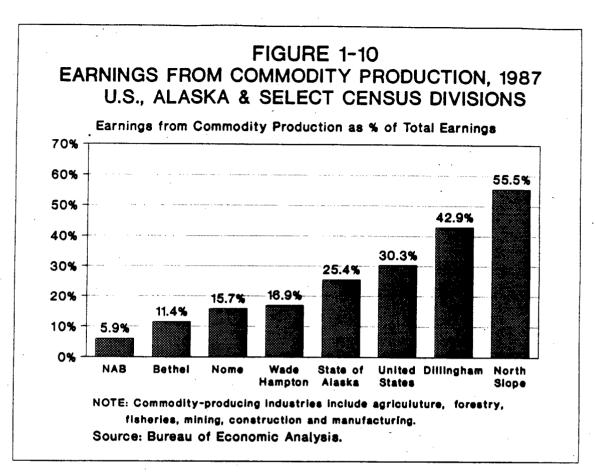
NOTE: Minor statistical interpolations, based on historic BEA income data and ADOL payroll data, were necessary to estimate undisclosed data.

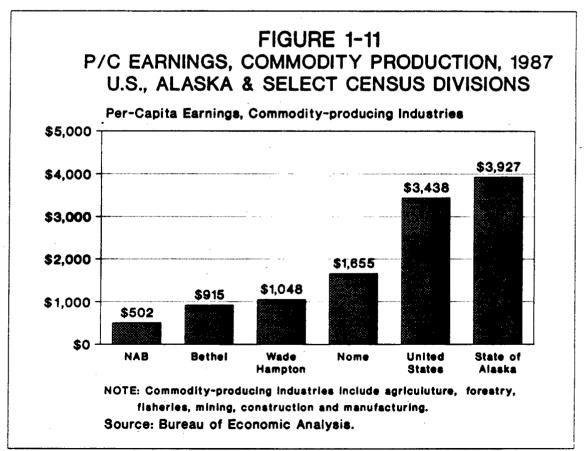
NOTE: North Slope Borough per-capita earnings are greatly inflated by nonresident earnings in oil and oil-related industries.

Source: Bureau of Economic Analysis.

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These comparative regional figures on wealth-producing industry illustrate the struggling status of the Northwest Arctic Borough's private basic economy before development of the Red Dog Mine. Southwest coastal Alaska has its modest-to-prosperous salmon industry, Nome has tourism and its reviving mining industry, the North Slope Borough has its prodigious oil and gas industry. As of 1987 the Northwest Arctic Borough had none of these and little else. If the Northwest Arctic Borough had to depend upon basic private sector industry for its liveli-hood, it would have been Alaska's cash-poorest region.

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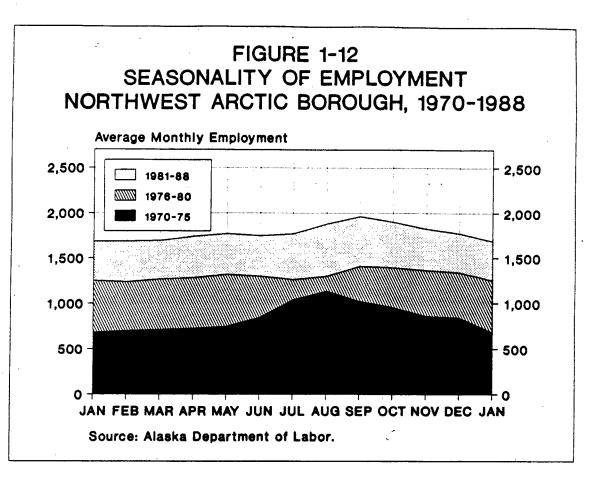
5. Seasonality of Employment

In 1970 the region's economy showed a pronounced seasonal rhythm, partly from the late summer pulse of longshoring/water transportation work (at that time, most goods were still delivered and intraregionally trans-shipped by water), partly from busy summertime trade. Full-time, year-round jobs were scarce at that time.

The region's monthly employment figures hold relatively level throughout the year (Figure 1-12). In fact, the region's annual employment cycle is now more stable than the state's and much flatter than the decidedly seasonal cycle of Bristol Bay/Lower Kuskokwim/Lower Yukon commercial fishing communities or Nome's mining and tourist economy.

But the monthly employment levels are not the whole story. In the Northwest Arctic Borough, mid- to late summer peaks in transportation, construction, trade, and service sector employment coincidentally offset the summertime drop in school district employment. For the most part, the former sectors employ different segments of the workforce than the school district. Thus, relatively stable

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overall employment figures hide substantial seasonal turnover of jobs and workers in specific employment sectors. For many unskilled workers summer still provides the seasonal "window of opportunity" for wage employment.

6. Recent Employment Trends

The Alaska Department of Labor's latest employment data (Tables 1-5, 1-11 and 1-12) indicate that the region's economic recession bottomed out in 1987 and then rebounded strongly. Figure 1-13 compares employment and payrolls for 1987, 1988, and 1989.⁹ Compared to the regional employment level (1,732 employees) in 1987, employment rose slightly to 1,785 in 1988, then jumped to an all-time high of 1,991 employees in 1989, a rise of 15.0 percent over two years. Similarly, regional payrolls rose from \$40.7 million in 1987, to \$45.4 million in 1988, to \$52.0 million in 1989, a two-year increase of 27.7 percent.

Employment figures (Table 1-11) indicate broad-based economic revival. Data show employment growth in every sector except, puzzlingly, retail trade. Strongest growth registered in the service sector (+22.9 percent) and in government (+11.0 percent), where local government employment growth more than offset losses in federal and state employment. Table 1-11 figures doubtless reflect Red Dog Mine construction, transfer of administration of the Kotzebue Hospital from the Alaska Area Native Health Service to Maniilaq Association, staffing of the newly formed Northwest Arctic Borough, City of Kotzebue staff increases, and state government employment cutbacks. Note that the adjusted employment figures

^{9.} ADOL employment and payroll figures for 1988 and 1989 do not appear to reflect fully construction and other employment related to Red Dog Mine development. Some nonlocal contractors and subcontractors may not have made separate report of their local employment.

TABLE 1-11						
	OYMENT BY		- 1000			
NORTHWEST	ARCTIC BOH	(OUGH, 198	/-1989			

				Percent
				Change
Industry Classification	1987	1988	1989	<u> 1987-89</u>
Mining	*	*	*	
Construction	*	*	33	.
Manufacturing	0	0	0	
Transportation, Communica and Public Utilities	tion 153	153	167	+9.2%
Trade	209	171	184	-12.0%
Finance, Insurance and Real Estate	86	84	*	.
Services'	336	354	413	+22.9%
Government ¹	909	932	1,009	+11.0%
Federal	(111)	(101)	(89)	(-19.8%)
State	(93)	(88)	(86)	(-7.5%)
Local ¹	(705)	(743)	(834)	(+18.3%)
Miscellaneous	*	*	*	
TOTAL	1,732	1,785	1,991	+15.0%
Payrolls	\$40,691,136	\$45,438,750	\$51,976,768	+27.7%

*Figures withheld to comply with disclosure regulations.

1. After ADOL statistics are adjusted to reclassify Maniilaq Association and NIHA employment from "services" to "local government", the following figures result.

				% Change
Classification	1987	1988	1989	<u> 1987-89</u>
Services	106	110	112	+5.7%
Government	1,139	1,176	1,310	+15.0%
(Local)	(935)	(987)	(1,135)	(+21.4%)

Source: Alaska Department of Labor.

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TABLE 1-12LABOR FORCE, EMPLOYMENT, AND UNEMPLOYMENTNORTHWEST ARCTIC BOROUGH, 1987-1989

	1987	1988	1989
Labor Force	2,193	2,195	2,135
Employment	1,853	1,910	1,923
Unemployment	340	285	212
Unemployment Rate	15.5%	13.0%	9.9%

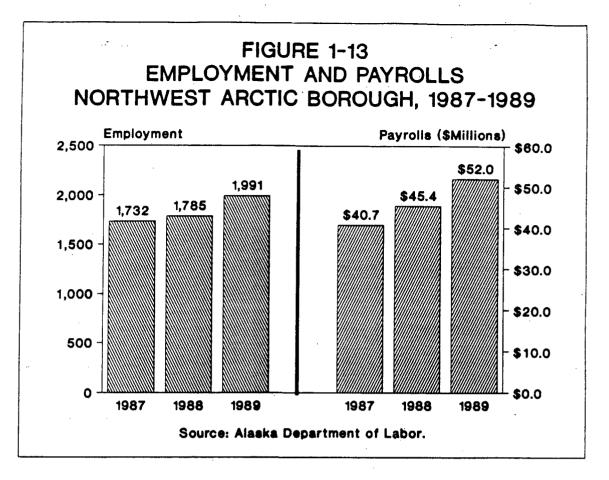
Note: The employment figures in this table were developed according to federal guidelines and are definitionally different from the figures that appear in the ADOL Statistical Quarterly employment data series. ADOL does not regard comparisons of this table's employment numbers for different time periods to be as meaningful as other time series published by ADOL.

Source: Alaska Department of Labor, Alaska Economic Trends.

in Table 1-11 show only modest service employment growth (5.7 percent) but much stronger local government growth (18.3 percent).

Overall, the region's employment and payroll trends since the onset of the state's economic recession in 1986 indicate surprising resilience. The recession affected the Northwest Arctic Borough less severely than Anchorage or Fairbanks and the region rebounded sooner and stronger than those regions, partly thanks to the stimulus of the Red Dog Mine project (Alaska Department of Labor, 1989a).

ADOL labor force data are consistent with this picture of a reviving regional economy. Table 1-12 reports official labor force, employment and unemployment figures for the Northwest Arctic Borough for 1987 through 1989. It shows a drop in labor force size (from 2,193 to 2,135) and a modest gain in employment (from 1,853 to 1,923), which together produce a substantial drop in unemployment (340



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to 212) and unemployment rate (15.5 percent to 9.9 percent). Overall, thesefigures also suggest a positive trend in the regional economy, though not so positive as the employment and payroll data cited just previously. The figures in Table 1-12, however, are derived from sample data according to federal guidelines. They cannot be directly compared to other ADOL employment series and may be less reliable. Also, these official labor force and unemployment figures exclude discouraged workers and tend to understate effective unemployment rates. (See later discussion in Section IV.1).

Table 1-13 lists occupational classifications for which employers filed five or more job orders to the Alaska Department of Labor's Kotzebue Alaska Employment Service office in FY 1986-1989. This table covers only employers recruiting through the local Alaska Employment Service office and does not indicate positions actually filled by local workers. Thus, the figures only suggest occupational labor demand in the region.

Generally, the figures in Table 1-13 coincide with the notion that labor demand picked up in the region after 1987. Construction trades and laborer occupations dominate the occupational mix of FY 1988-1989 job orders, as did managerial and administrative positions. This demand pattern suggests that Red Dog Mine construction and, perhaps, ongoing governmental growth were strong sources of labor demand during that time.

III. SOURCES OF PERSONAL AND HOUSEHOLD INCOME

1. Introduction: Types of Earned and Unearned/Cash and Non-cash Income Personal and household cash income statistics surprisingly are plentiful and detailed for the Northwest Arctic Borough and its communities, especially 1

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TABLE 1-13 JOB OPENINGS AND AVERAGE WAGE RATES KOTZEBUE JOB SERVICE OFFICE, FY 1986-1989

	Numb	er of C	peninas	,
Occupation		1987		1989
Administrative Services Manager	8	*	14	8
Amusement & Recreation Attendants	*	*	*	6
Bookkeeping, Acctg & Auditing Clerks	*	*	9	18
Carpenters	5	13	*	18
Cooks: Institutional & Cafeteria	*	*	7	7
Cooks: Restaurant	*	*	*	12
Earth Drillers, Ex. Oil & Gas	*	*	10	*
Electricians	*	*	5	8
General Office Clerks	8	*	11	13
Hand Packers & Packagers	*	*	*	7
Helpers: All Other Construction Trades	*	*	10	*
Hoist & Winch Operators	*	*	*	6
Industrial Production Manager	*	*	*	6
Janitors/Cleaners	11	*	5	11
Ex Maids/House Cleaners			•	
Maids & Housekeeping Cleaners	*	*	*	8
Maintenance Repairers: General Utility	*	*	*	5
Meat/Poultry/Fish Cutters/Trimmers:Hand	107	7	*	*
Mechanics: Mobile Heavy Equip, Ex Engine	*	*	15	7
Nurses: Registered	*	*	*	8
Nursing Aides, Orderlies & Attendants	*	*	5	10
Operating Engineers	*	*	64	26
Paving/Surfacing/Tamping Equip Operators	*	*	5	*
Plumbers, Pipefitters, & Steamfitters	*	5	*	7
Receptionists	*	*	*	6
Recreation Workers	*	*	7	*
Reinforcing Metal Workers	*	*	*	9
Salespersons: Parts	*	*	*	5
Secretaries	9	*	7	22
Social Service Technicians	*	*	, 5	*
Social Workers, Ex Medical/Psychiatric	*	*	5	*
Stock Clerks: Sales Floor	* *	5	*	*
Stock Clerks: Sales Floor Structural Metal Workers	*	*	*	22
	*	*	*	5
Supervisors: Construction/Extractive Workers	*	*	*	5
Supervisors: Production/Operating Workers	*	*	6	с *
Supervisorst Trans/Mtl Moving Machs	*	*	0 *	21
Truck Drivers: Heavy or Tractor Trailer	8	*	*	۲۱ ۲
Vocational & Educational Counselors	8 *	*	*	10
Welders & Cutters			~	10

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TABLE 1-13 (continued, page 2) JOB OPENINGS AND AVERAGE WAGE RATES KOTZEBUE JOB SERVICE OFFICE, FY 1986-1989

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Occupation	Nur FY1986	nber of FY1987			
All Other Agriculture/Forestry/Fishing	3	*	1	7	>
All Other Clerical/Admin Support Workers	17	16	28	34	
All Other Construction Trades Workers	13	- 9	34	79	
All Other Crafts, Operators, & Laborers	15	14	19	40	
All Other Freight/Stock/Mtl Movers: Hand	7	5	14	. *	
All Other Helpers/Laborers/Mtl Movers: Hand	24	8	95	*	
All Other Managers & Administrators	8	- 6	8	11	
All Other Prof/Technical/Paraprof Wkrs	29	9	33	55	
All Other Sales Workers	2	4	. *	8	
All Other Service Workers	19	11	21	30	
All Other Teachers & Instructors	*	*	*	5	
Total Job Openings Listed	293	112	492	576	
Total Job Openings	294	133	492	577	
Average Hourly Wage: Total Listed Total Openings		\$12.67 \$12.36			

* Less than five employer job orders.

Source: Alaska Wage Rates, 1986-1989.

considering their population and remoteness. Nonetheless, cash income data fall short of representing all major sources of livelihood in this region's mixed economy. Noncash in-kind income (goods and services supplied by nonlocal governments) and in-kind subsistence income are each vital as well to the region's households.

This mix **of** cash income supplemented by in-kind goods and services in the Northwest Arctic Borough is not unique even within the contemporary U.S. economy, but the portion of livelihood comprised by in-kind transfers and subsistence production is highly unusual. Data presented later in this report show that the cost of noncash benefits delivered by state and federal governments nearly

equals residents' total personal cash income. Official figures for cash income and market consumption generally ignore these sorts of in-kind income.¹⁰

This analysis of household and personal income attempts to account for both cash income and non-cash, or in-kind, income. The analysis further subdivides these two broad types of income into earned (e.g., wages) and unearned (e.g., transfer payments, dividends) cash income and earned (e.g., subsistence production) and unearned (e.g., subsidized health, educational, and housing services) in-kind income. The analytic approach is broadly comparative. Income conditions in the Northwest Arctic Borough are frequently compared with and evaluated by reference to statewide and national conditions.

Before the empirical analysis, we identified four technical points that tend to muddle measurement and interpretation of household or personal income data for Northwest Arctic Borough households.

Generally, empirical research has found that nationally, the net effect of noncash programs was to redistribute income and reduce poverty. This research also underlined the economic vulnerability of the border-line poor to cutbacks in noncash benefit programs.

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^{10.} Over the past decade, federal economists have become increasingly aware that cash income, excluding noncash governmental benefits, is an incomplete measure of economic and poverty status. The U.S. Bureau of the Census has sponsored a pioneering theoretical and statistical research into the net effect (less income and payroll taxes) of such noncash benefit programs as food stamps, school lunch subsidies, rent subsidies, Medicaid coverage, employer contributions to employee health programs and home equity on the distribution of income and the prevalence of poverty. This topic abounds with conceptual and technical difficulties, most particularly, about the definition and valuation of noncash benefits. These issues, along with recent empirical research, are informatively discussed in Measuring the Effect of Benefits and Taxes on Income and Poverty: 1989 (U.S. Bureau of the Census, 1990).

First, the in-kind transfers of goods and services provided or paid for by nonlocal governments contribute greatly to personal consumption of goods and services (in other words, income) by rural Alaska households. Such personal consumption, though income, is not recorded in official ledgers of household income or expenditures or national income accounts. As with subsistence income, affixing a monetary value to in-kind income is difficult. Perhaps the foremost issue concerns whether to value specific goods and services at government's cost, their worth to recipients, or by some other measure.

Second, subsistence production of goods and services for household consumption amounts to a significant part of earned, albeit non-cash income. By definition, subsistence is the antithesis of commercial production for market distribution. Though subsistence indisputably produces income, gross national product figures exclude activities that occur outside the cash marketplace.¹¹

Though economists find subsistence income difficult to monetize, subsistence itself is commonplace. Many American families still hunt and fish for the dinner table, harvest backyard gardens, fell and chop firewood, fabricate clothes, service their own cars, and make home repairs and additions. These are everyday examples of contemporary subsistence. More and more households, however, willingly pay cash for these goods and services and similar time-saving

^{11.} The Bureau of Economic Analysis gives a slight conceptual nod to subsistence income. Its personal income tabulations allow for selected types of nonmonetary income, for example, the imputed cash value of food and fuel produced and consumed on farms. Akin to subsistence, these items are defined as "production of goods and services for household consumption." In this way, official statistics tacitly acknowledge that subsistence generates real income but, not surprisingly, flinch at the technical and practical problems of tracking and valuing nonmarket subsistence production. The BEA collectively valued all forms of nonmonetary income, of which subsistence was a small part, at less than onehalf of one percent of total national personal income in 1986.

conveniences (prepared and fast foods, child care, mail-order shopping, etc.) to buy time away from household chores. These tradeoffs are backhand proof that subsistence goods and services have genuine cash worth, even in a modern market economy. (Chapter 3 covers the role of subsistence in the regional economy.)

Third, the cost-of-living differential for the Northwest Arctic Borough severely deflates the purchasing power of cash income. Interregional comparisons are complicated, since local consumer preferences and personal expenditures tend to fit living conditions in the Northwest Arctic Borough, not national consumption norms. This regional cost-of-living differential is distinct from nationwide consumer price inflation as measured by the U.S. Bureau of Labor Statistics Consumer Price Index.

Fourth, some household income in the Northwest Arctic Borough, as elsewhere, eludes official income statistics. Typically, elusive income includes off-books employment; illegal activity like bootlegging and drug sales, gambling, sales of ivory and artifacts; sale of handicrafts; and barter or sale of subsistence production. These forms of income are near-universal but are especially prevalent in loosely structured, developing economies where many transactions take place in informal settings outside any bookkeeper's view. Unfortunately, no data exist to show whether the underground economy in the Northwest Arctic Borough is more or less extensive than in the national economy.

2. Earned Cash Income

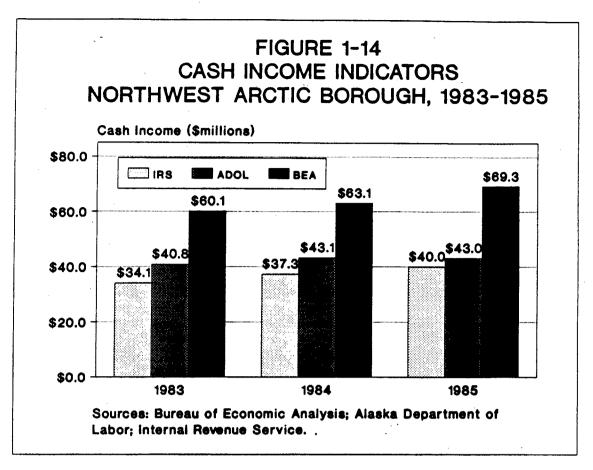
Three basic sources of historical data on cash income for persons and/or households have been published about the Northwest Arctic Borough: the Alaska Department of Labor's <u>Statistical Quarterly</u>, the Alaska Department of Revenue's

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Federal Income Taxpayer Profile by Alaska Community and Income Level and Filing Status, and the federal Bureau of Economic Analysis's Local Area Personal Income. Each serves a distinct purpose and adopts its own data coverage, technical definitions, statistical methods, and data aggregation formats. As a result, cash income data usually are not directly comparable. This lack of comparability has advantages and disadvantages. On one hand it qualifies the usefulness of different data series for complementary analyses or direct cross-checks, but on the other hand each data series yields a different perspective on regional income conditions.

All three data series produce aggregate statistics that combine data for Native and non-Native persons and households. Nineteen-eighty census data (see Table 2-3) show that non-Native incomes are much higher than Native incomes. Aggregated IRS statistics gloss over this difference, making Native income levels appear higher than the actual case, especially in villages where non-Natives hold a disproportionate share of permanent well-paid jobs. This shortcoming qualifies interpretation of all the cash income data presented below.

Figure 1-14 compares cash income for 1983-1985 as reported for the Northwest Arctic Borough by the Bureau of Economic Analysis (total personal income), the Alaska Department of Labor (payroll wages), and the Internal Revenue Service (wages, interest, dividends, capital gains, pensions, taxable social security income, and unemployment compensation). The data in Figure 1-14 indicate that: (1) the BEA's income figures are higher and, therefore, probably more complete than ADOL or IRS figures and (2) the three data series (and the differences among them) are consistent from year to year.



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Alaska Department of Labor Statistical Quarterly.

The Alaska Department of Labor compiles wage earnings data as reported by employers. The data exhibit several limitations--some minor, some important. For example:

- Payroll earnings data omit self-employment earnings.
- Disclosure restrictions sometimes prevent publication of certain data.
- Employers maintaining several places of work within a region may submit a single report covering several job sites. For example, in the Northwest Arctic Borough, several major region-wide employers headquartered in Kotzebue (Northwest Arctic Borough School District, Maniilaq Association) regularly attribute payrolls for all their employees throughout the region to Kotzebue, regardless of their actual places of work. This results in reporting errors that distort the intraregional distribution of wage employment and earnings.¹²
 Payrolls are reported by place of work, not place of worker residency. Consequently, ADOL payroll data include wages earned locally by nonresidents or transients but omits wages earned in other

venues by Northwest Arctic Borough residents. Thus, the payroll data represent wages earned in the region rather than wages earned by the region's residents.

^{12.} The Minerals Management Service commissioned the Alaska Department of Labor to disaggregate employment and payroll data for 1980-1986 for the seven census subareas (and eleven settlements) comprising the Northwest Arctic Borough: Candle (Buckland, Deering), Kivalina, Kobuk River (Ambler, Kiana, Noorvik), Kotzebue, Noatak, Selawik and Shungnak (Kobuk, Shungnak). These subarea data were examined for information about the intraregional distribution of wage work and payrolls. We found that the disaggregated subarea data were badly distorted by omissions and reporting errors and were unreliable for intraregional labor analysis. Therefore, these subarea data were not included in this analysis.

On the positive side, the ADOL data are published more promptly than other employment and income data series. They are more timely for recent economic trend analysis. Table 1-14 presents ADOL employment and wage (in constant dollars) figures for the Northwest Arctic Borough region from 1970 through 1988. In real terms annual payrolls tripled from \$12.6 million in 1970 to \$38.4 million by 1988, while average annual employment almost tripled from 641 in 1970 to 1,785 in 1988.

The figures in Table 1-14 show clear signs of a post-oil boom slump. By 1987 employment, annual payrolls, and average monthly wage had dipped below the levels of a few years earlier. Table 1-14 also shows a recent retreat in real wage levels almost to 1970 levels. The average monthly wage rose from \$1,639 in 1970 to peak at \$2,168 in 1977 and had fallen to \$1,723 in 1987. The employment, payroll, and monthly wage figures for 1988 all moved up, suggesting a new positive trend in the regional economy.

Figure 1-15 charts regional payrolls from 1980 through 1988 in constant dollars adjusted according to the U.S. Department of Labor's Consumer Price Index (CPI: 1982-84 = 100). Figure 1-15 shows the steady decline in real total payroll earnings after 1984, falling to a pre-1981 level by 1987. This retreat parallels the general economic downturn that beset southcentral, interior, and much of western Alaska after the early 1980s drop in state petroleum revenues and the ensuing cutback in state outlays for pump-priming public expenditures.

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WAGE EMPLOYMENT,	ANNUAL PAYR	OLLS, AND	AVERAGE	MONTHLY	WAGE
NORTH	WEST ARCTIC	BOROUGH,	1970-198	8	

Year	Average Monthly Employment	Annual Payroll ^{1/}	Average Monthly Wage ¹
1970	<u>641</u>	\$12,609,320	\$1,639
1971	724	13,757,291	1,583
1972	875	16,575,071	1,579
1973	970	18,329,850	1,575
1974	894	19,589,406	1,375
1975	1,042	23,392,578	1,820
1976	1,075	26,324,049	2,041
1977	1,274	33,149,032	
			2,168
1978	1,402	34,063,360	2,025
1979	1,364	30,458,656	1,861
1980	1,437	33,040,160	1,916
1981	1,753	39,680,991	1,886
1982	1,880	40,380,313	1,790
1983	1,709	40,888,238	1,994
1984	1,779	41,452,723	1,942
1985	1,823	39,936,988	1,826
1986	1,823	38,231,762	1,748
1987	1,732	35,808,200	1,723
1988	1,785	38,395,743	1,793

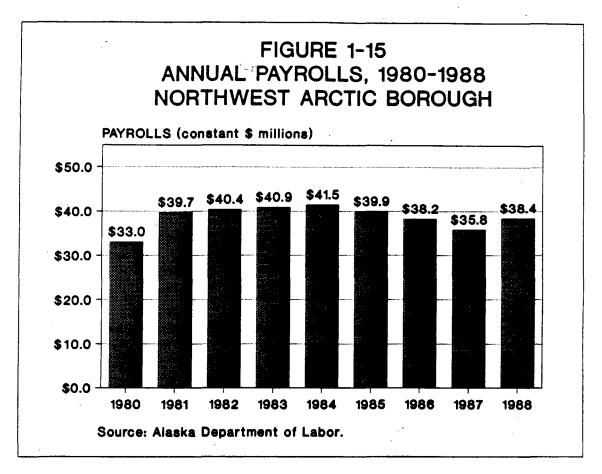
1. Constant dollars, as per Bureau of Labor Statistics' Consumer Price Index (1982-1984=100).

Source: Alaska Department of Labor.

Bureau of Economic Analysis.

The Bureau of Economic Analysis' annual Local Area Personal Income publication provides the most comprehensive data on total personal cash income, including locally earmed income, for the Northwest Arctic Borough. The BEA earned income data include wages and salaries derived from ADOL payroll data, plus other labor income and non-farm proprietors' income. The BEA earnings data also provide estimates of employee contributions toward retirement, medical and social insurance programs and a "residence adjustment" for income earned locally by persons residing outside the Northwest Arctic Borough.

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Table 1-15 displays earned income for the Northwest Arctic Borough for 1982 through 1987. These income figures support several points about recent trends in earnings. Even though total personal income rose every year, earned income flattened out after 1984 and wage and salary income actually declined. Meanwhile, earnings contributed a shrinking share of total personal income from 81 percent in 1982 down to 69 percent in 1987, even as unearned income, mainly from transfer payments and dividends, continued to grow. In each year there was a modest net drain of earned income from the region.

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Internal Revenue Service/Alaska Department of Revenue.

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The Internal Revenue Service reports select federal income taxpayer data to the Alaska Department of Revenue. The Department of Revenue compiled and published this IRS income data for 1978 and 1981-1985 in two reports (Alaska Department of Revenue, 1985; 1988).¹³ The reports summarize total and average figures for every community in the state for: number of returns and exemptions; main sources of taxable income, including wages, interest, dividends and pensions and annuities; and adjusted gross income, taxable income, and income tax paid.¹⁴ For larger communities such as Kotzebue the reports also publish data on the distribution by income group of the total number of returns, exemptions, taxable income, and tax paid.

13. Due to budgetary constraints, the department discontinued publication of this IRS taxpayer data after 1985.

14. These data categories conform with federal income tax reporting requirements. They are not congruent with the standard definitions employed by BEA or ADOL. Also, the detailed IRS data on sources of income do not itemize selfemployment income but included it in adjusted gross income.

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	1982	1983	1984	1985	1986	1987	
Total Personal Income	\$55,888	\$60,085	\$63,144	\$69,270	\$71,431	\$72,622	
Earnings by Place of Work	45,172	47,315	49,518	50,879	50,552	50,132	
Wages and Salaries	40,297	41,848	44,201	44,141	43,035	42,198	۰.
Other Labor Income	3,480	3,463	3,498	3,256	3,004	3,370	
Non-Farm Proprietors' Income	1,395	2,004	1,819	3,482	4,513	4,564	
Less Personal Contributions for Social Insurance	2,807	2,794	3,038	3,170	2,967	3,082	
Plus Adjustment for Residence	(2,177)	(1,809)	(1,294)	(1,371)	(1,588)	(1,364)	
Equals Net Earnings by Place of Residence	40,188	42,712	45,186	46,338	45,997	45,686	

TABLE 1-15 EARNED INCOME (\$1,000s) NORTHWEST ARCTIC BOROUGH, 1982-1987

Source: Bureau of Economic Analysis.

These taxpayer income data constitute a comprehensive and authoritative body of standardized data on sources of taxable income for residents of Alaska communities. The IRS data have two useful advantages over ADOL and BEA data.

First, IRS taxpayer income data are aggregated by community of residence as indicated by filer's mailing address at the time of filing. Thus, the community aggregate income is apt to include earnings and other taxable income of bona fide residents, regardless of where earned, but omit local earnings of transients who most likely filed as residents of their home communities. Additionally, the data can be used for "snapshot" comparisons of intraregional and interregional income levels. (Unfortunately, revisions in federal income tax statutes and regulations and changes in reported data items erode year-to-year comparability).

Second, IRS data itemizes taxable income by main income sources (but earnings from self-employment and proprietors' income are unaccountably not separately itemized).

The IRS taxpayer data best reflect taxable income actually accruing to regional and community residents, regardless of where earned. IRS taxpayer income data understate total cash income for two reasons. Some low-income persons fall below the minimum income reporting threshold and are omitted from the data.¹⁵ This omission lowers reported total income but boosts per-return income figures. Further, self-reported taxable income is apt to err on the side of omission.

Table 1-16 shows the 1985 distribution of taxable cash income by source for Northwest Arctic Borough communities. These data embody four noteworthy points. First, wages are by far the main source of taxable cash income for Northwest Arctic Borough taxpayers, accounting for more than 90 percent of their taxable income. The balance is comprised mainly of dividends¹⁶, interest, capital gains, and taxable pension and unemployment compensation payments (and self-employment income which is not itemized in the IRS data, but see discussion of "proprietors' and self-employment income below). In this respect the personal income profile for the region and its communities closely resembles the statewide average, notwithstanding minor differences in the share of cash income obtained from lesser sources (Figure 1-16).

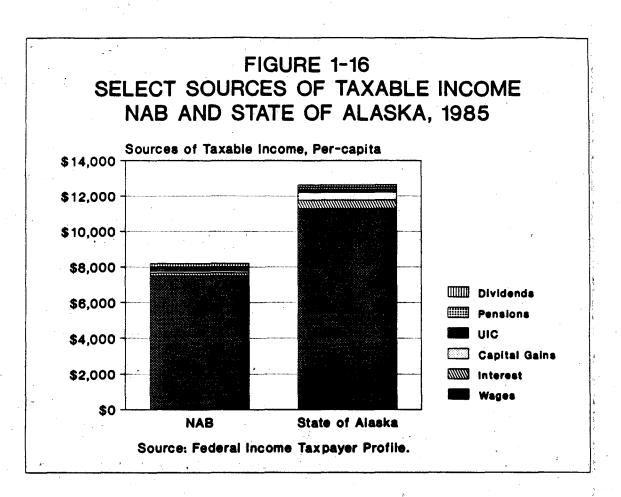
Second, Kotzebue leads the region's wage/cash economy, capturing about two-thirds of the region's wage income with only 44 percent of its population.

15. The minimum income level for required filing of federal income tax returns changed between 1978 and 1985 as follows:

Status	1978	1981-84	1985
Single	\$2,950	\$3,300	\$3,430
Single, 65 or over	3,700	4,300	4,470
Married, filing jointly	4,700	5,400	5,620
Married, filing jointly (one over 65)	5,450	6,400	6,660
Married, filing jointly (both over 65)	6,200	7,400	7,700
Surviving spouse	3,950	4,400	4,580

16. In 1985, NANA Regional Corporation paid a dividend of \$2.00 per share or \$200 per each original corporate shareholder. This accounts for the relatively high proportion of dividend income among Northwest Arctic Borough region residents.

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TABLE 1-16DISTRIBUTION OF MAIN SOURCES OF TAXABLE INCOME1NORTHWEST ARCTIC BOROUGH REGION COMMUNITIES, 1985

			Divi-	Capital		Taxab]e		
<u>Community</u>	Wages	<u>Interest</u>	dends	Gains	<u>ions</u>	<u>SSI²</u>	UIC ²	Total
Ambler	86.8%	3.0%	4.9%	0.1%	0.6%	0.0%	4.7%	100.0%
Buckland	83.9%	3.2%	4.5%	3.0%	0.5%	0.7%	4.2%	100.0%
Deering	94.4%	0.3%	2.3%	0.0%	0.0%	0.0%	2.9%	100.0%
Kiana	90.3%	0.7%	4.0%	0.3%	0.2%	0.1%	4.4%	100.0%
Kivalina	90.6%	0.6%	3.3%	0.0%	1.1%	0.1%	4.4%	100.0%
Kobuk	87.0%	2.1%	2.5%	0.0%	4.0%	0.0%	4.4%	100.0%
Kotzebue	92.1%	2.3%	1.5%	1.9%	1.1%	0.1%	1.0%	100.0%
Noatak	93.2%	0.1%	2.8%	0.0%	0.3%	0.0%	3.5%	100.0%
Noorvik	90.2%	1.5%	3.4%	-0.2%	1.4%	0.2%	3.4%	100.0%
Selawik	92.3%	0.4%	4.0%	0.0%	0.6%	0.1%	2.6%	100.0%
Shungnak	93.1%	0.6%	2.3%	0.4%	0.2%	0.0%	3.4%	100.0%
NAB TOTAL	91.6%	1.9%	2.2%	1.4%	0.9%	0.1%	1.9%	100.0%
STATE TOTAL	89.3%	3.8%	0.9%	3.5%	1.1%	0.2%	1.3%	100.0%

1. Self-employment income not included.

2. SSI represents Supplemental Security Income; UIC represents Unemployment Insurance Compensation.

Source: Federal Income Taxpayer Profile, 1983-1985 by Alaska Community and Income Level and Filing Status. Alaska Department of Revenue, February 1988.

Third, the per-capita and per-household levels of wage income and adjusted gross income vary widely among the region's communities. Kotzebue exceeds village income levels, coming closer to the statewide norm than to even the most prosperous of the region's other villages (Table 1-17 and Figure 1-17). Figure 1-17 profiles the per-capita adjusted gross income of the borough's communities for 1985.¹⁷ These data document the income disparity between the communities,

17. With qualifications noted, "adjusted gross income" (defined by IRA as the gross income received during the tax year by the taxpayer minus specified business and personal deductions) is the best approximation of overall cash income obtainable from the IRS data. Per capita adjusted gross income was calculated by dividing total adjusted gross income by the number of exemptions reported for federal income tax returns filed from each community. The per-capita figures may be systematically skewed upward inasmuch as an unknown number of low-income persons with dependents fell below the income threshold for tax return filing or simply did not file.

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TABLE 1-17 PER-CAPITA AND PER-HOUSEHOLD WAGES AND ADJUSTED GROSS INCOME NORTHWEST ARCTIC BOROUGH COMMUNITIES, 1985

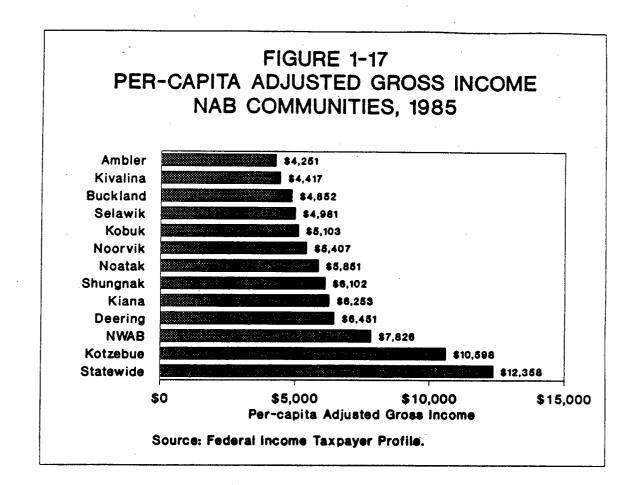
Per	Capita	Per H	<u>Per Household</u>		
• • • •	Adjusted Gross	· · · · · · · · · · · · · · · · · · ·	Adjusted Gross		
Wages	Income	Wages	Income		
			\$12,898		
			16,221		
· ·	•	-	15,891		
•	•		15,140		
•	•	-	13,310		
•	•		16,210		
•		•	25,373		
•		· · · · · · · · · · · · · · · · · · ·	14,795		
	•		13,238		
			13,499		
		-	13,503		
\$7,502	\$7,826	\$18,917	\$19,735		
\$11,297	\$12,358	\$25,931	\$28,367		
	Wages \$3,669 4,641 6,182 5,626 4,290 3,942 10,348 5,318 4,877 4,712 6,159 \$7,502	GrossWagesIncome\$3,669\$4,2514,6414,8526,1826,4515,6266,2534,2904,4173,9425,10310,34810,5985,3185,8514,8775,4074,7124,9816,1596,102\$7,502\$7,826	Adjusted GrossWagesIncomeWages\$3,669\$4,251\$11,1314,6414,85215,5156,1826,45115,2305,6266,25313,6214,2904,41712,9303,9425,10312,52310,34810,59824,7755,3185,85113,4504,8775,40711,9404,7124,98112,7706,1596,10213,629\$7,502\$7,826\$18,917		

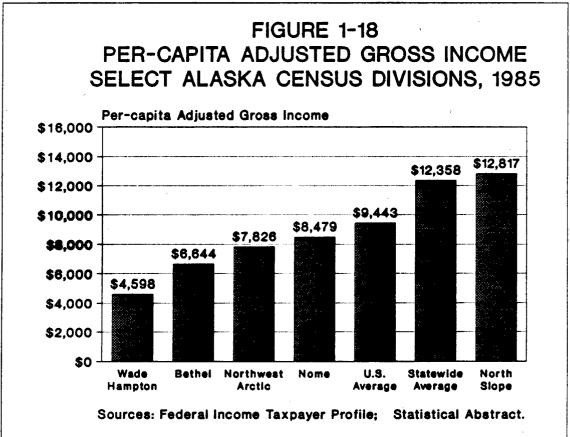
NOTE: More detailed data is presented in Appendix Tables 1 and 2.

Source: Federal Income Taxpayer Profile, 1983-1985 by Alaska Community and Income Level and Filing Status. Alaska Department of Revenue, February 1988.

especially Kotzebue and some of the villages. Kotzebue's per-capita cash income (\$10,598) ranges from 65 percent to 150 percent higher than its satellite villages. Figure 1-17 also shows the spread between per-capita cash incomes within the region's communities and the statewide average. No geographic pattern to community income levels emerged; that is, upriver communities were not consistently poorer or better off than coastal communities.

Fourth, all Northwest Arctic Borough communities fall below statewide income norms as measured by per-capita adjusted gross income (Table 1-17) and all but





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Kotzebue fall below national norms. The Northwest Arctic Borough as a whole ranks near the bottom of the state's census areas, surpassing only the Wade Hampton, Bethel, and Dillingham regions. Table 1-18 and Figure 1-18 compare percapita adjusted gross income for the Northwest Arctic Borough and other western Alaska regions with statewide and national norms.

TABLE 1-18PER-CAPITA ADJUSTED GROSS INCOME1BY SELECT CENSUS DIVISION, STATE OF ALASKA, 1985

		Percent of Statewide
Census Division	Dollars	Average
<u>Highest Four Census Divisions</u>		
1. Juneau	14,147	114.5%
2. Anchorage	14,031	113.5%
3. North Slope	12,817	103.7%
4. Fairbanks North Star	12,126	98.1%
Lowest Four Census Divisions		
20. Northwest Arctic	7,826	63.3%
21. Dillingham	7,096	57.4%
22. Bethel	6,644	53.8%
23. Wade Hampton	\$ 4,598	37.2%
STATE AVERAGE	\$12,358	100.0%
U.S. AVERAGE	\$ 9,443	76.4%
		1

1. Per-capita adjusted gross income calculated by dividing total adjusted gross income by number of exemptions.

Source: Federal Income Taxpayer Profile, 1983-1985 by Alaska Community and Income Level and Filing Status, Alaska Department of Revenue, February 1988; 1988 Statistical Abstract.

Exported and Repatriated Income.

The Northwest Arctic Borough is not a closed labor market or income pool. Many residents periodically or temporarily work outside the region, returning to their home communities to spend their earnings. The region's export of labor in this manner is in effect a form of basic industry. Conversely, transient or temporary workers fill some local job openings, taking part of their earnings elsewhere. To complicate matters further, career residents (i.e., persons whose local residency is tied to their professional occupation or career) often export part of their surplus income as savings for investment or later spending, eliminating this income from the region's economy. Money remitted to residents by relatives and friends living elsewhere may partly offset this drain.

<u>Exported Income</u>. Income leakage commonly occurs in developing regions, especially where seasonal industries draw transient workers. The development process often calls for skilled workers in numbers beyond those found in the indigenous labor force. This shortage partly can be filled with imported labor temporarily for short-term work and permanently for long-term professional and semiprofessional positions.

Data from BEA and ADOL help quantify the extent of income leakage from the Northwest Arctic Borough's economy. BEA reports earned income aggregated by region of work and (estimated) by region of residence. The difference comprises the estimated net (but not gross) flow of earnings to or from the region. ADOL also publishes information about the relative scale of nonresident (that is, of Alaska) earnings in the Northwest Arctic Borough.

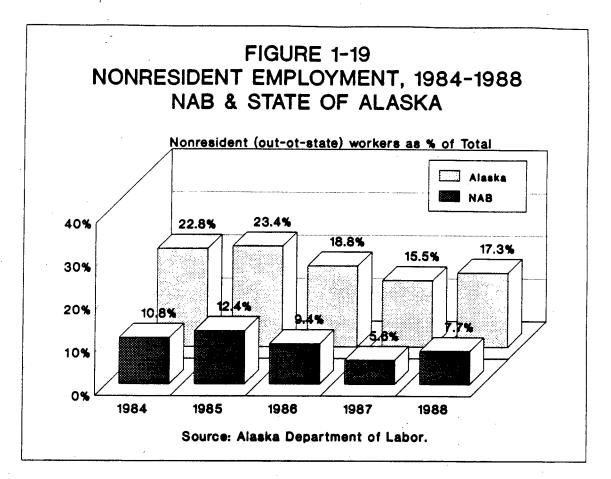
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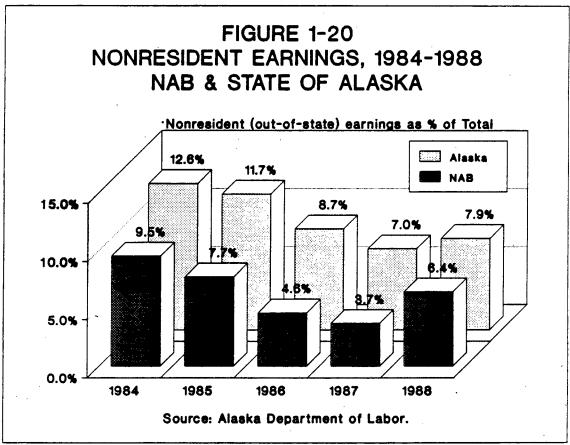
For 1987 BEA estimated a modest net outflow (-2.7 percent) of earnings from the Northwest Arctic Borough. This percentage places the Northwest Arctic Borough near the middle of the state's census divisions and well below the statewide average outflow of -5.4 percent. BEA data also show a positive trend in the region's net outflow of earnings during the past six years, down from -4.8 percent in 1982. In sum, these BEA data indicate that nonresidents collect a relatively small and, through 1987, diminishing share of the Northwest Arctic Borough's wages.

Comparison with other regions reveals wide variation among Alaska census divisions. For example, in 1987 the net outflow of earnings from the North Slope Borough amounted to 70.9 percent of in-region earnings, mainly due to itinerant oilfield workers. The income outflow from Bristol Bay Borough was 27.3 percent because of nonresident seasonal workers in commercial fishing and fish processing plants. At the other extreme, the Matanuska-Susitna Borough enjoyed a net inflow of earnings amounting to +59.9 percent of in-region earnings. Many Matanuska-Susitna Borough residents either commute daily to Anchorage or rotate through schedules in North Slope and Kenai oil fields or other out-of-region jobs.

Since 1984, state law has required ADOL to submit an annual report (<u>Nonresidents</u> <u>Working in Alaska</u>) to the legislature on resident and nonresident employment and earnings. Where BEA defines nonresidents as out-of-region residents, ADOL defines nonresidents as out-of-state residents. According to the ADOL reports the Northwest Arctic Borough's rates of nonresident employment and nonresident earnings have consistently been lower than the statewide average (Figures 1-19 and 1-20). In 1987 and 1988 the region had the lowest rate of nonresident workers of the state's 23 census areas and third (1987) and seventh (1988) lowest

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rate of nonresident earnings (Appendix Tables 3 and 4). Unfortunately, the ADOL figures do not address income leakage to other regions of the state, but the ADOL figures are consistent with the BEA data that indicate the region has an unusually low rate of income leakage, whether to nonresidents of the region or state.

The share of jobs and earnings captured by nonresidents fell by half between 1984 and 1987 (Table 1-19). Unfortunately, this statistic is not altogether positive. This decline in the region's extrastate income leakage may be due as much to its stagnant and remote job market as to intensive local efforts to boost local resident hire. Note that the decline in nonresident earnings and employment coincided closely with the post-1984 drop in total employment, payrolls, and average wages (Table 1-14).

TABLE 1-19					
NONRESID	ENT WOR	KERS AND	EARNINGS		
NORTHWEST	ARCTIC	BOROUGH,	1984-1988		

Year	Nonresident Workers as % of Total	Nonresident Earnings as % of Total	Average Nonresident <u>Earnings</u>
1984	10.8%	9.5%	\$11,587
1985	12.4	7.7	8,128
1986	9.4	4.6	5,764
1 987	5.6	3.7	7,946
19 88	7.7	6.4	9,717

Note: Wages paid to state government employees are excluded.

Source: Nonresidents Working In Alaska, 1984. Alaska Department of Labor.

All these trends reversed in 1988 when the regional economy was quickened by Red Dog project construction. Some project contractors kindled controversy by hiring numerous nonlocal workers. These hiring practices were the key to the 1988 jump in earnings that went to out-of-state workers. Table 1-20 shows 1988 nonresident earnings and employment by industry. The construction industry had by far the highest rate (31.3 percent) nonresident earnings¹⁸ and accounted for nearly half of all nonresident earnings. This suggests that high-wage construction booms are especially apt to draw nonlocal workers into the local labor market.

ADOL also published data on the residency status of employees of all major employers (at least 20 workers during any month) in the state for 1987 and 1988. Table 1-21 reports the residency status of employees of 22 major employers in the Northwest Arctic Borough. The figures in Table 1-21 confirm that the region's major employers are public employers. Sixteen of the 22 major employers listed are local public agencies (state and federal agencies were not listed), with three employers (Northwest Arctic Borough School District, Maniilaq Association, City of Kotzebue) accounting for more than half the major employers' total workforce. The figures also show that local public employers hire few outof-state workers. Five of the six listed private firms were among the six firms with the highest rate of nonresident workers. The private business with the fewest nonresident workers was the Nullagvik Hotel, a NANA Regional Corporation subsidiary. (Table 1-27 shows employment for NANA Regional Corporation and its various subsidiary operations).

Repatriated Income. Numerous observers have commented that Northwest Arctic Borough residents have a long-time habit of taking seasonal and temporary employment outside their home region. Unfortunately, only anecdotal evidence

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^{18.} Note that these nonresident figures refer only to out-of-state residents. Were figures on out-of-region earnings available, we believe they would show that income leakage for the construction industry was actually much higher.

-TABLE-1-20 RESIDENT AND NONRESIDENT TOTAL EARNINGS AND WORKERS BY MAJOR INDUSTRIAL GROUP NORTHWEST ARCTIC BOROUGH, 1988

	Earnings			Workers				
Industrial Group	Resident		Nonresident		Resi	dent	Nonresident	
-	(\$1,000)	Percent	(\$1,000)	Percent	Number	Percent	Number	Percent
Agriculture ¹	\$ 0	0.0%	\$ 0	0.0%	0	0.0%	0	0.0%
Mining	(D)	92.4	(D)	7.6	(D)	88.9	· (D)	11.1
Construction	2,217	68.7	1,012	31.3	272	78.8	73	21.2
Manufacturing	(D)	0.0	(D)	0.0	(D)	0.0	(D)	0.0
Transportation	2,045	94.2	126	5.8	191	91.4	18	8.6
Retail Trade	1,948	92.5	157	7.5	272	91.6	25	8.4
Fin./Ins./Real Est.	1,422	95.9	61	4.1	121	94.5	7	5.5
Services	7,223	96.3	276	3.7	818	94.8	45	5.2
Nonclassifiable	(D)	93.9	(D)	6.1	(D)	90.0	(D)	10.0
Local Government	14,195	97.6	352	2.4	1,469	95.6	67	4.4
TOTAL	\$32,495	93.6%	\$2,235	6.4%	2,740	92.3%	230	7.7%

Source: Nonresidents Working in Alaska, 1988. Alaska Department of Labor.

Note: (D) indicates that information is nondisclosable.

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1. Data includes only nonagricultural wage and salary workers covered by unemployment insurance. Consequently, data provided for this industry may not represent the industry as a whole. ليتميآ المست

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,		Total	Resident	Nonresident
Employer	Industry	Employees	Employees	Employees
Ambler, City of	Public Administration	96	87 (90.6%)	9 (9.4%)
Baker Aviation	Trans., Comm., Util.	56	46 (82.1%)	10 (17.9%)
Buckland City Council	Public Administration	66	61 (92.4%)	5 (7.6%)
Cominco American Inc.	Mining	77	70 (90.9%)	7 (9.1%)
Deering City Council	Public Administration	38	37 (97.4%)	1 (2.6%)
Hanson Trading Co./KDC	Retail Trade	95	85 (89.5%)	10 (10.5%)
Kiana, City of	Public Administration	84	80 (95.2%)	4 (4.8%)
Kivalina City Council	Public Administration	50	48 (96.0%)	2 (4.0%)
Kotzebue, City of	Public Administration	201	186 (92.5%)	15 (7.5%)
Kotzebue/KIC/RS Store Inc.	Construction	69	60 (87.0%)	9 (13.0%)
Maniilaq Association Inc.	Services	481	458 (95.2%)	23 (4.8%)
Noatak Village Council	Services	48	47 (97.9%)	1 (2.1%)
Noorvik, City of	Public Administration	100	97 (97.0%)	3 (3.0%)
Northwest Arctic Borough	Public Administration	36	36 (100.0%)	0 (0.0%)
Northwest Arctic Bor. SD	Services	775	758 (97.8%)	17 (2.2%)
Nullagvik Hotel	Services	100	96 (96.0%)	4 (4.0%)
NW Inupiat Housing Authority	Finance, Ins. and R.E.	83	79 (95.2%)	4 (4.8%)
OTZ Telephone Coop. Inc.	Trans., Comm., Util.	43	41 (95.3%)	2 (4.7%)
R S Store Inc.	Retail Trade	67	61 (91.0%)	6 (9.0%)
Selawik City Council	Public Administration	138	129 (93.5%)	9 (6.5%)
Selawik IRA Council	Services	40	40 (100.0%)	0 (0.0%)
Shungnak City Council	Public Administration	45	45 (100.0%)	0 (0.0%)
TOTAL		2,788	2,647 (94.9%)	141 (5.1%)

TABLE 1-21 EMPLOYEE RESIDENCY STATUS MAJOR EMPLOYERS, NORTHWEST ARCTIC BOROUGH, 1988

Source: Residency Analysis of Alaska's Workers by Firm 1988. Alaska Department of Labor, 1990.

NOTE: "Major" defined to include employers who employed at least 20 workers during any month of 1988. All employees of major firms were counted, regardless of duration of employment. Employees were considered residents if they received a Permanent Fund Dividend in 1988 or applied for a dividend in 1989. Employees not filing for a Permanent Fund Dividend were presumed to be nonresidents of Alaska.

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and spotty statistics exist to document this practice. For example, the U.S. Census Bureau reported that 3.6 percent of Northwest Arctic Borough residents who worked during the 1970 census week worked outside their region of residence and 2.1 percent during the 1980 census week. These rates were somewhat higher than average for other western and arctic census divisions.

Lacking comprehensive data on out-of-region employment and earnings, we collected data on resident or NANA shareholder earnings for several historically important out-of-region employment sources: pipeline construction, fire-fighting, North Slope oilfield employment, Red Dog Mine construction, and <u>Exxon Valdez</u> oil spill cleanup operations.

Though spotty, these data suggest a consistent and plausible picture of the regional workforce's mobility. Cumulative data show that part of the region's labor pool has been exceptionally willing, mobile, and versatile in pursuit of cash employment outside their home towns and home region. This labor mobility has helped offset the local deficit of job openings.

a. Trans-Alaska Pipeline Construction Project. Of the seven ANCSA corporate regions wholly outside the pipeline corridor, NANA Regional Corporation had the highest percentage of shareholders employed at some time on the pipeline construction project. Five regions (CIRI, Doyon, AHTNA, Chugach, and Arctic Slope) exceeded NANA's percentage, six others fell below (Table 1-22). The rate of project employment varied widely among the region's communities. Kivalina (16.8 percent) had the highest participation rate. Ambler (1.9 percent), Deering (2.5) and Shungnak (3.7) were lowest; and the other communities were bunched around the region-wide average.

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TABLE 1-22 ALASKA NATIVE TAPS PIPELINE WORKERS AS A PERCENT OF ANCSA CORPORATION MEMBERSHIP

	Percent of Membership
ANCSA Corporations	Employed on TAPS
Cook Inlet	20.1%
Doyon	18.7
Ahtna	14.6
Chugach	10.1
Arctic Slope	6.5
NANA	6.3
Sealaska	5.4
Bering Straits	4.5
Calista	2.2
Koniag	2.1
Bristol Bay	1.9
Aleutian	1.0
AVERAGE	7.3

Source: Alaska Native Hire on the Trans-Alaska Oil Pipeline Project, ISER, 1978.

b. Alaska Fire Service. The Bureau of Land Management's Alaska Fire Service has employed residents of many rural Alaska Native villages over the years. Table 1-23 gives annual wages for the period 1985-1988 for the NANA region village fire-fighting teams. Firefighters' wage levels have risen steadily, perhaps because of fluctuating demand for these services. For the peak year of 1988, firefighter payrolls for this highly seasonal activity amounted to nearly 3 percent of the region's total payroll earnings (\$45,438,750).

Table 1-24 summarizes 1988 Alaska Fire Service firefighter payrolls by region. Despite their distance from Alaska Fire Service administrative headquarters in Fairbanks, the region's residents that year earned higher wages fighting fires than any region except the Yukon-Koyukuk region.

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TABLE 1-23ALASKA FIRE SERVICE ANNUAL PAYROLLNANA REGION, BY VILLAGE, 1985-1988

Village	1985	1986	1987		1988		TOTAL
Ambler	\$ 44,972	\$ 2,214	\$ 76,875	\$	86,384	\$	210,445
Buckland	35,764	34,135	89,718		162,762	-	322,379
Dahl Creek	671	0	0	•	. Q.		671
Kiana	64,317	113,323	105,969		235,456		519,065
Noorvik	36,102	35,257	173,318		258,826		503,503
Selawik	35,344	80,024	0		322,157		437,525
Shungnak	72,281	77,118	51,193		179,562		380,154
TOTAL	\$289,451	\$342,071	\$497,073	\$1	,245,147	\$2	,373,742

NOTE: These payroll earnings are not included in ADOL payrolls for Northwest Alaska Borough.

Source: Alaska Fire Service, Bureau of Land Management, unpublished data.

TABLE 1-24

ALASKA FIRE SERVICE ANNUAL PAYROLL BY REGION, 1988

Region	Payroll
Yukon-Koyukuk	\$3,702,163
Northwest Arctic	1,245,146
Fairbanks North Star	1,231,929
Southeast Fairbanks	1,222,209
Wade Hampton	816,306
Bethel	452,409
Ahtna	382,124
Bering Straits	245,115
Dillingham	131,567
Haines	105,762
Matanuska-Susitna	86,238
TOTAL	\$9,620,968

NOTE: These payroll earnings are not included in **ADOL** payrolls for Northwest Alaska Borough.

Source: Alaska Fire Service, unpublished data.

c. NANA Regional Corporation. The NANA Regional Corporation and its subsidiaries have become major employers of NANA shareholders, both within

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the region and in their diverse operations outside the region. The corporation's own operations are concentrated in businesses that can provide employment opportunities to shareholders. Similarly, NANA has used its participation in joint ventures to facilitate shareholder access to wage employment. It aggressively brokered employment for shareholders in the Exxon Valdez oil spill cleanup program. And shareholder employment was a fundamental goal of its Red Dog mine development strategy. (Exxon Valdez cleanup and Red Dog Mine employment are discussed in detail in succeeding subsections.) As a result, corporate business activities regularly generate cash wages for shareholders far in excess of its dividend distributions.

The corporation's annual reports show how NANA has used its corporate resources to improve employment opportunities for its shareholders. In its regional operations, NANA has favored local shareholder employment opportunities over profit considerations. Thus, NANA has continued its local business operations in the face of persistent losses. Table 1-25 shows that NANA's regional operations have lost money every year since 1980, while its statewide (i.e., out-of-region) operations have regularly shown profit.

Apart from their profitability, NANA's statewide and joint-venture operations also have been an important source of employment for many shareholders living in or outside the region. These businesses help offset the shortage of inregion employment.

Table 1-26 summarizes NANA shareholder employment and payrolls in its own and subsidiary operations between 1982 and 1989. Part of shareholder employment in NANA's own operations (in 1989, almost half), and most shareholder employment

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TABLE 1-25 NANA REGIONAL CORPORATION NET INCOME, REGIONAL AND STATEWIDE OPERATIONS, 1980-1990

Year	Regional	Statewide	Total
1980	(\$43,992)	\$1,485,883	\$1,441,891
1981	(1,018,435)	2,125,134	1,106,699
1982*	•		
1983	(1,252,683)	3,674,637	2,421,954
1984	(1,514,045)	6,058,907	4,544,862
1985	(1,323,149)	2,312,466	989,317
1986	(2,187,631)	3,802,402	1,614,771
1987	(1,038,374)	829,579	(208,795)
1988	(688,319)	1,646,905	958,586
1989	<pre>(1,344,679)</pre>	2,759,331	1,414,652
1990	(1,075,504)	5,997,666	4,922,162
TOTAL 1980-90	(\$10,411,307)	\$30,692,910	\$19,206,099

* Detailed breakdown not published in 1982 Annual Report.

Source: NANA Regional Corporation annual reports.

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NANA REGIONAL	CORPOR	ATION S	HAREHOLI	DER EMP	LOYMENT	& PAYR	DLL, FY	1982-1989
B .	1982	1983	1984	1985	1986	1987	1988	1989
NANA Operations	587	450	392	389	265	2491	471	399
Subsidiaries	147	92	112	124	105	226	160	276 ²
Joint Ventures	98	68	76	86	93	<u>99</u>		276
Cominco-Red Dog	39	14	24	30	7	26		
NANA-Coates	10	10	12	8	5 1			
Endicott Projec	t					101		
Total Employment	734	542	504	513	370	475	631	675 ²
Payroll(\$million)	\$4.3	\$5.1	\$4.5	\$5.0	\$4.2	\$4.2	\$5.3	\$7.4 ²

Includes 167 employees in region-based operations and 82 employees in 1. Anchorage-based operations.

2. Includes only joint venture subsidiaries. Full total would be higher.

Source: NANA Regional Corporation Annual Reports and unpublished corporate data.

in subsidiaries is based outside the NANA region. During the seven-year period 1982-1989, NANA provided an average of 556 job opportunities annually for shareholders. To put this figure in perspective, note that NANA has about 4,571 active shareholders, many of whom are not in the workforce, and that total wage employment for the Northwest Arctic Borough averaged 1,815 jobs annually over this period.

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In 1989 NANA strengthened the region's economy and workforce in several specific ways. Within the region, NANA's business enterprises had 264 employees, of whom 194 were shareholders¹⁹, and a gross payroll of \$1.7 million. Its most important regional operations were its corporate offices and the Nullagvik Hotel. Additionally, NANA's subsidiaries and joint ventures, most of which are based outside the region, provide employment opportunities for NANA shareholders, most but not all of whom live in the region (Table 1-27). NANA subsidiaries had 917 employees, of whom 205 were shareholders, and a gross payroll of \$16.2 million, of which shareholders earned \$3.1 million. Subsidiaries with the largest gross payrolls were NANA Development Corporation, Purcell Services, Inc. and NANA Oilfield Services. Lastly, NANA's joint ventures (NANA/Marriott, Alaska United Drilling and Chugach-NANA Marriott²⁰) had 1,555 employees, of whom 276 were shareholders, and a gross payroll of \$16.2 million for the shareholders earned

20. Chugach-NANA Marriott, formed to provide support services to the Exxon Valdez oil spill cleanup, employed 92 NANA shareholders for a payroll of \$1.0 million. Purcell Services, Inc. also provided some security services for cleanup operations. These subsidiaries' cleanup employment and payrolls were in addition to Veco's direct employment cited in Table 25.

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^{19.} The count of shareholder employees includes some nonNative spouses of shareholders. The employment count, which includes seasonal and temporary jobs and employee turnover, is not directly comparable with data on average annual employment. Information on how many regional residents worked in NANA's out-of-region enterprises may be available for the Final Report.

\$3.2 million. With the addition of Red Dog mine-related employment, NANA's combined enterprises produced 745 jobs and \$9.1 million in payroll earnings for region residents and other shareholders in 1989. Shareholder stock dividends that year totalled \$917,625.

TABLE 1-27SHAREHOLDER EMPLOYMENT AND PAYROLLSNANA REGIONAL CORPORATION & SUBSIDIARIES, 1989

- <u></u>	Total Employment	Shareholder Employment	Percent Shareholder	Shareholder Payroll
Regional Operations	•		•	
Ambler Fuel	7	6	86%	\$ 12,217
Buckland Fuel	2	2	100	14,464
Deering Fuel	2	2	100	14,588
Jade Mountain	5	5	100	140,683
Museum of the Arctic	33	32	97	55,166
NANA Regional Corp.	23	19	83	349,276
NANA Seafood	14	12	86	32,713
Nullagvik Hotel	178	121	68	508,942
Subtotal	264	194 ¹	73	1,123,377 ¹
Statewide Operations	•		-	
American Meat Shop	1	1 -	100	23,911
Arctic Caribou Inn, Ltd.	13	7	54	30,276
Arctic Utilities	. 6	3	50	93,212
NANA Development Corp.	101	71	70	828,440
NANA DMTS Services, Ltd.	33	29	88	355,206
NANA Oilfield Services	59	20	34	439,775
Purcell Services	693	64	9	1,224,552
Tour Arctic	11	10	91	54,650
Subtotal	917	205	22	3,050,022
Joint Ventures			•	
Alaska United Drilling	241	38	16	621,439
Chugach-NANA/Marriott	503	92	18	1,028,305
NANA/Marriott	811	146	18	1,591,473
Subtotal	1,555	276	18	3,241,217
GRAND TOTAL	2,736	675 ¹	21%	\$7,414,616 ¹

1. There are minor unreconciled discrepancies in original data totals.

Source: NANA Regional Corporation.

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Shareholder jobs and wages are not the same as resident hire because many NANA shareholders live outside the region. Table 1-28 lists shareholders by place of 1989 residence. Almost one-third of NANA's 4,571 active shareholders dwelled outside the region--many (892) elsewhere in Alaska and some (575) outside Alaska.

Residence	Number	Percent
Ambler	150	3.3%
Buckland	142	3.1
Deering	77	1.7
Kiana	223	4.9
Kivalina	170	3.7
Kobuk	41	.9
Kotzebue	1,279	28.0
Noatak	224	4.9
Noorvik	316	6.9
Selawik	342	7.5
Shungnak	140	3.1
Subtotal	3,104	67.9
Elsewhere in Alaska	892	19.5
Outside Alaska	575	12.6
Subtotal	1,467	32.1
TOTAL	4,571	100.0

TABLE 1-28 NANA REGIONAL CORPORATION SHAREHOLDERS BY PLACE OF RESIDENCE, 1989¹

1. Does not include 541 inactive (deceased or unknown whereabouts) shareholders. Total number of shareholders is 5,112.

Source: NANA Regional Corporation.

Based on the location of its various business activities, shareholder residency patterns, and partial information on the residency of shareholder employees in certain NANA business activities (Table 1-29), we estimate that in 1989 NANA activities generated about 465 jobs and \$5.5 million in wages, plus other payroll benefits for resident shareholders, with the balance of jobs (280) and wages (\$3.6 million) accruing to shareholders dwelling outside the region. Beginning in 1990, the figures for resident employment and wages should jump as Red Dog Mine moves into full operation.

TABLE 1-29 NANA REGIONAL CORPORATION SHAREHOLDER HIRE EXXON VALDEZ OIL SPILL CLEAN-UP THROUGH AUGUST 10, 1989

1		Chugach		10 1 0 1 0		
Residence	~	NANA-Marriot	t Security	VECO	Total	Percent
Ambler Buckland		6 5	5	7 6	18 16	6.5% 5.8
Deering Kiana Kivalina		4	2	1 7 5	4	1.4
Kobuk Kotzebue		1 1 29	0	5 1 12	8 2 53	2.9 .7 19.1
Noatak Noorvik		6	1	3	10 19	3.6
Selawik Shungnak Subtotal	•	4 <u>5</u> 69	14 <u>6</u> 54	9 <u>5</u> 63	27 <u>16</u> 186	9.7 <u>5.8</u> 67.1
Anchorage Fairbanks Other Subtotal	- a.	50 17 <u>9</u> 76	* 8 1 <u>2</u> 11	1 1 <u>2</u> 4	59 19 <u>13</u> 91	21.36.94.732.9
TOTAL	4 F	<u>145</u>	<u>65</u>	<u>67</u>	277	100.0%

Source: NANA Regional Corporation.

NANA's 1989 Annual Report noted the corporation's achievements in shareholder hire, but also expressed the its concern about high turnover among shareholder employees.

Although shareholder hire is increasing overall, high turnover among shareholder employees continues to be a concern to the Board of Directors; in the last fiscal year, 37 percent terminated within the year.

High turnover among shareholders is also evident in length of employment at NANA. Only three shareholders have been employed

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continuously for 15 years or more. Of the 35 employees who have been with NANA 10 to 15 years, only seven are shareholders. Of the 156 NANA employees with five to 10 years of continuous employment, only 16 are shareholders.

During 1990, the corporation instituted several new policies and programs to improve shareholder hire and retention, including:

- creation of a human resources department;
- initiation of a plan to train, place and promote shareholders in hotel, camp and food service management;
- development of improved employee orientation materials;
- stronger substance abuse policies for employees;
- provision of accounting training; and
- on-going management training.

As part of its operations, NANA Regional Corporation maintains a computerized Talent Bank System. NANA's personnel department uses this system to match job applicants with employment positions in the corporation or its affiliated businesses, including the Red Dog Mine. The original Talent Bank is currently being converted to an enhanced system to be operational by summer 1990.

The new system's database consists of coded job classifications and a set of individual personnel files containing name, residence, sex, shareholder status, education, work history, union affiliation, coded job preference(s), and phone number. On request, the Talent Bank can retrieve all personnel files that match a specific job code and related criteria (job preference, minimum experience, residence, sex, shareholder status, etc.) or all files that satisfy the criteria of a general inquiry. Overall, these data on Northwest Arctic Borough resident employment at out-ofregion enterprises confirm that this region's workforce has been more willing than most rural Alaska workers to travel outside its home region for work. Outof-region work has helped make up for the scarcity of at-home employment opportunities. This mobility is a positive feature of the workforce, inasmuch as it suggests that at least some workers are accustomed and willing to adapt to job opportunities away from home such as the Red Dog Mine project.

d. Exxon Valdez Oil Spill Cleanup. The 1989 <u>Exxon Valdez</u> oil spill cleanup program employed an estimated 10 thousand workers at various cleanup related activities. NANA Regional Corporation aggressively pursued spill cleanup employment opportunities for its shareholders through several channels. NANA actively sought to recruit shareholders to work directly for Veco, Inc., the chief spill cleanup contractor. Additionally, several NANA Regional Corporation subsidiaries and joint ventures were engaged as subcontractors to Veco. These subcontractors hired many NANA shareholders.

NANA reported a total of 277 NANA shareholders worked at catering/camp support, security and beach cleanup activities for the oil spill through early August 1989. Table 1-29 shows the number of shareholders, by place of residence, employed in spill-related work. It is noteworthy that the percentage of shareholders who worked on the spill and were resident in the region (67.1 percent) matched the percentage of shareholders who lived in the region (67.9 percent--see Table 1-28). Within the region, villagers were slightly overrepresented in the spill workforce, Kotzebue somewhat underrepresented. These figures indicate that NANA region residents, including villagers, were very

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successful at obtaining spill-related employment, despite their remoteness from the spill scene.

Other data released by Veco, Inc. confirm that a disproportionate number of NANA region residents held oil spill cleanup jobs. Veco's employment records (Table 1-30) appear less complete than NANA's records, but show that the Northwest Arctic Borough supplied it with more employees (44) than the North Slope Borough, Bering Straits, Wade Hampton, Bethel, Dillingham, Bristol Bay and Aleutian Island regions combined (34).

In sum, these spill cleanup employment data demonstrate again the ability of NANA and large numbers of its shareholders to respond opportunistically and effectively to unexpected job openings far outside their home region.

Red Dog Mine.

NANA Regional Corporation selected the Red Dog Mine property under terms of the Alaska Native Claims Settlement Act.²¹ First discovered in 1953 in a remote, undeveloped area of northwest Alaska about 82 miles north of Kotzebue and 47 miles inland from the Chukchi Sea coast, only Red Dog's size (proven ore reserves of 85 million tons) and high ore grade (17 percent zinc, 5 percent lead) made development economically feasible. In 1982 NANA and Cominco Alaska Incorporated agreed on the terms under which the mine would be developed and have released its key features.

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^{21.} The Red Dog Mine site was actually among lands withdrawn from mineral staking and Native selection by ANCSA. NANA succeeded in obtaining a congressional amendment under the 1980 Alaska National Interest Lands Conservation Act that allowed NANA to select the Red Dog property.

TABLE 1-30

RESIDENCY OF VECO'S EXXON VALDEZ OIL SPILL CLEANUP EMPLOYEES THROUGH AUGUST 13, 1989

Place of Residency	Number of Employees
NORTHWEST AND WESTWARD ALASKA Northwest Arctic Borough Ambler (4), Buckland (3), Kiana (6), Kivalina (4), Kobuk (1), Kotzebue (10), Noatak (1), Noorvik (8), Selawik (4), Shungnak (3)	78 44
Nome Dillingham Bethel Bristol Bay Aleutians	2 22 5 1 4
SOUTHCENTRAL/PRINCE WILLIAM SOUND (Kenai Peninsula Borough, Matanuska-Susitna Borough, Kodiak Island Borough, Anchorage, Valdez/Cordova)	3,196
INTERIOR (Fairbanks North Star, Southeast Fairbanks, Yukon-Koyukuk)	443
SOUTHEAST (Haines, Juneau, Ketchikan Gateway Borough, Sitka, Skagway/Yakutat, Wrangell-Petersburg)	27
TOTAL ALASKA OUT OF STATE GRAND TOTAL	3,744 343 4,087

NOTE: No employees were reported for the North Slope Borough or Prince of Wales census areas.

NOTE: These figures include direct employees of Veco, Inc. as of August 13, 1989. Figures do not include workers hired by Norcon or Veco subcontractors or crews on fishing boats under contract to Veco, Inc. The number of subcontracted employees is about 2,360 and the number of Norcon employees is about 1,150.

NOTE: The totals in this table were retotaled from the breakdowns reported by Veco, Inc. to reconcile a minor discrepancy (three employees) in the original figures.

Source: Veco, Inc., August 25, 1989.

Under the agreement, Cominco leases the property from NANA, operates the mine, and markets the concentrate. The purpose of the agreement is threefold:

-to develop one of the richest zinc deposits in the world -provide employment

-protect the subsistence lifestyle of the people in the region

Upon signing the agreement, NANA received \$1.5 million. Every year thereafter, until the mine goes into production, NANA receives an additional \$1.0 million. Once production begins NANA will receive 4.5% of the net smelter return. After Cominco recovers its capital investment, NANA will begin sharing in the net proceeds. This begins at 25 percent and increases by 5 percent every 5 years until NANA and Cominco share equally in the profits.

Another important provision in the agreement deals with employment. First preference on all Red Dog jobs goes to qualified natives in the NANA region. It is the intent of Cominco and NANA that by the twelfth year of the mine's operation the mine will be run 100% by natives from the region. Red Dog Facts, Cominco/NANA.

The partners have estimated development costs at \$415 million. This includes \$150 million for haul road and port facilities financed by industrial revenue bonds issued by the Alaska Industrial Development Authority under a reimbursement agreement with Cominco. When fully operational, Red Dog will be the nation's premier zinc mine and one of the largest zinc producers in the world.

The partners developed the Red Dog deposit as an open pit mine. Trucks haul product (zinc, lead, and silver concentrates) 52 miles overland to the shallow water port site to be stored for shipment during open water shipping season. Many commodity industries are vulnerable to periodic production shutdowns caused by volatile market prices for their product. Red Dog, however, as a highly efficient, low-cost producer of zinc concentrates, is better positioned to sustain price fluctuations without shutdown or interrupted employment, although profits might suffer. Known reserves will sustain the mine's projected working

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life for 50 years at present production levels. The new transportation system opens other highly mineralized areas in the vicinity to potential commercial development, but no other projects are planned at present.

Red Dog Mine development spanned from mid-1987 with construction of the access road to late 1989, when production began. Cominco released data on the residency status of project employees during construction and initial mine operation (Table 1-31). Total project employment and resident employment peaked during the construction phase.²²

About one-third of construction-phase employees were region residents, but many construction jobs were short-term. Table 1-31 shows the total number of jobs held by different persons rather than employment at any one time or average annual employment. The December 1989 figures are for mine and support positions at start-up of mining operations. Mine operations entail fewer workers but offer permanent full-time positions, more of which (almost 60 percent) were initially held by region residents. In May 1990, by which time the mine was in full operation, resident hire remained at about 60 percent.

Red Dog's resident hire figures approximate original Cominco estimates in the project environmental impact statement (EIS). Cominco anticipated that 124 residents would be employed during construction and 168 for initial production. Residents actually held 475 construction phase jobs in 1988 and 273 in the first

22. Detailed employment tabulations are shown in Appendix Tables 7 through 11.

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ten months of 1989. Taking job turnover into account, actual resident employment approximated the EIS projection of 124 full-time equivalent jobs.²³

		SLE 1-31	_
NORTHWEST	ARCTIC BOR	OUGH RESIDENT	EMPLOYMENT ¹
	RED DOG M	INE, 1988-1989	

	Residents		Nonres	idents	Total	
Period	Number	Percent	Number	Percent	Number	Percent
Period 1988'	475	33.9%	928	66.1%	1,403	100.0%
Through 10/24/89 ¹	273	30.0	636	70.0	909	100.0
December_1989 ²	168	59.2	116	40.8	284	100.0
May 1990 ³	192	60.2	127	39.8	319	100.0

1. Includes port and mine site construction.

 At start-up of mining operations. Includes Cominco Alaska mine site employees (128 resident of 228 total), Arrow Transportation (13 of 22) and NANA Marriott (27 of 34).
 At full operation. Includes Cominco Alaska mine site employees (141 resident of 245 total), Arrow Transportation (24 of 38) and NANA Marriott (27 of 36).

Source: Cominco Alaska Incorporated, Red Dog Hi⁻Lites.

Resident employment (168) at production start-up matched Cominco's projections even though total initial project employment was substantially less than projected (Table 1-32). The EIS estimated an initial production workforce of 392, and Cominco reports that actual employment was 275 workers.²⁴ The difference is mainly because worker training has not been conducted on-site as the EIS anticipated but elsewhere. Though exact payroll figures are not available, Cominco has estimated an initial annual payroll of about \$10 million

- 23. These employment levels are not fully reflected in ADOL's 1988 and 1989 employment figures for the Northwest Arctic Borough. Presumably, some nonlocal contractors and subcontractors did not separately report their local payrolls.
- 24. There are minor differences in Cominco's figures for initial production employment because the figures are not simultaneous. Cominco expects that actual employment will fluctuate during initial production.

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(pers. com., Parker, 1991). Recent ADOL employment and payroll figures suggest this estimate is conservative.

Occupation		EIS ¹	Actual ²
Management		7	8
Supervisors		30	32
Professionals and Technical/Clerical		60	52
Equipment Operators, Drivers		64	46
Mill Operators	٤	22	24
Tradesmen		69	24
Trainees		84	0 ·
Laborers		16	9
Catering	. *	. 40	23
Millwrights		0	24
Mechanics	· •	0.0	15
Floormen		0	6
Powerhouse Operators and Trainees		0	9
Welders	• •	0	3
TOTAL		392	275

		TABI	E 1-	-32		
PROJECTED	AND	ACTUAL	RED	DOG	MINE	EMPLOYMENT

Projected initial employment for production phase.
 Actual employment during November/December 1989 start-

. Actual employment during November/December 1989 start-up.

Source: Environmental Impact Statement, Red Dog Mine Project; Cominco Alaska, unpublished data.

Table 1-33 compares regional employment and payrolls for the first quarters of 1989 and 1990 (the most currently available data), by which date the mine was in full operation. Inferentially, the figures show the Red Dog mine start-up had a dramatic impact on regional earnings. The actual figures for mining and wholesale trade were not released, due to disclosure regulations. But comparisons between the first quarters of 1989 and 1990 (compare the subtotals for undisclosed employment and payroll) suggest that the mine added an estimated 230 new mining jobs with a quarterly payroll of \$2,850,000 (prorated annually at \$11,400,000). These estimates include mining industry employees only,

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exclusive of mine-related transportation and camp support services. The latter would add about 75 more jobs (see Table 1-31) and an annual payroll of perhaps +\$3 million. These figures do not include secondary employment generated inside the region by this new basic industry.

TABLE 1-33EMPLOYMENT AND PAYROLLS, BY INDUSTRYNORTHWEST ARCTIC BOROUGH, FIRST QUARTER, 1989 & 1990

	Emp	loyment		Payrolls
Industry Classification	1989	1990	1989	1990
Mining	*	*	*	*
Construction	68	33	855,838	195,827
Transportation, Communication and Public Utilities	160	170	966,749	1,462,406
Wholesale Trade	*	*	*	*
Retail Trade	176	160	897,280	922,631
Finance, Insurance and Real Estate	99	87	488,691	603,070
Services	371	395	1,958,148	2,213,921
Government	1,020	1,095	5,943,674	6,711,456
Federal	(81)	(80)	(575,516)	(614,695)
State	(86)	(82)	(824,557)	(887,563)
Local	(853)	(933)	(4,543,601)	(5,209,198)
Miscellaneous	*	0	*	0
(Subtotal: Undisclosed)	(12)	(240)	(142,864)	(3,001,409)
TOTAL	1,906	2,180	\$11,253,244	\$ 15,110,720

*Figures withheld to comply with disclosure regulations.

Source: Alaska Department of Labor.

As a measure of the mine's contribution to the region's private sector, note that this new permanent mining (\$11.4 million) and mine-related (\$3 million) basic payroll was almost fivefold the region's total 1987 earnings (about \$3 million) from all commodity-producing industry (agriculture, fisheries, mining, construction, manufacturing--see Table 1-10).

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Though Cominco fulfilled the resident hire goals set by the NANA/Cominco agreement, legal controversy enveloped the local hire practices of one of the state's major subcontractors on the project. The State of Alaska's 1986 "Regional Preference Law" required contractors on state projects to hire residents for 50 percent of project jobs in regions (census areas) the Alaska Department of Labor determined were economically distressed. The Alaska Industrial Development Authority, a state agency, administered road and port facility construction for Red Dog Mine and ADOL found the Northwest Arctic Borough an economically distressed region. In such cases the state required contractors to implement 50 percent local hire. Enserch Alaska Construction, Inc., the main contractor for road construction, challenged the legality of preferential hire for residents. The State Supreme Court struck down the law in 1988. On appeal in December 1989 the State Supreme Court declared that the law violated the equal protection provision of the Alaska Constitution.

The "Regional Preference Law" was the state's third legislated local hire preference attempt to be struck down on constitutional grounds. With construction done and mine hiring policies covered by contractual terms of the NANA/Cominco agreement, the statutory and constitutional issues about local hire became immaterial as far as Red Dog Mine is concerned.

The mine initially operated around the clock in two shifts. At start-up, Cominco established a four-week-on/two-week-off rotation schedule for workers at the mine site. Some region residents reportedly preferred a two-week-on/twoweek-off schedule that allowed more time for home life and subsistence. Cominco officials acknowledged that the four-week work period has led some employees to terminate, for example, females with family and home responsibilities. Cominco

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maintains that the longer work term is essential for effective worker training during start-up but say they may later revise the work schedule to suit worker preferences.²⁵ The shorter rotation would reduce annual hours and wages per job by about one-quarter but increase employment by about one-third.

Cominco furnishes transportation between hometown and job site for regional residents or transportation between the mine and Anchorage for others. Some NANA shareholder employees relocated to Anchorage for its greater amenities. Paradoxically, the mine's well-paid jobs plus the free commute available to and from Anchorage may enable some region residents to move away, while other village-based residents choose to stay in their home villages.

As the mine has operated for only a brief period as of December 1990, the longrun net effect of population movements between Kotzebue, the villages, Anchorage, and elsewhere cannot yet be determined.

(M) any, perhaps most, of the residents hired for the mine would be recruited from other jobs in the region, leading to a period of job shuffling. These vacated positions would become available for other underemployed and unemployed resident workers. If the vacated posts were not readily filled from the resident labor pool, some of the jobs might draw newcomers to the region to replace mine hirees. In this way, resident hire on the mining project would trigger upward job mobility throughout the region's labor pool and might also attract some new residents to the region. Environmental Impact Statement, Red Dog Mine Project, p. V-31.

Local informants report that the employment possibilities created by mine development, the 1989 Prince William Sound cleanup, and mine operation generated substantial turnover in the staff of local public agencies, siphoned off many

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^{25.} Two articles in the Anchorage Daily News (Arctic Yields Buried Treasure, December 24, 1989; A New Living Off the Land, January 7, 1990) provide anecdotal information on resident and company attitudes on mine labor policies.

good employees, and left behind hard-to-fill vacancies. Here, too, how the region's workforce will ultimately adjust to the series of job openings originated by the mine remains unclear.

Speculation that it might be economically advantageous to backhaul fuels and bulk freight to Kotzebue or to the port site for redistribution within the region has not materialized in a concrete plan to implement the process.

In 1987 the Northwest Arctic Borough and Cominco agreed by contract that the company would pay \$1 million annually, rising by steps to \$3 million, in lieu of all other borough taxes for 14 years. This agreement provided funds to the newly incorporated borough in advance of mine development. If the borough terminates the agreement, Cominco is entitled to a credit against any borough taxes levied upon it?

3. Unearned Cash Income

The BEA personal income data series is the only source of detailed long-term information on unearned cash income for the Northwest Arctic Borough. BEA defines transfer payments and dividends, interest, and rent as the two broad categories of unearned cash income.

Transfer Payments.

As defined by the BEA, "transfer payments" consist of income payments to persons for which they do not render current services. Governments issue virtually all transfers as cash payments for social security and other retirement benefits; medical and unemployment insurance benefits; income assistance such as Aid to Families with Dependent Children, food stamp and Supplemental Security Income benefits; and veterans benefits. Payments under Alaska's Permanent Fund Dividend and Longevity Bonus programs are also classified as transfer payments.

Table 1-34 and Figures 1-21 and 1-22 compare growth in transfer payment income for the Northwest Arctic Borough, state of Alaska, and United States from 1971 to 1987. Transfer payments provided a fluctuating but substantial share of Northwest Arctic Borough personal cash income during this period. In 1987 transfer payments amounted to 30.1 percent of total personal income compared to 24.2 percent in 1971. The most rapid rise in per-capita transfer income for Northwest Arctic Borough residents occurred during the 1971-1975 period.

TABLE 1-34

TRENDS IN TRANSFER INCOME, 1971-1987 NORTHWEST ARCTIC BOROUGH, STATE OF ALASKA AND UNITED STATES

	Per-Capita Total Transfer	Transfer Pay- ments as % of Total Per-
Northwest Arctic Borough	<u>Payments</u>	<u>sonal Income</u>
1971	\$ 570	24.2%
1975	1,753	33.8
1980	1,592	21.5
1985	3,348	26.1
1987	3,696	30.1
<u>State of Alaska</u>	-	-
1971	\$ 342	6.9%
1975	795	8.2
1980	1,046	8.0
1985	2,293	12.2
1987	2,769	15.1
<u>United States</u>		•
1971	\$ 456	11.0%
1975	836	14.3
1980	1,310	13.8
1985	2,054	14.8
1987	2,257	14.6

Source: Bureau of Economic Analysis.

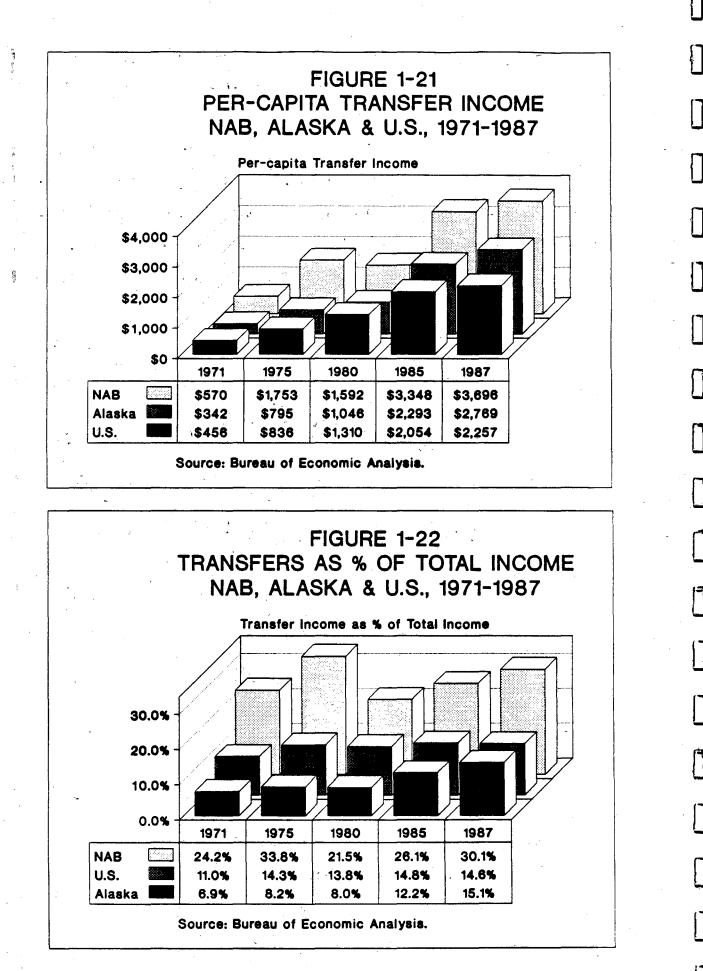
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Indeed, after adjustment for inflation the 1975 figure (\$3,259 per-capita in constant 1982-84 dollars) actually was slightly higher than the 1987 figure (\$3,243). Since 1975, residents also appear to have become less dependent on cash transfer payments, measured as a percent of total cash income.

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Nevertheless, in absolute and relative terms, Northwest Arctic Borough residents have for many years depended on transfer payments as a source of cash income more than state and national residents. Northwest Arctic Borough per-capita cash transfer payments were higher and transfer payments comprised a larger share of personal cash income. In 1987, total per capita transfer payments reached \$3,697 in current dollars for the Northwest Arctic Borough, \$2,769 for the state, and \$2,368 for the nation.

Two Alaska transfer programs (Alaska Permanent Fund Dividend Program, Alaska Longevity Bonus Payment Program) preclude direct comparisons with national norms. These unique programs distribute cash payments to all eligible Alaskans, regardless of income status. In 1987 their combined cash benefits, counted as transfer payments in the category "Other Governmental Payments to Individuals" in Table 1-35, surpassed all other categories of transfer payments to Alaskans.²⁶

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^{26.} Since its inception in 1982, the Alaska Permanent Fund Dividend Program has disbursed annual payments as follows: 1982: \$1,000.00; 1983: \$386.15; 1984: \$331.29; 1985: \$404.00; 1986: \$556.26; 1987: \$708.19; 1988: \$826.93; and 1989: \$873.16. We estimate 1989 payments to Northwest Arctic Borough residents totaled about \$5,000,000.

The Alaska Longevity Bonus Payment Program pays \$250 monthly to eligible persons 65+ years old. Based on Alaska Department of Administration data, estimated payments to Northwest Arctic Borough residents in FY 1989 totaled \$716,500. This estimate is prorated from aggregate data for the election district, which includes the North Slope Borough, according to the Northwest Arctic Borough's share of the district's residents 65+ years of age.

They account for most of the difference between transfer payment totals for the Northwest Arctic Borough and national figures.

- TABLE 1-35

GOVERNMENT TRANSFER PAYMENTS TO INDIVIDUALS (PER CAPITA) NORTHWEST ARCTIC BOROUGH, STATE OF ALASKA, AND UNITED STATES, 1987

<u>Category of Payment</u>	Northwest Arctic Borough	State of Alaska	
Income Assistance Programs Retirement & Disability Ins. Benefits Medical Payments Income Maintenance Benefits Unemployment Insurance Benefits Veterans Benefits Federal Education & Training Assistance	\$ 714 739 676 372 20 5	\$ 831 344 214 191 44 10	\$1,258 579 202 64 71 22
Subtotal	2,526	1,635	2,197
Other Gov't Payments to Individuals ¹	812	781	3
Total Gov't Payments to Individuals	3,338	2,416	2,200`
Other Transfer Payments ²	359	353	168
Total Transfer Payments	\$3,697	\$2,769 ~	\$2,368

1. Mainly includes Alaska's unique Permanent Fund Dividend and Longevity Bonus payments, plus trivial amounts from the Bureau of Indian Affairs and several other minor sources. Note that outside Alaska the category "Other Government Payments to Individuals" is negligible.

2. Includes payments to nonprofit institutions and business payments to individuals.

Source: Bureau of Economic Analysis.

Review of the detailed data on types of transfer payments (see Table 12 and Table 13 in Appendix) refutes the notion that Northwest Arctic Borough residents inordinately depend on government income assistance programs. Table 1-35 breaks down 1987 governmental transfer payments to individuals by category of payment for the Northwest Arctic Borough, the state, and the nation. Northwest Arctic

Borough residents received higher payments for some programs (medical payments, income maintenance, and unemployment benefits) than the national average; in other program categories, payments were lower (retirement, disability, and veterans benefits). Most of the differences reflect economic conditions in a region that historically lacked the jobs that qualify workers for social security benefits. That meant fewer claimants for social security benefits but more for income assistance and unemployment benefits. Even so, the overall disparity in per-capita payments under income assistance programs for the Northwest Arctic Borough (\$2,526) and the nation (\$2,197) was modest. The data show that income maintenance programs (supplemental security income, aid to families with dependent children, food stamps, et al.) collectively provided only about 5.5 percent--one-twentieth--of total personal income in the borough in 1987.

Data compiled from Alaska Department of Health and Social Services records show estimated payments made in FY 1986 to Northwest Arctic Borough residents under aid to families with dependent children and food stamps, the two major income assistance programs administered by the state (Table 1-36). These state data were cross-checked with BEA transfer payment data. The state figures for FY 1986 are lower than the corresponding 1987 BEA figures.

Discrepancies in population and period of coverage may partly explain the difference, but state data confirm that income assistance payments are a relatively minor source of cash income to Northwest Arctic Borough residents. State data also show that program payments varied widely from community to community. This variation may not be a reliable barometer of local need since the level of program payments is strongly influenced by the local effectiveness of program delivery.

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TABLE 1-36AFDC AND FOOD STAMP PAYMENTSNORTHWEST ARCTIC BOROUGH COMMUNITIES, FY 1986

Community		AFDC	Food Stamps	·	Total		tal Per Capita
Ambler	<u> </u>	32,280	\$ 40,500	S	72,780		269
Buckland		66,060	72,660	•	138,720	•	536
Deering		N/A	N/A		N/A		N/A
Kiana		101,292	76,140	•	177,432		409
Kivalina		69,564	101,376		170,940		589
Kobuk	•	5,064	2,532	•	7,596		88
Kotzebue		294,960	372,952		667,912	,	253
Noatak		98,820	57,000		155,820		456
Noorvik		197,940	30,256		228,196		526
Selawik		144,768	∞ . 86,628	· · ·	231,396		366
Shungnak		63,348	19,488		82,836		338
TOTAL	\$1	,074,096	\$859,532	\$1	,933,628	\$	337
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Note: Community data were not available for state-administered medical assistance payments. Per-capita totals based on Alaska Department of Labor provisional population figures for July 1, 1986.

Source: Alaska Department of Health and Social Services, as reported in Memorandum dated February 27, 1987, by Brad Pierce, Alaska State Legislature, House of Representatives Research Agency.

Dividends, Interest and Rent.

As defined by the BEA, "dividends" comprise payments in cash or other assets by profit-making corporations to shareholders. "Interest" consists of cash or imputed interest payments to persons. "Rent" comprises personal cash income from rental of real property, the imputed net rental income of owner-occupants, and royalties to persons from patents, copyrights, and natural resource rights.

Table 1-37 compares personal income from "Dividends, Interest and Rent" between 1971 and 1987 for the Northwest Arctic Borough, State of Alaska, and United States. This income source has become steadily more important to Northwest Arctic Borough residents, rising from \$47 to \$866 per capita and from about 2.0

percent to 7.1 percent of total personal income. Shareholder dividends by NANA Regional Corporation (\$917,625 or \$125 per shareholder in 1987) and Kikiktagruk Inupiat Corporation (\$505,250 or \$250 per shareholder) helped boost dividend income. Notwithstanding these gains, Northwest Arctic Borough residents' income from "dividends, interest and rent" falls well below state averages and even further below national averages in both per-capita and percentage terms.

TABLE 1-37

DIVIDENDS, INTEREST AND RENT, 1970-1987 NORTHWEST ARCTIC BOROUGH, STATE OF ALASKA AND UNITED STATES

		Per Capit	a Dividend	<u>s, Interest</u> ,	& Rent	
	NAE		State o	f Alaska	United	States
	(Amount) (Percent) ¹	(Amount)	(Percent) ¹	(Amount)	(Percent) ¹
1971	\$ 47	2.0%	\$ 280	5.7%	\$ 545	13.2%
1975	134	2.6	787	8.1	797	13.6
1980	376	5.1	1,362	10.5	1,560	16.4
1985	906	7.0	1,816	9.7	2,371	17.5
1987	866	7.1	1,886	10.3	2,605	16.8

1. Dividends, interest and rent payments as percent of total personal cash income.

Source: Bureau of Economic Analysis.

4. Distribution of Household Cash Income

Statistical distribution of households along the income scale shows relative economic equality and concentrations of wealth and poverty. Analysis of household income distribution may suggest hidden economic and class structures as well as the dynamics of economic class changes. Statistical tests can track the persistence of a large cash-poor underclass, the emergence of a middle-income class, or concentration of income in a wealthy elite. For example, a bimodal distribution of households at the extreme ends of the income spectrum suggests a highly stratified society that is split into two unequal income groups or

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classes. On the other hand, a pronounced normal distribution with few households at either income extreme suggests a relatively egalitarian economic society.

The IRS/Department of Revenue taxpayer data publication provides some income distribution information for Kotzebue but none for the region's smaller communities. Table 1-38 compares Kotzebue's 1985 distribution of households by income group to the city of Nome, the state of Alaska, and the United States.²⁷ It shows that distribution of Kotzebue's households across the income scale generally resembles the pattern in Nome and the state as a whole, once allowance is made for Kotzebue's lower median household income. Kotzebue's distribution is slightly skewed toward the lower end of the scale, as might be expected given overall lower household incomes; but otherwise statistical differences between Kotzebue, Nome, and the state are minor. Unfortunately, IRS data do not discriminate between incomes of Native and non-Native households and so does not shed light on disparities in household income distributions by race.

Two noteworthy discrepancies exist between national and Alaska distributions. The proportion of low-income households is strikingly lower nationally compared to the Alaska areas, and the proportion of upper-middle income (\$25,000-\$50,000) households nationally is substantially broader.

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^{27.} The national data (distribution of households by income) and Alaska data (distribution of federal income tax returns by adjusted gross income) are not perfectly congruent. The differences do not seem to significantly distort geographic comparisons. Further, analysis of the distribution of <u>persons</u> (instead of <u>households</u>) by per-capita income would yield different results since rural Alaska's households are typically larger, so a per-capita analysis of their incomes would skew income distributions downward relative to most other regions.

TABLE 1-38DISTRIBUTION OF INCOME BY HOUSEHOLD1KOTZEBUE, NOME, STATE OF ALASKA & UNITED STATES, 1985

		•	State of	United
Income Group	Kotzebue	Nome	Alaska	States
Under \$5,000	18.7%	17.5%	14.9%	7.5%
5,000 - 10,000	12.9	12.2	12.4	12.2
10,000 - 15,000	9.3	8.6	10.5	11.3
15,000 - 20,000	8.3	8.1	9.1	10.8
20,000 - 25,000	9.6	10.0	8.0	9.9
25,000 - 35,000	13.5	13.7	13.6	16.9
35,001 - 50,000	14.4	14.2	14.5	16.0
50,000 +	13.3	15.6	17.1	15.4
TOTAL	100.0%	100.0%	100.0%	100.0%
Median Household Income	\$20,484	\$21,793	\$22,438	\$25,387

1. U.S. figure is for median household income. Figures for Kotzebue, Nome, and state of Alaska are distribution of federal income tax returns by adjusted gross income.

Source: Statistical Abstract; Federal Income Taxpayer Profile, 1983-85.

5. Unearned In-kind, or Noncash, Transfer Income

In-kind, or noncash, transfer income consists mainly of goods and services provided or subsidized by nonlocal governments. Important examples of in-kind transfer income in the Northwest Arctic Borough include public education; health and housing services; subsidized energy; and most public works and services.

Net in-kind transfer income is the value (cost) of goods and services provided or funded by federal/state governments minus payments to federal/state governments. Costs of goods and services collectively provided by all levels of government are offset by taxes and other revenues collected (or borrowed) by governments. Within the Northwest Arctic Borough:

Federal expenditures exceed receipts many times over (Table 1-39), insuring a large net inflow of federal funds.

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- State expenditures are funded largely by resource revenues, not by taxes and charges levied on persons, households and businesses resident in the Northwest Arctic Borough. Virtually all state expenditures for goods, services, and transfer payments represent a net gain to the region.
- Local government and service agency programs primarily depend on intergovernmental revenue transfers from federal and state governments rather than locally raised revenues. Even most goods and services provided by local government represent net transfers of inkind income.²⁸

TABLE 1-39

FEDERAL PERSONAL INCOME TAX RECEIPTS, EXPENDITURES, AND OBLIGATIONS NORTHWEST ARCTIC BOROUGH, 1983-85

Year ¹	Federal Personal Income Tax Receipts	Federal ² Expenditures & Obligations
1983	\$4,891,713	\$16,940,000
1984	5,276,016	18,137,000
1985	5,552,868	23,181,000

- 1. Tax receipts are for calendar year; expenditures and obligations for federal fiscal year.
- 2. Includes only federal expenditures and obligations reported in Consolidated Federal Funds Report. Does not include expenditures for housing and health care programs, shown in Tables 1-45 and 1-46 to exceed \$10 million annually.

Source: Alaska Department of Revenue, U.S. Department of Commerce.

This section of the report attempts to document (1) nonlocal governmental expenditures for in-kind goods and services in the Northwest Arctic Borough and

28. For example, according to the 1988 County and City Data Book, intergovernmental revenues comprised about 72 percent (\$9.3 million) of FY 1982 general revenues (\$13.0 million) for all local governments within the Northwest Arctic Borough. That year, locally levied tax revenues amounted to \$143 per capita or less than \$1 million in all.

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(2) specific expenditures for the most significant goods and services that government provides. Note that this account of in-region program expenditures systematically understates the full cost of providing federal and state services to the region. The in-region expenditure category omits the expense of administration and other support services centrally provided to local and regional programs.

A technical aside here will help to explain what may seem like a double count of some federal and state expenditures in our regional cash and in-kind income categories. Earlier, state and federal payrolls were counted as part of the region's earned cash income. Now, we propose to count the net cost, including payroll costs, of goods and services provided or funded by nonlocal governments as part of the region's in-kind transfer income. Seemingly, payroll costs are counted twice as income to the region.

A simple mental exercise will show that joint provision of services and payrolls actually entails two distinct types of income to the region. Were all transfer goods and services continued while in-region payrolls were discontinued, then in-kind transfer income would stay unchanged but the region would be poorer in earned cash income. Conversely, were payrolls maintained but all free goods and services withdrawn, then the region's cash income would remain unchanged but its standard of living would plummet due to loss of educational, health, housing, and similar services.

Public goods and services that entail federal and state-supported payrolls bestow a double blessing on the region's economy. One is that nonlocal governments furnish goods and services free to the region's residents. The other that state

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and federal governments employ residents to deliver those free goods and services.

<u>Federal Expenditures</u>.

Since FY 1983, the U.S. Bureau of the Census has published comprehensive data on federal expenditures by fiscal year, type, amount, borough, and city in its <u>Consolidated Federal Funds Report</u>.²⁹ Table 1-40 summarizes federal expenditures in the Northwest Arctic Borough for FY 1983-1989. In 1989, federal expenditures and obligations totalled \$26,897,000, or about \$4,152 per capita. Grant awards comprised the largest component (50.0 percent) of this federal outlay, followed by direct wages and salaries (18.7 percent), procurement contract awards (13.3 percent), direct cash payments to individuals (12.1 percent), and loan guarantees and insurance (5.5 percent). More than 94 percent of federal outlays in the region that year were for civilian purposes.

Figure 1-23 compares FY 1989 federal outlays for the three major types of civilian expenditures (grants and contracts, direct cash payments to persons, and salaries and wages) for the Northwest Arctic Borough and the nation. Percapita federal outlays (\$3,873) were about 40 percent higher in the Northwest Arctic Borough, but the profile of expenditures by category was radically different in the two jurisdictions.

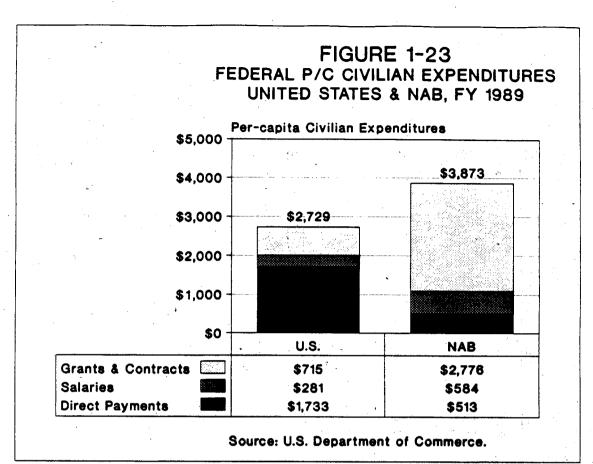
29. Not all federal expenditures are included, notable exceptions being Department of Housing and Urban Development grants and U.S. Postal Service expenditures. U.S. Postal Service officials estimated rural Alaska postal subsidies amounted to about \$50 million in 1990. Also, not all federal program expenditures are suballocated to borough or city levels.

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	1983	1984	1985	1986	1987	1988	1989
GRANT AMARDS	\$4,954	\$6,620	\$9,324	\$8,672	\$10,056	\$12,834	\$13,404
SALARIES & WAGES: TOTAL	3,252	4,010	4,558	4,753	5,348	4,460	5,020
DEFENSE	798	730	829	983	1,391	516	1,458
CIVILIAN	2,454	3,280	3,729	3,770	3,957	3,944	3,562
DIRECT PAYMENTS FOR INDIVIDUALS: TOTAL	3,209	3,358	3,421	2,668	2,409	3,658	3,247
RETIREMENT & DISABILITY	2,086	2,206	2,173	2,406	2,084	3,369	2,928
ALL OTHER	1,123	1,152	1,248	262	325	289	319
(DEFENSE DIRECT PAYMENTS)	86	134	81	95	99	107	115
(CIVILIAN DIRECT PAYMENTS)	3,123	3,224	3,340	2,573	2,310	3,551	3,132
PROCUREMENT CONTRACT AMARDS: TOTAL	5,427	2,960	2,052	3,968	163	2,549	3,558
DEFENSE	1,553	(530)	0	1,096	0	0	- 30
CIVILIAN	3,874	3,510	2,052	2,872	163	2,549	3,528
OTHER EXPENDITURES OR OBLIGATIONS	3	91	<u>96</u>	94	<u>96</u>	<u> 127</u>	97
DIRECT EXPENDITURES OR OBLIGATIONS: TOTAL	\$16,845	\$17,059	\$19,451	\$20,156	\$18,072	\$23,628	\$25,326
DEFENSE	2,437	334	910	2,175	1,489	623	1,603
CIVILIAN	14,408	16,725	18,541	17,981	16,583	23,005	23,723
DIRECT LOANS	0	0	0	0	1,421	0	0
GUARANTEED LOANS & INSURANCE	95	1,078	3,730	3,124	1,227	- 1,137	1,481
GRAND TOTAL	\$16,940	\$18,137	\$23, 181	\$23,280	\$20,720	\$24,765	\$26,807
PER CAPITA: TOTAL	\$3,487	\$3,213	\$3,481	\$3,607	\$3,308	\$4,325	4,152
DEFENSE	504	63	163	389	273	114	263
CIVILIAN	2,982	3,150	3,318	3,218	3,036	4,211	3,889

TABLE 1-40 FEDERAL EXPENDITURES OR OBLIGATIONS, NORTHWEST ARCTIC BOROUGH, FY 1983-1989 (\$1,000s)

Source: U.S Department of Commerce, Bureau of the Census, for the Office of Management and Budget. Consolidated Federal Funds Report, County Areas, FY 1983 ff. Note: the published data for FY 1987, 1988 and 1989 contained errors which were corrected after consultation with the Bureau of the Census. Does not include U.S. Department of Housing and Urban Development grants or U.S. Postal Service subsidies.



Direct cash payments (\$1,733 per capita) to persons, mainly retirement and disability entitlements, were the most important expenditure type at the national level, but least important (\$513) in the Northwest Arctic Borough. Per-capita federal salaries were higher in the Northwest Arctic Borough (\$584 vs. \$281), reflecting the greater role of the federal government in direct delivery of services. For the Northwest Arctic Borough, federal grants and contracts (\$2,776 per capita, or 71.7 percent of the regional total) were the most important type of federal outlay, topping the national average (\$715 per capita, or 26.2 percent of national total).

The Northwest Arctic Borough's comparatively high level of federal grants, contracts, and salaries underscores the historic and continuing special involvement of the federal government in provision of facilities and services for Alaska Native communities. Conversely, the low level of federal direct payments to persons reflects the relatively low eligibility of the region's residents for social security and other federal retirement and disability benefits. These disparities in the federal government's national and regional outlays imply fundamentally different political and administrative relationships. At the national level the federal government typically sends entitlement checks;³⁰ for the Northwest Arctic Borough, the federal government sends grants and services.

Table 1-41 presents most of the same federal civilian expenditures data (except salaries and direct payments to individuals) as Table 1-40, disaggregated by Northwest Arctic Borough community. Table 1-41 summarizes data for seven fiscal

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^{30.} Relatively few Northwest Arctic Borough residents qualify for the social security and other retirement program benefits that comprise the bulk of direct federal payments.

TABLE 1-41FEDERAL GRANTS, CONTRACTS AND LOANS & INSURANCENORTHWEST ARCTIC BOROUGH COMMUNITIES, FY 1983-89

+				
Community	Guante	Civilian Procurement Contract	Direct & Guaranteed Loans and	Total
Community	Grants	Awards	Insurance	<u> </u>
Ambler	\$ 41,095	\$ 0	\$ 180,000	\$ 221,095
Buckland	72,241	11,000	0	83,241
Deering	61,085	10,000	0	71,085
Kiana	104,094	32,000	0	136,094
Kivalina	93,181	11,000	0	104,181
Kobuk	65,344	1,336,000	Ó	1,401,344
Kotzebue	49,350,640	13,978,000	7,779,396	71,108,036
Noorvik	945,878	86,000	0	1,301,878
Selawik	514,031	45,000	0	559,031
Shungnak	66,664	0	0	66,664
Balance of Region		13,000	0	983,143
Undistributed	13,583,497	3,025,036	5,332,628	21,941,161
TOTAL	\$65,865,893	\$18,547,036	\$13,292,024	\$97,704,953
Annual Average FY 1983-89	\$9,409,413	\$2,649,576	\$1,898,861	\$13,957,850
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Note: The published data for FY 1987, 1988 and 1989 contained errors which were corrected after consultation with the Bureau of the Census. For detailed annual expenditures by community, see Appendix Table 14. "Undistributed" includes funds for region-wide programs or funds not 'attributable to specific communities.

Source: U.S Department of Commerce, Bureau of the Census, for the Office of Management and Budget. Consolidated Federal Funds Report, Subcounty Areas, FY 1983 through current year.

years (FY 1983-1989) to average out year-to-year variations. During that period almost three-quarters of all federal grants, contracts, and loans awarded to the region came to or through Kotzebue. A substantial but unknown part of the federal expenditures reported for Kotzebue was actually earmarked for Kotzebuebased agencies that delivered services to the entire region. Nonetheless, the intraregional distribution of federal funds confirms Kotzebue's central administrative role in delivery of regional services.

Next, we present data on federal and state expenditures in the Northwest Arctic Borough for four specific services: education, housing, medical care, and energy. As best we are able to verify, these specific expenditures are not included among other federal and state expenditures reported in this section.

Education.

Directly or indirectly, most local jurisdictions in the United States pay for the primary and secondary educational services they enjoy. Nationwide in 1985 elementary and secondary education accounted for 33.5 percent of all local government expenditures (1988 Statistical Abstract). The financial burden for public elementary and secondary education that year was shared about equally by state (48.6 percent) and local (44.6 percent) governments. Federal (6.5 percent) government and other (0.3 percent) sources picked up the rest (1988 Statistical Abstract). Thus, elementary and secondary education is local government's most important function in most American communities, mainly supported by a combination of local and state tax levies.

Alaska's system for finance of local education differs radically from this national norm. Everywhere in Alaska, state government shoulders most of the cost of education. State and federal governments together cover local education in unincorporated regions and bear nearly the full cost in tax base-poor rural boroughs, such as the Northwest Arctic Borough. Economically developed municipal and borough school districts typically supplement state and federal educational funds with locally levied taxes.

The Northwest Arctic Borough School District provides local education at no personal expense to region residents. The state funds virtually the entire cost

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with royalty and severance tax income from petroleum production, not by taxes on persons and businesses. In effect, the region's residents receive and consume educational services as an in-kind transfer.

We have tried to estimate the value (or cost) of the educational services consumed by Northwest Arctic Borough residents. The estimate separately considers annual payments for operating costs and outright grants for capital improvements.

Table 1-42 shows the sources of annual operating revenues for local education in the Northwest Arctic Borough from FY 1980 to FY 1988. In FY 1988, the most recent year for which figures are available, state government funded 92 percent of operating costs. Local sources contributed \$822,223 or about seven percent of that year's operating budget. In FY 1988 and earlier years; the major part of the "local contribution" actually stemmed from investment earnings on state grant fund advances held on deposit by the school district and so might also be considered state revenues. That year, the recently formed Northwest Arctic Borough made local government's first contribution of local tax revenues to support local education in the amount of \$250,000.

To date, all Northwest Arctic Borough school district facilities have been constructed with state or federal grant funds. Table 1-43 summarizes state capital appropriations for school construction between FY 1979 and FY 1990. During that ten-year period, state school construction grants totalled \$52,389,500, or an average of \$5.3 million annually. State appropriations for school construction in the Northwest Arctic Borough since FY 1979 have been modest compared to other rural and municipal school districts. (See Alaska State

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TABLE 1-42 NORTHWEST ARCTIC BOROUGH SCHOOL DISTRICT OPERATING REVENUES, BY SOURCE, FY 1980 - FY 1988

Year	State	Federal	Local ¹	Total	ADM ²
FY 1980	\$8,852,536	\$ 729,820	\$ 618,533	\$10,500,889	1,435
FY 1981	11,692,159	679,243	898,965	13,270,367	1,420
FY 1982	11,496,051	1,898,236	1,592,226	14,986,513	1,478
FY 1983	13,852,774	3,006,760	419,490	17,279,024	1,486
FY 1984	14,035,224	3,790,041	637,253	18,462,518	1,491
FY 1985	13, 197, 994	3,767,955	775,123	17,741,072	1,480
FY 1986	13,024,232	3,665,619	499,537	17,189,388	1,482
FY 1987	11,010,798	4,322,849	408,098	15,741,745	1,550
FY 1988	11,067,748	136,667	822,231	12,026,638	1,540

Northwest Arctic Borough School District earnings on investments (that is, grant funds on deposit) comprised more than half of local revenues.
 ADM equals average daily membership or student enrollment for entire fiscal year.

NOTE: Not included in above figures are miscellaneous intergovernmental transfers to support noneducational services (e.g., food services) delivered through the school system. These miscellaneous transfers amounted to \$5,165,044 in FY 1986; \$4,472,423 in FY 1987; and \$620,296 in FY 1988, in which year not all such transfers were reported.

Source: Education in Alaska, Report to the People, published annually by the Alaska State Board of Education.

Legislature, House of Representatives Research Agency, Memorandum dated February 4, 1987, by Jay Livey, Table 15.) This may partly be explained by the fact that the school facilities inherited from the Bureau of Indian Affairs were in relatively good condition, partly by the region's success in obtaining school construction funds in preceding years.

Two public institutions provide postsecondary educational and training services to residents of the Northwest Arctic Borough--Chukchi Community College and Kotzebue Technical Center. From 1983 to 1988 the college delivered approximately one million dollars annually of educational services paid for by state government (Table 1-44).

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TABLE 1-43 STATE OF ALASKA CAPITAL APPROPRIATIONS FOR SCHOOL CONSTRUCTION NORTHWEST ARCTIC REAA/BOROUGH SCHOOL DISTRICT, FY 1979-1990

Year				State Capital Grants
FY 1979	· · · .			\$12,211,400
FY 1980		. •	. .	542,900
FY 1981		•		10,658,700
FY 1982	-			10,091,500
FY 1983				1,915,000
FY 1984	•			2,933,000
FY 1985				1,861,000
FY 1986	•			2,145,000
FY 1987			<i>i</i> .	5,501,000
FY 1988				530,000
FY 1989				3,500,000
FY 1990				500,000
TOTAL			۳ ⁴ (۲۰۰۰)	\$52,389,500

Source: Alaska State Legislature, House of Representatives Research Agency, Memorandum dated February 4, 1987, by Jay Livey; Alaska State Legislature, Operating and Capital Budget, Election District Reports.

TABLE 1-44UNRESTRICTED EDUCATIONAL AND GENERAL REVENUE
CHUKCHI COMMUNITY COLLEGE, FY 1983-1988

Fiscal Year	State Government	All Other Sources	TOTAL
1983	\$ 950,000	\$21,229	\$ 971,229
1984	837,874	39,830	877,704
1985	1,050,126	43,305	1,093,431
1986	1,071,000	56,104	1,127,104
1 987	897,573	43,860	941,433
1988	900,200	35,118	935,318

Source: Statistical Abstract 1988. Office of Institutional Research, University of Alaska Statewide System of Higher Education. February, 1989. Fairbanks.

<u>Housing</u>.

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Many housing assistance programs have subsidized the cost of shelter for Northwest Arctic Borough households. The list includes the state's remote housing program, several mortgage and loan programs, the senior citizen housing development program, and on the federal side the BIA home improvement program, Farmers Home Administration loans, and various Department of Housing and Urban Development rental and home ownership programs. Numerous federal, state, and regional agencies have administered these housing assistance programs, but the federal government has underwritten most of the cost. The Department of Housing and Urban Development, through programs now administered locally by the Northwest Inupiat Housing Authority, has been the chief source of housing subsidies through fund advances for project development and its contributions toward project debt service and operating subsidies.

Table 1-45 summarizes the Department of Housing and Urban Development public housing subsidies, plus minor state subsidies, delivered through the Northwest Inupiat Housing Authority to region residents for the years 1986 through 1988. Federal and state subsidies ranged from \$7.4 million to \$8.8 million annually.

Though several other programs, such as those cited above, also defray the cost of housing for region residents, their financial records are so dispersed that it is not feasible to document their collective financial contribution to the region. These programs are modest compared to the housing assistance delivered through the Northwest Inupiat Housing Authority.

Medical Care.

The Alaska Area Native Health Service of the federal Indian Health Service provides free medical care services to Alaska Natives. Until recently, AANHS

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TABLE 1-45 FEDERAL AND STATE HOUSING SUBSIDIES NORTHWEST INUPIAT HOUSING AUTHORITY, 1986-1988

1986	1987	1988
	at e st i	
\$5,519,488	\$5,462,904	\$5,519,489
3,036,579	1,011,513	1,489,781
215,000	524,200	409,300
8,771,067	6,998,617	7,418,570
	603,195	24,440
\$8,771,067	\$7,601,812	\$7,443,010
	\$5,519,488 3,036,579 <u>215,000</u> 8,771,067	\$5,519,488 \$5,462,904 3,036,579 1,011,513 <u>215,000 524,200</u> 8,771,067 6,998,617

Source: Northwest Inupiat Housing Authority, Report on Examination of Financial Statements and Supplemental Data, 1986-1988.

delivered health services in the Northwest Arctic Borough through its Kotzebue Service Unit, which operated the Kotzebue Hospital and programs administered under contract with Maniilaq Association.³¹ In 1989 Maniilaq Association contracted with the federal government to provide health care services, including hospital operations, to the region's Alaska Natives.

Table 1-46 reports annual federal expenditures from 1983 to 1989 for health care services delivered to the region through the Kotzebue Service Unit and Maniilaq Association. In FY 1989 the federal contribution to Maniilaq Association for in-region health care programs was \$7,303,376.

31. Both the Kotzebue Service Unit and Maniilaq Association also serve the North Slope Borough community of Point Hope.

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TABLE 1-46FEDERAL HEALTH CARE EXPENDITURESNORTHWEST ARCTIC BOROUGH, FY 1983-1989

	Kotzebue	Maniilaq	
<u>Year</u>	Service Unit	Association	Total
FY 1983	\$3,642,749	\$1,786,658	\$5,429,407
FY 1984	3,612,137	1,297,343	4,909,480
FY 1985	3,435,768	1,486,899	4,919,657
FY 1986	3,280,684	1,482,226	4,762,910
FY 1987	3,204,716	1,542,491	4,747,207
FY 1988	3,933,867	1,855,591	5,789,458
FY 1989		7,303,376	7,303,376

Source: Alaska Area Native Health Service.

The figures in Table 1-46 indicate a FY 1989 per-capita expenditure of \$1,230, based on AANHS's estimated 1989 Alaska Native population of 5,935 persons in the borough and Point Hope. This is a conservative measure of federal and state expenditures for subsidized health care for the region's residents. These figures do not include costs of care for patients referred to the Alaska Native Medical Center in Anchorage for surgery, critical care, and other specialized medical services or for a wide range of other administrative and support services provided by and budgeted to the Anchorage Area Office or the Alaska Native Medical Center. The Alaska Area Native Health Service's total FY 1989 per-capita budget of \$1,851 (\$153,890,190 to serve 83,120 Alaska Natives) was probably a better measure to the real per-capita cost of the health care services it delivered. Not included in the above figures is the cost of public health services delivered by the Alaska Division of Public Health.

Energy.

Energy subsidies pervade rural Alaska. A February 1988 report by the Alaska Legislature's House Research Agency compiled data on state legislative energy appropriations, including state-administered federal program funds, for FY 1977

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through FY 1988. The study listed appropriations for 15 program categories (feasibility studies, capital projects, operating subsidies, loans, alternative energy sources, etc.) implemented in rural regions,³² plus a number of statewide or unallocated appropriations. Several of these state and federal programs directly subsidize energy consumption in the Northwest Arctic Borough.

State rural energy appropriations peaked in FY 1982 (\$64,962,000, of which electrification projects accounted for \$27,098,000). By FY 1988 state rural energy appropriations had fallen by 70 percent to \$19,088,000, of which the Power Equalization Cost Program accounted for 75 percent and capital grants only 3 percent.

Over the period studied, three programs--the Power Cost Equalization Program, the Low Income Housing Energy Assistance Program and Energy Project Capital Grants--provided an estimated 75 to 80 percent of total state energy appropriations to rural Alaska and, inferentially, to the Northwest Arctic Borough communities. Tables 1-47 and 1-48 summarize state appropriations for each of these three programs for each Northwest Arctic Borough community for FY 1980 and following years as available.

The State's Power Cost Equalization Program subsidizes the cost per kilowatt hour of electricity consumed by rural households and other rural consumers. Whether enjoyed by households, businesses, or institutions, subsidy benefits collectively accrue to the community as a whole. Table 1-47 shows annual

32. Rural Alaska was defined to include all areas outside the urban towns of Anchorage, Fairbanks, Juneau, Homer, Kenai, Ketchikan, Kodiak, Palmer, Petersburg, Seward, Sitka, Soldotna, Wasilla, and Wrangell. subsidies to Northwest Arctic Borough communities for FY 1983 through FY 1989. Annual subsidies under this program ranged from \$1.1 million to \$1.6 million.

IADLE 1-47					
ENERGY COST ASSISTANCE GRANTS					
NORTHWEST			COMMUNITIES,		1983-1989

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<u>Fiscal Year</u>	Power Cost Equalization Program	Low Income Housing Energy Assist- ance Payments
1983	\$1,053,367	n.a.
1984	1,457,005	\$486,753
1985	1,069,227	\$450,349
1986	1,577,767	n.a.
1987	1,492,006	n.a.
1988	1,556,574	\$318,156
1989	1,442,918	\$273,784
1990	n.a.	\$214,710 ¹

1. First three quarters of FY 1990.

Note: See Appendix Tables 15 and 16 for details.

Source: Alaska's Energy Plan 1986, Volume III (FY 1983-85 data); Statistical Report of the Power Cost Equalization Program, 1988; unpublished data for FY 1989, Alaska Energy Authority; unpublished data, Alaska Department of Health and Social Services, Division of Public Assistance.

The Low Income Housing Energy Assistance Program (LIHEAP) is a federal block grant program to reduce home energy costs for low-income Alaskans through direct payment for heating bills or energy conservation measures. Table 1-47 shows the annual grants under this program to Northwest Arctic Borough communities for a number of recent fiscal years.

Since 1980 the State has provided numerous capital grants for electrification and fuel storage facilities. These grants effectively subsidize the supply of electric power and fuels. Table 1-48 lists state energy grants totalling \$4.4 million to Northwest Arctic Borough communities from FY 1981 through FY 1990.

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TABLE 1-48STATE OF ALASKA GENERAL FUND ENERGY GRANTS' NANA REGION, BY COMMUNITY, 1981-1990

	Project	Grant	
Community	Description	Year	Amount
Buckland	Bulk Storage	1981	\$100,000
Buckland	Electrification	1981	96,000
Deering	Electrification	1982	180,000
Kiana	Bulk Storage	1982	100,000
Ambler	Electrification	1983	40,000
Kotzebue	Electrification	1983	1,900,000
Selawik	Bulk Storage	1983	100,000
Selawik	Electrification	1983	100,000
Kobuk	Bulk Storage	1984	100,000
Noatak	Electrification	1985	75,000
Selawik	Electrification	1985	350,000
Deering	Electrification	1985	250,000
Buckland	Electrification	1985	108,000
Kotzebue	Waste Heat Recovery	1985	420,000
Selawik	Fuel Tank	1985	150,000
Kobuk	Electrification	1986	75,000
Kotzebue	Electrification	1986	300,000
Deering	Bulk Storage	1989	30,000
Buckland	Generator Building	1990	34,500
TOTAL		а 5 ж . т. с. н	\$4,433,500

Source: Alaska's Energy Plan 1986, Volume III; Alaska State Legislature, Operating and Capital Budget, Election District Reports.

State Capital Grant Appropriations.

During the 1980s the State of Alaska committed a large share of its surplus petroleum revenues to its annual capital budget. The Northwest Arctic Borough region's political and legislative leadership proved adept at obtaining state grants. Table 1-49 summarizes annual state capital grants for local facilities,

projects, and programs for FY 1983-1990. In this eight-year period the region received \$95,060,761 in state capital grants or an annual average of \$11,882,595.

TABLE 1-49STATE OF ALASKA CAPITAL APPROPRIATIONSNORTHWEST ARCTIC BOROUGH, FY 1983-1990

Fiscal Year	Appropriation
FY 1983	\$10,488,689
FY 1984	15,152,300
FY 1985	15,760,900
FY 1986	15,370,900
FY 1987	15,408,972
FY 1988	4,970,500
FY 1989	9,571,000
FY 1990	8,337,500
TOTAL	\$95,060,761
Annual Average FY 1983-90	\$11,882,595

NOTE: For detailed list of annual appropriations, see Appendix Table 17.

Source: Alaska State Legislature, Operating and Capital Budget, Election District Reports.

Table 1-50 shows the largest grant amounts earmarked for transportation improvements (\$26.7 million), educational facilities (\$18.9 million) and water and sewer facilities (\$15.4 million). Substantial capital funds also were awarded for energy projects (\$4.6 million) and erosion control (\$4.6 million).

State Revenue Sharing and Municipal Assistance Programs.

In addition to state capital grants for public works, the region's local governments obtain funds under the State Revenue Sharing and Municipal Assistance Programs. These programs are the major source of unrestricted revenues for the region's small city governments. Funds are generally used to finance delivery of local government services.

TABLE 1-50 STATE CAPITAL GRANTS, BY PROGRAM CATEGORY NORTHWEST ARCTIC BOROUGH, 1983-1990

Category ¹	Amount
Airports, Docks & Roads	\$26,693,600
Education ²	18,885,000
Water/Sewer _	15,409,572
Energy Projects ⁵	4,607,500
Erosion Control	4,553,000
Other	29,665,189
TOTAL	\$95,710,761

1. In appropriation documents, grants are sometimes multipurpose, sometimes ambiguous in purpose, and sometimes awarded for program operations rather than capital improvements. This categorization represents a best effort to assign grants to program categories.

2. The Northwest Arctic REAA received another \$33,594,500 in state capital grants during FY 1979-82 for a major school construction program.

3. Includes some energy grants not listed in state capital budget.

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Source: Alaska State Legislature, Operating and Capital Budget, Election District Reports; Alaska's Energy Plan 1986, Volume III.

Table 1-51 summarizes state grants to the region's local governments under these two program between FY 1980 and FY 1990. Since FY 1985, grants have totalled from about \$1.5 to \$1.8 million annually.

Summary.

Table 1-52 and Figure 1-24 summarize federal and state expenditure data for the Northwest Arctic Borough between 1983 and 1989 and compare them to total personal cash income. Expenditures summary data are most complete for 1986, 1987, and 1988. The expenditures summary omits certain federal expenditures, most notably defense outlays and direct payments to individuals and state and federal program

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TABLE 1-51 MUNICIPAL REVENUE SHARING AND MUNICIPAL ASSISTANCE NORTHWEST ARCTIC BOROUGH GRANTEES, FY1980-1990

	Grant
Year	Amount
1980	\$ 340,798
1981	1,047,617
1982	1,473,681
1983	1,199,893
1984	1,301,086
1985	1,486,872
1986	1,468,390
1987	1,558,353
1988	1,726,377
1989	1,723,592
1990	1,832,734

Note: See Appendix Table 18 for detail.

Source: Alaska Department of Community and Regional Affairs.

outlays not allocated to geographic subdivisions. Thus, the summary is a conservative estimate of the cost of in-kind goods, services, and facilities supplied to the region by federal and state governments.

Even with the noted omissions, Table 1-52 indicates that noncash benefits as measured by the cost of federal and state in-kind transfers (1986: \$65.1 million; 1987: \$61.3 million) nearly equal to the region's total personal cash income (1986: \$71.4 million; 1987: \$72.6 million). Thus, for 1987, the combined value of personal cash income plus locally consumed in-kind transfers totalled a minimum of \$134 million. Consumption of in-kind goods and services provided by government counted for almost as large a part of the region's total income as personal cash income. Inclusion of subsistence income would enlarge the relative size of the nonmonetary economy.

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Program Type	<u>~ 1983</u>	1984	1985	1986	1987	1988	1989	
Education			•	•	÷			
Northwest Arctic District	16,860	17,825	16,966	16,690	15,334	11,205	n.a.	
Chukchi Community College	950	838	1,050	1,071	898	900	n.a.	۰,
Housing	n.a.	n.a.	n.a.	8,771	7,602	7,443	n.a.	
Health Care	5,429	4,909	4,920	4,763	4,747	5,789	7,303	
Energy	1,053 ²	1,944	1,520	1,578 ²	1,4922	1,875	1,717	
SUBTOTAL	\$24,292	\$25,516	\$24,456	\$32,873	\$30,073	\$27,212	n.a.	
State Capital Grants	10,489	15,152	15,761	15,371	15,409	4,971	9,571	
State Revenue Sharing	1,200	1,301	1,487	1,468	1,558	1,726	1,724	
Other Federal Expenditures ³	11,285	13,501	15,201	15,408	14,273	19,454	20,591	•
SUBTOTAL	\$22,974	\$29,95 4	\$32,449	\$32,247	\$31,241	\$26,151	\$31,886	
TOTAL STATE & FEDERAL EXPENDITURES	\$47,266	\$55,470	\$56,905	\$65,120	\$61,314	\$53,363	n.a.	
TOTAL PERSONAL INCOME	\$60,085	\$63,144	\$69,270	\$71,431	\$72,622	n.a.	n.a.	

TABLE 1-52STATE AND FEDERAL PROGRAM EXPENDITURES & TOTAL PERSONAL INCOME
NORTHWEST ARCTIC BOROUGH, 1983-19891
(\$1,000s)

 1 This table includes data recorded by state and federal fiscal years and by calendar year. For lack of a feasible alternative, the data are tabulated according to their nominal fiscal or calendar year.

² Does not include capital grants for energy projects or Low Income Housing Energy Assistance Program grants for FY 1983, FY 1986 or FY 1987.

³ Excludes defense expenditures, direct payments to persons, and loans and loan guarantees and insurance.

Sources: Tables 1-40, 1-42 through 1-49, and 1-51.

FIGURE 1-24 CASH AND INKIND INCOME BY TYPE NORTHWEST ARCTIC BOROUGH, 1987 Cash and Inkind Income by Type \$80 \$72.6 million \$61.3 million Personal Cash Income \$60 -Other Federal State Rev. Sharing State Capital Grants \$40 -Energy 🗄 Health Care Housing \$20 Education \$O · Cash Income Inkind Income Source: Table 1-52.

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This balanced blend of cash and noncash income exemplified in Table 1-52 has profound implications for the region's political and market economies and for its economic culture. It means that attempts to describe, analyze, and forecast the regional economy by focussing on cash work, cash income, and cash spending miss half of this region's livelihood. This omission is doubly important, because the noncash and cash components of the regional economy are closely linked.

For most Americans, consumption patterns result mainly from their personal spending choices in the marketplace and, to a much lesser extent, from public choices to authorize and fund governmental services. In contrast, in the Northwest Arctic Borough nonlocal governments ultimately determine about half of what people consume. This arrangement gives residents access to extra economic resources but at some cost to their personal and institutional economic and political autonomy.

In effect, the extent of the public in-kind transfer economy marks the bounds of the private commercial economy. How people spend their cash income in the marketplace depends on what basic needs are left unmet by housing, health care, utilities, and other governmental programs. These sorts of in-kind transfer income free up cash income to be spent in the private sector for other goods and services. Any reduction of in-kind transfers means going without or shifting cash spending to buy what was formerly gotten for free.

In-kind transfers have repercussions on the region's labor economy as well. Transfer programs that raise the region's standard of living induce persons to

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stay in the region who might have moved elsewhere for better living conditions. Some of these persons may add to the region's labor surplus.

Coincidentally, it may be speculated that government's dominant role in setting wage standards, subsidization of select goods and services for select consumers, and subsidization of select infrastructure costs ultimately impairs the optimal operation of private sector labor, consumer, and production markets. The large economic benefits obtainable from governmental intervention may inhibit development of a private entrepreneurial economic culture. Instead, economic development strategies may tend to stress governmental intervention to subsidize jobs, infrastructure, and living standards to offset market disadvantages rather than a market-disciplined pursuit of entrepreneurial opportunities and improvements to efficiency and productivity.

6. Household/Personal Consumption Expenditures

Household cash expenditure and consumption patterns illustrate several important complementary features of the region's cash and in-kind economy. The 1985 Alaska Geographic Differential Study compiled statewide and regional data about costof-living differentials and household cash expenditures. The study was statistically rigorous and comprehensive in scope. It adopted the standard expenditure categories used by the U.S. Bureau of Economic Analysis for national income accounts, so regional, state, and national cash expenditure patterns can be compared.

The study analyzed regional differences in prices and spending patterns to quantify a cost-of-living differential for each state election district. Though five years old, the data base remains the most authoritative source of

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comparative data on regional cost-of-living and expenditure patterns for rural Alaska regions. Raw data collected in the original study was recompiled by school district and published in 1988 as the Alaska School District Profiles and Differential Study.

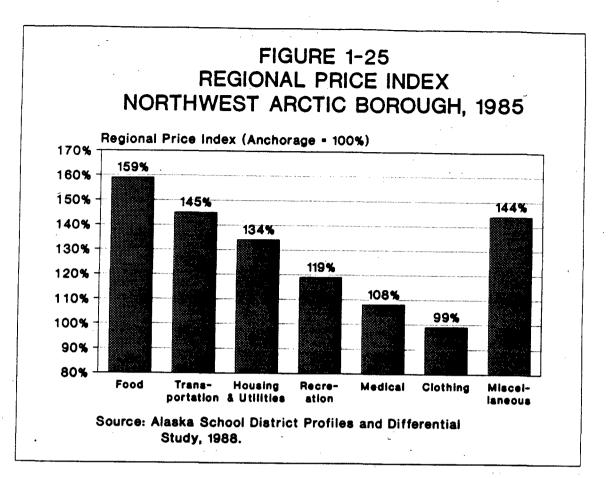
Regional Cost of Living Index.

Figure 1-25 shows that 1985 prices in the Northwest Arctic Borough were generally higher compared to Anchorage,³³ especially for basic necessities such as food (159 percent of Anchorage base), transportation (145 percent), and shelter and shelter utilities (134 percent).³⁴ Prices were higher for all other expenditure categories (recreation: 119 percent of Anchorage base; medical care: 108 percent; and miscellaneous expenses: 144 percent) except clothing (99 percent).

33. The 1985 Alaska Geographic Differential Study measured Anchorage's costof-living differential at about 16% above Seattle's. Here, it is essential to distinguish between national price inflation over time, measured by the U.S. Department of Labor's Consumer Price Index (CPI), and regional inflation, measured by instant place-to-place comparisons in regional cost-of-living differentials. For a explanation of how these different inflation indices apply to Alaskan regions, see Wilson and Rae, " A Guide to Measuring Alaska's Cost of Living", Alaska Department of Labor (1990). The true importance of consumer price inflation in rural Alaska and the Northwest Arctic Borough is clouded by the volume of in-kind goods and services bought and delivered by government.

34. Unfortunately, the 1985 report combined Northwest Arctic Borough and North Slope Borough price data for housing (88 percent of Anchorage base) and for domestic energy (411 percent) and utilities (331 percent). The 1988 revised report combined housing and energy and utilities prices for the Northwest Arctic Borough. As a result, first-hand data on comparative prices for housing and domestic energy and utilities in the Northwest Arctic Borough were not separately compiled for either report. Nonetheless, the original data indicated that Northwest Arctic Borough housing costs were lower than Anchorage costs in 1985 (when Anchorage's housing prices were at an all-time peak) but that its prices for domestic energy and utilities were three to four times Anchorage prices. 8

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These price data confirm that the purchased cost of comparable goods and services was generally higher in the Northwest Arctic Borough than in Anchorage but not uniformly for all categories of consumption. These price differences account for most of the Northwest Arctic Borough's higher cost of living.

The region's cost-of-living differential does not uniformly affect all households or economic sectors. As the ultimate purchaser of most goods and services, government, not persons, chiefly absorbs the brunt of regional inflation. Perversely, government spending may also be the main prop sustaining the costof-living differential. Writing in an earlier era when the federal government dominated Alaska's economy, Tussing (1969) explained the principal causes and consequences of Alaska's chronic regional inflation in these words:

It is apparent that the federal government bears the major direct burden of Alaska regional inflation. . . (Emphasis in original).

In our view, the answer to the . . . question [How is chronic regional inflation financed?] is found in the disproportionately large role of the federal government. Simply put, for almost 30 years the federal government has dominated the economy of Alaska; and each federal agency has been willing to pay whatever prices were demanded of it for the goods and services necessary to accomplish its mission. Each agency has accepted the prevailing wage and price structure; and by doing so, has helped to validate and to perpetuate it. In technical terms, the largest exogenous component of demand in the Alaska economy has been almost totally inelastic with respect to prices.

The inability of competitive cost constraints in the private sector of Alaska's economy so far to hold down the prices and wages paid by the federal government reflects the fact that the private economy is relatively small and is composed almost entirely of a few natural-resource industries which, because of the institutional regime in each one, are unable to resist inflationary pressure generated elsewhere, and of service activities dependent almost entirely upon the multiplier effects of income from federal expenditures and (much less) from crude-materials exports.

Regional inflation can be expected also to place a substantial direct and indirect burden on the subsistence sector, the rural

unemployed and underemployed, and Alaska Natives generally. The bias of the price structure against low income people has been noted above. . .

Tussing speculated further that government-financed inflation distorted and arrested development of a productive private economic sector.

The hypothesis that prevailing high money wage levels also reduce Native employment opportunity by imparting to Alaska industry an additional bias in favor of capital and skill intensity deserves to be investigated.

(T)here is a strong presumption that high prices and high money wages retard the development of both "export" industries and of some, but not all, import substitution in Alaska.

Tussing's analysis, updated to account for state government's enlarged fiscal role, fits well today's Northwest Arctic Borough regional economy. Federal, state and other employees with cost-of-living-adjusted wage scales are largely insulated from regional price inflation. Further, residents who are heavy consumers of subsidized public goods and services are, to that extent, insulated from price inflation. Regional inflation hurts persons with limited or fixed incomes who purchase most of their consumption at market prices. And it hurts businesses whose competitiveness is impaired by high cost factors.

Tussing's hypothesis that "high money wage levels also reduce Native employment opportunity by imparting to Alaska industry an additional bias in favor of capital and skill intensity", is consistent with the state of the region's industry. Its single large-scale productive industry--Red Dog mine--entailed a capital investment of about \$415 million and created about 320 jobs, or a capital investment of about \$1.3 million per job.

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Tussing's speculations on big government's decisive role in Alaska's chronic regional inflation neatly joins two pertinent themes: how governments' ability and readiness to pay compensatory wages and premium prices counterproductively sustains and perpetuates inflation; and how this governmental policy undercuts development of a competitive private market-oriented economy in the productive, distributive and commercial sectors.

Two important circumstances about the NAB's economy have changed since Tussing published his 1969 analysis. Then, the federal government was the dominant public wage-payer. Now, federal/state/local governments are collectively even more dominant. And the consumption of in-kind goods and services provided by government has grown enormously. This consumption is largely unconstrained by household purchasing power and local price levels. But we believe the main points of his analysis can be applied to the region's current economy.³⁵

Expenditure and Consumption Patterns.

Different expenditure and consumption patterns stemming from the region's distinctive consumer needs and preferences also affect regional cost of living. Comparison of the region's cash expenditure patterns against state and national norms gives an oblique insight into the household economic adjustments arising from the region's uncommon blend of cash income and in-kind income in the form of goods and services provided by government.

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^{35.} The impact on private economic development of government's role as chief underwriter of regional inflation is magnified by but analytically separate from its transfer role as provider of many goods and services. The latter issue is well-framed in Knapp and Huskey (1987).

Figures 1-26A and 1-26B compare cash expenditure patterns in the Northwest Arctic Borough, Anchorage, and the nation. The figures show the share of disposable cash income spent for eight categories of goods and services: food, personal transportation, housing, domestic energy and utilities; medical care, clothes, recreation and miscellaneous items. The two basic consumption categories of food and utilities together absorbed almost half (47 percent) of Northwest Arctic Borough disposable cash expenditures compared to the national average of 25 percent.

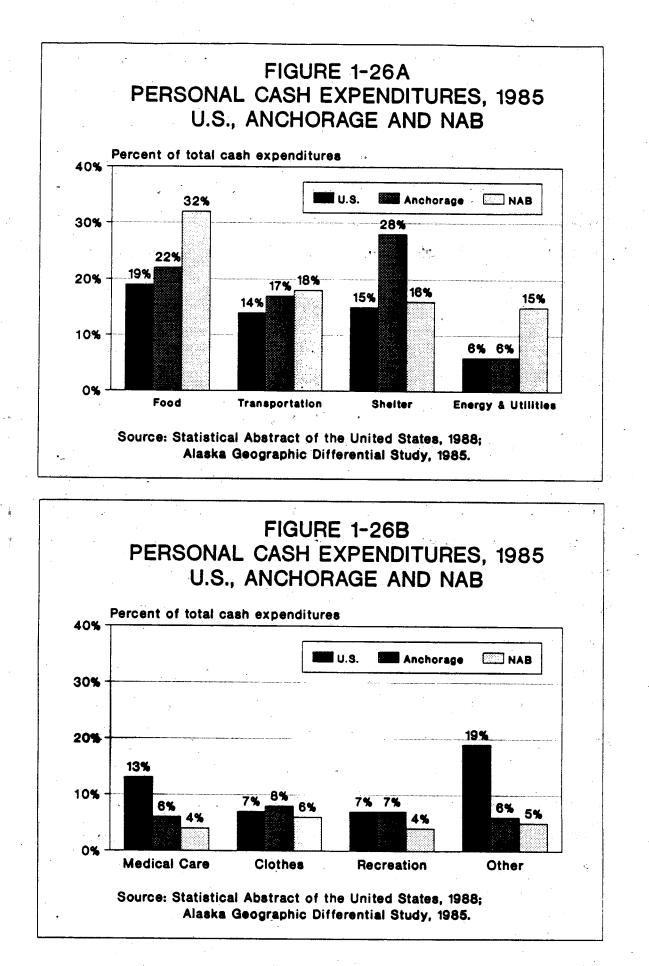
Food. The amount of money and time that Northwest Arctic Borough households spend to put food on the table is a serious constraint on the region's economic development. Food prices are not significantly subsidized (unlike housing, utility, and medical costs). Compared to Alaska and national norms, Northwest Arctic Borough households spend more of their cash income (32 percent) for food purchases than typical Alaskan (22 percent) or national (19 percent) households. They also spend more time at food production. About 3 percent of the nation's labor force is engaged in food production (1988 Statistical Abstract). Subsistence food production in the Northwest Arctic Borough surely absorbs a much larger, if not precisely known, share of the region's livelihood efforts, plus a significant share of household cash resources for subsistence gear and related expenses. Subsistence still makes economic sense, but its economic viability is chiefly due to high food prices and limited alternatives for cash employment.

In its food economy, the Northwest Arctic Borough has the worst of both economic systems: high food prices in the cash economy; low return on its investment of time and money in the subsistence economy. The net result is that food purchases take a large share of the region's cash and subsistence food

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numerous nonlocal workers. These hiring practices were the key to the 1988 jump in earnings that went to out-of-state workers. Table 1-20 shows 1988 nonresident earnings and employment by industry. The construction industry had by far the highest rate (31.3 percent) nonresident earnings¹⁸ and accounted for nearly half of all nonresident earnings. This suggests that high-wage construction booms are especially apt to draw nonlocal workers into the local labor market.

ADOL also published data on the residency status of employees of all major employers (at least 20 workers during any month) in the state for 1987 and 1988. Table 1-21 reports the residency status of employees of 22 major employers in the Northwest Arctic Borough. The figures in Table 1-21 confirm that the region's major employers are public employers. Sixteen of the 22 major employers listed are local public agencies (state and federal agencies were not listed), with three employers (Northwest Arctic Borough School District, Maniilaq Association, City of Kotzebue) accounting for more than half the major employers' total workforce. The figures also show that local public employers hire few outof-state workers. Five of the six listed private firms were among the six firms with the highest rate of nonresident workers. The private business with the fewest nonresident workers was the Nullagvik Hotel, a NANA Regional Corporation subsidiary. (Table 1-27 shows employment for NANA Regional Corporation and its various subsidiary operations).

Repatriated Income. Numerous observers have commented that Northwest Arctic Borough residents have a long-time habit of taking seasonal and temporary employment outside their home region. Unfortunately, only anecdotal evidence

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^{18.} Note that these nonresident figures refer only to out-of-state residents. Were figures on out-of-region earnings available, we believe they would show that income leakage for the construction industry was actually much higher.

-TABLE-1-20 RESIDENT AND NONRESIDENT TOTAL EARNINGS AND WORKERS BY MAJOR INDUSTRIAL GROUP NORTHWEST ARCTIC BOROUGH, 1988

		Earn	ings			Work	ers	<u> </u>
Industrial Group	Resi	dent	Nonres	ident	Resi	dent	Nonre	sident
-	(\$1,000)	Percent	(\$1,000)	Percent	Number	Percent	Number	Percent
Agriculture ¹	\$ 0	0.0%	\$ 0	0.0%	0	0.0%	0	0.0%
Mining	(D)	92.4	(D)	7.6	(D)	88.9	· (D)	11.1
Construction	2,217	68.7	1,012	31.3	272	78.8	73	21.2
Manufacturing	(D)	0.0	(D)	0.0	(D)	0.0	(D)	0.0
Transportation	2,045	94.2	126	5.8	191	91.4	18	8.6
Retail Trade	1,948	92.5	157	7.5	272	91.6	25	8.4
Fin./Ins./Real Est.	1,422	95.9	61	4.1	121	94.5	7	5.5
Services	7,223	96.3	276	3.7	818	94.8	45	5.2
Nonclassifiable	(D)	93.9	(D)	6.1	(D)	90.0	(D)	10.0
Local Government	14,195	97.6	352	2.4	1,469	95.6	67	4.4
TOTAL	\$32,495	93.6%	\$2,235	6.4%	2,740	92.3%	230	7.7%

Source: Nonresidents Working in Alaska, 1988. Alaska Department of Labor.

Note: (D) indicates that information is nondisclosable.

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1. Data includes only nonagricultural wage and salary workers covered by unemployment insurance. Consequently, data provided for this industry may not represent the industry as a whole. ليتميآ المست

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,		Total	Resident	Nonresident
Employer	Industry	Employees	Employees	Employees
Ambler, City of	Public Administration	96	87 (90.6%)	9 (9.4%)
Baker Aviation	Trans., Comm., Util.	56	46 (82.1%)	10 (17.9%)
Buckland City Council	Public Administration	66	61 (92.4%)	5 (7.6%)
Cominco American Inc.	Mining	77	70 (90.9%)	7 (9.1%)
Deering City Council	Public Administration	38	37 (97.4%)	1 (2.6%)
Hanson Trading Co./KDC	Retail Trade	95	85 (89.5%)	10 (10.5%)
Kiana, City of	Public Administration	84	80 (95.2%)	4 (4.8%)
Kivalina City Council	Public Administration	50	48 (96.0%)	2 (4.0%)
Kotzebue, City of	Public Administration	201	186 (92.5%)	15 (7.5%)
Kotzebue/KIC/RS Store Inc.	Construction	69	60 (87.0%)	9 (13.0%)
Maniilaq Association Inc.	Services	481	458 (95.2%)	23 (4.8%)
Noatak Village Council	Services	48	47 (97.9%)	1 (2.1%)
Noorvik, City of	Public Administration	100	97 (97.0%)	3 (3.0%)
Northwest Arctic Borough	Public Administration	36	36 (100.0%)	0 (0.0%)
Northwest Arctic Bor. SD	Services	775	758 (97.8%)	17 (2.2%)
Nullagvik Hotel	Services	100	96 (96.0%)	4 (4.0%)
NW Inupiat Housing Authority	Finance, Ins. and R.E.	83	79 (95.2%)	4 (4.8%)
OTZ Telephone Coop. Inc.	Trans., Comm., Util.	43	41 (95.3%)	2 (4.7%)
R S Store Inc.	Retail Trade	67	61 (91.0%)	6 (9.0%)
Selawik City Council	Public Administration	138	129 (93.5%)	9 (6.5%)
Selawik IRA Council	Services	40	40 (100.0%)	0 (0.0%)
Shungnak City Council	Public Administration	45	45 (100.0%)	0 (0.0%)
TOTAL		2,788	2,647 (94.9%)	141 (5.1%)

TABLE 1-21 EMPLOYEE RESIDENCY STATUS MAJOR EMPLOYERS, NORTHWEST ARCTIC BOROUGH, 1988

Source: Residency Analysis of Alaska's Workers by Firm 1988. Alaska Department of Labor, 1990.

NOTE: "Major" defined to include employers who employed at least 20 workers during any month of 1988. All employees of major firms were counted, regardless of duration of employment. Employees were considered residents if they received a Permanent Fund Dividend in 1988 or applied for a dividend in 1989. Employees not filing for a Permanent Fund Dividend were presumed to be nonresidents of Alaska.

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and spotty statistics exist to document this practice. For example, the U.S. Census Bureau reported that 3.6 percent of Northwest Arctic Borough residents who worked during the 1970 census week worked outside their region of residence and 2.1 percent during the 1980 census week. These rates were somewhat higher than average for other western and arctic census divisions.

Lacking comprehensive data on out-of-region employment and earnings, we collected data on resident or NANA shareholder earnings for several historically important out-of-region employment sources: pipeline construction, fire-fighting, North Slope oilfield employment, Red Dog Mine construction, and <u>Exxon Valdez</u> oil spill cleanup operations.

Though spotty, these data suggest a consistent and plausible picture of the regional workforce's mobility. Cumulative data show that part of the region's labor pool has been exceptionally willing, mobile, and versatile in pursuit of cash employment outside their home towns and home region. This labor mobility has helped offset the local deficit of job openings.

a. Trans-Alaska Pipeline Construction Project. Of the seven ANCSA corporate regions wholly outside the pipeline corridor, NANA Regional Corporation had the highest percentage of shareholders employed at some time on the pipeline construction project. Five regions (CIRI, Doyon, AHTNA, Chugach, and Arctic Slope) exceeded NANA's percentage, six others fell below (Table 1-22). The rate of project employment varied widely among the region's communities. Kivalina (16.8 percent) had the highest participation rate. Ambler (1.9 percent), Deering (2.5) and Shungnak (3.7) were lowest; and the other communities were bunched around the region-wide average.

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TABLE 1-22 ALASKA NATIVE TAPS PIPELINE WORKERS AS A PERCENT OF ANCSA CORPORATION MEMBERSHIP

	Percent of Membership
ANCSA Corporations	Employed on TAPS
Cook Inlet	20.1%
Doyon	18.7
Ahtna	14.6
Chugach	10.1
Arctic Slope	6.5
NANA	6.3
Sealaska	5.4
Bering Straits	4.5
Calista	2.2
Koniag	2.1
Bristol Bay	1.9
Aleutian	1.0
AVERAGE	7.3

Source: Alaska Native Hire on the Trans-Alaska Oil Pipeline Project, ISER, 1978.

b. Alaska Fire Service. The Bureau of Land Management's Alaska Fire Service has employed residents of many rural Alaska Native villages over the years. Table 1-23 gives annual wages for the period 1985-1988 for the NANA region village fire-fighting teams. Firefighters' wage levels have risen steadily, perhaps because of fluctuating demand for these services. For the peak year of 1988, firefighter payrolls for this highly seasonal activity amounted to nearly 3 percent of the region's total payroll earnings (\$45,438,750).

Table 1-24 summarizes 1988 Alaska Fire Service firefighter payrolls by region. Despite their distance from Alaska Fire Service administrative headquarters in Fairbanks, the region's residents that year earned higher wages fighting fires than any region except the Yukon-Koyukuk region.

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TABLE 1-23ALASKA FIRE SERVICE ANNUAL PAYROLLNANA REGION, BY VILLAGE, 1985-1988

Village	1985	1986	1987		1988		TOTAL
Ambler	\$ 44,972	\$ 2,214	\$ 76,875	\$	86,384	\$	210,445
Buckland	35,764	34,135	89,718		162,762	-	322,379
Dahl Creek	671	0	0	•	. Q.		671
Kiana	64,317	113,323	105,969		235,456		519,065
Noorvik	36,102	35,257	173,318		258,826		503,503
Selawik	35,344	80,024	0		322,157		437,525
Shungnak	72,281	77,118	51,193		179,562		380,154
TOTAL	\$289,451	\$342,071	\$497,073	\$1	,245,147	\$2	,373,742

NOTE: These payroll earnings are not included in ADOL payrolls for Northwest Alaska Borough.

Source: Alaska Fire Service, Bureau of Land Management, unpublished data.

TABLE 1-24

ALASKA FIRE SERVICE ANNUAL PAYROLL BY REGION, 1988

Region	Payroll
Yukon-Koyukuk	\$3,702,163
Northwest Arctic	1,245,146
Fairbanks North Star	1,231,929
Southeast Fairbanks	1,222,209
Wade Hampton	816,306
Bethel	452,409
Ahtna	382,124
Bering Straits	245,115
Dillingham	131,567
Haines	105,762
Matanuska-Susitna	86,238
TOTAL	\$9,620,968

NOTE: These payroll earnings are not included in **ADOL** payrolls for Northwest Alaska Borough.

Source: Alaska Fire Service, unpublished data.

c. NANA Regional Corporation. The NANA Regional Corporation and its subsidiaries have become major employers of NANA shareholders, both within

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the region and in their diverse operations outside the region. The corporation's own operations are concentrated in businesses that can provide employment opportunities to shareholders. Similarly, NANA has used its participation in joint ventures to facilitate shareholder access to wage employment. It aggressively brokered employment for shareholders in the Exxon Valdez oil spill cleanup program. And shareholder employment was a fundamental goal of its Red Dog mine development strategy. (Exxon Valdez cleanup and Red Dog Mine employment are discussed in detail in succeeding subsections.) As a result, corporate business activities regularly generate cash wages for shareholders far in excess of its dividend distributions.

The corporation's annual reports show how NANA has used its corporate resources to improve employment opportunities for its shareholders. In its regional operations, NANA has favored local shareholder employment opportunities over profit considerations. Thus, NANA has continued its local business operations in the face of persistent losses. Table 1-25 shows that NANA's regional operations have lost money every year since 1980, while its statewide (i.e., out-of-region) operations have regularly shown profit.

Apart from their profitability, NANA's statewide and joint-venture operations also have been an important source of employment for many shareholders living in or outside the region. These businesses help offset the shortage of inregion employment.

Table 1-26 summarizes NANA shareholder employment and payrolls in its own and subsidiary operations between 1982 and 1989. Part of shareholder employment in NANA's own operations (in 1989, almost half), and most shareholder employment

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TABLE 1-25 NANA REGIONAL CORPORATION NET INCOME, REGIONAL AND STATEWIDE OPERATIONS, 1980-1990

Year	Regional	Statewide	Total
1980	(\$43,992)	\$1,485,883	\$1,441,891
1981	(1,018,435)	2,125,134	1,106,699
1982*	•		
1983	(1,252,683)	3,674,637	2,421,954
1984	(1,514,045)	6,058,907	4,544,862
1985	(1,323,149)	2,312,466	989,317
1986	(2,187,631)	3,802,402	1,614,771
1987	(1,038,374)	829,579	(208,795)
1988	(688,319)	1,646,905	958,586
1989	<pre>(1,344,679)</pre>	2,759,331	1,414,652
1990	(1,075,504)	5,997,666	4,922,162
TOTAL 1980-90	(\$10,411,307)	\$30,692,910	\$19,206,099

* Detailed breakdown not published in 1982 Annual Report.

Source: NANA Regional Corporation annual reports.

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NANA REGIONAL	CORPOR	ATION S	HAREHOLI	DER EMP	LOYMENT	& PAYR	DLL, FY	1982-1989
B .	1982	1983	1984	1985	1986	1987	1988	1989
NANA Operations	587	450	392	389	265	2491	471	399
Subsidiaries	147	92	112	124	105	226	160	276 ²
Joint Ventures	98	68	76	86	93	<u>99</u>		276
Cominco-Red Dog	39	14	24	30	7	26		
NANA-Coates	10	10	12	8	5 1			
Endicott Projec	t					101		
Total Employment	734	542	504	513	370	475	631	675 ²
Payroll(\$million)	\$4.3	\$5.1	\$4.5	\$5.0	\$4.2	\$4.2	\$5.3	\$7.4 ²

Includes 167 employees in region-based operations and 82 employees in 1. Anchorage-based operations.

2. Includes only joint venture subsidiaries. Full total would be higher.

Source: NANA Regional Corporation Annual Reports and unpublished corporate data.

in subsidiaries is based outside the NANA region. During the seven-year period 1982-1989, NANA provided an average of 556 job opportunities annually for shareholders. To put this figure in perspective, note that NANA has about 4,571 active shareholders, many of whom are not in the workforce, and that total wage employment for the Northwest Arctic Borough averaged 1,815 jobs annually over this period.

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In 1989 NANA strengthened the region's economy and workforce in several specific ways. Within the region, NANA's business enterprises had 264 employees, of whom 194 were shareholders¹⁹, and a gross payroll of \$1.7 million. Its most important regional operations were its corporate offices and the Nullagvik Hotel. Additionally, NANA's subsidiaries and joint ventures, most of which are based outside the region, provide employment opportunities for NANA shareholders, most but not all of whom live in the region (Table 1-27). NANA subsidiaries had 917 employees, of whom 205 were shareholders, and a gross payroll of \$16.2 million, of which shareholders earned \$3.1 million. Subsidiaries with the largest gross payrolls were NANA Development Corporation, Purcell Services, Inc. and NANA Oilfield Services. Lastly, NANA's joint ventures (NANA/Marriott, Alaska United Drilling and Chugach-NANA Marriott²⁰) had 1,555 employees, of whom 276 were shareholders, and a gross payroll of \$16.2 million for the shareholders earned

20. Chugach-NANA Marriott, formed to provide support services to the Exxon Valdez oil spill cleanup, employed 92 NANA shareholders for a payroll of \$1.0 million. Purcell Services, Inc. also provided some security services for cleanup operations. These subsidiaries' cleanup employment and payrolls were in addition to Veco's direct employment cited in Table 25.

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^{19.} The count of shareholder employees includes some nonNative spouses of shareholders. The employment count, which includes seasonal and temporary jobs and employee turnover, is not directly comparable with data on average annual employment. Information on how many regional residents worked in NANA's out-of-region enterprises may be available for the Final Report.

\$3.2 million. With the addition of Red Dog mine-related employment, NANA's combined enterprises produced 745 jobs and \$9.1 million in payroll earnings for region residents and other shareholders in 1989. Shareholder stock dividends that year totalled \$917,625.

TABLE 1-27SHAREHOLDER EMPLOYMENT AND PAYROLLSNANA REGIONAL CORPORATION & SUBSIDIARIES, 1989

- <u></u>	Total Employment	Shareholder Employment	Percent Shareholder	Shareholder Payroll
Regional Operations	•		•	
Ambler Fuel	7	6	86%	\$ 12,217
Buckland Fuel	2	2	100	14,464
Deering Fuel	2	2	100	14,588
Jade Mountain	5	5	100	140,683
Museum of the Arctic	33	32	97	55,166
NANA Regional Corp.	23	19	83	349,276
NANA Seafood	14	12	86	32,713
Nullagvik Hotel	178	121	68	508,942
Subtotal	264	194 ¹	73	1,123,377 ¹
Statewide Operations	•		-	
American Meat Shop	1	1 -	100	23,911
Arctic Caribou Inn, Ltd.	13	7	54	30,276
Arctic Utilities	. 6	3	50	93,212
NANA Development Corp.	101	71	70	828,440
NANA DMTS Services, Ltd.	33	29	88	355,206
NANA Oilfield Services	59	20	34	439,775
Purcell Services	693	64	9	1,224,552
Tour Arctic	11	10	91	54,650
Subtotal	917	205	22	3,050,022
Joint Ventures			•	
Alaska United Drilling	241	38	16	621,439
Chugach-NANA/Marriott	503	92	18	1,028,305
NANA/Marriott	811	146	18	1,591,473
Subtotal	1,555	276	18	3,241,217
GRAND TOTAL	2,736	675 ¹	21%	\$7,414,616 ¹

1. There are minor unreconciled discrepancies in original data totals.

Source: NANA Regional Corporation.

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Shareholder jobs and wages are not the same as resident hire because many NANA shareholders live outside the region. Table 1-28 lists shareholders by place of 1989 residence. Almost one-third of NANA's 4,571 active shareholders dwelled outside the region--many (892) elsewhere in Alaska and some (575) outside Alaska.

Residence	Number	Percent
Ambler	150	3.3%
Buckland	142	3.1
Deering	77	1.7
Kiana	223	4.9
Kivalina	170	3.7
Kobuk	41	.9
Kotzebue	1,279	28.0
Noatak	224	4.9
Noorvik	316	6.9
Selawik	342	7.5
Shungnak	140	3.1
Subtotal	3,104	67.9
Elsewhere in Alaska	892	19.5
Outside Alaska	575	12.6
Subtotal	1,467	32.1
TOTAL	4,571	100.0

TABLE 1-28 NANA REGIONAL CORPORATION SHAREHOLDERS BY PLACE OF RESIDENCE, 1989¹

1. Does not include 541 inactive (deceased or unknown whereabouts) shareholders. Total number of shareholders is 5,112.

Source: NANA Regional Corporation.

Based on the location of its various business activities, shareholder residency patterns, and partial information on the residency of shareholder employees in certain NANA business activities (Table 1-29), we estimate that in 1989 NANA activities generated about 465 jobs and \$5.5 million in wages, plus other payroll benefits for resident shareholders, with the balance of jobs (280) and wages (\$3.6 million) accruing to shareholders dwelling outside the region. Beginning in 1990, the figures for resident employment and wages should jump as Red Dog Mine moves into full operation.

TABLE 1-29 NANA REGIONAL CORPORATION SHAREHOLDER HIRE EXXON VALDEZ OIL SPILL CLEAN-UP THROUGH AUGUST 10, 1989

1		Chugach		10 1 0 1 0		
Residence	~	NANA-Marriot	t Security	VECO	Total	Percent
Ambler Buckland		6 5	5	7 6	18 16	6.5% 5.8
Deering Kiana Kivalina		4	2	1 7 5	4	1.4
Kobuk Kotzebue		1 1 29	0	5 1 12	8 2 53	2.9 .7 19.1
Noatak Noorvik		6	1	3	10 19	3.6
Selawik Shungnak Subtotal	•	4 <u>5</u> 69	14 <u>6</u> 54	9 <u>5</u> 63	27 <u>16</u> 186	9.7 <u>5.8</u> 67.1
Anchorage Fairbanks Other Subtotal	- a.	50 17 <u>9</u> 76	* 8 1 <u>2</u> 11	1 1 <u>2</u> 4	59 19 <u>13</u> 91	21.36.94.732.9
TOTAL	4 F	<u>145</u>	<u>65</u>	<u>67</u>	277	100.0%

Source: NANA Regional Corporation.

NANA's 1989 Annual Report noted the corporation's achievements in shareholder hire, but also expressed the its concern about high turnover among shareholder employees.

Although shareholder hire is increasing overall, high turnover among shareholder employees continues to be a concern to the Board of Directors; in the last fiscal year, 37 percent terminated within the year.

High turnover among shareholders is also evident in length of employment at NANA. Only three shareholders have been employed

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continuously for 15 years or more. Of the 35 employees who have been with NANA 10 to 15 years, only seven are shareholders. Of the 156 NANA employees with five to 10 years of continuous employment, only 16 are shareholders.

During 1990, the corporation instituted several new policies and programs to improve shareholder hire and retention, including:

- creation of a human resources department;
- initiation of a plan to train, place and promote shareholders in hotel, camp and food service management;
- development of improved employee orientation materials;
- stronger substance abuse policies for employees;
- provision of accounting training; and
- on-going management training.

As part of its operations, NANA Regional Corporation maintains a computerized Talent Bank System. NANA's personnel department uses this system to match job applicants with employment positions in the corporation or its affiliated businesses, including the Red Dog Mine. The original Talent Bank is currently being converted to an enhanced system to be operational by summer 1990.

The new system's database consists of coded job classifications and a set of individual personnel files containing name, residence, sex, shareholder status, education, work history, union affiliation, coded job preference(s), and phone number. On request, the Talent Bank can retrieve all personnel files that match a specific job code and related criteria (job preference, minimum experience, residence, sex, shareholder status, etc.) or all files that satisfy the criteria of a general inquiry. Overall, these data on Northwest Arctic Borough resident employment at out-ofregion enterprises confirm that this region's workforce has been more willing than most rural Alaska workers to travel outside its home region for work. Outof-region work has helped make up for the scarcity of at-home employment opportunities. This mobility is a positive feature of the workforce, inasmuch as it suggests that at least some workers are accustomed and willing to adapt to job opportunities away from home such as the Red Dog Mine project.

d. Exxon Valdez Oil Spill Cleanup. The 1989 <u>Exxon Valdez</u> oil spill cleanup program employed an estimated 10 thousand workers at various cleanup related activities. NANA Regional Corporation aggressively pursued spill cleanup employment opportunities for its shareholders through several channels. NANA actively sought to recruit shareholders to work directly for Veco, Inc., the chief spill cleanup contractor. Additionally, several NANA Regional Corporation subsidiaries and joint ventures were engaged as subcontractors to Veco. These subcontractors hired many NANA shareholders.

NANA reported a total of 277 NANA shareholders worked at catering/camp support, security and beach cleanup activities for the oil spill through early August 1989. Table 1-29 shows the number of shareholders, by place of residence, employed in spill-related work. It is noteworthy that the percentage of shareholders who worked on the spill and were resident in the region (67.1 percent) matched the percentage of shareholders who lived in the region (67.9 percent--see Table 1-28). Within the region, villagers were slightly overrepresented in the spill workforce, Kotzebue somewhat underrepresented. These figures indicate that NANA region residents, including villagers, were very

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successful at obtaining spill-related employment, despite their remoteness from the spill scene.

Other data released by Veco, Inc. confirm that a disproportionate number of NANA region residents held oil spill cleanup jobs. Veco's employment records (Table 1-30) appear less complete than NANA's records, but show that the Northwest Arctic Borough supplied it with more employees (44) than the North Slope Borough, Bering Straits, Wade Hampton, Bethel, Dillingham, Bristol Bay and Aleutian Island regions combined (34).

In sum, these spill cleanup employment data demonstrate again the ability of NANA and large numbers of its shareholders to respond opportunistically and effectively to unexpected job openings far outside their home region.

Red Dog Mine.

NANA Regional Corporation selected the Red Dog Mine property under terms of the Alaska Native Claims Settlement Act.²¹ First discovered in 1953 in a remote, undeveloped area of northwest Alaska about 82 miles north of Kotzebue and 47 miles inland from the Chukchi Sea coast, only Red Dog's size (proven ore reserves of 85 million tons) and high ore grade (17 percent zinc, 5 percent lead) made development economically feasible. In 1982 NANA and Cominco Alaska Incorporated agreed on the terms under which the mine would be developed and have released its key features.

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^{21.} The Red Dog Mine site was actually among lands withdrawn from mineral staking and Native selection by ANCSA. NANA succeeded in obtaining a congressional amendment under the 1980 Alaska National Interest Lands Conservation Act that allowed NANA to select the Red Dog property.

TABLE 1-30

RESIDENCY OF VECO'S EXXON VALDEZ OIL SPILL CLEANUP EMPLOYEES THROUGH AUGUST 13, 1989

Place of Residency	Number of Employees
NORTHWEST AND WESTWARD ALASKA Northwest Arctic Borough Ambler (4), Buckland (3), Kiana (6), Kivalina (4), Kobuk (1), Kotzebue (10), Noatak (1), Noorvik (8), Selawik (4), Shungnak (3)	78 44
Nome Dillingham Bethel Bristol Bay Aleutians	2 22 5 1 4
SOUTHCENTRAL/PRINCE WILLIAM SOUND (Kenai Peninsula Borough, Matanuska-Susitna Borough, Kodiak Island Borough, Anchorage, Valdez/Cordova)	3,196
INTERIOR (Fairbanks North Star, Southeast Fairbanks, Yukon-Koyukuk)	443
SOUTHEAST (Haines, Juneau, Ketchikan Gateway Borough, Sitka, Skagway/Yakutat, Wrangell-Petersburg)	27
TOTAL ALASKA OUT OF STATE GRAND TOTAL	3,744 343 4,087

NOTE: No employees were reported for the North Slope Borough or Prince of Wales census areas.

NOTE: These figures include direct employees of Veco, Inc. as of August 13, 1989. Figures do not include workers hired by Norcon or Veco subcontractors or crews on fishing boats under contract to Veco, Inc. The number of subcontracted employees is about 2,360 and the number of Norcon employees is about 1,150.

NOTE: The totals in this table were retotaled from the breakdowns reported by Veco, Inc. to reconcile a minor discrepancy (three employees) in the original figures.

Source: Veco, Inc., August 25, 1989.

Under the agreement, Cominco leases the property from NANA, operates the mine, and markets the concentrate. The purpose of the agreement is threefold:

-to develop one of the richest zinc deposits in the world -provide employment

-protect the subsistence lifestyle of the people in the region

Upon signing the agreement, NANA received \$1.5 million. Every year thereafter, until the mine goes into production, NANA receives an additional \$1.0 million. Once production begins NANA will receive 4.5% of the net smelter return. After Cominco recovers its capital investment, NANA will begin sharing in the net proceeds. This begins at 25 percent and increases by 5 percent every 5 years until NANA and Cominco share equally in the profits.

Another important provision in the agreement deals with employment. First preference on all Red Dog jobs goes to qualified natives in the NANA region. It is the intent of Cominco and NANA that by the twelfth year of the mine's operation the mine will be run 100% by natives from the region. Red Dog Facts, Cominco/NANA.

The partners have estimated development costs at \$415 million. This includes \$150 million for haul road and port facilities financed by industrial revenue bonds issued by the Alaska Industrial Development Authority under a reimbursement agreement with Cominco. When fully operational, Red Dog will be the nation's premier zinc mine and one of the largest zinc producers in the world.

The partners developed the Red Dog deposit as an open pit mine. Trucks haul product (zinc, lead, and silver concentrates) 52 miles overland to the shallow water port site to be stored for shipment during open water shipping season. Many commodity industries are vulnerable to periodic production shutdowns caused by volatile market prices for their product. Red Dog, however, as a highly efficient, low-cost producer of zinc concentrates, is better positioned to sustain price fluctuations without shutdown or interrupted employment, although profits might suffer. Known reserves will sustain the mine's projected working

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life for 50 years at present production levels. The new transportation system opens other highly mineralized areas in the vicinity to potential commercial development, but no other projects are planned at present.

Red Dog Mine development spanned from mid-1987 with construction of the access road to late 1989, when production began. Cominco released data on the residency status of project employees during construction and initial mine operation (Table 1-31). Total project employment and resident employment peaked during the construction phase.²²

About one-third of construction-phase employees were region residents, but many construction jobs were short-term. Table 1-31 shows the total number of jobs held by different persons rather than employment at any one time or average annual employment. The December 1989 figures are for mine and support positions at start-up of mining operations. Mine operations entail fewer workers but offer permanent full-time positions, more of which (almost 60 percent) were initially held by region residents. In May 1990, by which time the mine was in full operation, resident hire remained at about 60 percent.

Red Dog's resident hire figures approximate original Cominco estimates in the project environmental impact statement (EIS). Cominco anticipated that 124 residents would be employed during construction and 168 for initial production. Residents actually held 475 construction phase jobs in 1988 and 273 in the first

22. Detailed employment tabulations are shown in Appendix Tables 7 through 11.

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ten months of 1989. Taking job turnover into account, actual resident employment approximated the EIS projection of 124 full-time equivalent jobs.²³

		SLE 1-31	_
NORTHWEST	ARCTIC BOR	OUGH RESIDENT	EMPLOYMENT ¹
	RED DOG M	INE, 1988-1989	

	Residents		Nonres	idents	Total	
Period	Number	Percent	Number	Percent	Number	Percent
Period 1988'	475	33.9%	928	66.1%	1,403	100.0%
Through 10/24/891	273	30.0	636	70.0	909	100.0
December_1989 ²	168	59.2	116	40.8	284	100.0
May 1990 ³	192	60.2	127	39.8	319	100.0

1. Includes port and mine site construction.

 At start-up of mining operations. Includes Cominco Alaska mine site employees (128 resident of 228 total), Arrow Transportation (13 of 22) and NANA Marriott (27 of 34).
 At full operation. Includes Cominco Alaska mine site employees (141 resident of 245 total), Arrow Transportation (24 of 38) and NANA Marriott (27 of 36).

Source: Cominco Alaska Incorporated, Red Dog Hi⁻Lites.

Resident employment (168) at production start-up matched Cominco's projections even though total initial project employment was substantially less than projected (Table 1-32). The EIS estimated an initial production workforce of 392, and Cominco reports that actual employment was 275 workers.²⁴ The difference is mainly because worker training has not been conducted on-site as the EIS anticipated but elsewhere. Though exact payroll figures are not available, Cominco has estimated an initial annual payroll of about \$10 million

- 23. These employment levels are not fully reflected in ADOL's 1988 and 1989 employment figures for the Northwest Arctic Borough. Presumably, some nonlocal contractors and subcontractors did not separately report their local payrolls.
- 24. There are minor differences in Cominco's figures for initial production employment because the figures are not simultaneous. Cominco expects that actual employment will fluctuate during initial production.

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(pers. com., Parker, 1991). Recent ADOL employment and payroll figures suggest this estimate is conservative.

Occupation		EIS	Actual ²
Management		7	8
Supervisors		30	32
Professionals and Technical/Clerical		60	52
Equipment Operators, Drivers		64	46
Mill Operators	٤	22	24
Tradesmen		69	24
Trainees	- ·	84	0
Laborers		16	<u> </u>
Catering	*	. 40	23
Millwrights		0	24
Mechanics	· •	0.	15
Floormen		0	6
Powerhouse Operators and Trainees		0	·9
Welders	· •	0	3
TOTAL		392	275

		TABI	E 1-	-32		
PROJECTED	AND	ACTUAL	RED	DOG	MINE	EMPLOYMENT

Projected initial employment for production phase.
 Actual employment during November/December 1989 start-

. Actual employment during November/December 1989 start-up.

Source: Environmental Impact Statement, Red Dog Mine Project; Cominco Alaska, unpublished data.

Table 1-33 compares regional employment and payrolls for the first quarters of 1989 and 1990 (the most currently available data), by which date the mine was in full operation. Inferentially, the figures show the Red Dog mine start-up had a dramatic impact on regional earnings. The actual figures for mining and wholesale trade were not released, due to disclosure regulations. But comparisons between the first quarters of 1989 and 1990 (compare the subtotals for undisclosed employment and payroll) suggest that the mine added an estimated 230 new mining jobs with a quarterly payroll of \$2,850,000 (prorated annually at \$11,400,000). These estimates include mining industry employees only,

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exclusive of mine-related transportation and camp support services. The latter would add about 75 more jobs (see Table 1-31) and an annual payroll of perhaps +\$3 million. These figures do not include secondary employment generated inside the region by this new basic industry.

TABLE 1-33EMPLOYMENT AND PAYROLLS, BY INDUSTRYNORTHWEST ARCTIC BOROUGH, FIRST QUARTER, 1989 & 1990

	Emp	loyment		Payrolls		
Industry Classification	1989	1990	1989	1990		
Mining	*	*	*	*		
Construction	68	33	855,838	195,827		
Transportation, Communication and Public Utilities	160	170	966,749	1,462,406		
Wholesale Trade	*	*	*	*		
Retail Trade	176	160	897,280	922,631		
Finance, Insurance and Real Estate	99	87	488,691	603,070		
Services	371	395	1,958,148	2,213,921		
Government	1,020	1,095	5,943,674	6,711,456		
Federal	(81)	(80)	(575,516)	(614,695)		
State	(86)	(82)	(824,557)	(887,563)		
Local	(853)	(933)	(4,543,601)	(5,209,198)		
Miscellaneous	*	0	*	0		
(Subtotal: Undisclosed)	(12)	(240)	(142,864)	(3,001,409)		
TOTAL	1,906	2,180	\$11,253,244	\$ 15,110,720		

*Figures withheld to comply with disclosure regulations.

Source: Alaska Department of Labor.

As a measure of the mine's contribution to the region's private sector, note that this new permanent mining (\$11.4 million) and mine-related (\$3 million) basic payroll was almost fivefold the region's total 1987 earnings (about \$3 million) from all commodity-producing industry (agriculture, fisheries, mining, construction, manufacturing--see Table 1-10).

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Though Cominco fulfilled the resident hire goals set by the NANA/Cominco agreement, legal controversy enveloped the local hire practices of one of the state's major subcontractors on the project. The State of Alaska's 1986 "Regional Preference Law" required contractors on state projects to hire residents for 50 percent of project jobs in regions (census areas) the Alaska Department of Labor determined were economically distressed. The Alaska Industrial Development Authority, a state agency, administered road and port facility construction for Red Dog Mine and ADOL found the Northwest Arctic Borough an economically distressed region. In such cases the state required contractors to implement 50 percent local hire. Enserch Alaska Construction, Inc., the main contractor for road construction, challenged the legality of preferential hire for residents. The State Supreme Court struck down the law in 1988. On appeal in December 1989 the State Supreme Court declared that the law violated the equal protection provision of the Alaska Constitution.

The "Regional Preference Law" was the state's third legislated local hire preference attempt to be struck down on constitutional grounds. With construction done and mine hiring policies covered by contractual terms of the NANA/Cominco agreement, the statutory and constitutional issues about local hire became immaterial as far as Red Dog Mine is concerned.

The mine initially operated around the clock in two shifts. At start-up, Cominco established a four-week-on/two-week-off rotation schedule for workers at the mine site. Some region residents reportedly preferred a two-week-on/twoweek-off schedule that allowed more time for home life and subsistence. Cominco officials acknowledged that the four-week work period has led some employees to terminate, for example, females with family and home responsibilities. Cominco

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maintains that the longer work term is essential for effective worker training during start-up but say they may later revise the work schedule to suit worker preferences.²⁵ The shorter rotation would reduce annual hours and wages per job by about one-quarter but increase employment by about one-third.

Cominco furnishes transportation between hometown and job site for regional residents or transportation between the mine and Anchorage for others. Some NANA shareholder employees relocated to Anchorage for its greater amenities. Paradoxically, the mine's well-paid jobs plus the free commute available to and from Anchorage may enable some region residents to move away, while other village-based residents choose to stay in their home villages.

As the mine has operated for only a brief period as of December 1990, the longrun net effect of population movements between Kotzebue, the villages, Anchorage, and elsewhere cannot yet be determined.

(M) any, perhaps most, of the residents hired for the mine would be recruited from other jobs in the region, leading to a period of job shuffling. These vacated positions would become available for other underemployed and unemployed resident workers. If the vacated posts were not readily filled from the resident labor pool, some of the jobs might draw newcomers to the region to replace mine hirees. In this way, resident hire on the mining project would trigger upward job mobility throughout the region's labor pool and might also attract some new residents to the region. Environmental Impact Statement, Red Dog Mine Project, p. V-31.

Local informants report that the employment possibilities created by mine development, the 1989 Prince William Sound cleanup, and mine operation generated substantial turnover in the staff of local public agencies, siphoned off many

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^{25.} Two articles in the Anchorage Daily News (Arctic Yields Buried Treasure, December 24, 1989; A New Living Off the Land, January 7, 1990) provide anecdotal information on resident and company attitudes on mine labor policies.

good employees, and left behind hard-to-fill vacancies. Here, too, how the region's workforce will ultimately adjust to the series of job openings originated by the mine remains unclear.

Speculation that it might be economically advantageous to backhaul fuels and bulk freight to Kotzebue or to the port site for redistribution within the region has not materialized in a concrete plan to implement the process.

In 1987 the Northwest Arctic Borough and Cominco agreed by contract that the company would pay \$1 million annually, rising by steps to \$3 million, in lieu of all other borough taxes for 14 years. This agreement provided funds to the newly incorporated borough in advance of mine development. If the borough terminates the agreement, Cominco is entitled to a credit against any borough taxes levied upon it?

3. Unearned Cash Income

The BEA personal income data series is the only source of detailed long-term information on unearned cash income for the Northwest Arctic Borough. BEA defines transfer payments and dividends, interest, and rent as the two broad categories of unearned cash income.

Transfer Payments.

As defined by the BEA, "transfer payments" consist of income payments to persons for which they do not render current services. Governments issue virtually all transfers as cash payments for social security and other retirement benefits; medical and unemployment insurance benefits; income assistance such as Aid to Families with Dependent Children, food stamp and Supplemental Security Income benefits; and veterans benefits. Payments under Alaska's Permanent Fund Dividend and Longevity Bonus programs are also classified as transfer payments.

Table 1-34 and Figures 1-21 and 1-22 compare growth in transfer payment income for the Northwest Arctic Borough, state of Alaska, and United States from 1971 to 1987. Transfer payments provided a fluctuating but substantial share of Northwest Arctic Borough personal cash income during this period. In 1987 transfer payments amounted to 30.1 percent of total personal income compared to 24.2 percent in 1971. The most rapid rise in per-capita transfer income for Northwest Arctic Borough residents occurred during the 1971-1975 period.

TABLE 1-34

TRENDS IN TRANSFER INCOME, 1971-1987 NORTHWEST ARCTIC BOROUGH, STATE OF ALASKA AND UNITED STATES

	Per-Capita Total Transfer	Transfer Pay- ments as % of Total Per-
Northwest Arctic Borough	<u>Payments</u>	<u>sonal Income</u>
1971	\$ 570	24.2%
1975	1,753	33.8
1980	1,592	21.5
1985	3,348	26.1
1987	3,696	30.1
<u>State of Alaska</u>	-	
1971	\$ 342	6.9%
1975	795	8.2
1980	1,046	8.0
1 985	2,293	12.2
1987	2,769	15.1
<u>United States</u>		•
1971	\$ 456	11.0%
1975	836	14.3
1980	1,310	13.8
1985	2,054	14.8
1987	2,257	14.6

Source: Bureau of Economic Analysis.

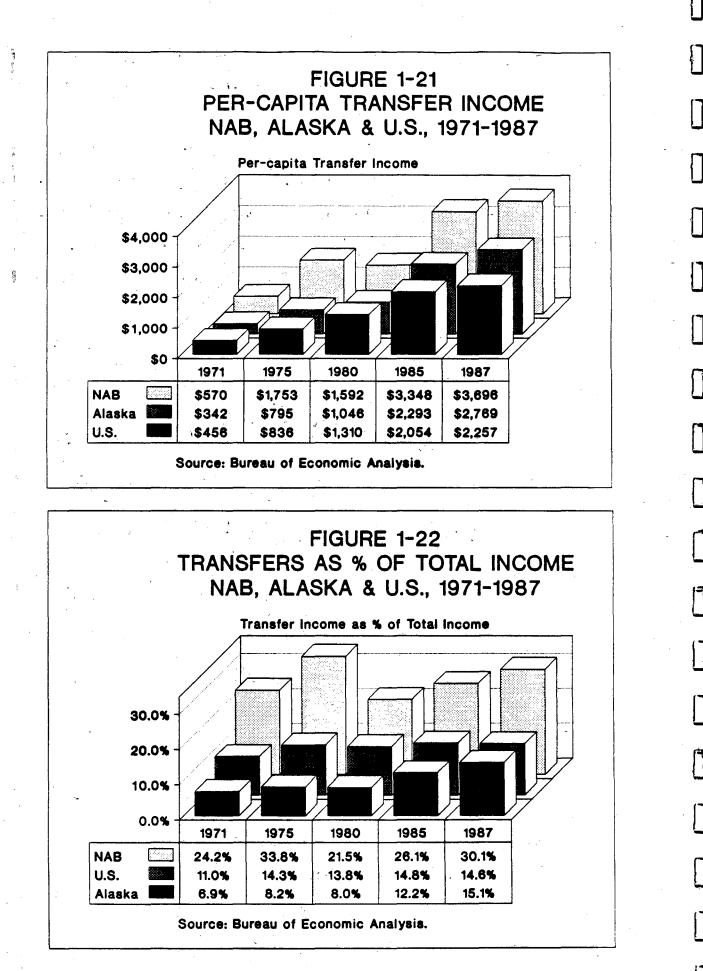
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Indeed, after adjustment for inflation the 1975 figure (\$3,259 per-capita in constant 1982-84 dollars) actually was slightly higher than the 1987 figure (\$3,243). Since 1975, residents also appear to have become less dependent on cash transfer payments, measured as a percent of total cash income.

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Nevertheless, in absolute and relative terms, Northwest Arctic Borough residents have for many years depended on transfer payments as a source of cash income more than state and national residents. Northwest Arctic Borough per-capita cash transfer payments were higher and transfer payments comprised a larger share of personal cash income. In 1987, total per capita transfer payments reached \$3,697 in current dollars for the Northwest Arctic Borough, \$2,769 for the state, and \$2,368 for the nation.

Two Alaska transfer programs (Alaska Permanent Fund Dividend Program, Alaska Longevity Bonus Payment Program) preclude direct comparisons with national norms. These unique programs distribute cash payments to all eligible Alaskans, regardless of income status. In 1987 their combined cash benefits, counted as transfer payments in the category "Other Governmental Payments to Individuals" in Table 1-35, surpassed all other categories of transfer payments to Alaskans.²⁶

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^{26.} Since its inception in 1982, the Alaska Permanent Fund Dividend Program has disbursed annual payments as follows: 1982: \$1,000.00; 1983: \$386.15; 1984: \$331.29; 1985: \$404.00; 1986: \$556.26; 1987: \$708.19; 1988: \$826.93; and 1989: \$873.16. We estimate 1989 payments to Northwest Arctic Borough residents totaled about \$5,000,000.

The Alaska Longevity Bonus Payment Program pays \$250 monthly to eligible persons 65+ years old. Based on Alaska Department of Administration data, estimated payments to Northwest Arctic Borough residents in FY 1989 totaled \$716,500. This estimate is prorated from aggregate data for the election district, which includes the North Slope Borough, according to the Northwest Arctic Borough's share of the district's residents 65+ years of age.

They account for most of the difference between transfer payment totals for the Northwest Arctic Borough and national figures.

- TABLE 1-35

GOVERNMENT TRANSFER PAYMENTS TO INDIVIDUALS (PER CAPITA) NORTHWEST ARCTIC BOROUGH, STATE OF ALASKA, AND UNITED STATES, 1987

<u>Category of Payment</u>	Northwest Arctic Borough	State of Alaska	
Income Assistance Programs Retirement & Disability Ins. Benefits Medical Payments Income Maintenance Benefits Unemployment Insurance Benefits Veterans Benefits Federal Education & Training Assistance	\$ 714 739 676 372 20 5	\$ 831 344 214 191 44 10	\$1,258 579 202 64 71 22
Subtotal	2,526	1,635	2,197
Other Gov't Payments to Individuals ¹	812	781	3
Total Gov't Payments to Individuals	3,338	2,416	2,200`
Other Transfer Payments ²	359	353	168
Total Transfer Payments	\$3,697	\$2,769 ~	\$2,368

1. Mainly includes Alaska's unique Permanent Fund Dividend and Longevity Bonus payments, plus trivial amounts from the Bureau of Indian Affairs and several other minor sources. Note that outside Alaska the category "Other Government Payments to Individuals" is negligible.

2. Includes payments to nonprofit institutions and business payments to individuals.

Source: Bureau of Economic Analysis.

Review of the detailed data on types of transfer payments (see Table 12 and Table 13 in Appendix) refutes the notion that Northwest Arctic Borough residents inordinately depend on government income assistance programs. Table 1-35 breaks down 1987 governmental transfer payments to individuals by category of payment for the Northwest Arctic Borough, the state, and the nation. Northwest Arctic

Borough residents received higher payments for some programs (medical payments, income maintenance, and unemployment benefits) than the national average; in other program categories, payments were lower (retirement, disability, and veterans benefits). Most of the differences reflect economic conditions in a region that historically lacked the jobs that qualify workers for social security benefits. That meant fewer claimants for social security benefits but more for income assistance and unemployment benefits. Even so, the overall disparity in per-capita payments under income assistance programs for the Northwest Arctic Borough (\$2,526) and the nation (\$2,197) was modest. The data show that income maintenance programs (supplemental security income, aid to families with dependent children, food stamps, et al.) collectively provided only about 5.5 percent--one-twentieth--of total personal income in the borough in 1987.

Data compiled from Alaska Department of Health and Social Services records show estimated payments made in FY 1986 to Northwest Arctic Borough residents under aid to families with dependent children and food stamps, the two major income assistance programs administered by the state (Table 1-36). These state data were cross-checked with BEA transfer payment data. The state figures for FY 1986 are lower than the corresponding 1987 BEA figures.

Discrepancies in population and period of coverage may partly explain the difference, but state data confirm that income assistance payments are a relatively minor source of cash income to Northwest Arctic Borough residents. State data also show that program payments varied widely from community to community. This variation may not be a reliable barometer of local need since the level of program payments is strongly influenced by the local effectiveness of program delivery.

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TABLE 1-36AFDC AND FOOD STAMP PAYMENTSNORTHWEST ARCTIC BOROUGH COMMUNITIES, FY 1986

Community		AFDC	Food Stamps	·	Total		tal Per Capita
Ambler	<u> </u>	32,280	\$ 40,500	S	72,780		269
Buckland		66,060	72,660	•	138,720	•	536
Deering		N/A	N/A		N/A		N/A
Kiana		101,292	76,140	•	177,432		409
Kivalina		69,564	101,376		170,940		589
Kobuk	· .	5,064	2,532	•	7,596		88
Kotzebue		294,960	372,952		667,912		253
Noatak		98,820	57,000		155,820	•	456
Noorvik		197,940	30,256		228,196		526
Selawik		144,768	∞ . 86,628	· · ·	231,396		366
Shungnak		63,348	19,488		82,836		338
TOTAL	\$1	,074,096	\$859,532	\$1	,933,628	\$	337
					10 ×		

Note: Community data were not available for state-administered medical assistance payments. Per-capita totals based on Alaska Department of Labor provisional population figures for July 1, 1986.

Source: Alaska Department of Health and Social Services, as reported in Memorandum dated February 27, 1987, by Brad Pierce, Alaska State Legislature, House of Representatives Research Agency.

Dividends, Interest and Rent.

As defined by the BEA, "dividends" comprise payments in cash or other assets by profit-making corporations to shareholders. "Interest" consists of cash or imputed interest payments to persons. "Rent" comprises personal cash income from rental of real property, the imputed net rental income of owner-occupants, and royalties to persons from patents, copyrights, and natural resource rights.

Table 1-37 compares personal income from "Dividends, Interest and Rent" between 1971 and 1987 for the Northwest Arctic Borough, State of Alaska, and United States. This income source has become steadily more important to Northwest Arctic Borough residents, rising from \$47 to \$866 per capita and from about 2.0

percent to 7.1 percent of total personal income. Shareholder dividends by NANA Regional Corporation (\$917,625 or \$125 per shareholder in 1987) and Kikiktagruk Inupiat Corporation (\$505,250 or \$250 per shareholder) helped boost dividend income. Notwithstanding these gains, Northwest Arctic Borough residents' income from "dividends, interest and rent" falls well below state averages and even further below national averages in both per-capita and percentage terms.

TABLE 1-37

DIVIDENDS, INTEREST AND RENT, 1970-1987 NORTHWEST ARCTIC BOROUGH, STATE OF ALASKA AND UNITED STATES

		Per Capit	a Dividend	<u>s, Interest</u> ,	& Rent	
	NAE		State o	f Alaska	United	States
	(Amount) (Percent) ¹	(Amount)	(Percent) ¹	(Amount)	(Percent) ¹
1971	\$ 47	2.0%	\$ 280	5.7%	\$ 545	13.2%
1975	134	2.6	787	8.1	797	13.6
1980	376	5.1	1,362	10.5	1,560	16.4
1985	906	7.0	1,816	9.7	2,371	17.5
1987	866	7.1	1,886	10.3	2,605	16.8

1. Dividends, interest and rent payments as percent of total personal cash income.

Source: Bureau of Economic Analysis.

4. Distribution of Household Cash Income

Statistical distribution of households along the income scale shows relative economic equality and concentrations of wealth and poverty. Analysis of household income distribution may suggest hidden economic and class structures as well as the dynamics of economic class changes. Statistical tests can track the persistence of a large cash-poor underclass, the emergence of a middle-income class, or concentration of income in a wealthy elite. For example, a bimodal distribution of households at the extreme ends of the income spectrum suggests a highly stratified society that is split into two unequal income groups or

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classes. On the other hand, a pronounced normal distribution with few households at either income extreme suggests a relatively egalitarian economic society.

The IRS/Department of Revenue taxpayer data publication provides some income distribution information for Kotzebue but none for the region's smaller communities. Table 1-38 compares Kotzebue's 1985 distribution of households by income group to the city of Nome, the state of Alaska, and the United States.²⁷ It shows that distribution of Kotzebue's households across the income scale generally resembles the pattern in Nome and the state as a whole, once allowance is made for Kotzebue's lower median household income. Kotzebue's distribution is slightly skewed toward the lower end of the scale, as might be expected given overall lower household incomes; but otherwise statistical differences between Kotzebue, Nome, and the state are minor. Unfortunately, IRS data do not discriminate between incomes of Native and non-Native households and so does not shed light on disparities in household income distributions by race.

Two noteworthy discrepancies exist between national and Alaska distributions. The proportion of low-income households is strikingly lower nationally compared to the Alaska areas, and the proportion of upper-middle income (\$25,000-\$50,000) households nationally is substantially broader.

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^{27.} The national data (distribution of households by income) and Alaska data (distribution of federal income tax returns by adjusted gross income) are not perfectly congruent. The differences do not seem to significantly distort geographic comparisons. Further, analysis of the distribution of <u>persons</u> (instead of <u>households</u>) by per-capita income would yield different results since rural Alaska's households are typically larger, so a per-capita analysis of their incomes would skew income distributions downward relative to most other regions.

TABLE 1-38DISTRIBUTION OF INCOME BY HOUSEHOLD1KOTZEBUE, NOME, STATE OF ALASKA & UNITED STATES, 1985

		•	State of	United
Income Group	Kotzebue	Nome	Alaska	States
Under \$5,000	18.7%	17.5%	14.9%	7.5%
5,000 - 10,000	12.9	12.2	12.4	12.2
10,000 - 15,000	9.3	8.6	10.5	11.3
15,000 - 20,000	8.3	8.1	9.1	10.8
20,000 - 25,000	9.6	10.0	8.0	9.9
25,000 - 35,000	13.5	13.7	13.6	16.9
35,001 - 50,000	14.4	14.2	14.5	16.0
50,000 +	13.3	15.6	17.1	15.4
TOTAL	100.0%	100.0%	100.0%	100.0%
Median Household Income	\$20,484	\$21,793	\$22,438	\$25,387

1. U.S. figure is for median household income. Figures for Kotzebue, Nome, and state of Alaska are distribution of federal income tax returns by adjusted gross income.

Source: Statistical Abstract; Federal Income Taxpayer Profile, 1983-85.

5. Unearned In-kind, or Noncash, Transfer Income

In-kind, or noncash, transfer income consists mainly of goods and services provided or subsidized by nonlocal governments. Important examples of in-kind transfer income in the Northwest Arctic Borough include public education; health and housing services; subsidized energy; and most public works and services.

Net in-kind transfer income is the value (cost) of goods and services provided or funded by federal/state governments minus payments to federal/state governments. Costs of goods and services collectively provided by all levels of government are offset by taxes and other revenues collected (or borrowed) by governments. Within the Northwest Arctic Borough:

Federal expenditures exceed receipts many times over (Table 1-39), insuring a large net inflow of federal funds.

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- State expenditures are funded largely by resource revenues, not by taxes and charges levied on persons, households and businesses resident in the Northwest Arctic Borough. Virtually all state expenditures for goods, services, and transfer payments represent a net gain to the region.
- Local government and service agency programs primarily depend on intergovernmental revenue transfers from federal and state governments rather than locally raised revenues. Even most goods and services provided by local government represent net transfers of inkind income.²⁸

TABLE 1-39

FEDERAL PERSONAL INCOME TAX RECEIPTS, EXPENDITURES, AND OBLIGATIONS NORTHWEST ARCTIC BOROUGH, 1983-85

Year ¹	Federal Personal Income Tax Receipts	Federal ² Expenditures & Obligations
1983	\$4,891,713	\$16,940,000
1984	5,276,016	18,137,000
1985	5,552,868	23,181,000

- 1. Tax receipts are for calendar year; expenditures and obligations for federal fiscal year.
- 2. Includes only federal expenditures and obligations reported in Consolidated Federal Funds Report. Does not include expenditures for housing and health care programs, shown in Tables 1-45 and 1-46 to exceed \$10 million annually.

Source: Alaska Department of Revenue, U.S. Department of Commerce.

This section of the report attempts to document (1) nonlocal governmental expenditures for in-kind goods and services in the Northwest Arctic Borough and

28. For example, according to the 1988 County and City Data Book, intergovernmental revenues comprised about 72 percent (\$9.3 million) of FY 1982 general revenues (\$13.0 million) for all local governments within the Northwest Arctic Borough. That year, locally levied tax revenues amounted to \$143 per capita or less than \$1 million in all.

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(2) specific expenditures for the most significant goods and services that government provides. Note that this account of in-region program expenditures systematically understates the full cost of providing federal and state services to the region. The in-region expenditure category omits the expense of administration and other support services centrally provided to local and regional programs.

A technical aside here will help to explain what may seem like a double count of some federal and state expenditures in our regional cash and in-kind income categories. Earlier, state and federal payrolls were counted as part of the region's earned cash income. Now, we propose to count the net cost, including payroll costs, of goods and services provided or funded by nonlocal governments as part of the region's in-kind transfer income. Seemingly, payroll costs are counted twice as income to the region.

A simple mental exercise will show that joint provision of services and payrolls actually entails two distinct types of income to the region. Were all transfer goods and services continued while in-region payrolls were discontinued, then in-kind transfer income would stay unchanged but the region would be poorer in earned cash income. Conversely, were payrolls maintained but all free goods and services withdrawn, then the region's cash income would remain unchanged but its standard of living would plummet due to loss of educational, health, housing, and similar services.

Public goods and services that entail federal and state-supported payrolls bestow a double blessing on the region's economy. One is that nonlocal governments furnish goods and services free to the region's residents. The other that state

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and federal governments employ residents to deliver those free goods and services.

<u>Federal Expenditures</u>.

Since FY 1983, the U.S. Bureau of the Census has published comprehensive data on federal expenditures by fiscal year, type, amount, borough, and city in its <u>Consolidated Federal Funds Report</u>.²⁹ Table 1-40 summarizes federal expenditures in the Northwest Arctic Borough for FY 1983-1989. In 1989, federal expenditures and obligations totalled \$26,897,000, or about \$4,152 per capita. Grant awards comprised the largest component (50.0 percent) of this federal outlay, followed by direct wages and salaries (18.7 percent), procurement contract awards (13.3 percent), direct cash payments to individuals (12.1 percent), and loan guarantees and insurance (5.5 percent). More than 94 percent of federal outlays in the region that year were for civilian purposes.

Figure 1-23 compares FY 1989 federal outlays for the three major types of civilian expenditures (grants and contracts, direct cash payments to persons, and salaries and wages) for the Northwest Arctic Borough and the nation. Percapita federal outlays (\$3,873) were about 40 percent higher in the Northwest Arctic Borough, but the profile of expenditures by category was radically different in the two jurisdictions.

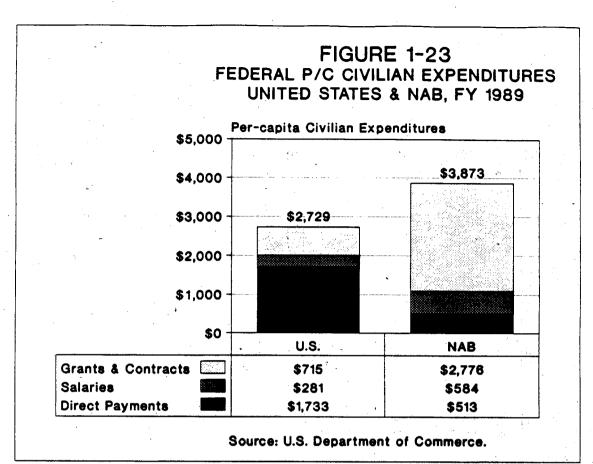
29. Not all federal expenditures are included, notable exceptions being Department of Housing and Urban Development grants and U.S. Postal Service expenditures. U.S. Postal Service officials estimated rural Alaska postal subsidies amounted to about \$50 million in 1990. Also, not all federal program expenditures are suballocated to borough or city levels.

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	1983	1984	1985	1986	1987	1988	1989
GRANT AMARDS	\$4,954	\$6,620	\$9,324	\$8,672	\$10,056	\$12,834	\$13,404
SALARIES & WAGES: TOTAL	3,252	4,010	4,558	4,753	5,348	4,460	5,020
DEFENSE	798	730	829	983	1,391	516	1,458
CIVILIAN	2,454	3,280	3,729	3,770	3,957	3,944	3,562
DIRECT PAYMENTS FOR INDIVIDUALS: TOTAL	3,209	3,358	3,421	2,668	2,409	3,658	3,247
RETIREMENT & DISABILITY	2,086	2,206	2,173	2,406	2,084	3,369	2,928
ALL OTHER	1,123	1,152	1,248	262	325	289	319
(DEFENSE DIRECT PAYMENTS)	86	134	81	95	99	107	115
(CIVILIAN DIRECT PAYMENTS)	3,123	3,224	3,340	2,573	2,310	3,551	3,132
PROCUREMENT CONTRACT AMARDS: TOTAL	5,427	2,960	2,052	3,968	163	2,549	3,558
DEFENSE	1,553	(530)	0	1,096	0	0	- 30
CIVILIAN	3,874	3,510	2,052	2,872	163	2,549	3,528
OTHER EXPENDITURES OR OBLIGATIONS	3	91	<u>96</u>	94	<u>96</u>	<u> 127</u>	97
DIRECT EXPENDITURES OR OBLIGATIONS: TOTAL	\$16,845	\$17,059	\$19,451	\$20,156	\$18,072	\$23,628	\$25,326
DEFENSE	2,437	334	910	2,175	1,489	623	1,603
CIVILIAN	14,408	16,725	18,541	17,981	16,583	23,005	23,723
DIRECT LOANS	0	0	0	0	1,421	0	0
GUARANTEED LOANS & INSURANCE	95	1,078	3,730	3,124	1,227	- 1,137	1,481
GRAND TOTAL	\$16,940	\$18,137	\$23, 181	\$23,280	\$20,720	\$24,765	\$26,807
PER CAPITA: TOTAL	\$3,487	\$3,213	\$3,481	\$3,607	\$3,308	\$4,325	4,152
DEFENSE	504	63	163	389	273	114	263
CIVILIAN	2,982	3,150	3,318	3,218	3,036	4,211	3,889

TABLE 1-40 FEDERAL EXPENDITURES OR OBLIGATIONS, NORTHWEST ARCTIC BOROUGH, FY 1983-1989 (\$1,000s)

Source: U.S Department of Commerce, Bureau of the Census, for the Office of Management and Budget. Consolidated Federal Funds Report, County Areas, FY 1983 ff. Note: the published data for FY 1987, 1988 and 1989 contained errors which were corrected after consultation with the Bureau of the Census. Does not include U.S. Department of Housing and Urban Development grants or U.S. Postal Service subsidies.



Direct cash payments (\$1,733 per capita) to persons, mainly retirement and disability entitlements, were the most important expenditure type at the national level, but least important (\$513) in the Northwest Arctic Borough. Per-capita federal salaries were higher in the Northwest Arctic Borough (\$584 vs. \$281), reflecting the greater role of the federal government in direct delivery of services. For the Northwest Arctic Borough, federal grants and contracts (\$2,776 per capita, or 71.7 percent of the regional total) were the most important type of federal outlay, topping the national average (\$715 per capita, or 26.2 percent of national total).

The Northwest Arctic Borough's comparatively high level of federal grants, contracts, and salaries underscores the historic and continuing special involvement of the federal government in provision of facilities and services for Alaska Native communities. Conversely, the low level of federal direct payments to persons reflects the relatively low eligibility of the region's residents for social security and other federal retirement and disability benefits. These disparities in the federal government's national and regional outlays imply fundamentally different political and administrative relationships. At the national level the federal government typically sends entitlement checks;³⁰ for the Northwest Arctic Borough, the federal government sends grants and services.

Table 1-41 presents most of the same federal civilian expenditures data (except salaries and direct payments to individuals) as Table 1-40, disaggregated by Northwest Arctic Borough community. Table 1-41 summarizes data for seven fiscal

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^{30.} Relatively few Northwest Arctic Borough residents qualify for the social security and other retirement program benefits that comprise the bulk of direct federal payments.

TABLE 1-41FEDERAL GRANTS, CONTRACTS AND LOANS & INSURANCENORTHWEST ARCTIC BOROUGH COMMUNITIES, FY 1983-89

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Community	Guante	Civilian Procurement Contract	Direct & Guaranteed Loans and	Total
Community	Grants	Awards	Insurance	<u> </u>
Ambler	\$ 41,095	\$ 0	\$ 180,000	\$ 221,095
Buckland	72,241	11,000	0	83,241
Deering	61,085	10,000	0	71,085
Kiana	104,094	32,000	0	136,094
Kivalina	93,181	11,000	0	104,181
Kobuk	65,344	1,336,000	Ó	1,401,344
Kotzebue	49,350,640	13,978,000	7,779,396	71,108,036
Noorvik	945,878	86,000	0	1,301,878
Selawik	514,031	45,000	0	559,031
Shungnak	66,664	0	0	66,664
Balance of Region		13,000	0	983,143
Undistributed	13,583,497	3,025,036	5,332,628	21,941,161
TOTAL	\$65,865,893	\$18,547,036	\$13,292,024	\$97,704,953
Annual Average FY 1983-89	\$9,409,413	\$2,649,576	\$1,898,861	\$13,957,850
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Note: The published data for FY 1987, 1988 and 1989 contained errors which were corrected after consultation with the Bureau of the Census. For detailed annual expenditures by community, see Appendix Table 14. "Undistributed" includes funds for region-wide programs or funds not 'attributable to specific communities.

Source: U.S Department of Commerce, Bureau of the Census, for the Office of Management and Budget. Consolidated Federal Funds Report, Subcounty Areas, FY 1983 through current year.

years (FY 1983-1989) to average out year-to-year variations. During that period almost three-quarters of all federal grants, contracts, and loans awarded to the region came to or through Kotzebue. A substantial but unknown part of the federal expenditures reported for Kotzebue was actually earmarked for Kotzebuebased agencies that delivered services to the entire region. Nonetheless, the intraregional distribution of federal funds confirms Kotzebue's central administrative role in delivery of regional services.

Next, we present data on federal and state expenditures in the Northwest Arctic Borough for four specific services: education, housing, medical care, and energy. As best we are able to verify, these specific expenditures are not included among other federal and state expenditures reported in this section.

Education.

Directly or indirectly, most local jurisdictions in the United States pay for the primary and secondary educational services they enjoy. Nationwide in 1985 elementary and secondary education accounted for 33.5 percent of all local government expenditures (1988 Statistical Abstract). The financial burden for public elementary and secondary education that year was shared about equally by state (48.6 percent) and local (44.6 percent) governments. Federal (6.5 percent) government and other (0.3 percent) sources picked up the rest (1988 Statistical Abstract). Thus, elementary and secondary education is local government's most important function in most American communities, mainly supported by a combination of local and state tax levies.

Alaska's system for finance of local education differs radically from this national norm. Everywhere in Alaska, state government shoulders most of the cost of education. State and federal governments together cover local education in unincorporated regions and bear nearly the full cost in tax base-poor rural boroughs, such as the Northwest Arctic Borough. Economically developed municipal and borough school districts typically supplement state and federal educational funds with locally levied taxes.

The Northwest Arctic Borough School District provides local education at no personal expense to region residents. The state funds virtually the entire cost

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with royalty and severance tax income from petroleum production, not by taxes on persons and businesses. In effect, the region's residents receive and consume educational services as an in-kind transfer.

We have tried to estimate the value (or cost) of the educational services consumed by Northwest Arctic Borough residents. The estimate separately considers annual payments for operating costs and outright grants for capital improvements.

Table 1-42 shows the sources of annual operating revenues for local education in the Northwest Arctic Borough from FY 1980 to FY 1988. In FY 1988, the most recent year for which figures are available, state government funded 92 percent of operating costs. Local sources contributed \$822,223 or about seven percent of that year's operating budget. In FY 1988 and earlier years; the major part of the "local contribution" actually stemmed from investment earnings on state grant fund advances held on deposit by the school district and so might also be considered state revenues. That year, the recently formed Northwest Arctic Borough made local government's first contribution of local tax revenues to support local education in the amount of \$250,000.

To date, all Northwest Arctic Borough school district facilities have been constructed with state or federal grant funds. Table 1-43 summarizes state capital appropriations for school construction between FY 1979 and FY 1990. During that ten-year period, state school construction grants totalled \$52,389,500, or an average of \$5.3 million annually. State appropriations for school construction in the Northwest Arctic Borough since FY 1979 have been modest compared to other rural and municipal school districts. (See Alaska State

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TABLE 1-42 NORTHWEST ARCTIC BOROUGH SCHOOL DISTRICT OPERATING REVENUES, BY SOURCE, FY 1980 - FY 1988

Year	State	Federal	Local ¹	Total	ADM ²
FY 1980	\$8,852,536	\$ 729,820	\$ 618,533	\$10,500,889	1,435
FY 1981	11,692,159	679,243	898,965	13,270,367	1,420
FY 1982	11,496,051	1,898,236	1,592,226	14,986,513	1,478
FY 1983	13,852,774	3,006,760	419,490	17,279,024	1,486
FY 1984	14,035,224	3,790,041	637,253	18,462,518	1,491
FY 1985	13, 197, 994	3,767,955	775,123	17,741,072	1,480
FY 1986	13,024,232	3,665,619	499,537	17,189,388	1,482
FY 1987	11,010,798	4,322,849	408,098	15,741,745	1,550
FY 1988	11,067,748	136,667	822,231	12,026,638	1,540

Northwest Arctic Borough School District earnings on investments (that is, grant funds on deposit) comprised more than half of local revenues.
 ADM equals average daily membership or student enrollment for entire fiscal year.

NOTE: Not included in above figures are miscellaneous intergovernmental transfers to support noneducational services (e.g., food services) delivered through the school system. These miscellaneous transfers amounted to \$5,165,044 in FY 1986; \$4,472,423 in FY 1987; and \$620,296 in FY 1988, in which year not all such transfers were reported.

Source: Education in Alaska, Report to the People, published annually by the Alaska State Board of Education.

Legislature, House of Representatives Research Agency, Memorandum dated February 4, 1987, by Jay Livey, Table 15.) This may partly be explained by the fact that the school facilities inherited from the Bureau of Indian Affairs were in relatively good condition, partly by the region's success in obtaining school construction funds in preceding years.

Two public institutions provide postsecondary educational and training services to residents of the Northwest Arctic Borough--Chukchi Community College and Kotzebue Technical Center. From 1983 to 1988 the college delivered approximately one million dollars annually of educational services paid for by state government (Table 1-44).

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TABLE 1-43 STATE OF ALASKA CAPITAL APPROPRIATIONS FOR SCHOOL CONSTRUCTION NORTHWEST ARCTIC REAA/BOROUGH SCHOOL DISTRICT, FY 1979-1990

Year				State Capital Grants
FY 1979	· · · .			\$12,211,400
FY 1980		. •	. .	542,900
FY 1981		•		10,658,700
FY 1982	-			10,091,500
FY 1983				1,915,000
FY 1984	•			2,933,000
FY 1985				1,861,000
FY 1986	•			2,145,000
FY 1987			<i>i</i> .	5,501,000
FY 1988				530,000
FY 1989				3,500,000
FY 1990				500,000
TOTAL			۳ ⁴ (۲۰۰۰)	\$52,389,500

Source: Alaska State Legislature, House of Representatives Research Agency, Memorandum dated February 4, 1987, by Jay Livey; Alaska State Legislature, Operating and Capital Budget, Election District Reports.

TABLE 1-44UNRESTRICTED EDUCATIONAL AND GENERAL REVENUE
CHUKCHI COMMUNITY COLLEGE, FY 1983-1988

Fiscal Year	State Government	All Other Sources	TOTAL
1983	\$ 950,000	\$21,229	\$ 971,229
1984	837,874	39,830	877,704
1985	1,050,126	43,305	1,093,431
1986	1,071,000	56,104	1,127,104
1 987	897,573	43,860	941,433
1988	900,200	35,118	935,318

Source: Statistical Abstract 1988. Office of Institutional Research, University of Alaska Statewide System of Higher Education. February, 1989. Fairbanks.

<u>Housing</u>.

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Many housing assistance programs have subsidized the cost of shelter for Northwest Arctic Borough households. The list includes the state's remote housing program, several mortgage and loan programs, the senior citizen housing development program, and on the federal side the BIA home improvement program, Farmers Home Administration loans, and various Department of Housing and Urban Development rental and home ownership programs. Numerous federal, state, and regional agencies have administered these housing assistance programs, but the federal government has underwritten most of the cost. The Department of Housing and Urban Development, through programs now administered locally by the Northwest Inupiat Housing Authority, has been the chief source of housing subsidies through fund advances for project development and its contributions toward project debt service and operating subsidies.

Table 1-45 summarizes the Department of Housing and Urban Development public housing subsidies, plus minor state subsidies, delivered through the Northwest Inupiat Housing Authority to region residents for the years 1986 through 1988. Federal and state subsidies ranged from \$7.4 million to \$8.8 million annually.

Though several other programs, such as those cited above, also defray the cost of housing for region residents, their financial records are so dispersed that it is not feasible to document their collective financial contribution to the region. These programs are modest compared to the housing assistance delivered through the Northwest Inupiat Housing Authority.

<u>Medical Care</u>.

The Alaska Area Native Health Service of the federal Indian Health Service provides free medical care services to Alaska Natives. Until recently, AANHS

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TABLE 1-45 FEDERAL AND STATE HOUSING SUBSIDIES NORTHWEST INUPIAT HOUSING AUTHORITY, 1986-1988

· · ·		
1986	1987	1988
	at e st t	
\$5,519,488	\$5,462,904	\$5,519,489
3,036,579	1,011,513	1,489,781
215,000	524,200	409,300
8,771,067	6,998,617	7,418,570
	603,195	24,440
\$8,771,067	\$7,601,812	\$7,443,010
	\$5,519,488 3,036,579 <u>215,000</u> 8,771,067	\$5,519,488 \$5,462,904 3,036,579 1,011,513 <u>215,000 524,200</u> 8,771,067 6,998,617

Source: Northwest Inupiat Housing Authority, Report on Examination of Financial Statements and Supplemental Data, 1986-1988.

delivered health services in the Northwest Arctic Borough through its Kotzebue Service Unit, which operated the Kotzebue Hospital and programs administered under contract with Maniilaq Association.³¹ In 1989 Maniilaq Association contracted with the federal government to provide health care services, including hospital operations, to the region's Alaska Natives.

Table 1-46 reports annual federal expenditures from 1983 to 1989 for health care services delivered to the region through the Kotzebue Service Unit and Maniilaq Association. In FY 1989 the federal contribution to Maniilaq Association for in-region health care programs was \$7,303,376.

31. Both the Kotzebue Service Unit and Maniilaq Association also serve the North Slope Borough community of Point Hope.

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TABLE 1-46FEDERAL HEALTH CARE EXPENDITURESNORTHWEST ARCTIC BOROUGH, FY 1983-1989

	Kotzebue	Maniilaq	
<u>Year</u>	Service Unit	Association	Total
FY 1983	\$3,642,749	\$1,786,658	\$5,429,407
FY 1984	3,612,137	1,297,343	4,909,480
FY 1985	3,435,768	1,486,899	4,919,657
FY 1986	3,280,684	1,482,226	4,762,910
FY 1987	3,204,716	1,542,491	4,747,207
FY 1988	3,933,867	1,855,591	5,789,458
FY 1989		7,303,376	7,303,376

Source: Alaska Area Native Health Service.

The figures in Table 1-46 indicate a FY 1989 per-capita expenditure of \$1,230, based on AANHS's estimated 1989 Alaska Native population of 5,935 persons in the borough and Point Hope. This is a conservative measure of federal and state expenditures for subsidized health care for the region's residents. These figures do not include costs of care for patients referred to the Alaska Native Medical Center in Anchorage for surgery, critical care, and other specialized medical services or for a wide range of other administrative and support services provided by and budgeted to the Anchorage Area Office or the Alaska Native Medical Center. The Alaska Area Native Health Service's total FY 1989 per-capita budget of \$1,851 (\$153,890,190 to serve 83,120 Alaska Natives) was probably a better measure to the real per-capita cost of the health care services it delivered. Not included in the above figures is the cost of public health services delivered by the Alaska Division of Public Health.

Energy.

Energy subsidies pervade rural Alaska. A February 1988 report by the Alaska Legislature's House Research Agency compiled data on state legislative energy appropriations, including state-administered federal program funds, for FY 1977

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through FY 1988. The study listed appropriations for 15 program categories (feasibility studies, capital projects, operating subsidies, loans, alternative energy sources, etc.) implemented in rural regions,³² plus a number of statewide or unallocated appropriations. Several of these state and federal programs directly subsidize energy consumption in the Northwest Arctic Borough.

State rural energy appropriations peaked in FY 1982 (\$64,962,000, of which electrification projects accounted for \$27,098,000). By FY 1988 state rural energy appropriations had fallen by 70 percent to \$19,088,000, of which the Power Equalization Cost Program accounted for 75 percent and capital grants only 3 percent.

Over the period studied, three programs--the Power Cost Equalization Program, the Low Income Housing Energy Assistance Program and Energy Project Capital Grants--provided an estimated 75 to 80 percent of total state energy appropriations to rural Alaska and, inferentially, to the Northwest Arctic Borough communities. Tables 1-47 and 1-48 summarize state appropriations for each of these three programs for each Northwest Arctic Borough community for FY 1980 and following years as available.

The State's Power Cost Equalization Program subsidizes the cost per kilowatt hour of electricity consumed by rural households and other rural consumers. Whether enjoyed by households, businesses, or institutions, subsidy benefits collectively accrue to the community as a whole. Table 1-47 shows annual

32. Rural Alaska was defined to include all areas outside the urban towns of Anchorage, Fairbanks, Juneau, Homer, Kenai, Ketchikan, Kodiak, Palmer, Petersburg, Seward, Sitka, Soldotna, Wasilla, and Wrangell. subsidies to Northwest Arctic Borough communities for FY 1983 through FY 1989. Annual subsidies under this program ranged from \$1.1 million to \$1.6 million.

IADLE 1-47					
ENERGY COST ASSISTANCE GRANTS					
NORTHWEST			COMMUNITIES,		1983-1989

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<u>Fiscal Year</u>	Power Cost Equalization Program	Low Income Housing Energy Assist- ance Payments
1983	\$1,053,367	n.a.
1984	1,457,005	\$486,753
1985	1,069,227	\$450,349
1986	1,577,767	n.a.
1987	1,492,006	n.a.
1988	1,556,574	\$318,156
1989	1,442,918	\$273,784
1990	n.a.	\$214,710 ¹

1. First three quarters of FY 1990.

Note: See Appendix Tables 15 and 16 for details.

Source: Alaska's Energy Plan 1986, Volume III (FY 1983-85 data); Statistical Report of the Power Cost Equalization Program, 1988; unpublished data for FY 1989, Alaska Energy Authority; unpublished data, Alaska Department of Health and Social Services, Division of Public Assistance.

The Low Income Housing Energy Assistance Program (LIHEAP) is a federal block grant program to reduce home energy costs for low-income Alaskans through direct payment for heating bills or energy conservation measures. Table 1-47 shows the annual grants under this program to Northwest Arctic Borough communities for a number of recent fiscal years.

Since 1980 the State has provided numerous capital grants for electrification and fuel storage facilities. These grants effectively subsidize the supply of electric power and fuels. Table 1-48 lists state energy grants totalling \$4.4 million to Northwest Arctic Borough communities from FY 1981 through FY 1990.

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TABLE 1-48STATE OF ALASKA GENERAL FUND ENERGY GRANTS' NANA REGION, BY COMMUNITY, 1981-1990

	Project	Grant	
Community	Description	Year	Amount
Buckland	Bulk Storage	1981	\$100,000
Buckland	Electrification	1981	96,000
Deering	Electrification	1982	180,000
Kiana	Bulk Storage	1982	100,000
Ambler	Electrification	1983	40,000
Kotzebue	Electrification	1983	1,900,000
Selawik	Bulk Storage	1983	100,000
Selawik	Electrification	1983	100,000
Kobuk	Bulk Storage	1984	100,000
Noatak	Electrification	1985	75,000
Selawik	Electrification	1985	350,000
Deering	Electrification	1985	250,000
Buckland	Electrification	1985	108,000
Kotzebue	Waste Heat Recovery	1985	420,000
Selawik	Fuel Tank	1985	150,000
Kobuk	Electrification	1986	75,000
Kotzebue	Electrification	1986	300,000
Deering	Bulk Storage	1989	30,000
Buckland	Generator Building	1990	34,500
TOTAL		а 5 ж . т. с. с.	\$4,433,500

Source: Alaska's Energy Plan 1986, Volume III; Alaska State Legislature, Operating and Capital Budget, Election District Reports.

State Capital Grant Appropriations.

During the 1980s the State of Alaska committed a large share of its surplus petroleum revenues to its annual capital budget. The Northwest Arctic Borough region's political and legislative leadership proved adept at obtaining state grants. Table 1-49 summarizes annual state capital grants for local facilities,

projects, and programs for FY 1983-1990. In this eight-year period the region received \$95,060,761 in state capital grants or an annual average of \$11,882,595.

TABLE 1-49STATE OF ALASKA CAPITAL APPROPRIATIONSNORTHWEST ARCTIC BOROUGH, FY 1983-1990

Fiscal Year	Appropriation
FY 1983	\$10,488,689
FY 1984	15,152,300
FY 1985	15,760,900
FY 1986	15,370,900
FY 1987	15,408,972
FY 1988	4,970,500
FY 1989	9,571,000
FY 1990	8,337,500
TOTAL	\$95,060,761
Annual Average FY 1983-90	\$11,882,595

NOTE: For detailed list of annual appropriations, see Appendix Table 17.

Source: Alaska State Legislature, Operating and Capital Budget, Election District Reports.

Table 1-50 shows the largest grant amounts earmarked for transportation improvements (\$26.7 million), educational facilities (\$18.9 million) and water and sewer facilities (\$15.4 million). Substantial capital funds also were awarded for energy projects (\$4.6 million) and erosion control (\$4.6 million).

State Revenue Sharing and Municipal Assistance Programs.

In addition to state capital grants for public works, the region's local governments obtain funds under the State Revenue Sharing and Municipal Assistance Programs. These programs are the major source of unrestricted revenues for the region's small city governments. Funds are generally used to finance delivery of local government services.

TABLE 1-50 STATE CAPITAL GRANTS, BY PROGRAM CATEGORY NORTHWEST ARCTIC BOROUGH, 1983-1990

Category ¹	Amount		
Airports, Docks & Roads	\$26,693,600		
Education ²	18,885,000		
Water/Sewer _	15,409,572		
Energy Projects ⁵	4,607,500		
Erosion Control	4,553,000		
Other	29,665,189		
TOTAL	\$95,710,761		

1. In appropriation documents, grants are sometimes multipurpose, sometimes ambiguous in purpose, and sometimes awarded for program operations rather than capital improvements. This categorization represents a best effort to assign grants to program categories.

2. The Northwest Arctic REAA received another \$33,594,500 in state capital grants during FY 1979-82 for a major school construction program.

3. Includes some energy grants not listed in state capital budget.

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Source: Alaska State Legislature, Operating and Capital Budget, Election District Reports; Alaska's Energy Plan 1986, Volume III.

Table 1-51 summarizes state grants to the region's local governments under these two program between FY 1980 and FY 1990. Since FY 1985, grants have totalled from about \$1.5 to \$1.8 million annually.

Summary.

Table 1-52 and Figure 1-24 summarize federal and state expenditure data for the Northwest Arctic Borough between 1983 and 1989 and compare them to total personal cash income. Expenditures summary data are most complete for 1986, 1987, and 1988. The expenditures summary omits certain federal expenditures, most notably defense outlays and direct payments to individuals and state and federal program

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TABLE 1-51 MUNICIPAL REVENUE SHARING AND MUNICIPAL ASSISTANCE NORTHWEST ARCTIC BOROUGH GRANTEES, FY1980-1990

	Grant
Year	Amount
1980	\$ 340,798
1981	1,047,617
1982	1,473,681
1983	1,199,893
1984	1,301,086
1985	1,486,872
1986	1,468,390
1987	1,558,353
1988	1,726,377
1989	1,723,592
1990	1,832,734

Note: See Appendix Table 18 for detail.

Source: Alaska Department of Community and Regional Affairs.

outlays not allocated to geographic subdivisions. Thus, the summary is a conservative estimate of the cost of in-kind goods, services, and facilities supplied to the region by federal and state governments.

Even with the noted omissions, Table 1-52 indicates that noncash benefits as measured by the cost of federal and state in-kind transfers (1986: \$65.1 million; 1987: \$61.3 million) nearly equal to the region's total personal cash income (1986: \$71.4 million; 1987: \$72.6 million). Thus, for 1987, the combined value of personal cash income plus locally consumed in-kind transfers totalled a minimum of \$134 million. Consumption of in-kind goods and services provided by government counted for almost as large a part of the region's total income as personal cash income. Inclusion of subsistence income would enlarge the relative size of the nonmonetary economy.

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Program Type	<u>~ 1983</u>	1984	1985	1986	1987	1988	1989	
Education			•	•	÷			
Northwest Arctic District	16,860	17,825	16,966	16,690	15,334	11,205	n.a.	
Chukchi Community College	950	838	1,050	1,071	898	900	n.a.	۰,
Housing	n.a.	n.a.	n.a.	8,771	7,602	7,443	n.a.	
Health Care	5,429	4,909	4,920	4,763	4,747	5,789	7,303	
Energy	1,053 ²	1,944	1,520	1,578 ²	1,4922	1,875	1,717	
SUBTOTAL	\$24,292	\$25,516	\$24,456	\$32,873	\$30,073	\$27,212	n.a.	
State Capital Grants	10,489	15,152	15,761	15,371	15,409	4,971	9,571	
State Revenue Sharing	1,200	1,301	1,487	1,468	1,558	1,726	1,724	
Other Federal Expenditures ³	11,285	13,501	15,201	15,408	14,273	19,454	20,591	•
SUBTOTAL	\$22,974	\$29,95 4	\$32,449	\$32,247	\$31,241	\$26,151	\$31,886	
TOTAL STATE & FEDERAL EXPENDITURES	\$47,266	\$55,470	\$56,905	\$65,120	\$61,314	\$53,363	n.a.	
TOTAL PERSONAL INCOME	\$60,085	\$63,144	\$69,270	\$71,431	\$72,622	n.a.	n.a.	

TABLE 1-52STATE AND FEDERAL PROGRAM EXPENDITURES & TOTAL PERSONAL INCOME
NORTHWEST ARCTIC BOROUGH, 1983-19891
(\$1,000s)

 1 This table includes data recorded by state and federal fiscal years and by calendar year. For lack of a feasible alternative, the data are tabulated according to their nominal fiscal or calendar year.

² Does not include capital grants for energy projects or Low Income Housing Energy Assistance Program grants for FY 1983, FY 1986 or FY 1987.

³ Excludes defense expenditures, direct payments to persons, and loans and loan guarantees and insurance.

Sources: Tables 1-40, 1-42 through 1-49, and 1-51.

FIGURE 1-24 CASH AND INKIND INCOME BY TYPE NORTHWEST ARCTIC BOROUGH, 1987 Cash and Inkind Income by Type \$80 \$72.6 million \$61.3 million Personal Cash Income \$60 -Other Federal State Rev. Sharing State Capital Grants \$40 -Energy 🗄 Health Care Housing \$20 Education \$O · Cash Income Inkind Income Source: Table 1-52.

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This balanced blend of cash and noncash income exemplified in Table 1-52 has profound implications for the region's political and market economies and for its economic culture. It means that attempts to describe, analyze, and forecast the regional economy by focussing on cash work, cash income, and cash spending miss half of this region's livelihood. This omission is doubly important, because the noncash and cash components of the regional economy are closely linked.

For most Americans, consumption patterns result mainly from their personal spending choices in the marketplace and, to a much lesser extent, from public choices to authorize and fund governmental services. In contrast, in the Northwest Arctic Borough nonlocal governments ultimately determine about half of what people consume. This arrangement gives residents access to extra economic resources but at some cost to their personal and institutional economic and political autonomy.

In effect, the extent of the public in-kind transfer economy marks the bounds of the private commercial economy. How people spend their cash income in the marketplace depends on what basic needs are left unmet by housing, health care, utilities, and other governmental programs. These sorts of in-kind transfer income free up cash income to be spent in the private sector for other goods and services. Any reduction of in-kind transfers means going without or shifting cash spending to buy what was formerly gotten for free.

In-kind transfers have repercussions on the region's labor economy as well. Transfer programs that raise the region's standard of living induce persons to

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stay in the region who might have moved elsewhere for better living conditions. Some of these persons may add to the region's labor surplus.

Coincidentally, it may be speculated that government's dominant role in setting wage standards, subsidization of select goods and services for select consumers, and subsidization of select infrastructure costs ultimately impairs the optimal operation of private sector labor, consumer, and production markets. The large economic benefits obtainable from governmental intervention may inhibit development of a private entrepreneurial economic culture. Instead, economic development strategies may tend to stress governmental intervention to subsidize jobs, infrastructure, and living standards to offset market disadvantages rather than a market-disciplined pursuit of entrepreneurial opportunities and improvements to efficiency and productivity.

6. Household/Personal Consumption Expenditures

Household cash expenditure and consumption patterns illustrate several important complementary features of the region's cash and in-kind economy. The 1985 Alaska Geographic Differential Study compiled statewide and regional data about costof-living differentials and household cash expenditures. The study was statistically rigorous and comprehensive in scope. It adopted the standard expenditure categories used by the U.S. Bureau of Economic Analysis for national income accounts, so regional, state, and national cash expenditure patterns can be compared.

The study analyzed regional differences in prices and spending patterns to quantify a cost-of-living differential for each state election district. Though five years old, the data base remains the most authoritative source of

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comparative data on regional cost-of-living and expenditure patterns for rural Alaska regions. Raw data collected in the original study was recompiled by school district and published in 1988 as the Alaska School District Profiles and Differential Study.

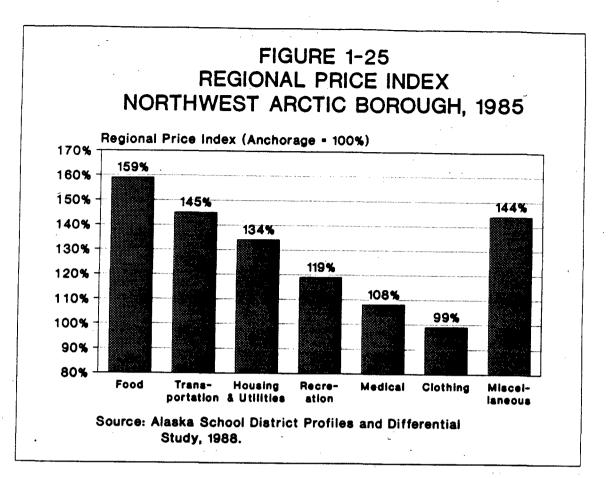
Regional Cost of Living Index.

Figure 1-25 shows that 1985 prices in the Northwest Arctic Borough were generally higher compared to Anchorage,³³ especially for basic necessities such as food (159 percent of Anchorage base), transportation (145 percent), and shelter and shelter utilities (134 percent).³⁴ Prices were higher for all other expenditure categories (recreation: 119 percent of Anchorage base; medical care: 108 percent; and miscellaneous expenses: 144 percent) except clothing (99 percent).

33. The 1985 Alaska Geographic Differential Study measured Anchorage's costof-living differential at about 16% above Seattle's. Here, it is essential to distinguish between national price inflation over time, measured by the U.S. Department of Labor's Consumer Price Index (CPI), and regional inflation, measured by instant place-to-place comparisons in regional cost-of-living differentials. For a explanation of how these different inflation indices apply to Alaskan regions, see Wilson and Rae, " A Guide to Measuring Alaska's Cost of Living", Alaska Department of Labor (1990). The true importance of consumer price inflation in rural Alaska and the Northwest Arctic Borough is clouded by the volume of in-kind goods and services bought and delivered by government.

34. Unfortunately, the 1985 report combined Northwest Arctic Borough and North Slope Borough price data for housing (88 percent of Anchorage base) and for domestic energy (411 percent) and utilities (331 percent). The 1988 revised report combined housing and energy and utilities prices for the Northwest Arctic Borough. As a result, first-hand data on comparative prices for housing and domestic energy and utilities in the Northwest Arctic Borough were not separately compiled for either report. Nonetheless, the original data indicated that Northwest Arctic Borough housing costs were lower than Anchorage costs in 1985 (when Anchorage's housing prices were at an all-time peak) but that its prices for domestic energy and utilities were three to four times Anchorage prices. 8

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These price data confirm that the purchased cost of comparable goods and services was generally higher in the Northwest Arctic Borough than in Anchorage but not uniformly for all categories of consumption. These price differences account for most of the Northwest Arctic Borough's higher cost of living.

The region's cost-of-living differential does not uniformly affect all households or economic sectors. As the ultimate purchaser of most goods and services, government, not persons, chiefly absorbs the brunt of regional inflation. Perversely, government spending may also be the main prop sustaining the costof-living differential. Writing in an earlier era when the federal government dominated Alaska's economy, Tussing (1969) explained the principal causes and consequences of Alaska's chronic regional inflation in these words:

It is apparent that the federal government bears the major direct burden of Alaska regional inflation. . . (Emphasis in original).

In our view, the answer to the . . . question [How is chronic regional inflation financed?] is found in the disproportionately large role of the federal government. Simply put, for almost 30 years the federal government has dominated the economy of Alaska; and each federal agency has been willing to pay whatever prices were demanded of it for the goods and services necessary to accomplish its mission. Each agency has accepted the prevailing wage and price structure; and by doing so, has helped to validate and to perpetuate it. In technical terms, the largest exogenous component of demand in the Alaska economy has been almost totally inelastic with respect to prices.

The inability of competitive cost constraints in the private sector of Alaska's economy so far to hold down the prices and wages paid by the federal government reflects the fact that the private economy is relatively small and is composed almost entirely of a few natural-resource industries which, because of the institutional regime in each one, are unable to resist inflationary pressure generated elsewhere, and of service activities dependent almost entirely upon the multiplier effects of income from federal expenditures and (much less) from crude-materials exports.

Regional inflation can be expected also to place a substantial direct and indirect burden on the subsistence sector, the rural

unemployed and underemployed, and Alaska Natives generally. The bias of the price structure against low income people has been noted above. . .

Tussing speculated further that government-financed inflation distorted and arrested development of a productive private economic sector.

The hypothesis that prevailing high money wage levels also reduce Native employment opportunity by imparting to Alaska industry an additional bias in favor of capital and skill intensity deserves to be investigated.

(T)here is a strong presumption that high prices and high money wages retard the development of both "export" industries and of some, but not all, import substitution in Alaska.

Tussing's analysis, updated to account for state government's enlarged fiscal role, fits well today's Northwest Arctic Borough regional economy. Federal, state and other employees with cost-of-living-adjusted wage scales are largely insulated from regional price inflation. Further, residents who are heavy consumers of subsidized public goods and services are, to that extent, insulated from price inflation. Regional inflation hurts persons with limited or fixed incomes who purchase most of their consumption at market prices. And it hurts businesses whose competitiveness is impaired by high cost factors.

Tussing's hypothesis that "high money wage levels also reduce Native employment opportunity by imparting to Alaska industry an additional bias in favor of capital and skill intensity", is consistent with the state of the region's industry. Its single large-scale productive industry--Red Dog mine--entailed a capital investment of about \$415 million and created about 320 jobs, or a capital investment of about \$1.3 million per job.

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Tussing's speculations on big government's decisive role in Alaska's chronic regional inflation neatly joins two pertinent themes: how governments' ability and readiness to pay compensatory wages and premium prices counterproductively sustains and perpetuates inflation; and how this governmental policy undercuts development of a competitive private market-oriented economy in the productive, distributive and commercial sectors.

Two important circumstances about the NAB's economy have changed since Tussing published his 1969 analysis. Then, the federal government was the dominant public wage-payer. Now, federal/state/local governments are collectively even more dominant. And the consumption of in-kind goods and services provided by government has grown enormously. This consumption is largely unconstrained by household purchasing power and local price levels. But we believe the main points of his analysis can be applied to the region's current economy.³⁵

Expenditure and Consumption Patterns.

Different expenditure and consumption patterns stemming from the region's distinctive consumer needs and preferences also affect regional cost of living. Comparison of the region's cash expenditure patterns against state and national norms gives an oblique insight into the household economic adjustments arising from the region's uncommon blend of cash income and in-kind income in the form of goods and services provided by government.

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^{35.} The impact on private economic development of government's role as chief underwriter of regional inflation is magnified by but analytically separate from its transfer role as provider of many goods and services. The latter issue is well-framed in Knapp and Huskey (1987).

Figures 1-26A and 1-26B compare cash expenditure patterns in the Northwest Arctic Borough, Anchorage, and the nation. The figures show the share of disposable cash income spent for eight categories of goods and services: food, personal transportation, housing, domestic energy and utilities; medical care, clothes, recreation and miscellaneous items. The two basic consumption categories of food and utilities together absorbed almost half (47 percent) of Northwest Arctic Borough disposable cash expenditures compared to the national average of 25 percent.

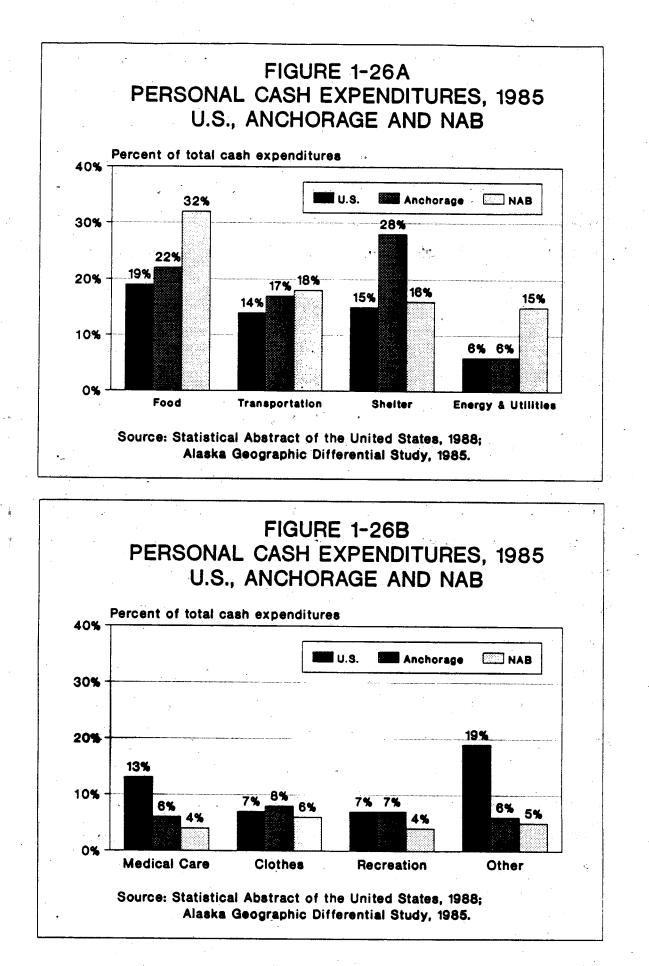
Food. The amount of money and time that Northwest Arctic Borough households spend to put food on the table is a serious constraint on the region's economic development. Food prices are not significantly subsidized (unlike housing, utility, and medical costs). Compared to Alaska and national norms, Northwest Arctic Borough households spend more of their cash income (32 percent) for food purchases than typical Alaskan (22 percent) or national (19 percent) households. They also spend more time at food production. About 3 percent of the nation's labor force is engaged in food production (1988 Statistical Abstract). Subsistence food production in the Northwest Arctic Borough surely absorbs a much larger, if not precisely known, share of the region's livelihood efforts, plus a significant share of household cash resources for subsistence gear and related expenses. Subsistence still makes economic sense, but its economic viability is chiefly due to high food prices and limited alternatives for cash employment.

In its food economy, the Northwest Arctic Borough has the worst of both economic systems: high food prices in the cash economy; low return on its investment of time and money in the subsistence economy. The net result is that food purchases take a large share of the region's cash and subsistence food

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production takes a large share of its time, shorting the money and time available for other productive purposes. Nor does the region's subsistence resource base yield a significant marketable surplus such as the salmon resource of southwest coastal Alaska.

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<u>Domestic Energy and Utilities</u>. Northwest Arctic Borough residents spend a much larger share (estimated at 15 percent) of their cash income for domestic energy and utilities than state or national households (each 6 percent). This is so despite massive federal and state capital and operating subsidies for power, water, and sewer utilities and fuels supply. Without these subsidies, Northwest Arctic Borough households would have to spend even more on shelter utilities or consume less of these services.

Medical Care. Northwest Arctic Borough households spent about 4 percent of their disposable cash income for medical services, less than onethird the national average of 13 percent. This difference mainly reflects that most Northwest Arctic Borough residents are entitled to free health services through the Alaska Area Native Health Service. Once government-funded medical care is taken into account (Table 1-46) it is clear that Northwest Arctic Borough households do not consume less medical services, they just do not fully pay for medical services out of their household budgets.

Housing. Northwest Arctic Borough households spend about the same share of their expenditures for housing (16 percent) as the national average (15 percent) but substantially less than Anchorage households (28 percent). Public housing subsidies (Table 1-45) help defray part of the region's housing costs. These subsidies and the fact that the size and quality of housing available in the region is significantly below Anchorage standards may help explain why borough households spend less for housing than their Anchorage counterparts.

Also, Anchorage housing prices were at a peak in 1985 when this study's data were collected.

Northwest Arctic Borough households spend somewhat more for transportation services, despite the low rate of personal vehicle ownership, about the same for housing and clothing, and much less for medical care, recreation, and miscellaneous discretionary items compared to national norms. Spending levels for medical care and housing reflect in-kind subsidies.

Overall, the pattern of cash expenditures reflects certain basic facts about the region's economic conditions, especially the crucial contribution of government-provided goods and services to the region's material standard of living.

- An extraordinary amount of cash and time is dedicated to putting food on the table. This circumstance is partly effect, partly cause of the region's stunted productive commercial economy.
- The region's material well-being depends heavily on subsidized housing, health, educational and energy services; on capital grants for basic public improvements; and on access to subsistence food resources.
- Many households would experience economic hardship were subsidies and grants for basic services severely cut back or subsistence opportunities reduced.

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IV. WORKFORCE CHARACTERISTICS

1. Labor Force Participation³⁶

Table 1-53 presents civilian labor force status data by age and sex compiled by the decennial census for the Northwest Arctic Borough in 1980. Even though these data are a decade old, they illustrate what we believe are some fundamental and persistent difference between the Native and non-Native segments of the region's workforce.³⁷

Many adult non-Natives workers are sojourners. They come to the region to work. Without jobs, they leave. Consistent with this pattern the 1980 Census labor force data show non-Native labor force participation as extraordinarily high (86

Unhappily, these official definitions are poorly suited to measure workforce behavior in underdeveloped economies in transition toward a wage economy. They produce statistics that are "true" to their own terms, but miss much of what distinctive and important about the world of work in rural Alaska. Charles D. Stewart provides a concise explanation of the problematic features of these official labor force terms in his articles on "Employment and Unemployment" and "Labor Force" in the Encyclopedia of Economics (Greenwald, 1982).

Interpretation of official unemployment figures for NAB is further complicated by high labor turnover, high rates of frictional and voluntary unemployment, and widespread underemployment. Nonetheless, for lack of any better data, there is little choice but to use the official statistics, always minding the appropriate gualifications.

37. It is unfortunate that 1990 Census data were not yet available for this analysis. Regional labor force data collected by various other sources in the interim since the 1980 Census tend to be <u>ad hoc</u>, spotty in coverage and dubious in quality, so that they are unreliable for rigorous analysis.

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^{36.} Most employment data series (Bureau of Labor Statistics, Alaska Department of Labor, U.S. Bureau of the Census) follow common official definitions of such key labor terms as "workforce participation", "employment", "unemployment", and "discouraged workers." These definitions, conceptually oriented to the modern wage economy, have been controversial since first devised (and often since revised) over fifty years ago.

percent) and unemployment low (4 percent). Overall, a very high percentage of all non-Natives 16 years and older was employed (83 percent).

	A1	aska Nati	ives	<u>Non-Natives</u>				
Labor Force Status ¹	Male	Female	Total	Male	Female	Total		
Persons 16 years+		•						
Employed	358	438	796	247	163	410		
Unemployed	242	77	319 .	- 12	. 3	15		
Not in Labor Force	713	684	1,397	25	43	68		
Total	1,313	1,199	2,512	281	207	488		
Unemployment Rate	40%	15%	29%	5%	2%	4%		
Labor Force Parti- cipation Rate	46%	43%	44%	91%	79%	86%		
Employed as Per- cent of Total	27%	37%	32%	87%	78%	83%		

TABLE 1-53 CIVILIAN LABOR FORCE STATUS, BY RACE & SEX NORTHWEST ARCTIC BOROUGH, 1980

1. Includes all civilians 16 years of age and older.

Source: U.S. Census, 1980, unpublished census tape data on file at ISER.

Working-age Natives, on the other hand, are comparatively immobile. They live in the region because it is their home and most stay regardless of economic hardships. The 1980 Census data show that their labor force participation rate was low (44 percent) and their unemployment rate was high (29 percent). Overall, a distressingly low percentage of working-age Natives was employed (32 percent). The 1980 Census data also show that the unemployment rate for Alaska Native males (40 percent) was almost triple the rate for Alaska Native females (15 percent). The Alaska Native male participation rate was slightly higher, but the percentage of all working-age Alaska Native females who were employed surpassed that of males.

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The 1980 Census statistics also reflect a wide gap between Kotzebue and the region's outlying small villages in terms of Alaska Native participation in the wage economy. As Tables 1-54 and 1-55 and Figure 1-27 show, more of Kotzebue's Alaska Native residents participated in the labor force (54 percent) than in the balance of the region's villages (39 percent). Fewer were unemployed overall (18 percent vs. 38 percent), and fewer males (27 percent vs. 48 percent). Nearly twice as many persons 16+ years old (44 percent vs. 24 percent) were employed at the time of the census. These differences stem partly from Kotzebue's more advanced wage economy, partly from the higher cash needs of living in Kotzebue, and perhaps partly from different lifestyle preferences of Kotzebue and village residents.

In contrast, virtually no differences could be detected in the corresponding labor force status figures for non-Natives living in or outside Kotzebue.

Table 1-56 shows 1980 Census regional statistics on labor force status by age and sex. Two feature stand out. First, for every age group the rate of unemployment was substantially higher for men than women, indicating women have more success at filtering into the wage economy. Second, young adults of both sexes experienced the highest unemployment rates. If this pattern persists, young adult males may be most acutely affected by future job shortages in the region.

Workforce participation and unemployment figures usually measure only the civilian labor force, defined by the U.S. Bureau of the Census to include all civilians in the noninstitutional population 16 years of age and older

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TABLE 1-54CIVILIAN LABOR FORCE STATUS BY RACE & SEXKOTZEBUE, 1980

· · · · · ·	A1	<u>aska Nat</u>	ives	N	on-Nativ	es es a
Labor Force Status ¹	Male	Female		Male		
Persons 16 years+			· · · · ·		1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	
Employed	204	/ 217	421	186	111	297
Unemployed	74	19	93	. 8	. 3	11
Not in Labor Force	206	249	455	15	30	45
Total	484	475	959	209	144	353
Unemployment Rate	27%	8%	18%	4%	3%	4%
Labor Force Parti- cipation Rate	57%	48%	54%	93%	79%	87%
Employed as Per- cent of Total	42%	46%	44%	89%	77%	84%

1. Includes all civilians 16 years of age and older.

Source: U.S. Census, 1980, unpublished data.

TABLE 1-55

CIVILIAN LABOR FORCE STATUS BY RACE & SEX NORTHWEST ARCTIC BOROUGH COMMUNITIES EXCEPT KOTZEBUE, 1980

	Ala	ska Nat	ives	No	n-Native	s
Labor Force Status ^{1/}	Male	Femal	e Total	Male	Female	Total
Persons 16 years+						
Employed	154	221	375	58	50	108
Unemployed	168 -	58	226	· 4	0	4
Not in Labor Force	507	435	942	10	13	23
Total	829	724	1,553	72	63 🔒	135
Unemployment Rate	48%	21%	38%	6%	0%	4%
Labor Force Parti- cipation Rate	39%	39%	39%	86%	7 9%	83%
Employed as Per- cent of Total	19%	31%	24%	81%	79%	80%

1. Includes all civilians 16 years of age and older.

Source: U.S. Census, 1980, unpublished data.

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TABLE 1-56 LABOR FORCE STATUS, BY AGE & SEX NORTHWEST ARCTIC BOROUGH, 1980

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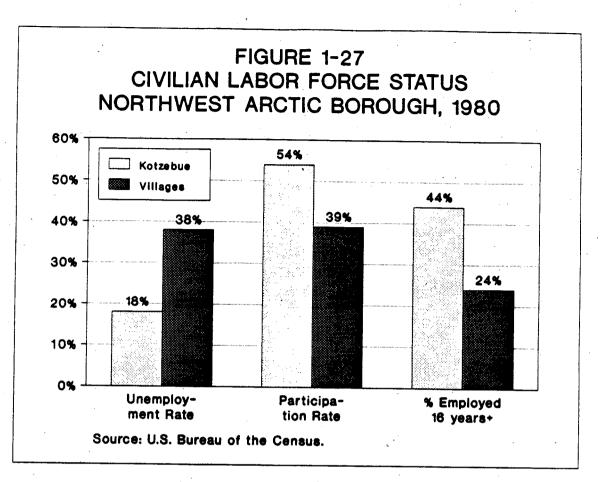
Labor Force Status	M	lale	Fei	male
	Number	Percent	Number	Percent
Total Persons 16 years +	1,640	100.0%	1,413	100.0%
Not in Labor Force	738	45.0	727	51.5
Labor Force	902	55.0	686	48.5
Employed	645	71.5	606	88.3
Unemployed	257	28.5	80	11.7
16 to 19 years +	256	100.0	218	100.0
Not in Labor Force	187	73.0	177	81.2
Labor Force	69	27.0	41	18.8
Employed	33	47.8	29	70.7
Unemployed	36	52.2	12	29.3
20 to 24 years +	242	100.0	260	100.0
Not in Labor Force	110	45.5	129	49.6
Labor Force	132	54.5	131	50.4
Employed	80	60.6	112	85.5
Unemployed	52	39.4	19	14.5
25 to 54 years +	920	100.0	697	100.0
Not in Labor Force	282	30.7	242	34.7
Labor Force	638	69.3	455	65.3
Employed	491	77.0	412	90.5
Unemployed	147	23.0	43	9.5
55 to 64 years +	96	100.0	119	100.0
Not in Labor Force	48	50.0	70	58.8
Labor Force	48	50.0	49	41.2
Employed	35	72.9	47	95.9
Unemployed	13	27.1	2	4.1
65 years and over	126	100.0	119	100.0
Not in Labor Force	111	88.1	109	91.6
Labor Force	15	11.9	10	8.4
Employed	6	40.0	6	60.0
Unemployed	9	60.0	4	40.0

1. Percent employed and unemployed were calculated based on labor force. Source: U.S. Census, 1980.

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classified as "employed" or "unemployed." Persons outside the labor force are "non-participants" and are ignored in the calculation of unemployment rates. This practice understates the effective unemployment rate, especially in regions with chronic job shortages. Prolonged high unemployment tends to depress labor force participation by producing numerous "discouraged workers" who, regardless of their desire to work, do not actively pursue work when they have little chance of success. Omission of these "discouraged workers" from the labor force lowers labor force participation and unemployment rates below the rate that would prevail were "discouraged workers" counted.

Labor economists recognize that official labor statistics systematically underreport labor force size and unemployment rates in rural Alaska. Thus, the Alaska Department of Labor's monthly report of employment conditions (Alaska Economic Trends) carries this qualifying footnote:

The official definitions of unemployment currently in place exclude anyone who has made no attempt to find work in the four-week period up to and including the week that includes the 12th of each month. Most Alaska economists believe that Alaska's rural localities have proportionately more of these discouraged workers.

Although the reality of "discouraged workers" in rural Alaska is widely accepted, the lack of quantitative data makes it hard to fix their number and the effective rate of unemployment. Recently, ADOL (1990) published an analysis of Alaska's discouraged workers based on sample survey data collected monthly between 1985 and 1988 as part of the U.S. Census Bureau's Current Population Survey. The ADOL analysis acknowledged certain statistical and qualitative limitations. Most importantly, the survey data did not classify respondents by

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place of residence and did not identify respondents' racial origin except as "white," "black," or "other."³⁸

Nonetheless, this study presents the most credible current account of the overall extent of discouraged workers and effective wage unemployment among Alaska Natives. Data published with the study (Table 1-57) document that:

- the standard unemployment rate for nonwhites (18.0 percent) was more than double the rate for whites (8.8 percent);
 - "discouraged workers" were ten times more frequent among nonwhites (6,100 discouraged workers in a working age population of 77,700 persons or 7.8 percent) than whites (1,900 of 270,300 or 0.7 percent); and
 - the unemployment rate, including "discouraged workers," for nonwhites was triple (27.3 percent) the rate for whites (9.6 percent). These statistics support inferences that rates of unemployment and "discouraged workers" are higher among rural Alaska Natives (most Alaska Natives are rural residents and Alaska Natives comprise a majority of nonwhite Alaskans) than among urban or non-Native Alaskans. Additionally, Alaska Native male workers seem to experience higher rates of unemployment and far higher rates of "discouraged worker" status than do Alaska Native females.

Standard labor force statistics do not reflect another labor force maladjustment that is common where aggregate unemployment (too few jobs) or structural

38. For a fuller explanation of this study's methods and technical qualifications, refer to "Alaska's Discouraged Workers - Out of Work & Out of the Labor Force", Alaska Economic Trends, February 1990.

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TABLE 1-57 POPULATION AND LABOR FORCE ESTIMATES¹ STATE OF ALASKA, 1985-1988 AVERAGE

	16+ Years Population	Labor ² Force	Employed	Unem- ployed	Discour- aged Workers	Parti- ³ cipation Rate	Unemploy- ² ment Rate	Unemployment ment Rate w/ Discouraged Workers
White Male	134,800	114,800	103,700	11,100	1,000	85.2%	9.7%	10.4%
White Female	135,500	90,600	83,700	6,900	900	66.9	7.6	8.5
White Total ⁴	270,300	205,300	187,400	18,000	1,900	76.0	8.8	9.6
Nonwhite Male Nonwhite Female	36,500 41,100	25,100 23,100	20,000 19,500	5,100 3,600	4,400 1,700	68.8 56.2	20.3 15.6	32.2 21.4
Nonwhite Total ⁴	77,700	48,200	39,500	8,700	6,100	62.0	18.0	27.3
TOTAL	347,900	253,500	226,900	26,700	8,000	72.9	10.5	13.3

1. The numbers in this table do not replace any previously released by the Alaska Department of Labor Research and Analysis Unit or the U.S. Department of Labor, Bureau of Labor Statistics.

2. Numerous post-1970 changes in procedures for estimating labor force size (and unemployment rates) nullify long-term historic comparisons. (For an explanation of these changes, see 1988 Statistical Abstract, page 362.)

3. Participation rate equals "labor force" as a percent of "16+ years population".

4. Totals may not add due to rounding.

Source: Alaska Department of Labor, Research and Analysis, as extracted from U.S. Department of Labor - Current Population Survey.

unemployment (available labor poorly matched to available jobs) are widespread. Underemployment, that is, part-time or temporary jobs in lieu of full-time work or jobs below workers' occupational skill levels, is frequently the lot of surplus or inappropriately qualified labor in a job-short economy.

Official figures on employment and labor force participation rates among rural Alaska Natives may be faulted for yet another reason. Official statistics classify persons engaged full time in subsistence pursuits as "unemployed" or as outside the labor force for employment statistical purposes, although a commonsense notion of work might regard them as busy and productive. In this respect official statistics understate the number of rural Alaskans working to support their households. Uunfortunately, there useful systematic data for a factual analysis of the interplay between subsistence pursuits and commitment to the workforce.

2. Unemployment

Labor economists differentiate between aggregate unemployment and structural unemployment. Aggregate or cyclic unemployment stems from a chronic or periodic drop in labor demand during economic depressions or recessions--too few job openings for too many unemployed workers. Structural unemployment occurs when the occupational mix of available jobs does not match the work skills of available labor or when the geographic distribution of available jobs does not match the geographic distribution of jobseekers. Jobs are available but in the wrong occupations or places for those seeking employment.

Table 1-2 showed that the employment/labor force ratio for the Northwest Arctic Borough remains substantially below state and national norms. Structural

unemployment underlies residents' stubbornly high unemployment and underemployment and, ironically, explains how most of the region's non-Native population came to live there.

Structural unemployment is a chronic problem for modernizing economies such as the Northwest Arctic Borough's, especially when the economic impetus for development stems from external political and market forces. The development process typically requires kinds and numbers of professionals and technicians in education, health care, public administration, industry, commerce, etc., beyond any the local-born workforce can supply. As a result, many positions cannot be filled by indigenous jobseekers; hence, nonresidents fill critical positions lest they go vacant. The region's overall job deficit, especially in the private sector, intensifies this mismatch. Available jobs are skewed toward professional and administrative occupations. All too often, indigenous workers do not qualify for these positions, and there are few or no openings in positions for which they do qualify.

Occupational and educational data from the 1980 Census, though dated, illustrate the striking mismatch between the region's labor supply and demand. The region's job market was top-heavy in managerial and professional occupations that called for credentials and skills not easily acquired within the region. Table 1-58 shows that managerial and professional occupations (37.6 percent) dominated the region's job market, more so than in state (29.0 percent) and national (27.7 percent) job markets and as much as in the governmental center of Juneau City-Borough, where managerial and professional occupations comprised 37.8 percent of employees.

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<u>Occupation</u>	Arctic			<u>f Alaska</u>		<u>States</u>
	Number	Percent	Number	Percent	Number	Percent
					(1,000)	
Managerial & professional	454	37.6%	47,797	29.0%	22,152	22.7%
Executive, admin. & managerial	(181)	(15.0)	(22,469)	(13.6)	(10, 134)	(10.4)
Professional	(273)	(22.6)	(25,328)	(15.4)	(12,018)	(12.3)
Technical, sales & admin.	296	24.5	50,938	30.9	29,594	30.3
Technical	(57)	(4.7)	(6,616)	(4.0)	(2,982)	(3.1)
Sales	(65)	(5.4)	(14,078)	(8.5)	(9,760)	(10.0)
Administrative	(174)	(14.4)	(30,244)	(18.3)	(16,851)	(17.3)
Service occupations	254	21.1	22,370	13.6	12,629	12.9
Farming, forestry & fishing	· 5	0.4	4,170	2.5	2,811	2.9
Precision prod., craft & repair	101	8.4	20,852	12.6	12,594	12.9
Operators, fabricators & laborers	96	8.0	18,747	11.4	17,859	18.3
TOTAL	1,206	100.0%	164,874	100.0%	97,639	100.0%

TABLE 1-58OCCUPATION OF EMPLOYED PERSONSSTATE OF ALASKA & NORTHWEST ARCTIC BOROUGH, 1980

Source: U.S. Census, 1980.

Educational attainment (an indicator of professional occupational qualifications) of the region's Alaska Native adults lagged behind state and national averages. Table 1-59 shows that, despite substantial advances between 1970 and 1980, the percentage of Alaska Native adults holding high school or college degrees was below comparable national, state, and regional figures for whites as well as Alaska Natives statewide.

TABLE 1-59

EDUCATIONAL STATUS OF PERSONS 25 YEARS AND OLDER BY RACE UNITED STATES, STATE OF ALASKA, AND NORTHWEST ARCTIC BOROUGH, 1980

		nt High <u>Graduates</u>	Percent Col- <u>lege Graduates</u>		
	White	Alaska Native	White	Alaska Native	
United States	68.8%		17.1%		
State of Alaska	88.5	46.2	24.4	3.5	
Northwest Arctic Borough	94.2	35.4	50.9	1.7	

Source: Alaska Population Overview, 1983; U.S. Census, 1980.

Conversely, the percentage of Northwest Arctic Borough's white adults holding high school or college degrees was much higher than state and national averages. This disparity reflects the sort of positions into which nonresidents were recruited, despite high resident unemployment.

Structural unemployment, perpetuated by the affinity of most residents for their home region and amplified by rapid growth in the resident workforce, helps explain some of the region's perplexing demographic and labor cross-currents:

chronic resident unemployment along with substantial employment growth;

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- very high indigenous unemployment coexisting with very low non-Native unemployment;
- rapid population growth despite high unemployment; and
- net emigration of Alaska Natives simultaneous with an influx of non-Natives.

Three remedies moderate structural unemployment--creation of new jobs suited to existing labor force skills; appropriate manpower training and development to qualify resident workers for available jobs; and increased labor mobility for better access to nonlocal employment opportunities.

3. Workforce Attitudes

In May-June 1989 the Northwest Arctic Borough conducted a boroughwide survey of personal attitudes toward job training, labor mobility, and Red Dog mine employment. Table 1-60 summarizes the responses of a sample of 1,254 interviewees 16 years or older. Most respondents in each community expressed interest in occupational training. A majority also indicated that they would relocate within the borough for the sake of employment or to accept work on a rotation schedule. Experience has shown, however, that respondents' behavior often belies positive answers to speculative questions of this sort. Otherwise, how to explain that 50 percent of the working age population remains to affirm its willingness to move away? Regardless of absolute numbers, statistical variations among communities may still reflect genuine attitudinal differences about the question topics.

Varying percentages of respondents in each village said they were willing to relocate outside their home region for work, from a low of 36 percent in Buckland

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Survey Question	Ambler	Buckland	Deering	Kiana	Kivalina	Kobuk	Kotzebue	Noatak	Noorvik	Selawik	Shungnak	Total
Presently employed?	35.6	32.2	41.1	30.1	24.0	30.6	57.1	25.3	23.9	24.1	34.0	34.8
Desire training?	78.8%	81.4%	58.9%	68.3%	60.5%	52.8%	66.2%	66.7%	72.5%	71.3%	77.4%	69.0%
Move in Borough for job?	72.0	69.5	60.7	55.3	58.1	52.8	50.0	64.6	65.9	66.1	83.0	61.6
Willing to work rotation?	78.8	79.7	60.7	74.0	71.3	72.2	63.2	86.9	77.5	81.0	88.7	74.6
Nove outside region for job?	61.0	35.6	48.2	43.1	36.4	38.9	50.0	44.4	57.2	54.0	67.9	49.7
Expect Red Dog job?	50.0	44.1	23.2	23.6	45.0	19.4	31.6	46.5	49.3	32.8	75.5	39.0
Sufficient jobs in future?	75.4	91.5	64.3	49.6	70.5	75.0	73.7	63.6	82.6	58.0	84.9	70.0

Note: Figures represent affirmative responses. There was a substantial number of non-respondents for each of these survey questions. Source: Northwest Arctic Borough Survey Results, McNabb, 1989.

TABLE 1-60 WORKFORCE ATTITUDES BY COMMUNITY NORTHWEST ARCTIC BOROUGH, 1989

to a high of 68 percent in Shungnak. Expectations for jobs at Red Dog Mine ranged widely as well. Only 19 percent of Kobuk respondents looked forward to work at Red Dog, while as many as 76 percent of nearby Shungnak respondents did. No consistent geographic pattern emerged on interest in work at Red Dog. Residents of communities situated closer to Red Dog Mine did not necessarily hold higher expectations for work there.

Surprisingly, no consistent correlation seems to emerge among the communities between current job status (Table 1-61), training interest, willingness to relocate or commute outside the home community for work, or expectations for work at Red Dog. That is, respondents from communities with low employment rates appear no more willing to relocate or travel for work.

V. FUTURE WORK FORCE AND EMPLOYMENT

Much of the Northwest Arctic Borough region's economic progress from 1970 to 1990 stemmed from better opportunities for cash employment. Though the labor force grew rapidly, an even faster-growing job market was able to absorb more and more workers. Strengthening demand for wage labor nudged labor supply and demand into closer balance. Nevertheless, by the standards of a developed economy, the region still has an acute job deficit and falls short of normal employment ratios.

Future progress toward fuller employment depends partly on how fast the pool of working-age residents grows compared to the job pool, partly on such factors as labor mobility, labor skills, participation rates, and population migration.

TABLE 1-61 EMPLOYMENT STATUS BY COMMUNITY NORTHWEST ARCTIC BOROUGH, 1989

		-	Employ	nent Stat	US	
	Full-	Part-	Seasonal/		Does Not Apply/	
<u>Community</u>	Time	Time	Temporary	Subtotal	No Response	Total
Kotzebue	47.7%	10.2%	18.8%	76.7%	23.3%	100.0%
Kobuk	36.1	11.1	30.6	77.8	22.3	100.1
Deering	30.4	23.2	21.4	75.0	25.0	100.0
Kivalina	27.1	25.6	19.4	72.1	27.9	100.0
Ambler	25.4	19.5	28.0	72.9	27.1	100.0
Noorvik	23.2	15.2	31.9	70.3	29.7	100.0
Selawik	22.4	15.5	33.9	71.8	28.1	99.9
Buckland	20.3	25.4	27.1	72.8	27.1	99.9
Shungnak	18.9	13.2	43.4	75.5	24.6	100.1
Kiana	18.7	22.8	26.8	68.3	31.7	100.0
Noatak	16.2	20.2	27.3	63.7	36.4	100.1
TOTAL	28.3	17.6	26.6	72.5	27.6	100.1

Number of respondents were: Ambler-118, Buckland-59, Deering-56, Kiana-123, Kivalina-129, Kobuk-36, Kotzebue-266, Noatak-99, Noorvik-138, Selawik-174, Shungnak-53, Total-1,254.

Source: Northwest Arctic Borough Survey Results, McNabb, 1989.

As a starting point for assessing future resident employment prospects, we have developed (a) a projection of the resident labor force by village and for the region for the years 1990, 1995, and 2000; and (b) an estimate of future regional employment.

1. **Resident Workforce Estimate**, 1990-2000

Table 1-62 presents estimates of the resident working age population for each Northwest Arctic Borough community for the years 1990, 1995, and 2000. Figure 1-28 shows estimates for the region. We have defined the "working age population" to include all persons between 20 and 64 years of age, regardless of whether they are participating in the formal labor force. The "working age

population" does not coincide with the standard definition of "labor force" (all persons 16 years and older working or looking for work). The definition here used has practical and theoretical advantages for the present analysis. This definition is the most basic measure of potential labor supply, free of such personal variables as discouraged workers and depressed labor force participation rates. Focussing on this narrowed but more relevant age segment of the potential labor force highlights the pressure that the region's young people will impose on the region's job market as they reach working age.

Estimates were developed by the cohort-survival method, which produces shortterm projections for small communities that have relatively closed labor pools with age-specific population data. The method is sensitive to the particular demographic profiles of individual communities and to the entry of young people into the local workforce.

The Alaska Permanent Fund Dividend Recipient Profile is the most credible and current source of population data by age group for Alaska's rural communities. Table 1-63 shows the age-group distribution for the 1985 population of Northwest Arctic Borough communities.³⁹ The age profiles vary among the communities, particularly in the relative proportion of young persons entering the workforce between 1985 and 2000.

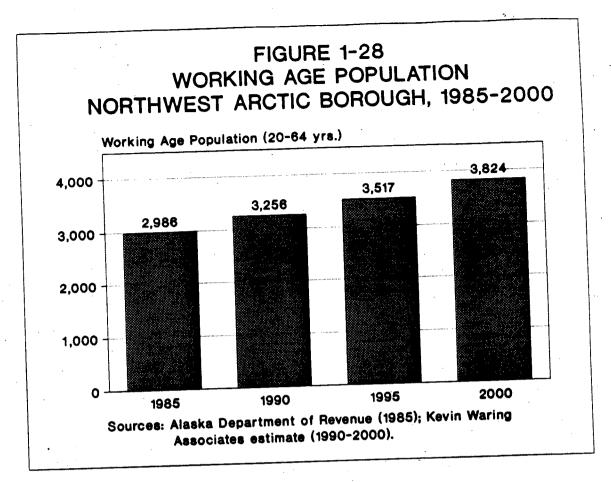
	-				Percent
					Increase
Community	1985	1990	1995	2000	<u>1990-2000</u>
community	(Actual)	1990		2000	1990-2000
Amhles		161	187	204	26 78
Ambler	138			204	26.7%
Buckland	113	126	144	163	29.4
Deering	69	75	86	93	, 24.0
Kiana	194	216	235	261	20.8
Kivalina	1 29	146	162	176	20.5
Kobuk	30	34	37	39	14.7
Kotzebue	1,504	1,621	1,738	1,874	15.6
Noatak	171	200	209	208	4.0
Noorvik	243	264	283	307	16.3
Selawik	280	290	316	368	26.9
Shungnak	115	124	121	132	6.5
TOTAL	2,986	3,256	3,517	3,824	17.4%
Net Change Over Previous		+270	+261	+307	
Percent Change Over Previous		+9.0%	+8.0%	+8.7%	

TABLE 1-62PROJECTED RESIDENT LABOR POOLNORTHWEST ARCTIC BOROUGH, BY COMMUNITY, 1990, 1995 & 2000

Source: Kevin Waring Associates estimate, based on Alaska Bureau of Vital Statistics age-specific mortality data for Northwest Arctic Borough and Alaska Department of Revenue (November 1986) age group data by community.

39. The Alaska Department of Labor's 1985 population figure for the Northwest Arctic Borough (5,913 persons) is higher than the aggregate community populations (5,648 persons) compiled from permanent fund dividend applications. The Department of Labor's estimate includes infants, newcomers and others who did not qualify or did not apply for permanent fund dividends and thus is more comprehensive than the permanent fund dividend applicant counts. Our comparative review of age-group data suggests that infants, who were ineligible for permanent fund dividends and who will not reach working age by 2000, may account for most of the discrepancy between the two sources. The permanent fund dividend recipient figures are the only recent source of village-specific age-group data.

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Age Group	Ambler	Buckland	Deering	Kiana	Kivalina	Kobuk	Kotzebue	Noatak	Noorvik	Selawik	Shungnak	Tota
0 - 5	35	41	15	43	40	8	308	31	73	81	26	701
5 - 9	34	34	16	49	30	9	282	23	58	77	23	635
10 - 14	39	26	17	36	32	5	256	27	48	57	14	557
15 - 19	33	24	11	39	29	7	215	41	44	34	19	496
20 - 24	28	25	15	34	25	5	280	41	64	63	27	
25 - 29	21	19	16	34	21	Ĩ.	295	30	49	61		607 570
30 - 34	17	25	6	33	16	5	267	28	33	49	· 20 20	570
35 - 39	18	10	8	24	18	Å	226	16	16	38	16	499
40 - 44	18	10	6	20	13	1	141	13	14	12	10	394
45 - 49	16	6	7	18	0	3	97	10	11		2	251
50 - 54	9	. 8	6	12	ó	5	72	16	22	13	3	193
55 - 59	6	3	2		10	1	78	11	19	9		175
60 - 64	5	7	· 3	10	8	2	48	11 4	15	20	13	172
65 - 69	2	Ś	2	10	5	. 1	32	. 0	<u>د</u> ا ۲	15	0	125
70 - 74	2	ž	1	.0	5		25	2	<i>'</i>	13	4	83
75 +	2	5	2		4 Z	4	48	4	5	9	2	63
Unknown	ō	Ō	ō	- 1	0	1	40 8	10 2	11 3	17 4	2	107 20
TOTAL	285	251	133	382	272		0 (70	-	-		•	
	207	231		302	212	66	2,678	311	492	572	206	5,648
Median Age	20.4	20.2	22.7	23.6	21.1	24.5	25.0	24.1	21.8	23.0	24.0	23.6
Percent of												
Population 5-19 yrs.	37.2%	33.5%	33.1%	32.4%	33.5%	31.8%	28.1%	29.2%	30.5%	29.3%	27.2%	29.9%

TABLE 1-63 1985 ALASKA PERMANENT FUND DIVIDEND RECIPIENTS NORTHWEST ARCTIC BOROUGH COMMUNITIES, BY AGE GROUP

Source: 1985 Permanent Fund Dividend Recipient Profile.

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The cohort-survival projection method assumes that every resident who will join the labor force by 2000 is already alive and counted. At each five-year interval the next youngest age group (15-19 years) matures into the workforce and the oldest age group (60-64 years) retires, so estimates for the workforce update easily. Preliminary estimates are adjusted for expected mortality. A groupspecific (20-64 years) mortality rate can be derived from recent vital statistics data obtained from the State of Álaska's Bureau of Vital Statistics for the Northwest Arctic Borough. This step yields a projection of the resident workforce for each village by age.

The cohort-survival method assumes no net migration within the working age population. Ordinarily, net migration balances the workforce and employment. This assumption makes the method insensitive to differential migration patterns within the potential workforce. For example, the method considers neither the historic propensity of many young adult females to move from the region nor the predominance of young adult males among newcomers to the region.

Young men newly entering the working-age group are likely to outnumber young females for two reasons. First, ADOL's most recent estimate of regional population by age group and sex (Table 1-64) shows that, as of July 1, 1987, males outnumbered females in each age group that will mature to working age by 2000. In the 0-4 years age group there were 453 males and 451 females; in the 5-9 age group, 362 and 316; and in the 10-14 age group, 276 and 238. Males in all age groups outnumbered females by about 9 percent. Second, more young adult females than males historically have tended to leave the region, possibly for marriage or for more promising educational and employment opportunities. Newcomers to the region disproportionately tend to be young adult males. If

this pattern holds over the next decade, the expected imbalance in the composition by sex of the region's working-age population will widen.

TABLE 1-64POPULATION COMPOSITION, BY AGENORTHWEST ARCTIC BOROUGH, 1980, 1987

		1980			1987	
Age	Male	Female	Total	Male	Female	Total
Under 5 years	293	278	571	453	451	904
5 - 9	293	244	537	362	316	678
10 - 14	287	242	529	276	238	514
15 - 19	332	276	608	250	222	472
20 - 24	247	263	510	333	280	613
25 - 29	270	193	463	338	290	628
30 - 34	199	152	351	312	239	551
35 - 39	117	95	212	220	162	382
40 - 44	121	82	203	139	134	273
45 - 49	95	103	198	112	79	191
50 - 54	98	81	179	97	83	180
55 - 59	63	64	127	98	86	184
60 - 64	52	42	94	68	68	136
65 - 69	59	42	101	43	43	86
70 - 74	28	37	65	27	35	62
75 - 79	24	23	47	21	27	48
80 - 84	. 7	12	19	16	19	35
85 plus	-9	8	17	9	16	25
TOTAL	2,594	2,237	4,831	3,174	2,788	5,962
Median Age	21.7	21.5	21.6	23.7	23.0	23.4

Source: Alaska Department of Labor, Alaska Population Overview, 1986 and Provisional 1987 Estimates.

As shown in Table 1-62, the region is projected to add nearly 600 residents to its working age population between 1990 and 2000, a net increase of about 17.4 percent for the decade. Based on current community population profiles, the projected rate of labor pool growth varies widely among communities. The resident labor pools of Buckland, Selawik, and Ambler are each projected to grow

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by more than 25 percent, while Noatak and Shungnak are projected to increase less than 10 percent.

2. Future Regional Employment

Economic base analysis is a standard method to describe, analyze, and forecast the economic performance of communities and regions. Economic base analysis rest on two principal concepts: an analytic distinction between basic and non-basic economic activities; and the notion of an "economic multiplier."

Basic economic activities produce goods and services for export to non-local markets: these export industries bring a flow of funds from elsewhere into the local economy. Governmental activities financed by federal and state transfers in excess of receipts may also be treated as basic, inasmuch as they inject external funds into the local economy. Nonbasic economic activities produce goods and services strictly for local markets; this local production for local consumption generates the circulation of money within the local economy.

Basic earnings spent on locally produced goods and services "multiply" to generate nonbasic employment and earnings. On the other hand, basic earnings spent for imported goods and services "leak" out of the local economy without generating additional local jobs and earnings. The "economic multiplier" is an empirically determined ratio which quantifies the propensity of the basic economy to stimulate nonbasic or support-sector activities. The multiplier can be applied to employment, personal income, business receipts and profits, industrial and commercial production, and similar numerical measures of economic activity. The concepts of economic base analysis are well suited to the dynamics of rural Alaska's developing regional economies for several reasons. These economies are typically simple in structure. Their private-sector exports are comparatively easy to isolate, measure, and relate to overall regional economic growth. Federal and state public sector transfers can likewise usually be identified. Additionally, the economic base model accounts well for the process of "import substitution," that is, the shift to local production for local consumption of goods and services formerly imported. Import substitution amplifies the "multiplier effect" of basic economic activities and is a key dynamic factor in the internal growth of these regions' underdeveloped commercial economies.

On the other hand, the economic base model is poorly suited to anticipate changes in the structural status quo, unless supplemented by economic judgments about trends in basic industries and support sector economic activities.

Traditional regional economic development strategy has stressed promotion of basic or export industries to bring new income into the region. This new income is doubly beneficial, since it also boosts the nonbasic economy through the "economic multiplier." For mature economic regions with well-developed support sectors and relatively stable "economic multipliers" the focus on basic economic development is strategically apt. But for rural Alaska's developing economies, support-sector development may offer more leverage over regional economic growth. Tussing (1983) concludes an empirical analysis of the contribution of supportsector growth to regional economic growth in post-1970 Alaska with these observations:

The notion that the support sector might, under certain circumstances, be the principal force for regional economic growth is consistent with even the "naive" economic-base model recently fashionable in Alaska. Export-driven growth expands the demand for

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both consumer goods and the goods and services required by basic industry. As demand grows, an increasing number of goods and services become cheaper to produce locally than to import, and others that residents previously got along without become cheap enough to find a market. The result, in terms of the economic-base model, is an <u>increase in the size of the export multiplier</u>.

. . . Regardless of the share of the regional economy heretofore occupied by residentiary [support-sector] industry, an autonomous expansion in the support-sector is at least as effective in generating aggregate economic growth as is an equivalent expansion in basic-industry export income. (Emphasis in original).

At present, the region's economic multiplier is exceptionally low. As of 1989, we estimate that about 68 percent of the region's employment was basic in nature, about 32 percent non-basic (Table 1-65). This constitutes an employment multiplier of about 2.1:1, that is, 2.1 basic jobs generate 1 nonbasic job. This estimate is based on ADOL employment data by industry, allocated to basic or nonbasic sectors according to our best guess based on our knowledge of the regional economy.

The addition of Red Dog Mine to the region's basic employment, may have temporarily raised the employment multiplier even higher, to about 2.8:1. This later estimate is based on employment figures for the first half of 1990, shortly after Red Dog Mine came on line. Red Dog Mine added about 230 new basic mining jobs and a payroll of about \$11,400,000 into the region's economy. (But it should be noted that about 40 percent of the jobs and perhaps 50 percent of this payroll currently go to nonresidents.)

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	Estimated	Employment			
	Percent Basic	1	989	First Two (Juarters 1990
Industry Classification	Employment	Total	Basic	Total	Basic
Mining	100	*	*	248	248
Construction	90	33	30	36	32
Transportation, Communication and Public Utilities	50	167	84	180	90
Trade	20	184	37	152	30
Finance, Insurance and Real Estate	25	*	*	86	22
Services	60	112	67	112	67
Government					
Federal	80	89	71	80	64
State	100	86	86	85	85
Local	80	1,135	908	1,254	1,003
Miscellaneous	50	185	92		• •
TOTAL		1,991	1,356	2,233	1,641
Percent Basic Employment			68.1%		73.5% 2.8:1
Employment Multiplier		• •	2.1:1		2.0:1

TABLE 1-65ESTIMATED BASIC EMPLOYMENT BY INDUSTRY SECTOR
NORTHWEST ARCTIC BOROUGH, 1989 & 1990

Employmont

*Figures withheld to comply with disclosure regulations.

Source: Alaska Department of Labor. Service and local government employment figures for 1989 and 1990 (estimated) adjusted per Table 1-4. Mining employment for 1990 estimated from ADOL data and other sources. Percent basic employment and employment multiplier estimated by Kevin Waring Associates.

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Overall, the outlook for gross expansion in the region's basic economy over the next decade appears limited. Nonetheless, at its current stage of development, structural changes and upgrade of the region's workforce hold potential for substantial improvements in the wage economy for regional residents.

For the coming decade, we anticipate that total employment in the basic sector of the region's economy will be stable, remaining near current levels. The main contributors to basic employment by industry are:

• Federal, State and Local Governments. This is the largest component of basic employment. Most federal, virtually all state, and the part of local government employment supported by transfer funds are all basic in nature. The region's public sector employment has grown strongly since 1985, notwithstanding concerns that federal and state budget reductions might shrink governmental employment. In actuality, the large core of public sector employment engaged in delivery of education, health care, housing, and social services is relatively secure against severe funding cutbacks. These services are mainly demand-driven (education, health care) or secured by long-term federal contractual commitments (housing). Federal and, especially, state funding cutbacks have been most visible in capital projects, but hardly evident in service programs. The latter also generate substantially more local employment per dollar of public expenditure. Overall, slight to modest public sector employment growth is anticipated.

Mining. Red Dog Mine is now essentially fully staffed, providing stable, long-term, well-paid, year-round employment. There are no expansion plans for Red Dog Mine and Cominco officials say that expanded production would not require a significantly larger workforce. There are no concrete plans for other mining development in the region.

• Construction. State and federally funded public works have generally been the main component of basic construction. (Red Dog Mine construction was exceptional.) Major construction projects such as the pending new hospital and NANA's pending office building may temporarily spike construction employment. But overall, it is expected that state and federally funded public works construction will be below the mid-1980s peak and closer to the level of the past 2-3 years.

■ Services, Transportation/Communications/Public Utilities, Trade. Part of the region's service, transportation and trade employment depends upon purchases made by visitors, both tourists and government travellers, and may be counted as basic. At best, modest growth is anticipated for the basic component of these sectors.

In contrast to basic sector industries, there appears to be substantial potential for employment growth in support sector industries. The Red Dog Mine will boost resident purchasing power. Through the "economic multiplier," this new purchasing power will create more demand for goods and services already provided locally. Further, this new purchasing power, pooled with existing demand, may make it feasible to expand the selection of locally supplied goods and services. This would raise the value of the "economic multiplier." As noted above (Tussing 1983), support sector growth can be a powerful generator of regional employment growth in developing economies. The borough government, through its Economic Development Commission, is exploring ways to stimulate local

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entrepreneurs and small businesses to capitalize on the potential for support sector industry. We believe that the greatest potential for job growth in the region depends on public and private efforts to broaden the region's support sector, particularly in Kotzebue and to a lesser extent in the outlying villages.

It is important to note, however, that aggregate regional employment growth is a very partial index of the economic status of the region's indigenous residents.

Payrolls account for less than half of the region's total income or consumption. Nearly half of all regional income is comprised of in-kind transfers (Table 1-52). Unearned income (Tables 1-34 and 1-37) and subsistence are also important.

Part of the region's workforce regularly works outside the region. Their jobs are not counted as part of the region's employment.

Part of the region's jobs are filled by non-residents. Major construction projects frequently employ nonresident tradesmen. For now, nonresidents comprise about 40 percent of the Red Dog Mine workforce. These jobs are counted in the region's employment base but do not benefit resident wage earners.

Another part of the region's jobs are filled by sojourners who move to the region to work for a period of time.

Over the next decade, improved employment conditions for indigenous residents of the region will depend heavily upon advances in educational attainment, job

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skills and occupational mobility of the resident workforce as well as aggregate job growth. These advances will depend upon:

 Continuing improvements in elementary, secondary and post-secondary educational performance of new entrants to the labor force.

Manpower programs to upgrade qualifications and occupational status of existing workforce.

Qualification and recruitment of residents specifically for positions in education, health care and similar credentialed professional and semiprofessional occupations now predominately staffed by imported personnel. These positions represent the region's largest pool of stable, well-paid, career jobs. (It is substantially larger than the pool of technical/professional positions that NANA residents aspire to fill at Red Dog Mine.) The level of qualified residents is currently low, but the longterm potential for employment gains from gradual recruitment of residents into these positions is substantial.

Increase resident hire at Red Dog Mine.

■ Successful engagement of local entrepreneurs in new business ventures.

Continuing access to extra-regional employment opportunities.

There is no statistical database from which to extrapolate the future status of these events and trends. But there are grounds for anticipating significant

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positive results from local public and private efforts to develop the region's human resources.

Native residents already successfully staff most top managerial and administrative positions in many fields of public service and in corporate management, where lack of professional credentials is not a bar to employment. (We expect that the 1990 Census will show large gains in Native employment in managerial and professional occupations over the past decade.) Presumably, over time, more Native residents will qualify for and seek professional positions in the educational and health care system.

In development of Red Dog Mine and its other corporate activities, NANA has shown commitment and capacity to train, qualify and place many shareholders into openings within and outside the region. There is broad and growing public commitment to improve education at all levels and training programs, as well as programs to reduce work-related problems such as substance abuse. The borough government and NANA recognize the importance of stimulating indigenous small business development to capitalize on the region's enlarged purchasing power.

The cumulative effect of these events and trends may enlarge the pool of cash employment opportunities accessible to region residents even if without major growth in total regional employment.

3. Regional Employment Forecast for Hope Basin OCS Lease Sale The proposed Hope Basin OCS lease sale tentatively scheduled for 1992 extends in area from Point Hope in the north to Wales at the western tip of the Seward Peninsula. Forecast of the lease sale's direct employment impacts on the Northwest Arctic Borough must be based on highly speculative assumptions about the number, timing, and location of exploratory and delineation wells that may be drilled; the drilling technology and gear that may employed; and logistic arrangements. For the sake of developing plausible estimates of the likely relative scale of direct employment requirements of the Hope Basin sale on the Northwest Arctic Borough, we adapted the forecast approach presented in the Environmental Impact Statement for the Chukchi Sea Oil & Gas Lease Sale 109. The operating conditions in this sale area offshore the northwest coast of the North Slope Borough are similar to conditions in the Hope Basin sale area directly to the south.

Following the model used by Minerals Management Service to forecast direct employment requirements for the Chukchi Sea EIS we assume that only exploration activities will ensue from the Hope Basin Sale before the close of the forecast period. Development and production activities are deferred beyond the year 2000.

The Chukchi Sea EIS estimated that in-region direct employment during the first eight years after the lease sale would range between 133 and 649 workers (Table 1-66). The EIS further assumed that workers (79 percent) for the most laborintensive exploration activities (drillship operations and shorebase construction and operation) will be mostly out-of-state commuters and that only a small share of the in-state OCS-related work force would be Alaska Native residents. The EIS allowed that marine and aviation support activities for exploration might engage somewhat larger shares of Alaska residents, presumably including Alaska Natives.

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Overall, the Chukchi Sea EIS estimated that the level of Alaska Native employment throughout the entire period of exploration, development, and production would hold constant at about 30 workers.

Employment conditions in the Northwest Arctic Borough are poorer than in the North Slope Borough. Speculatively, this may more incline Northwest Arctic Borough workers to seek OCS-related employment. Additionally, NANA's experience in oil-field support enterprises may give it a foothold for capturing support business for the Hope Basin lease area. This could facilitate recruitment of more NANA shareholders for OCS-related jobs in logistic, catering, and camp support; security services; and similar activities that are well matched to NANA's business profile and the resident workforce's job skills.

TABLE 1-66					
DIRECT	EMPLOYMENT,	EXPLORATION	PHASE,		
	CHUKCHI S	EA SALE 109			

	Exploration
Post-Sale Year	Employment
Year 1	133
Year 2	189
Year 3	189
Year 4	649
Year 5	649
Year 6	649
Year 7	649
Year 8	342

Source: Minerals Management Service, Alaska OCS Region, adapted from Chukchi Sea Oil & Gas Lease Sale 109 Final Environmental Impact Statement, Volume II, Appendix F, page F-4, Table F-3.

Even allowing for differences between the two lease sales and the two economic regions and for a substantial margin of error in the Chukchi Sea EIS employment

estimates, it seems unlikely that OCS exploration activities (or any later development and production activities) would significantly boost employment of the region's indigenous labor force.

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CHAPTER 2: EDUCATION AND EMPLOYMENT¹

This chapter examines and assesses how education and training in the Northwest Arctic Borough has prepared and is preparing its residents, primarily its youth, to take advantage of and contribute to economic opportunities--principally employment--within the region. Formal education and training is an integral part of the region's overall social, economic, and political development. Therefore this chapter discusses the region's schools within the context of the region's overall development. [Chapters 3 and 4 specifically address the informal socialization processes and cultural changes occurring within the region, and Chapter 1 assesses the past, present, and future outlook for economic opportunities within the region.]

The region's overall social, economic, and political development falls into four distinct eras: Federal Territorial (pre-1959); Early Statehood (1959-69); Alaska Pipeline (1970-79); and Prudhoe Bay (1980-89). These four eras mark major changes in the institutional relationships among the federal government, the State of Alaska, and the Alaska Natives of the Northwest Arctic. And the three most recent eras each lasted a scant ten years before some major event again changed the picture.

Two events--the opening of the Red Dog mine and the incorporation of the Northwest Arctic Borough--are so recent that their impacts are still being felt.

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¹This chapter was written by Lee Gorsuch and Paul Ongtooguk, with assistance from Teresa Hull, Linda Leask, and Linda Rinaldi.

After assessment of school performance and description of the Northwest region, discussion turns to school performance in each of the four development eras.

I. ASSESSING SCHOOL PERFORMANCE

Education and work are intertwined. The type of work available within a region generally influences the type of education offered, and the local availability of educated or trainable workers may influence an employer's decision to locate in the region. If workers are not available within the region, employers will recruit outside workers. Conversely, if residents cannot find suitable work within the region, they are likely to leave for jobs elsewhere.

While this is not a study of regional migration and employment, it is a review of the relationship between education and work within the region. It is intended to advance our understanding of education's likely contribution to the region's future work force.

This chapter reports and analyzes measures of the region's school performance, augmented by the views of key informants from the region.

School performance is described around four sets of questions: (1) What goes into education and training (resources, students, and community support)? (2) What are the educational goals, strategies, and teaching processes, including curriculum and performance rules and expectations? (3) What have been and are the educational outcomes, including participation of local youths in the regional labor force? and (4) What are the major issues and opportunities related to education and work in the region, and what do these portend for the region's future development?

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We extracted information and data from various agency reports and studies describing the human and financial resources that go into education and training, and the resulting levels of educational attainment and performance. That information is augmented by the views of key informants from the region. Our discussions of school performance and related issues (Sections III, IV, V, and VI) are mainly descriptive. At the end of the chapter, in Sections VII and VIII, we summarize our findings and then turn to an analysis of factors affecting school performance and the outlook for education in the region. Our informants helped identify and assess major education and work issues and opportunities. Where possible, we corroborated or reconciled both the patterns and conflicts of perception with data drawn from secondary sources.

II. THE NORTHWEST REGION

The Inupiat or Northern Eskimo are the indigenous people of the region and they continue to be its predominant residents, comprising 85 percent of the population. While there are differences in dialect and lifestyle between the Kobuk (or river/freshwater) people and the coastal (saltwater) people, the Northwest region is culturally similar for all practical historical purposes.

The region, about the size of Illinois, encompasses 30,000 square miles of mountains, lakes, and tundra. The headwaters of the three major river systems within the region--the Selawik, Noatak, and Kobuk--form the region's eastern border, while Kotzebue Sound on the Bering Sea bounds the west. The Brooks Range forms a natural boundary along the north, while the southern border extends to the Seward Peninsula.

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The region's geographic boundaries coincide with those of the Northwest Arctic Borough, including the school district; those of NANA Corporation, a regional Native corporation formed pursuant to the Alaska Native Claims Settlement Act; and the 1980 Kobuk census area.

Kotzebue has long been the largest community and regional center; it has a population of about 2,700. The other Northwest villages are Ambler, Buckland, Deering, Kiana, Kivalina, Kobuk, Noatak, Noorvik, Selawik, and Shungnak. Their populations vary from fewer than 100 in Kobuk to nearly 600 in Selawik. Kotzebue, where most of the region's jobs are located, has a higher proportion of non-Native residents than do the smaller villages, where more than 90 percent of the population is Native (Table 2-1).

III. FEDERAL TERRITORIAL ERA (PRE-1959)

From 1867 to 1959, Alaska was a territory of the United States. At the start of the twentieth century, the federal government's presence in the northwest Arctic consisted of a few administrators posted to jobs related to mining activity.

As with most areas in rural Alaska, the introduction of formal Euro-American education in Kotzebue and the Northwest region was the result of contact with missionaries. The First Organic Act of 1884 authorized education in the territory, but provided scant funding for it. Dr. Sheldon Jackson, then U.S. General Agent for Education in Alaska and an active participant in Presbyterian missions, was asked by the people of Kotzebue in 1896 to establish a mission school there. Three missionaries from the California Yearly Meeting of Friends arrived in response to that request on August 27, 1897 (Ray 1959:21; Smith 1966:107).

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TABLE 2-1COMMUNITY POPULATIONS, NORTHWEST ARCTIC BOROUGH, 1950-1980

						Alaska Native <u>Population, 1990¹</u>		Percent of Region	
	1950	1960	1970	1980	1990 ¹	Number	Percent	<u>1950</u>	1990
Ambler	NA	70	169	192	311	279	89.7%	<u>1550</u> NA	5.1%
Buckland	108	87	104	177	318	302	95.0	4.9%	5.2
Deering	174	95	85	150	157	148	94.3	7.8	2.6
Kiana -	181	253	278	345	385	360	93.5	8.1	6.3
Kivalina	117	142	188	241	317	309	97.5	5.3	5.2
Kobuk	38	54	56	62	69	- 62	89.9	1.7	
Kotzebue	623	1,290	1,696	2,054	2,751	2,067	75.1	28.0	1.1 45.0
Noatak	326	275	293	273	333	322	96.7	14.7	45.U 5.4
Noorvik	243	384	462	492	531	498	93.8	14.7	
Selawik	273	348	429	536	596	569	95.5	12.3	8.7
Shungnak	141	135	165	202	223	211	94.6		9.7
Total Outside					220	611	34.0	6.3	3.6
Native Villages	NA	NA	NA	107	122			NA	2.0
TOTAL	2,224	3,133	3,925	4,831	6,113			100.0%	100.0%
Population Incre	ease	909	792	906	1,282				
Percent Increase		4 1%	25%	23%	27%				

1. Preliminary.

Sources: U.S. Bureau of the Census.

Page ப The missionaries' 40-year presence produced significant changes in the region, beyond those specifically related to education. In addition to teaching, they often operated trading posts, provided medical services, extended credit, and organized local economic activities (Olson 1931). A school was established soon after their arrival, with a first priority of encouraging adults to learn English. Supplies for the first school building were shipped by the federal government and arrived in Kotzebue in 1902. Early school records indicate an enrollment of 41 students in the school year 1903-1904, from 41 permanent families.

During the decade following the Nome gold discoveries in 1898, miners poured into the region and missionaries established schools in more villages. The first Eskimo woman to teach in one of those schools began her career in 1911 (Smith 1966:107-115).

During the early 1900s, the federal Bureau of Education assumed responsibility for operation of the mission schools and established new ones. Ducker summarizes the influence of the Bureau of Education in locating schools and frequently villages as well (1985:35):

Between 1907 and 1910 the Bureau of Education instituted schools in scores of Alaskan Native villages and took over teaching responsibility from mission schools. When the agency decided on a school site, it often determined the location of a village. Natives, especially those living on the region's rivers, led peripatetic lives. However, Native families quickly congregated around the schools to afford their children an education.

The schools established at Shungnak (1907), Noatak (1908) and Noorvik (1915) anchored those communities, but Buckland had to be relocated because of poor original siting (Ducker 1985:39-40).

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The federal Bureau of Education maintained control and responsibility for education in rural Alaska until it was shifted to the Bureau of Indian Affairs (BIA) in 1931 (Case 1984:201). Teachers continued to exercise substantial authority beyond the scope of schools and viewed their role as one of civilizing the Natives (U.S. Department of the Interior: 1918). BIA policy was to encourage the transfer of schools to the territorial government, but funding limitations and political considerations interfered with this process. Educating Native Americans, including Alaska Natives, was generally felt to be the responsibility of the federal government. Fluctuations in federal Indian policies--between those that encouraged assimilation and those that encouraged self-determination, for instance--were felt in Alaska as well. Commenting about the overall goals of federal Indian policy, Darnell observes that "the federal system experienced a merry-go-round effect of cyclic contradictory policies" (1979:434).

Teachers brought in to teach in BIA schools for short periods provided little continuity in the villages. The 40-year commitment of the Friends missionary teachers, mentioned earlier, was not typical. Teachers on temporary assignments imparted various philosophies and patterns of interaction in the villages. Noatak provides an example described by Hippler (1970:30):

In trying to effectively evaluate urban/village (white/native) contact in a place like Noatak it must be remembered that the most significant contact, here as elsewhere, is the BIA school teacher. But the school teachers (they tend to be married couples) are rotated every two years, and vary greatly in attitude and behavior. One set of BIA teachers seemed to live just like villagers. Another absolutely refused to have anything to do with villagers.

Under the various federal mandates, elementary education was provided through the eighth grade under a centrally controlled system. Schools in each of the villages comprising what is now the Northwest Arctic Borough School District

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continued under BIA management until the agency began transfer to the state government, beginning with two schools in the 1950s. Darnell describes the persistence of the territory's position that Native education was a federal responsibility (1979:434):

All but the last territorial commissioner of education, who served from 1952 to 1958, supported the policy that native education was the responsibility of the federal government.

The schools at Kobuk and Ambler were transferred from BIA operation during the 1950s and continued under territorial and then state control. BIA day schools remained in all other locations until the 1970-1971 school year, when schools at Buckland, Deering, Kivalina, Noatak, Noorvik, Selawik, and Shungnak began operation as rural schools under state management. The BIA continued to operate day schools in Kiana and Kotzebue until the 1976-1977 school year.

Secondary education was not available in the villages for most of this period. Initially, high-school students attended boarding schools outside Alaska. Later, Mount Edgecumbe school, which operated a statewide boarding school beginning in 1946 at Sitka in southeast Alaska, became the training ground for many of the region's leaders. Other public and private boarding schools elsewhere in Alaska (Unalakleet, St. Mary's, Wrangell, St. Michael) and outside Alaska (Chemawa in Oregon and Chilocco in Oklahoma), as well as the state's urban boarding home program, served to meet secondary educational needs at various times, but to a lesser extent.

In 1950 the population of the region totaled just over 2,200 residents, living in the same eleven villages that make up the region today. The most rapid population growth in recent decades was between 1950 and 1960, when the population grew 41 percent (Table 2-1). Kotzebue, with a population of 623, had already established itself as the largest community in the region by 1950.

By this time most of the villages had formed tribal governments under the Indian Reorganization Act of 1936, but local governmental authority still rested in the traditional village councils. In matters related to local education, local missionaries and later federal education officials made all decisions.

During this era residents had little familiarity with formal education and little voice in what would be taught, how, and by whom. As recently as 1960, nearly half the adult population over the age of 25 had four years or less of schooling, and less than 2 percent had completed high school or more (Table 2-2). The goals of schooling in those early years related to Christianity and to literacy in the English language.

Students were disciplined for speaking their native tongue in school. Few teachers remained in villages long enough to learn about local culture and geography and to incorporate them in their teaching--a problem that persists today.

The economy of the region for much of this period was largely subsistence related, as it had been traditionally. Many people took advantage of the opportunities for supplemental income presented by seasonal construction and other jobs. The median Native family income for the region was \$1,924 in 1960 (Table 2-3).

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TABLE 2-2EDUCATIONAL ATTAINMENT, BY RACENORTHWEST ARCTIC BOROUGH, 1960-1980

	Ala	ska Nat	ive ¹	Non-Native ²		
<u> </u>	1960	1970	1980	1960	1970	
<u>Persons 25+ yrs.</u>	1,205	1,198	1,612	167	263	463
<u>No School</u>	17.3%	5.1%	5.0%	0.0%	0.0%	0.0%
<u>Elementary</u> 1-4 years 5-7 years 8 years	27.6 37.5 12.5	29.2 37.0 10.9	17.5	0.0 5.4 7.2		1.3 0.6 1.9
High School 1-3 years 4 years	3.3 1.5	6.8 8.4	11.7 25.9	7.2 18.0	4.9 34.2	3.2 21.6
<u>College</u> 1-3 years 4 years 5 years or more	0.0 0.3 NA	2.6 0.3 0.0	7.9 1.6 0.0	19.2 43.1 NA	17.9 19.0 16.0	16.8 23.1 31.3
Median School Years Completed	5.4	6.2	8.8	NA	13.5	16.2

In 1960 this category is "Nonwhite;" in 1970, "Natives and Others."
 In 1960 this figure equals total minus "Nonwhite." In 1970, this category was "Whites and Blacks."

Source: U.S. Bureau of the Census.

While the proportion of working-age Native residents in the labor force had grown to 33 percent by 1960, much of the regional employment was seasonal--and of those in the labor force, more than 20 percent were unemployed (Table 2-4).² Of those who had jobs, more than half worked fewer than 26 weeks per year.

²See Chapter 1, Section IV.1, for discussion of technical problems with measures of labor force participation and unemployment.

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TABLE 2-3

PERCENT DISTRIBUTION OF FAMILY INCOME BY NATIVE¹ AND NON-NATIVE² HOUSEHOLD NORTHWEST ARCTIC BOROUGH, 1960, 1970 & 1980

1960	Perc	cent Distri	ibution of F	amilies				
Nominal \$	Loss to	\$2,000-	\$6,000-	\$10,000			-	
_	\$1,999	\$5,999	\$9,999	and Over			Median Annual	Number
(1990 \$) ³	(Loss to \$6,732)	(\$6,733- \$20,203)	(\$20,204-\$33,674)	(\$33,675 and Over)	-		Family Income	of Fam ilies
lative	52.1%	37.4%	8.3%	2.3%			\$1,924 (\$6,480)	530
Non-Native	4.4%	33.8%	41.2%	20.6%			NA	68
1970	Р	Percent Dis	tribution o	<u>f Families</u>				
Nominal \$	Loss to \$1,999	\$2,000- \$5,999	\$6,000- \$9,999	\$10,000- \$14,999	\$15,000 and Over		Median	
(1990 \$) ³	(Loss to \$5,620)	(\$5,621- \$16,867)	(\$16,868- \$28,113)	(\$28,114- \$42,171)	(\$42,172 and Over)		Annual Family Income	Number of Fam- ilies
lative	10.0%	42.5%	28.8%	15.4%	3.3%		\$ 5,763 (\$16,203)	518
lon-Native	4.4%	3.5 X	13.3%	23.0%	55.8%		\$15,516 (\$43,625)	113
1980		Percent	Distributio	n of Familie	<u>:s</u>	•		
Iominal \$	Loss to \$5,000	\$5,000- \$9,999	\$10,000- \$19,999	\$20,000- \$34,999	\$35,000- \$49,999	\$50,000 and Over	Median	
(1990 \$) ³	(Loss to	(\$6,861-	(\$13,720-	(\$27,440-	(\$48,020-	(\$68,600	Annual Family	Number of Fam-
lative	<u>\$6,860)</u> 16.0%	\$13,719) 20.0%	<u>\$27,439)</u> 31.0%	<u>\$48,019)</u> 21.0%	<u>508,599)</u> 6.0%	and Over) 6.0%	<u>Income</u> \$14,666 (\$20,122)	<u>ilies</u> 708
ion-Native	0.0%	5.0%	10.0%	36.0%	26.0%	23.0%	(\$20,122) \$34,545 (\$47,396)	182

In 1960 this category is "Nonwhite;" in 1970, "Natives and Others."
 In 1960 this figure equals total minus "Nonwhite." In 1970, this category was "Whites and Blacks."

3. Income figures in constant 1990 dollars are given in parentheses, calculated from the Anchorage Consumer Price Index for Urban Wage Earners and Clerical Workers (1982-1984=100).

Source: U.S. Bureau of the Census.

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Among those who had jobs, most were employed as craftsmen and operators, laborers, and service workers (Table 2-5). Relatively few of the region's jobs-except professional jobs like that of school teacher--required or rewarded formal education. Regional employment mostly called for technical skills or labor-which could be developed through short-term training or apprenticeships. Schools in the region offered only up to an eighth grade education. A few select students were encouraged to go on to high school, where they could pursue a vocation. As of 1960, 820 students were enrolled in the region's school system; however, only 73 were enrolled in high school.

IV. - EARLY STATEHOOD ERA (1959-69)

The first ten years of statehood were largely occupied with the transition from a territorial government to a fully sovereign state government. Officials of the new state devoted their energies to establishing the three branches of state government, delegating governmental powers, and selecting 103 million acres of land granted to the State of Alaska by the federal government under the Statehood Act.

Northwest Alaska remained part of the "unorganized" borough--the large expanse of rural or "Bush" Alaska with no regional governmental authority. Only the largest villages had state chartered local governments. Kotzebue organized as a second-class city in 1958.

By 1970 the population of northwest Alaska had grown to just under 4,000 residents (Table 2-1). All villages in the region except Deering had grown. Kotzebue continued to grow rapidly, reaching a population of 1,696. The

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TABLE 2-4LABOR FORCE STATUS OF ALASKA NATIVES116 YEARS OF AGE AND OVER2NORTHWEST ARCTIC BOROUGH, 1960, 1970 & 1980

	1960	1970	1980
Total Civilians, 16 years of age and over	1,669	1,854	2,512
Not in Labor Force	1,120	1,375	1,397
Percent Not in Labor Force	67.1%	74.2%	55.6%
In Labor Force	549	479	1,115
Employed	431	401	796
Unemployed	118	77	319
Unemployment Rate ³	21.5%	16.1%	28.6%

1. In 1960 this category was defined as "Nonwhite;" in 1970 as "Natives and Others."

2. In 1960 and 1970, the age category was 14 years and over.

3. Unemployed as a percentage of persons in labor force.

Source: U.S. Bureau of the Census.

TABLE 2-5

PERCENT DISTRIBUTION OF EMPLOYMENT BY OCCUPATION ALASKA NATIVES¹ 16 YEARS OF AGE AND OVER² NORTHWEST ARCTIC BOROUGH, 1960, 1970, 1980

Occupation	1960	1970	1980
Professional/Managerial	11.8%	18.5%	29.0%
Clerical & Kindred	7.9	20.8	23.0
incl. Sales			
Craftsmen/Operatives	25.5	22.9	15.0
Laborers, excl. Farm	8.8	7.7	5.0
Service Workers	16.9	25.9	28.0
Other	29.0	4.2	3/
All Occupations	100.0%	100.0%	100.0%

1. In 1960 this category is "Nonwhite." In 1970 this category is "Natives and Others."

2. In 1960 and 1970 the age category is 14 years and over.

3. Less than 1 percent.

Sources: U.S. Bureau of the Census.

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population of Ambler more than doubled between 1960 and 1970, up from 70 to 169; and the populations of both Noorvik and Selawik grew by 20 percent.

Kotzebue's role as the regional center in transportation, communication, trade, and services continued to develop, largely in response to the expansion of government (mostly federal) services. However, the region's economic expansion did not keep pace with its population growth. Fewer of the Northwest's Native people were employed in 1970 than had been in 1960, and the percentage of the working-age population in the labor force fell from 33 percent in 1960 to 26 percent in 1970 (Table 2-4). (See also earlier discussion of employment and labor force participation at Sections IV.1 and IV.2.)

Though overall employment declined, higher wages and more weeks of work increased the median income of Native families from \$1,924 in 1960 to \$5,763 in 1970. While inflation contributed to the nominal increase in income, the distribution of incomes also widened, with more Native families having higher incomes and fewer at the bottom end (Table 2-3). Native occupations also shifted over the decade, with evidence of a professional and managerial class emerging within the region (Table 2-5).

The region's lackluster economic growth reflected the general austerity of the new state government, with few revenues to devote to the expansion or assumption of federally supported services in rural areas. And even though the new Alaska Constitution required the state government to provide a system of public education for all its citizens, the BIA continued to operate most rural schools.

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A federal task force on education in Alaska during the 1960s reported problems with rural education, particularly the limited opportunities available to attend high school. In response, emphasis shifted to sending more of the region's youth away to high school boarding home programs. By 1970, the number of students in high school had grown to 350--up dramatically from just 73 in 1960.

The Friends Church had long sought to establish a high school in the region to avoid sending students to distant boarding schools in Chemawa, Oregon or Mount Edgecumbe in southeast Alaska. They began construction of a school in Kotzebue in 1958, and the first students enrolled in the ninth and tenth grades in 1959.

The Friends High School was approved by the Department of Education in 1960 and operated until 1965. It was closed because a regional BIA school had been completed in Nome, and one was also planned for Kotzebue. The BIA Kotzebue high school was completed in 1970. The Friends school was leased to the BIA for ninth and tenth grades (Roberts 1978:354-361).

Kleinfeld (1973) chronicled the trauma that sending young teenagers away to boarding homes wrought on parents and students alike. But an unanticipated benefit for the students who successfully completed their high school educations at the Mount Edgecumbe school was that they formed friendships with Native students from other villages and regions--friendships that facilitated the establishment of statewide and regional political alliances. Alaska Natives formed such alliances to push for settlement of their aboriginal land claims. As the state selected lands it had been granted under the statehood act, Alaska Natives organized regional Native associations to advance and protect their own land claims.

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Coinciding with these political developments, the Johnson administration's "War on Poverty" was extended to Alaska in the mid-1960s. A community action agency, Rural Alaska Community Action Program (RurALCAP), helped the Native regional associations organize and function as representatives of the cultural interests of Natives in various regions of the state. In the Northwest, the Northwest Area Native Association (N.A.N.A.) was formed.

From the mid-1960s through the early 1970s, N.A.N.A. focused much of its attention on the fight for a settlement of the aboriginal land claims of the Native people in the Northwest region. Other "War on Poverty" programs took root in the Northwest region, including Head Start, a pre-school program designed to help pre-schoolers from economically disadvantaged families get an early start in their schooling.

The Head Start program has been active in the region almost since its original authorization in 1965. Both Head Start and a Parent-Child Center were in operation in Kotzebue in 1970 (ASHA 1971). Original funding was provided by the Office of Economic Opportunity and the programs were administered by RurALCAP. As of 1989-1990, however, RurALCAP Head Start programs were funded for operation in only the communities of Noorvik and Selawik.

The region made significant gains in educational attainment during the 1970s (Table 2-2). The percentage of adult Natives over the age of 25 with four years of high school or more grew from less than 2 percent in 1960 to almost 36 percent by 1980. That increase is attributable to the region's young people, who attended high school in much larger numbers after 1960. Correspondingly, the median years of school completed jumped from 5.4 to 8.8.

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Non-Natives still held most of the professional jobs in the region, mostly teaching school. The median years of schooling among non-Natives in the region was 13.5. But during the 1960s a small number of non-Natives with just high-school educations had also moved to the region to take advantage of the emerging economic opportunities (Table 2-2).

By the end of the early statehood era, political awareness and development in the region had grown substantially. While the number of jobs in the region had grown only modestly, regional family incomes had increased significantly, allowing some to rise above the poverty levels of 1960.

V. TRANS-ALASKA PIPELINE ERA (1970-79)

The discovery of oil on the Arctic coast at Prudhoe Bay became a financial bonanza for the new State of Alaska. The state government had selected these oil-bearing lands as part of its statehood grant prior to the discovery of North America's largest oil reservoir. In 1969 the State of Alaska collected \$900 million in lease bonus bids from oil companies proposing to develop this huge oil field. But before oil could be sold and shipped--and the state could collect its substantial royalties and taxes--an 800-mile pipeline would have to be built across Alaska. Still, the big lease bonus and expectations of more to come prompted the state to expand services to previously underserved rural areas, including the Northwest. It also accelerated the assumption of responsibility for the public schools being operated by the BIA, including those in the Northwest Arctic.

In 1970, the legislature established the Alaska State-Operated School System (ASOSS) to administer public education in areas not incorporated into organized

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boroughs and cities. That included most of the villages of the region. The approach to delivering educational services remained highly centralized and bureaucratic. Secondary education for most villages continued to be available only at boarding or regional schools (Darnell 1979:435).

The 1970s were characterized by the increased attention given to the needs of the Northwest region and by the creation of regional entities to represent and serve the region's interests. Perhaps most significant of the newly created entities was NANA Regional Corporation. It was created in 1971 as a regional for-profit corporation, one of thirteen regional Native corporations formed under terms of the Alaska Native Claims Settlement Act. NANA was endowed with substantial cash and land resources and was legally obligated to the Alaska Native residents of the region, who became the corporation's shareholders.

Each of the region's villages also formed village corporations under terms of the claims settlement act. But with the exception of the Kotzebue corporation, these village corporations were subsequently merged with NANA. Much of the early 1970s was dominated by the creation and development of the settlement act corporations, and the Native leadership focused relatively limited attention on the region's schools.

A host of other federal legislation addressing the needs and interests of Native Americans also affected the region during this period. Federal housing legislation appropriated large sums of money for the improvement of housing for Alaska Natives, including those of the Northwest. Two pieces of federal education legislation, the Johnson-O'Malley Act and the Indian Education Act, called for the formation of local Native advisory committees to oversee the

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expenditure of federal funds for the development of programs responsive to Native peoples and to their cultures. These federally supported programs introduced into the region's schools a programmatic focus on the needs and culture of Native people. These programs have been modified over the years. However, there has been no on-going assessments of their efficacy beyond the normal administrative oversight.

The Indian Self-Determination Act also offered incentives for Native American tribes to begin providing to their members services which had previously been provided by federal agencies. Throughout Alaska, Native regional non-profit associations increasingly began to provide services under contract with federal agencies. The Northwest was no exception. NANA's non-profit association (now known as Maniilaq Association) became a major service provider for the villages of the region.

Thus, by the early 1970s the region had developed two major regional institutions created and controlled by Native residents. By the mid-1970s this political development had expanded to education. The recently created and much criticized Alaska State Operated School System was replaced by a more decentralized public school system. The state created 21 separate geographic regions--known as Regional Education Attendance Areas, or REAAs--which were authorized to form their own schools. The State of Alaska would continue to finance those schools, but there would be more local control.

The region chose to form an REAA coterminous with the boundaries of NANA and Maniilaq Association. Formation of an REAA included the formal election of school board members. The Northwest Region School District opted to designate

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board seats requiring village residency. This provision was designed to ensure broad village representation on the region's school district board.

In addition to the REAA school board, each village school had its own citizens' advisory school board (Getches 1976). The Northwest 'region also still had two BIA schools in the villages of Kiana and Kotzebue. The one exception to the initial regionalization of public schools in the Northwest was the village of Selawik which, fearing domination by Kotzebue, functioned independently from 1975 to 1977 as the Selawik City School District.

Unlike city and borough governments with school districts, REAAs were prohibited by law from assessing taxes to supplement state funds and from changing their initial charters. Thus, the Northwest Arctic School District did not function with as much autonomy as did boroughs or first class cities. Nonetheless, the REAAs represented a substantial advance in the authority regional residents had over their public schools. Regional key informants interviewed for this report said residents at that time began to think of the schools as belonging to them.

During the 1970s the population of the region and of the villages continued to grow. Kotzebue continued to expand as the region's service center. It served as the regional headquarters for both state and federal agencies, including the newly formed REAA. Correspondingly, it also became the transportation, communication, and distribution hub for the region. With more than 2,700 residents, Kotzebue had become home to 45 percent of the region's population, up from about 28 percent in 1950.

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Contributing to the population growth was an improvement in the physical health of the region's population. The region's fertility rate increased 50 percent between 1970 and 1980 and the infant mortality rate fell significantly, as did the crude death rate for residents 55 years of age and older (Table 2-6).

Along with the region's population growth, most through natural increase, also came growth in the numbers of households and jobs within the region. The increased availability of federal housing programs helped increase the region's supply of housing and reduce the average household size. Changes in the composition of households accompanied the formation of smaller households and is likely to have altered the patterns of socialization which occur within households (see discussion in Chapter 4).

A dramatic increase in wage employment occurred in the Northwest during the 1970s, far outstripping growth in the working-age population. During that decade wage employment in the region expanded by an additional 396 workers for an increase of more than 220 percent, while the working-age population jumped just 138 percent (Table 2-7). This sharp increase in jobs began to absorb some of the region's residents who were out of the labor force. The number of Northwest Alaska Natives drawn into the labor force almost doubled over the decade. The labor force participation rate grew from 25.8 percent in 1970 to 44 percent by 1980. However, that improvement still left an estimated 56 percent of the working-age population out of the labor force (Table 2-4). (See related discussion of problems in measurement of workforce in Chapter 1, Section IV.)

Public sector spending continued to fuel the region's growth in wage employment over the 1970s. Public goods and services heretofore absent or in short supply

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TABLE 2-6 VITAL STATISTICS NORTHWEST ARCTIC BOROUGH, 1970 & 1980

	197	70	1980		
		Non-		Non-	
	Native	Native	Native	Native	
Fertility Rate (per 1,000 Females					
15-44 years of age)	103.1	75.5	150.7	80.9	
Birth Rate (per 1,000 persons)	25.2	13	31.9	19.5	
Infant Mortality Rate ¹	37.5	14.9	22.8		
Crude Death Rate (per 1,000 persons)	6.8	[`] 3	6.6	2.8	
Age-Specific Death Rates (per 1,000 persons)		•			
0-4 Years	8.1		5.9		
5-14 Years				·	
15-34 Years	2.2		8.1		
35-54 Years	10.6		11.8	5	
55 Years and Over	24.1	, 	9.2	27.8	
Cause-Specific Death (per 100,000 persons) ² Preventable					
Tuberculosis	5.8	· 			
Influenza and Pneumonia	64.3		25.6	34.8	
Other Respiratory Illnesses	29.2		6.4		
Congenital Anomalies		· • • •	19.2		
Violent			•		
Accidents	128.5	151.3	205.1	104.5	
Suicides	29.2		83.3	 *	
Homicides	35.1	30.3	19.2		
Alcoholism	35.1		32	·	
Chronic and Old Age	-				
Heart Disease		60.5	76.9	34.8	
Malignant Neoplasms	81.8		51.3	34.8	
Cerebrovascular Disease	58.4	30.3	12.8		
General Arteriosclerosis					

1. The 1970 infant mortality rate is per 1,000 live births. The 1980 rate is per 1,000 persons for the time span 1975-1978.

2. The 1980 cause-specific death rates are for the time span 1975-1978.

Source: Institute of Social and Economic Research, A Summary of Changes in the Status of Alaska Natives, 1984.

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TABLE 2-7SUMMARY OF SOCIAL AND ECONOMIC CHANGESNORTHWEST ARCTIC BOROUGH, BETWEEN 1970 AND 1987

	Percent	Increase
	1970-80	1980-87
Population	119%	123%
Wage Employment	224%	121%
Number of Households	140%	123%
Working Age Population (16+ yrs.)	138%	123%

Sources: U.S. Bureau of the Census; Alaska Department of Labor.

in the region became much more plentiful. By 1980, regional employment in public administration and services (largely funded through contracts with federal or state agencies) comprised 67 percent of all employment, up from 40 percent in 1960 (2(c) report 1985 update). Trade, communications, and utilities jobs combined with wholesale and retail trade jobs to make up another 25 percent of the 1980 employed work force (Table 2-8).

PERCENT DISTRIBUTION OF EMPLOYMENT BY INDUSTRY	
PERCENT DISTRIBUTION OF EMPLOYMENT BY INDUSTRY ALASKA NATIVES ¹ 16 YEARS OF AGE AND OVER ²	
NORTHWEST ARCTIC BOROUGH	
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Industry	1960	1970	1980
Agriculture/For estry/Fisheries	14.8%	1.2%	1.0%
Mining	0.0	4.3	2.0
Construction	6.0	5.8	4.0
Manufacturing	8.4	1.2	
Transportation/Communi- cations/Public Util.	8.8	13.3	13.0
Trade	10.2	11.5	12.0
Insur./Finance/Real Estate	0.0	1.7	1.0
Services	23.9	44.7	44.0
Public Administration	6.0	11.8	23.0
Not Reported	21.8	4.5	0.0
TOTAL	100.0%	100.0%	100.0%

1960 this category is "Nonwhite;" in 1970, "Natives and Others."
 In 1960 and 1970 the age category is 14 years and over.

Sources: U.S. Bureau of the Census.

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Correspondingly, private sector employment as a percentage of all employment fell between 1970 and 1980--from 46.8 percent to 35 percent among Native workers, and from 36.5 percent to 32 percent among non-Natives (Table 2-9). The overall number of private jobs in the region did increase by 59 percent during this period, but the number of public sector jobs grew by 136 percent.

Though approximately two-thirds of the occupational composition of non-Native regional employment remained unchanged from 1960-1980, for the 789 Natives employed in the region in 1980 the proportion of those working in professional and managerial positions increased from 11.8 percent in 1960 to 29 percent in 1980. Native employment in clerical jobs increased even more dramatically, growing from 8 percent to 23 percent (Table 2-5). Accompanying these increases were decreases in the proportions of Natives working as craftsmen and operators and laborers. These shifts represent changes in employment opportunities in the region as well as improvements in educational attainment.

	Total Civilian Nonagricultural Employment	Percent Private Sector Employment	Percent Public Sector Employment
Alaska Natives	<u></u>		· · · · · · · · · · · · · · · · · · ·
1970	393	46.8%	53.2%
1980	789	35.0	65.0
Non-Natives ²			· · · · ·
1970	200	36.5	63.5
1980	412	32.0	68.0

TABLE 2-9 CIVILIAN NONAGRICULTURAL EMPLOYMENT, BY SECTOR PERSONS 16 YEARS OF AGE AND OVER NORTHWEST ARCTIC BOROUGH, 1970 & 1980

In 1970 this category is "Natives and Others."
 In 1970 this category is "Whites and Blacks."

Sources: U.S. Bureau of the Census.

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A major shift in public sector employment also occurred in recent decades. Whereas in 1970 nearly half of all regional employment was with the federal government, by 1988 this proportion had fallen to a modest 6 percent. Local government employment soared from 8 percent to 42 percent over the same time period. The decline in direct federal government employment masks a significant amount of service sector employment supported by federal contracts. Nonetheless, the shift within the public sector from federal to local employment was dramatic. The regional school district contributed to this shift as the largest employer in the region with almost one-third of the entire workforce.

VI. PRUDHOE BAY ERA (1980-PRESENT)

The economy of the Northwest region continued to expand during the 1980s. But the region's population grew even faster. The region's population grew 27 percent, from 4831 in 1980 to 6113 in 1990--with 45 percent of the population concentrated in Kotzebue. All of the region's villages grew during the 1980s; two villages, Ambler and Buckland, doubled in size and reported 1990 populations of 311 and 318 respectively (Table 2-1).

Regional residents continued to expand their control over and participation in the organizations of the region, including education and service entities related to utilities, housing, health care, and social services.

Elected representatives from the region exercised leadership and influence as members of the Alaska State Legislature. They secured many special appropriations for the region, including a vocational and technical center (the Alaska Technical Center, which operates under the NABSD but was initially known

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as the Kotzebue Technical Center) and the Iñupiat Materials Development Center, both in Kotzebue.

NANA continued to expand its presence and employment in the region and to exercise its influence on the region's economic development. Its joint mining venture in the region, the Red Dog mine, began construction in 1987, after many years of negotiations and exploration work. Having secured a long-term future economic tax base, the region voted to incorporate as a borough government. Incorporation was completed in 1988 and included the transfer of the Northwest Arctic School District to the newly formed borough.

This latest transfer of the school district to the borough represented the fourth major restructuring of the region's public school program within the past forty years. Although essentially administrative, the transfer nonetheless represents a significant shift of authority and caused some disruption. That tended to distract from the major business of the organization--education.

Through the initial leadership efforts of NANA, the role of the region's elders was expanded. The formation of the Elders' Council reflected a desire and determination to retain the cultural identity of the region. This desire is also reflected in the efforts and increasing determination to allocate funds to support bilingual and bicultural programs within the school curricula, and for schools to more broadly embrace and integrate into the instructional program the geographic and cultural realities of the region.

One motive for organizing the elders to participate in the major institutions of the region was to try to use their influence to combat the region's growing

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social and personal problems (Table 2-6). By 1980 the number of Native suicides in the region, particularly among young men, had grown to over ten times the state rate for the same age group. Alcoholism is also a widespread problem. Similarly, reports of growing incidents of physical abuse of women and children were also alarming.

Concurrent with these signs of social stress, the 1980s also saw indications of increasing income disparities and significant shifts in labor force participation by both gender and age and major changes in the composition of households.

1. Changes in Personal Income

The median income for Native families in the region--which had increased almost threefold from 1960 to 1970 (from \$1,924 to \$5,763)--continued to gain between 1970 and 1980, moving to \$14,666. Still, by 1980 median income for Native families was still less than half that for non-Native families in the Northwest region (Table 2-3). Native family incomes continued to grow in the 1980s, but exact data from the 1990 census are not yet available.

The distribution of Native family income in the Northwest region changed sharply in recent decades. In contrast to income distribution in 1960, when over half the Native families had annual incomes of less than \$2000, or even in 1970, when the income distribution still clustered at the low end of the income scale, by 1980 many Native families had significantly larger cash incomes (Figure 2-1). Those gains also increased social differentiation within the region. Income disparities were much smaller 20 years ago, when most families of the region had little income. Income gains are attributable to more Natives being in the work

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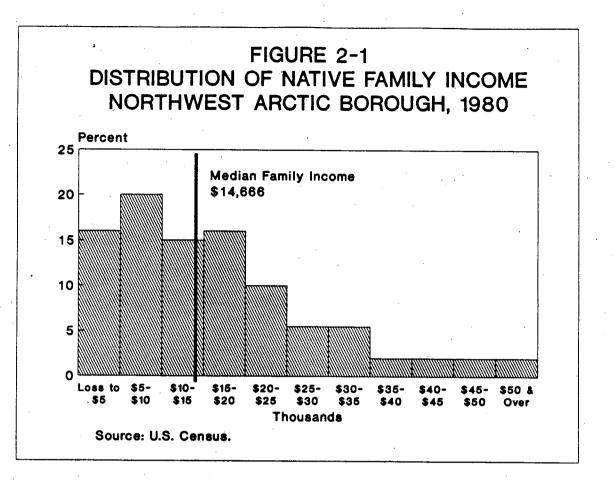
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force and holding higher paying jobs, which also generally require some postsecondary education.

2. Changes in Labor Force

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From 1980 to 1987 the region's working-age population grew at just about the same rate as the number of jobs (Table 2-7). That trend was the reverse of what had happened in the previous decade, when the number of jobs grew almost twice as fast as the population, thereby drawing a bigger percentage of the working-age population into the work force. Between 1980 and 1987 wage employment grew by 121 percent while the working-age population grew slightly more (123 percent). Consequently, as more people join the labor force, unemployment grows.

Public sector spending and public sector employment continued to be the dominant sources of employment and income in the region.

Throughout the 1980s public sector employment and contracting comprised approximately two thirds of total employment. A big share of that public employment in the Northwest region is with the Northwest Arctic Borough School District; in 1988, wages and salaries for school district employees made up an estimated 20 percent of total wages and salaries in the region.

Figures showing how Native employment in public and private jobs changed in the Northwest region in the 1980s aren't yet available from the 1990 census. But data for all workers in the region (whether Native or non-Native) in recent years show that, despite the opening of the Red Dog mine and other private ventures, public sector employment continues to dominate.

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Native employment in the region became increasingly professional and managerial between 1970 and 1980, and we can assume the same trend persisted during the 1980s. Consequently, educators and students confront a work environment which increasingly requires higher levels of education. The increasing numbers of the region's Native population who are filling these professional and managerial jobs provide a measure of the region's educational advancement and of its capacity to meet the local work force needs.

3. Women in the Labor Force

Another change occurring in the region's work force pertains to women. Like women in the rest of the United States, women in Alaska have been entering the labor force in increasing numbers. This has also been true of the Native women of the Northwest region. By 1980, Native women participated in the labor force in almost the same proportion as men--43 percent of women were in the labor force as compared with 46 percent of men. If that trend held during the 1980s, we would expect that by 1990 the share of women in the labor force equalled or exceeded that among men.

Also by 1980, nearly 66 percent of Native women 18 to 24 years of age had graduated from high school, compared with 53.8 percent among men of the same age (Table 2-10). Unless several trends change, more women will enter the labor force; higher percentages of women will graduate from high school; and more women than men will have the higher education required to fill the professional and technical jobs within the region.

Many of those interviewed commented on the increase in the number of women in the work force and the increase in the number of women graduating from high school

and succeeding in college. They speculated that a number of factors are contributing to these trends. The economy of the Northwest region remains a mixed cash and subsistence economy. Different households rely on subsistence and cash to different degrees, so informants speculated that some men may spend more time in subsistence activities. However, research on hunting and fishing activities in the North Slope Borough showed that men who worked either part-time or full-time engaged in more hunting and fishing activities than did men who did not work at all (Kruse 1981:72).

	Percent High So	chool Graduate	Percent College Graduate		
	Northwest Arctic	State of Alaska	Northwest Arctic	State of Alaska	
Male	53.8%	78.3%	2.4%	3.4%	
Female	65.7	80.2	1.4	3.6	
Total	59.6	79.2	1.9	3.5	

TABLE 2-10						
SCHOOL	YEARS	COMPLETED,	PERSONS	18-24	YEARS	OLD
NORTHWES	T ARCT	IC BOROUGH	AND STAT	E OF	ALASKA,	1980

Source: U.S. Bureau of the Census.

Another possibility mentioned is that women's roles have not changed as much as men's with the shift from the subsistence to the subsistence-cash economy, and that women's experience adapts more readily to employment opportunities. In research in the North Slope Borough, Kleinfeld found that women were increasingly moving into the labor market for a number of reasons, including the fact that the many clerical, health, and social service jobs created in recent times were generally seen as women's work; that cultural attitudes did not bar women from working; and that Native women saw jobs as opportunities to broaden their alternatives (1981:17). There are also spotty data that suggest female students are more successful academically, which may facilitate employment success.

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4. Youth in the Labor Force

Table 2-11 sheds some light on the absorption of youth into the labor force as of 1980. The table compares the Northwest Arctic Borough with the state average. It shows that the percentage of youths aged 16 to 19 who were in enrolled in school was roughly comparable--68 percent for the region and 66 percent for the state. But while a bigger proportion of students attended high school in the Northwest region, fewer actually graduated than in the state as a whole.

TABLE 2-11 SCHOOL ENROLLMENT AND LABOR FORCE STATUS PERSONS 16 TO 19 YEARS OLD NORTHWEST ARCTIC BOROUGH AND STATE OF ALASKA, 1980

	Northwest Arctic Borough Number Percent		<u>State of</u> Number	<u>State of Alaska</u> Number Percent	
<u>Enrollment Status</u> Enrolled in school Not enrolled in school Total	323 <u>151</u> 474	68% <u>32</u> 100%	18,670 <u>9,448</u> 28,118	66% <u>34</u> 100%	
<u>Labor Force Status</u> Enrolled in school Employed Unemployed Not in labor force Subtotal	43 15 <u>265</u> 323	13% 5 <u>82</u> 100%	6,023 1,222 <u>11,425</u> 18,670	32% 7 <u>61</u> 100%	
Not enrolled in school, with diploma Employed Unemployed Not in labor force Subtotal	17 12 <u>33</u> 62	28% 19 <u>53</u> 100%	3,587 670 <u>1,573</u> 5,830	62% 11 <u>27</u> 100%	
Not enroll ed in school, without diploma Employed Unemployed Not in labor force Subtotal	2 21 <u>66</u> 89	2% 24 <u>74</u> 100%	1,241 653 <u>1,724</u> 3,618	34% 18 <u>48</u> 100%	

Source: U.S. Bureau of the Census.

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Table 2-11 also reports that 28 percent (17 of 62) of the students from the region who graduated from high school were employed, compared with only 2 percent (2 of 89) among those who had not received diplomas. So overall graduates were 10 times more likely to be employed than those who hadn't graduated. Similarly, high school graduates were much more likely than non-graduates to be in the labor force looking for work (74 percent compared to 53 percent). While these census data indicate that high school graduates were substantially more likely to join the labor force and find employment, it should be noted that the 1980 census appears to have under-reported labor force participation.

The employment rate for high school graduates in the region in 1980 was, however, less than half that among young graduates in the state as a whole (28 percent as compared with 62 percent). Thus, the absorption of the region's young workers into the wage economy significantly lags the state average. This lower rate may indicate that many youths in the region, including high school graduates, are unprepared for jobs.

The growth in wage employment was very robust during the first seven years of the 1980s--121 percent. But both the region's overall population and working-age population grew as fast or faster. This growth pattern effectively halts the progress made during the 1970s toward getting a bigger share of the region's working-age population into the labor market If it continues, it will begin to reverse that progress. Nonetheless, by 1987 one of every 3.4 persons worked for wages in the Northwest region, a strong improvement from 6.3 in 1970. And the average number of wage earners per household increased from .8 in 1970 to 1.2 in 1987.

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5. Problems in the Labor Force

Key informants among the region's largest employers report that labor shortages, employee turnover, and employee absenteeism and tardiness are the three most common work force problems in the region. Notwithstanding low rates of labor force participation and high rates of unemployment, these employers consistently reported difficulty in hiring and retaining workers. The worker shortage applies to both entry level and professional workers. Below we discuss employee problems reported by individual employers and ways they have attempted to resolve these problems. In the final section of the chapter, "Outlook for Education and Its Contribution to the Region's Workforce," we discuss some of the possible reasons for these problems.

The National Guard indicated it faces stiff competition from other regional organizations to hire the most qualified Alaska Natives. Service organizations report having to contract for services to outside companies because qualified service workers are not available locally. Even airline companies and retail stores report difficulty in hiring and retaining entry level workers.

Regional retailers who have as many 30 to 35 entry level positions report having to hire between 100 and 150 workers each year to fill those positions. They indicate entry level workers often work only a few weeks before quitting the job or being fired.

One employer noted, "They really don't know what's expected when they go to a job." This lack of knowledge about the work place has led a few employers to establish intensive orientation programs for new hires. Other employers, because

of the high turnover within the first few weeks of employment, wait a while after an employee has been hired before offering orientation programs.

Other employers mentioned that the quality of supervision could also be contributing to labor turnover. A number of employers believe that many supervisors--whether Native or non-Native--are ineffective. Non-Native supervisors may not relate effectively with Native employees, and Native supervisors may be uncomfortable in exercising supervisory responsibilities. Also, promotion of persons who are untrained in supervisory responsibilities and functions creates dissatisfaction among employees. That dissatisfaction is exacerbated when new employees are recent college graduates with more formal training but less experience than the supervisors.

The relatively small pool of qualified and dependable employees creates competition for them among regional employers. This, in turn, contributes to the problem of work force turnover. Several service organizations reported that their wage and benefit packages were not competitive with public sector salaries and therefore they were reassessing their compensation plans. Some employers indicated that they tolerated poor work practices--such as employees failing to notify them when they couldn't come to work--because they were not confident of being able to hire more reliable replacements. In doing so they penalize good workers who have to pick up the slack of the absent or tardy worker. Similarly, employers acknowledged that they reinforced the employee turnover by hiring workers who have work histories of quitting jobs. Failure to come to work was the most frequently cited reason for terminating employees.

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Most employers associated poor attendance with the schools' failure to train students in dependability. Several employers interviewed reported they had instituted orientation programs for new employees that specifically emphasize the importance of dependability and punctuality. Several attributed employees' poor attendance to cultural differences, noting that traditional activities were governed more by the seasons and migrations than by the clock.

Several employers interviewed said they were also working to accommodate employees' need for time off. One informant who had worked on a rotating schedule claimed that being away from his family for eight weeks was burdensome. One manager said he had instituted a flexible work schedule, provided employees gave adequate notice and their responsibilities were covered.

Cominco, owner of the newly opened Red Dog mine, is trying to structure the rotational work schedules at the mine to maximize local hire. In a survey of mine workers, the company found, "three in four favored a four-week-on, two-week-off schedule to working for two weeks and taking the next two weeks off, mainly for financial reasons." (Mark Baumgartner, <u>Anchorage Daily News</u>, 7/21/90.) So it is apparent that the issue of accommodating lifestyle preferences and work roles is complex. (See Chapter 5, Section V.1, for full discussion of Red Dog employment arrangements.)

Employers also reported that employees' personal and family problems hurt their job performances, with many employees finding it hard to keep their personal and family problems from interfering with their work. Employers report that many employees feel personally torn between loyalties to their work and to their

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families, and some employers (at least in Kotzebue) have made assistance available to help employees cope with this stress.

"People have got to believe in themselves. . . to know that they're respected . . . that there's hope for the future" was a view expressed by one employer and seconded by many others. Employers indicated the workers' feelings of low self-esteem and pessimism affect their productivity and that conversely, high productivity contributed to feelings of high self-esteem.

Kotzebue employers noted that employees hired from the region's smaller villages tended to be shyer than their Kotzebue counterparts but that apart from the shyness their work habits were similar. (The opportunities for first-time employment are more limited in the smaller villages than in Kotzebue, which accounts for some of the observed shyness.) The two most significant differences employers see among workers are those of generation and gender.

Employers consistently reported that older workers were more dependable than younger workers. As one employer observed, older and longer term workers "all seem to have a very stable life outside the work environment. They're married. They have roots. They have a responsibility to provide for a family."

Regional **employers** also view women as more dependable workers then men, particularly among the younger generation. One employer noted that women tended to be more expressive during interviews and more ready to ask questions and seek advice, whereas men tended to be reluctant to speak and ask questions. These traits are also associated with success in school, and may partially explain why young women appear to do better in school then young men. Skill associated with

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job interviewing success--such as selling oneself, recounting achievements, and being assertive--were not traditionally valued behaviors.

Based largely on the observation that older workers tend to be better workers, many employers believe young people are leaving school generally unprepared for work. Employers described much of this lack of preparedness as lack of discipline. Older employees may have been the products of stricter boarding school educations. Others may have been in the military, or worked outside the region, where they became accustomed to meeting the expectations associated with jobs. Most informants expressed the belief that schools could play a more significant role in training students to be more responsible. Many also said the schools need to teach basic skills expected of employees, rather than assuming these skills will be taught at home.

6. Educational Attainment and School Enrollment

If better educated parents tend to encourage educational achievement in their children, then the Native children of the Northwest region have significant disadvantages as compared with non-Native children of the region or with the majority of Alaska's children.

By 1980, the median years of educational attainment among the Native adult population over the age of 25 had grown to 8.8 years, with 26 percent of the population having four years of high school and an additional 8.5 percent having some college--which still fell far short of educational levels among non-Natives (Table 2-2). However, the higher levels of education among non-Natives are not unexpected, considering that many of them move to the region to take professional jobs. Although the 1990 census data on educational attainment are not yet

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available, those data will undoubtedly reflect a significant and continuing improvement in the overall school grade level attainment in the Northwest region.

Table 2-12 shows that in 1980 the percentage of 16- and 17-year-olds and 18- and 19-year-olds attending school in the Northwest region actually exceeded the state averages. Similarly, the proportion of Northwest children enrolled in nursery school and Head Start programs was also larger than the state average.

TABLE 2-12PERCENT ENROLLED IN SCHOOL BY AGE. 1970 AND 1980

	NORTHWEST ARCTIC BOROUGH AND STATE OF ALASKA							
	3-4 Years	5-6 Years	16-17 Years	18-19 Years				
<u>Northwest Arctic</u> 1970 1980	29.0 47.8	80.5 94.2	87.5 89.6	62.0 44.2				
<u>Alaska</u> 1970 1980	13.9 31.2	77.2 85.0	86.0 87.3	39.0 37.5				

Source: U.S. Bureau of the Census.

Although comparable statistics from the 1990 census are not yet available, the pattern of enrollments throughout the 1980s suggests that the rate of school participation has remained at the 1980 levels, with possible erosion in the high school participation rates. Graduation rates have fluctuated sharply over the past decade, as Table 2-13 shows. The proportion of 18-year-olds graduating from high school in the Northwest region appears to have hit a low point in the early 1980s, peaked in 1986, and fluctuated but been mainly down since then.

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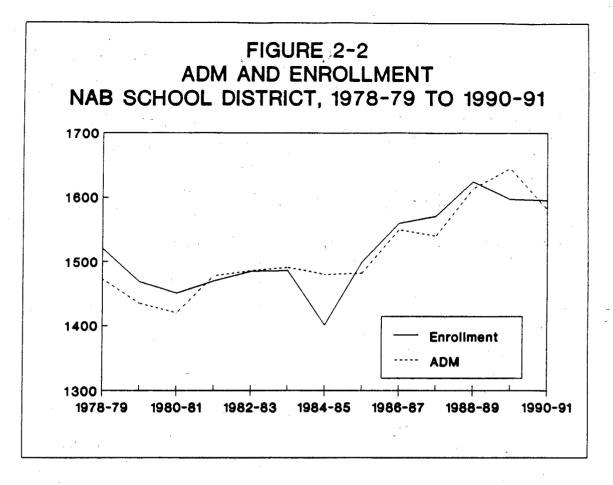
TABLE 2-13NUMBER OF HIGH SCHOOL GRADUATESNORTHWEST ARCTIC BOROUGH SCHOOL DISTRICT, 1979-1989

		Total	Graduates
	Number of	18-Year-	as Percent
	Graduates	01ds	of Total
1 979	83	121	69%
1980	73	· · 101	72
1981	52	123	42
1982	59	122	48
1983	109	141	77
1984	107	135	79
1985	82	119	69
1986	89	101	88
1987	71	73	79
1988	76	101	75
1989	71	118	60
1990	65	97	67

Sources: For 1979-89 graduate data: Alaska Department of Education; for 1990 data: Northwest Arctic Borough School District. Number of 18 year olds estimated from 1980 Census data.

Table 2-14 shows total regional school enrollment from 1978-79 through 1990-91. From 1980 to 1989, school enrollment increased 19 percent, while the region's total population grew by 27 percent. Figure 2-2 graphs the increase in enrollment in Northwest schools.

Percentage increases in school enrollments among the region's various villages varied sharply over the past decade. Table 2-15 shows that three villages are so small they continue to have consolidated kindergarten through high school programs, while the other eight villages are large enough to have separate elementary and secondary schools. Among the smallest villages, Ambler's enrollment grew from 73 students in 1979-80 to 118 by 1989-90, but school enrollments in Deering and Shungnak grew only modestly over the decade.



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TABLE 2-14

School Year	ADM	Enroll- ment	Kinder- garten ¹	Pre-Ele- mentary
1978-79	1,473	1,521	107	2
1979-80	1,435	1,469	115	2
1980-81	1,420	1,451	121	1
1981-82	1,478	1,470	140	3
1982-83	1,486	1,485	121	0
1983-84	1,491	1,486	134	1
1984-85	1,480	1,401	145	9
1985-86	1,482	1,499	155	Ö
1986-87	1,550	1,560	161	NA
1987-88	1,540	× 1,571	165	171
1988-89 ³	1,614	1,625	177	159
$1989 - 90^3$	1,646	1,598	143	178
1990-913	1,582	1,596	158	202

AVERAGE DAILY MEMBERSHIP (ADM) AND ENROLLMENT NORTHWEST ARCTIC BOROUGH SCHOOL DISTRICT, 1978-79 to 1990-91

1. Kindergarten is included in the ADM calculations and in the enrollment totals. Pre-elementary is not included in either.

2. Included in kindergarten.

3. Ten students from the district attended Mount Edgecumbe High School in 1988-89 and 1989-90; eleven attended in 1990-91.

Sources: Alaska Department of Education; Mt. Edgecumbe High School.

Enrollments in all district elementary schools grew during the 1980s, and both Buckland's and Selawik's more than doubled. In sharp contrast, high school enrollments declined in all villages except Buckland. Overall, high school enrollments within the region declined by approximately 24 percent over the past ten years, mainly due to shrinkage in the high school age cohort. But the significant growth in numbers of elementary school students, shown in Table 2-16, suggests that unless many leave the region before they reach high-school age, regional high-school enrollments will significantly increase within the next five to ten years.

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TABLE 2-15 ENROLLMENT AND CERTIFIED PERSONNEL NORTHWEST ARCTIC BOROUGH SCHOOLS, 1979-80, 1987-88, 1988-89, 1989-90

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		1979		<u> </u>		1988		1989	-90 ¹
Call 4 3	• •	Enroll-		Enroll-		Enroll-	Cert.	Enroll-	
School	<u>Grades</u>		Pers.	<u>ment</u>	<u>Pers.</u>	ment	Pers.	ment	Pers.
Alternative Learning Center	K-12	NL	NL	4	1	4	1	0	
Ambler School	K-12	73	8	92	7	100	10	118	<u>ā</u>
Buckland Elementary	K-6	37	5	56	6	61	7	80	ž
Buckland High	7-12	22	1	36	Ĩ	39	2	37	2
Deering School	K-12	48	5	48	5	55	ñ	52	6
Kiana Élementary	K-6	51	5	71	5	74	Ř	78	6
Kiana High	7-12	59	5	56	5	52	Ă	54	Å
Kobuk School	K-8	16	ī	19	2	12	2	26	
Kotzebue Elementary	Pre-6	316	27	268	21	369	27	438	27
Kotzebue Junior High ²	5-8	107	.17	168	15	100	13	430 91	21
Kotzebue High	9-12	205	7	143	10	147	12	132	10
McQueen Elementary (Kivalina)	Pre-6	37	Á	55	10	46	12		19
McQueen High (Kivalina)	7-12	52	5	35	2	33	5	64	2
Noatak Elementary	K-6	51	· F	46	2	52	37	40	3
Noatak High	7-12	42		40	5	52	/	61	6
Noorvik Elementary	K-6	80	4		4	39	<u>3</u>	40	2
Noorvik High	7-12	90	0	98		100	/	120	9
NU Anctic Dictrict Wide/Comm	7-12		8	55	4	55	6	57	5
NW Arctic District Wide/Corr.	8-12	NL	NĻ	44	2	35	3	26	8
Selawik Elementary	K-6	63	/	115	10	122	12	127	10
Selawik High	7-12	84	9	60	3	69	3	62	3
Shungnak School	K-12	61	9	62	6	61	7	73	6
District Office			17		14		17		8
TOTAL		1,494	157	1,571	138	1,625	166	1,776	152

Note: "NL" means "not listed."

Not included are ten district students who attended Mount Edgecumbe in 1988-89 and 1989-90.
 Kotzebue J.H. consisted of grades 7-8 in 1979-80, grades 5-8 in 1987-88, and grades 7-8 in 1988-90.

Sources: Alaska Department of Education; Mount Edgecumbe High School.

TABLE 2-16ELEMENTARY AND HIGH SCHOOL ENROLLMENTNORTHWEST ARCTIC BOROUGH SCHOOL DISTRICT1960, 1970, 1980 & 1990

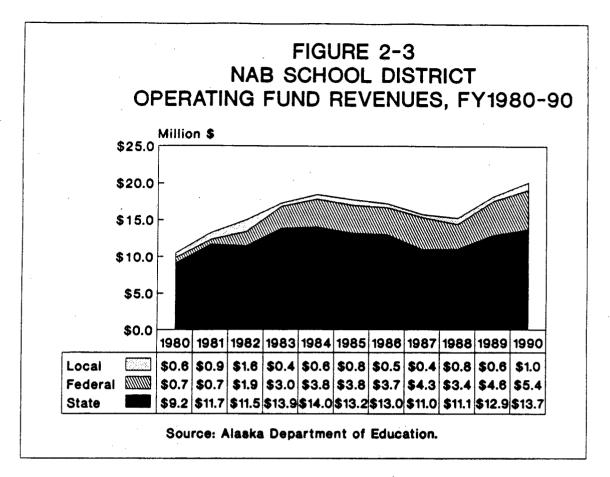
Year	Elementary Gr. 1-8	High School Gr. 9-12	Tota] Gr. 1-12
1960	820	73	893
1970	1,076	350	1,426
1980	848	514	1,362
1990	1,071	378	1,449

Sources: U.S. Bureau of the Census (1960-1980 data); Alaska Department of Education & Mount Edgecumbe High School (1990 data).

7. School Finance and Program Changes

Figure 2-3 graphs the relative contributions of state, federal, and local governments to Northwest public schools in the 1980s. The proportional contributions remained relatively constant through 1986. In 1987 the state experienced a major loss of oil revenues and dramatically reduced state spending--including spending for education in the region. The combined effect of the decline in the state's contribution and the modest increase in the federal contribution was a shift in the proportional contributions, with the federal share increasing and the state share declining. The local government share has remained relatively small and constant throughout the 1980s.

Both the composition and the pattern of educational expenditures within the region over the past ten years reflect the amount of funding appropriated by the state legislature and the allocation of expenditures among various categorically funded programs such as special education, vocational education, bilingual/ bicultural programs, and correspondence study. Table 2-17 summarizes the region's public school expenditures since 1980. It reveals a significant



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	(\$1000S, except ADM in units)										
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Instructional Progra	am										
Regular	\$3,358		\$5,187	\$5,472	\$6,199	\$6,308	\$6,135	\$4,884	\$5,723	\$5,717	\$6,279
Vocational Education				1,063				605	418	344	351
Correspondence Study		88	104	121		190		190	183	181	150
Special Education	412	517	630	585	875	875	853	695	860	998	
Gifted/Talented'	0		0	0	0	0	-	O	40	64	
Bilingual, Bicultura			312			461		438		483	602
Subtotal	4,740	6,051	7,223	7,731	8,865	9,010	8,555	6,812	7,691	7,787	8,753
<u>Other Support</u>	2,606	3,569	3,938	3,616	4,187	4,352	3,670	2,997	3,288	3,317	3,807
Other Expenditures							· · · ·	١			
<u>& Transfers</u> O & M	2,866	3,547	3,711	3,400	4,694	4,687	4,496	4,249	4,092	3,877	4,428
Pupil Activity	Ū Ū	•	0	•		0		201	314	418	
Other ²	177	280	304	619	552	519		725		1,746	
Subtotal	3,043		4,015			5,206		5,174		6,041	
TOTAL	\$10,388	\$13,447	\$15,176	\$15,366	\$18,327	\$18,568	\$17,199	\$14,983	\$15,556	\$17,145	\$18,008
Average Daily Membership	1,435	1,420	1,478	1,486	1,491	1,480	1,482	1,550	1,540	1,614	1,646
Expenditure per ADM	\$7,239	\$9,470	\$10,268	\$10,340	\$12,292	\$12,546	\$11,605	\$9,667	\$10,101	\$10,622	\$10,940
1. The Gifted/Talent 2. Includes expendit						s, Food	Service,	Special	Revenue	Funds,	transfer

TABLE 2-17 NORTHWEST ARCTIC BOROUGH SCHOOL DISTRICT OPERATING FUND EXPENDITURES FY 1980-FY 1990 (\$1000s, except ADM in units)

2. Includes expenditures and transfers for Community Services, Food Service, Special Revenue Funds, transfers to other funds, and other transactions.

Source: Alaska Department of Education.

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fluctuation of funding over the past ten years. Expressed in expenditures per student (per average daily membership or ADM), the region saw a 76 percent increase in spending between 1980-84, a 19 percent decrease between 1985-87, and a 20 percent increase between 1987-90.

Although the state doesn't maintain data on the relative increase in the cost of education by geographic region, the overall rate of inflation for the state over the decade was about 27 percent. Adjusting current expenditures for this overall inflation reveals that current spending per pupil (ADM) is about the same as it was in 1982, or about 12 percent above what it was in 1980.

Table 2-17 also reveals several shifts in the composition of educational expenditures within the region. First, the percentage of the total expended for instruction increased from 46 percent in 1980 to 49 percent in 1990, with a corresponding decline in expenditures for operations and maintenance--from 28 percent to 25 percent.

The types of instructional programs funded also shifted over the decade. Expenditures for vocational education were cut in half, while spending for both special education and bilingual/bicultural programs increased more than threefold. By 1990, spending on bilingual/bicultural programs represented almost 10 percent of all instructional spending--reflecting a major new educational emphasis in the Northwest region over the past ten years.

Table 2-18 reflects other shifts in the educational priorities of the region over the past ten years. It compares changes in the pupil-teacher ratio (PTR) in elementary and high schools from 1979 to 1989. First, it reveals variation in

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TABLE 2-18NORTHWEST ARCTIC BOROUGH SCHOOL DISTRICTPUPIL/TEACHER RATIO ANALYSIS1, 1979-80 & 1989-90

•	1979-80			1989-90			
	Enroll- ment	Teachers	Pupil/ Teacher Ratio	Enroll- ment		Pupil/ Teacher rs Ratio	
High Schools	·						
Buckland	22	1	22.0	37	. 2	18.5	
Kiana	59	5	11.8	54	.4	13.5	
Kivalina	52	5	7.4	40	3	13.5	
Kotzebue	312	24	13.0	213	23	9.3	
Noatak	42	4	10.5	40	23	20.0	
Noorvik	90	8	11.3	57	2	11.4	
Selawik	84	9	· 9.3	62	5 3	20.7	
Subtotal	661	58	11.4	503	42	12.0	
Elementary Schools ²							
Buckland	37	5	7.4	80	7	11.4	
Kiana	51	5 5	10.2	78	6	13.0	
Kivalina	37	4	9.3	64	5	12.8	
Kotzebue	316	27	11.7	438	27	16.2	
Noatak	51	5	10.2	61	6	10.2	
Noorvik	80	5 8	10.0	120	9	13.3	
Selawik	63	7	9.0	127	10	12.7	
Subtotal	635	61	10.4	968	70	13.8	
Total	1,296	119	10.9	1,471	112	13.1	

Excludes combined schools in Ambler, Deering, Kobuk, and Shungnak.
 1989-90 enrollment excludes 178 pre-elementary students district-wide.

Source: Alaska Department of Education.

village PTRs in different time periods and in high school and elementary programs--although for several villages, that variation may reflect an arbitrary allocation of teachers to either high school or elementary school. So, for example, Buckland in 1979 had the highest PTR for the high school and the lowest for the elementary school. However, overall the district allocates teachers to villages on the basis of total K-12 enrollment, amd the local schools and school advisory councils determine the allocation between elementary and secondary programs.

Also, the table shows that PTRs for both high school and elementary school programs increased over the decade, reflecting both fewer resources and possibly some economies of scale. The regional PTR for elementary programs exceeded that of high school programs in 1979--but by 1989, high school PTRs exceeded elementary PTRs. Again, that shift partly reflects economies of scale associated with large increases in elementary enrollments.

A significant decrease in the Kotzebue high school PTR relative to that of the other villages also likely reflects enrollment losses and organization of high school programs.

Complementing the public elementary and high school programs in two communities--Noorvik and Selawik--are federally funded Head Start programs which have been operating for the past two to three years. Currently Noorvik has 17 children in its Head Start program--largely three-year-olds, since the school district offers a pre-kindergarten program. Selawik has 19 Head Start children enrolled. While all villages within the region are eligible for Head Start, available federal funding with some matching state funds has limited the program to these two

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villages. Should federal Head Start funding increase, it is likely other villages within the region would opt to offer the program. Unfortunately, there has been no research on the effectiveness of Alaska's Head Start programs. Nonetheless, educational researchers argue that such programs do help children in their learning readiness and in their subsequent achievement.

In recent times, the percentage of school age population attending school in the Northwest region roughly equaled that in other public school districts in Alaska. (We have no figures from the 1990 census yet.) Attendance rates among pre-school and kindergarten age students in the Northwest region exceeded the state average in both 1970 and 1980 because the region had unusually well-funded preschool programs. Almost half of the Northwest's three- and four-year-olds were reported to attend school in 1980--a rate almost three times that of the state. Table 2-19 shows that the district had 202 pre-elementary students enrolled during the 1990-91 school year. Even among 16- and 17-year-olds, regional attendance in the Northwest exceeded the state average. Among 18- and 19-year-olds, the region's enrollment rates in 1980 were equivalent to those of the state as a whole, but were down from the previous decade.

In the 1984-85 school year, the region adopted a pre-kindergarten program which operates in each of the villages and partially explains the significant increase in elementary age enrollments. It also reflects a decision to introduce children to the school program earlier and is a practical measure toward expanding early childhood education. It is a deliberate strategy to compensate for the disadvantaged socioeconomic backgrounds of Northwest students. Most school districts in Alaska don't offer pre-kindergarten programs. Presumably the 1990

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census report will reveal that the percentage of three- and four-year-olds attending school is close to the 1980 kindergarten level.

IORTHWEST ARCTIC BOROO	an School District
Grade Level	Enrollment
Pre-elementary	202
Kindergarten	158
Grade Öne	148
Grade Two	164
Grade Three	146 +
Grade Four	140
Grade Five	137
Grade Six	123
Grade Seven	116
Grade Eight	97
Grade Nine	134
Grade Ten	88
Grade Eleven	81
Grade Twelve	64
Total	1,798

TABLE 2-19 CLASS ENROLLMENTS, 1990-1991 NORTHWEST ARCTIC BOROUGH SCHOOL DISTRICT

Source: Alaska Department of Education.

8. Post-Secondary Education

At the other end of the educational spectrum, the region also offers a small post-secondary program as part of the University of Alaska. Chukchi College enrollments have fluctuated over the past five years from a high of 61 full-time equivalent students to a low of 19. Table 2-20 summarizes the enrollment patterns by level of course. It reveals a shift away from vocational courses toward general education, almost all of which is at either lower division or developmental levels.

Chukchi College is funded at about one million dollars per year. Thus, the annual cost per full-time equivalent (FTE) has averaged \$35,000 over the 1986-

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1989 period, or about three times the comparable costs for the elementary and secondary school programs. Since 1983 the college has awarded an average of five associate of arts degrees per year, indicating that most of the students enrolled do not pursue or complete degree programs. A college official reported that the "typical" graduate took eight years to complete the Art degree program. Figure 2-4 presents the number of degrees awarded by year.

TABLE 2-20 CHUKCHI COLLEGE ENROLLMENT, 1985-1989 FULL-TIME EQUIVALENT STUDENTS

1985	1986	1987	1988	1989
44 1			. 1900	1303
44.1	21.7	10.2	19.0	36.0
4.8	1.8	0.0	2.2	5.0
39.3	19.9	10.2	14.1	21.2
0.0	0.0	0.0	2.7	9.8
17.3	10.9	8.9	7.1	2.2
17.3	10.9	8.9	6.5	2.2
0.0	0.0	0.0	0.6	0.0
61.5	32.7	19.1	26.0	38.2
4.8	1.8	0	2.2	5.0
56.7	30.9	19.1	20.5	23.4
0	0	0	3.3	9.8
	4.8 39.3 0.0 17.3 17.3 0.0 61.5 4.8 56.7	4.8 1.8 39.3 19.9 0.0 0.0 17.3 10.9 17.3 10.9 0.0 0.0 61.5 32.7 4.8 1.8 56.7 30.9	4.8 1.8 0.0 39.3 19.9 10.2 0.0 0.0 0.0 17.3 10.9 8.9 17.3 10.9 8.9 0.0 0.0 0.0 61.5 32.7 19.1 4.8 1.8 0 56.7 30.9 19.1	4.81.80.02.239.319.910.214.10.00.00.02.717.310.98.97.117.310.98.96.50.00.00.00.661.532.719.126.04.81.802.256.730.919.120.5

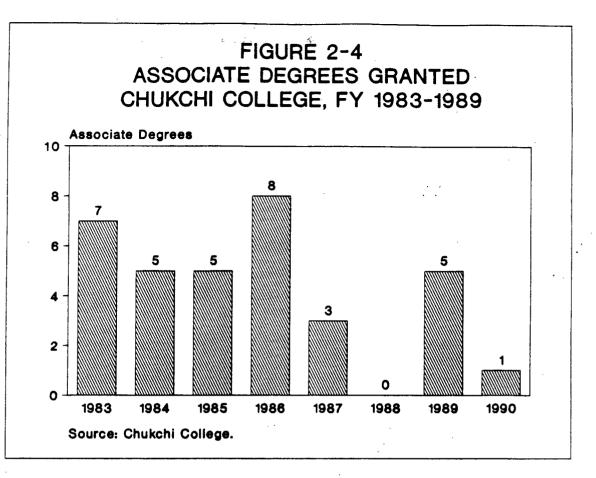
Source:

University of Alaska System of Higher Education, Office of Institutional Research, Statistical Abstract 1990.

Chukchi College officials also report that the overwhelming majority of students are women, and that of the 36 graduates to date, only 4 have been men. Other educators in the region report that among Northwest students enrolled in college, women outnumber men by about three to one.

The shift away from vocational training at Chukchi College may in part reflect the increasing numbers of adults enrolled in the Kotzebue Technical Center, which played a major role in 1989 in preparing about 90 of the region's shareholders

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for jobs with the Red Dog mine. More recently, many of the regions's shareholders seeking specialized vocational training have attended the Alaska Vocational Technical College in Seward. In contrast to Chukchi College's students, the great majority of trainees and mine workers are men.

Under a recent grant from the U.S. Department of Education's "Vocational Education Indian Program," 94 of NANA's shareholders who work at the mine are receiving on-the-job training. Officials report that older trainees in particular have some language comprehension problems. But overall, mine supervisors express satisfaction with the job performance of the region's workers, and job turnover has been significantly reduced since the mine opened. Approximately 60 percent of the mine's more than 300 employees are Natives of the region.

However, while significant numbers of the region's male adults are getting the training they need for entry level and semi-skilled jobs at the Red Dog mine, relatively few have the qualifications necessary for the various professional and technical jobs associated with the mine. Such jobs make up almost 30 percent of all the jobs created by the mine. These professional and technical jobs require college educations, often in specialized fields of study. This pattern of regional residents being concentrated in jobs at the entry and semi-skilled levels also holds in health and education industries.

And key informants report that there is a shortage of qualified entry level workers in the region--which has increased worker turnover and driven up entrylevel wages. High-school advisors report that fewer students, particularly males, were enrolled in college in 1991 because of the opportunity to earn high

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wages at the Red Dog mine. The average age of Native workers at the mine is 20 to 25. So, while attracting high-paying jobs may have the unintended effect of discouraging young people, especially males, from pursuing higher education.

Comprehensive data on the proportion of high school graduates who go on to college are not available. But key informants cited several long-term trends that are reinforced by the limited data that is available for recent years. First, as more students attended and completed high school in recent times, both the absolute number and the percentage of high-school graduates who elected to go on to college also increased. Second, growing numbers of students enrolled in college are succeeding academically and are continuing beyond their first year.

A third trend is that significantly more of the region's young women than men elect to go to college. Further, reports by the school district on its graduates attending the University of Alaska Fairbanks also show women earning better grades than men. Finally, while both college enrollments and the number of upper-division students are increasing, the number of college graduates continues to be just a few per year.

Northwest Arctic Borough School District figures show that 23 of the region's 76 graduates from the 1989 class enrolled in college programs in the fall after graduating. Two thirds of those students chose to attend the University of Alaska Fairbanks. The school district's student advisors report that historically most of its high-school graduates have opted to attend the University university at Fairbanks. Several graduates have chosen to attend the University

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of Alaska Anchorage or Sheldon Jackson College in Sitka, and a few have chosen colleges outside Alaska.

Table 2-21 presents a profile of Northwest high-school students attending the University of Alaska Fairbanks in the spring semester over the past few years. (By spring semester, two of those who had enrolled in the fall semester had already dropped out.) Although these figures fluctuate somewhat from year to year, overall they support the long-term trends cited above.

TABLE 2-21

NABSD	GRADUATES	ENROLLED	AT UNI	VERSITY O	F ALASKA	FAIRBANKS
	BY CLA	SS RANK,	SPRING	SEMESTER	1986-198	9

	Spring 1986	Spring 1987	Spring 1988	Spring 1989
Number of H.S. Graduates	82	89	71	76
Number of Freshmen Percent of H.S. Graduates	11 13%	13 15%	9 13%	13 17%
Number of Sophomores Percent of Prior Year's Freshmen	3 NA	6 55%	3 23%	5 56%
Number of Juniors Percent of Prior Year's Sophomores	2 NA	8 267%	4 67%	2 67%
Number of Seniors Percent of Prior Year's Juniors	5 NA	5 250%	8 100%	4 100%
Total Number of UAF Enrollees	21	32	24	24

Source: Northwest Arctic Borough School District.

Academic preparedness to do college level work and to compete favorably with non-Natives continues to be an unresolved issue for many of the region's Native high school students. In 1985, a school district advisor tested 24 college bound

students from six Northwest villages and found their composite ACT test scores to be 11 compared with composite scores of 18 for incoming college freshmen at the University of Alaska Fairbanks. (The maximum ACT score is 36.) Thus, many of the region's college bound students are disadvantaged academically. One local educator interviewed held the opinion that "kids flunk or get kicked out of college because they are not academically prepared."

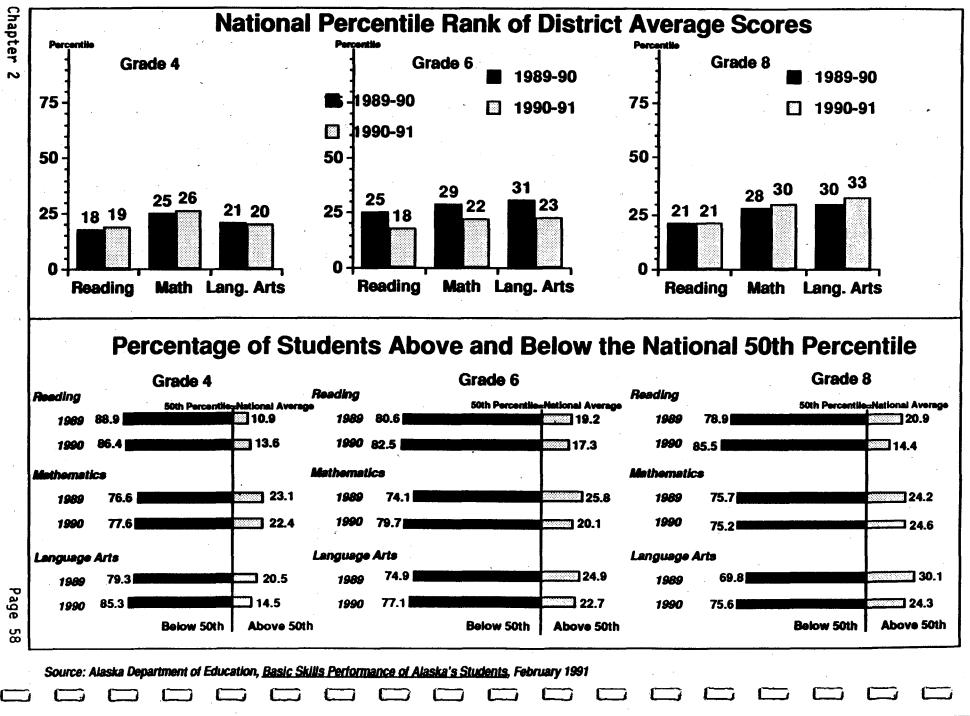
The problem of academic preparedness applies to success in high school as well as in college. Evidence of inadequate academic preparation is at least partly reflected in the standardized testing program the State of Alaska has recently mandated for its school districts. All school districts test students at three grade levels--fourth, sixth, and eighth grades.

Figure 2-5 reveals that all three grade levels within the Northwest region tested roughly between the 18th and the 30th percentile levels nationally on the three subject matters tested. The test scores combined results for Native and non-Native students. At all three grade levels and for all three subjects, more than three quarters of Northwest students scored below national averages. Of the three subjects tested, students did worst in reading and somewhat better in math. Fourth grade students tested lower relative to national averages than sixth and eighth graders.

Table 2-22 shows that test scores of Northwest Arctic students are not dramatically different from those of students in neighboring predominantly Native school districts but are far below the statewide average. These low scores suggest that Native students are likely to be disadvantaged when competing with higher scoring non-Native students. And by implication, the quality of the

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FIGURE 2-5 NATIONAL PERCENTILE RANK NABSD AVERAGE TEST SCORES



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regional work force will also be disadvantaged when competing with outside workers.

TABLE 2-22

STANDARDIZED TEST SCORES, SELECTED ALASKA SCHOOL DISTRICTS 1989-90 SCHOOL YEAR

(PERCENTAGE OF STUDENTS BELOW THE NATIONAL 50TH PERCENTILE)

School District	Grade 4	Grade 6	Grade 8
Northwest Arctic Schools			
Reading			
Below 50th	88.9	80.6	78.9
Math			
Below 50th	76.6	74.1	75.7
Language Arts			
Below 50th	79.3	74.9	69.8
North Slope Borough Schools []	IJ		
Reading	~ ~ ~	~ ~ ~	70 0
Below 50th	80.3	69.3	72.3
Math	77 4	54.0	70.0
Below 50th	77.4	54.0	72.3
Language Arts	54.8	53.4	64.3
Below 50th Bering Strait Schools	54.0	53.4	04.3
Reading			
Below 50th	81.7	82.3	82.0
Math	01.7	02.5	02.0
Below 50th	79.1	73.5	82.0
Language Arts	13.1	, 5.5	02.0
Below 50th	61.5	65.0	60.2
Alaska Statewide Total	01.0	00.0	00.2
Reading			
Below 50th	46.5	41.3	42.0
Math			
Below 50th	45.0	45.2	42.7
Language Arts			
Below 50th	50.2	44.1	44.0

1. Test results for Grade 3, 5, and 7 tested in the spring of 1990.

Source: Alaska Department of Education, Office of Data Management. Basic Skills Performance of Alaska's Students, 1991.

VII. SUMMARY OF FINDINGS

Before we move into our concluding discussion of the outlook for education and its potential future contribution to the Northwest work force, below we summarize

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trends in school control and curricula, in educational attainment, and in economic conditions in the Northwest region during the four development eras we've examined.

Overall we've seen that in the past 40 years, education in the Northwest region improved in several important ways: Native adults became on average much better educated; the state government established high schools in all the villages; local residents gained more control of schools; and bilingual and bicultural programs reflecting language and traditions of Native people became a part of school curricula. Unfortunately, there is no comprehensive, reliable information on the efficacy of the new and special programs that have been added in recent years.

The improvements in education accompanied growth in the regional economy. In part because they were better educated, Natives were able to take advantage of the many new and better jobs created in the region. Increasing numbers of Native adults joined the work force, and some were able to move into professional and managerial jobs that had once been held almost exclusively by non-Natives. More and more women were able to get jobs.

In large part increasing state affluence was responsible for both economic growth and improved education in the Northwest region. As state income grew in the 1970 and 1980s, the state government had more to spend in rural areas. More state money in the Northwest region meant not only more services--including improved education--but also more jobs.

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NANA has become another important contributor to regional employment since the 1970s. NANA has been committed to hiring local residents and to making NANA shareholders more competitive in the work force by improving education in the region. (See also discussion in Chapter 1, Section III.2.c.)

Despite the very substantial improvements in both the economy and education in the Northwest region, there are signs of serious problems in how well Native youths are being prepared to move into the work force. Lack of data from the 1990 U.S. census hampers our ability to compare trends of the 1980s with those of earlier years.

But there are indications of trouble. Very low scores on national standardized tests indicate that Northwest youths will be at a disadvantage when looking for jobs. Numbers of students graduating from high school have dropped in recent years, and there are signs that enrollment in high school may also be declining. Key informants in the region believe numbers of high-school dropouts are increasing. Young men in particular seem to be failing to graduate. A number of employers in the region described younger workers--again, particularly young men--as less reliable than older workers and in many instances poorly prepared for the working world.

Compounding the potential problems for the Northwest region is the looming state fiscal crisis. As petroleum revenues decline in the coming years, the state government will likely cut back spending--including spending in the Northwest. That region relies very heavily on state money. How much private development could offset losses in public spending is uncertain. What seems clear is that the Northwest Arctic Borough School District will need to do more with what it

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has. We now turn to an analysis of the major issues the Northwest schools face in trying to prepare youths for the work force, and an assessment of what the schools are already doing and what more they might do to resolve those problems.

VIII. OUTLOOK FOR EDUCATION AND ITS CONTRIBUTION TO THE REGION'S

WORKFORCE

The recent historical experience of the region reveals an important relationship between education and work. As the region's schools offered more education and the number of local jobs increased, the Native people became better educated and were able to get more and better jobs. However, the fact that the region has in the past and continues to import a high proportion of its professional and technical work force suggests that other factors also influence this nexus of education and work.

Future advancements in educational attainment and employment for the people of the region will depend on the quality of the schools and the nature of available jobs--which in turn depend on future state and federal support for education and for other public services.

However, both data on high school graduation and youth employment reinforce employers' concerns that many young people, particularly young Native men, are less active and successful in the work place than older workers. The region's employers, educators, and students reported a high degree of consensus on the major problems confronting students and schools and limiting students' ability to realize their academic potential. These problems clustered around five major issues discussed below. 1. Cultural Conflicts and Educational Goals

Many key informants indicated that villages, parents, and students are torn because they want to preserve their culture while at the same time changing it so they can succeed in the work place.

Employers frequently cited punctuality, reliable attendance, openly accepting and offering criticism, working under stress (such as waiting tables during a busy lunch hour) and working independently as examples of attitudes students need to succeed in the work place. Whether the lack of such attitudes represents conflicting cultural values, social disorganization, or other factors, employers emphasized the importance of schools' teaching and reinforcing those basic work values. (Researchers have examined how Western school and work values differ from those of Native groups. See for example Condon 1987, especially pages 157-174; also Chance 1990, pages 182-183).

The recent shift in the school district's spending from vocational to bilingual education conflicts with employers' implicit suggestions that the school district offer educational programs that would socialize students in work skills. Employers also want the schools to improve basic communication and problem solving skills; several noted that poor comprehension of written material limits workers' ability to benefit from technical training manuals.

Key informants from the region's education community report improvements in the school program which address some of the employers' concerns but which may not yet be reflected in students' performances on standardized test scores. Among the improvements cited were the adoption of policies related to grade levels and attendance.

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The school district has adopted policies to ensure that promotions from one grade to the next are based on academic standards and that students meet these standards before being promoted. It also adopted an attendance policy which calls for failing students who have sixteen absences from a class and which suspends students from school if they are failing more than three classes. This policy resulted in half of Kotzebue's high school freshman class being suspended the year the policy was adopted. Since then, attendance has improved and the number of suspensions has dropped significantly.

Students often resist higher standards. "If they (the kids) don't like something, they just walk off (the school grounds)" was how one respondent said school children resist raising standards and expectations.

Students also frequently encounter inconsistencies between what is expected of them at home and what is expected at school. Several respondents cited conflicts parents have with the school district over expectations and rules on matters concerning attendance, discipline, and homework.

A commonly expressed view was that many parents were unwilling to hold students to the higher academic standards schools were trying to set, and that some parents actively undermine such efforts, feeling that they place too much stress on children. Key informants reported a small but increasingly vocal group of parents who view schools as having a destructive influence on the Native culture and are openly hostile to schools. Several informants said that few children have educational materials at home and few are encouraged to read and discuss what they read with other members of the household. Thus assigning students homework is difficult and unpopular in many households.

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Employers we talked to urged the school district to get parents and teachers to raise academic standards. Educators responded that to do so required expanded community participation in the schools. "What needs to happen to create success is the quality of relationships need to be improved between the school district, private sector, the community, the parents--basically everybody" is how one informant described what was needed. Some employers feel the schools might be able to make students and their parents more active in the schools by creating incentives for involvement.

The district has increased local control of the schools by permitting local (village) advisory school boards to have the final say (for all practical accounts) over whether to hire a village school principal. "If they don't like the candidate, the district doesn't hire 'em." It also revised its allocation of resources within the region to address distributional equity.

The district has over the past four years given a priority to meeting both state standards and local objectives. A school administrator reported that special emphasis was given to junior and senior high language arts programs and that teachers have been more actively involved in curriculum and staff development. The district expanded in-service training for both teachers and aides. The curricular development activities also include Inupiat Studies, which are designed to make students more aware of their origins and traditions. (One respondent felt that the middle school curricula was still disjointed.)

Still another dimension of the cultural conflict has to do with what is taught, and how that relates to the realities faced by students, parents, and the communities. Key informants suggested that the district also build on the

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cultural uniqueness of the region and relate the curriculum to local realities including subsistence hunting and fishing, tribal governance, and Native issues, and get parents and other residents involved in school activities. One respondent urged that the rigor and quality of the bilingual program be on a par with that of English.

Independent of the rigor and quality of all the district's educational programs is the extent to which local lifestyles, culture, and Native issues should be separate from or integral parts of the curriculum. Because the school day is limited, adding to the curriculum generally requires that something else be dropped. Thus, what is to be given priority becomes important.

The region's educators report that they have already incorporated bilingual and bicultural programs into the curriculum. The integration of academic curricula with regional cultural content is time consuming and complex. The region had the good fortune in the early 1980s to receive a separate appropriation of funds to develop some such curricula and materials, although respondents said more was needed.

Overall, many informants believe that preserving cultural values while at the same time metivating students to go on to higher education is crucial for their future success in the workforce. The trend in the region is toward more jobs requiring higher education. Most professional and technical jobs available in the region require college degrees. Only by going on to college and graduating will Northwest residents gain access to those jobs.

2. Social and Economic Opportunities

The region has made considerable progress in creating local employment opportunities and in developing regional leaders to manage these initiatives. Nonetheless, the region continues to import most of its education and health professionals and the social and economic opportunities in the villages are limited because they are small and relatively isolated from one another and from the urban regions of the state. Children have limited opportunities to learn how to cope with strangers or urban places. Opportunities for part-time work are limited, as is exposure to career opportunities. These limitations may contribute to what both educators and students referred to as students' lack of goals, ambitions, and plans that would help make self-discipline purposeful. Unless parents aspire and expect students to achieve at levels associated with becoming professionals, the region will continue to rely on imported employees to staff a substantial portion of its professional work force.

One key informant also noted that neither schools nor the community recognize or promote non-college role models. The example cited was a local mechanic who loves his work, is innovative, performs an important role successfully, and yet is looked upon by many as less than successful because he did not go to college.

Over the past decade, the number of youths who came of working age exceeded the number of new jobs. These new working age residents added to the existing pool of adults, many of whom were already either unemployed or not in the labor force at all. One respondent commented that "Productivity gives self-esteem. When (economic) times are good, people feel better and complain less." The limited potential for growth in the region's economy argues for preparing youth to explore options outside the region as well as within it. (In fact, as described

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in Section III.2 of Chapter 1, in the past many residents of the Northwest Arctic have taken jobs outside the region.)

Most key informants commented on the need for more "successful" role models for young people and children and for the expansion of job opportunities within the region. The occupational trends within the region, as well as in the rest of the nation, suggest that future employment will require higher levels of education. Even right now, the region offers many professional and technical employment opportunities which are filled by non-residents because local residents don't have enough education for these jobs.

More of the region's students today live in households which are organized around a parent's 8-5 work schedule. This routinization to a schedule coincides with the school schedule and helps reinforce the practice of getting students off to school on time. Those households which do not have adults on regular work schedules, and there are still many, do not appreciate the importance of simply getting students on to such schedules. This lack of schedule contributes directly to students' absenteeism or tardiness--behaviors which employers most frequently cite as reasons for firing workers. The district's recently adopted attendance policies address this particular problem. However parents need to learn the importance of getting their children to school on time if they want them to succeed in school.

Finally, a number of informants mentioned the need for Northwest schools to better teach students the values and skills associated with entrepreneurship. If students had such knowledge, they could take advantage of opportunities that might exist for establishing small businesses in the region.

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3. Personal and Social Problems

One key informant characterized the personal and social problems within the region by saying that many young people have "lots of unhappiness from within" and that they engage in self-destructive behavior which in turn harms family and friends. (A number of studies have examined substance abuse among Native Alaskans. Examples include Alaska Federation of Natives 1989 and Minerals Management Service 1988.)

Educators report that many students continue to use drugs and alcohol, although they think use is declining (particularly marijuana use). They say students typically start using drugs and alcohol just before or during junior high school. Several said they have seen a surge in teenage pregnancies and an alarming increase in the number of fetal alcohol syndrome (FAS) births in the region.

School board members and health professionals we interviewed also said there had been a significant rise in FAS births within the region, and that the incidence of FAS births was alarmingly high. (It is possible, however, that the perceived increase in FAS rates is partially explained by the increased attention the syndrome has received, improved diagnoses, and earlier detection than in previous years.) While such alarming statistics cannot be confirmed, the poorer performance on standardized test scores of lower grade students could partially reflect the mental impairments FAS imposes on its victims. Even a much smaller rate of FAS births would still impose on both the victims and the region a permanent handicap among a significant segment of the future adult population.

Several of the student informants reported that while increasing numbers of young women were getting pregnant and becoming teenage parents, the schools offered

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relatively little sex education or information on parenting. They want realistic alcohol, drug, sex education, and parenting classes.

One educator indicated that because village schools are small, older kids are put together with younger ones, resulting in severe social pressure on the younger kids to behave like the older ones. This pressure causes younger kids to behave inappropriately--drinking alcohol at age ten, for instance, or engaging in sex as a pre-teen.

Educators mentioned that the city of Kotzebue made an important contribution to education when it closed the bars and liquor stores. Several indicated that school attendance had improved and that children came to school more rested. They believe that the opening of the Red Dog mine also gave a psychological boost to the community and to the schools, and that now more parents are becoming involved in schools.

Finally, a number of informants mentioned the contributions NANA has made toward controlling alcohol and drug abuse in the region through its strict employee drug testing program and its recovery and education programs.

4. Transient Educators, Traditional Schools, and Resource Constraints Key informants report that the district has had difficulty recruiting math and science teachers, and employers and educators alike said that teacher turnover, which they estimated to be about 20 percent per year in Kotzebue and much higher in the villages, hurts local education in several ways. Teacher turnover:

complicates establishing relationships with students, parents, and the communities.

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- disrupts the continuity of the educational process, which is particularly important in small schools with only a few teachers.
- undermines the ability of the district to shift the curricular initiatives from the district to the classroom teacher.

High teacher turnover also exacerbates the difficulties in helping communities forge a consensus on what educational goals and standards they would like set for their students. Both educators and employers believe agreement on the goals of education is necessary if schools are to do a better job of educating students. The increasing size of large, multi-grade level classes within the district's village elementary schools is also making teaching more difficult. The Northwest region continuously offers professional development opportunities to its staff related to teaching methods, particularly methods of teaching reading.

Several informants also emphasized the importance of introducing aspects of the region's culture into the school curricula and program. Several educators with years of teaching experience in the region indicated that the challenge was to introduce culture in a way that would be consistent with and reinforce curricular and academic goals. Several suggested that teaching cultural practices could build bridges between schools and communities. In fact, the district's budget reports that 10 percent of the instruction budget is now devoted to bicultural education. One informant suggested that the challenge confronting the district is to ensure that the bicultural programs have legitimate academic goals. Otherwise, valuable school time is being taken away from the curricula and students will sense that their cultural teaching does not carry the same rigor and respect as do other curricular activities.

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Educators also reported that fluctuating school budgets have placed considerable strain on teachers and made it difficult to determine how schools and curriculum will be organized and delivered from one year to the next. Not surprisingly, students and parents get upset when classes are consolidated or high school classes are no longer offered or are only offered once every several years because of a reduction in the number of teachers. Several educators believe that village and parent dissatisfaction with the school district stems from how these fluctuating school resources--including teachers--are allocated among villages and educational programs.

High teacher turnover, difficulty in recruiting teachers, and parent dissatisfaction with the school district are likely to be exacerbated if the district experiences budget reductions in the years ahead when enrollments are likely to be larger. Similarly, teachers are likely to become dissatisfied if they are required to teach courses they feel they are unqualified to teach.

Finally, some informants made the point that there are many possible outcomes of education, and that it is difficult for small village schools to explore and prepare students for all the possible choices. Some students, for instance, will be best suited to go on to college, some to technical jobs, and some to a more strongly traditional lifestyle. How can a small school make all the choices known to students, and prepare them for the very diverse occupations? This will be a continuing challenge to smaller schools, but there may be opportunities to augment existing programs to better show students that life after school offers many choices.

5. Student Ambitions and Academic Achievement

Several employers reported that many young people, particularly young men, seem to have limited ambitions and are unaccustomed to the self-discipline school and work often require. Some suggested that young men seemed to have few incentives and no real pay-offs for working or studying hard, given the fact they could get by with minimal resources and would prefer to have time to hunt and fish.

The fact that there are relatively few job opportunities or part-time jobs for students within the region further complicates the task of creating real incentives. Nonetheless, respondents reported that parents are increasingly aware of what it takes to get ahead in the cash economy.

The possible increase in the number of high school dropouts, particularly young Native men, who have limited ambition to work, get vocational training, or go to college is problematic for the district and the region, if confirmed by 1990 census figures. As one former student observed, "A lot of guys are probably just going to stay around here... they like the hunting and everything." Another observed, "I see a lot of Natives who are very, very into having their own time."

Two key informants suggested that some students who go off to college discover their academic disadvantages and then choose to retreat rather than fail. One informant suggested a need for a college preparatory program after high school to give students an opportunity to correct their academic deficiencies before going off to college.

A number of employers and educators we talked to said that in general schools could help students by making them more aware of career possibilities, initiating

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more internship programs, and generally better preparing them to move into the work force. Northwest students could benefit from more career guidance and counseling and from more exposure to the demands and requirements of the work place.

Informants also said schools should foster and recognize successful local role models--including both those with and without higher education. Also, increasing the rewards and recognition given for academic achievement to balance those given for athletic achievement could encourage academic achievement.

The future of the region's educational attainment will be largely shaped by the degree of success the school district has in addressing these five major issues.

INTERVIEWS

General Note: In August and September 1991, 35 residents of the Northwest region were interviewed for this study, Interviewees included educators (13), employers (10), public officials (6, including school board members), students (3), and other local persons (3) knowledgeable about regional education and employment The interviews followed a loosely defined set of questions that conditions. allowed respondents to answer in an open-ended way. All interviews were audiotaped. We assured the respondents that we would not attribute specific quotes to individuals. The interview results were not suitable for statistical analysis, given the limited number of interviews and the wide range of issues Instead, we used the interviews as a source of qualitative discussed. information and insights; they provide a variety of local perspectives on education and employment issues.

All field interviews were conducted by Paul Ongtooguk, a local resident, former teacher with the Northwest Arctic School District, and currently a doctoral candidate in education at the University of Michigan.

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CHAPTER 3. SUBSISTENCE¹

I. INTRODUCTION

1. The Arctic Woodland Pattern

Although it seems strange today, prior to World War II the academic community conceived of Inuit (Eskimos, including Yup'ik) only as maritime peoples. Birket-Smith (1929) had proposed an "inland" origin of Eskimo peoples, a thesis which was not supported by the archaeological investigations of Mathiassen (1927), one of Birket-Smith's colleagues on the Fifth Thule Expedition. In 1940 Louis Giddings began a coordinated dendrochronological and archaeological investigation along the Kobuk River from sixty miles above the village of Kobuk to Kotzebue. Documenting the "origin of Eskimos" was the main research theme in the late 1930s and influenced the theoretical framework Giddings utilized in his analysis of the Kobuk data.

Giddings' work along the Kobuk was interrupted by the war and was not concluded until 1947. By then, Giddings had excavated almost eighty houses at five major sites and at numerous other locations. Giddings grouped the Kobuk River sites into five chronological-geographical periods. He suggested that an Arctic Woodland Culture, within a theoretical framework generally supportive of Birket-Smith's (1929) theory, constituted a distinctive cultural entity, neither Athapaskan nor Eskimo, which possibly predated both. The most enduring construct in Giddings' (1952:118) analysis is that the Arctic Woodland Culture is "the

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¹Selected data from the MMS Social Indicators study are presented in this chapter. The tabulations are subject to minor errors of small magnitude since the final stages of data review and analysis for that project have not been completed as this report goes to press.

predictable combination of sea-river-and-forest-hunting wherever it is possible for a single ethnic group to practice these together under the special conditions of the Arctic. Giddings saw "the Kobuk River archaeological record as documenting shifting human behavior patterns as an adaptive response to a varied and varying environment. This response "involved the development or borrowing of new traits, the modification of others, and the loss of still others" (Hickey 1976:251). The Arctic Woodland Culture is:

first of all defined by a remarkable adaptation to an environment which includes clear streams, rugged mountains, forests, and a bay of the sea. It is a culture that <u>draws freely upon all of the</u> <u>natural resources</u> of these surroundings, and yet retains a core of basic traits in which may be demonstrated more than 700 years of continuity and stability. River fishing is hardly second to caribou hunting as a means of livelihood, and both of these stand well ahead of harbor sealing as bases of economy. <u>Exchange</u> of the resources of these endeavors as well as materials such as the furs, tree barks and root fibers, and mineral substances, <u>helps to minimize the</u> <u>special effects of the local environment and makes possible the</u> <u>enrichment of the life of the individual without his having to move</u> <u>continually from one environment to another</u>.

The Arctic Woodland Culture may be defined environmentally as one that has its roots along forested streams and that encompasses both the bare mountains and plateaus of river headwaters and the saltwater harbors of Arctic seas. It is distinct in these respects from either far-inland or coastal cultures, and it can exist only where forests approach the sea. It differs from a truly inland culture of the sort practiced by most northern Athapascans in that its food supply is three-fold and insured in this respect against extreme seasonal scarcity. If shortage of caribou ensues, there is no need to follow diminishing herds into new pastures, but only to <u>change emphasis</u> to fishing and sealing. <u>Greater permanence of</u> residence is possible because both fish and seal are predictable as to place of appearance if not as to abundance. It differs from Arctic coastal cultures in that the meat and oil of sea mammals in great quantity is not required, rendering unnecessary special devices for hunting on sea ice and resisting the blizzards of barren coasts. (Giddings 1952:115). [emphasis added]

The region and its ecology have changed little over the past thousand years. Renewable resources have fluctuated in long- and short-term cycles of availability and abundance. Human groups using these resources have adjusted their harvest strategies accordingly. Since the beginning of the nineteenth century, the Arctic Woodland pattern in the Northwest Arctic Borough has been affected by subtle and not so subtle acculturative forces associated with Western contact. Nevertheless, the land and the familiar fluctuations of renewable resources provided a continuity. Residents of the region may be viewed as modern exemplars of this thousand-year-old Arctic Woodland pattern.

2. Basic Considerations.

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The term "subsistence" as used here follows Burch (1985:17) and is regarded as "the production of raw materials by the same individual intending to be the ultimate consumer(s) of those materials." This definition differs from the "legal" definition used by the State of Alaska (Alaska Department of Fish and Game, Division of Subsistence, 1984) whose language derives in part from Title VIII of the Alaska National Interest Land Conservation Act (ANILCA) of 1980. Burch's (1985:17) definition recognizes subsistence as "a continuous variable that covers a wide range of activities" and that "specific concrete activities" are not inherently either subsistence or nonsubsistence in nature, although they typically <u>emphasize</u> a particular orientation." Using Burch's definition, subsistence can be analytically distinguished as one component of a modern, industrializing "foraging" adaptive strategy (Cohen 1974). "Subsistence" is often used to characterize an entire type of economic system or a lifestyle. Burch's definition is preferred for its analytical convenience as subsistence production may be viewed as a constant while technology and/or the systems organizing labor, or the distribution and consumption of resources may undergo change.

The perspective adopted here does not flag "customary" and "traditional" activities. Instead, cultural evolution or development is explicitly recognized as dynamic "because no habitat (social as well as natural) remains unchanged.

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New adaptations must be developed if effective relationships with altered habitational conditions are to be maintained" (Cohen 1974:46). In any event, new sociocultural adaptations or adjustments are variously linked to preexisting sociocultural states and therefore are amenable to historical analysis. According to Cohen (1974:50), the principal sources of cultural evolution or development are: 1) technological innovation, 2) contacts between groups, 3) population growth, and 4) political innovation.

Addressing cultural development in northwest Alaska, Burch (1980:261) cautions:

Most of us think in terms of a 'traditional' or a 'contact' or an 'aboriginal' state of affairs as having been somehow immutable until massive European interference suddenly changed everything. This is a tendency we must resist. Life seems always to have been in a state of flux in Northwest Alaska, particularly at the individual society level.

Burch's definition of subsistence allows subsistence activities to be viewed along a historical-developmental continuum and, therefore, may be usefully applied to the historical periods identified below. Since the first contacts with Europeans approximately 150 years ago, accelerating changes in the social organization, technology, and demography of the borough region in response to Euroamerican influences and fluctuations in renewable resources make the designation of "customary" or "traditional" activities a complex exercise. Given resource availability in any year or set of years subsumed by longer resource cycles, activities considered "traditional" or "customary" can contrast sharply. For example, Euroamerican goods were more readily available earlier in some parts of the region than in others. Firearms, which became a significant factor in the organization of production after 1850, had a minimal impact on production groups when they were first introduced (Ray 1975a). When the Western Arctic Caribou Herd declined drastically in the nineteenth century, those Iñupiat groups living

on the margins of the range were significantly affected several decades earlier than were Iñupiat groups living in the core range of the herd.

"Northwest Alaskan Eskimos seem to have exploited virtually every animal and vegetable resource that was available to them. They may have missed something, but most apparent omissions turn out on investigation to be the result of ignorance on the part of the researcher" (Burch 1978:275). Within the region, caribou, mountain sheep, bears (grizzly, black, polar), several species of sea mammal (bearded seal, ringed seal, spotted seal, beluga, walrus, bowhead whale), fish (char, several species of salmon and whitefish, sheefish, grayling, burbot, Arctic cod), small game (ground squirrels, hare), furbearers (white fox, colored fox, hoary marmot, wolverine, lynx, wolf, otter, mink, muskrat, ermine), and birds (ptarmigan, snowy owls, sandhill cranes, whistling swans, several varieties of ducks and geese, seacliff nesting birds) comprised the harvestable fauna. The harvestable flora included several varieties of berry, greens, roots, shrubs (with edible or otherwise useful leaves or bark), mosses, and trees (especially spruce, birch, cottonwood); driftwood was abundant along the coast. Useful mineral resources included chert, jade, and clay.

The relative abundance of the different resources varied from one societal territory to another, as did the precise timing of animal and fish movements. The environmental differences created the basis for societally distinctive economies and annual cycles of movement and for the comprehensive system of intersocietal trade (Burch 1984:306).

Many studies list the species used by the Iñupiat of the Northwest region, and some provide Iñupiaq names for these species (Foote 1965; Foote and Williamson

1966; Alaska Department of Natural Resources 1988; Anderson et al. 1977; Anderson and Anderson 1977; Hildreth and Conover 1983, among others) or even detail their uses and techniques of storage (Uhl and Uhl 1977; Jones 1983). Though such reports provide informative baseline data, this chapter will emphasize the fluctuations of resource availability and the flexibility and adaptability of the subsistence food procurement system rather than the specific foods that have been or are currently being harvested at any point in time. "Those subsistence people who were and are on the scene have just as dramatically adapted their use, methods, and means of taking and preserving methods as those animals have risen in importance or faded to insignificance" (sic) (Uhl and Uhl 1977:183).

One principle variable affecting subsistence production is supply, or the amount of fish, fowl, game, or plant population harvested. Resource supply is highly variable in the Arctic. Northwest Alaska foragers, like all foragers, are not responsible for the presence of the food they obtain. This is not to deny the effects of human actions on subsistence production. Foragers may significantly affect resource availability at particular places within that resource's distribution and for varying amounts of time. Stands of willow, for example, may be depleted after a few seasons and may not be capable of providing a steady source of fuel again for a decade. A single lake trout fishery may not be capable of providing a reliable secondary resource for large groups once it has been intensively harvested. New technology may increase demand for or pressure on a resource. The introduction of the sheet-iron stove on the arctic coast virtually exhausted coastal supplies of driftwood (Slaughter 1982:57-58).

The extinction of 32 genera at the close of the Pleistocene in North America has been attributed to human hunting pressure (Martin 1973). However, numerous other

explanations involving climatic and environmental stress (contraction of habitat, introduction of new parasites, inability to adjust reproductive cycles) also have been proposed; no single explanation of post-Pleistocene extinction is entirely satisfactory and some combination of factors is suspected.

One characteristic of foraging societies organized by domestic groups and kinship relations is that resource demand consistently falls short of carrying capacity (Sahlins 1972). The relationship of this apparent fact to the ecological law of the minimum (that the size of the population or the life of the individual is limited by whatever requisite of life is in shortest demand) has not been fully explicated in long- and short-term perspective.

We lack reliable information on the size and age structure of such populations [foragers] over even three or four generations. (Netting 1977:20)

The systematic interaction of population size with environment, as influenced by resource availability, technology, human biology, and cultural self-regulation (abortion, infanticide, migration, and so on) has been modelled only in a crude and incomplete way by scientific investigators. We have learned enough to say that inclusive statements of equilibrium or mere random fluctuation cannot do justice to the complexity of real [human] ecosystems. (Netting 1977:21)

The short-term observer of human ecosystems is likely to overlook the limiting extremes. Uhl and Uhl in the quote above implicitly acknowledge that cycles of limiting extremes may exceed a human lifetime.

Dunbar (1968) suggested that arctic ecosystems are less mature than temperate or tropical ecosystems and are characterized by high environmental oscillations in long-term cycles and few species with large populations. According to Dunbar, the climatic oscillations are reflected in biological population oscillations whose periods are a function of the size of the animals. These population oscillations are greatest in the herbivores. Burch (1972:357, Fig. 6) attempted

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to graph the population fluctuations of the Western Arctic Caribou Herd. Unfortunately, his data barely cover one period. Minc (1986) uses tree-ring data to graph temperature and moisture regimes in northwest Alaska. She believes "these chronologies register long-term climatic cycles consisting of periods of warmer, dryer conditions followed by colder and wetter conditions." Minc suggests that the warm, dry inland conditions were associated with an arctic high that favored inland faunal populations and that such periods alternated with the cool, wet conditions of a Pacific maritime high that cause lower summer temperatures, a heavier volume of summer sea ice and restricted open water. These conditions favor sea mammal hunting, especially whaling. "Over the long term, the coast and the interior constitute complementary zones based on the alternate availability of their faunal resources" (Minc 1986:70).

Short-term variations in the availability of resources also are marked. Burch's (1985) study of Kivalina subsistence harvests provides the only diachronic data for the region. Burch's (1985:114) Kivalina study shows "that there was tremendous variation in the harvest of each species, not only from week to week, but from year to year." Using maximum and minimum weekly harvests on record, Burch (1985:116) calculated that a maximum hypothetical year would show "a total harvest of 1,037,706 pounds, more than twice the largest actual harvest of record. The hypothetical minimum year would have yielded a harvest of a mere 82,003 pounds, an amount only 22 percent of the lowest actual harvest of the four subsistence years under consideration."

The subsistence food procurement system must be flexible and adaptable to these long- and short-term oscillations. "The ability of a population to deal with environmental variability is largely a function of its ability to collect,

process, and store information regarding this variability" (Keene 1981:192). Even though they may not be able to articulate the short- and long-term cycles of the resources upon which they depend, subsistence harvesters are acutely aware that many variables affect the location, timing and concentration of subsistence Minc (1986) has argued that oral traditions preserve survival resources. knowledge over extended periods of time. For this reason, the mapping of subsistence areas is undertaken with reluctance, if not trepidation. Harvest area maps (e.g. Schroeder, Anderson and Hildreth 1987) are composite maximum use maps reflecting a specific period in time (usually the lifetime of the informants). Even so, informants are uncomfortable (Gal, pers. comm.) with the assumption that "The lifetime use pattern evens out natural fluctuations in resource distribution and abundance that affect land use patterns" (Schroeder, Anderson, and Hildreth 1987a:2) knowing that "because of species dynamics and the need for continual updating of use patterns, . . . [usage] must always be considered flexible and changing rather than static and constant" (Uhl and Uhl 1977:184). Subsistence use area maps are potentially misleading for those resources whose oscillation period is longer than the lifetime of the informants. Oral traditions, especially, and archaeology, possibly, may eventually provide important supplementary information in this regard.

For convenience of description, many "subsistence" studies focus upon a generalized seasonal cycle of activities. For example, D.J. Ray (1964) identified three subsistence "patterns" for the Seward Peninsula--the Caribou Hunting Pattern, the Small Sea Mammal Pattern, and the Whaling Pattern. Each of these patterns remains manifest in northwest Alaska. Generalized characterizations, however, tend to mask the flexibility and variability of

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foraging systems over the short- and long-term which characterize the Arctic Woodland Pattern described by Giddings.

A common misconception about idealized seasonal cycles is that they are rigid. Minc (1986:66-67) cites data on whaling success that record failures every fifth to seventh year. The success of the whaling "pattern" evidenced by her data is premised on an <u>average</u> condition; the limiting condition for the pattern is the availability of alternative resources during failures. Should failures occur every second or third year, the whaling pattern may become untenable. As well, many variables affect the production (to be distinguished from supply) of subsistence resources. Possible critical influence of these variables may be obscured by the characterization of seasonal cycles. Conforming to Giddings' notion of the Arctic Woodland Culture, Ray (1964:62) correctly cautions that her

subsistence patterns had three important aspects: 1) the mobility of the inhabitants seasonally for food getting; 2) the flexibility of the food quests, and the variety of subsistence foods utilized within one subsistence area, which led to: 3) the many alternatives offered in all subsistence patterns, but especially the Caribou and Small Sea Mammal patterns.

Descriptions of seasonal rounds also tend to focus on one or a few major biomes. Northwest Alaska is more accurately described as a "crazy-quilt" environment (Hickey 1974). In a given season differently configured subgroups of a single foraging group may be in different areas harvesting different resources. Burch (1985:117) identified a number of variables that influence individual and group decisions regarding where, what, and how much is harvested:

1. Distribution of fish and game;

2. Accessibility of fish and game to human foragers;

3. Desirability of alternative fish or game resources;

4. Availability to the foragers of alternative fish or game resources;

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- 5. Weather conditions;
- 6. **Processing and storage conditions;**
- Possibilities for sale or barter of by-products of or surplus from the subsistence harvest;
- 8 Availability and desirability of alternative activities entirely outside the foraging realm;
- 9. Political factors, such as closed seasons and bag limits.

To cover all situations, political factors should be expanded to include, for example, shamanistic input and inter- and intragroup hostilities or alliances. Also, whim and the availability of personnel might be added to Burch's list (Gal 1975). Hunters frequently say that the reason they visited an area was because they had "never been there before" or "hadn't been there in a long time." Burch (1981:62) refers to this phenomenon as "scanning" and states that in the Point Hope area, it insured that "the best land was always being used."

3. Organization of the Chapter

To understand the role of subsistence activities today it is useful to consider the present as the culmination of cultural and historical developments in the region. Six periods will be considered:

- Prehistoric. This period is known from archaeological sources only. We include it here because it provides concrete examples of the range of human settlement, harvest, and exchange strategies practicable in the region.
- 2. Traditional. This period is known primarily through ethnohistoric reconstruction and is defined as the last time the Iñupiat of the region operated according to an indigenous system of social action. It

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corresponds to what North American anthropologists refer to as an "ethnographic baseline." In northwest Alaska this period covers the first half of the nineteenth century; its beginning merges with the Prehistoric. Transitional. The transitional period is characterized by protracted contacts with Euroamericans and, following Burch (1975:26), is divisible into three parts "according to significant changes in the volume or nature of Euroamerican influence in Northwest Alaska."

- a) Early. The Early Transitional Period began about 1850 when explorers and whalers first visited the region in great numbers. The introduction of liquor and new infectious diseases disrupted the demographic structure of traditional Iñupiat life. This Early Transitional Period is known primarily through the oral accounts of parents and grandparents recalled by the present-day elders.
- b) Intermediate. Establishment of permanent missions, stores, and schools in the 1890s characterizes the Intermediate Transitional Period. It ended with the increased federal presence established during the 1940s in response to World War II. Again, elders possess the most knowledge of this period.
- c) Recent. Beginning in the 1940s opportunities for education, welfare, communication, transportation, medical services, and wage labor expanded. Government became the dominant economic force. The social life of the northwest Alaska Iñupiat expanded greatly in terms of opportunities for non-kin-based organization. The mixture of hunting and cash incomes was mandatory. However, most of the opportunities for earning wages lay outside the region. At one point the Bureau of Indian Affairs sponsored training and relocation of the region's residents.

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4. Post-ANCSA. Nominally beginning with passage of the Alaska Native Claims Settlement Act (ANCSA) of 1971, this period intensified past trends under different political circumstances. During the Recent Transitional Period both power and decision-making were lodged primarily outside the region. ANCSA ushered in a phase of self-determination in the region, governmentdirect services were dismantled or directed through the regional native corporations; more power shifted to the region. The Molly Hootch decision led to local schools managed by local school boards instead of the Bureau of Indian Affairs or State of Alaska, even in small villages. Management of other services (e.g., medical) also began to change from externally controlled to locally controlled institutions. As state revenues from oil production soared in the early 1980s, capital improvement funds were used to build not only schools, but also basic utilities and other public services in the villages. Seasonal wage jobs for unskilled persons generally were available in every village. In the last ten years, however, two factors have tempered the trends for localization of decision-making and wage-earning. The Alaska National Interest Lands Conservation Act (ANILCA) of 1980 mandated federal management of the majority of the lands in northwest Alaska. Local control is frustrated by considerations of "national interest" within these new conservation units. Declining oil revenues have reduced capital improvement dollars and local wage-earning opportunities for unskilled workers.

With the exception of the Prehistoric Period, this report will summarize the seasonal cycle (production) of the societal segments of each period to indicate subregional variability. Additionally, an overview of the supply of subsistence resources, population distribution, key elements of the social organization,

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characteristics of the economic process, and social integration at the societal and regional levels also will be discussed. The final sections of this chapter addresses trends in subsistence use and potential impacts to subsistence activity.

(Note to the reader: This chapter's analysis of subsistence is organized by historic period and by traditional societal territories. There are many details about the distribution of subsistence resources, and perhaps unfamiliar geographic and ethnographic names. Therefore, several reference aids are included to assist the reader: Figure 3-1, Area Map of Northwest Arctic Borough; Figure 3-2, Map of Societal Territories; Figure 3-3, Development Periods, Precontact to Present; Figure 3-4, Annual Subsistence Rounds; and the list of traditional nations or societies on page 29.)

II. PREHISTORIC PERIOD

Present archaeological data are too scant to define territories occupied by prehistoric groups. Hall (1970:9) lamented the level of our archaeological understanding: "Only more work combined with an awareness of diversity within an overall cultural system that . . . has considerable continuity between the involved groups, will provide firmer answers." Anderson (1980:243) noted that "as yet there have been few attempts to integrate the [archaeological] findings into a history of cultural diversity in the region as a whole." Burch (1986: 15-16) suggested that "upstreaming," focusing upon the distribution of winter settlements, may be a good approach, but to date such a program has not been undertaken. (Anderson and Anderson (1977) have accumulated settlement data for the Selawik area that could provide the basis for such a study.) The only

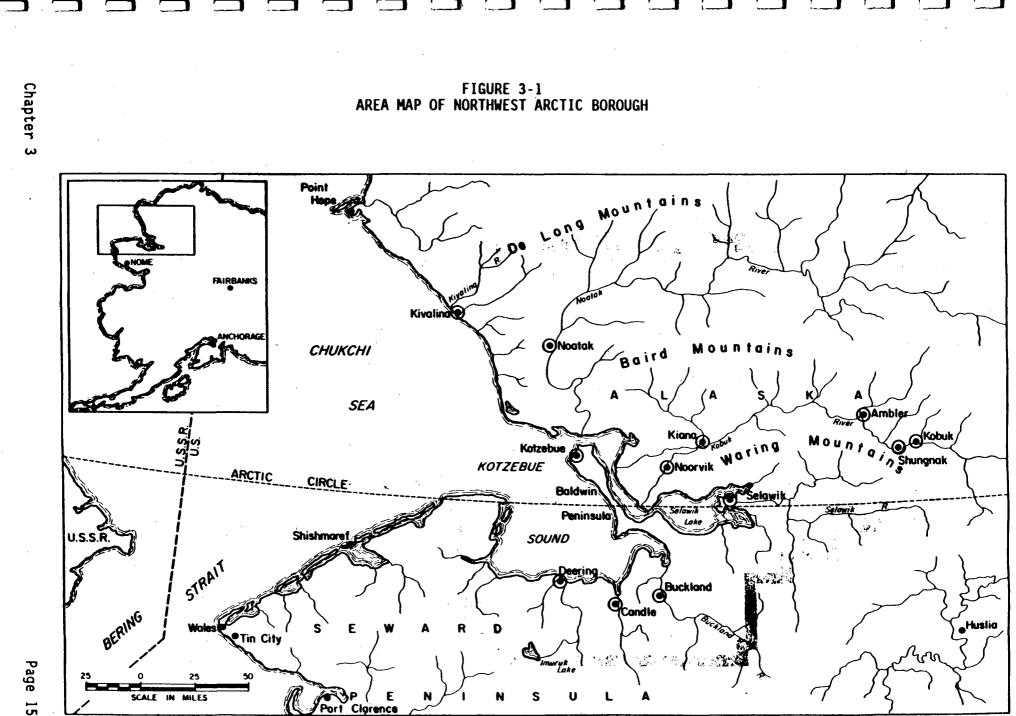
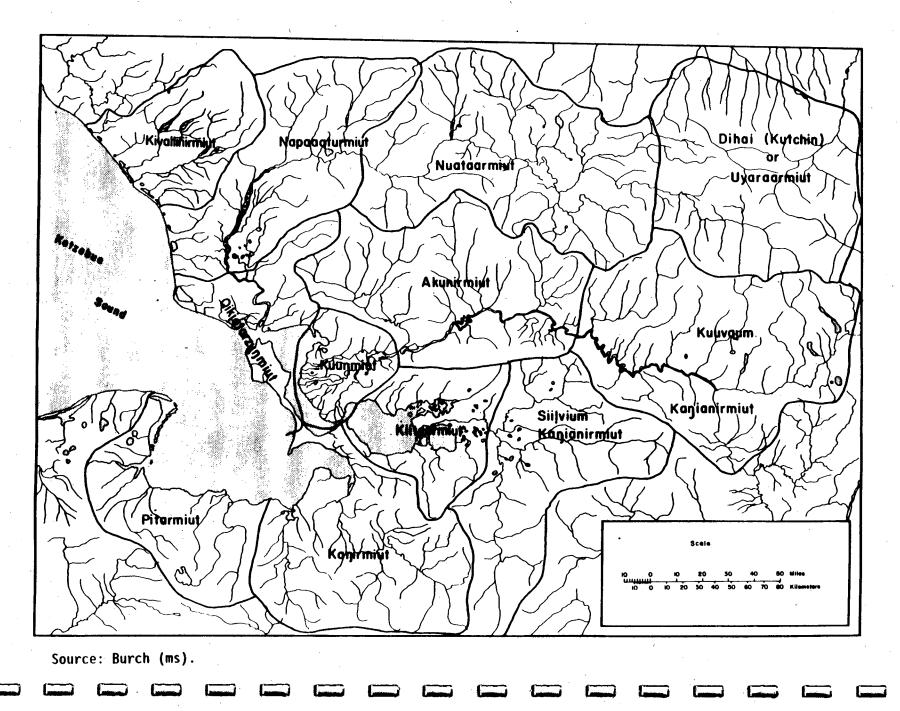


FIGURE 3-2 MAP OF SOCIETAL TERRITORIES, STUDY REGION, C. 1800



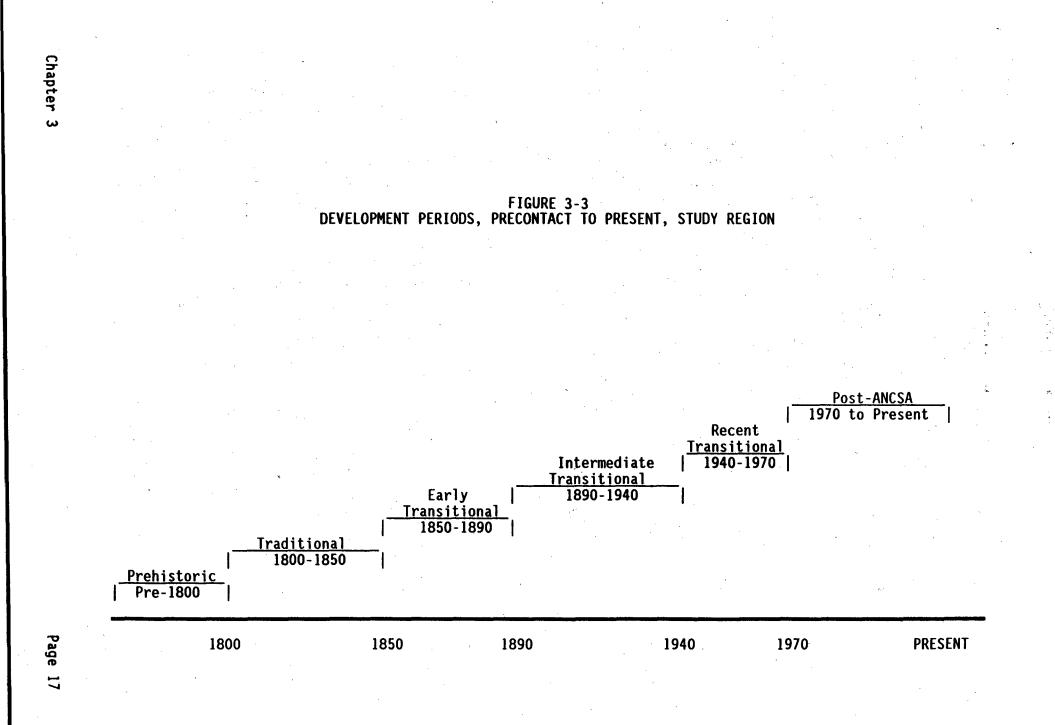
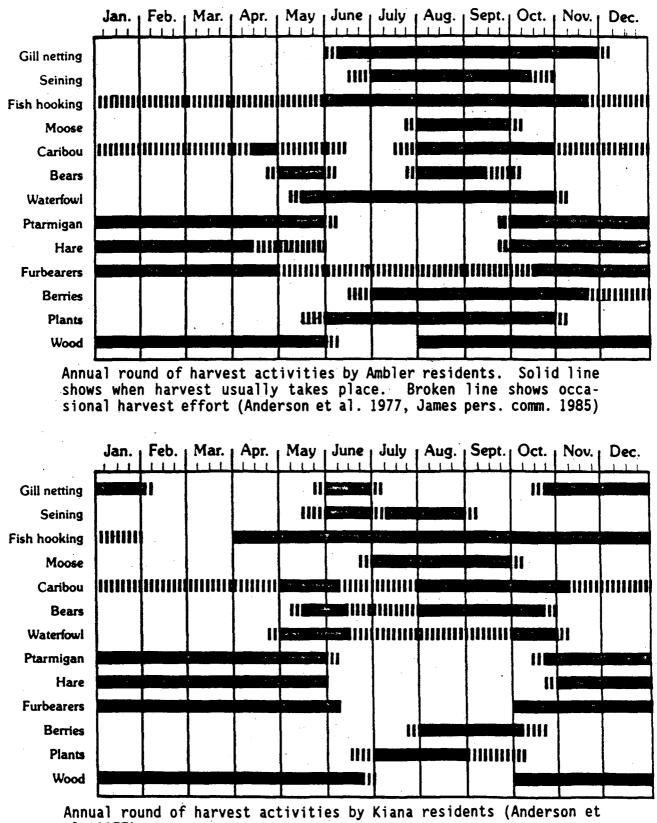


FIGURE 3-4 ANNUAL SUBSISTENCE ROUNDS AMBLER, KIANA, KIVALINA, KOBUK, NOATAK, NOORVIK & SHUNGNAK¹

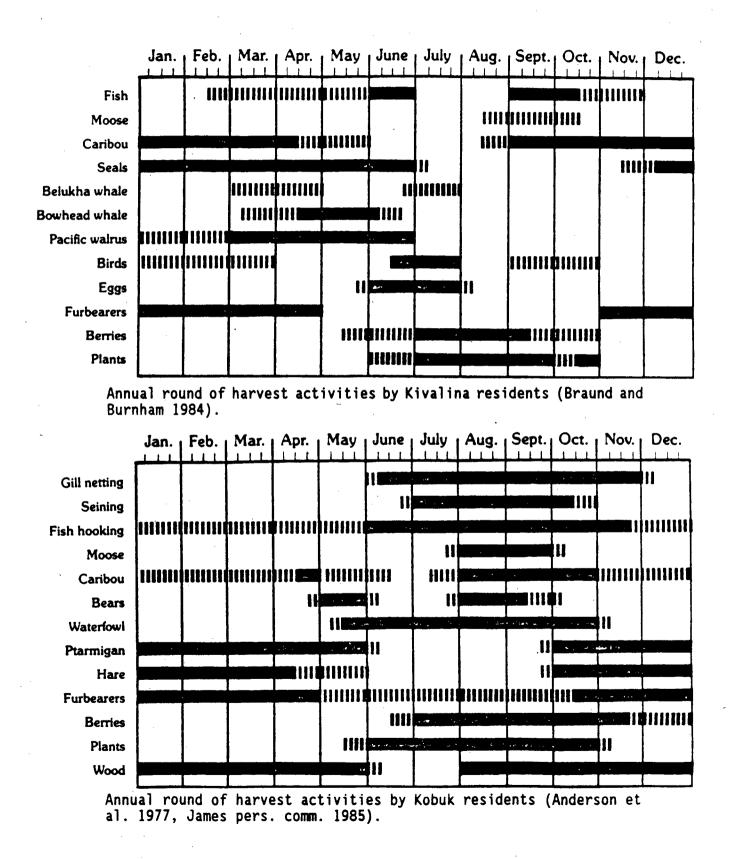


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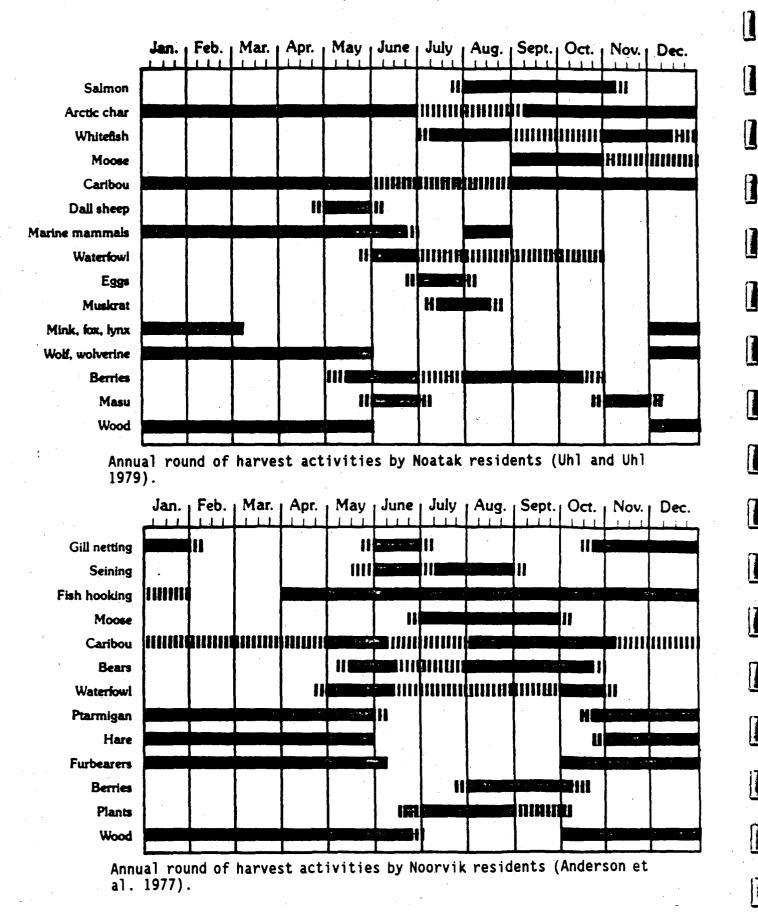
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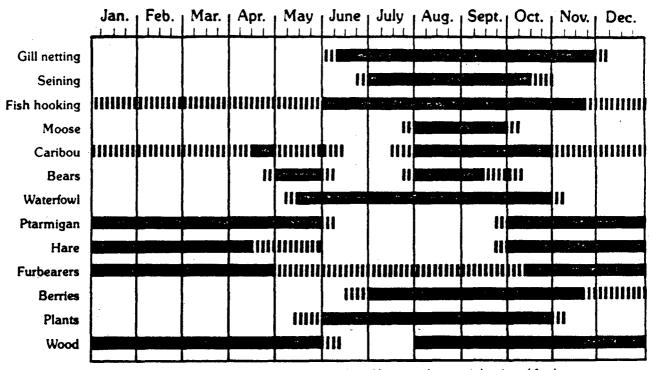
FIGURE 3-4 (continued, page 3)¹



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FIGURE 3-4 (continued, page 4)¹



Annual round of harvest activities by Shungnak residents (Anderson et al. 1977, James pers. comm. 1985).

¹ All charts in Figure 3-4 are reproduced from Alaska Habitat Management Guide, Arctic Region, Volume II: Distribution, Abundance, and Human Use of Fish and Wildlife (Alaska Department of Fish and Game, Division of Habitat 1986).

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regionally focused archaeological research has concentrated primarily upon establishing a chronological framework (e.g., Giddings 1952; Giddings and Anderson 1986; Anderson 1988). Most of the other archaeological studies have been based on single site excavations (e.g., Hall 1971a; Hickey 1968, 1977) or broad surveys which tested rather than excavated sites (e.g., Hall 1975b, Anderson 1972a) in the Northwest Arctic Borough region.

Another problem plagues archaeological data. The contemporaneity of structures within an archaeological settlement can be difficult to establish. The contemporaneity of settlements within a region is an even more tenuous exercise. Nevertheless, a considerable amount of archaeological work has been carried out in the region, and it is possible to bring archaeological data to bear on the variability of subsistence strategies, fluctuations of the resource base, and interdependence of prehistoric groups. A few examples from the archaeological record will suffice to illustrate.

The Onion Portage site is located on the middle Kobuk River in the heart of what was Akunirmiut country during the Traditional Period. Onion Portage is located immediately north of a broad gap between the Waring Mountains and the Shelukshuk Range, through which much of the Western Arctic Caribou Herd moves on its semiannual migration. Anderson (1968:24) described the site as an ideal base from which to hunt caribou. Onion Portage is a stratified site whose earliest levels date back 9,600 years. Caribou were the major faunal component identified in all the occupied levels at Onion Portage (Anderson 1988:5). Except for a hiatus in the record (geological disconformity) between about six thousand and eight thousand years ago, the site seems to have been regularly occupied by caribou hunters right up to the present.

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The stratigraphy of the site has been described as eight major sedimentary bands, each composed of multiple levels. More than seventy levels show evidence of human occupation (Anderson 1968:27). Radiocarbon dating is not precise, and some of the dates are stratigraphically inverted. Dates for levels occupied sequentially may be separated by two hundred to three hundred years (Anderson 1988:48, Fig. 44). This distinctness of the stratigraphy contrasts to the stratigraphy found, for example, at continuously occupied coastal midden sites. The interlevel hiatuses, given the imprecision of radiocarbon dating, suggest that for varying periods of time the site was not occupied by caribou hunters and may represent shifts in caribou migration patterns away from the Onion Portage area or biological lows in the caribou population. Of course, the effect of other factors, such as the low density of the human population, warfare, or taboo, etc., must also be considered. Nevertheless, the record at Onion Portage suggests a regular if not steady harvest of caribou at Onion Portage.

Cape Krusenstern, an archaeologically rich area located about 30 miles northwest of Kotzebue, also shows regular occupation over time. During the last 4,500 years a series of more than one hundred beach ridges has built up seaward. Human foragers camped on the most seaward beaches and increasingly older settlements are encountered on the ridges as one moves lagoonward.

Only at two points in time did the occupants of Cape Krusenstern specialize in taking bowhead whales. Whale hunting technology has been available in the Chukchi Sea region for the last three thousand years. About 1000 B.C. at Cape Krusenstern, people of the Old Whaling Culture occupied five large, deeply excavated houses in winter and moved into five nearby, shallowly excavated houses in the summer. Not until A.D. 1000, during Western Thule times, did the people

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at Cape Krusenstern again hunt bowheads. The nearest to Cape Krusenstern that bowhead whales are hunted today is at Kivalina. "Why was whaling discontinued?" Krupnik (1988:102), analyzing twentieth century whale harvests, has suggested that "It [Asiatic Eskimo-marine resource interaction] has nothing to do with a textbook view of aboriginal arctic communities as stable, ecologically balanced societies that maintained equilibrium with their environment through delicate population controls and/or shifts in hunting pressure." Krupnik (1988:104) perceives "short 'equilibrium' intervals" shifted rapidly "by ecological 'leaps' or pulsations that occurred at different levels of duration and intensity." Krupnik (1988:104) argues that aboriginal arctic seal mammal hunting behavior leading "to regular local overkill of game stocks" was quite "normal" and may be responsible for the lack of cases of continuous, long-term cultural succession in the historical record (emphasis added). To the extent that the Krusenstern whaling settlements reflect the local availability of bowheads to hunters, Krupnik's model may be supported by the historical record of whaling at Cape Krusenstern.

Until recently, the Old Whaling Culture was known only from this single settlement. Dikov (1988) reports another Old Whaling Settlement at the Devil's Gorge Site on the south shore of Wrangell Island. Both sites are peripheral to the range of bowheads today. In 1867 Captain Long of the bark <u>Nile</u> accurately mapped the south and east shores of Wrangell Island but spotted no whales in clear water. According to Bockstoce (1986:145), whalers knew "that crystal-clear waters contained no whales; murkier seas often indicated the presence of 'animalculae,' or plankton, upon which the oceans' food chains are built and upon which the whales feed." Three thousand years ago at Wrangell Island and Cape Krusenstern and again at Cape Krusenstern 1,000 years ago, plankton blooms and

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sea ice conditions may have been significantly different than today and affected the distribution of bowheads.

"During the years between the late 16th and middle 18th century, large numbers of Eskimos moved into the Brooks Range and beyond, shifting from a mixed economy of sea mammals/fish/caribou to almost exclusive dependence on caribou" (Hall 1976:131). The deeply excavated, semisubterranean houses with entrance tunnels resembled those in use on Kotzebue Sound and along the Kobuk River at that same time and are found in moderate-sized settlements on lakeshores and riverbanks. Near the lakeshore settlements have been found lines of inuksuk (stone cairns) that were used to drive into the lakes caribou to be dispatched from kayaks. In addition to numerous cache pits most settlements (e.g., Feniak Lake, Desperation Lake, Kinyiksukvik) had a stone-ringed structure which archaeologists interpret as a qazgi or community building. Ethnographically, the qazgi housed various activities (dances, feasts, and ceremonials as well as more mundane activities) and provided "the physical focus of the entire integration process" (Burch 1980:271).

The distribution of and similarities between these settlements suggest that they were all part of a single cultural system. Some time in the eighteenth century the settlement pattern in the Brooks Range shifted to one of more temporary occupations by smaller groups. Later, houses (those containing Western trade items) were not clustered into large settlements, were less substantially built, and likely were occupied only for a single season (Hall 1976:127-129). That the caribou, upon which the late prehistoric Brooks Range populations of the sixteenth to eighteenth centuries depended so heavily, failed in some way is one possible hypothesis (Aigner 1982) to explain the appearance and disappearance of

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these specialized hunters from the archaeological record. Skoog (1968:357-359) suggests that major population fluctuations are likely the result of densitydependent processes that form an integral part of caribou population dynamics. Thus fluctuations in the size of the Western Arctic Caribou Herd are likely to be encountered at multiple intervals in the archaeological record.

At the Choris site, located about 40 miles southeast of Kotzebue on the Baldwin Peninsula, Giddings excavated three large semisubterranean houses dating to the middle of the first millennium B.C. (Giddings and Anderson 1986). The occupants hunted sea mammals and caribou, but caribou dominated the faunal remains collected from the site. Today, caribou are not found near Choris. Analysis (Simmons 1960) of caribou bones suggested that two caribou populations were harvested. Most of the bones show a population of distinctly smaller stature, a condition which characterizes animal domesticates in general and domesticated reindeer in particular. The long, narrow Baldwin Peninsula is ideally suited for pasturing reindeer in the summer when they have a tendency to scatter due to insect molestation. In recent years the NANA Regional Corporation summered part of its herds on the peninsula for this reason. Giddings (1967:214) mused, "I sometimes visualize the Choris village as that of three extended families, each with several men as herders and enough others to go out in boats to procure the sealskins and ivory that they fashioned into Eskimo-like clothing, weapons, and implements." If Giddings' interpretation of the data is correct, the residents of Kotzebue Sound experimented with a subsistence strategy 2,500 years ago that was not practiced again until it was reintroduced by the U.S. government at the beginning of the twentieth century.

Many items in archaeological sites in the region are exotic, that is their raw materials were not derived from the immediate area (too many sources to cite here). Obsidian from a source area on the Koyukuk River is common in some archaeological horizons. Kobuk jade and amber are found in coastal settlements, and ivory and sea mammal products have been recovered from sites in the interior. High-quality cherts from sources in the DeLong Mountains were used for the manufacture of stone tools throughout the region. Iron, presumably of Chinese origin, appears in sites in the first few centuries A.D. The people smoked tobacco, probably obtained through Chukchi middlemen, long before they were visited by the first Europeans. Some of these exotic items may have been obtained in the course of a society's annual cycle. Others came via regional and long-distance trade networks. Although socioterritories cannot yet be delineated archaeologically, the data suggest that residents of the region were, for a very long time, enmeshed in an economic network of broad geographic proportions.

III. TRADITIONAL PERIOD

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1. Introduction

Ernest S. Burch, Jr. has for the last 30 years been the most ardent, systematic, comprehensive, and productive student and researcher of the peoples of northwestern Alaska and the NANA Region (see bibliography). Though Burch has amassed much ethnographic data covering the past two centuries, he has set priorities for his research. Because of the imminent demise of informants knowledgeable about the first half of the nineteenth century, many of Burch's published works focus on reconstructing the ethnographic situation at that time. A remarkable portion of what we know about the Traditional Period in the NANA region is due to Burch's efforts, and the following discussion relies heavily on

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Burch's research. Other researchers have found it difficult to obtain data regarding the Traditional Period. For example, Anderson and Anderson (1977:35) begin their characterization of Selawik subsistence and settlement patterns at the end of the nineteenth century because "of all the pre-village periods it is the one for which we are still able to gain detailed information from oral tradition."

Burch's depiction of early nineteenth century societies is not fully accepted by all researchers. McNabb (1990a:2) for example writes:

Burch's assertion that these [northwest Alaskan] groups were independent socio-political and territorial units is problematic, since their memberships consisted of extended bilateral "families" that are consistent with the fluid household-based social organizations that are described in the main body of Eskimo ethnographic literature. There is no doubt, however, that by the 19th century population concentrations in excess of one or two hundred Iñupiat would form on a seasonal basis in many customary locations, usually with a customary membership. Burch's evidence for organized warfare among 19th century territorial units supports his claims for independent socio-political organizations at that time, however there is not presently a consensus among scholars that warfare was widespread, common, or organized uniformly along territorial lines.

In earlier works Burch (1975:13; 1976:56-59) maintained that the societies of northwest Alaska in the first half of the nineteenth century had no names. Burch (1980:277) since has repudiated that view and has, more recently still, termed these named societies "nations" (1981). Initially, Burch identified ten societies, or nations, in the region. However, incorporating new research by Anderson and Anderson (1977), Burch (1986:32, footnote 4) has since recognized two nations along the Selawik drainage where formerly he identified only one. The names and spelling of these eleven nations used in this report follow Burch (1988) with the exception that "ng" is used for the nasal-velar diphthong. Alternate spellings appear in earlier work of Burch and others (e.g., Anderson and Anderson 1977). A uniform orthography for Iñupiaq has not been accepted by

Natives, linguists, and ethnographers. The eleven named Iñupiat nations recognized by Burch, their approximate geographic locations, and modern villages located within those locations are:

Nation	<u>Geographic Area</u>	<u>Modern</u> Village
Akunirmiut	middle Kobuk drainage	Kiana
Kangigmiut	Buckland-Kiwalik drainages	Buckland
Kiitaarmiut	west Selawik flat	Selawik
Kivalliñirmiut	Kivalina-Wulik drainages	Kivalina
Kuungmiut	Kobuk delta	Noorvik
Kuuvaum Kangianirmiut	upper Kobuk drainage	Ambler, Shungnak, Kobuk
Napaaqturmiut	lower Noatak drainage	Noatak
Nuatarmiut	upper Noatak drainage	none
Pittarmiut	Goodhope-Inmachuk drainages	Deering
Qikiqtarzungmiut	Kotzebue Sound	Kotzebue
Siilvium Kangianigmiut	upper Selawik drainage	none

Each of these nineteenth century societies occupied a well-defined territory (Burch 1988:228, Fig. 303). Burch (1980:276) notes, however, that societal boundaries "tended to be located in zones of relatively low productivity," and "while environmental factors had some bearing on the existence and location of societal boundaries primarily by influencing the location of population centers social factors of some kind must also have been at work. Just what those factors were, however, I cannot say."

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2. Annual Cycles

As discussed earlier, annual cycles are generalizations that obscure the flexibility and variability of the actual movement of people throughout the year. The sections following outline the annual cycle of each of the eleven Iñupiat nations identified by Burch for the Traditional Period. The annual cycles of the various nations are presented in an approximate geographic order beginning with those groups that spent some portion of the year focusing upon the resources of the northern shores of Kotzebue Sound and Hotham Inlet. Nations occupying the upper Kobuk drainage and the Selawik drainages are considered next, followed by a discussion of the nations that occupied the southern shores of Kotzebue Sound. Principal references for each nation are provided after the headings. Variations within these cycles will be indicated. Underlying these variations within a single cycle and variations between cycles, however, is a cultural unity, Giddings' Arctic Woodland Pattern, which reflects the *in situ* development of the traditional societies over several centuries.

Annual cycles have no beginning or end. Following a convention used by Burch (1975:14; 1978: Appendix), the annual cycles outlined below begin with freshwater freezeup. That was when people settled into their winter quarters within their home territory for a more-or-less lengthy sojourn. Burch (1986:19) has "found that freshwater freeze-up was the only time of year when every one of them [Burch's informants] could state with assurance where members of the society under discussion would have been located, and most of them could say approximately (or, often, precisely) how many households would be situated at each site" and further, that at freeze-up, the members of any particular society were located not around the periphery of the society's territory, but in its core (although they were not necessarily tightly clustered there.)"

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Qikiqtarzungmiut Annual Cycle [lower Noatak River-Baldwin Peninsula] (Burch 1975:14-17, 1980:289-290, 1986:25)

The Qikiqtarzungmiut was the only nation in northwest Alaska whose members usually stayed in their home territory year-round (Burch 1980:275). Early fall primarily was spent in fishing, although the men also hunted spotted seals. Sheefish, tomcod, and smelt were taken through the ice. Some men hunted caribou in the Baird Mountains. Unless summer and fall harvests were meager, people spent the darkest period of early winter in recreational or ceremonial activities. Messenger feasts were held in good times.

Most of Qikiqtarzungmiut spent the winter in a large village at the present site of Kotzebue. Several smaller winter villages were located in the lower portions of the Noatak River. Winter houses were substantial semisubterranean dwellings, some multifamily, with long entrance tunnels. Heated by a central fireplace where driftwood was plentiful and lit by a sea-mammal oil lamp, these homes offered comfort throughout winter.

The longer daylight hours of spring gave hunters the opportunity to travel inland for caribou or venture far out in Kotzebue Sound to hunt seals. In April all the Qikiqtarzungmiut would get in their umiaks and move into snowhouses on the ice off Cape Krusenstern to hunt seals. Cape Krusenstern is still referred to locally as "Sealing Point." When the ice became rotten in June, the Qikiqtarzungmiut moved onto shore, recovered their umiaks, and then moved eastward to their summer camp at Sisualik, the spit marking the right shore of Hotham Inlet.²

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² Sisualik is the spelling now preferred; other transliterations appearing in the literature are: Sesualik, Sheshalik.

When they arrived at their summer camp ground at Sesualik, they all went ashore and set up their tents in a line parallel to the beach. A bit further on, the tents of the Upper Noatak [Nuataarmiut] and Kobuk Delta [Kuungmiut] people would be in place already; shortly afterwards the Lower Noatak people [Napaaqturmiut] would arrive and set up their camp also. These societies, represented by virtually their entire memberships, comprised the bulk of the summer population at Sesualik, but small contingents from the Selawik and Kobuk Rivers regularly took part as well. The members of each society set up a camp clearly separated from the others." [Burch 1975: 16-17].

All the people at Sisualik hunted beluga in late June and July. Toward mid-July, as beluga-hunting activity lessened, hundreds of people from as far as Chukotka, the Diomedes, and Point Hope converged on Sisualik for a Native trade fair.

Fairs were events at which members of several regional groups gathered together in one place for a period of time lasting some two to three weeks or more. Although they did provide the primary opportunity for inter-regional trade, fairs were also the major occasions in which inter-regional marriages were contracted, new partnerships were made, and old alliances were renewed. In addition to trading, the fairs were characterized by feasting, dancing and athletic competitions, love-making, and informal gatherings, with each type of activity normally involving members of two or more regional groups. Although clearly structured around inter-regional alliances between individuals, the fairs brought together large numbers of individuals not connected on any basis at all. It was the only context in which so many strangers could get together peacefully in aboriginal times. (Burch and Correll 1972:30).

The people left Sisualik for their home territories in August. While some Qikiqtarzungmiut hunters or families went up the Noatak for caribou hunting, those who returned directly to their winter settlements from Sisualik fished for salmon or whitefish and hunted young bearded and spotted seals until freezeup.

Nuatarmiut Annual Cycle [upper Noatak River] (Burch 1975:18-19, 1980:294, Hall 1975)

Foote (1965:266, Table 18) summarized the principal food species utilized by the Nuatarmiut by season. The Nuatarmiut occupied the upper portions of the Noatak

River in fall and lived in winter houses constructed of moss, skin, or sod. At freeze-up the Nuatarmiut settled near good supplies of willows and fishing locations on rivers and lakes, but their primary concern was to be near where caribou could be found. The caribou hunt was the most important fall activity. A bad year forced people to relocate, sometimes outside their home territory. Throughout the winter the men hunted caribou from these settlements. The women and children fished and hunted small game and birds nearby.

In May most people returned to locations along the Noatak River where they had cached their umiaks. Some Nuatarmiut remained in the upper Noatak to hunt caribou all summer, while others crossed the Brooks Range to participate in the trade fair at Nirlik at the mouth of the Colville River. After breakup most of the Nuatarmiut travelled downriver to spend the summer at Sisualik. The Nuatarmiut stopped for a few weeks at the Noatak delta, and the men hunted ducks and fished while the women sewed new clothing for everyone. At Sisualik they engaged in beluga hunting and took part in the annual trade fair. The Nuatarmiut left Sisualik soon after the fair. Their return trip up the Noatak was arduous as their boats were laden with sea mammal products to last them the coming winter. An early freezeup forced the Nuatarmiut to leave their boats and supplies and retrieve them later when the ice was thick enough for sled travel. When this happened the Nuatarmiut probably missed the fall caribou migration and were in for a hard winter.

Napaaqturmiut Annual Cycle [lower Noatak River] (Burch 1975:18, 1980:290, 1986:24-25; Foote 1965; Hall 1975:13-26)

By freezeup the Napaaqturmiut had settled into several locations in the forested area between the Noatak and Eli rivers in the Noatak Flats where fishing was

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good. Foote (1965:265, Table 17) summarizes Napaaqturmiut principal food species by season. In early winter the women fished and hunted small game and birds while the men hunted caribou. As winter deepened, hunting of small game and birds became more important. In good years the darkest days of early winter were a holiday time, and Messenger Feasts were held. When supplies ran out in late winter, and caribou were not available, "trout" (char) in the river became important until people moved to their spring sealing area north of Cape Krusenstern in late March or early April. They transported their umiak and kayak frames over the hills to the coast by sled.

The Napaaqturmiut spring seal-hunting area lay between that of the Qikiqtarzungmiut to the south and the Kivalliñirmiut to the north. Settlements of snow houses were built out on the ice, and, like the Qikiqtarzungmiut, the Napaaqturmiut moved their camps onto shore as the ice rotted and re-covered their boats with skins for the trip to Sisualik.

At Sisualik the Napaaqturmiut took part in the beluga hunt and the trade fair. The Napaaqturmiut were among the first to leave the trade fair, travelling up the Noatak by boat to their salmon fishing areas along the Noatak and Eli rivers where the women remained while the men continued travel further upriver to hunt caribou.

Kuungmiut Annual Cycle [Kobuk River Delta]

Burch and Correll (1922:22-23) first identified the Kuungmiut as a distinct nineteenth century society occupying the Kobuk delta from the accounts of Native informants. As the Kuungmiut seasonal cycle has been described in only one published source (Burch 1978:289), it is reproduced in full here.

At freshwater freezeup the delta people were distributed among one large and several small settlements located near the mouths of the different river channels. During the winter they lived primarily on fish, plus supplies gathered during the previous summer. In spring they moved onto Hotham Inlet to fish, then returned home before breakup to harvest a caribou migration. A few families went to the Sesualik fair, but most stayed home and fished, hunted birds and small game, and collected vegetable products. In late summer some of the men walked north to the Baird Mtns. to hunt caribou, but most remained at home to harvest seals, and later caribou. Much of the population seems to have made only short moves during the course of an ordinary year.

Anderson et al. (1976:31-32) found no reference to this society in late nineteenth century explorers' accounts but imply that such a society might have existed on the basis of archaeological data.

Akunirmiut Annual Cycle [middle Kobuk River] (Burch 1980:291)

The Akunirmiut occupied the middle portion of the Kobuk River. Only recently, Native oral accounts have identified the Akunirmiut as a separate society (Burch 1980:291). Burch and Correll (1972:22-23) grouped the Akunirmiut together with the Kuuvaum Kangianirmiut as a single society. The earliest accounts of the informants of Giddings (1961) and Anderson et al. (1976) relate to the Early Transitional Period. Again, the only published account (Burch 1980:291) of the annual cycle of the Akunirmiut is reproduced below:

At freshwater freezeup the Middle Kobuk people were distributed among several medium-sized settlements located at or near the major tributaries of the Kobuk. They trapped fish as long as possible, then hunted caribou and small game and lived on their fish supplies during the winter. In late spring they would move to their fish camp locations. In summer the men would hunt caribou and mountain sheep in the mountains, while the women would fish along the Kobuk. Late in the summer the men would return, and the move to the winter settlement then would be made by boat.

The Kayak Site, excavated by Hickey (1968:66) has been tree-ring dated to the period 1838-1860 and likely represents an Akunirmiut winter village. Lamp oil concentrations, a bladder nozzle of ivory, trade items (metal, beads, etc.) and

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a mukluk sole of ugruk hide indicate ties with the coast (Hickey 1968: Appendix). Such items could have been obtained by Akunirmiut traders travelling to the coast or through downriver middlemen.

Kuuvaum Kangianirmiut Annual Cycle [upper Kobuk River] (Burch 1980:293-4) The Kuuvaum Kangianirmiut occupied the upper reaches of the Kobuk River. According to Burch, their seasonal cycle differed from that of the Akunirmiut only in that the fish runs in the Kobuk River reached them later and left earlier and that the summer hunters trekked farther east in the mountains. Unlike the Nuatarmiut, who travelled as a group to the coast to obtain sea mammal products, only a few Kuuvaum Kangianirmiut families specialized as traders. They travelled to the trade fair at Sisualik in the summer (Burch 1984:307).

<u>Kivalliñirmiut Annual Cycle [Kivalina area] (Burch 1980:289; 1986:24)</u> When the rivers froze the Kivalliñirmiut had distributed themselves in inland locations near good fishing places along the Kivalina, Wulik, and upper Kukpuk rivers where sections remained open throughout the winter. The men hunted caribou, and ptarmigan and hare were found nearby. When winter stores ran out, these settlements might be relocated several times, but almost always along the rivers.

In April the Kivalliñirmiut moved out onto the ocean ice, where they lived in snow houses. The men hunted seals, and the women hauled the meat and hides to shore camps. Bowhead whales were hunted when the leads opened up. Before breakup the Kivalliñirmiut moved to camps on shore from which the men continued to hunt seals. Returning ducks and geese also were taken at this time. When the ocean ice left the coast, the Kivalliñirmiut loaded their boats and travelled up

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the rivers and cached their supplies. Some families went to the trade fair at Sisualik, but most then travelled northward to hunt caribou.

In late August all the Kivalliñirmiut congregated at a coastal location for a holiday period during which feasting and games took place. By mid-September all the families were in the vicinity of their freezeup settlements, fishing for char and hunting caribou.

<u>Kiitarmiut and Siilvium Kangianigmiut Annual Cycles [lower and upper</u> <u>Selawik River] (Anderson and Anderson 1977; Burch 1980:292, 1986:32</u>

<u>footnote 4)</u>

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Anderson (1974-5) were the first anthropologists to recognize two, rather than one nineteenth century society along the Selawik River--the Kiitarmiut and the Siilvium Kangianigmiut. The Kiitarmiut occupied the lower portions of the Selawik drainage and Selawik Lake. The Siilvium Kangianigmiut were upriver people. Anderson and Anderson do not present any definitive information on the differences in annual cycle of these two societies in the early nineteenth century. Ecologically, they (1977:36-7) distinguish two general patterns for these groups:

Basically, the upriver area was distinguished by a greater number and variety of fur-bearing animals and conditions that allowed a longer winter ice fishing season, whereas the lower area had better conditions for spring ice fishing, carried out at Selawik Lake, and a greater accessibility to the coast and its late spring and summer resources. . The distinction between the two groups was essentially the same as that among the various Kobuk River groups (Burch 1977 [sic]), but was not so clear-cut as that between the Nunatagmiit [Nuatarmiut] and the Napaaktaugmiit [Napaaqturmiut] of the Noatak River, who even spoke different dialects.

At freezeup both the Kiitarmiut and the Siilvium Kangianigmiut had settled for the winter into small communities at good fishing places along the rivers and

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lakes. From them the men would travel to intercept the migrating caribou. Anderson and Anderson (1977:20) excavated a single house ruin at Selawik (Niglaaqtuq: SLK 024) that belongs to this era:

As indicated by the absence of net sinkers, for example, fishing by gill nets was probably less important then than it has been for the Iñupiat of the region in the present century. Instead of using gill nets, fishing by weir and dipnet was likely more important (along with angling and spearing), a fact that is consistent with information about their past related to us by our Siilavingmiit informants. No western trade goods were located at the site.

Fishing and small game and bird hunting went on throughout the winter and caribou were harvested when available. In spring, while the ice was still solid, the Kiitarmiut moved to Selawik Lake to fish through the ice. The Siilvium Kangianigmiut continued their winter activities upriver.

When the rivers began to flow, people moved to their summer camps to hunt muskrats and waterfowl and to fish. A few families would travel to the trade fair at Sisualik. Fishing continued throughout the summer. In August the men would hunt caribou in the Nulato Hills to the south.

Kangigmiut Annual Cycle [Buckland River] (Lucier 1954:215; Ray 1964:84-85, 1967, 1975b; Burch 1980:286)

The Kangigmiut spent the period from September to June upriver fishing and hunting. Freezeup would find them living near the rivers, primarily around present-day Buckland, in semisubterranean, moss-covered houses with central fireplaces. Primary emphasis at this time of year was on trapping whitefish. In January families would gather at a caribou corral and camp in hemispherical tents. After the cooperative caribou drive, groups would travel widely throughout the rest of the winter hunting caribou and small game and fishing. As spring approached the Kangigmiut established late winter camps progressively downriver, and by June they reached Eschscholtz Bay at the mouth of the Buckland River. En route they hunted muskrat. In early summer the Kangigmiut fished for smelt, then turned to hunting sea mammals, especially the beluga, that calved off the mouth of the Buckland River. Most of the Kangigmiut travelled to Sisualik for the trade fair in July, leaving there for their home territory by mid-August. In late August they began ascending the Buckland River for their fall fishing sites and early winter settlements.

Pittarmiut Annual Cycle [Goodhope Bay] (Larsen 1958:580-581; Ray 1964:83,

<u>1967, 1975b; Burch 1980:288)</u>

Larsen (1958:580) termed this group the "Inmachermiut," which seems to be a local group rather than a societal group designation. Ray (1964:83) did not assign a name to this group but recognized a "tribal" division which occupied the drainages of Goodhope Bay and whose main village was "Pittak." Later, Ray (1967:376) designated this group the "Inmachuk" or the "Kigalik" and suggested that in the early nineteenth century they occupied the Kiwalik drainage as well as the Goodhope Bay drainages. These designations, like Larsen's, seem to be local. Burch (1980:283, 297 footnote 19) says that the boundaries separating this society from others is unclear and may have been "the result of some kind of a catastrophe which had recently wiped out most of the inhabitants of the district." Burch (1980:288) refers to this society as the Pittarmiut, for the Goodhope or "Pittock" River travelled and recorded by Hobson (Ray 1964:83).

Like the Kangigmiut, the Pittarmiut spent the entire winter inland. At freezeup they settled along the larger rivers. Winter villages were medium sized and consisted of several temporary moss houses with central fireplaces. The houses

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had single or double sleeping platforms to accommodate one or two families. Caribou hunting was the chief occupation in the winter, although fish and small game also were taken. The men hunted caribou with snares set in willow thickets or drove them into surrounds constructed of willows where they were dispatched by bow and arrow. When hunting caribou in winter, snow houses roofed with willows and snow were used.

In April the Pittarmiut moved to Cape Espenberg for sea mammal hunting, especially for bearded and other small seals. Early spring sealing camps were located out on the ice, but as the ice rotted they moved the camps onshore. Sealing by kayak continued from shore until the ice moved out in early July. Then most families moved inland again, living in small groups, hunting caribou or ground squirrels, and fishing in the lakes and rivers. Some families went to the Sisualik trade fair instead of moving inland. The Pittarmiut returned to the coast in late summer. There they netted seals for a few weeks before moving to their winter settlements.

3. Discussion

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Famine always loomed over the subsistence bases of all of the early nineteenth century societies in northwest Alaska. Famine could strike in any year, in any season, and in any area within a society's home territory. When famine did strike, the early nineteenth century inhabitants of the region compensated by turning to alternate, perhaps less desirable, but convenient resources or by redistributing themselves within the societal home range or the region according to well-defined social linkages. Some could not activate these compensating

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mechanisms in time and perished. In the folk tales recorded by Hall (1975:446, Table 10) at Noatak, starvation was the ninth most frequent theme of thirty-three "physical dangers" mentioned in the set of tales recorded. The eight themes which appear more frequently could be regrouped from highest to lowest frequency as physical dangers: 1) other people, 2) animals, especially bears, and 3) foraging activities. Starvation figures prominently in the folklore.

Caribou were readily available in the home ranges of all of the early nineteenth century societies and by the middle of the nineteenth century:

the Western Brooks herd was at maximum population size, filling up all portions of its range and overflowing into adjacent territory. The Seward Peninsula and the mountains northeast of Norton Sound formed a major 'overflow zone' . . . During this period caribou were numerous in the overflow district, but were much more sedentary than members of the main herd; they travelled only short distances during the course of their annual cycle, remaining within the same general area on a year-round basis. (Burch 1972:356)

Each of the eleven early nineteenth century societies or nations relied upon three primary resources to varying degrees: caribou, fish, and sea mammals. Failure to obtain one of these resources caused hardship, though not necessarily catastrophe. Other resources could figure critically also. Failure of ptarmigan and hare populations at certain seasons of the year could prove disastrous. Burch's published data on the early nineteenth century suggest that this was a relatively stable period ecologically in that no regionwide, multiseason failure of key resources seems to have occurred. Presumably, any shortages were compensated for at the societal and the regional levels.

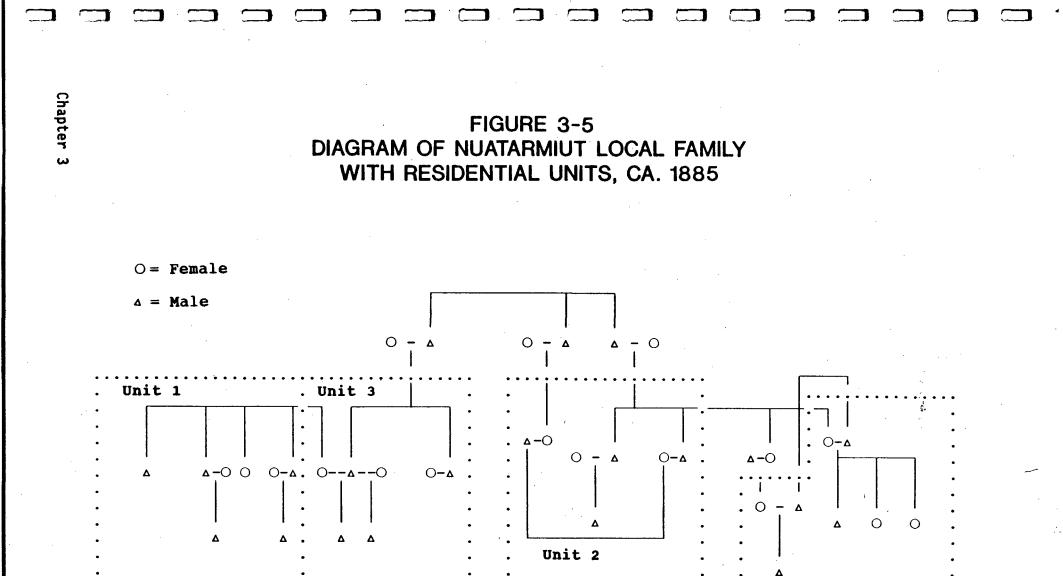
Social Organization

Early nineteenth century societies in northwest Alaska were segmental; that is, the basic unit was the domestic or nuclear family, though the operative unit politically and economically was the "local family" (Burch 1975:235-238). The

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local family was a lineally (related by direct descent), collaterally (related by nonlineal descent, as cousins) and affinally (related by marriage) extended family. Figure 3-5 shows the composition of a Nuatarmiut local family about 1885 (Burch 1975:256, Figure 12). The Nuatarmiut occupied the core area of the Western Arctic Caribou Herd, where the full effects of the caribou decline were not felt until 1888, the approximate year of Nuatarmiut abandonment of their territory. Figure 3-5 therefore represents an example of the local family at a time when their society was still viable. In this example, "membership was based on a variety of sibling and cousin ties, but many others including marital and in-law relationships, were also employed for this purpose" (Burch 1975:255). This prototypical local family was composed of thirty individuals belonging to four domestic units (labeled 1-4). Unit 1 is comprised of siblings of both sexes, spouses and offspring. Unit 3 is comprised of male siblings, spouses and offspring, and is affinally linked to Unit 1. Unit 2 is comprised of male siblings and a female cousin, with spouses and offspring, and is collaterally linked to Unit 3 and affinally to Unit 1. Unit 4 is an extended family that is lineally related to Unit 2, collaterally related to Unit 3, and affinally related to Unit 1.

Thirty-three kinship roles were named during the Traditional Period (Burch 1975:70, Table 3) as were twenty-seven basic kin relationships (Burch 1975:71, Table 4). These named roles and relationships prescribed the duties and obligations of the constituent social actor(s) and "both ideally and actually, kinship ties were emphasized at the expense of all others" (Burch 1975:22). Burch (1975:294) labels the kinship system "family-oriented" and hypothesizes that such systems are "relatively common in hunting-gathering societies,



Unit 4

Source: Burch 1975:256.

universal in highly modernized societies, and rare at intermediate levels of social complexity."

Each local family was linked to numerous other such families by both consanguineal and affinal ties. "A Northwest Alaskan Eskimo Society is thus most easily conceived of as a network in which the nodes were extended [local] families, and the lines between the families were less active or temporarily inactive kinship ties of various kinds" (Burch 1980:263). To illustrate how such a system operates, Gal (1985a, 1985b) metaphorically labelled such a system by the Eskimo term "ayaqhaat." Ayaghaat is the Iñupiaq word for string figures, or "cat's cradle." In a game of cat's cradle, each of the fingers may be taken to represent domestic families or local families and the string to represent the active kinship relationships linking domestic families into local families or local families into a society. The length of the string represents social or ecological opportunity and constrains the number of kinship linkages that may be As the game progresses (as domestic groups are realigned) the activated. composition of the local families or societies (those fingers linked by the string) may change, but the underlying structure, the possible linkages defined by kinship relationships, remains the same. Such a system provides a safetyvalve, allowing for the radical reconstitution of face-to-face groups at multiple levels in case of social or ecological crises.

"The outer boundaries of the kinship and political systems were defined by a relatively sharp break in this network of relationships. From this point of view, a society was a consanguineally and affinally bounded system" (Burch 1980:263). Burch (1988:304) has suggested that on the basis of his ethnohistorical data the separate early nineteenth century social systems or

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societies were 80 percent endogamous. Each such system was associated with a well-defined territory requiring a distinct seasonal cycle, and its members spoke a subdialect of Iñupiaq. Further, "differences in clothing, traditions, taboos, rituals, subsistence base, and various other factors combined to impart a sense of unity to the members of each society and of separateness from people belonging to the other societies. Intersociety prejudice was very strong in traditional times" (Burch 1988:304).

Settlement and Population

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The constituent domestic families of a local family occupied adjacent dwellings. Smaller settlements would be comprised of a single local family (Burch 1980:263). Burch (n.d.a.-1.) has recently detailed the fall settlements by society within the region to reconstruct the societal populations in the nineteenth century. As these data are unpublished and are undergoing final revision (see Burch 1980:296, Note 7. for a caveat that still stands), they are abstracted below only to suggest at a gross level what the population of the region might have been in the early nineteenth century. Burch (1980:296, Note 7) acknowledges that "As new information has been acquired and as I have reviewed old information in the light of the new, I have had to alter earlier opinions." These are not census data. They represent a period rather than a point in time.

The productivity of the various catchment areas (Higgs and Vita-Finzi 1972:27-28), or areas "served" by a settlement, will determine the upper limits of its size as well as its duration. In the mobile economies such as those of early nineteenth century in the northwest region, "[human population] numbers are often smaller than those which the available resources could support, being kept at that level by both well known social and less well understood physiological

Group	Numb.	Number	Largest
	<u>Named</u>	<u>Houses/Pop.</u>	<u>Settlement</u>
Akunirmiut ¹ Kangigmiut ² Kiitaarmiut ³ Kivalliñirmiut ⁴ Kuungmiut ⁵	8 6 27 13	55-60/330-360 28-33/168-198 75-98/450-588 35-36/210-336	10-12/60-72 3-4/18-24 6-8/36-48 5-7/30-42
Kuuvaum	10	24-38/144-228	10-15/60-90
Kangianirmjut ⁶	11	78-85/546-595	15/105
Napaaqturmjut ⁷	10	18-28/114-174	5-6/30-36
Nuatarmiut ⁸	21	65/455-520	6/42-48
Pittarmiut ⁹	11	31/217	7/49
Qikiqtarzungmiut ¹⁰	20	49-55/343-385	20/140
Siilvium Kangianigmiut ¹¹ Totals	24 162	61-82/366-492 519-611/3,343-4,093	12-15/72-90

<u>Source Notes</u>: 1-Burch n.d.f Table 21; 2-Burch n.d.k. Table 34; 3-Burch n.d.i. Table 30; 4-Burch n.d.b. Table 4; 5-Burch n.d.g. Table 24; 6-Burch n.d.e. Table 18; 7-Burch n.d.c. Table 9; 8-Burch n.d.d. Table 11; 9-Burch n.d.1. Table 37; 10-Burch n.d.h. Table 26; 11-Burch n.d.j. Table 32.

protective feed-back mechanisms" (Higgs and Vita-Finzi 1972:28). We cannot know if Burch's informants identified every fall settlement occupied during the Traditional Period and not included in the table above are isolated houses (39 with a population estimated at 234) that were identified to Burch. Thus, Burch's population reconstructions reasonably may be estimated to fall below the actual occupancy of the societal territories in the region at that time.

Societal territories overlapped yet were considered inviolate at certain times of the year. Trespass by members of another society often was considered an act of aggression. Sometimes, however, one group would use a portion of occupied territory after the original group had left to exploit another part of its area. For example, the Nuatarmiut travelled through and utilized Napaaqturmiut territory on their way to and from the trade fair at Sisualik.

Economic Processes

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Each of the segments, or local families, of the early nineteenth century societies or nations were able to satisfy almost all of their basic needs themselves. The accumulation of wealth and power were major goals (see Burch 1975:210-213 for an excellent exposition of hypothetical developmental forces within a local family). Wealth during the traditional periods consisted of large inventories of food, clothing, and skins (Burch 1975:209). Interfamily and intersocietal trade was founded on these surpluses. Regional and subregional differences in the distribution of resources and long- and short-term variations in the availability of resources at particular locations insured interfamily and intersocietal trade.

Political processes and, therefore, kinship relations figured prominently in the acquisition of wealth. The size of the local family was determined by the "effectiveness" of the umialik "because more people would be tempted to affiliate [by invoking kinship relations] with a successful organization than with an unsuccessful one" (Burch 1980:265). Local families were hierarchical structures headed by the umialik, who "generally directed the overall subsistence and manufacturing activities of the men, and his (primary) wife did likewise for the women. Most of the family's goods that were not in active use were kept in storerooms supervised by those two individuals, particularly by the umialik's wife. They were issued as needed to the other family members" (Burch 1980:267).

Traditional societies of the early nineteenth century were not egalitarian, they were stratified. Members of the same age and sex within a society or within a local family did not have equal access to resources (Burch 1975:220; 1980:265). Close consanguineals or affines of the umialik expected and usually received special treatment (Burch 1975:213).

Each society included a group of relatively large local families that were roughly equal in size and influence to one another, but definitely superior in both respects to many other families. The more powerful families typically had their winter dwellings at the most advantageous locations within the societal territory, while the settlements of the less powerful ones tended to be situated in more marginal settings (Burch 1980:265).

Local families represented stable economic groups to the extent that the institutionalized and structured sharing supervised by the umialik and his wife insured that everyone received what they needed. In times of famine, however, the constituent domestic families of the local families would move and activate kin relations in another local family elsewhere within the societal territory or even in the territory of another society. (Burch 1980:268).

Societal and Intersocietal Integration

Local families generally were exogamous, and affinal ties bound one such family with several others. Each local family's <u>qazqi</u> (for a general discussion of the qazgi see Burch 1980:271) served as a social center for the group and was the locus for information exchange between sexes, generations, domestic families, and occasionally with other local families (e.g., during feasts) or other societies (e.g., during a messenger feast).

During the course of an annual cycle each local family usually came in contact with all the other local families of the society (Burch 1980:270). The food reserves accumulated by early winter and a usual lull in subsistence activities afforded local families occupying the same general area an opportunity for visiting. Where the settlements were most stable over the course of a single annual cycle, visiting was very common. This probably accounted for the lack of strong ethnic differentiation between groups--for example, the Siilvium-Kangianigmiut and the Kiitaarmiut of the Selawik drainage.

Most societies had at least one annual gathering (<u>gatizut</u>) of their entire membership, which was "an important factor in maintaining a comparatively high level of information flow among the members of the society" (Burch 1980:270).

Societies were linked primarily by bonds established between individuals, bonds which over time extended to their domestic families. These bonds comprised intermarriage (20 percent of each society found spouses outside the society), trading partnerships, and co-marriage (Burch and Correll 1972:25-28; Burch 1970, 1975:106-111, 146, 198). These bonds "helped improve the quality of life in good times, and helped increase the survival rate in bad" (Burch 1980:273).

Two institutions provided integration functions at the inter-societal level but in fact were operational through the personal linkages of intermarriage, trading partnerships, and co-marriage. The annual trade fair at Sisualik brought members of many different societies together under the conditions of a general truce.

In addition to private contacts between partners, there were intersocietal feasts, dancing, and athletic competitions, and exhibitions of shamanistic prowess. A truly comprehensive social occasion, it was made possible both by the confluence of the Noatak, Kobuk, and Selawik rivers near Sheshalik [Sisualik] and by the relatively large (and temporary) concentration of resources there (particularly beluga and salmon) just prior to and during the fair" (Burch 1988:305).

The second institution, the Messenger Feast, was basically just a one- or twoweek gathering of two local families from different societies whose heads were associated on a partnership or co-marital basis; participation was by invitation only (Burch 1980:274). The Messenger Feast is a widespread formalized ceremony

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of intervillage exchange for goods not obtainable within a group's territory. The institution of the Messenger Feast occurs among the Yup'ik and Iñupiat Eskimos in Alaska. In Northwest Alaska, these feasts generally took place in the coldest and darkest part of the winter, from late November to January. Unlike the annual trade fair, Messenger Feasts were held sporadically.

Recognizing that the two types of information on warfare in Northwest Alaska (specific battles and generalizations about waging war) are secondhand at best, Burch (1974:2) writes: "The general pattern of warfare was the same throughout the Northwest Alaska area. Both my own data and the literature suggest that the frequency and sophistication of warfare increased somewhat as one proceeded toward the coast from the interior, and as one went south along the coast. This variation was insignificant. . . " Warfare was endemic in Northwest Alaska and erupted when festering enmities between individual members of different societies accumulated to an intolerable level. "My data suggest that the combination of circumstances required to start a war occurred somewhere in Northwest Alaska at least once a year" (Burch 1974:3). Offensive actions were often delayed in consideration of food reserves and other factors; magical preparations for war The principal objective of waging war was total annihilation were few. (tamatgirait) of the offending group, including men, women and children (Burch 1974:8).

Military considerations also allied different societies, such as when "the depredations of a large regional group would exceed the ability of its smaller neighbor(s) to retaliate against it. When this happened, the smaller units often formed 'military alliances' for self-defence or retaliation" (Burch and Correll 1972:32).

Subsistence activity in the Traditional Period was predicated on intermittent famine, and as a result "the persistence of the population of any given society over the long term required that a substantial proportion of its members have allies in neighboring groups, people upon whom they could depend when their own resources failed" (Burch 1980:276).

IV. EARLY TRANSITIONAL PERIOD, 1850-1890

1. Introduction

Prior to the extensive search for Sir John Franklin and his expeditions between 1848 and 1854, meetings were fleeting between the residents of northwest Alaska and Europeans on navigational-exploration voyages. In 1816 Otto von Kotzebue was the first Euro-American to visit the region. He was followed by Shishmarev in 1820, by Beechey in 1826, and 1827 and by Kashevarov in 1838. Although some trade was conducted by these exploring parties and welcomed by the Iñupiat, it did not seriously affect traditional lifeways.

In 1849-1850 the <u>Plover</u> overwintered in Kotzebue Sound. In 1848 Capt. Thomas Roys of the bark <u>Superior</u> discovered the Bering Strait whaling grounds. Within a few years, large numbers of whaling and trading vessels began to frequent the region, introducing firearms, whiskey, and disease. The summer trade fair at Sisualik presented an ideal opportunity for whalers and traders to obtain furs and other products from the Natives in exchange for firearms, metal tools, and other items. When the Sisualik traders returned to their home territories for the winter, they took with them not only Western trade goods, but infectious new diseases as well. The traditional trade network focused upon Sisualik became a vector for the rapid and wide spread of these new diseases.

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Whalers and traders found better anchorage off Cape Blossom, and between 1881 and 1884 the trade fair shifted to the site of present-day Kotzebue, which was called "Rendezvous" or "Summer Rendezvous" during this period (Anderson et al. 1976:41). The U.S Department of Treasury Revenue Marine attempted to regulate the trade in firearms and whiskey in the 1880s and stopped regularly at the "Rendezvous." The interior exploration expeditions of the Revenue Marine and the Navy in the 1880s (Cantwell 1889a, 1889b; McLenegan 1887; Stoney 1900) staged at Kotzebue. Kotzebue became the internal and external market center for the region, a function it still serves.

2. Annual Cycles

With the establishment of regular visits to the region, the number of historic accounts related to the Natives of the region increased. Unfortunately, these European observers generally did not recognize the regional differences which characterized the Traditional Period. Also, as these early observers usually spent no more than a few weeks near Native encampments, their accounts provide only fragmentary glimpses of occupied and abandoned settlements (see Anderson et al. 1976 for a good example of the kind of reconstruction that may be based upon these scattered accounts).

Kobuk River Annual Cycle

In 1940 and 1941 Giddings (1961) recorded recollections of several elderly residents of the Kobuk River. The three men interviewed by Giddings--Pegliruk, Kahkik, and Oolyak--had grown to manhood before the missionaries came to the Kobuk valley. They were born sometime between 1860 and 1870 and provided information mostly about Kobuk life at the time they were young men.

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The seasonal activities of the late nineteenth century recorded by Giddings generally reflects the traditional cycle described by Burch for the Traditional Period. Caribou and fish predominated as food species. "The people of the Kobuk depended almost wholly upon the resources of the streams, mountains, and forests. Articles such as seal oil and seal-skin line were known to them through trade with the coast, although these were non-essentials each of which had its local substitute" (Giddings 1961:128).

At freezeup Kobuk families dispersed along the river in semisubterranean winter houses. They set fish traps in the river for whitefish and mudsharks. Hare were snared throughout the winter, and the men hunted individually for caribou. Women prepared fishnets for the next summer, while men carved wooden dippers and buckets or made sleds for trade for seal mammal products with the coastal peoples. In spring the family moved out of the winter house to camps where the men would snare waterfowl and hunt muskrat while the women fished. In summer the family relocated to fish camps on the main rivers. The women fished while the men hunted caribou, sheep, and marmot in the mountains. This hunt was important as caribou and marmot taken at this time provided skins for winter clothing. The men might not return until just before freezeup, when it was time again to build the winter house.

The "nationalities" of Pegliruk, Kahkik, and Oolyak cannot easily be determined, but they were either Akunirmiut or Kuuvaum Kangianirmiut. Pegliruk and Kahkik spent most of their very early years in the upper Kobuk River country, but they mention the middle river as well. Oolyak grew up near Kiana, but unlike most residents of the Kobuk delta, who travelled to the coast for the summer, he describes travelling north to the mountains to hunt sheep and caribou. Perhaps

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the Akunirmiut and Kuuvaum Kangianirmiut societies were not sharply distinguished in the late nineteenth century. Giddings recorded neither societal name; however, Cantwell (1889a:61) encountered a number of families, presumably Akunirmiut, who were returning to the middle Kobuk area in late July after having visited the trade fair at "Rendezvous," or Kotzebue. They spoke of a another people who lived at the headwaters of the Kobuk during the winter and who travelled to the Koyukuk River to trade with the Indians and hunted as far north as the Colville River. These upriver people, presumably the Kuuvaum Kangianirmiut, moved into the middle Kobuk area for summer fishing.

Two other aspects of the narratives of Giddings' informants suggest that early nineteenth century patterns were changing by century's end. Giddings' informants insisted that winter houses were occupied for only one season, and "people never had a village together a lot of the time" (Giddings 1961:41). This pattern of dispersed winter settlements contrasts with the moderate-sized villages recorded for the late Arctic Woodland Culture sites excavated by Giddings and for the early nineteenth century settlements identified by Burch. Giddings also relies solely on Stoney's descriptions of caribou drives in the upper Kobuk area as his informants were silent about this technique. Perhaps caribou had abandoned the Kobuk area. This supports Oolyak's account of a generalized annual cycle during the late nineteenth century in which a man and wife were "not well fixed about clothing" (Giddings 1961:44). Caribou skins taken in late summer and early fall were used to make crucial winter clothing.

3. Discussion

<u>Supply</u>

According to Burch (1972:356) the Western Arctic Caribou Herd began to decline sometime between 1850 and 1860. The effects began at the margins of the herd's range, especially to the south on Seward Peninsula and east of Kotzebue Sound. By 1880 caribou numbers had decreased drastically, "By 1890 only stragglers were found outside the center of habitation, and even within the center of habitation, the population was reduced to scattered bands of animals" (Burch 1972:357). The relative ecological stability of the first half of the nineteenth century had been disrupted, and dramatic demographic shifts had occurred with increasing Western contacts. The traditional societies all but vanished.

Social Organization

The decline of the Western Arctic Caribou Herd contributed to social/cultural disintegration. Burch (1975:28) estimates that the subsistence base of northwest Alaska dropped by 40 to 50 percent during the Early Transitional Period. About that same time, foreign diseases and resultant morbidity decimated some local groups, while others remained virtually untouched. Reports suggest that venereal diseases, measles, influenza, diphtheria, and other illnesses drastically reduced some populations already stressed by famine (e.g., Foote and Williamson 1966:1049). Cantwell (1889b:83) reported no evidence of smallpox epidemics but observed that syphilis was common among coastal natives, but rarer inland. Lucier (1954:216) reports that the outbreak of influenza in 1918 reached the Kangigmiut.

Social organization probably remained essentially unchanged throughout the Early Transitional Period. At the intrasocietal level, social relations probably suffered due to declining population. Diminishing resources meant smaller families for longer periods. Also, the availability of firearms "freed the individual from hunting techniques that required group participation at particular locations during restricted seasons" (Foote and Williamson 1966:1047). As human populations sagged and resources failed, local aggregation (recruitment) and domestic family realignment (dislocation), though probably still based on related domestic families, likely were required to focus on a wider geographic ara. At the same time, non-kin and non-Eskimo associations increased, providing alternatives to traditional, kin-based and -controlled social action. "Contact with total strangers became such a commonplace event that people had to learn how to deal with them on a peaceful basis simply in order to survive" (Burch 1975:29).

Settlement and Population

The decline in the Western Arctic Caribou Herd caused frequent and widespread famine during this period for the people of northwest Alaska. A great famine struck in 1881-1883. In some areas, particularly those with regular and ample supplies of fish, people fared better than others. Many suffered terribly. Using personal observation and indirect evidence, Burch (1984:316, Table 1) posits a slight decline in population between 1850 and 1880, but by 1900 he estimates the 1850 population had been reduced by roughly 66 percent (Burch's population estimates are: 3,695 in 1850, 3,100 in 1880, and 1,050 in 1900). Foote and Williamson (1966:1046) calculated a population reduction of 50 percent between 1850 and 1885. $\left(\right)$

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Caribou hunted by the Pittarmiut and Kangigmiut were among the first subpopulations of the Western Arctic Caribou Herd to decline. The reasons for the decline of the Western Arctic Caribou Herd are not well understood. Some of the factors that have been suggested include overgrazing, hunting pressure, and reduced access to critical winter forage. Overgrazing seems unlikely as large reindeer herds, which utilized the same forage, were easily introduced and quickly increased in areas where caribou were once common. Skoog (1968:329-332) provides evidence that in some areas of Alaska, increased hunting pressure coincides with caribou population increases. Minc (1986:57, Fig. 4) found a close fit between cycles of cold, wet weather associated with a northern displacement of Pacific maritime high and Burch's (1972) reconstructed curve for caribou population fluctuation during the historic period. Citing a strong negative correlation between the size of reindeer herds and winter precipitation restricting access to critical winter forage in data from Greenland in the period 1910-1950, Minc (1986:56) suggests that the northward shift of the Pacific maritime high resulted in a shift from warmer, dry winter conditions to colder, wetter conditions. This shift, she posits, would adversely affect caribou winter feeding and increase winter mortality. Minc (1986:58) believes the "effects of these cycles suggest that a hunting population dependent on caribou would face . . . an extended regional crisis every three to five generations." Burch (1972:356) originally posited a resource crisis for caribou dependent human populations every two or three generations but has since readjusted his estimate to every three to five generations (Amsden 1977:48).

Many of the Kangigmiut, who since the Traditional Period had been obtaining European goods at Kotzebue and trading them to the Yukon and Unalit territories to the south, abandoned their home territory. They gradually relocated in Unalit

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territory, which had become depopulated as a result of the smallpox epidemic of 1838. There they became known as "Malemiut" (Ray 1964:63-64; 1975:130-139).

The response of the Pittarmiut to the caribou crash is uncertain, but Burch (1980:288) marks the termination of this society as occurring prior to 1850. Hobson travelled up the Kuzitrin River and down the Goodhope River in the spring of 1854. In the Kuzitrin drainage he observed several villages and a caribou drive and found caribou meat plentiful and easy to purchase. In Pittarmiut country, Hobson observed only two small villages, each with only two occupied dwellings, one on the Goodhope River, the other at Cape Deceit (Deering) (Ray 1975b:151-155).

"During the years 1881-1883 <u>all</u> food resources failed in the Kivalina region. About sixty percent of the population starved to death the first year, and about half of the survivors died in the second. The rest fled to surrounding areas as refugees, and only a few ever returned to their homeland" (Burch 1985:116). Brower (1942:37-38) reports that flu contributed to the decimation of the Kivalliñirmiut.

The Kuungmiut probably suffered a resource failure like that experienced by the Kivalliñirmiut at about the same time. In 1884 Cantwell found mostly unoccupied settlements. At one small settlement Cantwell (1889:54) was "informed that many natives had starved during the winter."

The Nuatarmiut abandoned their homeland by 1888 (Burch 1975:257). Some Nuatarmiut moved with the Napaaqturmiut to Qikiqtarzungmiut territory, but most moved to the Arctic Coast as did many of the Qikiqtarzungmiut, Kuungmiut, and Kivalliñirmiut (Burch 1984:314, 317). According to Foote and Williamson (1966:1051) the Nuatarmiut who moved to the lower Noatak River abandoned their former annual cycle and moved with the remaining Napaaqturmiut to the Napaaqturmiut spring sealing grounds.

Reliable fisheries, prominent in their early nineteenth century seasonal cycles, probably enabled the Napaaqturmiut, Siilvium Kangianigmiut, Kiitaarmiut, Kuuvaum Kangianirmiut, and Akunirmiut to continue "to occupy their traditional territories, although their populations steadily declined because of disease and emigration" (Burch 1984:314).

Economic Processes

"By the end of the 1820s native traders of Alaska and Siberia were exchanging wares in sufficient quantities from travelling traders as well as at Point Spencer and Kotzebue markets to change considerably the household inventory of every Eskimo in the Bering Strait area. At that time the trader who was a specialist in European exchange appears to have emerged...and to have amassed considerable individual wealth" (Ray 1975:121). In the early nineteenth century the explorers/whalers/traders and the Iñupiat operated relatively independently of one another. Iñupiat exchanged foodstuffs, clothing, furs, and handicrafts for items of European manufacture, especially metal. With the exception of the manufacture of handicraft items specifically for trade to Americans, production remained traditional.

One trade item in particular, firearms, eroded this independence and "slowly bound the native people to an outside culture" (Foote and Williamson 1966:1047). Highly desired, they could take virtually every species of game harvested

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traditionally. Also, as noted earlier, firearms enabled small domestic units to range independently in search of diminishing resources, decreasing their reliance on coordinate production groups (e.g. for a caribou drive) mobilized through kinship ties. Although firearms apparently were first introduced to the Pittarmiut in 1819, only after 1850 were they sold in large enough quantities that they began to replace traditional weaponry (Ray 1975:8). Traditional continued until the twentieth weapon use century. however. because ". . . individuals were too poor or <u>isolated</u> to obtain needed ammunition, spare parts, or new weapons" (Foote and Williamson 1966:1047) [Emphasis added.]

Trade continued to be profitable for Natives even after the Great Famine of 1881-1883. Brower (1942:40) visited a trader in the spring of 1885 at Kotzebue and observed,

Here [at the annual trade fair] the natives were accustomed to gather from points as far north as Tigara [Point Hope], and south to the mouth of the Yukon. Which accounted, no doubt, for the unusual wealth of the headman with whom we stayed. His racks were loaded down with bundles of Siberian deerskins, bales of Russian tobacco and furs of all kinds--a veritable gold mine for trading purposes, and well worth the whole trip.

The headman was in all probability the umialik of a large local family whose native trade relations were largely traditional. As the Western Arctic Caribou Herd had begun its precipitous decline at this time, Siberian deerskins were an important substitute for caribou skins for clothing.

Societal and Intersocietal Integration

As noted earlier, these historical descriptions provide only fragmentary glimpses of life in northwest Alaska during the late nineteenth century. Though stressed by events, the integration processes in operation at the beginning of the century probably continued. "At times of famine everywhere, the kinship and tribal

[societal] boundaries expanded to allow greater latitude of interaction" (Ray 1964:64). Burch (1980: 264) agrees that the "Northwest Alaskan Eskimos were involved in a single comprehensive system, or 'chain,' of kinship ties. In other words, there were no significant discontinuities in the kinship network anywhere in Alaska" but adds:

The extensive kinship networks referred to are the result of the widespread population movements which took place in the last half of the 19th century and the first few decades of the 20th. They did not exist during the first half of the 19th century. At that time, extensive operating kinship networks were restricted to the single society level. Inter-societal marriage and inter-societal migration did occur, but neither was common enough to erase the abrupt discontinuity in kinship ties that occurred at each society's borders.

Brower's trip from Point Hope to Kotzebue in the spring of 1885 illustrates the breadth of kinship ties throughout the region (Brower 1942:34). Brower's travelling companion, "Baby," was living at Wevok at Cape Lisburne when Brower met him. "Baby" was raised "two sleeps south of Tigara," and at each settlement they visited en route to Kotzebue, whether in Kivalliñirmiut or Napaaqturmiut territory, "Baby" was able to identify relatives. Brower (1942:37-42) characterizes these settlements in terms of their relative prosperity. Some were better off in terms of food supplies than others. One settlement somewhere near Cape Krusenstern was destitute. Brower's observations support Foote and Williamson's (1966:1049) summary statement for the late nineteenth century:

. . . it cannot be overemphasized that during these years of sickness, poverty, and hunger the Eskimos were left free to solve their own problems of adjustment. These problems could be solved by traditional Eskimo methods augmented by a minimum acceptance of foreign technology. The environment never totally failed to provide the necessary foods. Survival required no drastic departure from Eskimo life, but it did require a vigorous and talented use of the shifting resource base. Survival depended upon continuance of Eskimo dietary habits. It did not demand a change in Eskimo language.

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V. INTERMEDIATE TRANSITIONAL PERIOD, 1890-1940

1. Introduction

The Intermediate Transitional Period began with the establishment of permanent schools, missions, and stores in the region. The earlier independent relationship between Native and white was replaced by an interdependent relationship. Whites established permanent residence among the Natives for reasons of commerce or services they provided to the Natives, and "the dissemination of important food sources and the acceptance of firearms caused the Eskimos to be irrevocably bound to the outside culture" (Foote and Williamson 1966:1049). Permanent American settlements encouraged Natives to gathered there, too, as they provided non-kinship bases for social organization at a time when kinship-based social units were stressed by depopulation traditional (recruitment) and resource failure (dislocation). New economic opportunities appeared--mining, trapping, and reindeer herding--but throughout this period they remained local. The Intermediate Transitional Period ended with increased government interest in Alaska and its affairs prompted by World War II and the "Cold War."

2. Annual Cycles

No ethnographies of the people of northwest Alaska have focused on the Intermediate Transitional Period. Seasonal rounds at different times during this period have been reconstructed by Anderson et al. (1976) and by Anderson and Anderson (1977) for the residents of the Kobuk and Selawik drainages. The unpublished remembrances of Joe Sun (Sun and Libbey 1983) also provide vital information about life during this time.

Kobuk Drainage Annual Cycles

Between 1890 and about 1910 the people of the lower Kobuk River followed a seasonal cycle that revolved around an annual summer movement to the coast to obtain sea mammal products and to trade. Caribou disappeared from the lower river earlier in the cycle than those in the upper river, and most of the people of the lower river moved to the coast in the spring. Travel to the coast precluded the opportunity to hunt summer caribou in the Noatak drainage. Small settlements near good fishing locations dotted the delta in winter. Men of the lower river hunted caribou in the upper Noatak area in winter.

The patterns of upriver people emphasized summer fishing. As caribou became more difficult to find, summer fish camps tended to be women's camps as the men ranged widely hunting sheep and caribou in the mountains. At the height of the decline of the Western Arctic Caribou Herd, greater numbers of upriver people journeyed to the coast in summer. As the town of Kiana grew due to mining activity, many upriver people moved to the lower river.

Several themes stand out in the personal accounts recorded by Anderson et al. (1976:56-95). Starvation and great privation were commonplace. Even productive fishing locations sometimes failed, and lesser resources such as ptarmigan, hare, and waterfowl periodically became important. Men more and more were separated from their families. Women and children stayed for longer periods at settlements to be near schools, missions, and health care. For example, Joe Sun (Sun and Libbey 1983:61-65) explains that when he was first married in the late 1920s, he and his wife spent most of their time out in the Noatak country. When his children were small, the whole family moved to the Noatak in the fall and did not return until March. School was a major consideration, however, and once his children were enrolled, Sun would take his family with him before school started, return them to Shungnak for school, and then go back to the Noatak alone for sheep and caribou hunting. Sun also travelled to the Selawik drainage with his family in the springtime for muskrat hunting, returning to the Kobuk in time for late summer fishing.

Selawik Drainage Annual Cycle (Anderson and Anderson 1977:36-)

At the turn of the century freezeup dispersed the people of the Selawik drainage to small settlements at the mouths of small streams draining lakes. Some of these settlements were used as summer fishcamps and were occupied essentially year-round. Fish weirs erected across the streams provided a winter's supply of fish. Upriver people trapped fox, mink, otter, and lynx from November through January. People on the lower river looked for fast-running sections near their settlements, where thin ice allowed fishing throughout the winter. They also snared hares and ptarmigan in late winter.

In spring families moved by dogsled from their winter settlements to muskrat camps. Steel traps were used for muskrats but most people preferred to hunt them with .22 rifles. Some of the lower river people travelled to Selawik Lake to fish for sheefish and pike, while others moved to Eschscholtz Bay to hunt seals with Buckland people.

Breakup came earlier on the upper river, and as soon as the ice was out they set up individual or joint fish traps. After establishing the camps, the men left for the Noatak to hunt caribou. Families from the lower river dispersed along the many channels and fished with gill nets. Unlike the upriver families, those of the lower river did not congregate in joint fish camps. Some of these lower

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downriver families travelled to Kotzebue or Sisualik for trading and sea mammal hunting. All the families returned to their winter settlements just before freezeup.

Once Selawik village became established in 1908, most of the lower river people and some of the people of the upper river relocated there. Those who stayed in the upper Selawik area maintained themselves by trapping and their lifestyle did not much change. As Selawik was a traditional settlement, the lifestyle of the lower river people did not change much either, but the upriver people who relocated to the lower river had to establish new patterns.

Once all the Selawik families were back in the village for the winter, the women got out their nets and set them under the ice and the men fished for sheefish at Selawik Lake. In mid-November the men laid out their traplines. Throughout the trapping season the men visited their traplines for a week at a time, harvesting moose or caribou when they could. During Christmas week all the families of the Selawik drainage gathered at the village for holiday feasting.

In March most families withdrew their children from school and travelled to the muskrat camps. "By mid-May the school was empty and the village itself was abandoned" (Anderson and Anderson 1977:43). At the end of the muskrat season families returned to Selawik to trade their furs. Traders operated in Selawik, so most families did not go to Kotzebue to trade. Some families set nets near the village, while others established fishcamps farther away. The men hunted waterfowl with shotguns, and a few families traded at Kotzebue for sea mammal products.

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3. Discussion

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"It would appear from my informant data that between about 1890 and 1920, the [Western Arctic] herd had virtually ceased to exist as a functional unit. . . Although some animals remained in the center of habitation of the Western Brooks Herd and continued to use their normal calving grounds, regular annual movements ceased." (Burch 1972:357) Due to the failure of this critical resource Sheldon Jackson argued effectively for establishment of a reindeer industry in northwest Alaska and elsewhere in the state.

Throughout the Intermediate Transitional Period caribou were not available around Deering, though they had begun to frequent the area east of Kotzebue Sound once again. By the 1920s caribou were again being taken in the Selawik area during their fall migration (Anderson and Anderson 1977:45). In the late 1930s Noatak hunters still encountered only scattered caribou rather than large herds (Foote and Williamson 1966:1052). It was not until the 1940s that caribou returned to the Kivalina area (Saario and Kessel 1966:988).

Social Organization

"During the first half of the Intermediate Transitional Period, the two major demographic trends of the previous period--population reduction and dislocation-continued largely unchecked" (Burch 1975:30). Dislocated families gravitated towards settlements with missions, schools, and stores. Here they associated on a non-kinship basis. Church groups, reindeer herding associations, and organized village activities were established. Village councils were founded and "functioned largely to mediate or otherwise resolve disputes between the various kin-based factions in the villages" (Burch 1975:33). Throughout the Intermediate Transitional Period social organization changed immensely as the political, educational, religious, and recreational functions of the traditional kinship units were assumed by Western institutions.

One of the first activities of the missionaries was to rename the populace, assigning English surnames. Smith (1966:108) reports that the missionaries, unaware of genealogies, in some cases assigned different surnames to siblings. This renaming served to emphasize the nuclear, or domestic, family at the expense of the larger kin-group. "The missionaries and teachers . . . came with the explicit goal of 'saving' the natives, which meant, in practice, the elimination of most of the fundamental values that the Eskimos had" (Burch 1975:32). Polygamy, co-marriage, and easy divorce, which served to multiply an individual's ties to many groups in the traditional society, were specifically targeted.

Settlement and Population

The presence of schools, churches, and stores encouraged settlement of the people into larger communities. By the 1930s "the map of the Kotzebue region acquired essentially its present form" (Burch 1984:314). However,

Sedentarization put an end to the travel that had been so notable a feature of the traditional yearly cycles. As a consequence, the ties between the now (geographically) distant kin became progressively because there little effective weaker was communication between them even on a seasonal basis. Men still visited neighboring villages from time to time, but the women became highly sedentary. Neither men nor women had much opportunity to see relatives who lived much more than a hundred miles away except on rare occasions. (Burch 1975:32-33).

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In 1897 the California Yearly Meeting of Friends established the first mission in the region at Kotzebue, having arrived too late in the year to travel up the Kobuk River to establish their mission as intended. That winter only two Eskimo families stayed at Kotzebue (Anderson et al. 1976:44), but the permanence of the mission was established in a short time. In the following year a wooden frame house went up, and a post office was established in 1899. Kotzebue got its name in 1900. In 1901 the Friends were granted a tract of land there for their mission activities and a reindeer herd of 100 head was introduced. In 1902 the government shipped in the construction materials for a mission school. Children from other areas who travelled with their parents to the trade fair at Kotzebue were taught in the summertime, "beginning the process of transferring part of the traditional family roles of educating to white teachers" (Anderson et al. 1976:44). In 1909 the Friends built a hospital (Smith 1966:109).

In 1905 the Friends built a school at Kivalina on the barrier island at the mouth of the Wulik River. Its first teachers were Friends missionaries, and thirtyfour children attended the first day (Saario and Kessel 1966:1023). The school attracted the Kivalliñirmiut as well as refugees from the Shishmaref area. In 1903 a reindeer herd owned by two Iñupiat moved into the area, and in time the Kivalina Reindeer Company formed. In the early 1930s two stores operated at Kivalina.

In 1908 the Friends established a federally supported school at the site of present-day Noatak. The next year reindeer were introduced, and several men maintained individual herds until 1924 when the Kivalina-Noatak Reindeer Company was organized. A store was established in the village in 1915 (Hall 1975a:28).

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The year after the Friends landed at Kotzebue, more than a thousand miners stampeded to the Noatak and Kobuk rivers in search of gold. During that winter of 1898, the Samms, Friends missionaries at Kotzebue, conducted a census along the Kobuk River. They found two major settlements, at the mouths of the Hunt and Pah rivers, with a combined population of 280 and outlying settlements with 140 more (Anderson et al. 1976:45). Thirty-two prospecting camps sprang up along the Kobuk River that winter (Grinnell 1983:30-31).

Although most stampeders abandoned the region in the summer of 1899, some stayed on in the upper Kobuk area and others joined them the following year. The present site of Kobuk village became a supply depot for miners working along the upper river. In 1905 mail was moved between Kotzebue and Kobuk five times a winter by dog team. Kobuk once was called "Long Beach," later was named "Shungnak," and finally received its present name in 1928 (Orth 1971:534). The first government school along the Kobuk River opened in 1907 (Anderson et al. 1976:47). That same year the federal government established a reindeer herd at Kobuk for the Natives. In the 1920s most Kobuk families relocated to establish the village of Shungnak, about ten miles downstream from Kobuk.

Another supply depot sprang up at the confluence of the Squirrel and Kobuk rivers in 1908 or 1909 (Anderson et al. 1976:48) to supply miners stampeding to the gold strike at Kleary Creek. First known as Squirrel City and later named Kiana, it developed adjacent to the Eskimo settlement of Kutyak. By 1910 Kiana supported three stores and a restaurant and was the location of the Noatak-Kobuk District recording office (Anderson et al. 1976:48). In 1916 an Alaska Territorial School was established at Kiana for the children of white miners and by the early 1920s, Native children had become regular enrollees (Anderson et al. 1976:51).

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The discovery of gold at Anvil Creek (Nome) in 1898 prompted a massive stampede in summer 1899. Miners prospected throughout the Seward Peninsula. In 1901 a supply depot and post office was established at Deering for inland mining camps up the Inmachuk River. As at Kobuk and Kiana, stores and the possibility of wage-labor at Deering prompted Natives to relocate there. In 1906 the Friends established a mission school, and a government reindeer station was set up. By 1907 Deering boasted several stores, saloons and road houses (Heiner 1977:207). The old village, "Inmachukmiut," was located behind Deering, but "most of the old village inhabitants died in the 1900 measles and pneumonia epidemic" (Ray 1964:83-84).

After finding no extensive gold deposits in Kangigmiut territory, prospectors moved on. By 1914 a trading post, two reindeer herds, and a Friends mission had been established at present-day Buckland. Candle, on the Kiwalik drainage, boomed after gold was discovered there in 1901. The Fairhaven Mining District recording office was located at Candle. The Candle post office was established in 1902, and for a time the town boasted numerous stores, hotels, and saloons; a bank, a telegraph station; and even a dentist. Stores and the opportunity to work for wages attracted some Natives into the community. By 1935 Candle had a radio station and an airline operator (Heiner 1977:167).

By 1915 mining had reportedly fouled the Inmachuk River and deprived the Natives of Deering of an important resource--salmon. Supported by a Friends missionaryteacher, the Eskimo residents of Deering in 1915 relocated with their reindeer herds to a federal reservation established on the Kobuk Delta in traditional Kuungmiut territory. Nearby Oksik, the largest settlement on the Delta prior to establishment of Noorvik, consisted of only three to seven houses in 1905. Oksik 1

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had a school by 1913 (Anderson et al. 1976:47). All residents of Oksik soon moved to Noorvik, and the supplies for the new Oksik school were landed instead at Noorvik in 1915.

Noorvik was intended to become the major settlement in the Kotzebue-three river area, and shortly after it was founded it had a telegraph system with direct communication to Nome, a hospital (the first in the region), and electricity. The hospital remained until the next decade [1920s], when it was removed to the faster growing community of Kotzebue (Anderson et al 1976:51).

For several years Noorvik was the largest settlement in the region. A few Deering families became dissatisfied at Noorvik and returned to Deering.

In 1908 a mission and school were established at Selawik, and reindeer herding was introduced. "Within a year nearly all the families in the region moved to the vicinity of the village to take advantage of the school and the church" (Anderson and Anderson 1977:23). The Kiitaarmiut and the Siilvium Kangianigmiut gradually merged following the founding of Selawik village. Anderson and Anderson (1977:53) found that "until the 1950s the number of people living dispersed throughout the [Selawik] region fluctuated in response to the changing prices of furs: the higher the fur prices, the greater the number of people living (in order to trap effectively) away from the village."

According to McNabb (1990), "Village aggregation, then, proceeded fitfully: in 1910 the majority of residents lived outside permanent villages. As late as the 1930's about 20% of the population lived in mobile camps, dozens of which dot planning maps of this period."

Economic Processes

"From 1880 to 1930 the native economy of northwestern arctic Alaska became increasingly bound to the continental American market and to the Federal

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government" (Foote and Williamson 1966:1051). Imported tools had become essential. So readily were they adopted for traditional tasks that Van Stone (1980:1), attempting to document the Miner Bruce ethnological collection obtained in the early 1890s, in 1970 observed, "Unfortunately, even elderly villagers were unable to provide much additional information [about the functions of these traditional manufactures]."

"With the caribou gone and basic foodstuffs and ammunition available in stores or trading posts, people turned to a new subsistence pattern--trapping--to meet their needs. By 1899, "when the caribou population in the upper [Kobuk] region was reduced and the flow of Western goods to Kotzebue Sound expanded, an increasing number of individual boat loads of upper Kuuvangmiit [Kuuvaum Kangianirmiut] also began to travel to the coast annually" (Anderson et al. 1976:39).

From 1900 to 1929 fur prices climbed steadily (Foote and Williamson 1966:1050) but after the Great Depression of the 1930s white fox pelts once worth \$55 fell to a tenth of that value. Until the bottom fell out of the market an Eskimo trapper could earn several thousand dollars annually. Effective trapping meant that family units spread out and remained somewhat mobile, tempering the tendency toward permanent settlement.

With caribou unavailable, fish became the most important subsistence item. Commercial twine for nets increased Natives' ability to catch fish. This, coupled with the need to travel long distances for trapping and hunting, led to an increase in the number of sled dogs. "The average dog team of 1939 was three times larger [8-10 dogs] than it had been 50 years before" (Foote and Williamson

1966:1052). Anderson et al. (1976:54) report that whereas precontact dog teams consisted of 3 to 5 dogs, in the first half of the twentieth century some families on the Kobuk drove teams of 18 to 24 dogs and maintained forty dogs at this time. The advent of canvas tents and light basket sleds shod with steel runners also assisted mobility for trapping, hunting, trading, and visiting.

Reindeer herding was introduced in the first decade of the twentieth century to provide a substitute for caribou meat. Like trapping, herding required that families spend long periods of time away from settlements tending their animals. Herders and trappers regularly visited the settlements for resupply but were forced to leave their children with relatives near town to attend school. "By 1920 the typical villages had a core of permanent native inhabitants, plus another group who spent at least the winters 'on the land'" (Burch 1975:31).

Without competition from caribou for pasture, reindeer herds grew quickly. By 1922 "a number of individual natives were starting to amass large enough herds to be able to live largely from the income of their herds" (Stern et al. 1980:47). Herders frequently ran traplines while herding, further supplementing their income. In the 1920s "company herds" were established to resolve range and management problems.

While "reindeer herding is of relatively minor importance to the regional economy of northwest Alaska in terms of the wages and salaries it generates" (Stern et al. 1977:238), "Unquestionably, the knowledge and skills gained through the operation of the reindeer company helped to prepare the Eskimos of Point Hope and other northern villages for a more sophisticated involvement in a new type of economic existence" (Van Stone 1984:158).

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Stern et al. (1980:104) caution that "The network of relationships between the herd owners, the villagers, and the merchants is a complex one." Changing government policy, loss of opportunity for herders to acquire wealth and prestige, low fur prices, the Great Depression, government made-work programs, reduction in the number of small, independent white traders in the region, lack of markets, and other factors combined to limit the significance of herding from village to village and over time. These issues are too complex to discuss here. For a more detailed discussion of these and other factors, see Stern et al. (1977, 1980), Stern (1977, 1989).

Throughout this period the mining industry provided steady but modest opportunities for wage labor. Natives not only worked in the mines, but hired out as cooks, hauled supplies, and sold fish for human and canine consumption. Some Natives staked their own mining claims. During the first few decades of this century payments to Natives were mostly in store items and food as most of the mines were small operations run on a partnership basis. Later, payment of wages became more common.

The Great Depression of the 1930s hit the region hard. Federal projects provided some wages during the depression, but production of local resources was reduced to the subsistence level. Fur prices were so low it was no longer worth the effort to trap. Lack of capital slowed the mining industry: "At the same time the large reindeer herds started to decline. The decrease was caused by a number of factors, including the general economic depression in the villages, poor management techniques, overgrazing, and predators" (Foote and Williamson 1966:1052). Caribou began to move back into their old range, posing a double threat to the herders. Herds had to be more carefully tended to prevent their

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"capture" by their wild counterparts. Also, with caribou increasingly available as a source of meat, villagers did not need the herds so much for meat.

"By 1940, virtually all of the native population of Northwest Alaska was concentrated permanently in school-mission-store communities" (Burch 1975:32). By the end of the Intermediate Transitional Period, the population of the region depended on material items requiring cash to purchase but lived in communities with severely limited wage-paying employment opportunities. Direct government welfare began. In 1939 old-age assistance payments started, and shortly after 1940 aid to dependent children and to the blind became available. The harvest of traditional resources provided a safety net, but permanent residence limited the geographic range that could be exploited. Men still ranged widely for caribou, usually leaving their families in the villages during the hunt.

Societal and Intersocietal Integration

Depopulation, dislocation, and increasing settlement in permanent communities juxtaposed family groups in an unfamiliar, non-kin-based social environment. Law and order was imposed by U.S. government agents and other permanent white residents of the region. In this new social environment, U.S. institutions-especially school and church--served to integrate communities. "Medicine men (angakok), feasts, and trading partnerships were among the first institutions to be submerged or replaced by Christian practices" (Foote and Williamson 1966:1051).

According to Smith (1966:108-109) the Qikiqtarzungmiut held a Messenger Feast during the winter of 1897-1898. Throughout the Intermediate Transitional Period, however, the social contexts of feasting shifted to that of other institutions,

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e.g., church and patriotic celebrations. The Friends had established missions in all of the villages of the region, and the institutional framework of a single church served to integrate the communities at the regional level.Some traditional institutions survived. Joe Sun, for example, talks about his trading partner, or "neviq," at Selawik. Sun provided his partner with wolf, otter, and wolverine skins and received coastal products in exchange (Sun and Libbey 1983:70).

The Indian Reorganization Act of 1936 authorized the villages of the region to form village councils and recognized Native self-administration. The Reindeer Act of 1937 reinstituted the Lapp model of individual herd ownership and the integrating and disintegrating effects of the "stock companies" ended. However, reindeer herding never became a significant subsistence activity in the NAB region (Olson 1969:139; Stern et al. 1980:162; Van Stone 1984:158).

VI. RECENT TRANSITIONAL 1940-1970

1. Introduction

In the early 1960s the environmental baseline studies for a gigantic proposed port development in the region--Project Chariot--provided detailed data on two villages of the Northwest Arctic Borough. Doris Saario and Brina Kessel worked at Kivalina and Don Charles Foote, Alan Cooke, and Anthony Williamson at Noatak. Ernest Burch, who was a field assistant on Project Chariot at Kivalina, returned there from 1964 to 1966 to collect material for his doctoral dissertation. Edwin Hall spent thirteen months in Noatak village in 1964 and 1965. In 1965 Valene Smith collected data for a doctoral dissertation at Kotzebue. These are the major sources of anthropological information for the Recent Transitional Period. Louis Giddings launched a regional archaeological study on Kotzebue Sound and on

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the Kobuk River, also in the 1960s, and Douglas Anderson initiated a regional archaeological study of the Noatak in conjunction with Giddings' work.

2. Annual Cycles

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Kotzebue Annual Cycle (Smith 1966)

Smith (1966:54) conducted anthropological fieldwork in Kotzebue during the summer of 1965. She determined that the number of jobs available to Natives was "sufficient to provide a cash income for every household containing an employable member" and concluded that Kotzebue's residents depended "substantially upon a cash economy." The seasonal cycle Smith describes is sketchy, especially for winter months; she provides no estimates for amounts harvested.

Shortly after freezeup and throughout the winter many people, including children, fished through the ice for tomcod and sheefish. Very few families ran traplines as there was no local buyer. After breakup, when ice floes still choked Kotzebue Sound, groups of related men hunted ugruk. The women rendered the oil and dried the meat and hides.

In July a number of families moved from Kotzebue to summer camps at Sisualik for fishing and beluga hunting. Others set up tents on the beach at Kotzebue. In 1965 fifteen families from Noorvik and Kiana moved to beach camps at Kotzebue. Women and children picked berries when they ripened in August. Pickers often travelled by boat to good areas, took a taxi to the edge of town, or even chartered an airplane to an especially good place.

Kivalina Annual Cycle (Saario and Kessel 1966; Burch 1985)

Arctic cod were taken through the ice of the lagoon behind Kivalina from freezeup until November when ice got too thick. Men harvested caribou throughout winter until about April when travel became too difficult. Snowy owls and seals also provided food in winter. Trapping in the 1960s was a secondary activity and depended upon the price of furs and individual finances. Sealing at the leads could take place throughout the winter but sealing was not usually very good until February when light and weather conditions improved. Ugruk, small seals, and beluga were taken in March and April. In April many Kivalina people travelled to Point Hope for whaling. A whaling camp operated intermittently at Kivalina during the 1960s.

After ocean ice dispersed, the men launched their open boats to hunt sea mammals until July. Char arrived in June during their run to the sea. When the birds returned they were hunted, and later seagull eggs were gathered locally and murre eggs were collected at Cape Thompson. In late June and early July the women gathered edible greens, and from August to mid-September they picked berries. Intensive fishing on the Wulik River began in September and continued until freezeup. Many men worked for wages between May and October, often travelling to Kotzebue or Fairbanks for employment.

Noatak Annual Cycle (Foote and Williamson 1966; Hall 1971, 1975a)

The present-day [1960-1961] economy of Noatak consists of a delicate balance between subsistence hunting and a cash income from summer wage employment. Although the Noatak Eskimos obtain most of their food supply from hunting, fishing, and gathering, each family must nevertheless purchase imported goods for necessities and comforts (Foote and Williamson 1966:1077).

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When dogsled travel became possible at freezeup, Noatak hunters sought caribou within a radius of 30 miles of the village. Caribou killed at this time were cached for later pickup when more snow made hauling easier. Caribou hunting waned in December as people prepared for the Christmas festivities but continued from January through May. Some trapping occurred throughout the winter but remained small-scale because of low fur prices. Mink were trapped near the village, but those trappers seeking fox, wolf, and wolverine ranged farther up the Noatak River. During the study period hare and ptarmigan did not constitute a major resource because caribou were plentiful. During the winter of 1964-1965 caribou passed far from the village, and hunters spent from ten days to two weeks on each caribou hunting trip (Hall 1975a:31) instead of the more normal four or five days.

Both women and men hooked for trout in the main channels of the Noatak River in October and November. The most productive winter fishing was during March when the char schooled up before migrating back to the ocean. Winter fish trapping on the Wulik River in late winter was an important activity, especially when the salmon harvests of the previous fall were poor.

In the 1940s, the traditional movement of families onto the sea ice for spring sealing ceased (Foote and Williamson 1966:1100). In the early 1960s only men made weeklong trips to the coast for seal hunting. Two men travelled to Point Hope in April to take part in the whaling.

Whereas winter united the residents of Noatak in their food gathering activities, summertime activities separated them into several groups, each with a different food supply. As soon as the ice left the river, most families packed their

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household goods and dogs into their boats and departed for Sisualik for sea mammal hunting. While the men hunted ugruk and beluga, the women set nets for trout and whitefish. Less than 3 percent of the meat harvested at Sisualik was returned to Noatak village. Most was consumed at Sisualik and "some of the meat contributed significantly to Kotzebue households that did not hunt in the summer months" (Foote and Williamson 1966:1103). Beluga muktuk, however, was brought back to Noatak as it was regarded as a winter luxury.

Most cash in the village came from summer employment. In 1960 "about five-sixths of Noatak's able-bodied men work for wages during all or part of the summer season," thirteen men found summerlong employment in Kotzebue and twenty-seven men left the region for work (Foote and Williamson 1966:1078). Those who worked in Kotzebue took their families with them. A few families remained in Noatak throughout the summer, living on surpluses put aside over the winter and on store-bought foodstuffs. One Noatak man had a herd of about 1,500 reindeer that he grazed between Sisualik and Cape Krusenstern in summer and in the lowland near Noatak village in the winter. Most of the reindeer meat was sold in Kotzebue.

Autumn food-gathering focused on hunting caribou, picking berries, and most importantly on seining fish. The success of the salmon seining was especially critical as salmon provided food for the dog teams upon which winter caribou hunting depended. After enough salmon were taken for dog food, seine fishing for char for human consumption began. After caribou, char figured next in importance in the winter diet. River-based caribou hunting continued until freezeup. Π

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3. Discussion

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Throughout the period 1940 to 1970 fish and seal continued abundant. Most significantly, however, during this period the Western Arctic Caribou Herd reestablished itself throughout most of the range it occupied in the early nineteenth century. In 1948 the caribou once again migrated through the Kivalina area and left with the remnants of the consolidated Kivalina reindeer herd. The moose population substantially increased and extended its range. Burch (1985:12) believes that the first moose ever taken in Kivalina were in 1953-1954.

Irving (1964:37) reported that caribou first returned in numbers to the upper Kobuk area in 1959. Prior to that time, "those men unable to get an income from wage labor made annual winter trips with their families to the Noatak Valley a hundred or so miles to the north, where they generally found meat in abundance." In the winter of 1960-1961 "caribou accounted for 84% of the fresh meat consumed in the diet; freshwater fish represented 14% of the diet; and all other meat, 2% of the diet" at Noatak where just twenty years before only a few animals had been seen. "In the Kivalina region, caribou were altogether absent from about 1881 to 1948" (Burch 1985:69). Burch (1985:12-13) discusses the inadequacies of the harvest estimates of Saario and Kessel and, using a modified methodology for the period 1964-1966, calculates total annual production of major food resources to be 370,468 to 445,186 pounds (1985:110), of which 60,563 to 240,724 pounds were caribou (Burch 1985:72). Selawik and Buckland hunters began getting more caribou.

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Social Organization

Foote and Williamson's (1966:1096, Table 14) data on the caribou take show that the food harvest at Noatak varied widely from household to household. Saario and Kessel (1966:1013,1014 Tables 15 & 16) show similar variability in the household harvests of fish, seals, and caribou. Foote and Williamson (1966:1103) explain this variability for Noatak:

Those families which reaped a small harvest either traded for or received food from households with a surplus in which they had relatives through blood or marriage. In this way the extended family continues to be a dominant force in Noatak society, and in this manner surpluses and deficits of food, native products, and money are shared and balanced among the families of the village. Without the trading relation of an extended family, many persons in Noatak would be unable to survive as they do.

The Noatak beluga hunts at Sisualik "were conducted in cooperative associations, normally in boats occupied by near kin" (Foote and Williamson 1966:1082).

Saario and Kessel (1966:1014) found that the most successful households at Kivalina had more than one hunter; that is, they were extended families that "frequently served as dispensing centers to other families that did not have sufficient native food on hand. This surplus was given to the needy or sold to those who had money." Families with more than one adult male frequently divided hunting roles; for example, one hunter specialized in taking caribou, another seals. Also, two Kivalina families had large cash incomes provided by adult sons who worked part time during the summer. This extra income was used to support hunting activities (Saario and Kessel 1966:1014).

Smith provides some similar details regarding the organization of subsistence pursuits at Kotzebue. She described ugruk hunting as predominantly a "family

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enterprise, in which several men pool the cost of gasoline" (Smith 1966:61-62). Smith found kinship terms to be largely English and the traditional number of kinship linkages recognized were attenuated (1966:68,71). Only nine of 119 grade-school children could speak Iñupiaq, and they all resided with grandparents. Ten Iñupiaq kinship terms used by adults older than forty were presented to the children. They recognized only three terms. Even so, the local family (termed "kindred" by Smith) still functioned, and kinship provided the basis for housing, hospitality, and food-sharing (Smith 1966:71).

Factionalism in Kotzebue was strong. Kinship links commonly enabled inmigration, links were usually strongest among members of the same village. Smith (1966:80) observed that "the antipathy between Eskimo groups based on village of origin is marked and intense. Virtually all adult Eskimo share a sense of solidarity with their own group and consider members of all other regional populations now resident in Kotzebue as suspect and unreliable." These village factions were probably related families. Smith's findings are consistent with Burch's (1974:2) description of the "Spartan ethic" that governed intra- and intersocietal [-deme] feelings during the Traditional Period:

According to this standard, a man's worth was judged to a large extent on the basis of his toughness and endurance, both physical and mental. Within a deme, demonstration of these qualities involved not bragging, not showing off, and not getting upset at insults. Between demes exactly the opposite was expected.

Contrary to stereotyped descriptions of Eskimos, however, they were a highly competitive people, and in competition lie the seeds of conflict.

Sixty-five percent of Kotzebue's 1965 population had migrated from other villages. In contrast with the apparently healthy operation of the extended family identified by Foote and Williamson at Noatak, Smith (1966:139) concluded,

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"The traditional Eskimo values of familial interdependence, mutual support, and subsistence survival have waned; the nuclear family, as a single survival unit with a desire for the assurance of a wage economy and for the White man's social values, is in the ascendancy."

Burch (1975) describes in detail the accelerated changes that took place in the kinship system during the Recent Transitional Period. New non-kin associations proliferated, enmeshed family members at an earlier age and involved them for a longer period of time. For example, during the Intermediate Transitional Period children often started school when they were older, were often withdrawn for long periods of time, and did not often complete more than four grades. By 1960 most school children completed the eighth grade, and many voluntarily went outside the region to complete high school.

By 1970, kinship no longer had the preeminent position in the life of the North Alaskan Eskimos that it once had. Furthermore, the nature of the kinship of the modern Eskimos was different in a number of respects from that of their ancestors. Nonetheless, except in the towns, most Northwest Alaskan Eskimos continued to orient the majority of their activities toward kinship goals most of the time, and those ends frequently involved considerations of a traditional sort. Even in the towns, it was still impossible for anyone to evade kinship obligations all of the time, although the patterns there were increasingly non-Eskimo in nature. In 1970, <u>complete</u> escape from Eskimo kinship, though possible, could be effected only at the expense of leaving Northwest Alaska and rejecting one's Eskimo heritage altogether. (Burch 1975:42).

Settlement and Population

Between 1900 and 1940 the population of the region doubled. It redoubled between 1940 and 1970, finally approximating population numbers estimated by Burch for the beginning of the nineteenth century (Burch 1984:316, Table 1). In the 1960s a new village, Ambler, was established on the Kobuk River, and the mining town of Candle was finally abandoned after a bad fire in 1966. With the decline of

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mining in the area, Deering's population sagged as people migrated to Kotzebue. All other villages in the region experienced steady growth despite out-migration to Kotzebue and elsewhere.

Services and facilities in the villages gradually increased during the Recent Transitional Period. Most villages had at least one church, a store, a BIA or state school, a radio-telephone link, and a National Guard armory. Most villages had electricity and a year-round airstrip. The size of homes had grown and they were heated with fuel oil rather than wood, as in the Intermediate Transitional Period. Increased services and conveniences like oil-burning stoves increased the need for cash.

The government hospital, relocated from Noorvik, was dedicated at Kotzebue in 1938 (Smith 1966:115). During the 1950s the Public Health Service began a massive program of hospitalization for infectious diseases, especially tuberculosis. This, combined with regular medical care available in the region, allowed the population to increase faster. The government health program decreased the death rate and affected the character of the population in two ways: 1) the number of living children in each family increased, and 2) the number of elderly increased as longevity increased. Families with twelve or more living children became common. Neither demographic trend, however, comports with a mobile, foraging lifestyle. Better health services reinforced the sedentary lifestyle. Fortunately, a resurgence of caribou near settlements forestalled calamity.

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Economic Processes

World War II somewhat relieved economic depression in northwest Alaska. The price of fur increased tenfold (Foote and Williamson 1966:1053). The market for native crafts expanded as large numbers of military personnel poured into the state. After the war seal and wolf bounties added to cash income sources. It was, however, the construction boom during and after World War II that provided the most sustained growth related to the period. Development of Alaska's infrastructure provided much seasonal employment throughout the state, and the people of northwest Alaska capitalized on the opportunity.

Economic factors favored lifelong parent-child relationships. Old- age assistance payments allowed an aging parent to significantly help satisfy the cash needs of the family. As more elderly received such assistance, more cash flowed into the region. Concurrently, seasonal wage employment opportunities for adult males arose outside the region. During the Recent Transitional Period many families exhibited an extended patrifamily pattern in which adult sons engaged in seasonal wage employment to support fathers and younger siblings in hunting activities at home (Burch 1975:138).

Salmon had been sold to traders as early as the first decade of the twentieth century. In 1909 Lockhart's store purchased 21,906 pounds of salmon from the Eskimo and resold the fish for \$.05 per pound. A commercial salmon fishery began operating in Kotzebue in 1962. In 1965 a floating cannery paid \$.50 per fish and a little more than 40,000 fish were caught (Smith 1966:58). The commercial catch varied widely from year to year. In only two years (1966, 1967) between 1962 and 1970 did subsistence salmon production exceed commercial production. Commercial fishing was integrated easily into the local economy. Commercial fishing

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occurred in midsummer when runs were heavy, but it did not conflict with the subsistence harvest of fish. The heat and flies of July and early August complicated drying the oily salmon, and therefore the two fisheries did not compete for the same salmon. Like trapping, commercial fishing tied the people of the region into a world market that controlled price. The price of fish and the financial need of the fisherman dictated fishing intensity. The production of fish, like the production of other renewable arctic resources, is subject to cyclic availability and occasional inaccessibility.

The early success of the commercial fishery spurred the rapid exchange of dog teams for snow machines (Hall 1971b:242). Two years after the introduction of the "iron dogs" to Noatak village, nineteen machines were in use. Cash earned by fishing paid for many of the purchases. Fall seining for salmon for dog food dropped once large teams were no longer critical for winter hunting. Freed from the necessity of drying great quantities of fish for dog food, wage earners worked at seasonal jobs later into the fall, increasing the cash flow to the Hunting caribou by snow machines was efficient enough that men who village. previously bought caribou meat because their cash jobs tied them to town except on weekends could now obtain caribou meat themselves. Caribou hunting by snow machine requires less skill, and even inexperienced hunters could take caribou. In the words of an older Noatak hunter, "The young men aren't really learning to hunt when they use snowmobiles" (Hall 1971b:250). Acquisition of, or perhaps the very basis of prestige may have begun a shift. At coastal locations, the use of snow machines changed the pattern of hunting seals at the leads. The shift to snow machines tied villagers more closely to the cash economy (Hall 1971b:243-250).

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Mining began again in the Shungnak Region with the establishment of a mining camp at Bornite, named for the sulfide of copper that was found there. Between 1956 and 1964, Bear Creek Mining, a subsidiary of Kennecott Copper, obtained more than 150,000 feet of diamond core drillings in the Bornite area and bought the mineral rights from the original prospectors. In 1965 and 1966 a thousand- foot-deep mining shaft was blasted, which promptly flooded. Exploration continued, and the company identified another major deposit near Bornite, called "Arctic," in 1968. The mining exploration operations in this Ambler Mining District provided wage opportunities for the region's workers, particularly those from the villages of the upper Kobuk. Though the Ambler District was estimated in 1981 to contain more than \$9 billion worth of copper, lead, zinc, silver, and gold, the cost of transportation activity in the district had died down (McDermott 1981). In 1990 NANA Regional Corporation purchased the major mineral interests (valid claims when ANCSA was passed) in the Ambler Mining District for future development.

During their 1959-1961 study of subsistence activities at Kivalina, Saario and Kessel (1966:1016-1017) stated "There does not appear to be a minimum money level that induces more hunting activity" and suggested that there existed "a factor of interest or prestige that influences hunting intensity to the extent that some families are able to serve as a supply source for families who do not possess sufficient native foods." Saario and Kessel did not analyze the networks along which these native foods passed. Burch's (1985) conclusions regarding Kivalina in the 1960s coincide with those of Saario and Kessel (1966:1033): "The economy of the Kivalina people is based primarily upon the natural resources that the people obtain in their annual hunting and fishing cycle."

The condition of the Noatak Eskimos described by Foote and Williamson (1966:1105) characterizes all of the villages of the region and probably most of the Kotzebue population during the Recent Transitional Period:

The Noatak Eskimos could not survive on a diet composed solely of foodstuffs available to them in the native store. They could not afford to import fresh meat and vegetables as substitutes for their own meat harvest. If the supply of food for humans failed to attain at least 175,000 lb of meat during the 9 months Noatak is fully populated (September to May), the health of the Noatak Eskimos would be seriously jeopardized. Moreover, any failure in the supply of dog food would deplete the harvest of food for humans.

Integration Processes

Many Natives were drafted or enlisted in the Alaska Territorial guard during World War II. Native participation in military service exposed the men to a world beyond the region and its opportunities. The construction of the Distant Early Warning System (DEW Line) after the war provided regular seasonal employment and reaffirmed a pattern of men leaving the region periodically for wage employment. Many men joined unions to improve their chances of obtaining regular seasonal employment and travelled statewide to union job sites. Increased earnings spurred the purchase of such durable goods as outboard motors, washing machines, etc., tightening the bonds between the region and outside economies.

Residents were exposed to the larger society during the Recent Traditional Period through three major institutional services: hospitalization programs of the Public Health Service that removed individuals from the region to faraway urban centers, often for years at a time; students were sent elsewhere in or out of the state to attend high school; and a BIA-sponsored program in the 1960s which provided young people and families with training and then relocated them to the Lower 48 states. Such dislocation from the region and one's family for long

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periods of time, for whatever reason, disrupted the transmission of language, cultural values, and sentiment and sorely tested the strategies of affiliation of the earlier periods:

. ...close affiliation with large numbers of kin was sometimes disastrous for people with ambition. No matter how hard one worked, and no matter how much money he earned, his kin would be sure to spend it, either directly, or indirectly by consuming the goods one acquired with it. Reserves could rarely be accumulated for the kinds of investments needed to create wealth in a modernized society. Here we have the final irony: the accumulation of wealth for most Northwest Alaskan Eskimos in the recent period meant either the absence or the rejection of the very sort of relationships that had been so essential to its attainment in the traditional era (Burch 1975:223).

These effects were buffered by integrating forces at the regional level. The quarterly and annual meetings of the Friends Church had for decades provided a common focus. The regional solidarity institutionalized by the Friends Church, a solidarity whose roots may be found in the gathering for common purpose--the trade fair of the Traditional Period--facilitated formation of the Northwest Alaska Native Association (NANA) in 1966 to protest Project Chariot. The institutional framework of NANA reflects the model of the Friends meetings (see Chapter 5). However, beginning in the 1950s, other denominations started to vie for members in Kotzebue and in the region and frequently caused conflict at the local family level (Burch 1975:286).

Regular air transport encouraged intervillage contacts. Visiting, mail, and exchange of everything from seal oil to audio cassettes via air freight increased and "facilitated a reemphasis of the wider network of kin which had been so important, but which had been largely inoperative since the traditional societal structure was destroyed" (Burch 1975:41). Because snow machines could move people and loads over greater distances in less time than dog teams could, they served to increase social and economic interaction of the villages. Hall

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(1971b:251) predicted that this trend "will undoubtedly affect marriage patterns, residence patterns, the spread of communicable diseases and other aspects" of life in the region.

After a century of experience, the Eskimo people had successfully modified their culture and economy to the demands of modern Alaska. Their social and economic problems were not unique; they were simply those shared by numerous other communities in the world that find themselves geographically remote from, yet dominated by, a powerful nation. (Foote and Williamson 1966:1055)

VII. POST-ANCSA PERIOD (1970-PRESENT)

1. Introduction

The passage of the Alaska Native Claims Settlement Act in 1971 consolidated the political energies of the people of northwest Alaska. Under terms of the act, eleven village corporations and a regional corporation (NANA) were formed which received cash payments and land. Corporate management power accrued to Natives of the region. Also during the 1970s the BIA turned responsibility for Native education over to the State of Alaska, and in 1976 the state operated school system was dissolved and local and regional school districts were formed. A regional non-profit corporation, Maniilaq, incorporated and began to consolidate and manage various social programs and services previously controlled by bureaucracies outside the region.

From 1975 to 1985 the State of Alaska underwent great expansion. Construction of the trans-Alaska pipeline provided high-paying jobs for many NANA shareholders. Significantly, these job opportunities were available to both males and females, instead of only males as in the past. Completion of the pipeline diverted billions from the oil stream into state coffers. Voters

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supported a ballot measure to set up the Alaska Permanent Fund to protect some of the royalties and invest them. Permanent Fund Dividend payments significantly augmented the cash income of large Native families and provided a block of capital that could be invested in expensive durable goods such as boats, motors, and snow machines. The financial power of the Native corporations formed under ANCSA increased the political clout of rural Alaska. As a consequence, a large share of the new state's wealth found its way into capital improvement projects to provide basic facilities and services in the villages. Building this rural infrastructure increased local opportunities for wage employment.

2. Annual Cycles

One of the provisions of ANCSA was to identify national interest lands in Alaska. Seeking to preserve traditional uses of the region's natural resources and avoid conflict with major development proposals, NANA generally supported establishment of national-interest conservation units in the region. In anticipation of managing large areas in northwest Alaska, the National Park Service initiated or partially underwrote a number of studies of traditional use of the region by Native peoples (see below). In 1980 the Alaska National Interest Lands Conservation Act (ANILCA) established six conservation units within the NANA Region: Bering Land Bridge National Preserve, Cape Krusenstern National Monument, Noatak National Preserve, Kobuk Valley National Park, Gates of the Arctic National Park and Preserve, and Selawik National Wildlife Refuge.

Noatak Annual Cycle 1978 (Uhl and Uhl 1979)

During the 1960s opportunities for wage employment and modern conveniences caused some Noatak residents to relocate to Kotzebue. When sewer, water, modern housing, and television became available in Noatak and there was "less drudgery

at menial tasks," many people returned to the familiar Noatak "environment where Eskimo food sources are readily available" (Uhl and Uhl 1979:7). "Invariably when these [returning] people are asked 'why' their replies can be sifted down to show how great a priority is placed on having available close at hand favorite <u>nigipiag</u> (Eskimo food) on which they have been raised and find it difficult to do without" (Uhl and Uhl 1979:56).

The annual cycle of harvest at Noatak in 1978 (Uhl and Uhl 1979:43-44, Tables II & III) closely conformed with that in practice in the early 1960s with a significant exception. In 1978 there was only one working dog team at Noatak, and the effect of not having to feed large numbers of dogs "has resulted in a reduction in annual take of whitefish, common seal, rabbit, river chum salmon and necessary caribou harvest" (Uhl and Uhl 1979:33). Few salmon are seined in the fall over the spawning beds. Nevertheless, as in the early 1960s, "One need spend only a short time visiting various Noatak village households at mealtime to see that the basic item of each major meal is meat or fish harvested locally in the Noatak valley or preserved from seasonal coastal hunts" (Uhl and Uhl 1979:8). "For the 290 people of Noatak there is an almost 100% degree of dependence on basic food harvested from the land" (Uhl and Uhl 1979:51).

Uhl and Uhl (1979) purposely do not provide annual harvest estimates for Noatak because the environment offers many choices in most seasons, and, therefore, individual family preferences, abundance, and accessibility of resources, equipment condition, and financial condition largely determine harvest effort. This, combined with inexact or inappropriate methodologies for determining harvests "make a hodge-podge of facts and fantasy that is not easily made into useful information" (Uhl and Uhl 1979:37). (See discussion of Burch below for

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similarly quantified data for Kivalina bracketing a twenty-year period that illustrates Uhl and Uhl's concerns.) Regarding persistence in harvest effort and intensity of harvest effort, Uhl and Uhl stress two major points. The Noatak "subsistence person is a natural resource opportunist with special preferences" (1979:45) who "has managed to survive by taking and preserving all food that he can when opportunity arises, switching from species to species as their density and availability fluctuates" (Uhl and Uhl 1979:46). Also, for any period of the year, the type and quantity of food and cash reserves on hand dictate economic activity.

Noatak subsistence activities generally require a cooperating group. Uhl and Uhl (1979:17) imply that Noatakers pool the means of production through the formation of cooperative productive groups (e.g., seining, berry-picking) but do not elaborate on the structure of such groups or detail the distribution of the harvests thus obtained. "Each activity is done at the appropriate time with the most able bodied people participating and all sharing in the results. . . . more after the fashion of a coastal whaling group than an inland river group" (Uhl and Uhl 1979:17) Additionally, a regionwide and larger distribution network for locally produced foods was also important to Noatakers in 1978: "Through the unique system of visiting and sharing at different seasons of the subsistenceoriented year, any one of several thousand people who have relatives, friends or casual acquaintances among Noatak River resource harvesters may share in the fruits of the harvest" (Uhl and Uhl 1979:8, emphasis added). Unfortunately, Uhl and Uhl do not provide any examples illustrating the structure and operation of this system at the village or regional level or of the amounts and kinds of resources so distributed.

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The instability of opportunities available to Noatakers for wage employment determines harvest but only to a point:

. . . there is a diminished use of local resources when more and better quality market produce is made available and jobs are more readily available. But it must be understood that the diminished use will stabilize at a certain level. . . . even when Noatak is rich [in cash], fish and game resources are still basic staples of diet. When Noatak is poor these basic staples of diet simply become all there is, although it could be said that these are all that are needed to exist. (Uhl and Uhl 1979:51).

Kotzebue Sound Annual Cycle (Uhl and Uhl 1977)

Subsistence activities described by Uhl and Uhl (1977) within the Cape Krusenstern National Monument and adjacent areas of Kotzebue Sound pertain to the cycles of descendants of the Qikiqtarzungmiut and pertains as well to the many migrants to Kotzebue who now forage in what was once Qikiqtarzungmiut territory.

The channel in front of Kotzebue freezes very early because it is mostly fresh water from discharge of the Kobuk, Noatak, and Selawik watersheds. Freezeup, therefore, confines the people of Kotzebue and outlying camps until ice everywhere is thick enough for travel, usually November. Some hunters take seals at the edge of the new ice and retrieve their kills with small boats. Once the ice is thick enough for safe travel, caribou hunters take off for the hills north and west of Sisualik. Tomcod are hooked through the ice near shore. In November most families have settled into their winter quarters. Some men set out their traplines in November and continue trapping throughout the season. In 1976 good prices for red fox caused an upswing in trapping activity. If a good supply of food is set aside, foraging activity tapers off during December. Considerable visiting usually transpires over the holidays if food supplies are good.

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Outdoor activities pick up again in February or March when the sea ice is solid, days are longer and warmer (though still cold), and travelling conditions are best. Storms open leads in the ice, and seal hunters travel one to twenty miles to these leads to hunt ringed seal. Caribou wintering near the sound, hare, and ptarmigan are hunted opportunistically. Fishing for schools of sheefish in Hotham Inlet may be undertaken in February and March but becomes a major enterprise involving whole families in April. Also during April, ringed seals are actively hunted both for personal use and for exchange with inland peoples. The migratory waterfowl return in May and are hunted with shotguns and rifles. Brown bears emerge from their dens in spring and hunters pursue them while they retain some fat reserves.

In May the great diversity of foods emerges: bird eggs can be collected, tender new willow leaves are picked, waterfowl are available. May is the last month in which ringed seals shot along leads will still float because of their thick blubber, and most families make an effort to obtain what oil they need during this month. "As many as 100 can be handled by one family, but 50 makes the spring a success" (Uhl and Uhl 1977:125-126).

Though ice floes linger in June in Kotzebue Sound, hunters are out in their boats pursuing bearded seals. The meat is dried and stored in oil rendered from the blubber. All of the "black meat" (dried bearded seal) for the winter is prepared at this time, and some is exchanged with inland people. Good weather and few insects combine for ideal meat-drying conditions. Hunters may venture as much as twenty miles offshore for bearded seals, and each family may take ten to twenty of these 300- to 600-pound seals. Some bearded-seal hunters position themselves and their boats at Sisualik before the ice becomes too rotten to cross

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the nine miles between there and Kotzebue. Hunters based in Kotzebue must usually wait until mid-June to hunt bearded seal. Beluga are hunted in the shallows near Sisualik at the end of June.

Fishing becomes important as soon as the ice goes out. Char move along the coast at Sisualik, as do whitefish. These species are caught in beach set gill nets in some quantity and are dried for the coming winter.

July to August traditionally constituted a slack period in foraging activities. Hot weather and myriads of insects made the drying of fish and meat difficult. Today, this period provides the time for commercial fishing and wage employment. While the men are fishing, families in camp forage for maintenance rather than to set aside food reserves.

Berry-picking peaks from mid-August until freezeup. Waterfowl are hunted up until they migrate south, and many are stored for winter use. At the outlet of Krusenstern lagoon, migrating whitefish often have been trapped by a storm-built barrier beach and lowering water levels and can be taken in great quantity. In mid-September these whitefish are aged and frozen for use as <u>quag</u> (frozen fish) eaten with seal oil in winter. Whitefish taken at Krusenstern in this fashion are shared extensively.

In late fall caribou and moose are taken from boats travelling the rivers, and spotted seals can be taken at the mouth of the Noatak.

Selawik Annual Cycle (Anderson and Anderson 1977)

Douglas and Wanni Anderson conducted nine years of research in the Selawik area between 1968 and 1977. Their research focused on the "history of settlement and resource use of the Selawik River Drainage System" to show the "close interrelatedness of the people and their land, . . . that the Natives' knowledge and understanding of their local ecology is presently underutilized by governmental agencies and that intelligent maintenance of the region's resources necessitates the inclusion of local Natives as equal partners at the highest levels of regional planning and management" (Anderson and Anderson 1977:3). They also hoped to contribute an archaeologically pertinent "understanding of change and stability within small-scale transhumanic societies."

Unfortunately, Anderson and Anderson (1977) do not provide a description of the cycle of production for Selawik during the twelve-month period in 1971-72 that they resided in the village, but their demographic analysis of Selawik for 1975 and 1977 will be discussed in the section "Social Organization" below. They conclude that there is a "close connection between population, marriage and residence patterns and changing economic arrangements." Like Uhl and Uhl, Anderson and Anderson stress the importance of intra- and extravillage alliances for exchange but do not elaborate on the kind, frequency, and amount of goods to be exchanged. Anderson and Anderson find these alliances to be kin-based.

Selawik appears, then, to be characterized by close knit families with kinship alliances strengthened and expanded through marriages between their own village members. In many cases these alliances are continually reaffirmed and strengthened through marriages between kin, just as they are enhanced through continual social contacts and economic cooperation. As Selawik subsistence living depends on the accessibility to subsistence areas, such alliances have the effect of creating an expanded territory within which the hunters and fishers from the family network can cooperate. Also, the alliances mobilize a large family network of hunters and fishers who through their ability to cover a greater part of the valley on

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their forays, can increase the yield of food and other necessities from the village base within the Selawik River Valley itself. (Anderson and Anderson 1977:28-29).

Selawik marriage patterns show the importance of kinship alliances beyond the village:

The relatively high number of marriages between Selawik and [sea] mammal hunting coastal residents is socially and economically important. Socially they create kinship bonds and opportunities for closer interaction which can lead to further marriage alliances. provide families involved Economically, they the better opportunities to acquire coastal products. Such marriages also provide social networks in the coastal villages to facilitate moves to the coast, should they desire. Likewise, the marriages between Selawik and Kobuk river residents afford the families in each area the possibilities to exchange products not found in the other area. (Anderson and Anderson 1977:31).

Upper Kobuk (Ambler, Shungnak, Kobuk) Annual Cycle (Anderson et al. 1976) Fishing by gill nets through the ice occupies much time from freezeup until December when the ice thickens and catches diminish. Snow cover provides relatively easy access to the land, and the snow machine affords rapid transit, all but eliminating long absences from home. Winter forays tend to avoid the deep, soft snow typical of wooded areas along the rivers, favoring hard-packed tundra. Caribou are hunted opportunistically throughout the winter, when fatter, barren cows are preferred. Unless meat is in short supply, lean caribou often are cached to be made into dry meat in spring. Commercial trapping has all but disappeared because alternative sources of cash are available. Ptarmigan and hares are taken throughout the winter.

Intervillage visiting and long hunting trips fill March and April, when temperatures are warming, daylight hours lengthening, and snow conditions are optimal. Northward-migrating caribou are hunted intensively as they have already

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begun to fatten following winter. Bears are taken just after they emerge from their dens and still retain some fat reserves. In May travel becomes difficult, and people are largely confined to the village until the ice goes out of the rivers and boat travel once again becomes possible. Returning waterfowl are hunted and muskrats are taken both for their pelts and for meat.

In summer fishing with gill nets dominates. Families spend from a few weeks to most of the summer at fish camps. Once the water levels in the rivers drop in early summer, fishing slacks off, and some families travel by boat to Kotzebue for commercial salmon fishing. Some men leave for seasonal wage employment. In late summer and fall, seine and gill netting for whitefish, sheefish, and salmon become major enterprises. Large numbers of fish may be taken. From August to freezeup berry-picking occupies many hours, particularly for women and children.

Caribou hunting intensifies in the fall when pelts are prime and the animals are fat. As fall progresses, rutting bulls become rank and caribou cows are preferred. Moose and bears, fat from summer foraging, attract extensive hunting effort. Ducks and geese are taken opportunistically or more extensively, as needed.

Lower Kobuk (Noorvik, Kiana) Annual Cycle (Anderson et al. 1976)

Fish nets are set through the ice near the villages as soon as it is thick enough to support a person. Caribou hunting begins when snow machine travel becomes possible. A good fall caribou hunt means less effort during the darkest and coldest part of winter, over the holiday season. A few men run traplines near the villages, but this activity is secondary. In February and March travel for visiting and caribou hunting increases. In April and May families migrate to

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Hotham Inlet (locally called Kobuk Lake) to hook sheefish through the ice. Waterfowl and muskrat are harvested when encountered.

After breakup, the men travel by boat up the Kobuk to the Hunt and Salmon rivers and Onion Portage to intercept northward-migrating caribou. The river is clear of ice much sooner than Hotham Inlet, so early summer foraging focuses on the Kobuk waterways. The level of activity, settlement pattern, and geographic area covered depends on the amount of gasoline available in the village after the winter (gasoline can be flown in on chartered aircraft, but is very expensive).

Fishing for whitefish peaks in early summer. Noorvik people disperse to fish camps throughout the delta for varying periods of time. In the 1970s Kiana people fished near the village. Fishcamps within ninety minutes of the village can be maintained on day trips, so fishermen return to the village each evening. At about the same time that whitefish become available, sheefish are taken by hook and line as they migrate upriver. In mid-June, sheefish are netted, and in late June the smelt arrive and are taken by seining. Families cooperate in seining for smelt and share in the catch, so a family that does not own a seine still share in the harvest. Drying fish during the ideal conditions of early summer was formerly very important, and during the 1970s many drying racks were visible along the lower Kobuk. The number of drying racks seemed significantly lower in the 1980s. Whether this reflects a reduction in harvest, an increase in freezers in the villages, or both, is not known.

In July men leave for construction jobs outside the region. In 1974 and 1975 many jobs related to pipeline construction. Some families moved to Kotzebue at this time to take part in the commercial salmon fishery. Others remained in town

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to wait for a call for a fire-fighting crew. Those families remaining in the village might continue fishing or prepare their whitefish salmon seines for August. Generally two women pool their equipment and supplies for the enterprise. Most seining is accomplished on day trips away from the village, but preparation and drying take place back at the village.

Fall fishing is intense for families returning from the Kotzebue fishery, and berry-picking takes a lot of everyone's time. As home freezers now are common, moose hunting has become an important hedge against a poor fall caribou hunt. Some boats travel up the Kobuk River to hunt southward-migrating caribou at their fording places.

Kivalina Annual Cycle (1983-1984) (Braund and Burnham 1983; Burch 1985) Kivalina experienced an inmigration during the Post-ANCSA Period similar to that of Noatak. Between the 1960s and 1980s Burch (1985:7) reports that the population and number of occupied houses nearly doubled between 1964 and 1982. According to Burch (1985:9-11): "In 1966 Kivalina seemed on the verge of becoming a dying village; families and individuals were leaving, and prospects for the future were poor. But by 1982, all of the families, and most of the individuals, had returned. More outsiders had married in than villagers had married out during the intervening years." Significantly, "all of the local families that had operated in Kivalina in the mid-1960s were still operating there twenty years later. A number of developmental changes had taken place, of course, due to births, deaths, aging and marriage, but the level of social continuity between the two study periods was extremely high."

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The annual cycle, too, shows continuity. Burch (1985:112) expects that "when a comprehensive analysis of per capita consumption (as opposed to production) has been completed, very little change between the mid-1960s and the early 1980s will be apparent. Certainly the impression I got during my several visits to the village in 1982-84 was that individuals consumed about the same quantities of Native food in 1984 as they did twenty years earlier." As in all the communities in the region, the substitution of the snow machine for the dog team affected the harvest effort and its result.

Braund and Burnham (1983) conducted research in Kivalina in 1982 to provide background data for Cominco's Red Dog mine developments. Using interview data and participating in the fall char fishery, they produced a detailed study of Kivalina subsistence patterns. Burch (1985) enlisted assistants from the village to replicate for 1982-1984 the quantified harvest data he had obtained in 1964-1966. The rhythm of the annual cycle at Kivalina remained essentially unchanged between the 1960s and 1980s. As Burch's data are the only comprehensive quantified harvest figures for a village in the region during the Post-ANCSA Period, his outline of timing of the subsistence harvest will be emphasized here.

Burch found that in the 1980s the people of Kivalina foraged primarily for traditional Native foods. Just as Uhl and Uhl discovered at Noatak, Burch (1985:117) determined that "there is a fixed minimum level of demand that changes only with the size of the consumer population. If the supply of fish and game is low, then the activities of the foragers may indeed be very aggressive. When the supply is high, however, people may spend more time loafing or working at something else than hunting or fishing."

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Two foraging periods provide the foundation of local food production at Kivalina. The first is early summer, when "most of the dried fish and all of the dried bearded seal meat and oil (early to mid-June) are produced. The second is early fall (mid-September to early October). It is during this period that most of the fish later consumed frozen as <u>quag</u> [here, frozen fish consumed frozen, raw, usually with seal oil; caribou meat eaten frozen and raw is also called <u>quag</u>] are caught" (Burch 1985:125). The hunters, of course, have no way of predicting whether anomalously high or low harvests will occur. As a consequence, "hunters must take full advantage of windfalls, because they cannot know what disasters might lie only a short distance ahead [in the harvest cycle]."

Burch's (1985:119, Table 29) data confirm that major fluctuations in harvest from year to year continue and that "variation [in harvest] exists not only in the absolute size of the harvests of the different species, but also to the proportion a given species contributes to the total." He constructed a yearly cycle based on average harvest data, and his presentation differs from others (e.g., Uhl and Uhl 1979:42-44) in that it is harvest-based and quantified rather than a generalized reconstruction of foraging activities, qualitatively determined over an unknown period of time. It corresponds very closely to annual cycles based upon unquantified Native and ethnographic observations. Burch identifies ten phases in the annual subsistence cycle at Kivalina. An abstract of his characterization (Burch 1985:121-124) of these phases, their major emphases, and variations, follows:

The first phase . . . is the June hunting and fishing season. In principal, the primary resource produced during this period is bearded seal, followed by char. The char run out to sea is probably the single most dependable event in the entire calendar: they 'always' make it, and they are usually easy to catch except in extraordinarily foul weather, The bearded seal harvest is more variable because it is so heavily affected by ice conditions. When

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ice conditions are bad, hunters devote more attention to char, ringed seals, and migratory waterfowl. Occasionally there is a windfall of belukha or walrus.

The second phase. . . comes a week or two after the sea ice leaves the area. The harvest during this period can be comprised of various elements, but belukha and caribou are the primary ones.

[The third phase] . . . is the mid-summer lull. It includes salmon and a few char, the odd moose or caribou, perhaps a belukha or two, some murre eggs, berries and greens, and possibly waterfowl. The fact that the mid-summer season is a lull in subsistence activities results from both the relative paucity of game resources along the coast, and the people's interest in other matters, such as wage employment or the commercial salmonfishery, in Kotzebue. It is a recent phenomenon. Traditionally, summer was an important subsistence period, but one that required a considerable dispersal of people over the interior sectors of the region.

Phase [four]. . . is the fall char fishery, followed promptly by [phase five], . . the post-freezeup caribou hunting season. These are highly variable periods. In the four years covered by this study, every time [the char fishery] . . . has been a failure, [caribou hunting] . . . has been a great success, and <u>vice versa</u>. There is no known reason why this has been the case, however. If both were failures, the hunting and fishing effort during phase [six] . . .-the autumn maintenance period--would be exceptionally intense, with the actual results depending on the availability of fish and game that fall. In an "average" year . . . there is usually a gradual decline in activity, hence in harvest, into the short days and the Thanksgiving-New Year's holiday season.

Phase [seven] . . . is the winter hunting season, in which, theoretically, the harvest of ringed seals receives primary emphasis. However, if poor ice conditions prevent a successful seal hunt, attention shifts to caribou and char. That season typically is followed by a lull in early March, [phase eight] . . . , during which hunters wait for warmer weather and for bearded seals to begin sunning themselves on the ice. Frequently at this time there is a special effort . . . to hunt caribou before they head north in their spring migration. Productivity during this period can also be affected by such events as the Quarterly Meeting of the Friends Church, Easter, and the National Guard encampment.

The whale hunting season is . . . [phase nine]. While this brief period of late April has always been an important sea mammal hunting season for Kivalina hunters, the reinstitution of whaling in 1966 made it more productive than it had been for several decades previously. The big harvests in 1983 and especially in 1984 have distorted the averages for the specific years of record, hence the pattern is more typical of the 1980's than it is of the 1959-60 era.

The final phase...is the pre-breakup lull. During this period caribou are either scarce in or altogether absent from the Kivalina region; soft snow makes overland travel difficult, and the increasingly rotten sea ice makes sea mammal hunting progressively more dangerous. This is the season when migratory waterfowl usually go through in large numbers; they are eagerly hunted both to add diversity to the diet and because there is little else to hunt.

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Buckland Annual Cycle (Feldman 1986)

Feldman's late 1970-early 1980 study of beluga hunting at Elephant Point is the only study of Buckland available for the Post-ANCSA Period. His brief synopsis of the annual cycle at Buckland (Feldman 1986:156-157) follows:

Beluga hunting is an integral component of the use the Buckland people make of their environment on an annual basis. During the summer, salmon are netted in the rivers, bird eggs are gathered from Chamisso Island in Kotzebue Sound, other small islands in the rivers, and the tundra surrounding the village in the early summer. Walrus, a mammal which villages further north on the coast can rely on in addition to beluga, are not hunted by Buckland residents. Berries and other plants are gathered during the summer as well. Beavers are taken from the lakes to the east of the village and muskrat in small ponds. As the fall begins, seals (primarily spotted seals) are hunted at the mouth of the Buckland River and at the north and south ends of Eschscholtz Bay. As the fall continues, moose are hunted and then around November caribou are hunted near the Selawik Mountains to the east of the village. Bear and rabbit are also taken. During the winter, around March-April, sheefish are caught through the ice in Selawik lake (a twohour trip by snow machine). In March ptarmigan are hunted, although there weren't many around Buckland in 1981. Smelt come in large numbers to the Buckland River in front of the village during May and a communal netting effort is made. Then it is time once again for the beluga hunt in June.

Belukha are a highly valued resource of Kotzebue Sound. Feldman (1986:159) reports the 1982 price for belukha maktak (skin) in the region as \$4.50 per pound. The appearance of Belukha in the region in the spring is associated with appearance of nearshore leads. At Point Hope, their appearance signifies that bowhead whales will appear soon. Belukhas calve in Eschscholtz Bay but may calve in all coastal areas of the NANA region. As for many marine mammals, biological field observation is difficult but scientific studies of these animals within the NANA region are appearing (Burns et al. 1982, Frost et al. 1983).

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During the Traditional Period, belukhas were a major attraction of Sisualik. At this time and even as recently as the 1940s (Gal, personal communication) belukha pods frequented Selawik Lake as well as Kotzebue Sound and Eschscholtz Bay. The availability of belukha to the region's hunters is highly variable. This variability has prompted much discussion among hunters regarding the adverse effects of outboard motor noise and pollution on belukha movements, especially past Kotzebue.

3. Discussion

Supply

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Like the Recent Transitional Period, the Post-ANCSA Period has been a time of relative abundance of harvestable resources for the people of the region. Abundance and distribution have varied from year to year but not drastically. Sea mammals have been in good supply, as have fish. The commercial salmon fishery has exhibited fluctuations from year to year, and this affected fishermen financially. Fluctuating runs of salmon have affected the subsistence harvester less for two reasons. First, there are no longer working dog teams to feed throughout the year, so less salmon is needed for dog food. Second, other species (e.g., char, whitefish) may be taken in greater numbers to compensate for less salmon. Commercial fish buyers, on the other hand, are only interested in salmon and to a minor degree in char.

Except for a rapid decline of short duration in the mid-1970s, caribou have offered a steady supply of meat to people throughout the region (except for Deering). Unfortunately, no studies were done of the effects of the caribou decline, what alternate resources were turned to, and how they were distributed.

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In 1979 the beluga hunt at Elephant Point was very unsuccessful, and as caribou numbers still were considered low, Alaska Department of Fish and Game regulated their harvest. Buckland was allowed a special caribou hunting season, and 110 caribou were harvested. According to Feldman (1986:160), in 1979 the Buckland store sold twice as much meat as it did the previous year. Also, the number of households using food stamps increased 300 percent from 1978, but by February 1980, after the special caribou harvest, food stamp use dropped off sharply. Beluga hunters at Elephant Point have suffered some poor years since 1979, but caribou have been in good supply, caribou hunting has not been restricted, and, presumably, increased winter caribou harvests compensated once again for the lack of beluga set aside for winter.

Social Organization

One of the most striking features of the social organization in the Northwest Arctic Borough today is the all-pervasive orientation to kinship. When travelling through the region with a resident and meeting people, the first order of conversation is kinship. Lineal relatives are established first: "Who is your mother and your father?" "My grandmother was from X village." If no relevant consanguineal links are established, affinal ties are next discussed: "My wife is so-and-so, her parents are" Almost invariably, some kinship tie is established. A prominent Native leader from Kotzebue, who was raised by his grandparents, recently travelled to Point Hope and discovered a new set of kin through his grandfather's brother. Even when no kinship link is established, the process establishes each person's social position in terms of large family units: "Your uncle hunts caribou with my cousin at Hunt River every fall." The geographic breadth of kin relations is doubtless related to the personnel dislocations that occurred during the Early and Intermediate Transitional

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Periods. That these dispersed kinship relations are still pursued indicates their relevance to modern social interaction (Gal, personal communication).

The NANA Regional Corporation documented genealogies during the 1970s to establish a list of eligible shareholders under ANCSA. The Iñupiat Ilitqusiat program lists "knowledge of family" as one of its basic values, and some of the tapes of the Regional Elders' Conferences record genealogies. The National Park Service has undertaken a major study of genealogies in the Kobuk area (Sherrod, pers. comm.). When compiled the record of intra- and intervillage networks may more clearly reveal interrelationships of the Kobuk River area. Unfortunately, a current genealogical listing for all residents of the region is not available; however, some genealogical data have been assembled.

In addition kinship partnerships continue to be important in relationships in the region today, although "youngsters do not know what these partnerships are and young adults rarely engage in named, customary partnerships" (McNabb 1990:70). Anderson et al. (1976:461-463) identify seven Iñupiat terms for partnerships on the Kobuk River. McNabb (1990:72, Table 17) identifies eight items; the two sets of terms overlap, but are not identical. Those categories of persons from which partners are frequently chosen are: close school friends, friends originating from the same village and living in a different village, widows from different villages who have no persons from their village of origin to whom to turn, or persons residing in different villages. Partnerships form the basis for cooperative work groups and reciprocity to augment a person's local or regional kinship network. From Anderson et al.'s discussion, it is unclear whether all seven types of partnerships were in operation along the Kobuk River in the 1970s. For example, one of the types listed was "nulaqatigich," signifying persons who

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exchange wives--a relationship targeted for eradication by the missionaries since the turn of the century. Anderson et al. (1976) note that not until a "girl matures, becomes a mother, and assumes the responsibility as the joint head of a family, does her emotional attachment to subsistence activities deepen." Perhaps the involvement of young people in partnerships may undergo a similar developmental shift; no data are available.

"Formal kinship remains a central organizational principle that shapes customary patterns of mutual aid and subjective sentiments. Kinship principles are still used to discover, create, or allege social ties that, if present, justify affiliations between people" (McNabb 1990:64). Cooperation and pooling of resources, including cash and equipment, is necessary. Individuals in the Northwest Arctic Borough estimate capital costs of between \$30,000 and \$50,000 for the tools of subsistence production. These capital costs must be amassed through involvement in the institutional framework of industrial capitalism. The median household income for Natives in the region is not known, but it is certainly much lower than that for Kotzebue (including all non-Natives), which in 1985 was \$20,484.

Settlement and Population

Population levels throughout the region continued to rise between 1970 and 1980 (Burch 1984:316, Table 1). The greatest growth occurred at Kotzebue as wage opportunities increased. As indicated in Chapter 1, more of Kotzebue's Native residents participated in the labor force (54 percent) than in any other village. They captured two-thirds of the region's wage income with only 44 percent of its population. Following the shift of power to the region after the passage of ANCSA, administrative and service job opportunities increased in this regional

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center. During the post ANCSA period Native emigration from the region decreased and Native immigration to the region increased (McNabb 1990:170). McNabb (1990:21) suggests that "a large proportion of the NANA population (perhaps as much as 25 percent) is absent from the region at any point in time but later returns." (These are statewide trends as well; see Institute of Social and Economic Research et al. 1988:23-24.)

Residence during the Post-ANCSA Period was almost entirely sedentary and village One provision of ANCSA extinguished the Native Allotment Act of 1906, based. which allowed individuals to claim and receive title to up to 160 acres of unappropriated land in four parcels. The stated purpose of this act was to fix the Native population geographically and eliminate the foraging lifestyle. Most allotment parcels were primarily selected by the applicants because of their situation relative to traditionally harvestable resources. Ironically, the effect of the act today is exactly opposite of its original intent. The establishment of the national conservation units by ANILCA in 1980 threatens, according to local perceptions, free use (unconstrained access and use, including short-term settlement) of these federal lands for harvesting local foods. Many Native allotments today are islands of private holdings surrounded by the federal conservation units. They therefore stand as unrestricted havens for their owners and others, who launch foraging activities into catchments extending onto federal lands. Their presence insures that mobile foraging activities will continue from dispersed bases on conservation unit lands rather than be limited to the catchments of the permanent villages.

Most allotments have no permanent structures to distinguish them from surrounding lands. Only on allotments in the Sisualik-Krusenstern-lower Noatak areas are

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cabins common. Allotments provide respite from the more urban lifestyle of Kotzebue. A reserve has been established on lands at Sisualik by the Kikiktagruk Iñupiat Corporation (the Kotzebue ANCSA village corporation) to recognize the historic and continued use of the area by the Noatak people. At various times over the last six years discussion has occurred about establishing Sisualik as a separate settlement for people who wish to emphasize a foraging lifestyle.

No additional Native allotment applications will be accepted by the federal government, and their use has been largely kinship based. The pattern of erecting structures on allotments follows the same pattern that developed in Kotzebue after the townsite was surveyed--a pattern of kin building adjacent to kin. Kotzebue's zoning board often has been requested to subdivide city lots to allow close kin, unable to afford a lot, to build nearby. Parents with allotments encourage their grown children, who were ineligible to apply for an allotment or for other reasons did not receive an allotment, to build on their parcels. In the pattern of allotment use, the nineteenth century local family has been replicated. Social and economic ties between family members are strengthened through geographic proximity of related domestic family units. The relationship of house and tent structures provides a tangible model of kinship ties.

In the villages and in Kotzebue various housing projects have installed typical American houses suitable for nuclear families in the suburbs in place of the owner-built homes of the 1950s. Such houses place physical constraints on the composition of the household, and platting and construction of new housing obscures the relationship between domestic units. Formerly, related domestic families built adjacent to each other. Today, related domestic families, linked

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economically and socially, are scattered throughout the settlements (Burch 1975:287-288).

McNabb (1989: Charts 4-24) summarizes household size for each village in the region for 1987 and 1988. The frequency distribution of household size for Kotzebue over the two-year period did not change appreciably--most households consisted of four members. The stability of the size of Kotzebue households may indicate the predominance of smaller nuclear families in a more wage-oriented economy. The design of domestic housing, rather than the kinship and economic bonds that link domestic families, forms the basis of social survey instruments as a matter of convenience. Just as the platting of new housing projects obscures the physical representation of domestic families organized into local families, household surveys based on American nuclear family dwellings tend to blur the social and economic linkages between domestic families.

Economic Processes

Since Chapter 1 details the cash economy of the Northwest Arctic Borough, we will only highlight it here. The Post-ANCSA Period is characterized by a marked increase in wage employment opportunities both outside but especially within the region. The trans-Alaska pipeline provided many jobs and much cash into the region. The increase in the price of gold in the late 1970s modestly increased mining activity in the Candle area and provided some jobs. Capital improvement projects in the villages offered seasonal jobs at home. The regionalization of the schools in rural Alaska and the maintenance of K-12 schools in all the villages provided steady jobs for villagers as teachers' aides and cafeteria and maintenance personnel. Bilingual education and cultural awareness in the regional curriculum, instituted by locally controlled boards, have provided

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additional employment opportunities for residents. Non-Natives dominate the high-paying professional jobs (teachers and administrators), however. Kotzebuebased Chukchi Campus of the University of Alaska and the Alaska Technical Center both provide part-time positions for coordinators in the villages. A network of village health aides linked to the hospital in Kotzebue also provides some local employment. NANA Regional Corporation's efforts to employ shareholders in their various enterprises contributed regular cash flow into the region. NANA's Prudhoe Bay operations and support service provided by a NANA affiliate during the <u>Exxon Valdez</u> oil spill clean up recently have employed many of the region's residents. The export of seasonal labor has been a growing basic industry in the region since the 1950s.

NANA's joint venture with Cominco in the construction and operation of the Red Dog Mine, north of Kotzebue, holds the promise of numerous jobs for shareholders well into the future. As the administration of various services and of the ANCSA corporations shifted to the region, steady positions opened in these bureaucracies in management and in administrative, accounting, and clerical fields, especially in Kotzebue. As stated in Chapter 1, "The region's annual employment cycle is now more stable than the state's" and its "employment and payroll trends since the onset of the state's economic recession in 1986 indicate surprising resilience."

The increase in wage-earning opportunities has increased the disposable income of the present population as well as the demand for and expectation of services. Some indications of this trend are the number of scheduled air flights servicing the region and the number of restaurants and stores in operation. Bingo and other gambling games, run by the Lions clubs and other organizations, have a

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significant, albeit unquantified, effect on the circulation of cash throughout the region. Charitable groups use bingo profits for various purposes (e.g., scholarships, search and rescue) to sponsor dog races. A special bingo night at Kotzebue even helped eradicate the city debt.

Although included generally as nonmonetary income, subsistence goods and services have real cash value as they free dollars for expenditure in other areas. Pooling of expensive durable goods such as seines, outboard motors, and snow machines and costly expendables such as gasoline, for cooperative undertakings reduces the expense of local foraging. Although no quantified data are available, cooperative activities seem to be organized most frequently along kinship lines. Partnerships defined and named traditionally also occur but remain unstudied.

Protein and carbohydrates obtained from the land also free cash for expenditures other than food. Still, 32 percent of the disposable cash of households in the NANA Region is used to purchase food (Chapter 1). The amount of household income necessary to cover foraging-related expenses is not known. All of the studies pertaining to the Post-ANCSA Period stress the prevalence of locally produced food and the economic and cultural importance and the extent of the distribution system for this food. Informants report that Native foods and cash circulate throughout the region and to Barrow, Fairbanks, Anchorage, and elsewhere.

Often overlooked by outsiders examining the production of local foods is the discrimination and preferences of the people of the region. Dried fish is not simply dried fish, and <u>quag</u> (frozen meat or fish) is not just <u>quaq</u>. Each village specializes to a degree according to the condition of the foodstuff available to

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them at harvest and according to the way it is prepared. Dried pike from Selawik, char <u>quag</u> from Kivalina, black meat (dried sea mammal meat) from Kotzebue Sound, beluga from Elephant Point, Hotham Inlet sheefish, fall dried salmon from Noatak to name a few, are foods distinguished and valued for their subtlety of taste. Also, as noted at the beginning of this chapter, resources are not distributed uniformly throughout the region or may be scarce in one place and abundant in another during the same year. These differences form the basis of the regional exchange network (Uhl and Uhl 1977, 1979). "An important fact in this regard is that the Eskimos associate hardship with the lack of specific kinds of food. When the hunt fails, no volume of biscuits and marmalade can keep a man healthy and vigorous." (Foote and Williamson 1966:1070). These food preferences determine the exchange values (cash or produce) within the economy.

Gal (1985) calculated that food obtained from a single Native allotment in the Teshekpuk Lake area on the northern side of the Brooks Range was distributed to a minimum of forty individuals, including some living in Barrow and Anchorage. In the spring of 1987, a Point Hope man married to a Kiana woman and living in Kiana enlisted kin and various "partners" in town to amass caribou meat and hides. These were shipped to Point Hope and used by whaling crews. Black muktuk was returned to Kiana and distributed. Uhl and Uhl (1977:184-186) provide a glimpse of a distribution network that extended from Kotzebue Sound to Shungnak and illustrate the close links between the cash and noncash components of the regional economy. Burch (1970:61) describes an exchange of goods between two individuals via mail and air freight. The two individuals had never seen each other. Contingents from the NANA Region regularly attend the whaling feasts at Point Hope, Point Lay, Wainwright, and Barrow at which Native foods are redistributed. These kinds of anecdotal data, however, provide no measure of the

economic and social importance of transactions involving locally produced foods and their significance in the overall economy of the region.

Integration Processes

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As noted above, kinship remains a strong integrator at the village and regional levels. Throughout the Post-ANCSA Period, the number of sodalities (non-kin associations) within the NANA Region has also steadily increased. Excluding political organizations within the region, McNabb (1990: 56-57) provides a partial listing which includes twenty-six organizations. These organizations compete with kin-focused activities for an individual's time and energy. There is no common denominator to this list of voluntary associations, which includes advocacy groups, sports and recreational clubs, civic associations and special interest groups of various kinds.

Anderson et al. (1976:438-443) and Anderson and Anderson (1977:28-34) provide demographic data for the Kobuk River villages and for Selawik for 1975 that reveals settlement trends, economic processes, and regional integration. At Kiana, 18 percent of the marriages were village endogamous, 32 percent were to a Noorvik spouse, and 11 percent were to a spouse from one of the upper Kobuk villages. Noorvik marriages were 58 percent village endogamous and nearly 10 percent each to spouses from Selawik or to spouses from other Kobuk River villages. Six percent of the marriages were to spouses from Kiana; and the majority of these couples settled in Kiana). Half of Selawik marriages were village endogamous, 10 percent are to spouses from the upper Kobuk villages, and 9 percent were to spouses from Kiana and Noorvik. The majority of marriages to spouses from villages in Alaska other than those of Selawik and the Kobuk River are to coastal residents (e.g., Kotzebue, Point Hope, Kivalina).

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Both spouses of the majority of married couples in Noorvik and Selawik (but not Kiana) reside in the village where they grew up. In all three villages patrilocality is more common than matrilocality. In the modern foraging context of the region, this pattern of residence after marriage may assist in the transmission of skills and knowledge of terrain and game distributions from generation to generation. Long-distance foraging is more often done by men or by men accompanied by women than by women (77 percent of the men and only 40 percent of woman respondents report that they camp while hunting or fishing, see social indicators below). Most of the married men reside in the village in which they grew up (Anderson's 1977 "common residence" category plus "patrilocal" category) and thus have been familiar with the land and its resources since childhood. This is especially true since 1980 when all schools in the region provided a K-12 curriculum; that is, young adults were no longer sent outside the region for high school.

The tendency towards village endogamy evident in the Kobuk villages and Selawik is surprising in view of the increased opportunities for regionwide interpersonal contacts. Scheduled air transport between the villages is relatively inexpensive and frequent. The Quarterly Meeting of Friends and NANA's Annual Shareholder meeting bring together large numbers of people from throughout the region. The snow machine affords rapid and inexpensive transit between the villages, especially in March when several festivals are held (e.g., at Kotzebue, Noorvik). Chapter 5 details the institutional framework of the region, which brings together representatives from throughout the region. The commercial fishing season attracts families from different villages to Kotzebue. Apart from basketball tournaments, which are very popular and afford village teams an opportunity to travel, young people may be mostly excluded from these opportunities for

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establishing broad contacts throughout the region. The NANA Region has the highest teen birthrate and unwed teen birthrate in Alaska (Weeks 1989). Teen mothers living at home may be more likely to wed, or eventually wed, men from their home village; this may help account for the village endogamy.

After a period of proliferation of bureaucracies extending services throughout the region, consolidation has begun. Maniilaq administers almost all social and health service programs. The Northwest Arctic Borough provides the framework for political consolidation and has assumed the functions of the Regional Planning Strategy. The separate IRA councils have been coordinated into a Northwest Tribal Council. All of the village corporations except Kotzebue have merged with the NANA Regional Corporation to pool their capital and operate more effectively.

Perhaps one of the most significant influences in the integration of the region with the larger American society has been the installation of satellite television in the villages. In the 1950s and 1960s mail order catalogs helped bring the outside world to the villages. Today, television has touched all age groups and exposes the population to other values as well as to the vast range of consumer goods available.

The establishment of conservation units in the region has brought national interests to the region. The desires and needs of the local people in the use of these lands must be considered together with the needs of float-boaters, hikers, hunters, and other recreationists from throughout the United States. Only in this category, the management of more than 12 million acres historically used and adjacent to modern settlements and allotments, have trends towards local and regional control in the Post-ANCSA Period been reversed.

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VIII. CROSS-SECTIONAL COMPARISONS OF SUBSISTENCE ACTIVITY

BY AGE, SEX AND SOCIOECONOMIC STATUS

Obviously, variations occur in subsistence activity according to age, sex, and status. Title VIII of the Alaska National Interest Lands Conservation Act (ANILCA) clumsily acknowledges these cross-sectional differences by granting subsistence priorities based on place of residence--rural or urban. Virtually all of the literature published by the Alaska Department of Fish and Game, Subsistence Division, illustrates that subsistence activity is not a uniform practice across communities nor within any single community. Empirical evidence demonstrates that the socioeconomic factors that condition harvest arrangements-such as financing and capital, access to human resources via networks of collaborators, and availability of time--vary along with a wide range of employment and harvest criteria. Moreover, economic roles also differ. Hence, capital needs aside, older and younger persons and men and women tend to act dif-This section addresses cross-sectional variations in subsistence ferently. activity on the basis of age, sex, and socioeconomic status. For our purposes "socioeconomic status" is comprised of income, education, and employment status."

1. Age

Data from the MMS Social Indicators study conducted between 1986 and 1991 by Human Relations Area Files include 113 respondent households in four borough villages: Kotzebue, Kivalina, Deering, and Buckland. Bear in mind that the authors cannot specify how easily these data can be generalized to other communities. In the following tables the data for the four villages, collected in 1987 and 1989, are aggregated. One variable seeks to answer: "Was

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supported a ballot measure to set up the Alaska Permanent Fund to protect some of the royalties and invest them. Permanent Fund Dividend payments significantly augmented the cash income of large Native families and provided a block of capital that could be invested in expensive durable goods such as boats, motors, and snow machines. The financial power of the Native corporations formed under ANCSA increased the political clout of rural Alaska. As a consequence, a large share of the new state's wealth found its way into capital improvement projects to provide basic facilities and services in the villages. Building this rural infrastructure increased local opportunities for wage employment.

2. Annual Cycles

One of the provisions of ANCSA was to identify national interest lands in Alaska. Seeking to preserve traditional uses of the region's natural resources and avoid conflict with major development proposals, NANA generally supported establishment of national-interest conservation units in the region. In anticipation of managing large areas in northwest Alaska, the National Park Service initiated or partially underwrote a number of studies of traditional use of the region by Native peoples (see below). In 1980 the Alaska National Interest Lands Conservation Act (ANILCA) established six conservation units within the NANA Region: Bering Land Bridge National Preserve, Cape Krusenstern National Monument, Noatak National Preserve, Kobuk Valley National Park, Gates of the Arctic National Park and Preserve, and Selawik National Wildlife Refuge.

Noatak Annual Cycle 1978 (Uhl and Uhl 1979)

During the 1960s opportunities for wage employment and modern conveniences caused some Noatak residents to relocate to Kotzebue. When sewer, water, modern housing, and television became available in Noatak and there was "less drudgery

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at menial tasks," many people returned to the familiar Noatak "environment where Eskimo food sources are readily available" (Uhl and Uhl 1979:7). "Invariably when these [returning] people are asked 'why' their replies can be sifted down to show how great a priority is placed on having available close at hand favorite <u>nigipiag</u> (Eskimo food) on which they have been raised and find it difficult to do without" (Uhl and Uhl 1979:56).

The annual cycle of harvest at Noatak in 1978 (Uhl and Uhl 1979:43-44, Tables II & III) closely conformed with that in practice in the early 1960s with a significant exception. In 1978 there was only one working dog team at Noatak, and the effect of not having to feed large numbers of dogs "has resulted in a reduction in annual take of whitefish, common seal, rabbit, river chum salmon and necessary caribou harvest" (Uhl and Uhl 1979:33). Few salmon are seined in the fall over the spawning beds. Nevertheless, as in the early 1960s, "One need spend only a short time visiting various Noatak village households at mealtime to see that the basic item of each major meal is meat or fish harvested locally in the Noatak valley or preserved from seasonal coastal hunts" (Uhl and Uhl 1979:8). "For the 290 people of Noatak there is an almost 100% degree of dependence on basic food harvested from the land" (Uhl and Uhl 1979:51).

Uhl and Uhl (1979) purposely do not provide annual harvest estimates for Noatak because the environment offers many choices in most seasons, and, therefore, individual family preferences, abundance, and accessibility of resources, equipment condition, and financial condition largely determine harvest effort. This, combined with inexact or inappropriate methodologies for determining harvests "make a hodge-podge of facts and fantasy that is not easily made into useful information" (Uhl and Uhl 1979:37). (See discussion of Burch below for

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similarly quantified data for Kivalina bracketing a twenty-year period that illustrates Uhl and Uhl's concerns.) Regarding persistence in harvest effort and intensity of harvest effort, Uhl and Uhl stress two major points. The Noatak "subsistence person is a natural resource opportunist with special preferences" (1979:45) who "has managed to survive by taking and preserving all food that he can when opportunity arises, switching from species to species as their density and availability fluctuates" (Uhl and Uhl 1979:46). Also, for any period of the year, the type and quantity of food and cash reserves on hand dictate economic activity.

Noatak subsistence activities generally require a cooperating group. Uhl and Uhl (1979:17) imply that Noatakers pool the means of production through the formation of cooperative productive groups (e.g., seining, berry-picking) but do not elaborate on the structure of such groups or detail the distribution of the harvests thus obtained. "Each activity is done at the appropriate time with the most able bodied people participating and all sharing in the results. . . . more after the fashion of a coastal whaling group than an inland river group" (Uhl and Uhl 1979:17) Additionally, a regionwide and larger distribution network for locally produced foods was also important to Noatakers in 1978: "Through the unique system of visiting and sharing at different seasons of the subsistenceoriented year, any one of several thousand people who have relatives, friends or casual acquaintances among Noatak River resource harvesters may share in the fruits of the harvest" (Uhl and Uhl 1979:8, emphasis added). Unfortunately, Uhl and Uhl do not provide any examples illustrating the structure and operation of this system at the village or regional level or of the amounts and kinds of resources so distributed.

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The instability of opportunities available to Noatakers for wage employment determines harvest but only to a point:

. . . there is a diminished use of local resources when more and better quality market produce is made available and jobs are more readily available. But it must be understood that the diminished use will stabilize at a certain level. . . . even when Noatak is rich [in cash], fish and game resources are still basic staples of diet. When Noatak is poor these basic staples of diet simply become all there is, although it could be said that these are all that are needed to exist. (Uhl and Uhl 1979:51).

Kotzebue Sound Annual Cycle (Uhl and Uhl 1977)

Subsistence activities described by Uhl and Uhl (1977) within the Cape Krusenstern National Monument and adjacent areas of Kotzebue Sound pertain to the cycles of descendants of the Qikiqtarzungmiut and pertains as well to the many migrants to Kotzebue who now forage in what was once Qikiqtarzungmiut territory.

The channel in front of Kotzebue freezes very early because it is mostly fresh water from discharge of the Kobuk, Noatak, and Selawik watersheds. Freezeup, therefore, confines the people of Kotzebue and outlying camps until ice everywhere is thick enough for travel, usually November. Some hunters take seals at the edge of the new ice and retrieve their kills with small boats. Once the ice is thick enough for safe travel, caribou hunters take off for the hills north and west of Sisualik. Tomcod are hooked through the ice near shore. In November most families have settled into their winter quarters. Some men set out their traplines in November and continue trapping throughout the season. In 1976 good prices for red fox caused an upswing in trapping activity. If a good supply of food is set aside, foraging activity tapers off during December. Considerable visiting usually transpires over the holidays if food supplies are good.

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Outdoor activities pick up again in February or March when the sea ice is solid, days are longer and warmer (though still cold), and travelling conditions are best. Storms open leads in the ice, and seal hunters travel one to twenty miles to these leads to hunt ringed seal. Caribou wintering near the sound, hare, and ptarmigan are hunted opportunistically. Fishing for schools of sheefish in Hotham Inlet may be undertaken in February and March but becomes a major enterprise involving whole families in April. Also during April, ringed seals are actively hunted both for personal use and for exchange with inland peoples. The migratory waterfowl return in May and are hunted with shotguns and rifles. Brown bears emerge from their dens in spring and hunters pursue them while they retain some fat reserves.

In May the great diversity of foods emerges: bird eggs can be collected, tender new willow leaves are picked, waterfowl are available. May is the last month in which ringed seals shot along leads will still float because of their thick blubber, and most families make an effort to obtain what oil they need during this month. "As many as 100 can be handled by one family, but 50 makes the spring a success" (Uhl and Uhl 1977:125-126).

Though ice floes linger in June in Kotzebue Sound, hunters are out in their boats pursuing bearded seals. The meat is dried and stored in oil rendered from the blubber. All of the "black meat" (dried bearded seal) for the winter is prepared at this time, and some is exchanged with inland people. Good weather and few insects combine for ideal meat-drying conditions. Hunters may venture as much as twenty miles offshore for bearded seals, and each family may take ten to twenty of these 300- to 600-pound seals. Some bearded-seal hunters position themselves and their boats at Sisualik before the ice becomes too rotten to cross

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the nine miles between there and Kotzebue. Hunters based in Kotzebue must usually wait until mid-June to hunt bearded seal. Beluga are hunted in the shallows near Sisualik at the end of June.

Fishing becomes important as soon as the ice goes out. Char move along the coast at Sisualik, as do whitefish. These species are caught in beach set gill nets in some quantity and are dried for the coming winter.

July to August traditionally constituted a slack period in foraging activities. Hot weather and myriads of insects made the drying of fish and meat difficult. Today, this period provides the time for commercial fishing and wage employment. While the men are fishing, families in camp forage for maintenance rather than to set aside food reserves.

Berry-picking peaks from mid-August until freezeup. Waterfowl are hunted up until they migrate south, and many are stored for winter use. At the outlet of Krusenstern lagoon, migrating whitefish often have been trapped by a storm-built barrier beach and lowering water levels and can be taken in great quantity. In mid-September these whitefish are aged and frozen for use as <u>quag</u> (frozen fish) eaten with seal oil in winter. Whitefish taken at Krusenstern in this fashion are shared extensively.

In late fall caribou and moose are taken from boats travelling the rivers, and spotted seals can be taken at the mouth of the Noatak.

Selawik Annual Cycle (Anderson and Anderson 1977)

Douglas and Wanni Anderson conducted nine years of research in the Selawik area between 1968 and 1977. Their research focused on the "history of settlement and resource use of the Selawik River Drainage System" to show the "close interrelatedness of the people and their land, . . . that the Natives' knowledge and understanding of their local ecology is presently underutilized by governmental agencies and that intelligent maintenance of the region's resources necessitates the inclusion of local Natives as equal partners at the highest levels of regional planning and management" (Anderson and Anderson 1977:3). They also hoped to contribute an archaeologically pertinent "understanding of change and stability within small-scale transhumanic societies."

Unfortunately, Anderson and Anderson (1977) do not provide a description of the cycle of production for Selawik during the twelve-month period in 1971-72 that they resided in the village, but their demographic analysis of Selawik for 1975 and 1977 will be discussed in the section "Social Organization" below. They conclude that there is a "close connection between population, marriage and residence patterns and changing economic arrangements." Like Uhl and Uhl, Anderson and Anderson stress the importance of intra- and extravillage alliances for exchange but do not elaborate on the kind, frequency, and amount of goods to be exchanged. Anderson and Anderson find these alliances to be kin-based.

Selawik appears, then, to be characterized by close knit families with kinship alliances strengthened and expanded through marriages between their own village members. In many cases these alliances are continually reaffirmed and strengthened through marriages between kin, just as they are enhanced through continual social contacts and economic cooperation. As Selawik subsistence living depends on the accessibility to subsistence areas, such alliances have the effect of creating an expanded territory within which the hunters and fishers from the family network can cooperate. Also, the alliances mobilize a large family network of hunters and fishers who through their ability to cover a greater part of the valley on

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their forays, can increase the yield of food and other necessities from the village base within the Selawik River Valley itself. (Anderson and Anderson 1977:28-29).

Selawik marriage patterns show the importance of kinship alliances beyond the village:

The relatively high number of marriages between Selawik and [sea] mammal hunting coastal residents is socially and economically important. Socially they create kinship bonds and opportunities for closer interaction which can lead to further marriage alliances. provide families Economically, they the involved better opportunities to acquire coastal products. Such marriages also provide social networks in the coastal villages to facilitate moves to the coast, should they desire. Likewise, the marriages between Selawik and Kobuk river residents afford the families in each area the possibilities to exchange products not found in the other area. (Anderson and Anderson 1977:31).

Upper Kobuk (Ambler, Shungnak, Kobuk) Annual Cycle (Anderson et al. 1976) Fishing by gill nets through the ice occupies much time from freezeup until December when the ice thickens and catches diminish. Snow cover provides relatively easy access to the land, and the snow machine affords rapid transit, all but eliminating long absences from home. Winter forays tend to avoid the deep, soft snow typical of wooded areas along the rivers, favoring hard-packed tundra. Caribou are hunted opportunistically throughout the winter, when fatter, barren cows are preferred. Unless meat is in short supply, lean caribou often are cached to be made into dry meat in spring. Commercial trapping has all but disappeared because alternative sources of cash are available. Ptarmigan and hares are taken throughout the winter.

Intervillage visiting and long hunting trips fill March and April, when temperatures are warming, daylight hours lengthening, and snow conditions are optimal. Northward-migrating caribou are hunted intensively as they have already

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begun to fatten following winter. Bears are taken just after they emerge from their dens and still retain some fat reserves. In May travel becomes difficult, and people are largely confined to the village until the ice goes out of the rivers and boat travel once again becomes possible. Returning waterfowl are hunted and muskrats are taken both for their pelts and for meat.

In summer fishing with gill nets dominates. Families spend from a few weeks to most of the summer at fish camps. Once the water levels in the rivers drop in early summer, fishing slacks off, and some families travel by boat to Kotzebue for commercial salmon fishing. Some men leave for seasonal wage employment. In late summer and fall, seine and gill netting for whitefish, sheefish, and salmon become major enterprises. Large numbers of fish may be taken. From August to freezeup berry-picking occupies many hours, particularly for women and children.

Caribou hunting intensifies in the fall when pelts are prime and the animals are fat. As fall progresses, rutting bulls become rank and caribou cows are preferred. Moose and bears, fat from summer foraging, attract extensive hunting effort. Ducks and geese are taken opportunistically or more extensively, as needed.

Lower Kobuk (Noorvik, Kiana) Annual Cycle (Anderson et al. 1976)

Fish nets are set through the ice near the villages as soon as it is thick enough to support a person. Caribou hunting begins when snow machine travel becomes possible. A good fall caribou hunt means less effort during the darkest and coldest part of winter, over the holiday season. A few men run traplines near the villages, but this activity is secondary. In February and March travel for visiting and caribou hunting increases. In April and May families migrate to

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Hotham Inlet (locally called Kobuk Lake) to hook sheefish through the ice. Waterfowl and muskrat are harvested when encountered.

After breakup, the men travel by boat up the Kobuk to the Hunt and Salmon rivers and Onion Portage to intercept northward-migrating caribou. The river is clear of ice much sooner than Hotham Inlet, so early summer foraging focuses on the Kobuk waterways. The level of activity, settlement pattern, and geographic area covered depends on the amount of gasoline available in the village after the winter (gasoline can be flown in on chartered aircraft, but is very expensive).

Fishing for whitefish peaks in early summer. Noorvik people disperse to fish camps throughout the delta for varying periods of time. In the 1970s Kiana people fished near the village. Fishcamps within ninety minutes of the village can be maintained on day trips, so fishermen return to the village each evening. At about the same time that whitefish become available, sheefish are taken by hook and line as they migrate upriver. In mid-June, sheefish are netted, and in late June the smelt arrive and are taken by seining. Families cooperate in seining for smelt and share in the catch, so a family that does not own a seine still share in the harvest. Drying fish during the ideal conditions of early summer was formerly very important, and during the 1970s many drying racks were visible along the lower Kobuk. The number of drying racks seemed significantly lower in the 1980s. Whether this reflects a reduction in harvest, an increase in freezers in the villages, or both, is not known.

In July men leave for construction jobs outside the region. In 1974 and 1975 many jobs related to pipeline construction. Some families moved to Kotzebue at this time to take part in the commercial salmon fishery. Others remained in town

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to wait for a call for a fire-fighting crew. Those families remaining in the village might continue fishing or prepare their whitefish salmon seines for August. Generally two women pool their equipment and supplies for the enterprise. Most seining is accomplished on day trips away from the village, but preparation and drying take place back at the village.

Fall fishing is intense for families returning from the Kotzebue fishery, and berry-picking takes a lot of everyone's time. As home freezers now are common, moose hunting has become an important hedge against a poor fall caribou hunt. Some boats travel up the Kobuk River to hunt southward-migrating caribou at their fording places.

Kivalina Annual Cycle (1983-1984) (Braund and Burnham 1983; Burch 1985) Kivalina experienced an inmigration during the Post-ANCSA Period similar to that of Noatak. Between the 1960s and 1980s Burch (1985:7) reports that the population and number of occupied houses nearly doubled between 1964 and 1982. According to Burch (1985:9-11): "In 1966 Kivalina seemed on the verge of becoming a dying village; families and individuals were leaving, and prospects for the future were poor. But by 1982, all of the families, and most of the individuals, had returned. More outsiders had married in than villagers had married out during the intervening years." Significantly, "all of the local families that had operated in Kivalina in the mid-1960s were still operating there twenty years later. A number of developmental changes had taken place, of course, due to births, deaths, aging and marriage, but the level of social continuity between the two study periods was extremely high."

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The annual cycle, too, shows continuity. Burch (1985:112) expects that "when a comprehensive analysis of per capita consumption (as opposed to production) has been completed, very little change between the mid-1960s and the early 1980s will be apparent. Certainly the impression I got during my several visits to the village in 1982-84 was that individuals consumed about the same quantities of Native food in 1984 as they did twenty years earlier." As in all the communities in the region, the substitution of the snow machine for the dog team affected the harvest effort and its result.

Braund and Burnham (1983) conducted research in Kivalina in 1982 to provide background data for Cominco's Red Dog mine developments. Using interview data and participating in the fall char fishery, they produced a detailed study of Kivalina subsistence patterns. Burch (1985) enlisted assistants from the village to replicate for 1982-1984 the quantified harvest data he had obtained in 1964-1966. The rhythm of the annual cycle at Kivalina remained essentially unchanged between the 1960s and 1980s. As Burch's data are the only comprehensive quantified harvest figures for a village in the region during the Post-ANCSA Period, his outline of timing of the subsistence harvest will be emphasized here.

Burch found that in the 1980s the people of Kivalina foraged primarily for traditional Native foods. Just as Uhl and Uhl discovered at Noatak, Burch (1985:117) determined that "there is a fixed minimum level of demand that changes only with the size of the consumer population. If the supply of fish and game is low, then the activities of the foragers may indeed be very aggressive. When the supply is high, however, people may spend more time loafing or working at something else than hunting or fishing."

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Two foraging periods provide the foundation of local food production at Kivalina. The first is early summer, when "most of the dried fish and all of the dried bearded seal meat and oil (early to mid-June) are produced. The second is early fall (mid-September to early October). It is during this period that most of the fish later consumed frozen as <u>quag</u> [here, frozen fish consumed frozen, raw, usually with seal oil; caribou meat eaten frozen and raw is also called <u>quag</u>] are caught" (Burch 1985:125). The hunters, of course, have no way of predicting whether anomalously high or low harvests will occur. As a consequence, "hunters must take full advantage of windfalls, because they cannot know what disasters might lie only a short distance ahead [in the harvest cycle]."

Burch's (1985:119, Table 29) data confirm that major fluctuations in harvest from year to year continue and that "variation [in harvest] exists not only in the absolute size of the harvests of the different species, but also to the proportion a given species contributes to the total." He constructed a yearly cycle based on average harvest data, and his presentation differs from others (e.g., Uhl and Uhl 1979:42-44) in that it is harvest-based and quantified rather than a generalized reconstruction of foraging activities, qualitatively determined over an unknown period of time. It corresponds very closely to annual cycles based upon unquantified Native and ethnographic observations. Burch identifies ten phases in the annual subsistence cycle at Kivalina. An abstract of his characterization (Burch 1985:121-124) of these phases, their major emphases, and variations, follows:

The first phase . . . is the June hunting and fishing season. In principal, the primary resource produced during this period is bearded seal, followed by char. The char run out to sea is probably the single most dependable event in the entire calendar: they 'always' make it, and they are usually easy to catch except in extraordinarily foul weather, The bearded seal harvest is more variable because it is so heavily affected by ice conditions. When

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ice conditions are bad, hunters devote more attention to char, ringed seals, and migratory waterfowl. Occasionally there is a windfall of belukha or walrus.

The second phase. . . comes a week or two after the sea ice leaves the area. The harvest during this period can be comprised of various elements, but belukha and caribou are the primary ones.

[The third phase] . . . is the mid-summer lull. It includes salmon and a few char, the odd moose or caribou, perhaps a belukha or two, some murre eggs, berries and greens, and possibly waterfowl. The fact that the mid-summer season is a lull in subsistence activities results from both the relative paucity of game resources along the coast, and the people's interest in other matters, such as wage employment or the commercial salmonfishery, in Kotzebue. It is a recent phenomenon. Traditionally, summer was an important subsistence period, but one that required a considerable dispersal of people over the interior sectors of the region.

Phase [four]. . . is the fall char fishery, followed promptly by [phase five], . . the post-freezeup caribou hunting season. These are highly variable periods. In the four years covered by this study, every time [the char fishery] . . . has been a failure, [caribou hunting] . . . has been a great success, and <u>vice versa</u>. There is no known reason why this has been the case, however. If both were failures, the hunting and fishing effort during phase [six] . . .-the autumn maintenance period--would be exceptionally intense, with the actual results depending on the availability of fish and game that fall. In an "average" year . . . there is usually a gradual decline in activity, hence in harvest, into the short days and the Thanksgiving-New Year's holiday season.

Phase [seven] . . . is the winter hunting season, in which, theoretically, the harvest of ringed seals receives primary emphasis. However, if poor ice conditions prevent a successful seal hunt, attention shifts to caribou and char. That season typically is followed by a lull in early March, [phase eight] . . . , during which hunters wait for warmer weather and for bearded seals to begin sunning themselves on the ice. Frequently at this time there is a special effort . . . to hunt caribou before they head north in their spring migration. Productivity during this period can also be affected by such events as the Quarterly Meeting of the Friends Church, Easter, and the National Guard encampment.

The whale hunting season is . . . [phase nine]. While this brief period of late April has always been an important sea mammal hunting season for Kivalina hunters, the reinstitution of whaling in 1966 made it more productive than it had been for several decades previously. The big harvests in 1983 and especially in 1984 have distorted the averages for the specific years of record, hence the pattern is more typical of the 1980's than it is of the 1959-60 era.

The final phase...is the pre-breakup lull. During this period caribou are either scarce in or altogether absent from the Kivalina region; soft snow makes overland travel difficult, and the increasingly rotten sea ice makes sea mammal hunting progressively more dangerous. This is the season when migratory waterfowl usually go through in large numbers; they are eagerly hunted both to add diversity to the diet and because there is little else to hunt.

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Buckland Annual Cycle (Feldman 1986)

Feldman's late 1970-early 1980 study of beluga hunting at Elephant Point is the only study of Buckland available for the Post-ANCSA Period. His brief synopsis of the annual cycle at Buckland (Feldman 1986:156-157) follows:

Beluga hunting is an integral component of the use the Buckland people make of their environment on an annual basis. During the summer, salmon are netted in the rivers, bird eggs are gathered from Chamisso Island in Kotzebue Sound, other small islands in the rivers, and the tundra surrounding the village in the early summer. Walrus, a mammal which villages further north on the coast can rely on in addition to beluga, are not hunted by Buckland residents. Berries and other plants are gathered during the summer Beavers are taken from the lakes to the east of the as well. village and muskrat in small ponds. As the fall begins, seals (primarily spotted seals) are hunted at the mouth of the Buckland River and at the north and south ends of Eschscholtz Bay. As the fall continues, moose are hunted and then around November caribou are hunted near the Selawik Mountains to the east of the village. Bear and rabbit are also taken. During the winter, around March-April, sheefish are caught through the ice in Selawik lake (a twohour trip by snow machine). In March ptarmigan are hunted, although there weren't many around Buckland in 1981. Smelt come in large numbers to the Buckland River in front of the village during May and a communal netting effort is made. Then it is time once again for the beluga hunt in June.

Belukha are a highly valued resource of Kotzebue Sound. Feldman (1986:159) reports the 1982 price for belukha maktak (skin) in the region as \$4.50 per pound. The appearance of Belukha in the region in the spring is associated with appearance of nearshore leads. At Point Hope, their appearance signifies that bowhead whales will appear soon. Belukhas calve in Eschscholtz Bay but may calve in all coastal areas of the NANA region. As for many marine mammals, biological field observation is difficult but scientific studies of these animals within the NANA region are appearing (Burns et al. 1982, Frost et al. 1983).

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During the Traditional Period, belukhas were a major attraction of Sisualik. At this time and even as recently as the 1940s (Gal, personal communication) belukha pods frequented Selawik Lake as well as Kotzebue Sound and Eschscholtz Bay. The availability of belukha to the region's hunters is highly variable. This variability has prompted much discussion among hunters regarding the adverse effects of outboard motor noise and pollution on belukha movements, especially past Kotzebue.

3. Discussion

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Like the Recent Transitional Period, the Post-ANCSA Period has been a time of relative abundance of harvestable resources for the people of the region. Abundance and distribution have varied from year to year but not drastically. Sea mammals have been in good supply, as have fish. The commercial salmon fishery has exhibited fluctuations from year to year, and this affected fishermen financially. Fluctuating runs of salmon have affected the subsistence harvester less for two reasons. First, there are no longer working dog teams to feed throughout the year, so less salmon is needed for dog food. Second, other species (e.g., char, whitefish) may be taken in greater numbers to compensate for less salmon. Commercial fish buyers, on the other hand, are only interested in salmon and to a minor degree in char.

Except for a rapid decline of short duration in the mid-1970s, caribou have offered a steady supply of meat to people throughout the region (except for Deering). Unfortunately, no studies were done of the effects of the caribou decline, what alternate resources were turned to, and how they were distributed.

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In 1979 the beluga hunt at Elephant Point was very unsuccessful, and as caribou numbers still were considered low, Alaska Department of Fish and Game regulated their harvest. Buckland was allowed a special caribou hunting season, and 110 caribou were harvested. According to Feldman (1986:160), in 1979 the Buckland store sold twice as much meat as it did the previous year. Also, the number of households using food stamps increased 300 percent from 1978, but by February 1980, after the special caribou harvest, food stamp use dropped off sharply. Beluga hunters at Elephant Point have suffered some poor years since 1979, but caribou have been in good supply, caribou hunting has not been restricted, and, presumably, increased winter caribou harvests compensated once again for the lack of beluga set aside for winter.

Social Organization

One of the most striking features of the social organization in the Northwest Arctic Borough today is the all-pervasive orientation to kinship. When travelling through the region with a resident and meeting people, the first order of conversation is kinship. Lineal relatives are established first: "Who is your mother and your father?" "My grandmother was from X village." If no relevant consanguineal links are established, affinal ties are next discussed: "My wife is so-and-so, her parents are" Almost invariably, some kinship tie is established. A prominent Native leader from Kotzebue, who was raised by his grandparents, recently travelled to Point Hope and discovered a new set of kin through his grandfather's brother. Even when no kinship link is established, the process establishes each person's social position in terms of large family units: "Your uncle hunts caribou with my cousin at Hunt River every fall." The geographic breadth of kin relations is doubtless related to the personnel dislocations that occurred during the Early and Intermediate Transitional

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Periods. That these dispersed kinship relations are still pursued indicates their relevance to modern social interaction (Gal, personal communication).

The NANA Regional Corporation documented genealogies during the 1970s to establish a list of eligible shareholders under ANCSA. The Iñupiat Ilitqusiat program lists "knowledge of family" as one of its basic values, and some of the tapes of the Regional Elders' Conferences record genealogies. The National Park Service has undertaken a major study of genealogies in the Kobuk area (Sherrod, pers. comm.). When compiled the record of intra- and intervillage networks may more clearly reveal interrelationships of the Kobuk River area. Unfortunately, a current genealogical listing for all residents of the region is not available; however, some genealogical data have been assembled.

In addition kinship partnerships continue to be important in relationships in the region today, although "youngsters do not know what these partnerships are and young adults rarely engage in named, customary partnerships" (McNabb 1990:70). Anderson et al. (1976:461-463) identify seven Iñupiat terms for partnerships on the Kobuk River. McNabb (1990:72, Table 17) identifies eight items; the two sets of terms overlap, but are not identical. Those categories of persons from which partners are frequently chosen are: close school friends, friends originating from the same village and living in a different village, widows from different villages who have no persons from their village of origin to whom to turn, or persons residing in different villages. Partnerships form the basis for cooperative work groups and reciprocity to augment a person's local or regional kinship network. From Anderson et al.'s discussion, it is unclear whether all seven types of partnerships were in operation along the Kobuk River in the 1970s. For example, one of the types listed was "nulaqatigich," signifying persons who

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exchange wives--a relationship targeted for eradication by the missionaries since the turn of the century. Anderson et al. (1976) note that not until a "girl matures, becomes a mother, and assumes the responsibility as the joint head of a family, does her emotional attachment to subsistence activities deepen." Perhaps the involvement of young people in partnerships may undergo a similar developmental shift; no data are available.

"Formal kinship remains a central organizational principle that shapes customary patterns of mutual aid and subjective sentiments. Kinship principles are still used to discover, create, or allege social ties that, if present, justify affiliations between people" (McNabb 1990:64). Cooperation and pooling of resources, including cash and equipment, is necessary. Individuals in the Northwest Arctic Borough estimate capital costs of between \$30,000 and \$50,000 for the tools of subsistence production. These capital costs must be amassed through involvement in the institutional framework of industrial capitalism. The median household income for Natives in the region is not known, but it is certainly much lower than that for Kotzebue (including all non-Natives), which in 1985 was \$20,484.

Settlement and Population

Population levels throughout the region continued to rise between 1970 and 1980 (Burch 1984:316, Table 1). The greatest growth occurred at Kotzebue as wage opportunities increased. As indicated in Chapter 1, more of Kotzebue's Native residents participated in the labor force (54 percent) than in any other village. They captured two-thirds of the region's wage income with only 44 percent of its population. Following the shift of power to the region after the passage of ANCSA, administrative and service job opportunities increased in this regional

center. During the post ANCSA period Native emigration from the region decreased and Native immigration to the region increased (McNabb 1990:170). McNabb (1990:21) suggests that "a large proportion of the NANA population (perhaps as much as 25 percent) is absent from the region at any point in time but later returns." (These are statewide trends as well; see Institute of Social and Economic Research et al. 1988:23-24.)

Residence during the Post-ANCSA Period was almost entirely sedentary and village One provision of ANCSA extinguished the Native Allotment Act of 1906, based. which allowed individuals to claim and receive title to up to 160 acres of unappropriated land in four parcels. The stated purpose of this act was to fix the Native population geographically and eliminate the foraging lifestyle. Most allotment parcels were primarily selected by the applicants because of their situation relative to traditionally harvestable resources. Ironically, the effect of the act today is exactly opposite of its original intent. The establishment of the national conservation units by ANILCA in 1980 threatens, according to local perceptions, free use (unconstrained access and use, including short-term settlement) of these federal lands for harvesting local foods. Many Native allotments today are islands of private holdings surrounded by the federal conservation units. They therefore stand as unrestricted havens for their owners and others, who launch foraging activities into catchments extending onto federal lands. Their presence insures that mobile foraging activities will continue from dispersed bases on conservation unit lands rather than be limited to the catchments of the permanent villages.

Most allotments have no permanent structures to distinguish them from surrounding lands. Only on allotments in the Sisualik-Krusenstern-lower Noatak areas are

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cabins common. Allotments provide respite from the more urban lifestyle of Kotzebue. A reserve has been established on lands at Sisualik by the Kikiktagruk Iñupiat Corporation (the Kotzebue ANCSA village corporation) to recognize the historic and continued use of the area by the Noatak people. At various times over the last six years discussion has occurred about establishing Sisualik as a separate settlement for people who wish to emphasize a foraging lifestyle.

No additional Native allotment applications will be accepted by the federal government, and their use has been largely kinship based. The pattern of erecting structures on allotments follows the same pattern that developed in Kotzebue after the townsite was surveyed--a pattern of kin building adjacent to kin. Kotzebue's zoning board often has been requested to subdivide city lots to allow close kin, unable to afford a lot, to build nearby. Parents with allotments encourage their grown children, who were ineligible to apply for an allotment or for other reasons did not receive an allotment, to build on their parcels. In the pattern of allotment use, the nineteenth century local family has been replicated. Social and economic ties between family members are strengthened through geographic proximity of related domestic family units. The relationship of house and tent structures provides a tangible model of kinship ties.

In the villages and in Kotzebue various housing projects have installed typical American houses suitable for nuclear families in the suburbs in place of the owner-built homes of the 1950s. Such houses place physical constraints on the composition of the household, and platting and construction of new housing obscures the relationship between domestic units. Formerly, related domestic families built adjacent to each other. Today, related domestic families, linked

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economically and socially, are scattered throughout the settlements (Burch 1975:287-288).

McNabb (1989: Charts 4-24) summarizes household size for each village in the region for 1987 and 1988. The frequency distribution of household size for Kotzebue over the two-year period did not change appreciably--most households consisted of four members. The stability of the size of Kotzebue households may indicate the predominance of smaller nuclear families in a more wage-oriented economy. The design of domestic housing, rather than the kinship and economic bonds that link domestic families, forms the basis of social survey instruments as a matter of convenience. Just as the platting of new housing projects obscures the physical representation of domestic families organized into local families, household surveys based on American nuclear family dwellings tend to blur the social and economic linkages between domestic families.

Economic Processes

Since Chapter 1 details the cash economy of the Northwest Arctic Borough, we will only highlight it here. The Post-ANCSA Period is characterized by a marked increase in wage employment opportunities both outside but especially within the region. The trans-Alaska pipeline provided many jobs and much cash into the region. The increase in the price of gold in the late 1970s modestly increased mining activity in the Candle area and provided some jobs. Capital improvement projects in the villages offered seasonal jobs at home. The regionalization of the schools in rural Alaska and the maintenance of K-12 schools in all the villages provided steady jobs for villagers as teachers' aides and cafeteria and maintenance personnel. Bilingual education and cultural awareness in the regional curriculum, instituted by locally controlled boards, have provided

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additional employment opportunities for residents. Non-Natives dominate the high-paying professional jobs (teachers and administrators), however. Kotzebuebased Chukchi Campus of the University of Alaska and the Alaska Technical Center both provide part-time positions for coordinators in the villages. A network of village health aides linked to the hospital in Kotzebue also provides some local employment. NANA Regional Corporation's efforts to employ shareholders in their various enterprises contributed regular cash flow into the region. NANA's Prudhoe Bay operations and support service provided by a NANA affiliate during the <u>Exxon Valdez</u> oil spill clean up recently have employed many of the region's residents. The export of seasonal labor has been a growing basic industry in the region since the 1950s.

NANA's joint venture with Cominco in the construction and operation of the Red Dog Mine, north of Kotzebue, holds the promise of numerous jobs for shareholders well into the future. As the administration of various services and of the ANCSA corporations shifted to the region, steady positions opened in these bureaucracies in management and in administrative, accounting, and clerical fields, especially in Kotzebue. As stated in Chapter 1, "The region's annual employment cycle is now more stable than the state's" and its "employment and payroll trends since the onset of the state's economic recession in 1986 indicate surprising resilience."

The increase in wage-earning opportunities has increased the disposable income of the present population as well as the demand for and expectation of services. Some indications of this trend are the number of scheduled air flights servicing the region and the number of restaurants and stores in operation. Bingo and other gambling games, run by the Lions clubs and other organizations, have a

significant, albeit unquantified, effect on the circulation of cash throughout the region. Charitable groups use bingo profits for various purposes (e.g., scholarships, search and rescue) to sponsor dog races. A special bingo night at Kotzebue even helped eradicate the city debt.

Although included generally as nonmonetary income, subsistence goods and services have real cash value as they free dollars for expenditure in other areas. Pooling of expensive durable goods such as seines, outboard motors, and snow machines and costly expendables such as gasoline, for cooperative undertakings reduces the expense of local foraging. Although no quantified data are available, cooperative activities seem to be organized most frequently along kinship lines. Partnerships defined and named traditionally also occur but remain unstudied.

Protein and carbohydrates obtained from the land also free cash for expenditures other than food. Still, 32 percent of the disposable cash of households in the NANA Region is used to purchase food (Chapter 1). The amount of household income necessary to cover foraging-related expenses is not known. All of the studies pertaining to the Post-ANCSA Period stress the prevalence of locally produced food and the economic and cultural importance and the extent of the distribution system for this food. Informants report that Native foods and cash circulate throughout the region and to Barrow, Fairbanks, Anchorage, and elsewhere.

Often overlooked by outsiders examining the production of local foods is the discrimination and preferences of the people of the region. Dried fish is not simply dried fish, and <u>quag</u> (frozen meat or fish) is not just <u>quaq</u>. Each village specializes to a degree according to the condition of the foodstuff available to

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them at harvest and according to the way it is prepared. Dried pike from Selawik, char <u>quag</u> from Kivalina, black meat (dried sea mammal meat) from Kotzebue Sound, beluga from Elephant Point, Hotham Inlet sheefish, fall dried salmon from Noatak to name a few, are foods distinguished and valued for their subtlety of taste. Also, as noted at the beginning of this chapter, resources are not distributed uniformly throughout the region or may be scarce in one place and abundant in another during the same year. These differences form the basis of the regional exchange network (Uhl and Uhl 1977, 1979). "An important fact in this regard is that the Eskimos associate hardship with the lack of specific kinds of food. When the hunt fails, no volume of biscuits and marmalade can keep a man healthy and vigorous." (Foote and Williamson 1966:1070). These food preferences determine the exchange values (cash or produce) within the economy.

Gal (1985) calculated that food obtained from a single Native allotment in the Teshekpuk Lake area on the northern side of the Brooks Range was distributed to a minimum of forty individuals, including some living in Barrow and Anchorage. In the spring of 1987, a Point Hope man married to a Kiana woman and living in Kiana enlisted kin and various "partners" in town to amass caribou meat and hides. These were shipped to Point Hope and used by whaling crews. Black muktuk was returned to Kiana and distributed. Uhl and Uhl (1977:184-186) provide a glimpse of a distribution network that extended from Kotzebue Sound to Shungnak and illustrate the close links between the cash and noncash components of the regional economy. Burch (1970:61) describes an exchange of goods between two individuals via mail and air freight. The two individuals had never seen each other. Contingents from the NANA Region regularly attend the whaling feasts at Point Hope, Point Lay, Wainwright, and Barrow at which Native foods are redistributed. These kinds of anecdotal data, however, provide no measure of the

economic and social importance of transactions involving locally produced foods and their significance in the overall economy of the region.

Integration Processes

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As noted above, kinship remains a strong integrator at the village and regional levels. Throughout the Post-ANCSA Period, the number of sodalities (non-kin associations) within the NANA Region has also steadily increased. Excluding political organizations within the region, McNabb (1990: 56-57) provides a partial listing which includes twenty-six organizations. These organizations compete with kin-focused activities for an individual's time and energy. There is no common denominator to this list of voluntary associations, which includes advocacy groups, sports and recreational clubs, civic associations and special interest groups of various kinds.

Anderson et al. (1976:438-443) and Anderson and Anderson (1977:28-34) provide demographic data for the Kobuk River villages and for Selawik for 1975 that reveals settlement trends, economic processes, and regional integration. At Kiana, 18 percent of the marriages were village endogamous, 32 percent were to a Noorvik spouse, and 11 percent were to a spouse from one of the upper Kobuk villages. Noorvik marriages were 58 percent village endogamous and nearly 10 percent each to spouses from Selawik or to spouses from other Kobuk River villages. Six percent of the marriages were to spouses from Kiana; and the majority of these couples settled in Kiana). Half of Selawik marriages were village endogamous, 10 percent are to spouses from the upper Kobuk villages, and 9 percent were to spouses from Kiana and Noorvik. The majority of marriages to spouses from villages in Alaska other than those of Selawik and the Kobuk River are to coastal residents (e.g., Kotzebue, Point Hope, Kivalina).

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Both spouses of the majority of married couples in Noorvik and Selawik (but not Kiana) reside in the village where they grew up. In all three villages patrilocality is more common than matrilocality. In the modern foraging context of the region, this pattern of residence after marriage may assist in the transmission of skills and knowledge of terrain and game distributions from generation to generation. Long-distance foraging is more often done by men or by men accompanied by women than by women (77 percent of the men and only 40 percent of woman respondents report that they camp while hunting or fishing, see social indicators below). Most of the married men reside in the village in which they grew up (Anderson's 1977 "common residence" category plus "patrilocal" category) and thus have been familiar with the land and its resources since childhood. This is especially true since 1980 when all schools in the region provided a K-12 curriculum; that is, young adults were no longer sent outside the region for high school.

The tendency towards village endogamy evident in the Kobuk villages and Selawik is surprising in view of the increased opportunities for regionwide interpersonal contacts. Scheduled air transport between the villages is relatively inexpensive and frequent. The Quarterly Meeting of Friends and NANA's Annual Shareholder meeting bring together large numbers of people from throughout the region. The snow machine affords rapid and inexpensive transit between the villages, especially in March when several festivals are held (e.g., at Kotzebue, Noorvik). Chapter 5 details the institutional framework of the region, which brings together representatives from throughout the region. The commercial fishing season attracts families from different villages to Kotzebue. Apart from basketball tournaments, which are very popular and afford village teams an opportunity to travel, young people may be mostly excluded from these opportunities for

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establishing broad contacts throughout the region. The NANA Region has the highest teen birthrate and unwed teen birthrate in Alaska (Weeks 1989). Teen mothers living at home may be more likely to wed, or eventually wed, men from their home village; this may help account for the village endogamy.

After a period of proliferation of bureaucracies extending services throughout the region, consolidation has begun. Maniilaq administers almost all social and health service programs. The Northwest Arctic Borough provides the framework for political consolidation and has assumed the functions of the Regional Planning Strategy. The separate IRA councils have been coordinated into a Northwest Tribal Council. All of the village corporations except Kotzebue have merged with the NANA Regional Corporation to pool their capital and operate more effectively.

Perhaps one of the most significant influences in the integration of the region with the larger American society has been the installation of satellite television in the villages. In the 1950s and 1960s mail order catalogs helped bring the outside world to the villages. Today, television has touched all age groups and exposes the population to other values as well as to the vast range of consumer goods available.

The establishment of conservation units in the region has brought national interests to the region. The desires and needs of the local people in the use of these lands must be considered together with the needs of float-boaters, hikers, hunters, and other recreationists from throughout the United States. Only in this category, the management of more than 12 million acres historically used and adjacent to modern settlements and allotments, have trends towards local and regional control in the Post-ANCSA Period been reversed.

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VIII. CROSS-SECTIONAL COMPARISONS OF SUBSISTENCE ACTIVITY

BY AGE, SEX AND SOCIOECONOMIC STATUS

Obviously, variations occur in subsistence activity according to age, sex, and Title VIII of the Alaska National Interest Lands Conservation Act status. (ANILCA) clumsily acknowledges these cross-sectional differences by granting subsistence priorities based on place of residence--rural or urban. Virtually all of the literature published by the Alaska Department of Fish and Game, Subsistence Division, illustrates that subsistence activity is not a uniform practice across communities nor within any single community. Empirical evidence demonstrates that the socioeconomic factors that condition harvest arrangements-such as financing and capital, access to human resources via networks of collaborators, and availability of time--vary along with a wide range of employment and harvest criteria. Moreover, economic roles also differ. Hence, capital needs aside, older and younger persons and men and women tend to act differently. This section addresses cross-sectional variations in subsistence activity on the basis of age, sex, and socioeconomic status. For our purposes "socioeconomic status" is comprised of income, education, and employment status.

1. Age

Data from the MMS Social Indicators study conducted between 1986 and 1991 by Human Relations Area Files include 113 respondent households in four borough villages: Kotzebue, Kivalina, Deering, and Buckland. Bear in mind that the authors cannot specify how easily these data can be generalized to other communities. In the following tables the data for the four villages, collected in 1987 and 1989, are aggregated. One variable seeks to answer: "Was subsistence food a part of your meals yesterday?" Older respondents are far more apt to respond positively (Table 3-1).³

TABLE 3-1 AGE AND SUBSISTENCE FOOD (YESTERDAY)					
Age Column	No subsistence food	Yes, subsistence food	Row Total		
18-39	17 (33.3%)	34 (66.7%)	51 (100%)		
40 +	6 (10.0%)	54 (90.0%)	60 (100%)		
Totals:	23 (20.7%)	88 (79.3%)	111 (100%)		

Source: MMS Social Indicators study data files (2 missing observations); percentages shown are row totals.

Links of mutual assistance and sharing customarily span households in rural village society. Elders and young adults tend to be food recipients. As the young adults mature and improve their skills, they begin sharing larger quantities of foods just as their senior kin wane and grow more dependent on the labor of their juniors. Two-thirds of the oldest group of seniors (age 60 or more) reported that someone in another household gave them subsistence food during the last two days. Twenty percent of the youngest cohort reports the same pattern. Only about 20 percent of the oldest respondents harvested subsistence food over the last two days, but 60 percent or more of the younger persons who consumed subsistence food over the last two days harvested it themselves. The suggested curvilinear relationship between age and subsistence dependencies is more strongly supported by other data. Table 3-2 compares age and the number of

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³Only nine of 113 respondents are non-Native, so their contribution to this and other patterns, in the sense of diluting, counterbalancing, or skewing results, is negligible. Inspection of the raw data showed no significant difference in the distribution of Native and non-Native respondents.

meals eaten outside the home with relatives in other households over the last two days.

Age	no meals	1-3 meals	4-7 meals	8+ meals	Total
18-29	7 (41.2%)	8 (47.1%)	2 (11.8%)		17 (100%)
30-39	16 (51.6%)	15 (48.4%)			31 (100%)
40-49	8 (36.4%)	11 (50.0%)	3 (13.6%)		22 (100%)
50-59	5 (31.3%)	8 (50.0%)	1 (6.3%)	2 (12.5%)	16 (100%)
60 +	11 (50.0%)	7 (31.8%)	4 (18.2%)		22 (100%)
Total:	47 (43.5%)	49 (45.4%)	10 (19.3%)	2 (1.9%)	108 (100%)

TABLE 3-2 AGE AND MEALS WITH RELATIVES



MMS Social Indicators study data files (5 missing observations); Percentages shown are row totals

The composition of the diet may also be revealing. Older respondents are more likely to have eaten subsistence foods in the last two days, but this comparison does not address volume of food, only frequency. The Social Indicators Program also sought to characterize the dependence (rendered as a percentage of consumed subsistence protein over the last year) of respondents on protein from local game and fish. Table 3-3 reveals that it is the youngest group that shows the lowest reliance on locally harvested protein.

Some of the ethnographic literature asserts that young adult Iñupiat constitute economic linchpins who, because of robust health, strength, and limited family

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duties (i.e., many are unmarried), are able to share subsistence foods widely. These data do not lend great support to that image. The authors' observations and research over some decades reveal high capital demands and a general trend away from labor-intensive subsistence activity. Aggressive subsistence activity by young adults is curtailed by their lack of stable, predictable financing. Dietary habits also are probably changing. We do not know if the cross-sectional differences we see here reflect real changes in behavior (i.e., will younger adults retain this pattern as they age, or will they assume the roles and habits now evident among older adults?).

Age:	None	<50%	<75%	75% +	Total:
18-29		5 (27.8%)	8 (44.4%)	5 (27.8%)	18 (100%)
30-39	1 (3.1%)	9 (28.1%)	7 (21.9%)	15 (46.9%)	32 (100%)
40-49		9 (40.9%)	4 (18.2%)	9 (40.9%)	22 (100%)
50-59		4 (25.0%)	4 (25.0%)	8 (50.0%)	16 (100%)
60 +		6 (27.3%)	5 (22.7%)	11 (50.0%)	22 (100%)
Total:	1 (0.9%)	33 (30.0%)	28 (25.5%)	48 (43.6%)	110 (100%)

TABLE 3-3AGE AND DIETARY PROTEIN FROM SUBSISTENCE

Source: MMS Social Indicators study data files (3 missing observations); Percentages shown are row totals.

2. Sex

Economic role differentiation by sex is well documented in all Alaska Native societies. Despite changes in sex role definition in American society as a whole

during the last fifty years, differentiation and stratification are trademarks of structural disparity in both mainstream and peripheral societies on this continent. Women have increasingly entered the workforce in the borough and now dominate some clerical, service, and white collar positions (Davis 1983; McNabb 1990; Waring and Associates 1988). Nonetheless, men and women lead different economic lives.

Based on historical data, Worl (1982) characterizes sex role differentiation associated with subsistence activity in the NANA region. Her simplified division of customary tasks can be summarized as follows:

Males

Hunting - men responsible for most hunting; elders and adults teach young men techniques; boys assist men.

Birding - boys hunt ptarmigan.⁴

Fishing - men do hooking, burbot trapping, remove fish from weirs; men and boys fish with rod and reel, set up camp for family; men carve net floats and sinkers, build boats, maintain motors, drying racks, fish boxes; men assist women with seining, setting gill nets, cutting drying fish; young men and boys assist women in fishing tasks, transport them to seining sites.

Gathering - all ages gather berries, edible plants; men collect spruce bark.

Females .

Hunting - women hunt small game; some take some big game; women butcher, prepare, dry meat; girls assist.

Sealing - women butcher, render fat.

Whaling - women butcher [mainly belukha] and prepare meat, blubber; girls assist.

"Note that these are traditional activities which may have had more rigid gender boundaries in the past. For instance, boys "hunt" ptarmigan and women "snare" them. It is unclear how salient this distinction is in any absolute sense. In contemporary times both males and females most often hunt ptarmigan if they seek that species.

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Birding - women snare ptarmigan.

Fishing - women make nets and hang, place, check nets; carry out seining and gill netting activity; cut and care for drying fish; elders fish, teach seining and gill netting, prepare fish; girls assist.

Gathering - all ages, but mostly women and children, gather berries and edible plants.

As part of the MMS Social Indicators survey, respondents (roughly divided on the basis of sex) reported their subsistence activities over the previous year in thirty-three categories. We further compressed these categories into "composites" that group similar species or activities--land mammals together, sea mammals together, and so on. Table 3-4 typifies the main responses so as to characterize male and female activities among the Social Indicators respondents.

Such percentage-based classifications underline variations in subsistence activity which, though based on contemporary (1987-1989) data, probably typified economic activity in historic times. Few activities could be called exclusively male or female. The range of customary activity, however, is more or less stable. In line with other documented patterns of merger and fusion in sex roles, women and men now engage in subsistence activities that their historical cohorts may not have. Males do occasionally assist with "female" tasks. Similarly, females are sometimes the most adept and vigorous "hook" fishers and spin casters. A key informant in Buckland explained that "people do what they have to do," referring to gender shifts in subsistence activity, illustrating the pragmatic core of Iñupiaq subsistence concepts.

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Activity	Male	(n=30)	Female	(n=35)
Hunt land mammals	67%	20	26%	9
Hunt sea mammals	57%	17	14%	5
Attend feasts/ceremonies	50%	15	54%	10
Camp while hunt/fish	77%	23	40%	14
Fishing	60%	18	40%	14
Gathering	57 %	17	63%	22
Build/repair boats, nets	60%	18	23%	8
Build/repair sleds	53%	16	none	0
Sew skins	3%	1	46%	16
Maintain ice cellar	7%	2	11%	4
Birding	63%	19	9%	3
Trapping	13%	4	none	0

TABLE 3-4CHARACTERISTIC SUBSISTENCE TASKS BY SEX, 1987

Source:

MMS Social Indicators study data files. Percentages refer to the proportion of each group (males, females) who engage in an activity. Percentages will not total 100%.

The majority of the Alaska Natives in the Social Indicators sample consumed subsistence foods "yesterday," and males slightly counterbalance females overall. About 84 percent of the sampled males did so whereas 73 percent of the sampled females ate locally harvested foods during the last day. The social dimension of food sharing and communal meals is relatively uniform by sex. About 40 percent of both sampled males and females ate no meals with relatives outside the household during the two days prior to sampling. In other words about 60 percent of the sample dined with relatives during the last 48-hour period. Percentage breakdowns for the proportion of locally harvested protein in diets also reveal no notable differences for males and females. Table 3-5 tabulates the results of this comparison. (There is no compelling reason in this instance to expect

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gender differences in diet, but since acculturative tendencies do often differ by sex and since females may exercise some controls over diet as part of their food preparation tasks, the comparison shown here is warranted.)

DIETARY PROTEIN (SUBSISTENCE) BY SEX										
· · ·	None		<50 %		<75%		75% +		Row Total	n
Male			28.6%	(18)	25.4%	(29)	46%	(29)	100%	63
Female	2.1%	(1)	31.9%	(15)	25.5%	(19)	40.4%	(19)	100%	47

TABLE 3-5

3. Socioeconomic Status

One difficulty in assessing the relationship between "socioeconomic status" and a variety of subsistence behaviors is that socioeconomic status (for our purposes, educational attainment, income, and employment status) incorporates Status is highly correlated with all of the salient subsistence ethnicity. behaviors. Only nine respondents are not Alaska Native, but remember that "high" measures of socioeconomic status favor non-Natives and exclude many Natives.

A comparison of educational attainment and recent subsistence food consumption (e.g., consumption of subsistence foods "yesterday") demonstrates that with increasing education, subsistence food consumption tends to decline (Table 3-6). Age is uncontrolled in this comparison. Most of the oldest respondents cluster in the lowest attainment categories (as does the majority of the Alaska Native subsample). This comparison reconfirms that Alaska Natives and older respondents are more likely to consume subsistence foods. This "status" comparison, however, captures some of the mainly younger Alaska Natives, or best-schooled Alaska Natives of any age, who will cluster at the lower end of any of the subsistence

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comparisons offered here. Recall that the Alaska Native subsample never resides wholly in the highest subsistence categories. We infer that young Alaska Natives and Alaska Natives with higher educational attainments are less likely than their Alaska Native neighbors to consume subsistence foods. Non-Natives do generally possess more education than Alaska Natives, but this factor does not seriously threaten the point made here. Table 3-7 duplicates Table 3-6 and eliminates non-Natives, permitting a comparison of educational attainment and recent subsistence consumption for sampled Alaska Natives only. This table reveals much the same pattern: generally, higher levels of education are associated with lower levels of subsistence consumption.

On the face of it these data evade an obvious explanation. Better educated and younger Alaska Natives may be less inclined to procure (harvest) subsistence resources due to other time commitments or undeveloped subsistence skills, but why would they fail to consume these resources if they were otherwise available (for instance, as shared foods and gifts)? It seems likely that their food preferences may be different from their neighbors and that, regardless of food preferences, they may not receive sufficient supplies of local foods to permit consumption at levels comparable to their neighbors. We must stress, however, that these comparisons target specific variables with limited explanatory power. For example, of the nine non-Natives in the Social Indicators sample for this region, seven reported that they did not consume subsistence foods "yesterday" as described above. But only five reported that they did not eat subsistence food "the day before yesterday" and none of the non-Native respondents ate <u>no</u> subsistence protein over the last year. The point we wish to make is that none

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TABLE 3-6 EDUCATIONAL ATTAINMENT AND RECENT SUBSISTENCE CONSUMPTION

Column: years completed		ıbsistence yesterday			ubsistence yesterday
None				1	(100%)
1-8 years	3	(8.3%)		33	(91.7%)
9-12 years	13	(22.0%)		46	(78.0%)
College	- 4	(36.4%)		.7	(63.6%)
Higher	3	(75.0%)	•	1	(25.0%)

Source: MMS Social Indicators study data files (2 missing observations); Percentages shown are row totals.

TABLE 3-7							
EDUCATIONAL	ATTAINMENT	AND	RECENT	SUBSISTENCE	CONSUMPTION:		
	ALA	ASKA	NATIVE	ONLY			

Column com	: y plet				sistenc /esterd				ubsistence yesterday	
None			<u> </u>	· · · ·	··· <u>··</u> ···			1	(100%)	
1-8 years				3 ((8.3%)		:	33	(91.7%)	
9-12 years				10 ((18.5%)			44	(81.5%)	
College				3 (30.0%)			7	(70.0%)	
Higher								1	(100.0%)	
Source:	MMS	Social	Indicators	stuc	lv data	files	(2 missi	na	observation	s):

Percentages shown are row percentages.

of the relationships we draw attention to is perfectly uniform, with all non-Natives, Alaska Natives, old, and young fulfilling the simple expectations naive theories may suggest.⁵

Possibly, job-related demands, which are presumably greater for respondents with higher educational attainments, may indirectly affect subsistence behavior and partly explain this consumption pattern. On the one hand, employment <u>per se</u> does not influence consumption. When we compare <u>number of months employed</u> and <u>employment status</u> (yes, no) with subsistence consumption (e.g., subsistence foods "yesterday" and percentage of subsistence protein in the diet) we observe no significant differences related to socioeconomic status. Those employed, unemployed, and employed for greater or lesser periods are fairly matched in terms of subsistence behaviors. But those facing other economic demands may rely more on food sharing to obtain subsistence foods. Table 3-8 compares job status with the source of subsistence foods eaten over the previous day.

If persons with constrained economic assets and limited opportunities rely more on neighbors and kin and, likewise, those with more robust assets and opportunities are more often in positions of support and donation, then some

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⁵ In developing this and other sections of the report that rely on primary data bases, the authors have conducted several kinds of analysis, both bivariate and multivariate, to help explain salient issues central to the study. Pertinent and useful analyses are reported here, but material that we now know is tangential or irrelevant is not reported. But this does not mean that the analyses were not conducted. The reader should recall that the Social Indicators sample for this region is fairly small, and the partition for elders alone is very small (twenty two persons). Partial analyses that control for several factors tend to yield tables with numerous empty cells and other cells with only one or two responses, which makes analysis difficult and frequently infeasible.

trends may inhibit subsistence food consumption and distribution for persons with higher socioeconomic rank.

	EMPL	OYMENT STATUS	TABLE 3-8 S AND SOURCE O	F SUBSISTENCE	FOOD	
Column: Employment	Status	Source: Self	Source: Person in this house- hold	Source: Another household	Row Total	
Not employ	ed	40%	6.7%	53.3%	100%	
Employed		66.7%	14.8%	18.5%	100%	
Source:	MMS Soc	ial Indicator	rs study data	files (note:	this comparison	i

is based on only 42 observations).°

Income is poorly related to the subsistence behaviors discussed here. Although stable and predictable incomes more often than not are essential for sustained capital investment in subsistence activity, several other conditions confound the relationship we might expect: persons have access to other sources of financing, such as elderly relatives with small but predictable pensions and transfers; time limitations associated with those stable and predictable incomes inhibit labor-intensive subsistence activities and may prevent access to ephemeral, cyclic, and widely dispersed resources; wide patterns of sharing of food, capital and labor may erase the apparent benefit of the stable and predictable income by dispersing it or its indirect consequences (capital) through networks

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⁶The many missing observations reveal that respondents usually avoid talking about other persons, and so this comparison must be interpreted with caution. There is no relationship between employment status and recent subsistence consumption. For example, 21.7 percent of sampled respondents who were not employed over the last year did not eat subsistence food "yesterday" whereas 29.5 percent of those who were employed over the year did not eat local food "yesterday." The pattern is much the same for foods eaten "the day before." The difference among persons' subsistence consumption as a percentage of diet and their employment status is insignificant.

of kin; and harvested foods do not equate with consumed foods since foods are shared.

Only a weak connection links income and consumption <u>per se</u>, mostly in the lowest income brackets (Table 3-9).

TABLE 3-9

HOUSEHOLD INCOME AND RECENT (YESTERDAY) SUBSISTENCE CONSUMPTION, 1987 AND 1989

Column: Income Bracket	No subsistence food yesterday	Yes, subsistence food yesterday	
\$0-\$5,000	20%	80%	10
\$5,001-\$10,000	10%	90%	20
\$10,001-\$20,000	13%	87%	23
\$20,001-\$30,000	23.5%	76.5%	17
\$30,001-\$40,000	50%	50%	12
\$40,001-\$50,000	18.2%	81.8%	
Over \$50,000	33.3%	66.7%	12

Source: MMS Social Indicators study data files (8 missing observations).

Recent subsistence consumption is very high across all income categories. Levels of subsistence consumption, assessed with the dietary protein technique, also generally are high: the largest numbers of respondents by income category with very high ratings fall in the <\$10,000 bracket (63.2 percent obtain in excess of 75 percent of their protein from subsistence sources), whereas the <\$50,000 bracket achieves second rank, with 54.5 percent of those respondents reporting the same level of dietary protein. IX. ANALYSIS OF CHANGING DIMENSIONS OF SUBSISTENCE

Previous sections of this chapter have characterized each historical period in terms of supply, social organization, settlement and population, economic processes, and social integration and all are interrelated. The renewable resources of the region are distributed differentially. Each subregion (defined as areas surrounding the current villages) has a different set of resources available for harvest. Currently the region is enjoying a period of resource abundance that has not occurred since the beginning of the nineteenth century. Even such resources as caribou that occur in many of the subregions are available at different times, and when they become available, are differentially suited for subsistence harvest and storage. These factors are the prime determinants of the various annual cycles in the past and today. Changes in these annual cycles over time within a single subregion have been minimal and are related primarily to the acquisition of new technology and increased pressures (primarily economic and related to the acquisition of new technologies) for sedentarization.

Compounding distribution variables throughout the region are the periodic (shortterm) and cyclic (long-term) fluctuations of resources. Harvesters have no control over resource availability or of major factors, such as weather, that affect their harvest. Thus, drastic failure in the harvest of one or more resources may occur. Shifts to alternate resources help to compensate, but more importantly it is social and economic arrangements that average out these failures over a wider geographic area.

Wage earning opportunities present the same kinds of fluctuations in supply and profitability as do renewable resources. Just as resource availability may

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decline in one area within the region, or region-wide may experience a down cycle, so too do wage earning opportunities vary. Response to this variability in wage-earning opportunities is not understood. Presumably individual assessment of need figures into the equation. As a trapper one year might determine that the price of furs is too low and divert his energies to other activities, so too a potential wage earner might be characterized as "an opportunist with special preferences" (Uhl and Uhl 1979:45) and elect not to market his labor during a given season or year. McNabb (1989) found that there was no correlation between his categories of persons currently employed and persons employed the previous year. Personnel moved freely into and out of the Successful commercial fishing and trapping depend not only on job market. species availability, but on world markets as well. Native craft sales depend on outside markets. Jobs in construction, firefighting, etc. are highly seasonal and vary from year to year. After ANCSA, increased Native participation in public sector employment offered relative stability to the regional job market.

Mixed subsistence-cash economies often are described as "in transition" to capitalism-industrialism. Two points are clear. First, even though the people of the region no longer make their entire living from the land, the resources it provides are economically important. Since the early nineteenth century the traditional lifestyle in the region has included varying amounts of Western trade items and cash. Secondly, at no time has production been solely for domestic family consumption. At a minimum, the production of local resources was intended for an extended local family. Surpluses were produced and circulated in a system of delayed reciprocity and trade which on the one hand served to buffer the effects of periodic and cyclic resource failure and on the other bolstered prestige and social solidarity. With the introduction of American goods and then

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wage earning opportunities, different sorts of surpluses emerged. Some families always produced more than others.

"In any discussion of the subsistence scene in northwest Alaska there is always the need to explain that within the realm of resource use there are the harvesters and there are those that share in the harvest. The first number is quite small and the latter often in the unbelievable thousands" (Uhl and Uhl 1979:49). Similar participation occurs in the "cash scene" in northwest Alaska today. McNabb's (1989) survey analysis found that less than one-third of the work force worked in any particular month and suggested that the occupational and income histories of employed and unemployed residents may be similar. Significant here is the indication that in the NANA region, the fact that BOTH harvesters and wage earners need not constitute a large percentage of the population implies that harvested resources and cash are somehow redistributed throughout the society. Sahlins (1972:17) pointed out that one characteristic of foragers was an "underuse" of objective economic opportunities and that "Clearly in subsistence as in other sectors of production, we have to do with an economy of specific, limited objectives. By hunting and gathering these objectives are apt to be irregularly accomplished, so the work pattern becomes correspondingly erratic." Burch's (1985:116) figures for Kivalina indicate that the actual harvests of record were half of the hypothetical maximum yearly harvest. The variability in wage earning opportunities may possibly foster a parallel "ethos" in the cash economy and help explain McNabb's survey analysis. On the basis of the Alaska OCS Social Indicators study, McNabb (1990) concluded that "Household economic well-being is therefore better explained in terms of political economy and the Native cultural idiom--harvest, sharing and consumption

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of wild resources--than by factors relating to individual attainment in a Western, competitive mode.

Historically, kinship and pseudo-kinship relations provided the means whereby personnel and goods were redistributed in the region. "Although much of the recent change has been due to large-scale outside economic factors, the Siilavingmiit, as also their neighbors, are reacting through a time-honored social system already evolved to allow continual adjustments to new economic situations" (Anderson and Anderson 1977:33).

Ayaqhaat, or a family-oriented kinship system to use Burch's terminology, was in place in the early nineteenth century, underwent a transformation due to the massive population reductions and dislocations at the end of the nineteenth century, but seems to have become reestablished with the growth of the population after World War II. The sharing ethic supports this family-oriented system. Jorgensen et al. (1985:9) found:

Whereas some households are more Westernized than others, those more Westernized, economically solvent households are closely tied to the traditional, less solvent households. The multivariate relations demonstrate that as income increases, especially governmentally derived income, household sizes first accelerate to about six persons, then decelerate. Except for the largest households, where income plummets, as households and incomes increase in size, more total income is spent on the extraction of subsistence resources, more harvested proteins are consumed as proportions of diets, more types of naturally occurring species are harvested . . ., and more sharing occurs with the less solvent households. Sharing is effected through several mechanisms, including the gifting of natural resource goods (bag, quarry, catch, collection and by-products), commodities and cash; the contribution of nonremunerative labor; and the loan of technology (snowmachines, motorboats, nets, reloaders, etc.). We did not measure the prestige that accrues from giving, but field research indicates that high prestige is accorded to people who give much more than they receive, and that neither payment nor reciprocity is expected from recipients. Moreover, no stigma is attached to persons who receive more than they can give.

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Jorgensen and his colleagues (1985:4) hypothesized an "underdevelopment" model rather than a "Western Industrial" model to account for "current socio-economic conditions and native ideology." This model hypothesized that in rural Alaska, "development occurs at the expense of creating underdevelopment." They renvisioned the process by which undeveloped foragers become underdeveloped as :

- 1. domination by developed nations
 - 2. expropriation of their strategic resource areas
 - dependency on public sector economies (including employment) that are dominated by external corporations.
 - 4. dependency on the dole--in the form of transfer payments and services--with the consequent growth of earned and unearned income being a government response to the consequences of development.

As a pilot study, Jorgensen et al. (1985) then developed a methodology and collected data to measure community well-being (social indicators) in eight villages: four villages within the NANA region and four villages in the Aleutian-Pribilof Islands Association region. Summarizing four years of data of the social indicators monitoring project that grew out of the pilot study, McNabb (1990:121) found:

. . . that the persistence of traditional activity, measured by the harvest, sharing and consumption of wild resources, occurs across all subpopulations [31 communities in rural Alaska] and is not restricted to persons or households who lack educational and employment opportunities. Persons with greater job mobility, higher educational attainment and more substantial incomes may harvest and share resources more widely, for in fact they possess wealth necessary to underwrite these practices. Their harvests, when shared, may then supply more impoverished kin and friends, making resource consumption a general feature of Native life, despite employment and financial inequalities. Hence, this idiom of Native life may persist alongside structural inequalities created and sustained by a commercial economy. . . . achievement by individuals in employment, income, and capital formation is a limited and secondary factor in explaining economic practices in rural Native villages. [underlines added.]

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In a 1971 paper, Jorgensen (1988:292) posed an underdevelopment model for American Indian households and suggested that:

American Indian composite households and family household cycles are not retentions of aboriginal customs, but are products of their meager and unstable incomes, lack of skills, and lack of control over resources . . . Indian family households change from composite to nuclear to composite as their economic conditions change, making the Indian family similar to other families living in poverty in the Western World.

Wolf (1987), using data from five villages outside the Northwest Arctic Borough. found that a minority of households harvest the majority of the food supply. Further analyzing household production in these villages, he proposed the concept of the "superhousehold," which was "characterized by experienced household heads, an older pool of labor (that is, teenagers and young adult children), complete equipment holdings . . ., and a relatively large set of social obligations in regards to subsistence production" (Wolf 1987:9). Wolf was careful to not to equate residential units with exclusive production and consumption units and found the superhousehold linked to multihousehold groups following rules of alliance. Wolf (1987:11) concluded that "a major reason for the superhousehold phenomena has to do with the developmental cycle of households through time . . . " Wolf's data may be taken as indicating that in Alaska, as on reservations in the lower 48 states, and among poverty-stricken populations throughout the Western world, the family household cycles are similar. However, it should be borne in mind that these cycles may be instances of parallel cultural adaptations and "it is necessary to determine the crucial features in the environment that are selectively important to the culture of a particular level and a particular area tradition and "The culmination point may be said to have been reached when the amount of activity devoted to production for trade grows to such an extent that it interferes with the aboriginal subsistence cycle

and associated social organization and makes their continuance impossible" (Steward and Murphy 1977:153).

As Jorgensen (1988:292) notes, "the major problems of American Indians are rooted in economy and polity as are the problems of the other groups [Mestizo in Mexico, Callampa dwellers in Chile, Black urban ghetto dwellers, etc.] mentioned, a difference is that Indians often have resources. But the access of American Indians to their resources is severely restricted, and the major exploitation of these resources is carried out by non-Indian local, national, and multi-national corporations." Alaskan Natives may constitute a special subset of American Indians in that until very recently, the end of the Recent Transitional Period and during the post-ANCSA Period, their access to resources was by and large unfettered.

In discussing the plight of the Dene of Canada, Asch (1982:365) has stated the problem in different terms:

. . . as long as a society is able to maintain the dominance of their traditional mode of production and to control the reproduction of its institutional framework, it is able to accommodate much change in the technological area without undergoing a transformation. Once, however, the ability to reproduce these skills and social relationships becomes disrupted, as happened to the Dene with the advent of western-style schooling, then the society begins to undergo a rather rapid process of erosion which leads first to the subordination of the traditional institutional framework and, unless checked, ultimately to its demise."

In northwest Alaska, the traditional mode of production, combining a subsistence and cash economy, appears stable. The resource base and relatively steady income derived from the public sector (including both transfer payments and employment) presently seem capable of providing all the goods necessary to sustain the

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region. Even though the region is expected to show increases in the internal growth rate of 38 percent every five years (McNabb 1990:17), the population has only recently exceeded that estimated for the early nineteenth century, at which time 100 percent of all of the region's needs were derived from the land.

Part of the institutional framework, the family-oriented kinship system, is also in place though it no longer subsumes all the functions it once did. Like the Dene, however, mandatory education and increased exposure to the larger society, and sharing in its wants through television, for example, have initiated erosional processes that threaten the reproduction of the institutional framework. To a degree the relocation of secondary schools and installation of cultural studies within the region have helped slightly to prepare children for continuing production of local food resources. The revival of the Iñupiat Ilitqusiat program with specific goals could help even more. For the present, the people of the Northwest Arctic Borough area appear to be maintaining their traditional mode of production and distribution alongside a commercial economy (primarily public sector). The vitality of the traditional means of harvesting and sharing is attested to in the literature. However, no quantified data that may serve as a measure of this vitality are available, nor has the extent of traditional distribution networks been cursorily, much less extensively, mapped. Time series data on the amount of resources or the extent and character of distribution networks are naturally lacking as a consequence.

***X.** POTENTIAL IMPACTS TO SUBSISTENCE ACTIVITY

Any consequence of continental shelf (OCS) exploration activities that adversely affects the habitat or harvested species themselves would immediately hit

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subsistence users in the region. The flexibility of the food quest stressed throughout this chapter, should not be misinterpreted to suggest that because harvest strategies can accommodate periodic failures that no impacts will result. Any resource failure, particularly given the abundance characteristic of recent times, would cause hardships locally and regionally as sharing mechanisms are activated to compensate. For example, seal oil is an important dietary ingredient for interior as well as coastal communities as much of the meat consumed in the region is lean. A compounding factor is the natural fluctuation of all of the harvested resources. Should OCS exploration disrupt the distribution of seals, for example, from an oil spill perhaps, no major long-term impact would result. But if oil-soaked nets contaminated the char, whitefish, and salmon in coastal waters as well, many families would be in serious trouble. Should a spill adversely affecting sea mammals and fish coincide with a drop in caribou numbers, a situation approximating the Great Famine of 1881-1883 might result, although it is inconceivable that disaster relief in the form of American foods would not be provided from some quarter. The social (not to mention the psychological) dimensions of a twentieth century "great famine" likely could not be alleviated as easily as physical need.

This second area of impact--the social effects of OCS exploration--is one that is less well understood and can only be hypothesized in broad terms here. Increased pressures to provide assistance to those directly impacted by resource failures occasioned by OCS exploration would increase tensions within the social system--within families, communities, and the region. The disruptive potential of this increase in tensions cannot be accurately gauged as the social indicators studies currently available are household (residential unit) based. Although the social indicators surveys provide data suggesting that larger social groupings

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function (e.g., number of meals eaten with someone else, source of subsistence foods eaten, etc.), they do not illuminate the actual operation of these units, their extent and basis, or the kinds and amounts of traditional foods that are actually distributed and consumed. Indications are that these networks of sharing units are extensive and so a point-disruption, e.g. Kivalina, could have major repercussions for many people. Jorgensen et al. (1985) collected data in four NANA and four Aleutian-Pribilof Island region villages to identify key primary social indicators. After twice eliminating variables that displayed no variation across the sample, their primary field data set dealt with twenty-eight individual-level variables and seventeen institutional-level variables. Jorgensen et al. (1985:8, Fig. 12) then ran MINISSA⁷ solutions on the individual and institutional variables; the MINISSA solution for the individual-level variables identified four clusters, or sets of related variables.

Jorgensen et al. (1985:9) consider their Cluster IV to be "the cement that holds together the structure of multi-variate relations. Household size . . . and the practices of income pooling, labor sharing, and resource giving within and beyond households . . . , the amounts expended on extracting naturally-occurring and renewable natural resources for subsistence . . . and the percentage of harvested protein in household members' diets . . . bind together large households and small, the economically solvent with the indigent, youthful extractors and aged recipients, and facilitate the persistence of a native sharing ethic." Before the reverberations of impacts to specific harvests can begin to be discussed, detailed and quantified studies of the social networks through which harvested

⁷MINISSA refers to Guttman-Lingoes nonmetric similarity structure analysis techniques for reducing high dimensional data and mapping the data on the basis of multidimensional similarities.

resources, labor and cash are transferred must be undertaken. As Burch (1985:13) notes, detailed, accurate and complete reporting for such studies can only be insured through the use of Native researchers in project formulation and execution.

The second aspect of the social side of subsistence relates to Cluster II of the social indicators study of Jorgensen et. al. (1985:10) and involves perceptions of economic conflicts. Their Cluster II included variables that showed the mitigating effects of personal experience on Native perceptions of social change. They found that "as villages . . . and the proportion of earned incomes . . . increase in size, residents are more frequently immigrants from different regions . . ., economic conflicts are perceived as between natives and non-natives..., and the control of present and future economic developments is perceived as being vested in companies [or government agencies like OCS] whose headquarters are located outside the region."

How people perceive their social situation and relate that situation to impacts affecting their traditional harvest of renewable resources has implications for OCS exploration. Jorgensen et al.'s analysis suggests that factors such as increased earned income and within region relocations (e.g. resulting from OCS exploration-related job opportunities) may increase perceptions in the smaller communities as well as in Kotzebue that non-Native interests external to the region are over-riding regional interests in the subsistence economy. To a degree, this situation already exists in the region with National Park Service management. NANA attempted to avoid this problem with an oversight board for the Red Dog Mine development which was empowered to curtail operations.

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"The naturally-occurring, renewable, extractable resources are keys to the maintenance of traditional ties among kinspeople and friends within and beyond the community. Any event which would disrupt subsistence resource harvests or cause people to procure fewer resources will have far-reaching effects in NANA . . . society" and ". . . could precipitate returns to small villages, social movements, litigation, political turmoil, and perhaps rebellions" (Jorgensen et al. 1985:14).

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CHAPTER 4. INUPIAT VALUES, THE ELDERS COUNCIL,

AND ECONOMIC DEVELOPMENT¹

I. INTRODUCTION

Stories about the ancient prophet Maniilaq illuminate Iñupiaq life in the Northwest Arctic Borough today. They illustrate a fascinating fusion of indigenous and Christian beliefs about Iñupiaq values, the roles of elders, the foibles of the young and naive, and progress. Following is a brief excerpt of a story about Maniilaq related by James Wells (1974:97).

One evening at a special gathering he was again telling his people the message that his grandfather [God] had given him. He told the women that some day in the future there would be no more superstition of the women having babies at the snow huts or sod huts away from home, but there would come a time when some of the young women here would have their babies born to them in the family home, and they would also be properly taken care of. While he was talking he pointed to two of the teenage girls and told them that they would also be among those that would take part in the fulfillment of this message. But the girls just laughed at him because they were still young and were not old enough yet to have children of their own. They certainly thought the message was silly, because it seemed there was no such hope for women at that time.

According to Wells, Maniilag then discussed technological and economic changes

that would transform Iñupiag life:

Ma neal yuk was getting old at that time, but still he wanted to be faithful so there came other messages that must be given to his people, and he said that some day the Ipani ["ancient"] Eskimo equipment such as the jade axe, bow and arrow, and their wooden pots and plates and other things would someday be used no more. Their cooking utensils would be of a different type easier to use, their plates different, everything would change into a different type of material, and the people would change to a better and easier way of living.

Chapter 4

¹This chapter was prepared by Steven McNabb, assisted by Ernest Burch, Jr., Edward Busch, and Rachel Craig. Selected data from the MMS Social Indicators Study are presented in this chapter. The tabulations are subject to minor errors of small magnitude since the final stages of data review and analysis for that project have not been completed as this report goes to press.

Folk history recounts a part of the region's culture and its retelling affects how people view their lives now. Today regional elders still seek to instruct the young, and they, too, are sometimes chided and mocked. The generation gap of Maniilaq's time continues, but in a far more exaggerated form. Today, too, regional elders seek from time to time to advise, through word and deed, about socioeconomic changes that are under way or which may be on the horizon.

This vignette about Maniilaq serves two purposes. First, it illustrates that progressive ideologies with distinct social and economic dimensions are not new in the borough area. The development of the NANA Regional Strategy, Iñupiat Ilitqusiat, and the Elders Councils do not spring from a social vacuum. Real (if vague) antecedents exist. Second, it shows that a discussion of Iñupiaq values, roles of elders, and economic development should be historically grounded. For this reason the first section of this chapter offers a historical description of household composition and family roles with an emphasis on the values that sustain traditional forms of social organization.

- 1. Chapter Objectives
 - to establish a historical context for Iñupiaq values as they are expressed today, relations between elders and younger members of society, sources of stress for youth and elders, and the origins of the social and economic developments noted above;

to describe contemporary living and social arrangements, including socialization, that create bonds between generations, and to identify the institutional, political, and economic dimensions of these arrangements in light of the fact that much social support now occurs in agency settings; []

- to document social and health problems that afflict vulnerable populations (such as elders and youth) that regional elders and service providers are alarmed about now;
- and to identify formal and nonformal solutions proposed by elders or which involve elders, with an emphasis on services and economic development.

II. PAST AS CONTEXT: CHANGING FAMILY ROLES IN A CONTEMPORARY INUPIAQ SOCIETY

1. The Family in Traditional Iñupiag Societies

The traditional Iñupiaq population of Northwest Alaska was organized in terms of social systems variously labeled "tribes" or "societies" in the anthropological literature (see Chapter 3, pg. 23), but characterized as "nations" by people who were actually raised in them (Burch 1980). In choosing the word "nation," the elders were trying to convey the notion that, despite their small size, they were analogous to countries, as Westerners understand them. The citizens of each one held dominion over a specific territory (which encompassed several settlements, as well as hunting and fishing grounds), they espoused what would now be characterized as a "nationalist ideology," and they spoke a distinctive subdialect of the common Iñupiaq language. All of the traditional societies were destroyed by a combination of famine, disease, and population dispersal between about 1875 and 1900, and the survivors were eventually absorbed into the United States.

Each of the eleven societies had a "segmental" structure. That is, each was comprised of a network of relatively self-sufficient social segments in the form of families, but were entirely lacking in both roles (e.g., chiefs) and organizations (e.g., councils, governments) having a span of control transcending

family boundaries. The basic building block of the system was a conjugal family consisting of a husband and wife and their children, but the primary <u>operating</u> unit was a type of large extended family which has been referred to as a "local family" (Burch 1975:237).

Local families included two or more conjugal families and ranged from about eight to perhaps seventy-five or more individuals, each related by complex marital and genealogical connections. Since few couples had more than two living offspring, these families largely consisted of grandparents, grandchildren, aunts, uncles, nieces, nephews, siblings, cousins (of first to third degree), and various types of in-laws. (Burch 1975 outlines specific relationships in the system and the activities, rights, obligations, etc. of each.)

Most villages consisted of just a single local family. Members lived in two or more houses (in winter) or tents (in summer), which were erected close together and often linked by passageways or tunnels. In the few villages with more than one family the houses belonging to one local family usually were clustered slightly apart from those belonging to other families.

Local families, especially larger ones, were relatively self-sufficient. Their members produced needed goods and services, controlled disruptive behavior, defended themselves against outside aggression, taught young people how to become capable adults, and generated the inspiration and emotional support necessary to motivate and sustain each other. They survived for months at a time completely isolated from other people. Members did depend on outsiders as a source of spouses and support in case of famine or war.

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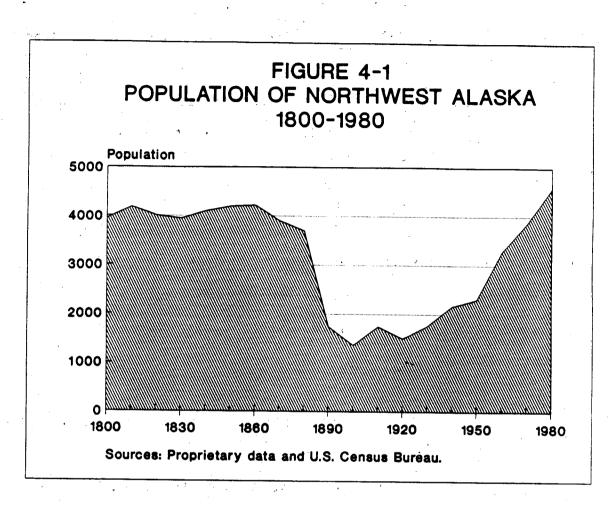
Members of modernized societies can barely conceive of the dominance of family in traditional Iñupiaq life. Local family members depended on each other for virutually everything. They worked together, ate together, played together, and suffered together. Most of the time people rarely even saw anyone outside their own family unit. A person spent virtually an entire lifetime in this social world, a world in which nepotism was considered a great virtue.

A mature adult male--the <u>umialik</u>--led each local family. The term <u>umialik</u> sometimes has been translated as "chief," but the span of his authority extended no further than the boundaries of his own local family. Ideally, the <u>umialik</u> was old enough to have considerable expertise and experience in a variety of activities--particularly in hunting and trading, yet young enough to be still physically vigorous.

Authority generally flowed outward and downward from the <u>umialik</u> according to a person's age, generation, and gender, in that order. Local families exhibited rather clearly defined hierarchical systems in which everyone knew who had authority over whom concerning particular activities. Elders acted as advisers, though a respected elder's views carried considerable weight in family affairs. An <u>umialik</u> did not possess institutionalized coercive power. He had to lead by example and persuasion.

2. Demographic History

Figure 4-1 shows the estimated population in the Northwest Arctic Borough region at ten-year intervals for the 180-year period from 1800 to 1980. From some unknown time in the past until about 1860 the regional population seems to have stabilized at slightly more than four thousand, although levels with the region



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fluctuated as bad times alternated with better conditions. Beginning in the 1860s, however, and with dramatically increasing severity through the end of the century the population of the region dropped by some 60 percent as a result of famine, imported European diseases, and emigration.

In the early decades of the twentieth century the situation began a reversal as schools, missions, and trading posts were established in the region. Disease, however, continued to take a terrible toll, particularly of infants. The population increase from 1900 to 1910 reflects an influx of Euroamerican miners seeking gold.

Beginning about 1905 the Native population began to recover. Infant mortality, and mortality in general, persisted at distressingly high levels, but the fertility rate increased to such an extent that the population grew anyway. Health conditions improved considerably during the 1960s, so despite fertility decline the population continued to expand. A slow, steady flow of Euroamerican immigrants to the region, especially after 1970, also contributed to population growth. In the 1970s the region's population exceeded its early contact size for the first time in a century, and it continues to grow rapidly today.

Table 4-1 shows Kotzebue's population within the larger regional context. It shows the estimated size of thepopulation of the Kotzebue area at ten-year intervals from 1850 to 1980 and the percentage of the region's total population as represented by the population of Kotzebue. The permanent population of the Kotzebue district constituted only about 6 to 8 percent of the total regional population during the second half of the nineteenth century. What the table does

not show, however, is that the Kotzebue district traditionally served as a major center for the entire region through the mechanism of the summer trade fair.

Year	Number of People	NANA Regional Population
1850	285	6.9
1860	290	7.0
1870	295	7.5
1880	300	8.2
1890	110	6.4
1900	115	8.4
1910	190	11.0
1920	230	15.8
1930	290	17.4
1940	370	17.1
1950	625	26.7
1960	1290	39.9
1970	1695	44.2
1980	2055	45.1

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THE	POPULATION	0F	KOTZEBUE,	1850-1980

% of Total

The traditional trade fair annually attracted two thousand or more people from all over Northwest Alaska and beyond to Sheshalik, across the bay from Kotzebue, for several weeks in July and early August. The people gathered there engaged in intersocietal (intertribal) trading, feasting, and athletic competition. Sheshalik was an excellent location for the fair because it was readily accessible from the interior via the Noatak, Kobuk, and Selawik rivers and from all portions of the coast. Local food resources abounded while the fair was in progress. In the 1880s the fair was moved to the small peninsula where Kotzebue

now stands so that American trading vessels could more closely approach the encampment. The modern site of Kotzebue (including the immediately adjacent coastline) has been at least a seasonal center for the entire region ever since.

Both the absolute and relative growth of the Kotzebue population increased in the early twentieth century as the village became a regional administrative center for the Friends' Church, the school system, the public health service, several stores, and the reindeer herds--all of which were established in the region about the same time. A temporary decline occurred during the Great Depression, but growth resumed during World War II and has continued ever since. Nowadays, Kotzebue is not only a regional administrative center, it is also the more or less permanent home of nearly half of the region's entire population.

Family size and composition are demographic factors of special importance to the present study. During the early and middle nineteenth century most couples had from one to three living offspring. More than three seems to have been very rare, and even three was uncommon. The reason for this is not clear, but evidence from the period (Burch 1975:329; Burch field notes, 1969-70) consistently confirms it.

The average conjugal family thus comprised four people. The average household, however, was an extended "domestic" family containing about seven persons (Burch 1975:240), possibly including a grandparent or two and one or two unmarried siblings of one of the adults. Or, it might comprise two conjugal pairs and three offspring. Many combinations were possible, but the important point for the present analysis is that only a third of the members of a typical household were subadults. Iñupiaq children thus grew up in a social world in which they were

constantly in the company of adults. The adults, in turn, provided the children with not only consistent models for the roles they would fill later, but also with the instruction and nurturance they needed to develop into competent adults. Child rearing was relatively easy from the adult point of view, partly because children were relatively few and they could be attended while the adults engaged in their ordinary activities.

3. Social Change in the Twentieth Century

The twentieth century brought many changes to Northwest Alaska, and some of the most important have occurred to or in the family system (Burch 1975:260-286). One major change has been the role of extended families within the overall social system. Small, family-controlled settlements of the past have been replaced by large, multifamily communities in which close relatives often cannot even be neighbors. The self-sufficient families of traditional times have come to depend on other segments of society for most of the goods and services required for survival. Once the primary locus of authority in the society, the extended family has become subsumed to many external institutions. Educational, recreational, and religious functions, once fulfilled almost entirely within the family, now largely emanate from nonfamily agencies. Nepotism, one of the most strongly held of Iñupiaq values only a few years ago, now is suppressed by a larger society in which it is regarded as inequitable.

These general changes have been reflected in the operation of family units themselves. In the first place, whereas family members were once dependent on one another and independent of everyone else for almost everything, they must now look elsewhere to satisfy many of their needs. Secondly the once dominant local families have steadily given way to conjugal families as the primary units of family life. In neither respect have conjugal families yet attained the degree of independence typical of conjugal families in the United States generally. In the villages, particularly, sharing and mutual support between and among extended family members continue at levels far above the general American pattern. They are still well below traditional Native standards in these respects, however. These trends are due partly to acculturation to the more widespread American pattern, and partly to the increase in the number of living offspring per conjugal pair.

During the ninteenth century, as noted above, few couples had as many as three children, and almost no couples had more than three. Nowadays, few Iñupiaq couples have less than four during the course of their child-bearing years, and most have many more than that.² During the early part of the transition between the traditional and contemporary patterns, most houses in Northwest Alaska were small, and they quickly became overcrowded. This caused extended families to divide into conjugal family households, although the dwellings were usually built in extended family clusters in the villages as recently as the 1960s. Government and other housing projects offered more and larger dwellings, perpetuating the pattern of conjugal family living.

In the traditional Iñupiaq household adults outnumbered children by a ratio of about two to one. Child-rearing was intensive, and the traditional approach of learning primarily by watching and doing occurred wholly within the family context. Nowadays, nonsingle-person households are made up primarily of conjugal rather than extended families, and the ratio of adults to children is about one

²Declining infant mortality rates during the twentieth century are largely responsible for this shift.

to three or four, a complete reversal of the traditional pattern. This has had a destabilizing effect, partly because child care cannot be as concentrated within the family as it used to be and partly because adult role models become more diffuse.

In addition, of course, many of the educational functions traditionally fulfilled by families now are the province of schools. Schools remove children from the family context and emphasize instruction, lecture, and rote learning rather than observation and practice. Schools grew out of an alien cultural tradition, and thus introduced the children to a very different world than that of their parents and grandparents.

Extended families are still much more important in the villages of Northwest Alaska than they are in most non-Native American communities. However, they are much less well integrated into the larger society than they once were. An example based on the author's field notes will illustrate the general point.

The control of disruptive behavior was once an important function of extended family politics. If a person was causing trouble, the other members of that persons' family were the ones with the responsibility of dealing with the problem. If the members of the family agreed that something needed to be done, they would get together and tend to the matter as a group. If anyone else interfered, however, an inter-family feud was the usual result.

Nowadays, the control of disruptive behavior is the responsibility of the police. The policeman (or VPSO) is necessarily either a person from the village or an outsider. If a villager, he or she is not infrequently faced with the need to

arrest or otherwise restrain a member of his or her own extended family. Action must be taken according to rules and regulations established by a government agency, whether or not the other members of the family agree that it is necessary or appropriate. Such a situation is fraught with potential for interpersonal and emotional conflict for the individuals involved.

Alternatively, a village policeman (or VPSO) may have to restrain someone from a different family, in which case a common result is an increase in the level of inter-family conflict in the community. If the policeman is an outsider, however, either Native or non-Native, the arrest or restraint of trouble makers may not produce any particular emotional problems, but such a person is very likely to be socially isolated in a small community by virtue of not being a member of <u>any</u> family.

Disruptive behavior is bad enough, but it is rendered especially stressful in contemporary Iñupiaq villages by the dissonance between family considerations, on the one hand, and external institutions, on the other. The general problem is not limited to the sphere of social control, of course, but extends across many spheres of contemporary life. Thus, schooling not only takes children out of the home, it is focused on a cultural tradition that is essentially alien to the youngsters' parents and grandparents; jobs not only take people out of the home, they often require a move out of town. Modern life is stressful even for individuals raised entirely within the cultural tradition that invented it. It surely has to be more so for Iñupiat raised either wholly outside or on the periphery of that tradition.

. The Political and Social Genesis of Elders Councils and Iñupiat

Ilitqusiat (IñI)

Speaking in Iñupiaq,³ an elder portrays Iñupiat Ilitqusiat and illustrates his view of the role of elders in this social movement:

In our lives, working with our youth for our villages, we work tirelessly, yet, let's remember the importance of our work. The attitude we manifest to Inupiat Ilitqusiat must continue even after our lives end. Values application for our leaders to continue so that our present efforts will be fruitful. As parents and grandparents, their concerns they voiced for us are remembered even when we choose the far-reaching consequences of disorder in our lives -- all from making mistakes. By remembering the words of wisdom stored deeply from our past experience, life unfolds our deepest emotional patterns. Inupiag Values will be remembered by our younger generation. Keeping us on the right path of life. Even if our responsibilities are heavy, let us be encouraged to carry our work to the best of our abilities. It's best to live this way. It's even difficult to put into words. Perhaps a few young people will benefit. That's good for all of us. The guidance and support we show them that have been helpful to our youth is wonderful. Innumerable influences affect us, but let's keep on. Because by hard work unless we stabilize our lives we cannot take charge of our own minds, our emotions, and our choices which affect ourselves and our younger generation.

This paragraph says much about the elders and Iñupiat Ilitqusiat: youth and elders working together; wisdom of the past; eradication of disorder; hard work and responsibilities.

The roots of the Elders Councils and IñI mesh with the broader social and historical context of life in northwest Alaska today. Both developments are reformative; that is, they aim towards changes in the existing social order and focus on the society rather than individuals (McNabb 1990a). They therefore share fundamental goals with other important social movements and sociopolitical events. These activities include mobilization of regional opposition to the Project Chariot nuclear excavation plan (see Chapter 5), the land claims battles ³All of the unreferenced quotes in this chapter are entries from project transcripts or interviews.

of the 1960s, and more recent self-determination efforts (such as those permitted or mandated by progressive federal legislation of the 1970s). A common ideology links such activities to the past and promotes self-reliance, preservation of Native culture and rights, and reestablishment of eroded social and political arrangements.

The ideology that sustains the Elders Councils and IñI pervades life in northwest Alaska. The councils and IñI may not be mentioned by name in all connections. Nevertheless, key goals of the NANA Regional Strategy, Multi-Board, Maniilaq Association, and NANA Corporation parallel those of the Elders Councils and IñI (Waring and Associates 1988:330-331). Chapter 5 explores these institutions more fully, but a short chronicle of the recent genesis of IñI and the councils (formerly called "Elders Committees") may be helpful here (McNabb 1990a).

The Iñupiat Ilitquisat movement in the NANA region has elements of both a revitalistic movement and a populist program, since it seeks to assert and validate Iñupiaq ethnic identity, reactivate and preserve Iñupiaq skills, and solve pressing social problems by using traditional wisdom that is part of the essential heritage of the Iñupiat (however, see the classificatory discussion below). The movement was not articulated by its first spokespersons until 1981, however Willie Hensley's keynote speech at the 1980 Alaska Federation of Natives convention anticipated it. He said,

We fought for the land because it represents the spirit of our people, because it represents an intimate knowledge of the environment our people grew up with for ten thousand years. . . Our fight for land was a fight for survival. . . We cannot look to corporate or political life to fill the void of a century of psychological repression. . . A renaissance of our language and culture will give us the basis for the renewal of our people (NUNA 1980).

"<u>NUNA</u> is a newsletter published by Maniilaq Association. This newsletter has no connection to <u>NANA</u>, the regional ANCSA corporation.

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Hensley consulted with John Schaeffer (NANA President), Robert Newlin (NANA Board of Directors) and Roland Booth (Friends' Church) over the next few months, and by June 1981 a title for a new organization, Iñupiat Ilitqusiat, and a Spirit Committee Coordinator (Hensley) had been selected.

The Committee presented an "Action Program" and agenda to the combined Boards of NANA, Maniilag Association, and NWASD in June. This plan specified Movement responsibilities on an agency by agency basis: NANA would coordinate the creation of Elder's Committees and would document Iñupiag geography and resource uses; NWASD would handle curriculum development; and Maniilag would document practices and traditional health care begin planning rehabilitation retreat designed around Iñupiaq values (which would eventually emerge as the Sivuniigvik camp). [ñupiaq values were identified (see section 4.c. and section 5.b.):

- know the Iñupiaq language
- share with others and try to be helpful
- treat all people with respect
- cooperate with others
- respect the elders
- treat children with love
- work hard and avoid idleness
- know your family tree
- avoid unnecessary conflict
- respect all animals
- don't lose your sense of humor
- meet your obligations to your family
- respect successful hunters
- learn Iñupiag domestic skills
- trust in a spiritual power greater than yourself
 (NUNA 1981a)

The ethnic revitalization emphasis combined with a redirection of existing institutions and institutional goals emerged only one month later. In a July 1981 Movement conference Hensley stated that,

'The school....has been a tool for the disintegration of viable cultures.' Hensley suggests that the western institutions that weakened Iñupiaq spirit can and should be used to restore it (NUNA 1981b:2).

Furthermore,

'As long as the rest of the world will see you as Iñupiaq,' Willie said, 'no matter what you do or where you go, you should know what it means to be Iñupiaq and feel good about being Iñupiaq. You can't become

⁵These text references are keyed to McNabb (1990a).

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<u>nalaugmiut [white] any more than a nalaugmiut can become</u> <u>an Iñupiag'</u>"(NUNA 1981b; original emphasis).

By December 1982 Elder's Committees had been fully formed in most communities and the agenda for Inupiat Ilitqusiat activities was being delegated to those Committees and village residents (NUNA 1982). The original intention of the founders was to formulate a concept that could then be imported, modified, or rejected by residents in accordance with their wishes and priorities. The formulation phase was terminated by the beginning of 1983.

Recent discussions with Major General John Schaeffer, an early proponent of the "spirit movement" in Northwest Alaska, emphasize several themes noted here and in Chapter 5. An extensive interview (Burch, personal communication, 1990) highlights these points in the history and genesis of IñI:

- despite material successes on the part of NANA, a general deterioration of morale had occurred in the region by 1981.
- the initial discussions in the villages designed to investigate the role and promise of such a movement were met with resistance and denial, which was overcome by illustrating the deterioration of morale and associated social pathologies.
- Schaeffer speculated that a renewed emphasis on Iñupiaq values could pay off in three generations, based on the assumption that three generations would be required for any fundamental shift in socialization goals, yet positive results were desired in fewer than three generations.
- the major perceived difference between Native and non-Native (Caucasian) values lies in the distinction between community (Native) and individual (Caucasian).
- early in the development of IñI it appeared that Shungnak demonstrated the most active program and Deering the least.

the perceived reason for the persistence of strong Native leadership in such places as Point Hope and Barrow is the perpetuation of whaling crew leadership, a mechanism only weakly developed in this region; the main mechanism for the development of Native leadership here is the Friends Church, a recent innovation that does not invoke ancient leadership conventions.

Elders Council functions, IñI, and other agency and civic activities have merged in ways best illustrated by events prior to 1983. Although there are clear political dimensions to these examples, the merger is most apparent in broadly defined "quality of life" social programs, advocacy efforts, and oversight by Elders Councils. Examples include:

- Participation of Elders Councils in local governance and Multi-Board sessions (see Chapter 5);
- Establishment of a formal IñI program within Maniilaq Association, which is advised by the Kotzebue Elders Council and the NANA Regional Elders Council (Maniilag 1990:11);
- Maniilaq IñI coordination of Iñupiaq Day in schools in the region and organization of the Regional Elders Conference (Maniilaq 1990:11);
 - **Operation** of the Camp Sivuniigvik youth camp by the Maniilaq IñI program (Maniilaq 1990) and operation of the upper Kobuk River youth camp by the Ambler, Shungnak, and Kobuk Elders Councils;
 - Closure of the NANA Corporation's Nullagvik Hotel bar following recommendations of regional Elders Councils in 1985 (McNabb 1990a);

Advocacy efforts by regional Elders Councils supporting prohibitions on the sale of alcohol under local option provisions, especially in Kotzebue for the 1988 vote (<u>Arctic</u> <u>Sounder</u> 1988:17).

Although the Elders Councils seldom function as bureaucratic institutions with explicit goals and Western-derived internal arrangements and operating routines (see Conn 1985; and cf. section 3, Conclusions, at the end of this chapter), their procedures are relatively formalized and the degree of organization, though sometimes perceived to be modest or barely existent, occasionally elicits praise from other regions. For instance, at one Elders Council meeting a guest from another region had just spoken and a regional elder noted:

We found out that they didn't have Inupiat Ilitqusiat program (at North Slope). They would very much like to endorse the Inupiaq Values, too. In fact, a woman who ate with us tried to elaborate on her understanding of the Values. The villages do not have a chairman in their village elder organizations. We (who are in the NANA region) often put little emphasis on our village reports, especially when we talk of the various difficulties we face. Yet, as I listened to these speakers, I concluded: "We are so much better off." Because we have regional leaders and officers of our village and elders are members at the regional elders council and it helps us to communicate with one another. This is wonderful that we have organized. I have heard that they want to organize also like we have.

At another meeting, elders discuss a process for gaining official title to land they sought to use for a demonstration camp during the summer:

At the Kobuk meeting we had selected Akiasqqauaq but for this summer and when we had a meeting at Shungnak we had asked our leader about this land--irigitchut [small eyes] but we are unable to have it right away. There is a reason why we can't have it but we will be able to have it within a year and if we select now and would help us either from Ambler or Shungnak selected lands. If you do not choose to take Akisaqpausaq which we first chose. That is what Fred explained to us earlier--Walter was willing to help us again if we selected from either of the latter two villages that are wanted only if it's not an allotment. If Akisaqpauraq is alright with you--it will also be okay. That is why I do not say yes to anyone right away because before I hear all

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first--I do not want to settle the selection. But after checking with everyone first it is better. I don't want to hear "they selected that land again" afterwards. Does anyone have any words to say regarding the camp for the children this summer?

In this case, the elders learn to employ formal rules in a public meeting:

If you make a motion and second it--it would be good. Make a motion. Is there a motion?

[women--even motion in Eskimo]

The person can first say "I make a motion" and someone to say "second" and then it would be up for approval.

I make a motion.

Who seconds it?

I second it, I'm from Ambler.

made the motion and _________ seconded the motion. Now we must approve it by all raising our hands. Unanimous approval to the motion. We select the first that we selected.

What's the name of that place?

Niyaliaq.

Though earlier Elders Councils steered clear of explicit political efforts, the April 1990 NANA Regional Elders Council in Kotzebue moved boldly into the political arena. The first two recommendations follow.

1. Organize a Voter Registration drive to:

elect a new governor

a possible amendment [sic] to the constitution of

the State of Alaska regarding subsistence

vote to dismiss Alaska Supreme Court Justice

Warren Mathews

2. Initiate a study to determine if the Northwest Arctic Borough can assume some of the municipal governmental tasks to allow villages to use traditional or IRA Governments (NANA Regional Elders Conference 1990b:3).

These recommendations bring us to the most recent phase of Elders Council activity. Later sections of this chapter (IV and V) record elders' comments, objections, and advice in detail to document areas of uniformity and disagreement about pressing social problems, roles of elders, and social and economic development.

III. MULTIGENERATIONAL SOCIETY: THE CONTEMPORARY SITUATION

To a great extent Elders Councils and IñI goals were designed to recover and reestablish forms of social organization that many Iñupiat believe will increase social integration and solidarity. Continuity is one ingredient of integration and solidarity in both a diachronic (historical) and synchronic (contemporary) sense. It provides a link to the past, or what is commonly referred to as "cultural heritage," as well as a bridge between present generations of Iñupiat. The roles of elders as mentors, socializers, and repositories of historical wisdom and lore are intuitively significant in this connection. The social and economic niche occupied by elders in both aboriginal and contemporary society accentuates interdependencies between generations that Elders Councils and IñI seek to redefine as opportunities rather than liabilities. The "family cycle" installs elders in positions of economic dependency on kin and local institutions even as they continue to provide key sources of capital and social support.

This section is divided into five units:

{ |

- Household Social Organization analyzes household demography, the family cycle, and residential arrangements.
- Socialization and Cultural Transmission explores formal (educational) and informal avenues for learning and enculturation.
- Cooperation and Reciprocity moves the analysis to the subject of the prevailing economic and social interdependencies among generations.
- Institutionalization of Social Support focuses on formal services for elders and other "vulnerable" populations often linked to elders in the interdependencies discussed above.
- Political Economic Context of Care discusses family life and social support, including the constraints and entitlements that influence regional services that are significantly controlled by external policies and budgets.

1. Household Social Organization

Living arrangements have changed significantly over the last century. Many of these can be traced to political economic trends at state and federal levels. Some economic and social functions of extended kinship groups persist, though in altered form. Despite the persistence of exchange, mutual assistance, and sentimental bonds among kin, the residential household has assumed an increasingly salient role in regional society.

The numerous collaterals and affines with whom Iñupiat are bonded are essential members of their social universe, but the economic and larger cultural roles of these kinspersons have become reduced or compressed as some socialization, work, and social support functions have been assumed by formal institutions. This is not a categorical assertion, nor does it apply to all persons, but the thrust of the claim is supported by the main body of descriptive, ethnographic literature: important symbolic and

productive behaviors (such as performance arts and vocational skills respectively) are often learned in institutional contexts rather than in the home among kin, and care of youngsters, elderly, and the infirm is often delegated to formal institutions.

Despite the crucial sentimental and economic roles of kinspersons even within this institutional milieu, the fundamental unit of current social organization may now be the residential household. The word "may" is selected since the question is not easily answered, because domestic organization is still in rapid transition.

The availability of housing undoubtedly influences household Prior to the advent of massive housing projects, composition. newlyweds and elderly conjugal pairs typically lived in extended households with their respective parents or children and other affines or collaterals as the case might be. After the 1960's housing projects expanded the housing stock in nearly every community, providing the opportunity for new residence configurations to emerge. Nonetheless, the bonds between kin have persisted, evident in mutual assistance, sharing, and gifting patterns that span households (see Jorgensen et al 1985 for formal evidence suggesting that sharing within and among villages in the NANA region is still robust). Subsistence harvests are probably the key activities that provide an economic framework for cooperation among related and unrelated residents (McNabb 1990a:62-63).

Housing availability has clearly influenced family organization. Large extendedfamily households have dispersed to smaller units. Federal and state housing subsidies in the borough area during 1986, 1987, and 1988 totalled nearly \$24 million (see Chapter 1) but population growth has offset housing availability. It is also likely that changing economic circumstances influence household size, since impoverished kin occasionally seek temporary or even long-term lodging with host-kin who are better situated economically. But it is worth noting in this connection that there is no evidence of substantial economic declines in the region over this period (see Waring and Associates 1988; and this report, Chapter 1) and increases in household size that are evident do not correlate with per capita and per household income data that are available through 1985 (see Chapter 1). We infer that population increases account for a large share of the increases in household size, although we do not possess data on population

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increases through natural increase or inmigration for specific communities. This inference seems well founded since anecdotal information from community interviewers associated with the 1989 Northwest Arctic Borough survey suggests that the number of households has not declined in any community (which one would expect to some extent if average household sizes increased as a result of recombination). Birth rates now hover around 35 per thousand in rural Alaska. The Northwest Arctic Borough area rate is about 36 per thousand (McNabb 1989; 1990a; 1990b). The teen birth rate and unwed teen birth rate are higher here than anywhere else in Alaska (Weeks 1989). These trends produced a decrease in household size between 1970 and 1980 but occasional increases after 1980 (Table 4-2).

Community	1970	1980	1989
Ambler	5.5	4.0	5.1
Buckland	5.2	4.5	5.0
Deering	4.5	. 4.3	3.4
Kiana	5.3	4.6	5.0
Kivalina	9.0	6.5	5.6
Kobuk	4.0	3.9	4.5
Kotzebu e	4.8	3.6	4.1
Noatak	5.5	n/a	4.8
Noorvik	6.5	5.4	5.9
Selawik	5.4	5.2	4.9
Shungnak	5.5	4.3	4.3

AVERAGE HOUSEHOLD SIZES NORTHWEST ARCTIC BOROUGH COMMUNITIES, 1970, 1980, 1989

1980 U.S. Census. 1989:

Residents experience these effects in different ways, depending at least to some extent on the ages of householders. Evidence from MMS Social Indicators research in four regional sites (Kotzebue, Kivalina, Deering, and Buckland) and research on household size and composition sponsored by the Northwest Arctic Borough suggest that growth pressures affect younger residents. Table 4-3 depicts household sizes for elders and nonelder adults.⁶ Table 4-4 classifies household types on the basis of these age categories.

TABL	Ε	4-	3
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NORTHWEST ARCTIC BOROUGH HOUSEHOLD SIZES BY AGE CATEGORY⁷

Household Size	MMS Social Indicators Study Young	MMS Social Indicators Study Old	NAB Young	NAB 01d
One	10.0%	26.1%	6.5%	5.3%
Тwo	10.0%	8.7%	7.4%	18.0%
Three to Five	43.3%	43.5%	40.3%	43.3%
Six to Eight	30.0%	21.7%	30.4%	23.3%
Nine or More	6.7%	0%	15.4%	10.0%
Column Totals:	100%	100%	100%	ca.100%
Column N:	90	23	974	1528
	ndicators and Nort			-,

⁶The Elders Councils define a candidate for elder status as a person 55 years of age or older. On the other hand, age 65 is usually identified as retirement age and, loosely speaking, the onset of senior citizenry. In addition, the age of 65 has salient socioeconomic meanings. For the sake of parsimony, age 60 is used at the breakpoint in some comparisons. Persons age 60 or more qualify as "elders" among Elder's Councils if they are perceived by council members to possess good character.

⁷"NAB" refers to Northwest Arctic Borough. The NAB data correspond to 1989, and the MMS Social Indicators Study data cover the 1987-1989 period without duplicated respondents. The MMS Social Indicators Study sample size in this region was 113. The NAB sample size was 1,172.

⁸The discrepancies between AOSIS (Social Indicators study) and NAB (Northwest Arctic Borough) household sizes are probably due to two related factors: first, the AOSIS sample is weighted disproportionately toward Kotzebue (with one of the smaller average household sizes; see Table 2, previous page); second, the NAB sample comprises several villages that are not sampled as part of the AOSIS program which have relatively large average household sizes (Noorvik, Ambler and Selawik are notable in this regard). In an overall proportional and regional sense, the AOSIS sample also overrepresents Deering, with a very small average household size.

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Households headed by or including elders are generally smaller than those of young adults. "Fissioning" of natal households often occurs as young adults leave or, less often, results from elders vacating homes they have turned over to offspring or other kin.

Table 4-4 compares older adult households with the total sample including elders. Figure 4-2 provides a graphic depiction of these household types, with two examples of remnant households (which are aggregated in Table 4-4). Clearly, household composition reflects final stages of the family cycle. The elders' share of nuclear household types is relatively small. Their share of remnant and mixed types, which often represent residues or opportunistic combinations of kin, is relatively large.

TABLE 4-4

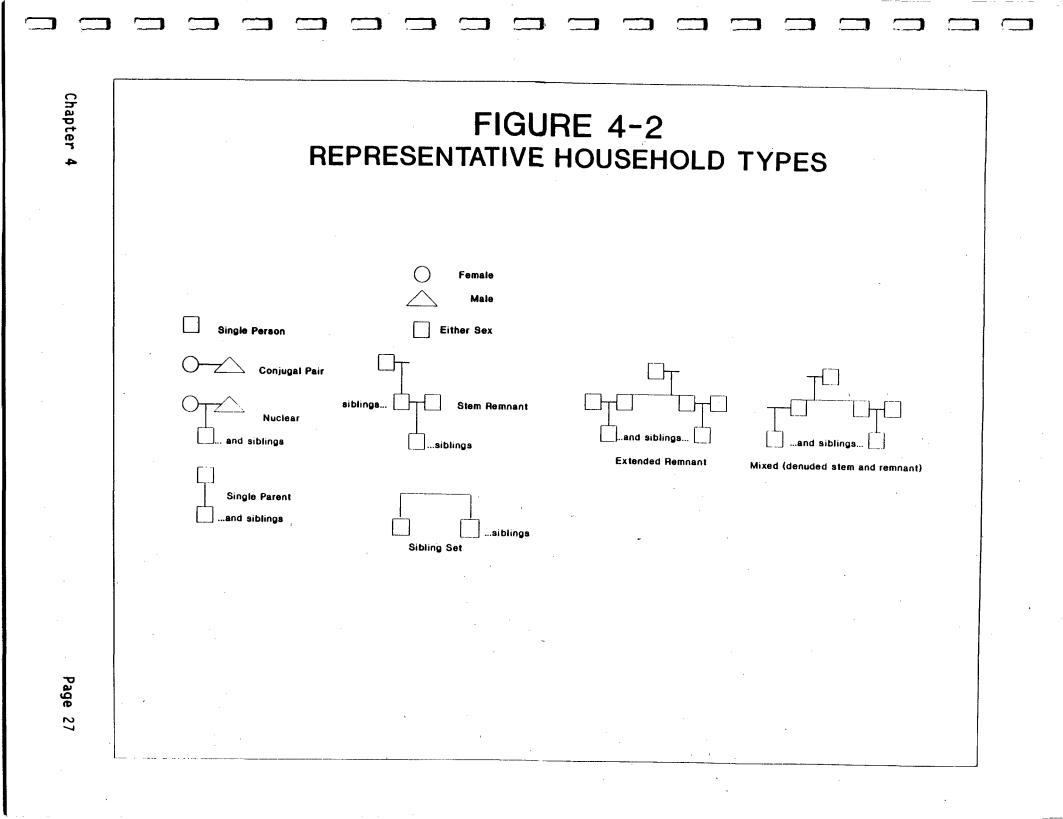
HOUSEHOLD TYPE BY AGE CATEGORY, NORTHWEST ARCTIC BOROUGH 1987-89

Household Type			India	MMS Social ators Study Sample	MMS Social Indicators Study Old
Single Person				14.2%	26.1%
Conjugal Pair	- , = ⁶ m = F 	,		8.0%	17.4%
Nuclear		• •		48.7%	13.0%
Sibling Set	•	· ·		3.6%	0.0%
Single Parent		• • • • • • • • • • • • • • • • • • •	· · ·	8.0%	4.3%
Remnants	1.14	÷.,		10.6%	21.7%
Mixed	*	•		7.1%	17.4%
Column Totals:				ca. 100%	ca. 100%
Column N:		• .	•	113	23

Source: Social Indicators data.

Table 4-5 provides a similar comparison using ten-year (approximately) intervals. In this case the "mixed" category is deleted.⁹ Age increases the likelihood of

⁹Since we seek more precision by using finer age categories, we eliminated the residual category of "mixed," which has no real precision.



single person, conjugal pair, and remnant compositions. The nuclear and single parent categories have curvilinear characteristics; i.e., as age increases, their frequency increases, peaks, and then drops off. Households headed by adults between the ages of 30 and 39 account for more than 40 percent of the singleparent households. Since elders frequently provide child care, mutual assistance probably links persons in these age categories.

Reciprocity and mutual support bind separate residential units. Mutual support-evident in sharing of food, capital, and labor--typifies Iñupiaq society. Burch (1984:304) identifies it as a diagnostic characteristic of indigenous societies.

A fourth unifying factor was that, although relatively selfsufficient most of the time, the members of the different local families within a given society were dependent upon one another for support in time of crisis (famine, war), and they also had to join together occasionally to conduct properly the feasts, dances, ceremonies, and games that were an important feature of Native life in the area.

Sharing and interdependency will be described in the third subsection of this section and is also addressed in Chapter 3. Here we are concerned with household composition and living arrangements which partly reflect prevailing socioeconomic conditions, which are influenced from time to time by cooperative links among households.

The facts that (1) elders may provide important social and financial support (child care, housekeeping chores, access to predictable sources of cash such as pensions, Old Age Assistance and Longevity Bonuses) and (2) a large proportion of single parents falls into a key age category often marked by high levels of employment and peak or near peak earnings both draw attention to the process of household formation and decay fluctuations in these financial resources may

TABLE 4-5 HOUSEHOLD TYPE AND AGE COMPARISON, NORTHWEST ARCTIC BOROUGH 1987-89

Household Typ	æ	-	Age of Household Head						
			18-29	30-39	40-49	50-59	60 +	Total	Row n
Single perso	n		12.5%	12.5%	18.8%	18.8%	37.5%	100%	16
Conjugal pai	ir		11.1%	22.2%	0.0%	22.2%	44.4%	100%	9
Nuclear			18.2%	38.2%	25.5%	12.7%	5.5% .	100%	55
Sibling set			75.0%	25.0%	0.0%	0.0%	0.0%	100%	4
Single parer	nt	:	22.2%	44.4%	11.1%	11.1%	11.1%	100%	9
Remnants			8.3%	8.3%	16.7%	25.0%	41.7%	100%	12
Source: M	MMS	Social	Indi	cators	Research	data (N	= 105).	· .	

trigger changes in household composition. Table 4-6 depicts Kobuk Census Area marriages and divorces for the 1977-1986 interval.¹⁰

Based on the large NAB sample for 1989, it is apparent that elders own their own homes significantly more often than younger adults (i.e., those under the age of 60), hence they possess a level of security that may provide benefits to kin, such as equity, stable residence for houseguests, etc. Elders' incomes are not significantly different than incomes of their younger kin, probably because incomes of some young adults are very low. On the other hand, elders are much more likely to receive transfer payments. Elders and their younger kin and neighbors differ little in terms of their receipt of "other" income, which in the NAB survey corresponds specifically to gifts. This is likely to mean that gifts move in both directions (almost eleven percent of the sample reported receiving cash gifts to supplement income).

¹⁰Since Iñupiaq spouses may not formalize marriages and divorces as often as non-Natives or may formalize them after substantial delays (for instance, only after birth of offspring), these data suffer from poor construct validity. Nonetheless, they warrant at least minimal attention as long as these potential flaws are recognized.

Wife		Husband Non-Native	Native	Total
MARRIAGE	Non-Native	57	23	80
1	Native	75	220	295
1. State 1.	Total	132	243	375
DIVORCE	Non-Native	17	10	27
-	Native	34	76	110
	Total	51	86	137
DIVORCE RATE	Non-Native	29.8	43.5	33.8
	Native	45.3	34.5	37.3
	Total	38.6	35.4	36.5

TABLE 4-6KOBUK CENSUS AREA MARRIAGES, DIVORCES AND
DIVORCE RATES, 1977-1986

Source:

Alaska Department of Health and Social Services, Vital Statistics (these data appear as Table 35 in Waring and Associates 1988).

The mixed ethnicity divorce rates are about 50 percent higher than others, but Native and non-Native "homogeneous" pairings are not notably dissimilar. Other data support this portrayal. Similar proportions of Native and white females are separated or divorced in Alaska; however higher percentages of Native women are single (Thomas 1983; Weeks 1989). Please bear in mind that the Vital Statistics data report marriages or divorces that are posted during the recording period whereas other data (such as Thomas') usually report current status whether or not that status was achieved during a particular period.^{11.}

Consider that if Iñupiaq elders customarily provide some social support, and if that support is directed at least some of the time to single parents and grandchildren (as much of ethnographic literature suggests), then elders may be

¹¹This data recording problem chronically obstructs analyses of key life sequence events. The variation among data corresponds to these very different questions: Were you divorced during the last year? vs. Are you divorced? vs. Have you ever been divorced? supporting a marginal or vulnerable population that receives little attention in the literature--non-Native single parents and mixed ethnicity offspring. Note that the mixed ethnicity divorce rates are about 50 percent higher than others. Although this suggestion is speculative, it is supported by statements from Iñupiaq elders. For instance, one elder described some applications of traditional knowledge (Kevin Waring Associates, 1991):

A person who doesn't know the Inupiaq Values and how they fit in his life is pitiful. A person who hasn't been taught during his childhood, making sure that he understood what was important, is really a pitiful person when he doesn't know what to do (according to what the others think is right). A person or grandparents must teach the child so he will be able to live a good life, having been taught what to do. Especially when it comes to hunting. They have to know what to do.

For instance, when we were hunting up river, taking our sons-in-law with us who don't know a thing of how we live, having come from the States, we had to tell them what to do because they didn't know the first thing about our traditions. And when they found out and learned about them, they liked it, and began to talk about them. This is the kind of information that we must pass on to our young people including those people who marry into our families, these white people that we love so much. We have to tell them, and make them understand, just like teaching our own children who don't know the first thing about our cultural traditions. The children are very pitiful when they haven't the least inkling of what to do in any given situation. They have no starting point of how to make a living. They get into situations where they must suffer when they don't know what to do in making a living.

Native elders typically view non-Native friends and kin in the same way as they view Native friends and kin, so this inference seems supportable on the face of it.

2. Socialization and Cross-generational Interaction

Literature on traditional socialization among Inuit,¹² or what could simply be called child-rearing and non-formal education, has accumulated over the last thirty years. Even ethnological investigations among Inuit soon after the turn

¹²Here we use the term "Inuit" to refer to all Eskimos. This is a hedge since that title does not refer to Yup'ik Eskimos but we wish to refer to them as well.

of the century provide scholars with fascinating glimpses of adult-child interactions that portray customary socialization techniques and values that are substantially valid today (see Stefansson 1913). Most sociological and ethnographic literature mentions that early Inuit childhood was marked by indulgence and expansive tolerance. Adults gradually increased demands on youths as they matured to inculcate diligence, hardiness, restraint, and self-control, interaction habits that stressed conflict avoidance and de-escalation in many (but not all) circumstances, dignity, and stoicism (Briggs 1970; Burch 1975; Chance 1965; Coles 1977; Condon 1987; Hughes 1975; Kleinfeld 1978; Lantis 1960, 1980; Parker 1962).

Subdued, virtually silent, task-oriented socialization characterizes interactions between youngsters and their older kin, as depicted in the following vignette from 1979 field notes compiled at a beach near Kotzebue.

Father working on net at beach, 2 kids ca. 8 and 6 watching. Grandfather close by, watching. Young boy now closely watching father's work. Picks up stray piece of twine, mimics father . . . turns attention to a balloon he had been playing with, now back to father, balloon etc. Grandfather edges closer; says "why don't you (father) let him (older boy) try over there (net closer to water)." Points to unraveled section of net. Father nods; doesn't look up. Older boy says nothing. Finally approaches section of net, looks. Turns attention to balloon. Then back to net. Goes to where father works, bends over, watches closely. Then goes to unraveled section, starts to tie knots. Younger boy now watches older brother. Older boy tries for about 3 min., then stops. Returns to father, watches, goes back to knots, tries again. Both boys now watch father intently. Father doesn't look up. Boys then give up. Nobody says anything"(McNabb 1985).

Examples such as these depict classic Inuit socialization practices: learning by precept or example, limited overt pedagogy, and nonintervention--an absence of encouragement, evaluation, or pressure.

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The main body of historical evidence reveals that the natal household represented the nexus of socialization. Grandparents and older kin today do not generally have a substantial role in child-rearing. Elders still play an important part in socializing the young, as they had to some extent in traditional Inuit society, yet young men now tend to look first to their fathers just as young women look to their mothers.¹³

If we consider adoptions, however, another avenue and mechanism for elder-youth socialization becomes apparent. In traditional times, adoption was one of several classic means to extend the privileges of kinship and create broader networks of cooperating kindreds. Very high rates of adoption were and still are characteristic of the Inuit (Chance 1966; Burch 1975; Graburn 1969; Guemple 1972; Smith 1966; Spencer 1959; VanStone 1962). Almost no systematic data on adoptions exist, but scattered tallies suggest that the adoption rate overall runs between 15 percent and 25 percent (Condon 1987; Davis 1983:86). Few solid and verified data exist on adoptions in Northwest Arctic Iñupiaq society covering the region as a whole. The best generalizations we can offer are based on personal

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¹⁵Extended kin certainly played important roles in indigenous Inuit society, but key roles most often were played by adults in the prime of life (parents, uncles, aunts). Elders typically withdrew from sustained supportive roles in their waning years. Although they would often retain the respect due them for their maturity and knowledge, they were no longer robust leaders or, arguably, role models. See Condon (1987), Davis (1983), and finally Van Stone (1974) for Athabascan cases which more severely illustrate age stigma. Yet the reader should realize that Inuit cosmology stipulates that the elder's inua (spirit) undergoes reincarnation as names are recycled. The infant is presumed to possess, sooner or later, some traits of the deceased for whom he or she was named. Hence, the spirits of elders always lived among loved ones. Death was not extinction. Furthermore, many examples of superior prowess (and therefore respect and great esteem) occur very late in life. Some very aged Inuit women are the best seamstresses, and some elderly males hunt with their younger kin into their eighties or more. Yet these persons may be exceptional, and some ambivalence is associated with old age. As this discussion makes clearer in later passages, the new emphasis on respect for the elders is partly a renewal but partly (probably) culture change, due perhaps to the Christian syncretism already noted.

observations of the authors and anecdotal evidence. The following list describes the main types of adoption with rank signifying apparent frequency.

- "Simple adoption," probably the most frequent, comprises adoption among kin at the same or adjacent generational levels.
- 2. "Unwed daughter-grandparent adoption," also very common, puts a grandparent in the caretaker or quasi parental role.
- 3. "Adoption gift," results when a couple or nuclear family opts to "give" a child to grandparents of either spouse.
- 4. "Sympathy gift" adoption occurs when bereaved parents who lose a child are "given" another. Recipients and donors tend to represent the same general age group.
- 5. "Junior caretaker" results when a preadolescent or adolescent child is adopted to an elderly grandparent to act as a helper.

Types four and five are rare. Types two, three, and five are specifically described in other sources (Condon 1987), although type one is assumed to be a universal "generic" adoption. Adoptions have now assumed more formal dimensions among Northwest Arctic Iñupiat because Permanent Fund Dividends require formal adoptive custody to be transferable (Waring and Associates 1988).

Clearly, children adopted into elder households experience somewhat different socialization than those raised by their parents. Such arrangements, however, may not contrast significantly from others. Normal socialization patterns include frequent contact with elders. Also, adoptees know who their birth parents are and continue to socialize with them. Adoptive grandparents may defer to the birth parents in matters of discipline, schoolwork, etc. Since much of the Iñupiaq adolescent tradition has been wiped away, strong peer bonds have virtually replaced dependencies on older adults by the early teen years.

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Other important venues have developed for youth socialization with and among elders. Most now have institutional ties, indicating the growing role of agencies in dealing with the social needs of both children and senior citizens. Most noteworthy are:

- Iñupiaq Day. The Maniilaq Association Iñupiat Ilitqusiat Coordinator, the Northwest Arctic Borough School Liaison, and local Elders Councils plan and carry out Iñupiaq Day in local classrooms, ideally once per month. Local Elders Councils usually take the lead in determining curricula which vary greaty. A lesson on food, for example, may also cover Native language, history, safety precautions, mapping and place names, and tool and clothing manufacture.
- 2. Iñupiaq dancing. Dancing rarely occurs at schools and in some villages Native dancing is virtually prohibited by policy of an Elders Council. Some elders associate dancing with shamanism, satanism, and erotic display. The president of the Friends Quarterly Meeting and pastor of the Kotzebue Friends Church, Robert Sheldon, spoke to this issue before elders and assembled guests during the 1990 Elders Conference. He explained that a compromise and rapprochement might be possible that would permit controlled (i.e., non-shamanistic) Iñupiaq dancing on a general basis. This issue remains unresolved. Youngsters and elders in the Northern Lights Dancers group continue their activities without the sanction of some elders.
- 3. Specific programmatic goals. Regional agencies often seek to mobilize elders (and Elders Councils) to support and advocate their particular goals. For example, the Maniilaq Health Education Program circulated the following on message cards at the 1990 Elders Conference: "Elders can: support pregnant women in their decision not to drink: urge the next

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generation to take responsibility for their own actions; warn of the dangers to their heritage when women drink while pregnant; guide them through their child-bearing years with wisdom." No elders program involving fetal alcohol syndrome exists, but elders are an effective target group for health promotion and prevention efforts because of their authority in the community (emphasis in original).

These efforts correspond to actual socialization--face-to-face contact between elders and youth involving cultural learning, mainly by precept and example, but also through verbal instruction and admonition. Elders act as educators through advocacy and criticism (mainly through the channel of Elders Councils) of education programs, officials, teachers, and administrators. (These roles are described in sections 3 and 4 of this chapter.)

3. Cooperation and Reciprocity

One of the strongest traditional Iñupiaq ideals was sharing of food; weapons, tools and other items; and services. This sharing followed a fairly complex set of rules (Burch 1988). It also had definite limits beyond which transactions seemed less altruistic; however, generosity was and remains a strongly institutionalized ideal. This section outlines the traditional system and summarizes how it has evolved in contemporary life.

The primary social arena of cooperation and reciprocity was the large extended family, as described earlier. Men and older boys regularly hunted together and, once back in the village, worked together making tools, weapons, and other items while socializing in the <u>gazgi</u>, or "community hall." Similarly, women, older girls, and infants of both genders spent most of the day together sewing, processing food products, or engaged in the various other tasks that were part of the female repertoire. Wild foods harvested by the several hunters in a local family were pooled and then redistributed as needed under the direction of the umialik's wife.

Since most settlements were occupied by members of just one local family, one can understand why many elders today insist that in olden times everyone in the village shared with one another. Within this realm the ideal of sharing most often was realized. Stinginess meant trouble.

Between families there was relatively little opportunity for cooperation on a day-to-day basis because villages were so far apart. There were certain occasions, however, when members of several families, or even the members of an entire society, would join together in a common effort. Examples include the bowhead whale hunt near Kivalina, the belukha hunts at Sheshalik and Eschscholtz Bay, major caribou corralling drives, major feasts and festivals, and crises such as famine or war. Generosity with both goods and services tended to follow kinship lines; the stronger the kinship tie, the greater the extent of sharing and cooperation, and <u>vice versa.</u>

Between societies, sharing was at a minimum. Indeed, most peaceful transactions at this level were on a buyer beware basis. However, the Iñupiat had an institutionalized means of cooperating at this level too in the form of a trading partnership (Burch 1970). A trading partnership was a formal arrangement between two people--usually, but by no means necessarily men--to exchange certain commodities that one had in relative abundance and the other did not. Most partnerships probably related people living in the interior, on the one hand, and

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people living on the coast, on the other. Partners usually met only once a year, at the summer trade fair, but partnerships also formed the foundation of the less frequently held messenger feasts, in winter. Partners also helped one another in time of dire need. For example, if a famine struck a particular district, the survivors could go live with their partners in another and receive both material aid and protection for the duration of the crisis.

The traditional ideal of sharing has hardly changed at all in Northwest Alaska. However, the context has changed to such an extent that the ideal cannot be realized in fact as often as it used to be (Burch field notes, 1960-61, 1964, 1965, 1969-70, 1973, 1976, 1980, 1982, 1983, 1984, 1986, 1987, 1990). Today, sharing is probably most common in connection with the distribution of wild foods. Also, there is a considerable amount of sharing of wild foods between related households within a given village. Specially prized foods are distributed even more widely, to relatives and partners in different villages within Northwest Alaska, and to kin or partners in Anchorage and other remote locations. However, wild foods constitute only a portion of the diet nowadays even in the smaller villages. Much food is purchased at stores, and that requires cash. Cash, too, is shared rather freely among close relatives, and major fishing or hunting items, such as seines and boats, are often used cooperatively by siblings and cousins even if technically owned by a single individual. Nevertheless, the obligation to share is not nearly as strong now as it was a century ago.

In traditional times, most villages were occupied by members of only a single extended family, and sharing was of course community-wide. In the few larger settlements, sharing outside the extended family was uncommon, being limited to

special festivals and feasts. Given the comparatively large size of modern villages and towns in Northwest Alaska, cooperation and sharing is rarely village-wide, but it does occur, as in former times, on special occasions. For example, most communities celebrate Thanksgiving, Christmas, and Easter feasts. Cooperation even among feuding families is required to make them successful, and it usually is forthcoming. Every household is expected to contribute food to the feasts, and to help maintain the halls in which they are held.

Perhaps the epitome is reached with the modern Kivalina whale hunt. The hunt, now as in former times, is conducted by a number of separate crews. When a bowhead whale is taken, or when there is a major belukha kill, all of the crews join forces to help do the butchering and bring the meat back to the village. This is a very traditional form of cooperation. The innovations emerge when word of the kill goes out over citizens' band radios and telephones. Dozens of people from neighboring villages soon arrive at the kill site on snowmobiles. A few come to help with the work, but all do so in the expectation of receiving a small share of the harvest; virtually no one leaves without at least something. Interestingly, sharing at this level had virtually no precedent in the traditional way of life.

4. Institutionalization of Social Support

Maniilaq Association revenues topped \$15 million for social services in FY 1989. That figure represents most, but not all institutionalized social support in the borough area. The Northwest Arctic Borough School District and other services are also pertinent. Social support now stems largely from institutions supported mainly by transfer funds.

The Operations Branch of Maniilaq delivers the borough area's key social support services, as Figure 4-3 shows.

These services are targeted to all vulnerable subpopulations in aggregate terms and, as a whole, the services generally aim at improving life for everyone. The following excerpted quote from the Maniilaq mission statement puts its goals in perspective:

With special attention to our youth and our Elders, and with a caring and ethical commitment to the well-being of each of our villages, we can succeed together in all our efforts (Maniilaq Association 1990:3).

Yet on a case-by-case basis, key services can be identified that more often than not address prominent needs of youth and their families and elders. A rough breakdown is listed below.

Dominant Youth (and Family) Services

- 1. Indian Child Welfare
- 2. Education
- 3. Adult Vocational Training
- 4. Direct Employment Assistance
- 5. Adult Basic Education (ABE)
- 6. Counseling Services
- 7. Inupiat Ilitquiat Youth Program
- 8. **Psychiatric** Nursing
- 9. Women's Shelter
- 10. Social Services
- 11. Substance Abuse Treatment Program
- 12. Youth Group Home
- 13. Juvenile Shelter

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FIGURE 4-3

MANIILAQ ASSOCIATION ORGANIZATION OF SERVICES: OPERATIONS BRANCH

Tribal Operations	Social Services	Community Health	Medical Center
Indian Child Welfare	Counseling Service	Community Health Prog	. Medical
Tribal Enrollment	Homemaker Services	Emergency Med. Serv.	Nursing
Rights Protection	IñI Youth Program	Environmental Health	Quality Assurance
Housing Improvement	Psychiatric Nursing	Remote Maintenance	Radiology
Realty Services	Women's Shelter	Health Education	Laboratory
Agriculture	Social Service	Senior Center	Pharmacy
Education	Social Rehabilitation	Maternal Child Health	Dental
Adult Vocational Training	Substance Abuse	Public Health Nursing	Social Services
Direct Employment Asst.	Youth Group Home	Prematernal Home	Medical Records
Adult Basic Education	Juvenile Shelter	Traditional Health	Dietary
	Public Assistance	WIC	Housekeeping
		Eye Care	Maintenance

Audiology

Source: Maniilaq Association 1990.

- 14. Public Assistance
- 15. Community Health Practitioners (CHP)
- 16. Health Education
- 17. Maternal Child Health
- 18. Public Health Nursing
- 19. Prematernal Home
- 20. Women, Infants and Children (WIC)
- 21. Audiology

Dominant Senior Citizen Services

- 1. Homemaker Services
- 2. Social Services
- 3. Public Assistance
- 4. Community Health Practitioners
- 5. Emergency Medical Services
- 6. Senior Center
- 7. Public Health Nursing
- 8. Traditional Health
- 9. Eye Care
- 10. Audiology

Health services offered through the Maniilaq Medical Center are equally relevant to both subpopulations and are sufficiently generic to be applicable to all groups whether especially "vulnerable" or not. The services breakdown does not suggest that some services are reserved or are uniquely relevant to only one group. Services that are chiefly targeted toward one group, such as young parents at the Prematernal Home, indirectly benefit related kinspersons in almost all instances. The composition of institutional support services within a cultural framework to some extent reflects that culture's assumptions about caregiving. Decisions of kin and caregivers about how cases should be managed (such as a senile parent or an abused child) partly reflect belief and culture, not merely medicine or caseload management. This premise is central to much of medical anthropology and is apparent in specific analyses of the "culture" of caregiving for dependent persons (Albert 1990). Research in urban settings in the United States offers two models of care. One stresses the "childlike" status of impaired or needy persons, emphasizes personal intimacy and bonding, and is based on the prototype infant-parent link. The other stresses obligation to the needy and impaired and focuses more on the concept of exchange, repayment of debts, or reciprocity of services. The same research suggests that these findings are probably not typical of all or even many cultural systems (Albert 1990).

Our review of the scanty anecdotal evidence available to us, combined with ethnographic observations during fifteen years work in the borough area, suggests that these models work poorly in this setting. Although the concepts of dependency and filial obligation unearthed in other research certainly apply in many cases, it seems more likely that care-giving in the borough area at both nonformal and institutional levels defines persons in need as "resource poor." They lack key capacities or skills (i.e., job skills, career goals, educational attainment, knowledge of resources, ignorance of opportunities, concrete facts about self-help and health maintenance), finances, and communal human resources (i.e., affiliated friends or kin who are able or willing to help, traditional knowledge, mentors, spiritual guidance, solidary relationships or civic attachments, competent parents or adult kin, role models). This is what we mean by the term "vulnerable," although customary meanings derived from epidemiology

are also pertinent; that is, youth, young adult, and elderly subpopulations are in fact at greater risk for certain life events, such as malnourishment, alcohol abuse, suicide, and a range of infectious and chronic degenerative diseases. (See McNabb 1990b for a review of major risk patterns in rural Alaska Native populations).

The intimate bond characteristic of the caregiving culture (which stresses "childlike" but endearing incompetence) and the obligatory sense of exchange characteristic of the other are inadequate models in the present context. Since so many regional services aim towards self-help, empowerment, rectification of defects, and provision of skills and opportunity (McNabb 1990; Waring and Associates 1988), the "impoverishment" concept seems fitting.¹⁴ The authors stress that this section aims to characterize a latent philosophy of care rather than explicit ideology.

5. The Political Economic Context of Care

Income transfer and social support programs represent political policies. Political decisions create them, and political decisions trim and terminate them.

¹⁴The analysis of care-giving as a cultural system is essential for understanding a growing dilemma in many societies. In the United States, for instance, adult daughters provide an estimated 80 to 90 percent of all medical and personal care for impaired parents (Albert 1990). As age expectancy rises, this inequity will grow. Stresses and expenses associated with care are reaching serious dimensions, and the effects of non-institutional support stress and expense undoubtedly affect institutions charged with support, notably on the demand side. Here we have tried to provide a sketchy analysis that identifies a dominant model of care in the borough area. Not all kin nor caregivers subscribe to the model, of course, and by no means are the terms (powerless, poor, underprivileged) designed to connote "second-class citizenship." But prevailing models of institutional support define social missions in terms of "filling gaps," and hence it should not be surprising that a vision of needs based on "lack" or "insufficiency" would evolve and might be shared with persons outside the institution. Note also that this model, like any model, is basically normative. Actual behavior by agencies and kin varies.

Rational market decisions and market discipline count for little in this arena. No wonder welfare reform is debated by every Congress. Of each tax dollar collected about 69 cents is disbursed either as direct or indirect benefits (though not all for welfare per se; see Lawrence and Leeds 1978).

This subsection briefly discusses the combined political and economic context of social care. Political policies developed to promote the public good may increase, maintain, or reduce transfers designed to promote the public good in the borough area. Broadly conceived, "transfers" fall into the following categories:

1. Direct cash payments

2. Tax relief (reduced tax liabilities)

3. In-kind goods and services (free or at reduced prices)

4. Credit

5. Insurance at special terms

Major transfer programs for social care and quality of life could also be categorized as follows:

1. Provide benefits which replace lost earnings

2. Supplement earned income

3. Supplement general income (mainly in-kind transfers)

4. Enhance earning potential (e.g., as through training and education) (Chapter 1 details these issues.)

Federally funded services show a decline across the board. A recent legal analysis (Case 1984:222) highlights the vulnerability of services to political

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manipulation, but reveals that the mosaic of services available can survive discrete cuts targeted at particular programs.

There is some evidence, beginning in the 1980's, that the federal executive branch is attempting to sharply restrict these [federal] human services, particularly in the fields of education and welfare payments. On the other hand, beginning with ANCSA, the federal government's commitment to Alaska Native economic development appears stronger and more likely to bear fruit than at any time in the past. Even in the fields of education and social services, the elimination of federal Native schools and general assistance would not eliminate other less direct support programs available under the Johnson-O'Malley, Indian Education, Self-Determination and Indian Child Welfare Acts.

This appraisal may yet prove too sanguine. The Indian Child Welfare Act has been weakened by antagonistic federal court decisions (McNabb 1990c), and financial support for Native public health services is in jeopardy at the federal level (McNabb 1990b).

The prospects for federal funding and policy relief are mixed, in essence. Native authorities feel that ICWA is vulnerable to attack (see Tundra Times 1988:3), yet Alaskan attorneys have met with some success in arguing for the preeminence of tribal authorities in child welfare and adoption cases. But a new state law (7 AAC 05.700(b)) recognizes "customary adoptions" within the meaning of ICWA (Arctic Sounder 1990:11). Federal 9th Circuit Court rulings have thus far prevented full implementation of ICWA, and other rulings (as in the Indiana Supreme Court ruling of 1990; see McNabb 1990c) stipulate that State courts may be able to decide when the federal law, ICWA, may apply.

But there is nonetheless substantial support for federal alternatives to dominant institutional solutions to child welfare problems. If there are threats to ICWA, many local key informants see a solution through the resurrection and

remobilization of IRA governments. At a recent Elders Council meeting, one

person explained:

We're separate. Dependent independent nations, they always call us. Even the little village of Kobuk when it has IRA, it has that special relationship with the government.

In IRAs, in IRAs all over the nation, the reason why we got to be an IRA here in Alaska was when Russia sold Alaska to the United States government. They put in there that for the unconquered people -for us -- that we would be treated just like Indians in the Lower 48. So, the U. S. government, when it signed off on that, had to agree with that. And for many years, the U.S. goverment treated the Indian tribes as separate nations. They had treaties with them What that lets us do, we could rule ourselves down there. In cities, there's many things that we could do. traditionally. Even after this meeting, IRAs could tax -- they could collect tax. IRAs could pass laws, like this Kotzebue IRA passed a law for employment for the Inupiat that live here. That's a law that we've been using and using with the contractors. And it could pass, it could have a tribal court, and I think that some of the IRAs in the region now are looking, going to try to use tribal courts for Inupiag kids. The federal government, about eight years ago, they passed Indian Child Welfare Act. And the reason why they passed it is because Indians in the Lower 48, they kept saying, "our kids are being raised by Naluagmiis; they forget who they are." You know. We want our kids to be Indian. And so they passed this law; that law is for us, too, because we have that same, like the Lower 48, we have that special relationship to the federal government. And the law says that full children who are in court custody that IRAs have to be told formally -- the Court or the BIA -- have to send a letter to the IRA to tell them that this child is in court, or they're taking the kid away from the mother, that kind of thing. They have to tell the IRAs, and then the IRAs could go into court. just like lawyers and in the court tell the judge what they had decided about the child. And so the IRAs have been working in the region and one thing that they are finding now, it would be much better if there was a court, an Inupiaq court, to take care of these because the Naluagmiu people always go crazy. And sometimes, like one boy, ten years old, he went with the court since he was a baby. They said for two years we'll keep him and then we'll give him back to the mother. They never give him back. And all the time, here in town, they put him with white foster parents, and then they put him with Natives every few months to go some other place. Finally, that boy start being real mad. And in school, real problem, so they finally had to expell him from school, 'cause he was, you know, too bad. They put him in the Group Home. They have to send him away from the Group Home. That little boy, in my mind, he grow up with hate because he didn't belong any place. They put him this place and that place. I think if there were tribal courts, maybe the Inupiag people would have taken him. And maybe the tribal court would have worked with that family to help him be a better person. In my mind, right now, we lost one person, you know, because he's

too full of hate. And I hate to see that. So, anyhow, the -- I think it's Kiana that's talking about tribal courts. They should have done that IRA here in Kotzebue and we have been talking about a tribal court for quite some time. But now we're saying because the kids, this IRA in Kotzebue got notice about it, a child maybe in Noorvik, or Shungnak, or some place. And people always come here, meet here for a while, go back home and come back here. So it's getting that State court confuse them and sending them here. So now, maybe we should try a regional tribal court, and that way all the region is together. And that way we won't mistake out kids (make wrong decisions for them), you know, or let them fall through the cracks. So that's being talked about right now. When there is a court, it would be looked at just like the State courts here, in terms of Indian Child Welfare. There's many powers that IRA could have, one of them in terms of drinking. And there is a federal law that the IRAs could meet to stop that booze. They could do that. They have that power. They have the power over some special monies, like BIA, Johnson O'Malley, at school. That has to be used for Eskimo kids and IRA could put any say, to take that federal government say, "That's the IRAs money." That's your long-term goal, IRA just passed a resolution or something to give that power of theirs to the school, you know. That power really is with the IRAs, and I'm glad that the school district has that money. But those things the IRAs have to watch over. IRAs have all of our region, all of our villages here, IRAs have the government. But also, back in 1936 or so when they signed that constitution for the IRA, they created the IRAs to be businesses. So the IRAs can be government and they can have their own businesses. And they could create the business and then, instead of paying state tax, that tax could be paid to the IRA. There's tribes in the Lower 48 who do that, and some of them get three-four million dollars a year on taxes from their businesses. So those are things that IRAs could do that I've explained.

And the IRA is the government for the Inupiaq people, and it's only as good as the people. And when we don't care, when we just let it go, it's weak, you know. Maniilaq Association is there only because the IRA give it the right to exist. By resolution they said, Maniilaq could be. And if the IRAs didn't want Maniilaq any more, all they have to do is write another resolution saying, "We want our money back," because at Maniilaq it's buying services from BIA services. That was built, and Maniilaq worked real hard at doing the best job it could. But then again, their power comes from IRAs.

In another meeting, an elder explains:

In the tribal government law, the IRA should have more power. You'll find this in the tribal government law. of the IRA government in the NANA region is gathering data on this. He may have already done so. They discussed having one representative each on the onset of organizing themselves. Perhaps the village does not understand the power given to the IRA council. They do in regard to the present status of our City Council. Actually

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established status of the IRA is to give assistance to the City Council when asked. Long ago at Ambler when I was identified as a chair-man of the district; was asked to be at our meeting. So that he could help explain the stronger power of the IRA from power of the City Council. Perhaps the villages have no knowledge of this. If possible, our helpers should address this so village people can under-stand these two organizations' functions better.

IRA is powerful. Because their purpose is self-determination for the villages. This has really made things easier for us at our village. The advantage of the elders council members being on the IRA council has been great for us at Noorvik.

In yet another case, an elder advocates increased participation on IRA Councils:

The Inupiat should become members in all the councils. That's how we can be strengthened. That way, you won't have a voice only in the elders councils. Diversify our presence by joining the IRA, City Council, and speak up to empower the voice of the village government. Our youth can hear you and your voice would be strengthened. Our youth are watching us. When we let some let-it-go just by talking, this erodes our voice. If we work by following our words, this strengthens our voice. These have to work together. One cannot talk only but implement the work that reflects Inupiaq determination.

In-kind transfers, which provide educational, medical, and social services at no cost, are important to the regional economy. Spending habits would change greatly if transfers were reduced or eliminated. In Chapter 1, the author explains:

In effect, the extent of the public in-kind transfer economy marks the bounds of the private commercial economy. How people spend their cash income in the marketplace depends on what basic needs are left unmet by housing, health care, utilities, and other governmental programs. These sorts of in-kind transfer income free up cash income to be spent in the private sector for other goods and services. Any reduction of in-kind transfers means going without or shifting cash spending to buy what was formerly gotten for free.

The regional Iñupiat have traditionally exhibited great political savvy in securing public funds. In the borough area, however, this has not inflated the local public sector beyond those of many other regions. On a per-capita basis, public sector earnings (a reasonable, but rough index of the scale of social services) amount to \$4,100 annually, substantially short of the statewide average

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and per-capita totals for some urban centers (see Chapter 1). Direct transfer payments to individuals (such as Aid to Families with Dependent Children, Supplemental Security Income, and Food Stamps) have risen in the aggregate, yet allowing for inflation the 1987 payments are somewhat less than comparable 1975 figures (see Chapter 1). Total educational revenues in FY 1988 are lower than at any other time since FY 1980 (Chapter 1). Regional trends show an increase in enrollments matched by a decrease in both revenues and educational employment between 1980 and 1987 (Alaska Department of Labor 1988a).¹⁵ Regional residents do not disproportionately depend on government transfers (see Chapter 1).

This trend reveals a key dilemma. Populations in need have not declined or stabilized relative to revenues. The birthrate in rural Alaska has exploded (Anchorage Daily News 1990; McNabb 1990). The highest rates of population growth in Alaska, however, accrue to age categories 70-74 (58.2 percent), 75-79 (64.7 percent), 80-84 (88.6 percent), and 85 and over (83.7 percent) between 1980 and 1986. The rate of change for elders age 65 and older during this period is 58.8 percent, which exceeds the rate for the 0-4 age cohort. In 1986 seniors (65 years of age and older) comprised 4.5 percent of the borough area population. Life expectancy may increase by almost 5 percent over the next fifteen years (Alaska Department of Labor 1988b).

Asked what she forsees as the results of current population trends, a local leader responded:

'I think there's room for growth in our villages,' said Marie Greene, president of the Maniilaq Association, the northwest Alaska

¹⁵Educational employment dropped by 22.5 percent between the first half of 1986 and the first half of 1987 in the Kobuk Census Area. This is the second largest drop in Alaska, behind the Kodiak Island Borough at 31.1 percent. Alaska Department of Labor (1988a).

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Native social service agency. Still, 'If we don't start planning, we are really going to be hurting, especially in the schools. . . We have so many other priorities right now," said Greene. 'We don't think very much about what we need to be doing to get ready for 10 or 20 years down the road' (Anchorage Daily News 1990).

Clearly, service financing and politics emerge as avenues for strategic intervention. Controls on population growth and migration (which in the latter case simply shift the need elsewhere) are not feasible options. Regional leaders, administrators, and advocates have thus far been successful in the finance and political domain. For instance, the Sivuniigvik camp (also known as the Social Rehabilitation Center) case illustrates this success. Sivuniigvik received substantial state funding from the Department of Corrections during FY 1988 and 1989 (\$395,000 and \$430,000, respectively). The initial budget for FY 1990 was \$180,000, which represents a massive cut ordered by the legislature (see McNabb 1990a). Successful lobbying and steady pressure from regional and other bush leaders, as well as residents, reinstated most funds. Yet the fiscal policies of the new Hickel administration present new and unique threats to Despite a massive budget surplus due to increased oil regional programs. revenues related to the Persian Gulf war, Hickel and his commissioners seek to reduce state spending. Although the Department of Corrections is customarily exempt from formula cut-backs since many of its programs are mandated, the current commissioner of corrections seeks to institute substantial cuts which, among other things, will terminate the Sivuniigvik program in its entirety. On the other hand, key members of the legislature have vowed to maintain funding. Hence, a constant struggle may be necessary to secure the resources on which this region depends.

Political action countered initial cuts by the legislature and administrative pressure from a state agency, but that action was eventually unsuccessful. If these political abilities and strong alliances among leaders and supporters outside the borough area persist, the borough may be able to counterbalance ominous revenue trends that could place important services in jeopardy,¹⁶ even given the fact that not all recent borough area efforts have yielded long-term success.

One of the first series of substantial service cuts in the post-boom Alaskan economy occurred during 1985 and 1986. Revenue and budget issues pertaining to services are routinely shared with elders, and Ms. Marie Greene, the President of Maniilaq Association, summarized the budget dilemma as follows:

At your last Council meeting I was reporting and tried to give you an idea of what we'll be expecting from the State -- the State of Alaska for Maniilaq programs. In this memo, the main part of the memo will be D. right here, the numbers. (indicating her handout) We'll give you the list of programs of what Maniilaq has and what we show we received. Like the middle column, that shows you how much we're actually getting. We're receiving now. Like in Public Assistance, that's one thing that might be also the littlest. That's the Food Stamp Program, the Old Age Assistance Program, Aid to Families with Dependent Children, Aid to the Blind, Aid to the Disabled, that kinds of programs. Then we have Medicare and Medicaid. Maniilag is receiving \$180,000; you can see the cut. You can see that last column there, where we got a cut of \$5,600. Because of that cut, we had to cut down on staff. We had to cut down from one full time position to one part time. We were trying to see if we had to make ----- in that program. We left in the eligibility technician 'cause he's one of the few people that travels to our villages. They travel to our villages and work with our fee agents. And we have him stationed here in Kotzebue and they're the ones that are here helping us with the applications. Anybody that wants into the system. So that's one program. All of the columns, the last column there. It shows the Social Services for this year, starting July 1 until June 30, 1987. We received a

¹⁶The Sivuniigvik case can be interpreted in several ways. In an alternate version, political pressure reinstated a program that was too expensive and unproductive. However the case is interpreted, it is clear that multiple standards of need, effectiveness, and accountability may operate among various service providers, service recipients, and granting and oversight bodies.

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cut of over \$200,000. So we had to make lot of changes in calls. You know, when you run a program, you have to cut when you receive less money. We try to keep in the key people, like the positions that we have in the building, the Maniilaq Board said, "Do everything you can to leave them there. Don't take away jobs from our villages." So that's one thing that I tried to do. Then we tried to just look at what we had stationed here in Kotzebue, and what kind of programs and what kind of positions we could cut -- not have them any more for this year.

Public Health Services, we got a cut of \$42,000, so we're actually receiving \$798,000. Alcoholism is one program that we really worked hard on this past winter. I even closed down the program for two months. Then we could try to see what we're not doing. You know we've had this program ever since I started working in Maniilag in 1976. And it seems like we're not getting you there. We still keep on having lot of alcohol syndrome problems so we closed shop for two months just to look at ourselves. The Alcohol Advisory Council, their budget, it's still sitting there in each of the villages and then we worked with all the different agencies that work in our alcoholism program. The court, the hospital, the magistrates, the State Troopers, the police. We had lot of meetings with different people, trying to ask them. With Robert and Senator (Frank) Ferguson, and Noorvik village working with Maniilag, and asking what we need to be doing. What kind of changes Maniilaq should make to provide a better service in the Alcoholism program. That program lost \$35,000. Because of that we had to cut one position. We didn't touch any of the villages. We left those intact. So we cut one position here, stationed here in Kotzebue.

Then the other thing I need to mention about the Alcoholism Program is this year, or last week, we started working with Noorvik because they're interested in setting up a program within Noorvik. A survey was done, all the people there in Noorvik are saying, "Yes, we want to help. We'd like to have a treatment center, or an office set up where they can provide direct counseling with their people." We're trying to work on that now. We're trying to come up with money to work with Noorvik and setting up a treatment center there. So people could do there like we have here in Kotzebue. We have up to eight people that are staying at the treatment center in this borough in this region. Some of our clients are people that stay there are saying, "It would be better if we had a place in the village -- a treatment center. Not in Kotzebue." They said it's real hard once they get out. The bars are here, and it's real hard for them to try to take care of themselves. So that's something that we're working with Frank Ferguson and Mike Scott and the Alcohol Advisory Council that we have, and we're trying to set up a plan now of how we can submit meetings to be done to set up Noorvik and then come up with the money. If we don't get any additional money from the State, then we're going to have to get money from this \$665,000 that Maniilaq is receiving from the State of Alaska. So those are things that we're trying to work out now. Once we get that set up, I'll have to bring it to the Maniilaq Board directly and get their approval, 'cause that's something that we really want

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to do, because it's the first time a village is saying we're here to help you. We want to set up a program within our village so we can help Maniilaq and Kotzebue and we'll try to solve our alcohol and drug problems. We have something to try to work with now.

And then there's Mental Health. We see the cut is over \$28,000. It hasn't affect it too much; we're keeping the same staff there. because for the first time we're able to have more counselors that could pay more attention to our villages. Any kind of a problem, whether it's a suicide attempt, or death in the family, our counselors are able to go out there now working for them. For example, when we have, you know, I think it was early this month in Kobuk, and our counselors right away were able to go to the village and work with the family, 'cause that was something they wanted right now. And because we have more staff, qualified counselors in that program, Mental Health, Maniilaq is able to do that. Before we used to have a hard time 'cause we didn't have enough people. Now we got enough counselors there to work closely with families that need counselling, second day, like a death in a family. We didn't cut down any positions there. Only thing we cut down is like, other things like supplies, less travel to out of the region 'cause we didn't want to cut down on village trips 'cause that's important to them.

And then the Senior Center. Let's see, we got a cut of over 170,000. And then we have the same number of staff there, because that's real important to carry on and care for our elders. So we didn't even cut down on staff. We cut down on the other line items in the budget.

There are three programs that we didn't get funding for. So what we had tried to do was what we call bare-bones budget in each of the programs so we could come up with money, we try to come up with money, like pre-maternal home. And because we didn't get anything from the State, you'll see it shows FY 87 that lacks these programs. We didn't get any money. So we're trying to get money from the total amount that we received, so what Mary and her progam managers had to do is try to see where we could get money to come up so we could operate our pre-maternal home. So that's one thing that we were able to do.

An elder responds and clarifies:

(in Inupiaq) Do you have any questions at all to ask? (after some silence) She has told us of the scarcity of money which is necessary to run the social service programs. You can see the figures listed on the paper. Their budget was cut over Half a Million Dollars. She also reported to us that they have cut positions in Kotzebue, leaving the Maniilaq village jobs intact. If the trend continues, we know that the availability of money will become more scarce with time. Perhaps even we as an Elders Council will wish we could continue coming to our meetings when the trend of financial unavailability continues.

It is important to stress yet again that the current revenue and expenditure picture is far too ambiguous to permit projections of service funding or demand (in the latter case, current or anticipated service curtailments, modifications, or consolidations will affect the capacities and objectives of numerous programs, making forecasts infeasible). The new administration may or may not seek access to the budget surplus, the legislature may or may not seek to use the surplus and, whatever the result, may or may not be successful in their intentions.

Federal grants-in-aid (for education, social services, health, public protection, and other types of service and administration) statewide have risen from about \$159 million in FY 1982 to about \$491 million in FY 1989, and projections show increases to \$565 million by FY 1992. Yet such projections have been overly optimistic since FY 1985 (see Alaska Department of Revenue 1983, 1986, 1987, FY 1989 unrestricted revenues, the economic "engine" of the Alaskan 1990). economy deriving mainly from the oil industry, are about half FY 1982 unrestricted revenues, and projected increases through FY 1992 are modest. Although Maniilaq Association has sustained a strong health and social services budget over the most recent interval (boasting a State block grant total of \$3.354 million in FY 1989 and \$3.572 million in both FY 1990 and FY 1991; see Alaska Legislature 1989, 1990, 1991), and recently received funding amounting to \$325,000 for the establishment of a residential alcohol detoxification center (NUNA 1990b:1), these positive developments are often matched by other For instance, alcohol program funding is still judged to be shortfalls. insufficient (Arctic Sounder 1991b:1, 6), and Kotzebue elders will now begin paying for water, sewer, and garbage collection, services for which fees were previously waived (Arctic Sounder 1991a:2).

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IV. SOCIAL PROBLEMS

Customarily, social scientists describe social problems in terms of incidence, rates, and distributions of specific diagnostic indicators deemed important by institutions assigned to monitor their progress in alleviating those problems. Such indicators include arrest and sentencing rates, scholastic achievement, and medical intake and discharge records. These institutional data, however, reveal only part of the "quality of life" picture. Other MMS documents discuss quality of life."¹⁷

[The] connection between life quality and institutional performance is actually quite problematic, and not only for empirical reasons. The main body of social science literature concerned with "life quality" has not yet arrived at a consensus regarding what quality of life means, but the term refers more often than not to <u>perceived</u> life quality or <u>subjective satisfaction</u> (Andrews and Withy 1976; Colby 1987; Levy and Guttman 1975). The broader ecology of life satisfaction--the environmental and institutional features that sustain or complement it--is only occasionally addressed in a systematic manner because the empirical links between the two domains are often tenuous or even counterintuitive. An enormous literature in anthropology, psychology, and sociology demonstrates that expectations and subjective attitudes -the ideas that people have about what they need, what they deserve, what makes their life condition and the conditions of their neighbors seem fitting and proper--change in accordance with their perceptions of other circumstances. Over the last century, most of that literature would generally fall into the domain of "relative deprivation" or, in bald terms, the tendency to measure your situation in terms of what you think about other situations rather than in terms of objective conditions.

In short, we are compelled to ask if "life quality" can really increase or decrease if people <u>perceive</u> that there has been no change? Similarly, is "life quality" stable if people perceive that it is not? Since perceptions of life quality vary from society to society and on the basis of gender and age (among many other factors), all other things being equal, is there in fact an objective basis for life quality? Consider these examples: nationwide, the elderly and females typically feel themselves to be more vulnerable to crime, yet young males are far more often victims of crime; expressed fear of crime generally grows in proportion to arrests and successful prosecutions; and, based on a large survey

¹⁷Versions of this passage appear in both the cited Proceedings document and the introduction to the MMS Social Indicators KI Summary report (SI87-88-2), also in press.

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sample here in Alaska, residents with the highest incomes and most stable jobs are more apt than others to express dissatisfaction with local economic conditions and institutional performance (McNabb 1989). In short, peoplemented to assess their life quality differently, using variable standards and based on different expectations (McNabb 1990d).

This section reviews regional social problems associated closely and distantly with documented Elders Council concerns. Two perspectives emerge--the institutional view describing problems in conventional terms, and elders' perceptions in their own words. Analysis focuses on similarities and differences in these perspectives. We seek to expand understanding of the elders' priorities in this analysis. Hence, areas deemed "problematic" by scientists, agencies, or others that receive little attention from elders will receive little attention in this chapter.

1. An Institutional Perspective

Maniilag Association's summary statement of progress for fiscal year 1988 states:

Changes reflect increased local control and self 1988: determination. . . . Hospital Merger - The most significant event of 1988 was the merger of Kotzebue Hospital with Maniilaq. . . . New Hospital - The planning phase for construction of a new hospital was nearly completed in 1988 . . . The new facility will allow consolidation of medical and community health services into one building . . . Nursing Wing - The decision was made to build the nursing wing as an addition to the Kotzebue Senior Sitizens Cultural Center...Substance Abuse - Through the efforts of several different programs, Maniilaq made important progress in the fight against alcohol and drug abuse. Services were increased and improved, and support was provided for "Growing Strong Together," a two-day conference sponsored by the Regional Elders Council. . . . Infant Mortality - An aggressive campaign to reduce infant mortality through better prenatal care, post-partum nutrition, and prenatal education is improving the odds for infant survival (Maniilaq Association 1988:6-7).

This summary reflects local control, self-determination, institutional consolidation, care for vulnerable population cross-sections (elderly, mothers,

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and infants), and behavioral health. The resulting index of terms would be fully compatible with other analyses of social and health goals in the borough area (McNabb 1990a), suggesting that these dominant social goals are persistent and stable.

The now obsolete, but nonetheless significant, health status report of Maniilaq Association (1984) Comprehensive Health Plan¹⁸ reveals similar goals.

To improve the health status and quality of life of all residents of the NANA region through enhancement of knowledge, understanding, and personal responsibility for health and exercise of healthful behaviors....

To reduce the morbidity and mortality rates from accidents in the NANA region....

To promote maternal and child health and foster optimal child development....

To enhance the nutritional status of residents of the NANA region so that nutrition-related diseases are reduced....

To promote self-respect among the people of the NANA region and a sense of community well-being that encourages the living and teaching of Inupiaq human values....

To reduce the incidence and prevalence of substance abuse and attendant health and social problems, as measured by a reduction in the violent death rate (suicides, homicides, and accidents) in the NANA region....

To strengthen community and family functioning and coping skills in order to promote stability and well-being....

To promote the dental health of the people of the NANA region to a level equal to that of the nation as a whole....

To reduce the incidence of visual and hearing difficulties which result from preventable and controllable illnesses and defects....

To reduce the need for outpatient health care by residents of the NANA region, as measured by the average number of visits per year for preventable illnesses and injuries....

¹⁸The Comprehensive Health Plan for 1984-1989 is technically obsolete and the new plan is being prepared as this document goes to press. Since it is not open to public review at this time, we were unable to report its contents. To promote food and water quality and reduce environmental hazards in order to enhance community health standards....

To reduce the need for inpatient hospital care by residents of the Maniilaq region....

To promote the highest quality of life possible for elderly and disabled residents of the NANA region....

To maintain the cultural heritage of the Inupiaq people through preservation and revitalization of traditional healing practices....

To strengthen community and family functioning and promote health through the provision of material assistance to persons in need.

Bearing in mind that institutional services are driven by available funding and state or national policies as well as by real or expressed needs,¹⁹ a review of service caseloads from 1985 through 1989 reveals the level of service demands and agency performance (Table 4-7).

1989	1988	1987	1986	1985
20	21	26	15	55
12	4	4	UNK	UNK
43	8	3	2	UNK
UNK	UNK	109	155	UNK
	20 12 43	20 21 12 4 43 8	20 21 26 12 4 4 43 8 3	20 21 26 15 12 4 4 UNK 43 8 3 2

TABLE 4-7MANIILAQ ASSOCIATION TRIBAL OPERATIONS CASES, FY 1985-198920

***UNK = Unknown**

Source: Maniilaq Association 1986-1990 ("UNK" = unknown).

²⁰These are direct support services for clients involved in educational programs: Higher Education (post-secondary), Vocational Education (frequently offered as support for clients receiving Maniilaq Manpower training), Direct Employment (support for clients who are employed, such as supplies or uniforms in post-training activities), and Adult Basic Education (primarily GED).

¹⁹High or low caseloads do not necessarily portend high or low needs or better or poorer performance in meeting needs. High caseloads may correspond to high staffing levels and generous funds. Likewise, low caseloads may signify limited funds despite real or expressed needs for specific services.

Key informants suggest that variations in funding patterns and staffing are the most likely causes of oscillations in case loads; but educational and training efforts undertaken by other entities, such as the Kotzebue Technical Center, Chukchi College, and Cominco, absorbed many service demands (see Chapters 2 and 5).

Caseloads in the Social Services branch of Maniilaq Association may be more enlightening since few entities offer substitute or parallel services. Note that medical, social, and psychiatric services are included under the Maniilaq umbrella and other alternative services, such as school counseling, are not sufficiently broad to dilute the service profile presented here. (see Chapter 5 for discussions of educational services). Table 4-8 depicts services in this area during the same time period.

Key informants indicated that funding constraints may account for reduced homemaker services, but otherwise shifts in caseloads are reasonable indicators of: (1) institutional effort (i.e., caseloads vary in response to performance) and (2) actual need. We inferred that growing caseloads correspond to more institutional emphasis as well as rising demand and need. Maniilaq's Social Services branch, however, may be absorbing some clients through referral from the psychiatric nursing program. The lower caseload at the Womens' Shelter may be attributable to Kotzebue's local option law prohibiting alcohol in the community, but the shelter's caseloads seem to be increasing again, perhaps because hardcore drinkers have found new sources of alcohol (NUNA 1990a:10).

TABLE 4-8MANIILAQ ASSOCIATION SOCIAL SERVICES, FY 1985-1989

467	391			
		330	283	230
28	86	40	67	51
237	287	UNK	UNK	UNK
650	637	UNK	874	vacant
424	749	>100	566	UNK
		2		
65	39	48	35	43
106	42	106	UNK	UNK
19	21	17	8	vacant
153	UNK	UNK	99	115
82	78	35	52	57
4	UNK	UNK	vacant	vacant
1234	1483	1339	1201	UNK
	237 650 424 65 106 19 153 82 4	237 287 650 637 424 749 65 39 106 42 19 21 153 UNK 82 78 4 UNK	237 287 UNK 650 637 UNK 424 749 >100 65 39 48 106 42 106 19 21 17 153 UNK UNK 82 78 35 4 UNK UNK	237287UNKUNK650637UNK874424749>1005666539483510642106UNK1921178153UNKUNK99827835524UNKUNKvacant

Source: Maniilaq Association 1986-1990.²²

Community Health Services programs for the period present a fairly stable picture with notable growth in the Traditional Health program. Although data shown in Table 4-9 are incomplete, they have been included since these services are

- ²¹MASAP is the Maniilaq Alcohol Safety Action Program, an educational and diversion program for alcohol offenders, mainly those with traffic offenses.
- ²²"UNK" represents unknown caseloads. "Vacant" can mean that the program existed but was not staffed as well as that it did not exist (or was under development). In short, there may have been no clients because the program was not operating.

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closely aligned with the global quality of life goals earlier articulated by Maniilaq Association.

1989	1988	1987	1986	1985
24,788	24,205	UNK	25,487	UNK
60%	74%	vacant	vacant	UNK
120	134 +	115	54	vacant
2229	1598	1311	1276	UNK
av. 335 Association	UNK	UNK	UNK	av. 268
	24,788 60% 120 2229 av. 335	24,788 24,205 60% 74% 120 134 2229 1598 av. 335 UNK	24,788 24,205 UNK 60% 74% vacant 120 134 115 2229 1598 1311 av. 335 UNK UNK	24,78824,205UNK25,48760%74%vacantvacant120134115542229159813111276

 TABLE 4-9

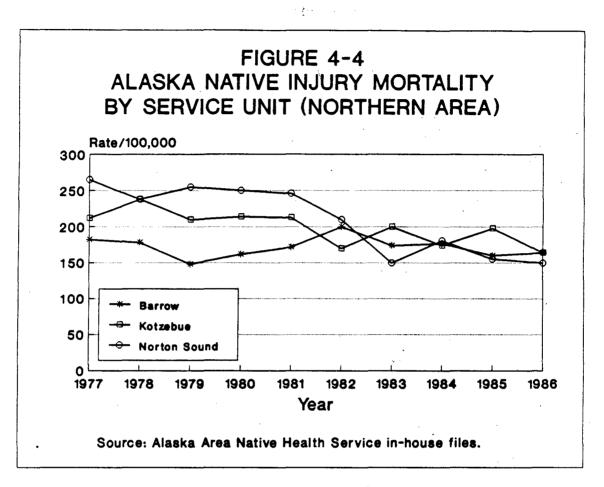
 MANIILAQ ASSOCIATION COMMUNITY HEALTH SERVICES,²³ FY 1985-1989

Other sources of data also warrant attention since they report program activity in key goal areas and correspond to concerns voiced by elders. Environmental hazards and accidents comprise one such category. The borough area has traditionally had a very high incidence of injuries, sometimes leading the state. After 1981 this situation has improved, in part due to aggressive accident prevention, water safety, and other programs offered in the region. Figure 4- 4^{24} shows that the injury mortality rate has dropped by about 25 percent overall.

Injury in hospitalization rates also seem to be declining (McNabb, proprietary data). This trend may reflect Maniilaq's policy of reducing hospitalization stays and referring more patients to outpatient services. Also, enhanced prevention and health promotion efforts and enforcement of drunken

²³CHP figures represent patient contacts; the Maternal-Child Health figures represent the rate of contact with all pregnant mothers during the first trimester; the Prematernal Home (Putyuk) figures represent total caseloads; the Traditional Health figures represent patient contacts; and the WIC figures represent the average number of persons served during a month.

²⁴I wish to thank Kathy Sloan (Providence Hospital) for first identifying these northern Alaska trends.



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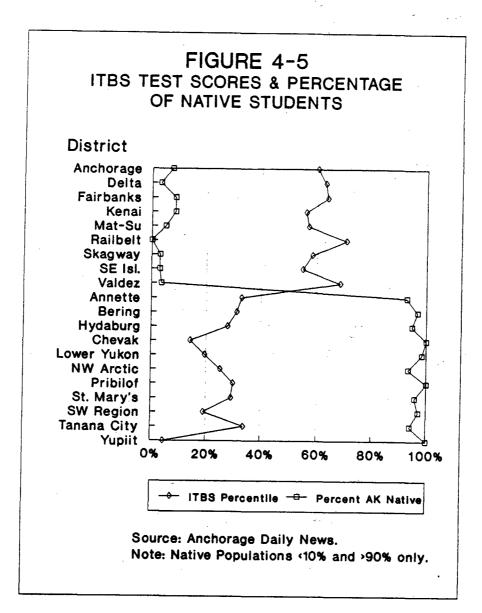
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driving and vehicle safety statutes have put downward pressure on the incidence of accidents.

Education is a major focus of Chapter 2, but since elders address the education issue regularly, it seemed appropriate to at least touch on their concerns. Figure 4-5 displays Iowa Test of Basic Skills percentile scores for Native districts with more than 90 percent Alaska Native students to those with less than 10 percent.²⁵ The Northwest Arctic Borough School District percentile rank is 25.3 percent. Since it is a national norm test, this means that 25.3 percent of the borough students obtained scores at or above the level of 50 percent of U.S. students at large. This achievement dilemma is, of course, chronic in rural Alaska (Figure 4-5). Other health data merit brief inspection. First, given the emphatic concern for maternal-child health and the vulnerability of young mothers and their infants, three allied trends merit mention. Borough teens give birth at a rate higher than any other statewide subpopulation (births/1000 age 15-19) females), posting a birthrate of more than 125. This exceeds the figure for Jamaica and Guatemala and approaches that of Bangladesh (Weeks 1989). Since teens are less likely than older females to possess a wide range of life skills, notably education enough to find and hold a job, the economic position of the burgeoning youth population could soon pose new problems. Infant health is also worrisome, though it has slightly improved over the last decade. The neonatal death rate in this region was last recorded at 10.1 deaths per 1,000 live births, about 50 percent higher than the statewide Alaska Native rate of 6.7. The postneonatal death rate of 16.8 in the borough area was only slightly above the statewide Alaska Native rate of 14.6. (These figures are based on unpublished

²⁵I wish to thank Dana Hallett (Kenai Peninsula School District) for drawing my attention to the >90% and <10% Native percentile score discrepancies.

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in-house files from the Alaska Area Native Health Service for 1986. See McNabb 1990b for additional analysis.) Regional service agencies have typically displayed great ingenuity and innovation in service development and advocacy which, combined with canny political acumen, has tended to preserve regional programs and secure resources for new or existing programs when those resources have been in short supply. When the Women, Infants and Children (WIC) nutrition program was temporarily shelved due to federal cutbacks after 1985, Maniilaq Association successfully argued that their tribal recognition permitted them to be treated as a state, allowing them to secure WIC funds even though Alaskan funds were depleted. The WIC program has since been resumed in Alaska as a whole. Maniilaq Association also received a \$100,000 award from the Ford Foundation and the John F. Kennedy School of Government at Harvard University for "Innovations in State and Local Government," acknowledging the Iñupiat Ilitquiat program (NUNA 1990b:1, 6). This award will underwrite a Special Projects Fund which will support small-scale projects aimed at communicating and sustaining traditional values throughout the region.

Yet current and past innovations targeted toward protection of vulnerable populations--seniors, young parents, and youth--are never wholly secure and are sometimes vulnerable themselves to unforeseen impacts from other innovations. For instance, the number of residential care beds at the Kotzebue Senior Citizens' Cultural Center has increased by 50 percent since it was founded in 1978, and a new nursing wing provides care for nine elders who require more services than other resident elders (see NUNA 1990b:8). This nursing wing clearly fills a need that had been perceived by residents and service providers alike for several years. Yet several elder key informants and younger residents have expressed concern that the presence of elders who are perceived to be "sick," disabled, or medically feeble may constrain the range of activities that are customarily carried out at the Cultural Center. Since the Center is now "medicalized," children may feel less welcome for spontaneous visits or shared meals, and activities accompanied by noise and crowds may be tacitly avoided. We emphasize that these are perceptions of some regional elders and residents and do not in any way reflect Center policies.

Self-destruction currently exacts a terrible toll of Native lives (McNabb 1990b). Service agencies in the borough seek to stem the incidence of voluntary and involuntary violence. Recorded suicide deaths in the borough have increased in recent years from one in 1984, to five in 1985, and then to seven in 1986 (from unpublished in-house files of the Alaska Area Native Health Service). Their average age was 27, four were female, and four came from villages other than Kotzebue. All but two were under the age of 33.

Alaska Natives in penal institutions represented about twice their percentage in the general population. In 1987, 34 percent of all inmates were Alaska Natives. Five percent (42) of them came from the borough area, and sixteen inmates listed Kotzebue as their residence. These figures fluctuate from year to year, however. In 1988, 25.6 percent of all inmates were Alaska Native and 55 (1.7 percent of all inmates) called the borough home (Alaska Department of Corrections 1988; Alaska Judicial Council 1988).

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2. Elders' Perspective

Based on in-depth discussions with elders²⁶ and reviews of Elders Council and Regional Elders Conference records, it is apparent that elders do not represent a single opinion bloc with consensus views on issues of social problems, Iñupiaq values, or economic development. Moreover, the views they have tend to be global opinions that are superordinate in the sense that they represent generic life quality goals that relate to more specific problems and objectives. Furthermore, those specific problems and objectives are only occasionally articulated. In many respects the Elders Councils and (outside that specific context) elders-atlarge operate much like traditional village councils. Although informal consensus building animates those groups, issues are approached in an almost random fashion, specific issues are avoided in favor of broad goals for which greatest support and sympathy can be gained, and the fundamental aim is what Conn calls "adjustment" and "integration" rather than formalistic adjudication of fine points (Conn 1985). It is worth mentioning in this connection that traditional village councils and traditional leaders are viewed by elders are "tough," far tougher than existing institutions that are seen to waver, delay, and capitulate to special interests. One elder explains traditional leadership in distant times:

²⁶The fieldwork and data collection routine used for this study required team members to conduct open-ended discussions with elder key informants from Kotzebue, Kivalina, Deering, Buckland, Noorvik, Selawik, and Shungnak. All members of village Elders Councils were contacted and, if they consented to discussions, they were interviewed. Additional materials, such as records of Elders Council and Regional Elders Conference meetings, were also reviewed.

The summaries provided here are intended to characterize extensive quotes and commentaries, and all recorded information summarized here was focused specifically on the roles of elders and Elders Councils, the goals of InI, contemporary social problems and program needs, and development attitudes. Analysis reported in the text addresses the scarcity of development attitudes <u>per</u> <u>se</u> among elders. This scarcity accurately represents the facts as the authors detect and understand them; elders in particular had very little to say about economic development apart from the positive effects of job creation. We will never live to survive like our forefathers, we understand that. They tough, steadfast, who corrected us and they always wanted a chief, who does not sway, and that made it tough to be chief. Because if the chief sways too much in deciding, it weakens them. That is why being a leader is hard, tough. This had been heard from time and time again. The people always lose interest when their leader sways his decision too much because they see him. That is how it is, even if you try to command or ask the people to do this or that, they will all become the same. We understand that our forefathers lived it. What we understand we must pass on and so our descendants also know and understand that which they realize anyway. If a person wants to be a leader or becomes one, he must definitely make that stand and not sway in front of the people he is leading.

In another instance:

The council were the only authority in the village when we were growing up. They were very strong. People respected them very much. They feared them even more than they do the court judges today. That's because they were very strong. Whenever they made a decision, there were no infringements to the contrary. The IRAs are supposed to be strong. They even held court sessions, sometimes all night long. (some soft laughter)

Our records suggest that few elders or Elders Councils believe they exemplify this toughness now, despite a desire to emulate those ideals, since the authority of elders is ambiguous. But in some cases, community support for elders' authority is pronounced. At another meeting, a resident notes:

When we see that City Council is off base in their actions, we counsel each other. They listen to the IRA, using patterns of our earlier strong traditional village council as their goal to follow It's very helpful when elders are active in as their model. correcting problems faced by City Council business dominated by our younger leaders. At Noorvik, when we began the Elders Council organization, we had a combined meeting of the City Council, IRA Council, and the School Board. Our village Elders Councils are advisors. In the governing structure of our villages, we have a voice. This has helped us find equity on decision making. No one in a leadership position go against the will of the Noorvik Elders. This helps everyone in reaching a just and peaceful leadership for our village. This is effective only when decision is reached equitably.

In a formal connection, it is notable that consensus building, evident in elders' gatherings, is also a feature of sociopolitical organization throughout regional institutions. A guest at an Elders Council meeting described how consensus

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building efforts could enhance representation within the Northwest Arctic Borough:

I think you all understand why some of the villages were not represented in the Assembly last spring. There were some villages like Kivalina and Noatak, Deering and Buckland that have no representation. The Democrats and Republicans always end up running one candidate, and if we did that at the next election, perhaps we could get representation from those villages by running one candidate. When three candidates from a village run, they take away votes from each other and no one wins to represent that village. You might take that piece of wisdom back to your villages and remind the people at the time of the next election. Meet together and agree on one candidate. Explain things to the elders. That's what I asked about when Deering and Buckland and Kivalina and Noatak didn't get representation on the borough Assembly by running two or three candidates for the same office. It didn't turn out good, but at the next election, you can remember that.

But in a traditional style, specific issues are nearly always secondary, while broad, generic life-quality issues dominate discussions. For example, though elders clearly express concern about environmental health--issues such as water and vehicle safety, wilderness survival, etc., this concern rarely is articulated in those terms. Elders are more inclined to talk about heritage and "the ways we used to do it.", Reading between the lines, they seem to intend that the audience make the connection between traditional skills and current problems, but they do not always explicitly say so. We will expand upon this example. Environmental issues may in fact command the main attention, but these instances are rare and emerge only when crises or emergencies are foreseen or are perceived or anticipated by some residents. At one recent meeting, perceived pollution associated with Red Dog mine operations was discussed:

He said that the Kivalina people were really concerned with the possible serious pollution of the river system, since that was their source of drinking water and fishing area. Some dead fish were seen afloat in the area all ready. was really defensive about the people's concern about the possible pollution from obvious discoloration of the river. We have to make sure our people are open minded enough to make sensible decisions without getting so defensive in their loyalties. A delegation from the village flew

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over the area to see for themselves the extent of the discoloration. They expect the pollution to hit their village by fall time. The village of Kivalina has also sent in water samples for independent I told them that I felt both were right -- the Subsistence study. Committee having Cominco do the testing in their lab, and the City of Kivalina getting an independ-ent study. If they agree, no problem. If there are discrepancies, then they can further study why there are discrepancies and come up closer to the truth. (It was interesting from our Staff meeting to learn of the negative results from the surface waters versus pollutant results from deeper areas in the river.) said that last week he picked up a dead salmon from the river. It had no apparent scars and they also sent it in to the lab for study. _____ said that it takes only four hours before Cominco knows from their testing whether we have something to worry about or not. If it looks bad, he said that the Committee has the powers to close the mine down until the problem is resolved.

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then began to talk in spite of <u>'s interruptions</u>. He said that the river was his hunting ground for many years, and that he is quite familiar with its clear waters (of the Salmon River). " I think about our grandchildren and how we have always relied on the salmon for our food the year around. Today the color of that river The substance in the water is green like is yellow and green. jello. I have no animosity toward people who work at Red Dog Mine, yet this discoloration is not just discoloration. We don't know for sure yet how serious this is. It might just look discolored, but I have a hunch it is toxic and might even get more so when heated by the sun's rays. We know that food spoils when it gets too much sun. How do we know whether there is chemical change or not when that substance that discolors our rivers is mixed with water and the heat of the sun. I have a feeling that if we do nothing, the condition The subsistence camps are being affected. could get worse. Spawning grounds of salmon cannot be seen and we don't know how it will affect the growth of the fish. We must protect our children from health hazards. If they eat the wild game and fish from there, how do we know what they are taking into their bodies might cause diseases. I have had to think pretty hard about this situation," ____said.

said that he is a member of the Noatak/Kivalina Subsistence Committee which exists because of the Red Dog Mine. He assures the people that the samples will help the Committee with their ultimate decisions. He also reminded the people that they are never present at meetings in Kivalina when meetings are called to inform the community of current developments.

said they have always used the rivers in their lifetime and have never seen discolorations like this. voiced his concern of the unpredictability of pollution in the future. said at least the caribou have not yet reached their traditional grounds in that area. maintains that it cannot be corrected until corrective action is demanded. claims that the reason the local people don't know what's going on is that they

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don't attend meetings held by the Subsistence Committee when they meet at Kivalina. "Since we have always lived here, we know the patterns of salmon migration on this river," she said. Then said that salmon do migrate in great numbers through the river. They spawn and die within their natural life cycle.

Yet the vast majority of elders' comments and statements that bear on environmental health fall into a more diffuse "survival" category, similar to this passage from a regional elder:

If they just found a site that has enough snow to make a shelter and crawl into it, they could survive. It is warm enough. Once they are in the snow shelter and the inner walls are slightly melted from the breath and form ice, it becomes windproof. , Before icing conditions form, it feels cold because the wind can still penetrate through the snow because it is newly fallen soft snow. But as soon as it is iced, it becomes warmer without any wind blowing through. If there are any large trees, and there's a lot of snow down at the trunk, it makes a good shelter because you could poke a hole through the snow right along the tree for ventilation and make an entrance hole on the side. It works like a stove. If you built a fire in the snow shelter, the air from the side entrance gives enough air so that the smoke goes up the hole along the tree. And when the opening at the entrance is widened, it helps the fire, on the same principle as the stove. You don't have to have much wood to keep warm. Just a few sticks is all you need to keep warm. When all the wood is burned and only embers are left, you can shut the entrance door because there is not the smoke to bother you. You stay warm inside the snow shelter that way. Our children don't know how to survive that way. If we don't show them those things that we know today, they'll never know them.

In a classic example of pedagogy without overt instruction, the elders usually guide by example, historical recitation, folklore, or allegory. Bear that in mind as we present these issues. Problems commonly emerge in terms of ideals or solutions, which eliminates some of the stigma or criticism that might be entailed by more direct discussion of pathologies or defects.

"Alcohol"

Alcohol abuse was identified frequently as the single most pressing social problem by many elders. In some instances the problem was tied to other

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circumstances or potential solutions, as in later summaries that join alcohol abuse to drug abuse and recreational solutions. Elders have addressed alcohol problems at all Elders Conferences, and passages from conferences illustrate the range and depth of elders' opinions:

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(In Iñupiaq) I have come to talk, and so I will say something. want to say that I have learned from experience and know that without a doubt that alcohol does no one any good. It doesn't do anyone any good. We have lost many young people, people who were a long ways from getting old, not like us, in Kotzebue. From alcohol. Some have frozen and some commit suicide. And in the homes, where a man and wife should be enjoying life together, alcohol has caused And in many homes, family life is them to split. Divorce. disrupted. The cause? Alcohol. The parents never get a full night of sleep. And even though their children drink, out of the goodness of their hearts, they make sure that their children have food in the house and a place to stay. Even when their children don't help them with house-hold expenses. Whenever the young men earn some money, they usually spend it on alcohol. Even when they need new clothes, it doesn't matter to them -- all they think about is how they can get alcohol. That's all they desire. These are some of the things that I have learned, that I know. I am not making anything up. I have learned the a lot of things about alcoholism and its problems.

In the early days, Kotzebue tried to become an alcohol town. Paul Davidovics had a saloon, and so did the Fergusons. And even George Ito had a saloon. But the Kotzebue people wrote petitions, and there were very few people here in Kotzebue. There were hardly any white people then, and hardly any people from other villages here in Kotzebue at that time. At that time, people who lived here were mostly Kotzebue families. There was hardly anyone living here from other places.

We made petitions. Lots of people, like Susie Hunnicutt, us. We faced the people even though they weren't treating us well -- those people who loved to drink. But we were not afraid of them and went around town gathering signatures to the petitions. Many would say anything against us. But some of the parents wouldn't listen to their children who were mumbling against us who were gathering signatures, and they signed their name to our anti-alcohol petitions. At those times, there were people who tried to start up selling alcohol, but we always snuffed it out.

And there were people who would gather in homes to pray together. That's what your forefathers in Kotzebue did. They prayed to God that alcohol would not become available in Kotzebue. They didn't want alcohol to thrive and grow in Kotzebue. That's why the older people would get together and pray together in each others homes. And so the efforts of those people who were trying to make alcohol

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available in Kotzebue would fail, and their efforts get snuffed out. That's because we resisted it and rejected it.

And years later, Kotzebue grew with many houses and every house had a family. Many white people came here to live, and Eskimos came from every village to live here. I am not saying this out of prejudice against those people; I just want to set the record straight. I am not prejudiced against those people.

When they got together, and many people began to live in Kotzebue and we were no longer just the original Kotzebue people, we were seemingly not diligent about our civic matters any more and soon there were many other people in our town. And places where alcohol is sold became established, with no one standing up against them, and now there are many. And now deaths have become frequent in our town. They are frequent. And now that the little villages around us have voted to go dry, and we are the only ones still selling alcohol, it is not a comfortable feeling to us. Those of us who live in this town that supplies alcohol to buyers. And its not only Kotzebue people any more. It also includes those of you who have moved here from other places to become Kotzebue people. And so, if you and we could get together and work together to stop the consumption of alcohol here, let us do it to succeed in snuffing it out. You have moved here to Kotzebue to become a part of us, to be Don't stand against us, but let us love one another so with us. well that the Evil One cannot destroy that love, and let us stand together, as if tied together, and fight against our alcohol problems together. We can pray and talk and walk together. Let us all fight our common problem together without causing conflict among our ranks, helping each other from all'sides. It is terrible when someone you least expect has died.

And since the other villages don't make alcohol available in their villages, their young people come to Kotzebue for alcohol when they have a little money, and I know they cause their families and parents to worry for their safety. And now that we have made alcohol consumption available in our town -- something that shouldn't be taken into the body, that which kills a body, a substance which will lead your soul to damnation -- when we have become the source of its availability to other, we should do whatever is necessary to remove it from Kotzebue.

I have thought many times that the package store which sells liquor indiscriminately to everyone, and those people who purchase that liquor take their purchase to some homes who welcome them in to drink together after they buy bottles of alcohol. Or they take those bottles home to their village, even though they know that their villages are trying to stay dry. If they would stop the sale of liquor in the package stores, even though they can still drink in the bars, they would come home with no liquor to take home. If there's any way that we could stop the sale of liquor in package stores, we should do all we can to accomplish that. You know as well as I do that alcohol has never done anyone any good. I am not the only one who knows that. I know that if the majority of us and the second se

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would sign a petition, it could stop the sale of liquor. It could get swallowed up. And we know that for sure. Those of us who lived in Kotzebue when some people tried to establish saloons here went through the petition route. I know what I am talking about; I'm not just guessing at something. But all this is something that I have learned from life experience. That is all.

Another statement followed:

We started losing our numbers because of alcohol, but they have not yet closed the bars down. Right now I have a very difficult time bearing up to what alcohol is doing in my family. My husband and I don't even live in the same house, simply because we would like to keep our children alive. My husband can't stand their drinking, and so he has moved to another house and cares for the rest of the members of our family. And I take care of some of them. My sons love to drink alcohol. Some were married, and their spouses divorced them. My husband and I live a very difficult life, and you don't even know about it. When you love your children, and they are caught in the web of alcohol, it is very difficult. Those of you who don't have children don't know what I am talking about. When you love your children and they go the way of alcohol drinkers, it really hurts. I know people have talked about how we live, but we are trying to work as best we can with the alcohol problem of our children. And when they earn money, the spend it for nothing, just buying booze to drink. That's the kind of life style we are forced to put up with.

We talked a lot. I said that if they got rid of alcohol in town, it would make life better. They asked, "How can we get rid of it? There is no law against it." After he said that to me, I thought, then why do some of our leaders like Hensley say to us that if we Eskimos got together and signed petitions that we could be rid of it? "We could get rid of it from Kotzebue," he said to me. After he said that to me, I told my friends, but they have never done anything. Maybe it's because they have good children and haven't had to bear up to living with an alcoholic offspring. That's what we have had to put up with for years, and I just can't take it any more. If we really want to be rid of alcohol, they said it can be done. After all, this town of Kotzebue is the home of the Iñupiat. Land of the Iñupiat. The land doesn't belong to the white people. I ame not saying this because I ame biased against the white people. I just want very badly to be rid of alcohol which has made life unbearable for us. It can be removed, they said, if we only agreed to work together. It can be removed. That's what they promised us, that if it causes too much discord, they would shut things down.

And when we finally worked through my problem and agreed to let my son go, the judge told me that what I was doing was all right. When he first came home, he started in in his old habits again. But now he seems to have straightened his life and is now working. He hurt himself, even broke his leg. If you really love your children, reject that alcohol. All you have to do is sign a petition to be rid of alcohol in Kotzebue. We can be rid of it.

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I am ashamed when we Kotzebue people have made alcohol available to the other village people. They come down here to drink, like our own children I have talked to them, and even so sometimes we hear that they have met with a bad accident before they go back home. We can all reject the misery brought on to us by alcohol. Those who want to continue drinking alcohol can go back home and drink all they want to. If you all make up your minds to work as one, you can be rid of it. I know some of my friends have borne alcohol problems in their homes the same as I have. When you have alcohol problems at home, it is a very heavy burden to bear. And especially when your own daughters also take to drinking, children that you dearly love, it really hurts. That is all I have to say.

And another elder comments on what elders have said thus far:

These women who were first in Kotzebue have told the truth. They have told the truth. There were very few people in Kotzebue. There were hardly any white people and no blacks. There were just a few white people. We never saw any drunk people staggering around, but it is true that when they found out that some people want to establish public places to sell alcohol, it was the few white people whose sole purpose was to make money from the local people. I know what they did, because I was among them. And ever since we lost, I have signed petitions a couple times. We signed petitions, but we lost anyway. After we lost the last time, we just kind of forgot about it after that. I was siding with the petitioners because I was against alcohol, and I am afraid of drunks. Even when I see drunks on TV or see someone staggering around on the streets out there, I just get up and lock my doors so they won't come into my I, an old lady, am afraid. And my grandchildren and my house. children are also big drunks. I never liked that.

Petition efforts were finally successful and Kotzebue voters banned the sale of alcohol in October 1987, but problems remain. We must emphasize that these attitudes are not uniform, however, and some elders do not perceive alcohol to be the pressing problem it once was or was ever said to be. An elder notes:

I think alcoholism is not as acute as it once was. It used to be our No. 1 problem in our villages. But I think it has changed in the villages, but it has not disappeared. I think that is something that all of the villages need to expend a lot of energy on. People who bring in alcohol secretly or are secretly bootlegging -- we shouldn't hide these things. If the offenders were discussed openly, it would help our community. It is good when we all work on these problems together. I have never forgotten what I said early on when we first got started on this problem. Sometime ago as we continued to live, when there were so many of our youth dying because of alcohol, I said at the meeting when we had guests from other regions as well, that if we all work hard together to get rid of alcohol from our communities, then our homes would begin to brighten up. It would be like early morning as daylight begins and begin to get brighter and brighter and pretty soon the whole community would begin to look as bright as the sunny day, even making us happy. That's what I am thinking about today when alcoholic intake is not as frequent as it once was or even when our young people are not dying as frequently on account of alcohol abuse. Alcohol is not the only thing; it is paired up with drugs. It seems that there was a lot of drugs available for a while, but now it doesn't seem that apparent. And if we really work hard to get rid of it, it will even get better in our community.

"Subsistence is the number one issue by far."

This elder concentrated on the opportunity for conflict, competition for resources, problems of dual management (federal and state), and bigotry inherent in Alaska's current subsistence dilemma. (As this report goes to press, the Alaska State Legislature has failed to pass a subsistence amendment to the Constitution that voters could approve or reject. Since the State is not in compliance with Title 8 of ANILCA, the U.S. Department of Interior has exercised its mandate to preempt fish and game management on federal lands.) He stated that guidance and education are proper roles for elders, rather than politics or advocacy. He emphasized that elders must teach subsistence skills and act as role models, otherwise abilities will wither and subsistence involvement will decline. Moreover, elders can impart conservation skills that will reduce conflict with regulatory institutions and preserve the resource base. Another elder states:

Do any of you have any questions that you would like to ask? Our young people really need to be counselled about killing animals. They shouldn't kill so many that they have to leave them out in the country. We need to counsel the young hunters at home about that. That's what he talked about, and that the staff at Fish and Game are looking for incidents like that. They're trying to find wanton waste of wild game in our land. Our traditional life by taking wild game for food from our land is a tradition that we must guard. But we can also see that it is beginning to be very difficult to maintain. On top of that, the white population is increasing all the time. When their numbers become many, it won't be easy for us to live off the land, a tradition which has been going on from time immemorial, the way our forefathers lived, providing for their families from the land. There was no other way because there were

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no convenient grocery stores, and so they worked hard to provide for their families. Life is getting easier for the rest of us, but we can't eat exclusively foods that we have to buy in stores. Employment is hard to come by in our area and so we can't depend on working for wages all the time.

We really must counsel our young hunters, that they get only those animals that they can take home. This goes for the caribou, too. This is good advice and counsel, and getting food from our land will continue to get harder and harder, especially hunting wild game. They are getting more scarce. If they continue to find overkills and what they consider wanton waste, leaving killed wild game out in the country, the Game Wardens will use that information to kill our way of life of hunting for wild game from our land. Our way of harvest-ing from the land without having to buy it from somebody. We must keep that in mind, those of us elders elected to organizations, and counsel our young people at meetings on the proper ways of hunting and providing for family without wasting anything. That would be a very good thing for us to do.

"The kids--getting them off drugs and alcohol and letting

them have sports and recreation."

This elder advocated a motivational program using a two-pronged approach. Sports and recreational activities would be offered as substitutes for self-destructive and anti-social behavior. Youngsters who have already made a commitment to avoid drugs and alcohol could be tapped as speakers and peer counselors and appear at meetings, schools and in private to show that teetotalers are not alone in the community. Alcohol and drugs together are often identified by elders as twin and associated problems, whether or not specific solutions are mentioned. For instance, at one Elders Council meeting an elder offered this conclusion about why Iñupiat Ilitqusiat and Elders Councils exist:

The main subject/reason that our meetings began was alcohol and drugs that when the children began rising, them which we elders of the Upper Kobuk did not approve of and had somewhat hoped to slow down the use of them. To this date that subject is still with us. Anyone must speak out on alcohol or drugs on what he has learned. Now is the time to speak.

"If you believe your culture is dying, it is already dead.

If you don't, it lives."

This message is one of the few recorded during field excursions that appealed to subjective attitudes representing identity, which is essentially a belief system. This elder apparently believed that the emblems of our culture hold meaning only insofar as we assert that meaning for them. The speaker continued with a message that stressed socialization (as a means to inculcate that identity) which, in turn, meant that the elders had to assume a key role in both formal and nonformal education. One resident used the analogy of a "safety deposit box" to convey the message that values and identity are a hidden resource available in times of need:

I have been working on some tapes that are about five or six years old. And somehere.....I guess I left them (the notes). But there was some talk by elders and they said in our beliefs, if we really follow what we are told, that we will eventually have children that we will also pass this information on from one generation to another. Even if the children are not following values teaching, it's like a safety deposit box. Somebody will unlock that box and someday they will start hearing about love for children, responsibility to tribe, knowledge of family tree, sharing, humor, ity. talked about that and gave a report on They never know somewhere in a child's life when they'll use humility. it. that key to that deposit of real emotional kinds of information that they've been putting away. From your words, from their parents' words, from Inupiat Ilitqusiat, from anybody. So that's what this program is about. The sharing of different people so that when the appropriate time comes, we bring it out and share. It might be a grandson. It might be a great-grandchild. Or it might be some other member in the community. Or anyone of us might never know when that information will be used. But that's what Iñupiat Ilitqusiat is all about. Trying to help remember how we got here, who we are, and to help us get to where we'll be. And when you talk to the youth, it's to go against vandalism, it's to go against not telling the truth. I know that they have along list of reasons why the elders go to Iñupiaq Day and talk about values. I think the biggest thing about Iñupiat Ilitqusiat and Sivuniigvik is the children learn to trust each other even if they come from various villages. They learn to do that in a week. And if that's the power we give our kids through Sivunniigvik with our values training, imagine what they will learn from your village because they go to you and see you all year around. It's not just for a week. Remember that. So, we might feel inadequately trained to talk to youth about values, but you know if somewhere in that we just have

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to find the safe deposit key and bring it out. And good luck with your school year as you deal with your community and your school.

"The School District Five Year Plan says 'need to develop appreciation of Native culture.' Wrong. We need to preserve Native culture and then develop an appreciation

of Western culture."

In this instance the speaker seeks revitalization of regional Iñupiaq culture while rejecting the implicit belief that Western culture is superior or better adapted to the needs of contemporary life. This speaker linked esteem to achievement and argued that Iñupiaq esteem would in fact be contingent on achievement in traditional educational programs. Hence, survival and prosperity of one culture are linked to achievement in terms of another. Essentially, esteem and confidence (in the Iñupiaq context) are related to scholastic performance, thus an improved sense of self-worth results from performance and contributes to it. The message that self-esteem and "right thinking" will boost confidence and lead to unforeseen rewards is in fact a common one. Looking outside the sphere of formal education per se, another resident speaks to problems of socialization and adjustment in general:

It is so very sad to have the children today grow up and they will realize too and read our lives as if it was in a book--it is very sad. A woman I have heard talk--not only once but saying while her daughter, age 5, was listening--she always start gossiping about her female neighbor on how bad she is. When the 5 year old gets older -she understands what her mom was saying. She realizes that and begins disliking that woman too because her mom talks about her as such. The 5 year old becomes a young woman disliking hating that woman yet but she comes to realize and understand that there was nothing wrong with that woman. She began watching that woman her mom devoured in gossip and getting to know her as reading a book. Why did my mother talk about this woman in that manner? One day the daughter went to apologize to that woman, saying that I believed my mother when she talked on how bad you were when I realize how wrong she was I came to ask your forgiveness. There is nothing wrong with you. The lady is telling the truth--a person always comes to their senses to realize and understand. We will be read too in the same

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manner. We have corrected and straightened that garbage out ourselves to our families and friends. It is so true, the correction story has been seen and experienced. We have to support the people who are working for the good--they are doing their best-also we must speak out to support and back them up.

Conventional modes of schooling and socialization are seen to be insufficient.

One elder says:

If we don't teach these Iñupiaq Values to our children, they will grow up like the white people. These Iñupiaq Values are priceless. If they would plainly teach them to the children at Sivuniigvik, it would really be good.

In another case, an elder explains that conventional educations will deprive Iñupiat of values and skills they need:

There is nothing really undesirable about it, but if our children learn everything only from the white people, they won't have any regard for the Native people. We all know that no two white people are alike. The majority of them don't have the slightest respect or regard for the Iñupiat. And that's just opposite of what we were taught when we were growing up. Especially the old people. They always taught us to regard the elders highly and respect them because they are the knowledgeable ones in the society. And so if our children just went to school and learned to be like the white people, not getting any values training by the Iñupiat, they will grow up with the attitudes of the white man not knowing what an Iñupiaq Value is. I am speaking that way on behalf of the Iñupiaq Values because they teach us to love one another and to be humble, and all those things. That is not the way of the white people. The only ones who come close to living that way are the ones who try to live their Christian faith.

"Take strength from the Lord."

This elder rejects the belief that collisions between languages, cultures, belief systems, expectations, and the like are at the root of contemporary social and economic problems. On the contrary, a religious crisis is responsible. "We can't live like our parents," he and his wife noted (and in this connection they add their emphatic rejection of Eskimo dancing, which they say is a source of lust and Satanic influences). Literally their only remedy for social problems is God. Religious declarations were relatively common among the elders we interviewed. Christian belief is often invoked as the origin of Iñupiat Ilitqusiat concepts and as the source of strength for elders. In this passage, an elder underlines the identical impulses for all three concepts:

Today, I am really trying to live according to the Iñupiaq Values because they are very similar to what the Bible teaches us. The advice is the same; it is not any different. It is not any different at all. I have always been thankful for those early elders who participated in the first elders conferences to establish these values for us. I am thankful for them up to now because they have helped me in my own life. Maybe some other person going the wrong way has been helped by them, too. If we would continue to go forward in our teaching of those values, a person has to teach straight from his heart. He cannot make fun of them at the same time, laughing inside while he's talking about them. These Iñupiaq Values are alive, and the Bible teaches us the same things.

These Christian tenets are very strong. In another instance, an elder explains how the region avoided the worst of the 1918 influenza epidemic:

When I was little girl back in 1918 we heard that there's a big flu coming this way. And so many people died. And people around here start praying, they don't want that flu to come here because they gonna die, leaving just children. And I remembered; those people really prayed for it. And it never get here. The Lord answered their prayers and that flu never come around. And there's nothing that is too hard for the Lord if we only pray earnestly from our heart and do something; that really will work out. I know the Lord will really help us.

"Sandwich eaters are weak."

This speaker summarized a fairly common theme among elders: Native food is healthier than non-Native food. Elders perceive a decline in health, strength, agility, and endurance among the young, nourished mainly by store-bought food. This theme is entirely consistent with strong values that promote Native food. Nostalgia exists for foods that are not prepared anymore or are rarely harvested. Elders commonly pine for foods for which they desire "just a taste." Native foods are widely considered to be more potent (some non-Natives are even warned to eat little, for fear they will become sick or intoxicated), more tasty, and more nutritious. This body of attitudes about traditional concepts has a strong

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"somatic" core that stresses biology and avoids emphasis on less concrete notions of personality and psychology. It is evident in many messages about adjustment and proper socialization, as in this example that illustrates a response to the problem of abuse:

A few weeks ago we were taught that our brain ... During childhood our brain is clean and as we grow up and we are hurt such as sexual abused--it stays there. Even if you are at 3 years old and sexually abused that is when your brain growing stops because you are hurting and cannot relate your hurt to anyone else. It bothers you--no one to hash it out with. So are the garbage in our head we collect is there--when we are hurt, thinking bad about someone. It's as picking up trash and putting it in a bag.

Since I began work and attended these workshops I have been working with myself personally from the days I was a child. I remember so many things that I have done including becoming an alcoholic--I started drinking when I was 11 or 12 and still drank even when I got married and began raising kids. The most part I thought about was how much I worried my mother when I was doing that. She prayed for me and I didn't understand why she was doing that. I'm sure that all of us have done that. If we should take all that out and clean it up then our brain cells would be cleaned and function properly. sexually abused at six by a male and she went through The easy so much that she is willing to help anyone who have been abused. She understands. As going through with these workshops I have learned to deal with problems within myself. You think about yourself before thinking of saying things of others. You should try to attend the workshops to learn. We all need help--we each have been mentally abused by our family or someone. I know I was being mentally abused when we were pastors by my own family and I kept those with me. It bothers me a great deal. We should all think before we say anything about anybody.

Our teacher taught us from books--her personal experience. (She was showing graphics of age group.) Newborn to early age--the hurt-anyone been hurt at that age? That is when you are mentally sick not physically even if we are cheery. When we are hurt--it goes directly, goes to our brain and these things we should each about them if you don't it will stay there uncleaned. If we do not teach our kids now the goods now and show them--hurt them they won't be any good to be teachers of wisdom when they reach 50. 75 years old can be teachers. We learned that we must teach our children well, have them, protect them. For example when a car tire is not pumped up correctly you will have a bumpy ride which is the same when your emotional state is unbalanced it will throb like a with a So if we are hurt emotionally, hole--thump, thump, thump. spiritually--it will roll unbalanced just like the tire. So if you are in need and lack being cleansed-you will be a tire running unbalanced. I concur with the report that ____gave. We must get rid of the trash, garbage--which is hurting inside you and that is

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the very thing that will keep, that is what counseling is all about. Go to someone to talk--even if it means crying it out. Our teacher says that when she first went to talk, she cried for a long period of time, about her emotional hurts. You must come for help yourself.

"We love all of you, we don't hate any of you."

This elder sought to explain how best to approach youth who expect criticism, gossip, humiliation, or ostracism for their wrongdoings. This elder advocated a loving approach when dealing with children, teens, and young adults who use drugs. A rift between elder and youth which would prohibit communication, isolate the youth, and neutralize elders as ineffectual and hopelessly out of touch. His theory was that drugs and alcohol are somatic dangers rather than indicators of behavioral or psychological deficiency. Drug use indicates "death is real close," according to this view. Another elder noted that "my brain is the same as his." Hence the child must make up his own mind. The elder is in no position to criticize. Some elders seemed to equate this forgiving, nonjudgmental stance to traditional courtesy, humility, generosity, and hospitality. One elder summarizes these ideals and then draws attention to the link between these precepts and current social problems:

And when a person from another settlement is passing through, we are always told to make room for them in our homes, feed them, and treat them as we would like to be treated. That is a courtesy we can give someone else. You may have felt that you helped someone in that circumstance, but once you start travelling and come to a place that you haven't been to before, chances are that person whom you bedded and fed in your home might be there. Then that recipient has this feeling of wanting to help his former host whom he never met before, but feeling grateful for the courtesy extended to him when he was in need. That's how our forefathers lived. We haven't been that nice to white people, but when they do come on business and we extend our hospitality to them, they are always glad to help us, too, when sometime we are in their part of the country. But we seldom extend our hospitality to white people who are not here on government business. That's because we don't really know them. But we really do try to help the Iñupiat even though we never met them before. This is considered good and it is said of a hospitable person, that he takes good care of people when he gives him a place to sleep and

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gives him food to eat in his house. Or even giving him direction which way he should go so he doesn't get lost out on the trail. Those are some things that we can do in this life, and be an example to our children when extending hospitality. And we should live in such a way that we are not cause for a lot of gossip, especially those of us who are now elders, refraining from using alcohol and marijuana or mistreating people. We should give support to the elders because they are usually right. They live in such a way that we consider is right.

This passage also serves as a good example of "indirect" guidance, achieved through stories, examples, and allegories, that elders often employ to drive home a point they wish to make.

"The problem is the kids -- they aren't eager,

they have no incentive."

According to this view, too many youngsters are impossible to teach despite great successes for some. "Kids are different today," some elders say, because they are disrespectful, lazy, lack diligence, are quick to concede failure, and are unmotivated, slothful, and heedless of the knowledge and skills of their parents and grandparents. Some statements suggest that motivation and respect among youngsters may be improved by using elders as more explicit role models, insuring that youngsters know that the elders are meeting for their sake, and by increasing contacts between youngsters and elders. For instance, at two Elders Council meetings these comments were registered:

We are thankful that we have gotten together again to meet, we have already started to meet and must continue to do so if we are able to, without missing what we have begun and we have been meeting for 5 years. When you don't continue to follow the meetings and attend sometimes you don't know what's happening but those of us who attend all and understanding each others also our children see and watch our actions not having meetings and this can curb them from making more mistakes but seeing us having meetings they will know that we are meeting about them. We always voice our reason for meeting is for the children and they see that which weakens (?) them from doing anything so drastic especially those that are at an understanding age.

Also, we must try to attend our meetings--those of us who are elders, parents--we all have children now. Our children are the

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reason of why we meet and also any other problem that may occur to be solved; or a person may need help. We like to be told of anyone who needs our help and we would try our best to help. Maniilaq representatives are there to help also if we are unable to help.

Regarding increased contacts among youth and elders, one resident responds:

Some other villages have been saying that, you know, at Kotzebue the elders go to the Senior Center for one hot meal a day. Some of the elders in some other villages would also like to meet together to eat together. But they just don't know how to get it started. And they have problems with homemakers, and so forth, for some of the elders because they think that their food stamps and so forth that might ruin their privileges, and so forth. How about you folks, how do they feel about hot meal programs.

As far as that is concerned, I would like to see the student body activities, they do have funds in their student body programs in Shungnak. In the future I'd like to see the students invite either their parents or an elder to dinner or lunch at least once a week, maybe. Maybe once a month to invite the community people up there for a school lunch.

"The problem is the parents--they spoil

the kids and yell all the time."

This view. commonly recorded. blames parents for abrogating their responsibilities by failing to exercise discipline or by isolating their children through inappropriate discipline unwisely and erratically applied. One elder recalled the practice of willow switching which, if used judiciously, maintained control and respect. In records of a previous Regional Elders Conference, willow switching was even discussed as an historical form of discipline (NANA Regional Elders Conference 1990:13). The need for parents and teachers to exercise greater discipline was voiced on several occasions in interviews and in records of Elders Councils meetings. For instance:

But today, things have changed. I don't know who established the rule that students can no longer be punished. And now the students are difficult to work with because we can't punish them in school no matter what they have done. That is not according to the tradition of the Iñupiat. If they followed Iñupiaq traditions, they would still be able to punish those who need correcting. That's what our forefathers did as they were raising children, and we did the same thing. And it was good. Punishing and disciplining a child doesn't kill him. A person who has been disciplined always remembers what he was told during that correcting period. And a person who has never been punished always feels like they can do anything because they can count on people who will stick up for them no matter what they do. That kind of person eventually ends up in jail and has to learn to behave himself the hard way. That's where we have brought our children through this lenient method established in school.

Alcohol, Drugs, Home Brew, Income Tax,

Participation of Elders, Law Enforcement

The above "problems of elders" were listed in records of a 1988 elders meeting (NANA Regional Elders Conference 1990:14). Common themes emerge, but specific financial problems (income taxes) and low participation rates among elders in Elders Council and Regional Elders Conference activities receive equal attention. By "law enforcement" the elders draw attention to lax enforcement and nepotism in villages that permits selective enforcement. These issues arose again several times at the 1988 meeting, which supports the authors' contention that (1) drugs and alcohol, (2) financial status of elders (and other at-risk populations), and (3) law enforcement and public safety are key concerns among elders.

3. Conclusions

Agencies and elders conceive of pressing problems in different ways, but they do not differ fundamentally when described. Agencies are bureaucracies that couch needs in formalistic terms geared specifically to defining the problem in a concrete way and then developing procedures to address the problem, monitor progress, and document accountability. The elders' tasks are quite different. They articulate problems in everyday language and appeal to common understandings in the audience. They tend to combine statements of problems in global or generic terms, followed by evaluations, statement of ideals, and solutions. This procedure is culturally grounded in the context of traditional Iñupiaq life. It

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validates the values of the elders as it comprises a kind of guidance and counsel with substantial historic roots, and it offers some similarities to traditional council activity which in the past typified village responses to external agencies.

Furthermore, since elders seldom articulate specific "plans of action," the burden of program formulation falls to agency staff. In this respect the Elders Council model departs from the traditional council procedure, since under the council model the adult (and usually elder) males were brokers between village life and external authorities. Under the Elders Council model, both elders and agency staff have brokering roles.

Finally, Elders Council members seldom mentioned economic development issues per Upon probing and reflection, most elders did assert that more jobs were se. needed in the villages, but employment opportunity, the developments that may create those opportunities, and the positive and negative dimensions of development were never central issues volunteered. Instead, it appears that elders' prevailing responses to development issues are almost entirely indirect. Their concerns center on the modern ramifications of social and economic change over past decades (e.g., changes in skills among youth, social problems, shifting dietary or discipline patterns, etc.). They did discuss obstacles that may prevent a healthy and productive adaptation to potential social and economic change. Some common themes in elders' dialogues link with concrete economic For example, one common apocalyptic view is that one day a massive issues. economic decline will occur, and jobs, services, and facilities will disappear. Subsistence would again become the centerpiece of the regional economy, and to survive then, elders warn, knowledge of subsistence skills must endure. This

apocalyptic view is extremely common in elders' dialogues about routine subsistence matters. In this passage, elders discuss plans for traditional skills classes at a summer camp:

I have one suggestion. I want the ladies to start thinking about it, and start doing something about it at sewing class. To teach our girls how to <u>giliak</u> [make nets] both for gill net and seine nets. That is our project before we go to camp because we gonna need those. I wanted to start that when we have our mother's club at Shungnak. We need to look for twine to giliak and when teat is done, we will make floats that's for men. See we could start right now. Those were on my mind and wanted to begin them early and they will be projects to teach the youngsters. We always have the young girls participate at our sewing class at Shungnak. Start to show them how and when we go to camp we will probably need to hang, put floats and sinkers.

Woman elders: [inaudible]

...have them make sinkers

Yes, the older children then.

Yes, show them how.

The net must be included in teaching them.

The different sorts of nets which are not weapons must really be used in teaching, showing the children.

Yes.

Weapons can come later and will learn as they live. Also homemade hook parts.

Let them make homemade hooks.

Yes, homemade hooks for grayling.

Woodstove can be made by young men. We will not be living with stove oil stoves forever and we may have to resort back to woodstove.

So it appears that elders possess a "multidimensional" viewpoint stressing an overall social and cultural context for achieving life quality rather than a unidimensional or mechanical perspective that seeks to optimize singular goals in isolation. For example, we recorded no elders suggesting that educational

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attainment should be improved purely as a means to obtain jobs. Similarly, the availability of jobs alone never surfaced as a key issue. In line with previous analysis, preeminent goals of the Elders Councils and their members appear to be "adjustment" and "integration."

V. FORMAL AND NONFORMAL SOLUTIONS

The solutions proposed by Elders Councils and their members reflect concepts already introduced. They are often "indirect" and aim to achieve results by improving a general sociocultural context. They focus on life quality and they seek to revitalize Iñupiaq culture. They emphasize the special needs of vulnerable populations, primarily elders and youths. They often reflect the concept of "resource impoverishment" in that they believe that opportunities and skills, once provided (especially to vulnerable populations), will alleviate many problems. Thus, problems are not seen as inherent deficiencies in persons or communities but as a scarcity of opportunities or privileges.²⁷

The proposed solutions also have both formal and nonformal dimensions, and often they are entwined. Elders Councils seek both forms of solution since alone each is considered insufficient. They cannot easily be categorized (after all, most evidence shows that the elders' views evade simple categories because they are intrinsically complex, multidimensional, and contextual), but the following broad themes harness many of those ideas.

²⁷There are many exceptions to these generalizations, as would be expected given the diversity of aims and opinions that have been described. For example, some elders' recommendations urge enhanced law enforcement which would include efforts by residents to "Report everyone that you see" commit transgressions, such as bootlegging or game violations (NANA Regional Elders Conference 1990a:24). This recommendation implicitly targets antisocial persons.

- Communication (within communities, between elders and others, between residents and institutions and governing authorities);
- Equity (in hiring and promotion, and also in the sense of nondiscrimination and non-nepotistic behavior in general);

Cultural values;

- Role models (elders as role models in schools, in conflict resolution, and in institutional settings such as alcohol treatment programs);
- Subsistence (protection as well as transmission of traditional skills and knowledge);
- Self-determination (including self-government and local control);
- Youth (their protection, socialization, encouragement of attainment, discipline, identity, self-respect);
- Language (preservation and maintenance, notably in its connection to self-esteem and cultural identity).

Following is a summary of proposed solutions to illustrate the scope and types of remedies developed by elders. The first subsection immediately below is drawn from NANA Regional Elders Conference (1990a).

Increase Iñupiaq language instruction time. Daily 20 minute instruction time is not adequate to really teach.

Sunday school teachers to teach lessons in Iñupiaq.

Teach how to respect nature and cycle of animal reproduction. (For general goals pertaining to teaching language and subsistence skills:)

- 1. Teach on weekends.
- 2. Special camps, both fresh/salt water camps and exchange campers so children will know both.
- 3. Keep Iñupiaq days [at schools] going.

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- 4. Taking field trips. The use of video equipment when people are doing normal seasonal subsistence.
- 5. School District and other entities dedicating money and other resources so Elders can teach.

(General recommendations for youth and healthy, safe communities:)

- 1. Learn to write resumes: Counselors, Student Advisors, IRA Administrators.
- 2. Pregnancy -- hold community meetings. Encourage mother/daughter, father/son talks.
- 3. Enforce existing laws.
- 4. Continue prevention efforts on alcohol and drug abuse.

(With reference to problems of elders and Elders Councils:)

- A. Find one (1) person that know [sic] how to talk to both the Elders and teenagers....
- C. Send out agendas of next meetings.
- 2. Leadership -- We are being watched by the youth. Encourage one another to be role models.
- 3. Housing -- Elders Council should take on the responsibility to write to Northwest Iñupiaq [sic] Housing in support of improvements to their homes.
- 4. Village Morgue -- Elders should write to the City Council in support of a City Morgue....
- 10. Request for Youth Facility -- Our youth have no place to go to better themselves in a controlled environment. Therefore, we as Elders should respect that the Sivuniigvik to be opened to children for this purpose.

(In relation to language preservation and maintenance:)

9. Speakers of the language need to make it necessary for people to learn Iñupiaq. Speak it all the time. Answer the telephone in Iñupiaq. Speak Iñupiaq over the CB. Speak Iñupiaq in meetings....

Label objects in Iñupiaq around the home. Publish Iñupiaq books.... Never ridicule or laugh at someone who is trying.... Appreciate niqipiaq [Native food] and never say "Aaqqaa" [gross!].

(In reference to subsistence and land preservation:)

- 31. Native studies -- Land Claims section. Should be incorporated [sic] Iñupiaq place names from our land marks....
- 36. Forbid selling of land -- write it in your will. Pass it on to your children.

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Recommendations that emerged from the 1990 NANA Regional Elders Conference (1990b) are described below. These follow most of the general themes noted in Elders Council discussions and at the 1988 Conference, but a call for more direct and aggressive political action is evident at this time. Examples include:

- 1. District [NWABSD] wide policies are not developed right -- the school district should include some communications by the respective School Board Members to require them to report to a village forum, hosted by the village itself, i.e. suspension and absence policy.
- 2. The School Board should review its policy regarding two things 1) retention, training and promotion of native teachers and administrators 2) retention training and promotion of nonnative teachers and administrators.
- 3. Educate the school system to accept Iñupiaq values as a welcome addition rather than an obstruction to deal with. Basic human values are generic and should be integrated towards developing quality of students.
- 4. Iñupiaq days must be taken seriously by the school district administration, and that they should belong to the people of the village.
- 5. Iñupiaq instructors for Iñupiaq studies is to happen regardless of western qualification.
- 6. The Elders are concerned about drop-outs from High School, and would like the District to do something about the problems (NANA Regional Elders Conference 1990b:1).

The themes of communication, equity, role models, cultural values, selfdetermination, and youth, are clearly evident in this sample of recommendations. Note that the Elders Councils wield no power or authority <u>per se</u> but lead through suasion and example. They can urge the Northwest Arctic Borough School District to act, but they cannot make it do so. They can express dismay over the drop-out problem but can't issue funds or establish policies to alleviate the problem. In a very real sense a measure of the effectiveness and prestige of the elders who work with Councils is the extent to which residents at large and formal policy makers or administrators comply voluntarily with their recommendations.

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Since the elders hold positions not unlike the U.S. Surgeon General, who is powerless in a formal sense, much rides on the strength of character and community acceptance of elders (in this respect, too, the roles of the elders parallel traditional council roles).

Following is a list of recommendations of the 1990 conference:

- Organize a Voter Registration drive to:
 elect a new governor
 - a possible amendment [sic] to the constitution of
 - the State of Alaska regarding subsistence
 - vote to dismiss Alaska Supreme Court Justice Warren Mathews
- 2. Initiate a study to determine if the Northwest Arctic Borough can assume some of the municipal governmental tasks to allow villages to use traditional or IRA Governments.
- 3. Direct the Regional School Board to adopt recommendations by the village Advisory School Boards.
- 4. There must be an effort to instill identity and self-esteem as Iñupiaq people.
- 5. Elders must take a stand while they are able and continue to give advise [sic] to the younger generation....
- 6. Show love and kindness from the heart and it will be reflected in your face. Greet all youth and treat them kindly.
- 7. Elders must have confidence and become involved. An example is to meet with the teenage youth and talk to them about teen pregnancy.
- 8. The suspension rule in the schools should be reviewed with input from the community.
- 9. Take your children and grandchildren hunting with you. Don't leave them behind just because they are too slow or weak. Children learn best by actually seeing and doing rather than just hearing and reading about something.
- 10. The City Council have sworn to obey the laws of the State of Alaska, and need to be reminded of their responsibilities to be role models, and as such, must do so.

11. Children must be taught about danger spots around the village. Also other village members should learn about another village's danger spots....

- 12. TV watching should be controlled. Many students are sleepy the next day after they watch TV unsupervised.
- 13. The Maniilaq Alcoholism Treatment Center is desperately in need of Iñupiaq culture education. There was an appeal for Elders to visit the center at least two (2) or three (3) times a week to share their knowledge (NANA Regional Elders Conference 1990b:3-4).

Here again, the topics of subsistence self-determination, communication, cultural values, role models, and youth surface as key issues.

These recommendations, though established through a consensus-building style of interaction, mask a great deal of diversity in Elders Council priorities and actions at the village level. Some village Elders Councils are relatively inactive (for instance, Kiana and Buckland), whereas others are quite active and easily mobilized (Ambler, Kobuk, and Shungnak). The reader will recall from Major General John Schaeffer's interview, summarized earlier, that resistance to the IñI concept was encountered in some villages and that some villages have been historically more active than others in their IñI activities. Local key informants are not able to account for these intervillage differences in a systematic manner. Key informants generally speak of lethargy, lack of energy among residents, shortages of facilities, resistance among some key leaders, or funding shortfalls when periods of inactivity occur, but village and personality differences are never invoked. In this passage, recent inactivity is described in one village:

Some other villages have also told us that their youth find a hard time finding recreational things to do. And so they do all kinds of things and sometimes get in trouble. Maybe you don't have that kinds of problems in Shungnak?

I don't think we are any different than the other villages when it comes to that. Our youth also don't know what to do. We had kept the gym open for them, but they were vandalizing inside of the building, and the principal stepped in. We felt that the principal

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was trying to do good things for us, and I am sure if the youth find out what the schedule is, they may be able to use the gym for recreation again. We don't have any place else where our youth could go for recreation. We do have a recreation hall, but because of lack of funds it is not being used. There are people who are qualified to run it, but no money with which to pay them.

Do you have a planning department in your city? Or in any of your organizations? Is your community coordinating whatever youth programs they have and elders programs and city programs, etc. Are they all being coordinated or are you doing nothing because nobody knows what's going on?

Again, that's the situation here in Shungnak that I see that we all see that we started programs, we started Iñupiaq Days, like you heard from some of the elders that it's dwindling down because of non-participation of basically everybody from us parents to the elders and to the students themselves. Other programs that we try to get from the state, again, is slow because of funding. For this last time that the legislative office visited the city I talked to Debbie Driver, MacLean's legislative assistant, to try to get a community building, maybe through the IRA here in Shungnak to where we can all always have a meeting place. That's what's curbing again the city functions because of a lack of a place to meet, like here in this armory today. By the laws of the National Guard, we are not supposed to be here at all. But they have fortunately given us this place to have our local meetings and the school now is charging facility fee for meetings and we can't hold our meetings up there because of the cost again. So, in the future I'd like to see a place by itself, maybe built by the IRA and combined with the city to have a city-community hall to where we can meet at will at any time.

In the next case, participation and mobilization was attributed to diligence

among elders as well as social opportunities (a feast):

The last time they had the meeting ... it was pretty good. The reason why it was a little bit better because they had a potlatch like this that's how come there was a lot of people. The first time there was only four or something like that so I've been trying to get to the other villages to get them started the elders again like they used to long ago. But Ambler, these upper Kobuk is doing real good. They have lots of elders involved and they're always going to meetings real good and Kotzebue's getting a lot better, too. Anytime you go down to Kotzebue the elders down there always have their meetings every first Monday of every month at 5 p.m. right after they have dinner and you're invited to go have dinner as a guest, but it will cost you \$1 to eat and right after that at 5 o'clock the elders have their meeting so they talk about anything. You're welcome to go to the meeting down there at Kotzebue whenever you go down there--its always the first Monday of every month on a Monday.

In two others instances, elders attributed organizational problems to resistance

and a lack of coordination among important political and economic institutions:

We have ... had people attending meetings, but they never report back to us. We don't know what's going on. The NANA board and mayor councils usually travel some place to meetings, they never report their discussions at those meetings to us. We don't know what kinds of decisions they make for us. That's why we are begging for some kind of assistance because we feel that our community has really gone out of order. If something drastic should happen we really don't want to be in a position of being nonplussed, at least we elders discuss that. We talk about these things at our meetings and have written notes to the City council requesting that we have community meetings, but they have never accepted our proposal. And since these things have been going on, we had decided that we would start looking for assistance from outside of the village. That is what I was thinking about and decided to speak on it to you.

And during that meeting, after they discussed school matters about the children, they asked us who had greater power -- the school board or the elders. The mayor told them that the elders had no source of power -- no source to cite as their strength. He said that the elders had no strength because they had no power source. That's the kind of abuse we have been taking here at ______ and we feel that it's time that that become known. That's the way that our mayor is. And so when we found that our mayor said that we elders had no power source we just silently started coasting along because we even became afraid of the City government. Because of what they say.

In yet another case, absences by elders at meetings, lethargy, and a lack of coordination are held to account for low levels of activity in one community:

... continued that absent elders at scheduled meetings have prevented them from reorganizing the Kivalina Elders Council. She expressed the need to have a Vice President as sometimes she felt very inadequate being the only official of their organization. She also said that they want the different governing bodies to work together -- the City Council, City Administration, the VPSO, IRA, She also feels that the City of Kivalina must make the etc. ordinances of the city known to the VPSO and that we all should work together. She cited the three of us coordinators working together and said that there is a need for a younger generation to help the elders of Kivalina, that we all pray for guidance to the same God, and the one thing that we all must learn is to work together instead of continually including hurtful inuendos in our conversation. She encouraged the community to unite and work together as one. Then she offered a prayer so no one would go away from the meeting with hurt feelings but be determined to work together.

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Examples of the priorities and high-profile Elders Council activities in selected villages are described below.

Ambler, Shungnak, Kobuk -- The upriver villages are organized as a "federation," or coalition that works together. Every two months meetings rotate among the three villages. Each summer a camp for elders and youth serves approximately sixty children and ten elders in five-day excursions which involve siting and building the camp, setting up a fully organized fish camp, and fish harvesting and drying. The dried fish are then taken to Kotzebue and donated to residents of the Senior Center and to students from upriver homes studying at Chukchi College or living at the Prematernal Home.

Kiana -- The Kiana Elders Council has established the Youth Action Program (YAP), which is designed to motivate youngsters away from alcohol and drug use. Meetings are scheduled once a month when interest is sufficiently high. Conceived as an outreach program, YAP is geared towards encouraging a core of interested youth to speak out and demonstrate their stand for sobriety. The YAP aims to develop healthy substitutes for substance abuse, but no specific activities associated with existing school events have yet been staged.

Deering and Buckland -- Activities in these villages are principally focused on Iñupiaq Days at the local schools. Elders visit classrooms at irregular intervals and demonstrate traditional skills and handiwork. Elders sometimes have been invited by school officials to address specific problems, such as gas sniffing. Consider the issue of economic development again. The actions and recommendations of Elders Councils are keyed towards broad life quality goals. Only occasionally are they concrete or closely focused. Most often the objective is the creation and maintenance of a healthy, supportive milieu in which opportunities can be optimized, risks reduced, and independent thinking can flourish. Our best understanding is that the Elders Councils seek to promote a foundation upon which other developments--such as economic programs, jobs, training, etc. can then build. Even so, specific developments in the economic arena rarely are broached as matters of pressing concern to the elders.

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CHAPTER 5. INSTITUTIONAL ANALYSIS¹

I. INTRODUCTION

The institutions and organizations in the Northwest Arctic Borough have established a unique decision-making process. This procedure enables leaders to identify regional issues, articulate solutions, and formulate implementation techniques appropriate to the specific social, economic, and cultural needs of residents. This process has its roots in the land claims struggle of nearly three decades ago.

Since the latter part of the nineteenth century Northwest Alaska has hosted large-scale resource exploration that led to some development. Despite extensive mineralized areas throughout the region, however, extraction of these resources was sporadic and generally short lived until the Red Dog Mine. The gold rush era of the early 1900s brought the first Euro-Americans most Iñupiat had ever seen. The brief but intense activity in the Deering-Candle-Buckland area and the Squirrel River area north of Kiana encouraged establishment of post offices and stores to serve the burgeoning population (Mauneluk Association 1974). The village of Deering sprang up in 1901 as a supply station for gold mining in the area (University of Alaska 1976).

Gold miners streamed to the Seward Peninsula following discovery of gold in the beaches of Nome. Many continued their quest northward, seeking the gold that had failed to materialize elsewhere. Most found nothing but hardship and disappointment and moved on after only a brief sweep through parts of western

1. This chapter was written by Edward Busch, assisted by Steven McNabb.

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Alaska. Sporadic and small-scale placer mining continues even now along the Inmachuk River south of Deering and in the Candle area. In 1970 approximately 527,000 ounces of gold were extracted (University of Alaska 1974).

The U.S. Bureau of Mines estimated reserves of approximately 500 million tons of one percent copper ore at Bornite along Copper Creek (University of Alaska 1974). Bear Creek Mining, a subsidiary of Kennecott Copper Corporation, invested more than \$10 million between 1956 and 1966 in exploration and development of a mining camp in that area. In 1963 the firm announced plans to begin mining but soon postponed activities, because of high costs and low copper prices (Mauneluk Association 1974).

Deposits of nonmetallic minerals such as asbestos, jade, and talc occur around Kobuk on the upper reaches of the Kobuk River in the foothills of the Brooks Range. High demand spurred exploration and mapping during World War II, and 48 tons of asbestos were mined in the mid-1940s (University of Alaska 1974). Over the years local residents mined small quantities of jade for jewelry and art products. More recently small-scale commercial operators have been active, including NANA Regional Corporation. High costs of extraction and restricted markets have constrained exploration of this resource.

Coal deposits are known near Candle on Chicago Creek, at Deering, and at scattered locations along the Kobuk River. Local inhabitants use it for heating, but large-scale operations have proved impractical as the coal's low quality bars it from use as a commercial heating or power generation fuel (University of Alaska 1974).

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Despite little actual production, interest in the minerals of the region remains, mostly because of the Red Dog discovery and mining operation. The Red Dog deposit already ranks as the second-largest known zinc deposit in the world and has yet to be fully defined. Additional deposits of lead, zinc, and silver are known nearby, notably at Lik. The infrastructure at Red Dog might make mining these deposits economically feasible.

The oil and gas potential of the Northwest Arctic Borough has received some attention, but little serious exploration has been conducted. NANA Regional Corporation entered into an exploration contract with a major oil company several years ago, but preliminary results were not promising and exploration activities ceased in the mid-1970s.

Except for Red Dog, none of these historical resource development projects had warranted that residents coordinate their efforts to identify and manage real and potential effects of those activities. One proposed project, however, spurred a consolidated response, because it posed such profound implications for the peoples of the northwest coast. Called Project Chariot, this scheme was part of the national Plowshare Program, intended to find peaceful applications for atomic power (U.S. Atomic Energy Commission 1962).

Project Chariot was devised to test the feasibility of using nuclear devices to excavate harbors. Cape Thompson, on the Chukchi Sea coast 125 miles northwest of Kotzebue and 40 miles northwest of Kivalina, was chosen as the test site. Project Chariot contemplated the simultaneous detonation of five nuclear devices at the mouth of Ogotoruk Creek. Four 20-kiloton devices at a depth of 400 feet and one device of 200 kilotons buried at a depth of 800 feet were to be set off

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to create a channel about 900 feet wide and 2,000 feet long. The explosion of the larger device would create a circular basin 1,800 feet in diameter. An estimated 30 million cubic yards of material would be "excavated" by these nuclear explosions (U.S. Atomic Energy Commission 1962). Available literature indicate no other purpose for Project Chariot than that coincidentally it would create a deepwater port for future resource development in the region.

The Atomic Energy Commission set in motion an extensive program of monitoring the natural environment of the project area. The stated intent was to provide comparable pre- and postevent environmental baseline data to permit analysis of the effects of the nuclear explosions. Biological studies began in March 1958 (U.S. Atomic Energy Commission 1962). The U.S. Geological Survey had already begun planning efforts and conducted field work that same year.

Project Chariot documents currently available confirm the biological and environmental bias of the studies performed prior to the scheduled test. In one report only 16 pages of 84 in the chapter entitled "The People" were devoted to the human environment and the possible consequences of detonating nuclear devices in a populated area (U.S. Atomic Energy Commission 1962). In the foreword to this same report the authors (the Committee on Environmental Studies for Project Chariot) stated:

We believe the many reviews of the data and consultations with many scientific people, warrant the conclusion that if the detonation were carried out the chance of biological cost at the ecological level, including jeopardy to the Eskimos or the plants and animals from which they derive their livelihood, appears exceedingly remote.

Little in this report documented or refuted the above statement.

A second report, a compilation of articles by individual researchers, did contain several articles on the human inhabitants of the test area. In fact, researchers lived in Kivalina for a period of 22 months and in Noatak for one summer. Articles by these researchers presented detailed descriptions of the daily lives of the villagers. Neither indicated that the villagers were informed as to the purpose of these visits or the ultimate use of the information collected. The relative importance of this subject to Project Chariot was apparent by the number of pages it occupied in the publication. Of a total of 1,225 pages, 184 were devoted to the people of the nearby villages. Although other sections speculated about the possible effects of Project Chariot on the natural environment, no similar conclusions were reached regarding comparable effects on residents (U.S. Atomic Energy Commission 1966).

A U.S. Geological Survey report (1966) did caution, however, that the detonation of nuclear devices could affect local water supplies. This report investigated the theoretical effects of radioactive fallout on the hydrologic resources used by plant, animal, and human organisms near the project and recommended:

For some such excavations, effects on the hydrologic environment could be substantial and could seriously handicap man's subsequent activities. Accordingly, until experience has been gained, it is considered advisable that each proposal for nuclear excavation provide for an appraisal such as is presented by this report, and that postshot phenomena be studied in sufficient scope to verify the preshot appraisal--in particular, to determine the actual fallout pattern and the actual dispersal and ultimate disposition of fission products relative to interception by vegetation, overland transport (both water and wind), and stream transport.

Basically, the Atomic Energy Commission was to perform a postevent monitoring program to determine the degree of "interception by vegetation," while consequences to the human population were completely ignored. Nonetheless, residents of communities closest to the project site (Point Hope, Kivalina, and Noatak) worried about the potential hazards posed by radioactive fallout and the effects on them and the animals on which they relied for subsistence. Howard Rock, born in Point Hope, returned in 1961 to discover that the Atomic Energy Commission had made no effort to consult the residents of these communities. Project Chariot was abandoned, but it had exposed the need for a unified voice for the Native peoples to deal with these externally generated projects and governmental decisions. Howard Rock responded by founding the <u>Tundra Times</u> in 1962, a weekly newspaper that provided an early forum for Native issues in Alaska. In 1966 the first statewide organization of Natives--the Alaska Federation of Natives--was formed (Arnold 1976).

This period thus provided opportunities for an emerging and relatively youthful Native leadership to become involved in the evolving land claims debate and to challenge the federal government to consult with the Native peoples who would be most affected by its decisions. Native organizations sprang up in various regions of Alaska, a number of which were the precursors to the regional profit and nonprofit corporations that would ultimately take root in each of Alaska's regions established in late 1971 by the Alaska Native Claims Settlement Act (ANCSA).

Willie Hensley of Kotzebue founded the Northwest Alaska Native Association in 1966. Robert Newlin of Noorvik was one of the organization's first chairmen. Hensley was elected to the Alaska House of Representatives in 1966, one of six Natives that year. He served on the first board of the Alaska Federation of Natives and as the organization's president during 1972-1973. Thus, the stage

was set for the eventual succession to self-determination of the peoples of the region.

II. BACKGROUND

1. Regional/Village Corporations' Merger

In the decade following passage of ANCSA regional and village corporations mandated in the act established themselves as major economic and political powers. Eleven village corporations and one regional corporation were created in the region (Table 5-1). The corporations simultaneously had to deal with the massive task of identifying and filing selections for their land entitlements (Table 5-2).

During and immediately following the corporate organization and land selection efforts, it became apparent to the region's leadership that economic survival of the village corporations would be very difficult. With the exception of the village corporation for Kotzebue, the rest were relatively small. Individual village corporations were ill-equipped to deal with the demands of managing a modern corporation endowed with a sizeable land base and a considerable infusion of cash.

NANA Regional Corporation proposed a merger with the village corporations. The corporation's leaders traveled to each of the villages numerous times to discuss this proposal. In 1976 all of the village corporations except that in Kotzebue voted to merge with NANA Regional Corporation. Thus, the financial, natural, and human resources of 10 of the 11 village corporations consolidated with the

TABLE 5-1

NANA REGION ANCSA CORPORATIONS' ORIGINAL SHAREHOLDER ENROLLMENTS AS OF SEPTEMBER 14, 1974

Corporation	Enrollment
Ambler	166
Buckland	159
Deering	<u> </u>
Kiana	339
Kivalina	191
Kobuk	63
Kotzebue	1,983
Noatak	281
Noorvik	487
Selawik	477
Shungnak	161
NANA Regional	4,905

Source: Arnold 1976

TABLE 5-2

NANA REGION VILLAGE CORPORATIONS' ORIGINAL ANCSA LAND ENTITLEMENTS

Corporation	Acreage
Ambler	92,160
Buckland	92,160
Deering	92,160
Kiana	115,200
Kivalina	92,160
Kobuk	69,120
Kotzebue	161,280
Noatak	115,200
Noorvik	138,240
Selawik	138,240
Shungnak	92,160

Source: Alaska Native Claims Settlement Act, 1971

regional corporation into a single corporate vehicle. This unified approach could be seen as a harbinger of future events in the region.²

The Northwest Alaska Native Association, the first regionwide organization, was established to represent the interests of the NANA region in land claims settlement negotiations. The passage of ANCSA and the creation of NANA Regional Corporation embodied the prime goals of the association. Yet the need remained for an organization to represent the social interests of the region's residents. Thus, the Northwest Alaska Native Association was also the precursor to Maneuluk Association, the region's nonprofit social services organization.

Both NANA Regional Corporation and Maneuluk (later changed to Maniilaq) Association had structural and operational similarities. Their boards represented every village in the region. Both would travel to the villages at least once a year to meet with residents to discuss the organizations and their functions and to solicit advice and guidance. Both entities consulted the villages prior to making important decisions. Both relied on the village councils organized under the Indian Reorganization Act (IRA) or the traditional village councils for village input. And, even though NANA Regional Corporation was a profit-making corporation, both organizations placed the social well-being of their constituents as a high priority.

2. Where not otherwise referenced, information in this chapter on ANCSA corporate development is based on personal observations and knowledge of the author.

2. The NANA Regional Strategy

Shortly after the merger of the village corporations into NANA Regional Corporation, the presidents of NANA Regional Corporation and Maniilaq Association approached Alaska's Governor's Office. They sought state assistance in establishing a regional mechanism to coordinate the various and often conflicting programs of the numerous public and private agencies in the NANA region. The eventual outcome was the NANA Regional Strategy.

The NANA Regional Strategy ultimately proved so successful that it served as a model for statewide application. The core principles of the NANA Regional Strategy were applicable anywhere regions were grappling with a multitude of public programs that all too often seemed unresponsive to the real needs of residents. Core principles centered on establishing regional mechanisms to accomplish the following (Maniilaq Association 1985):

- Provide a unified voice for residents.
- Establish a single contact point for organizations outside the region.
- Develop coordinated and rational policies for capital projects and social services.
- Facilitate provision of services and public facilities by eliminating duplication and gaps in public programs.
- Create a decision-making mechanism responsive to and indicative of the needs of the region.

The regional strategy concept was also an instrumental force in fashioning a region's response to impacts brought about by major resource development

activities. The following broad goals reflect the central themes of the NANA Regional Strategy:

- Raise the standard of living through balanced and phased economic development.
- Protect the environment and subsistence-based culture.
- Strengthen the spirit and pride of the Iñupiat Eskimo and reduce the causes of social problems brought on by rapid social and economic change.
- Develop local management capability and local control to make self-determination a reality.

Each of these broad themes included a number of more specific goals and objectives developed to guide implementation of the regional strategy.

The mechanisms established to accomplish these goals included the formation of the following task forces, each charged with addressing a specific issue: Lands, Economic Development, Health and Social Services, Education, and Facilities. Members of these task forces included representatives of the key public and private organizations with either regional programmatic responsibilities or a direct interest in the deliberations of the respective task force. Therein lay the strength of the regional strategy as formulated in the NANA region--the coalescence of all parties to an issue to focus discussion and strive towards consensus. The process thus established was replicated in other forums in the region and ultimately provided the framework for the formation of a regional government.

More importantly, this process became the cornerstone of decision-making on issues of regional scope. Organizations in the NANA region, including NANA

Regional Corporation, Maniilaq Association, and the Northwest Arctic Borough, meet to consider their options. When appropriate, other organizations also participate. The villages and Elders are routinely consulted. The overriding goal is to achieve consensus and reach sound decisions through thoughtful and open deliberation.

III. THE MULTI-BOARD

1. Origins of the Multi-Board

The evolution of the NANA Regional Strategy structured and institutionalized a decision-making mechanism. The strategy was overseen by the Steering Committee, made up of the presidents of NANA Regional Corporation and Maniilaq Association and the superintendent of the Northwest Arctic School District. In the formative years of the strategy the committee's membership also included representatives of the Governor's Office and the two agencies (Alaska Department of Community and Regional Affairs, U.S. Department of Housing and Urban Development) that provided the initial startup funding. These latter three public agency representatives gradually reduced their participation as the strategy successfully became an integral part of the region's decision-making processes.

As mentioned in the previous section, a number of task forces were established to coordinate activities and strategy implementation in key issue areas. The NANA Regional Strategy sponsored an annual three-day conference, first held in November 1981, during which all of the task forces would meet and report on their activities to the conference attendees. As the strategy matured, the breadth of conference participants was expanded to include representatives of the village IRA (Indian Reorganization Act) councils, city councils, and elders. Representatives from all of the various federal and state agencies that operated in the

borough region also attended. Likewise, the goals of the strategy expanded to incorporate the needs of those attendees who supported incorporation of the strategy into their programs.

As of 1984, the primary thematic goals of the NANA Regional Strategy were (Maniilaq 1985):

- 1. Raise the standard of living.
 - a. Stimulate balanced, phased and appropriate development to create jobs for maximum local hire.
 - Increase local processing of resources to create
 jobs and to reduce cash flow out of the region.
 - c. Encourage investments in roads, ports and runways. Improved transportation facilities would reduce transportation costs and improve the economic development climate.
 - d. Closely coordinate manpower placement programs to maximize local hire.
 - e. Train and support individuals interested in starting occupations such as fishing, agriculture, furfarms, and guiding as alternatives to working for large corporations.

2. **Protect the environment** and the subsistence-based culture.

- a. Manage growth and development so that the environment and subsistence are protected.
- b. Design economic development projects so they minimize impacts and site projects where they will do the least harm.

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- c. Advocate on behalf of subsistence.
- 3. Strengthen the spirit and pride of the Iñupiat Eskimo.
 - a. Raise morale and pride through a cultural revival and eliminate conditions that weaken the Iñupiat spirit.
 - b. Increase opportunities for developing both technical and subsistence skills so people can function effectively in both cultures.
 - c. Create a sense of self-worth and self-esteem by providing job opportunities in the villages.
 - d. Make visible job opportunities being created through economic development.

4. Develop local management capability and local control.

- a. Develop a new approach to training that blends traditional values and modern management techniques so people from this region can develop skills within a familiar framework.
- Develop targeted career training to prepare youth for key jobs in each sector of the economy.
 - Develop a middle management group from local village talent to be crew leaders, technical coordinators and supervisors to make sure community development projects happen.
- d. Train local council members in community organization skills and in decision-making techniques. Emphasize analysis of long-term costs of community development projects.

e. Teach local managers how to conduct town meetings that encourage public participation.

- f. Encourage establishment and growth of independent small businesses so that residents can be their boss and be independent of large corporations.
- g. Establish local strategies to provide a framework for further planning that includes economic development, community facilities, land use and social and health services.
- h. Maniilaq will study the feasibility of computerizing plans for rapid update.
- i. Maniilaq will develop a management tracking system for monitoring and updating plans. It may prove feasible to computerize the tracking charts so that agencies, communities and corporations can have rapid access to updates.
- j. Use NANA, Maniilaq, the Northwest Arctic School District and the City of Kotzebue as a training ground for developing managers.
- k. Encourage maximum local involvement and public participation in the design and review of economic and community development projects.
- Investigate the usefulness of borough government, a regional IRA Council, or any other structure that gives the communities a mechanism for improving services and local control.

The key theme of the NANA Regional Strategy is management of the process of change (Maniilaq 1985). The strategy sought to foster public and private

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cooperation in the design and implementation of projects so as to prevent negative impacts on the subsistence lifestyles of the residents while improving job opportunities in the region. The strategy relied as well on reinvoking traditional extended family support networks and cultural values, such as cooperation, persistence, and pragmatism (Maniilaq 1985).

2. The "Tri-Board"

Many important events occurred in 1981. The Iñupiat Ilitqusiat (IñI) program was formulated (see section IV. Iñupiat Ilitqusiat), 'and councils of elders were organized in each of the villages. The Regional Elders' Council, consisting of the presidents of each of the village Elders' Councils, began meeting quarterly to discuss issues arising in each of the villages. An annual Regional Elders' Conference was held in Kotzebue in April to discuss the more critical issues of regional scope. Because of the importance of the Iñupiat Ilitqusiat program and Iñupiat values, the boards of the major organizations in the borough also met at the same time as the Regional Elders' Conference. Initially included were the boards of NANA Regional Corporation, Maniilaq, and the Northwest Arctic School District. Not surprisingly, these same three entities were the core members of the NANA Regional Strategy Steering Committee. This group became known as the "Tri-Board," and its origins can be traced directly to the NANA Regional Strategy. The first Tri-Board meeting was held in 1981 during the formation of the IñI program.

The first meeting of the Tri-Board resulted in resolutions supporting the IñI program by each of the individual boards. In the ensuing year the IñI program expanded and goals were put in writing. A Regional Elders' Council meeting

adopted the document in 1982, and it was subsequently incorporated into the NANA Regional Strategy (Maniilaq 1985).

3. Operation of the "Multi-Board"

After incorporation of the Northwest Arctic Borough in 1986, the borough assembly joined what then became known as the "Quad Board." Even though the school district was subsumed by the borough under state law, the school board remained as a separate participant out of recognition of the importance of education. IRA and Traditional councils became more active. The Northwest Iñupiat Tribal Council formed as a regional tribal group. These organizations and others, such as the Board of Kikiktagruk Iñupiat Corporation (the village corporation for Kotzebue), were becoming more actively involved in the IñI movement and regional issues and began attending the Regional Elders' conferences. The boards of these respective organizations would then hold their own meetings to act upon resolutions in response to conference discussions. The Quad Board began being referred to by some as the "Multi-Board."

Regional Elders' conferences and Multi-Board meetings differ. Funding permitting, the Regional Elders' Conference is held each year. In the past some funds have been provided through the Alaska Humanities Forum and state programs such as on drug and alcohol abuse. Since all of Manillaq's funds are programmatic in nature, that organization has considerably less flexibility in allocating funds to support such activities as an Elders' Conference when a direct link to the purposes of the funding cannot be clearly demonstrated to the satisfaction of the funding agency. This fact, coupled with reductions in funding to Maniilaq, resulted in inadequate support for a Regional Elders'

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Conference in 1989. None of the other regional organizations had enough money to make up the shortfall.

Among the Multi-Board members, NANA Regional Corporation has the greatest degree of discretion in choosing how to budget its monies and for what purposes. NANA has, in fact, consistently budgeted funds to support its own efforts with respect to the IñI Program. These funds were earmarked initially for in-house staff and activities related to NANA's role in working with the Elders and coordinating with other organizations to foster the development of the IñI Program. Funding was not provided by NANA directly to the IñI Program.³ Table 5-3 illustrates the levels of funding budgeted by NANA for NANA's fiscal years 1985 through 1991.

T	FY	AMOUNT
	85	\$50,000
	86	\$42,900
	87	\$71,000
	88	\$91,122
	89	\$121,520
	90	\$182,233
	91	\$371,506

TABLE 5-3 NANA REGIONAL CORPORATION IñI PROGRAM BUDGET FY85-FY91

Source: NANA Regional Corporation

Funding in the earlier years was designated primarily for NANA's Elders' coordinator salary and expenses. This person was an Elder and a board member; until his death, NANA's Elders coordinator was Robert Newlin. As NANA became

3. NANA did, however, financially support IñI and the Regional Elders' Conference by other means. For example, NANA contributed \$14,530 for the 1988 Regional Elders' Conference. This funding was provided as a direct contribution and was not a budgeted expenditure (NANA Regional Corporation 1988).

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more actively involved in the IñI Program, funding slowly increased. The recent dramatic increase in NANA's financial support for the IñI Program was a result of several factors. Foremost, the corporation realized that increased funding was in keeping with its overall commitment to the program. Secondly, and of no less importance, the corporation believed it appropriate to honor Robert Newlin's work with the Elders by ensuring that the IñI Program would continue to grow and serve the people of the region. This was also in keeping with NANA's goal of incorporating the tenets of IñI into its overall operations. The increased funding not only supports NANA's Elders' coordinator, it also funds NANA's staff IñI coordinator, a position created within the past year. These funds also support one couple in each village to work on instilling the values of IñI in the village and to assist people as needed. Travel expenses for Elders to attend the annual AFN convention are also budgeted.

At the Regional Elders' Conference, representatives of all key regional organizations (NANA Regional Corporation, Maniilaq, and the Northwest Arctic Borough) report on their programs and how they responded to concerns raised at the last Regional Elders' Conference. As pointed out by one key informant, any issue or question raised at such a conference is addressed by Maniilaq Association, and Maniilaq staff report back to the Elders. This responsiveness indicates the great respect afforded the Elders by Maniilaq and the other regional organizations (Busch, pers. comm.).

Attendance at an Elders' Conference by these organizations' representatives does not in itself constitute a Multi-Board meeting. The Multi-Board meets only under specific circumstances and only to discuss significant issues of regional scope, usually after other attempts at resolution have failed or proven inadequate. The

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Multi-Board mechanism does not substitute for decision-making prerogatives of any single organization. Nor do the region's leaders want an issue to gain undue significance by virtue of calling a Multi-Board meeting to deal with it.

A Multi-Board meeting will not be held if another forum is more appropriate and effective. The region's efforts to deal with its chronic substance abuse problems illustrate the range of alternative approaches. The Regional Elders' Council, concerned about the epidemic proportions of this problem, requested a regionwide conference on alcohol abuse which was held in Kotzebue on November 1, 1988. Alcohol and drug abuse has been a longstanding problem in the NANA Region. The community of Noorvik had held a daylong meeting in the fall of 1988 to discuss the problem. It was attended by NANA, the borough school district, and all of the program managers at Maniilaq, and strove to accentuate the severity of the problem and the urgency of finding solutions.

During the same period of time numerous public meetings had also been held at the Kotzebue Senior Center. The City of Kotzebue was scheduling a special election on retaining the ban on the sale of alcoholic beverages that had been enacted by Kotzebue voters the previous year. Willie Hensley, then a state senator, spearheaded the 1988 Alcohol/Drug Conference to present a forum for discussing the positive results of the year-old ban. The conference brought together the leaders of NANA, Maniilaq, and the Elders as well as public safety officials, agency staff, and elected officials from around the state (<u>The Arctic Sounder</u>, Nov. 9, 1988). It was the first conference of this magnitude to address alcohol abuse in the NANA Region.

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No Multi-Board meetings were held in 1989. One reason was that the abovementioned regionwide conference was viewed as sufficiently effective and well attended that a Multi-Board meeting on the same topic was deemed unnecessary (Busch, pers. comm.). A second, related reason was that alcohol and drug abuse are intense issues for many people, and the regional conference had left many feeling that enough energy and emotion had been devoted to the subject for a while. Also, Multi-Board meetings require a significant commitment of time and resources, and excessive Multi-Board meetings would tend to dilute their importance and impact.

Multi-Board issues are thus handled very carefully. Multi-Board meetings are called by the member organizations only after the top officials of the organizations have met to discuss the issue or issues and have reached consensus that the Multi-Board forum is appropriate. A Multi-Board meeting can also be called at the direction of the Elders' Council.

A Multi-Board meeting is held at the Regional Elders' Conference whenever possible and appropriate. The region's organizations also schedule their respective board meetings at the same time to assist with travel costs of delegates. Attempts are made to coordinate with the regularly scheduled meetings of public bodies such as the borough assembly and the school board. This coordination of meetings of organizations' governing bodies originated with the Regional Strategy, when the annual Strategy Conference was held in Kotzebue.

During the Regional Elders' Conferences, the participating boards recess and reconvene as the Multi-Board. If appropriate, the Multi-Board will adopt resolutions passed by the Regional Elders Conference. Then the individual boards

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will meet independently and enact their own resolutions in support of the Multi-Board resolutions. At one Multi-Board meeting in Kotzebue the boards of the individual organizations discussed and adopted resolutions in the same room with all of the other boards in attendance doing the same. This was an extraordinary display of consensus on the issues at hand.

Issues sometimes arise that require a Multi-Board meeting at a time different from the Regional Elders' Conference. For example, the region might decide to take a position before the state legislature. One key informant stated that subsistence might warrant a Multi-Board meeting during the 1990 legislative session because of the extreme importance of subsistence to the region's residents (Busch, pers. comm.). However, a Multi-Board meeting to address subsistence was unnecessary due to the statewide Subsistence Summit Conference sponsored by the Alaska Federation of Natives (AFN) in Anchorage on April 10-11, 1990.

On December 22, 1989 the Alaska Supreme Court, in <u>McDowell v. State</u>, declared Alaska's rural subsistence preference unconstitutional. Thus, subsistence became a major issue during the 1990 state legislative session. AFN scheduled the conference immediately preceding a joint public hearing by the House and Senate Resources Committees to be held in the same location as the AFN conference (Alaska Federation of Natives 1990a).

AFN hoped the conference would coalesce Native opinions on resolving the subsistence dilemma and forge a united position for public testimony before the Resources Committees. Three resolutions representing unanimous consensus in the Native community were adopted at the conference. These resolutions called for

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an amendment to the state constitution that would guarantee a preference to subsistence use of wildlife resources and continued state management of subsistence resources on federal lands; recognized the protection of subsistence rights as a priority for Alaska Natives; and directed AFN to work with the state to make state regulations and statutes more responsive to the subsistence needs of Alaskans (Alaska Federation of Natives 1990b). Notwithstanding the political pressure brought to bear by AFN and others, including the governor, the Alaska legislature failed to enact any measure in 1990 to resolve the subsistence dilemma.

4. Origins of Multi-Board Issues

As has been previously described, all of the NANA Region's organizations are village based. Issues that ultimately reach the Regional Elders' Council or the Multi-Board often arise at the village level first. Issues rooted outside the region, such as OCS activities, must be brought to the attention of the Elders by the leaders of the appropriate organization. These externally generated issues come to the attention of the institutions long before they reach the Elders. It is the responsibility of the leadership to apprise the Elders of these sorts of issues so that they can be discussed until a consensus is reached (Busch, pers. comm.). As one key informant noted, the Elders will be very much interested in any offshore activities and related onshore development. This informant pointed out that the Elders consider the sea their "refrigerator".

Maniilaq's President described the three main ways that issues are brought to the attention of Maniilaq (Busch, pers. comm.):

1. A resident raises it at an IRA Council or public meeting.

2. A village IRA or Traditional Council will report on the issue to the Maniilaq Board.

3. Maniilaq Association raises issues in its program reports to funding agencies.

If Maniilaq feels that any of the issues presented to it are significant, it will be brought up to the other organizations that compose the Multi-Board. This action is taken if the issue appears to be of regional importance, if it is of concern to a large number of the villages, if it represents an issue of broad scope warranting a coordinated response regionwide, or if it is of such magnitude that more than one regional and/or local organization must deal with it. Moreover, issues of regional significance often are multifaceted and interrelated, e.g., local employment is directly related to substance abuse and to education. Addressing one issue often means addressing others, and more than one organization usually becomes involved.

Following evaluation of the specific issue, the leadership of the member organizations will decide whether that issue warrants Multi-Board attention. The same evaluation process that is applied by Maniilaq officials applies equally to the other participating organizations. Thus, by the time an issue reaches the Multi-Board, consensus has already been reached by the borough region's leadership that it is an issue warranting the attention of many organizations, that it is larger than any one organization can resolve. ł

IV. IÑUPIAT ILITQUSIAT

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1. Origins

Iñupiat Ilitqusiat (IñI) originated with a series of Elders Conferences held from 1976 through 1981 to retain and strengthen oral traditions of the Iñupiat. The Elders also began to consider specific issues confronting the people in the region. They eventually focused on the most severe problems, such as alcohol and drug abuse and suicide. Others participated in these discussions, which prompted key leaders to formulate a program to deal with these severe problems. This program became known as the Iñupiat Ilitqusiat (literally, teaching and learning Iñupiat) program.

Inclusion of the key cultural and social components of the Iñupiat Ilitqusiat program in the regional strategy paralleled the emergence of the Iñupiat Ilitqusiat program. The genesis of the IñI occurred in 1981, when the region's leadership, primarily John Schaeffer, president of NANA, Robert Newlin, Willie Hensley, and others realized that the restoration of the traditional Iñupiat's values was vital to the survival of the people of the NANA region. The people worked tirelessly through seemingly endless, enervating and emotional meetings. Honest, often agonizing, self appraisals resulted. The Iñupiat identified their problems and considered the consequences of not taking corrective actions (NUNA 1981).

No one denied the seriousness of the situation, yet the Iñupiat of the region grasped the opportunity to deal with their problems as an expression of cultural vitality. Their values had withstood the onslaught of time and difficulty for thousands of years. As a result of these realizations, IñI became formalized and recognized as an integral element in the lives of the people. Also, the people

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reaffirmed faith in the Elders as central to the success of the InI program and to the present and future well-being of the Iñupiat. InI originally had been called the Spirit Movement, a name later discarded because it conjured up notions of shamanism and aroused suspicions in some people (Busch, pers. comm.) In progress initially stalled because of confusion about Clarification by program proponents centered on the fundamental values of the Iñupiat culture and the central role of the Elders in reinforcing

The interrelationships between the NANA Regional Strategy, the Multi-Board, and the InI movement are profound and pervasive. Each evolved in its own way but in close harmony with each other. Eventually, the InIstook a central role in all of the region's efforts at self-determination.⁴

At the core of the Iñupiat Ilitquisat program are the following Iñupiag values:

4. A measure of the significance of InI to governance of the borough was the award to Maniilaq Association in August, 1990 of a \$100,000 grant through the 1990 Innovations in State and Local Government Awards Program. Sponsored by the Ford Foundation and the John F. Kennedy School of Government at Harvard University, the Innovations Program recognizes state and local government efforts that successfully address difficult policy issues. Maniilaq Association nominated the InI Program, one of 75 semifinalists selected from a field of 1,552 entrants. These 75 semifinalists were invited to submit more detailed applications, of which only 25 were selected for a site visit. Following that visit, representatives of Maniilag were invited to Boston for a presentation on the InI program. Maniilaq Association was one of 10 organizations nationally to be awarded a grant. The selection committee felt that the InI program could be reproduced in other communities, a significant factor in the selection of Maniilaq. The grant funds will be used by regional and local Elders councils to support IñI programs of their choice. (The Arctic Sounder April 11, 1990, The Borough Bulletin Fall 1990).

its intent.

and reinstilling those values.

- respect for elders
- love for children
- respect for others
- respect for nature
- hunter success
- domestic skills
- humility
- sharing
- cooperation
- hard work

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- avoidance of conflict
- spirituality
- family roles
- humor
- knowledge of language
- knowledge of family tree
- responsibility to tribe

The IñI program synthesized goals to realize these values and distributed them widely. Organizations established structures to incorporate the tenets of IñI into their operations. IñI goals became the goals of the NANA Regional Strategy, which further reinforced integration of the IñI program into the private sector component of the region's activities. Since all major regional organizations had been instrumental in the original formulation of the regional strategy and in its continued evolution, incorporation of the goals of IñI into the regional strategy lent credence and a degree of commitment that might not otherwise have occurred.

2. Iñupiat Ilitqusiat and the Elders

The central role of the Elders exemplifies the IñI movement. The overriding goal of the IñI movement is survival of the Iñupiat people. The Elders, as the repository of centuries of Iñupiat experience, would be the conduit for this experience and traditional Iñupiat values to succeeding generations.

The Elders took responsibility for implementation of Iñupiat Ilitqusiat. Elders' Councils, established in each village, oversaw implementation of program goals at that level and transmitted village concerns to the Regional Elders' Council. The Regional Elders' Council, which consisted of the presidents of the village councils, meets quarterly to address those concerns raised at the village level in terms of their regional implications and how they can be resolved. Representatives of the region's organizations attend the Regional Elders' Council meetings to report on their activities as they relate to the goals of IñI, to seek advice, and to respond to the needs of the Elders' Council.

The regional organizations also provide assistance to the Elders as a part of their ongoing programs. NANA Regional Corporation, Maniilaq, and the Northwest Arctic Borough each have a full-time staff person whose primary responsibility is to work with the Elders. Although no clearly delineated roles yet exist for each organization, Maniilaq generally works directly at the village level with local Elders' Councils and the local schools to mesh the program goals and philosophy of IñI with those of the schools. NANA also works at the village level through individuals selected to instill the values of IñI in the everyday lives of residents of the community. The borough generally works with communities and the schools to consolidate the tenets of IñI. Maniilaq's IñI coordinator provides assistance to the village Elders' Councils.

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Some Elders' Councils are better organized than others, so the coordinator targets those most needing organizational assistance. Maniilaq's purpose is to help the Elders deal with each issue in a manner appropriate to the individual village setting. The Elders work closely with IRA and Traditional councils, which often can access federal funds unavailable to other entities to apply to problems identified by the Elders.

The Upper Kobuk River villages of Ambler, Kobuk, and Shungnak formed an Upper Kobuk Elders Council in the early 1980s to deal with common issues, primarily substance abuse. The Elders work directly with affected families in their areas, focusing on improving well-being of the people in their villages. The Elders also meet individually in their respective villages.

The Elders view planning and communication as the keys to successfully addressing problems, according to Maniilaq's IñI coordinator, who specifically referred to the NANA Regional Strategy as an example of how that can be accomplished. Elders involved themselves in the Regional Strategy through participation on the various task forces and at the annual conference. The success of that process has carried over to the present operation of the Elders' Councils.

Maniilaq's IñI coordinator concentrates on getting Elders into the village schools. There they can be integrated into the educational system and teach the cultural values that are at the heart of IñI and the survival of the Iñupiat people. As will be discussed later, this marriage of IñI and Western education is among the most fundamental of the IñI program's goals.

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NANA Regional Corporation's key staff person for the IñI program confirmed the importance of education to the success of IñI and its goals. A significant goal of the IñI program is to improve the education of the region's youth. In general, the needs of each village should be reflected in the local education curriculum. Overall the graduates of the region's education system ought to be able to cope in the Western working world with a minimal degree of trauma and failure. Incorporating the goals of IñI by applying the skills of the Elders in the classroom is seen as a way to achieve that goal. Another technique is to place trained facilitators or coordinators in the villages to elicit village needs and incorporate responses to those needs into the educational system. The substantial budget increase for the IñI Program recently enacted by NANA Regional Corporation is partly earmarked for funding two individuals in each village to accomplish this mission.

The NANA Regional Corporation furthermore designates a board member to act as liaison with the Elders. Since the inception of the IñI program that person had been Robert Newlin, one of the prime proponents of the IñI movement. Following Newlin's death in 1989, another board member, has assumed that role.

NANA Regional Corporation is updating the IñI plan, but progress has been relatively slow. Several key people are no longer involved with the program, notably John Schaeffer and Robert Newlin. The intensity and emotional nature of the alcohol initiative required a "cooling off" period before proceeding to the next stage. It was noted that campaigns such as the ban on the sale of alcohol in Kotzebue typically dwell on the negative aspects of the issue and those who are involved. This is demanding and costly in human terms, and people often need a break afterwards (Busch, pers. comm.). Thus, in recent years the region's

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leadership had focused on addressing specific, critical issues and seeking solutions by whatever means appropriate, including application of the principles of IñI. To a certain extent, however, the leadership was not specifically concentrating on the IñI Program itself. Each of the region's organizations was primarily carrying out the IñI Program as it saw that program fitting within its particular realm of activities. A need remained to fashion an overall structure for the IñI Program within which all of the region's organizations would operate their respective portion of the program in a complementary and supportive manner.

To that end, NANA is developing a revised and updated IñI plan that would more precisely define the respective roles of the region's organizations, among other tasks. The NANA FY91 budget for the IñI Program is a direct result of this planning effort.

3. Iñupiat Ilitqusiat Goals and Principles

The 1982 Regional Elders' Council meeting developed and adopted the original IñI goals by resolution. They were prepared in conjunction with the Regional Strategy and incorporated in their entirety into it. The following are the IñI goals and basic principles (Maniilaq Association 1985):

INUPIAT ILITQUSIAT GOALS

- Teach Human (Iñupiaq) Values
- Develop Individual Identity and Self-Esteem
- Develop Incentive and Motivations
- Develop Use of Iñupiaq Language
- Preserve Iñupiaq Cultural Heritage
- Teach Traditional Job Skills

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BASIC PRINCIPLES

- Every Iñupiaq is responsible to all other Iñupiat for the survival of our cultural spirit, and the values and traditions through which it survives.
- Through our extended family, we retain, teach and live our Iñupiaq way.
- 3. Elders are responsible for cultural survival and transmission of traditional values and skills.
- Iñupiaq is the medium through which cultural identity will be transmitted.
- Iñupiaq is the language in which traditional values and skills will be taught.
- Our understanding of our universe and our place in it is a belief in God and a respect for all His creations.
- 7. Our land is the physical symbol of our Iñupiag spirit.

The NANA Regional Strategy plan expounds upon these principles. Of particular interest here is the degree to which education is stressed as an important component of the IñI program. Following are statements from the plan about the relationship between IñI and education.

- Elders must be respected for their knowledge of language and skills, and should be given a meaningful chance to educate children at home and at school.
- 2. With authority of the Elders' Councils and help from formally educated adults, we must find ways to use Western institutions, such as schools and governments, to promote Iñupiag values and lifestyle.

- 3. Iñupiaq should be spoken exclusively in day-care centers and early childhood education programs.
- 4. Oral and written Iñupiaq should be taught in the schools.
- 5. School district policy should give equal emphasis to both languages.
- Teachers of Iñupiaq should be supported and recognition and value given to their abilities.

Through formal adoption of resolutions of support by the boards of NANA, Maniilaq, and the school district (the Tri-Board), IñI goals approved by the Regional Elders' Council, and incorporation of the IñI goals into the Regional Strategy, the region has identified the means by which education can be instrumental in the implementation of the goals of IñI. The importance of education was further underscored by a Multi-Board meeting in May 1988 called solely to address education (Maniilaq Association 1988). The following regional organizations participated and presented their perspectives on education: NANA Regional Corporation, Maniilaq Association, Northwest Arctic Borough School District, Chukchi College, Northwest Iñupiat Tribal Council, and the Northwest Arctic Borough. In recognition of the significance of both the topic and the forum, top officials from each organization and both of the region's legislators attended.

The first resolution adopted by the Regional Elders Council in 1989 concerned education. The Elders urged youth of the region to continue their education past high school and to take advantage of opportunities available to them in pursuit of higher educational attainment (Regional Elders Council 1989).

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The Regional Elders' Conference held in Kotzebue in April, 1990, adopted a number of education recommendations. (Refer to Chapter 4 for a more detailed discussion of the 1990 Regional Elders' Conference). They reflect the scope of the Elders' concern for how relevant and responsive the educational system is seen to be with respect to the issues as perceived by the Elders. These recommendations evolved after three days of group and panel discussions and workshops. Although there was no formal process of adoption, the recommendations were presented to the conference as a whole without objection.

- Districtwide policies are not developed right--the school district should include some communications by the respective School Board Members to require them to report to a village forum, hosted by the village itself.
- 2. The School Board should review its policy regarding two things 1) retention, training and promotion of native teachers and administrators 2) retention training and promotion of non-native teachers and administrators.
- 3. Educate the school system to accept Iñupiaq values as a welcome addition rather than an obstacle to deal with. Basic human values are generic and should be integrated towards developing quality of students.
- 4. Iñupiaq days must be taken seriously by the school district administration, and that they should belong to the people of the village.
- 5. Iñupiaq instructors for Iñupiaq studies is to happen regardless of western qualification.
- 6. The Elders are concerned about drop-outs from high school, and would like the district to do something about the problem.

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- 7. There is a serious communications gap in the school district system. Elders, parents, and students do not feel any ownership of schools in their villages. Part of the problem is that the regional school board members do not report to anyone in the villages, which causes people in villages to wonder what is going on if there is a policy change, for example.
- 8. Role models in the NANA region should reflect the organizations they represent. Alcohol and drug abuse by elected officials is much more obvious and damaging than those doing it realize.
- 9. Be involved in the education of your children and grandchildren. Question teachers and communicate with them about your child's progress.
- 10. Do not defend your child or grandchild needlessly if he or she is being disciplined by the school. Support and work together with the teacher. This usually helps the child in the end.
- 11. Give advice to the students about good sportsmanship. Show the ball teams who visit our villages good hospitality. Teach our children about their relatives so they will know who they are related to when they visit another school.
- 12. If we are to maintain the Iñupiaq language, it must be used as a first language at meetings and at church. Emergency action must be taken now to maintain it. It cannot be learned only at the school (NANA Regional Elders' Conference 1990).

Accordingly, the efforts of the individual personnel of each of the region's organizations towards implementing these goals were given the full formal support of the key institutions of the NANA region. Consensus had been achieved

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regarding the value of education in realizing the goals of IñI, the survival of the indigenous culture, and preparation of the region's inhabitants for the future.

V. ECONOMIC DEVELOPMENT

1. Red Dog Mine

Red Dog Mine is the region's first locally generated thrust at major privatesector economic development. Public-sector programs and funding have dominated the cash economy of the NANA region for years. Although the private sector recently has become more prominent (see Chapter 1), economic development remains a major issue. Until Red Dog the primary private-sector economic activities were in services, retail, and transportation. Red Dog raised the spectre of enormous impacts, both positive and negative. The region's organizations marshalled their resources. They hoped to identify and neutralize unwanted effects and to anticipate and manage change. In fact, because of the self-contained nature of the mining operations, the impacts on health care, public safety, and other public services have been negligible.

NANA Regional Corporation monitors and manages the activities associated with Red Dog as the owner of both the surface and subsurface estate. Cominco Alaska Inc., the corporation's partner and the mine operator, and NANA established the Management Committee to oversee operations under the joint operating agreement between NANA and Cominco.⁵ The committee provides a forum for discussion of such significant issues as employment, job training, and work schedules to iron out potential threats to the economy, resources, and social structure.

5. The NANA-Cominco joint operating agreement is a confidential corporate document. References to the provisions of that document are through personal communication with NANA and Cominco officials.

The operating agreement authorizes establishment of advisory committees. The Subsistence Committee, composed of Elder's from the two villages closest to Red Dog (Kivalina and Noatak), oversees how mine activities affect subsistence and the cultural and spiritual integrity of residents. The Subsistence Committee recommends to the Management Committee ways to minimize detrimental impacts. If subsistence resources become unavoidably threatened by mine activities, the committee can shut down the mine. The committee pays particular attention to effects on the local caribou herd. The committee worked effectively to establish minimum flying altitudes for carriers serving the Red Dog airport during its initial stages of operation. Since then, aircraft noise has been determined not to be a significant problem (Busch, pers. comm.).

In addition, NANA and Cominco jointly sponsor a caribou monitoring program to document what if any effects mine operations are having on the migration patterns of the local caribou herd. A permanent part of the mine operation, Congress mandated this monitoring effort as a condition for the road easement through Cape Krusenstern National Monument; it will remain in effect during the term of the easement (99 years). Mitigation measures were developed to minimize disruption of the caribou. The first application of these measures occurred in summer 1989 when the road to the port was shut down long enough to allow several thousand caribou to **Eigrate** through the area (Cominco Alaska 1990b). No significant disruption **resulted** at the mine. The well-being of the local caribou herd is an accepted condition of operating Red Dog.

The response to the seepage of high levels of zinc and lead into Red Dog and other nearby creeks in the summer of 1990 illustrates how the management structure addresses critical issues. The problem developed when groundwaters

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leached metals out of the newly opened pit into a nearby creek. Concerns raised by the residents of Kivalina were first brought to the Subsistence Committee and then to the Management Committee. Concurrently, the state cited the mine for the discharge and required the discharge be stopped. Cominco, NANA, and state officials travelled to Kivalina to meet with residents and describe planned mitigation measures. (Cominco now samples water at the minesite daily and reports on those tested samples weekly to the Management Committee and to the community of Kivalina.) Cominco implemented a pumping and treatment program that has significantly reduced seepage and the levels of zinc and lead leaching into the creeks. Steps are presently being undertaken by Cominco to design and construct a permanent solution to this seepage problem. Also, the residents of Kivalina are continually apprised of resolution efforts. The state, NANA, and Cominco agree that this has been an effective and cooperative solution to the problem (Busch, pers. comm.).

The Employment Committee, composed of staff from both the mine operator and NANA, oversees training and employment. The Employment Committee addresses, as part of its purview, substance abuse and local hire. Substance abuse remains a pervasive problem in the local workforce. NANA's board of directors insisted that the Red Dog Mine site and the DeLong Mountain Transportation System (the road from the mine to the port) be free of drugs and alcohol. Major construction contractors (Enserch, most notably) conducted a rigorous drug and alcohol screening program. Cominco implemented an equally effective program to prevent importation and consumption of alcohol and drugs at the project.

Maniilaq Association had adopted a resolution in October of 1987 requesting Cominco Alaska to establish a comprehensive drug and alcohol testing and

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screening program (Maniilaq Association 1987). Four days later NANA adopted a similar resolution that additionally confirmed NANA's stance that the mine and all related facilities be drug and alcohol free (NANA Regional Corporation 1987). In spring 1988 the Multi-Board (called the Northwest Alaska Multi-Board on the resolution) passed a resolution calling for an alcohol- and drug-free environment at Red Dog (Northwest Alaska Multi-Board 1988a). Participating organizations included the Regional Elders' Council, Northwest Arctic Borough, Maniilaq Association, Chukchi College Community Council, Northwest Arctic Borough School District, NANA Regional Corporation, and the Northwest Iñupiat Tribal Council.

The Multi-Board called for a regionwide conference on alcohol and drug abuse in a second resolution adopted at the same meeting (Northwest Alaska Multi-Board 1988b). The stated purpose of this conference was to develop a coordinated regionwide strategy for resolving the alcohol- and drug-abuse problems of the region. Similar concern for substance abuse on the part of the village and Regional Elders' Councils culminated in the 1988 Alcohol/Drug Conference in Kotzebue in November (see Section III, The Multi-Board).

Cominco Alaska's drug and alcohol screening and testing program requires that all job applicants be tested as part of their employment screening for evidence of alcohol or drug use. Those that display positive results are not hired. Employees' baggage is subject to search at the job site, and the company conducts random room searches. These room and baggage searches are well-publicized company policies. Cominco fires employees with banned substances in their possession and sends them home. They are ineligible for rehire for six months. In order to be rehired, the individual must show proof of participation in a

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rehabilitation program in accordance with company policy. Both staff and management are subject to random drug tests at any time.

According to Cominco officials, preemployment physicals conducted by Maniilaq Association in Kotzebue and by an independent contractor in Anchorage screen out those with substance-abuse problems. No one at the mine site has failed a random drug test since its inception. The failure rate of the preemployment physicals, on the other hand, has been substantially higher, at times reaching 75 percent of those tested in a given cycle (Busch, pers. comm.). However, Cominco personnel officials recently indicated that the failure rate has been steadily declining. They believe that this decline is due to several factors. First, the word is out that there is no reason to apply for a job at Red Dog unless the applicant can pass the physical. More generally, there is an increasing awareness among residents of the borough region regarding the severity of the substance-abuse problem. People are exhibiting a greater willingness to confront this problem and are talking about it more openly. Social reticence is slowly being replaced by social pressures to reject substance abuse as a reason for failure.

The NANA-Cominco operating agreement requires that the Red Dog Mine operator (Cominco Alaska, Inc.) and all of the contractors and subcontractors employ as many local Native residents as possible. The agreement further states that twelve years is the goal at which time the mine's local hire percentage should be 100 percent (Busch, pers. comm.). A hiring preference for qualified Native residents extends to all jobs. (See Tables 5-8 and 5-9 and related text for resident hire statistics.)

The NANA Cominco joint operating agreement spells out the priorities for hiring employees at Red Dog. Those priorities are:

- Natives of the NANA Region who will qualify for the job or can be trained as outlined by the Employment Plan called for in the agreement.
- Individuals who have been residents of the NANA Region for at least two years.
- Individuals who have been residents of Northwest Alaska for at least two years.
- Individuals who have been residents of Alaska for at least two years.
- 5. Any other job applicant.

The agreement did not distinguish between Natives of the NANA Region residing in the region, elsewhere in Alaska, or outside the state. At its January 1988 meeting the NANA Board by unanimous motion adopted the following hiring priorities for Natives of the NANA Region:

- 1. Shareholders living in the region.
- 2. Shareholders living elsewhere in the state.
- 3. Shareholders living outside of the state.

In May 1987 the Quad Board adopted a resolution concerning local hire programs for residents of the region (Quad Board 1987). It called for each of the participating organizations to implement their own local hire plans. Signatories included the Regional Elders' Council, Maniilaq Association, NANA Regional Corporation, Kikiktagruk Iñupiat Corporation, Northwest Iñupiat Tribal Council, the Northwest Arctic Borough, and the Northwest Arctic Borough School District.

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In response to this regional consensus and to expand the pool of qualified applicants, NANA, Cominco, and its contractors instituted a series of on- and offsite job training programs geared specifically to the kinds of skills needed at the mine during construction phases of the project. Once the mine and mill were in operation, Cominco assumed all training responsibilities on site.⁶

The Kotzebue Technical Center, recently renamed the Alaska Technical Center, provided training during the construction phase of Red Dog. The <u>Kotzebue</u> <u>Sociocultural Monitoring Study</u> (Minerals Management Service 1988) described in detail the center's programs. The 1988 study reported results of followup surveys by the ATC of its graduates. There have been no additional student surveys since those reported in that study (Busch, pers. comm.); however, the ATC recently surveyed employers of graduates for the first time. They were asked to evaluate these employees in 10 categories. ATC tabulated the survey results according to the program in which the employed graduates were enrolled (i.e., building maintenance, business occupations and industrial mechanics). A summary tabulation of all responses was also prepared. Survey results indicate a high degree of satisfaction among employers with the capabilities and performance of

6. Cominco does rely on external training programs for potential employees. In fact, Cominco prefers training for employees in the more technical positions. The Alaska Technical Center in Kotzebue and the Seward Skills Center provide most of this sort of training in Alaska. Cominco officials said they were pleased with the results. Cominco actively recruits college and technical school 'students from the region for technical and managerial positions. Out of the 120 or so entry level positions generally available at the mine, approximately 80 of them require some degree of technical training or relevant experience. Cominco hired about 60 temporary employees in the summer of 1990 to work at the mine, mill, and at the port. This increased employment, primarily of residents of the borough region, offered an opportunity to provide basic training to a large number of people and to introduce residents to working at the mine and port.

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the 1987-1988 graduates (Kotzebue Technical Center 1989). Tables 5-4 through 5-7 present the results of the employer surveys.⁷

Clearly, most employers rated graduates average or above average. Of the total of 223 responses in the summary table (Table 5-4), 206 (92 percent) of the responses were average, above average, and superior. Responding employers did not rate all employees in all categories. However, respondents rated graduates of the business occupations program generally higher than the others. Of the 33 superior ratings given, 60 percent were awarded to business graduates.⁸

Cominco's ability to achieve the 100 percent local hiring goal set in the operating agreement with NANA largely will depend upon the success of the training programs available to potential employees. This includes those offered by Cominco itself at the mine site. As stated above, Cominco has been relatively pleased with the skills of the new employees hired for entry-level positions. The ratio of NANA shareholders to total employees at the mine is greater for these entry level and unskilled positions than it is for the technical and managerial positions. This was not unexpected, as all parties to the agreement realize that the greatest obstacle to achieving the 100 percent local-hire goal will be in positions requiring more education. Nonetheless, Cominco has made considerable progress towards satisfying the local-hire goal. Table 5-8 depicts

8. The number of superior ratings, or any ratings, given do not equate to the number of people being evaluated. The same person could receive a number of superior ratings.

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^{7.} Employers of graduates of the 1987-1988 program included Cominco Alaska, Inc., Maniilaq Association, NANA Regional Corporation, Northwest Arctic Borough, Northwest Arctic Borough School District, Green Construction, State of Alaska, the federal government, City of Kotzebue, City of Kobuk, City of Ambler, Enserch Alaska Construction, Alaska Technical Center, Chukchi Community College, Alaska Commercial Company, Northwest Iñupiat Housing Authority and a number of private individuals and small businesses (Busch, pers. comm.).

	Total Responses					
Evaluation Criteria	Below Average	Average	Above Average	Superior		
 Quality of employees' work 	1	12	7	3		
2. Quantity of employees' work	1	12	7	3		
3. Job knowledge	3	14	5	2		
 Able to operate equip- ment and machinery used on the job. 	1	6	6	3		
5. Basic educational skills						
Reading	1	10	4	a 1		
Writing	2	. 9	4	1		
Computations	1	. 9	3	1		
6. Verbal communication skills	1	12	3	1		
7. Responsible/dependable	3	7	4	3		
8. Accepts supervision		6	6	5		
9. Cooperates with co- workers/public	1	9	7	. 6		
10. Motivation towards work/ makes good use of time	2	6	5	4		
Totals	17	112	61	33		

TABLE 5-4 ALASKA TECHNICAL CENTER EMPLOYER SURVEY 1987-1988 GRADUATES SUMMARY RESULTS

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Source: Alaska Technical Center, 1989

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TABLE 5-5ALASKA TECHNICAL CENTER EMPLOYER SURVEY1987-1988 GRADUATESBUILDING MAINTENANCE

	Total Responses					
Evaluation Criteria	Below Average	Above Average Average		Superior		
1. Quality of employees work		4	1	1		
2. Quantity of employees work		4	1	1		
 Job knowledge Able to operate equip- ment and machinery used on the job. 		5 3	1 3			
5. Basic educational skills Reading Writing Computations		3 3 3	1			
6. Verbal communication skills	1	3	.1			
 Responsible/dependable Accepts supervision Cooperates with co- workers/public 	2	3 2 2	3 3	1		
10. Motivation towards work/ makes good use of time	1	2	2			

Source: Alaska Technical Center, 1989

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TABLE 5-6 ALASKA TECHNICAL CENTER EMPLOYER SURVEY 1987-1988 GRADUATES BUSINESS OCCUPATIONS

	Total Responses					
Evaluation Criteria	Below Average	Average	Above Average	Superior		
1. Quality of employees work		4	3	1		
 Quantity of employees work 		4	3	1		
3. Job knowledge 4. Able to operate equip-		4	2 4			
ment and machinery used on the job. 5. Basic educational skills						
Reading Writing Computations	1 1	4 4 5	1			
6. Verbal communication skills		6	•	1		
 Responsible/dependable Accepts supervision 		2 1	3	23		
9. Cooperates with co- workers/public			4	3		
 Motivation towards work/ makes good use of time 		2	3	2		

Source: Alaska Technical Center, 1989

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TABLE 5-7 ALASKA TECHNICAL CENTER EMPLOYER SURVEY 1987-1988 GRADUATES INDUSTRIAL MECHANICS

	Total Responses						
Evaluation Criteria	Below Average	Average	Above Average	Superior			
1. Quality of employees	1	4	3	1			
work 2. Quantity of employees work	1	4	· 3	1			
3. Job knowledge	3	[.] 5	2	1			
 Able to operate equip- ment and machinery used on the job. 	1	3	Ī				
 Basic educational skills Reading 		3	2				
Writing Computations 6. Verbal communication	1	2 1 3	2 2 2				
skills		5	2				
 Responsible/dependable Accepts supervision 	1	2	1	1 2			
9. Cooperates with co- workers/public	1	7		2			
10. Motivation towards work/ makes good use of time	1	2		2			

Source: Alaska Technical Center, 1989

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the total employment of Cominco Alaska, Inc. for the Red Dog mine in calendar year 1990 by category of employee and by total employment versus shareholder employment.

The percentage of shareholder employment remained level throughout the year, ranging from a low of 56 percent to a high of 59 percent of the total employment of Cominco Alaska at the mine site. The increases in employment in the months of April through September reflect the hiring of temporary employees due to the increased pace of summertime activities.

The figures above bear out the low rate of shareholder participation in the managerial and technical positions. The rate of shareholder employment in these job classifications ranged from 6 percent to 10 percent in 1990. Of a total of from 51 to 56 such positions at the mine through 1990, shareholders only held from three to five management and technical positions. Shareholder participation in all other positions throughout 1990 was considerably higher, ranging from 68 percent to 74 percent of the total employment in these other categories. These positions included mill operators, mine workers, maintenance personnel, and all other support positions. Cominco has aimed its on-site training programs towards these categories of employment. Cominco believes that some future mine management and many of the technical personnel will emerge from the rank. Onthe-job training will facilitate this accession to the managerial and technical levels. Cominco and NANA recognize that the more technical and sophisticated the job responsibilities, the more on-the-job training and formal education will be required to achieve that level. It is also recognized that formal technical education, such as a college engineering education, will be required for those seeking upper level management positions. This training and education, in

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TABLE 5-8 RED DOG MINE, 1991 NANA SHAREHOLDER EMPLOYMENT

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	<u>Management/Technical Employment</u> Total NANA Shareholder			Other Employment			Total Employment		
Month				Total	Total NANA Shareholder			Total NANA Shareholder	
		Number	Percent		Number	Percent		Number	Percent
January	52	3	6%	164	118	72%	216	121	56%
February	51	5	10	175	125	71	226	130	58
March	52	5	10	184	129	70	236	134	57
April	52	5	10	199	143	74	251	148	59
May	55	4	7	189	133	70	244	137	56
June	55	4	7	197	140	71	252	144	57
July	56	4	7	222	152	68	278	156	56
August	55	4	7	231	160	69	286	164	57 ⁻
September	54	4	7	226	160) 71 -	280	164	59
October	55	5	. 9	221	152		276	157	57
November	- 61	5	8	216	147	68	277	152	55
December	63	5	8	215	147	68	278	152	55 ୍
Annual Avg.	55	4	8%	203	142	. 70%	258	147	57%

Source: Cominco Alaska, Inc.

concert with ATC and the Seward Skills Center training will form the foundation for successfully achieving the 100 percent local hire goal.

Red Dog mine production began in November 1989. By January 1990 more than half (56 percent) of the total employment at the mine consisted of NANA shareholders. Fully 72 percent of the nonmanagement and nontechnical personnel were shareholders. These levels of shareholder employment reflect the commitment of the region's organizations to employing shareholders and local hire. Many passed resolutions to confirm the region's commitment to the local hire goal of the NANA/Cominco joint operating agreement.

These employment levels likewise reflect Cominco's commitment to local hire and the success of Cominco's training programs. Red Dog is a complex state-of-theart mine and mill complex. Cominco developed a unique training program that halved training time for many jobs. The mill operating foreman conducted the training, and trainees and the instructor wrote the training manuals. They toured working mines and a Cominco zinc smelter. By mine startup the new employees had a solid grounding in mine operations and mill procedures (Cominco Alaska 1989).

Local hire by the mine's subcontractors is also an important issue. With the mine now in operation the number of subcontractors at the site has been reduced to three from the larger number on site during the construction phase. These are the food service and housekeeping (NANA-Marriott), concentrate haulage (Arrow Transportation Services), and medical services (physicians' assistants) (Fairweather) subcontractors. Table 5-9 presents 1990 employment figures for these subcontractors.

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TABLE 5-9 RED DOG EMPLOYMENT, 1990 SUBCONTRACTORS

		NANA/MARRIOTT			ARROW TRANSPORTATION			
	Total	Total Share- holder	Percent Share- holder	Total	Total Share- holder	Percent Share- holder		
January	35	26	74	30	17	57		
February	39	27	69	32	18	56		
March	34	26	76	32	18	56		
April	36	27	75	31	18	58		
May	38	28	74	32	³ 20	63		
June	43	33	77 -	31	19 >	61		
July	50	36	- 72	35	· 20	57		
August	44	33	75	35	21	60		
September	52	39	75	37	21	57		
October	43	33	77	35	20	57		
November	47	31	66	33	21	63		
December	42	26	62	33	20	60		
Annual Average	42	- 30	73	33	19	59		

Note: Another subcontractor (Fairweather) had two employees throughout 1990, neither of whom were NANA shareholders.

Source: Cominco Alaska, Inc.

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Not surprisingly, NANA-Marriott, a joint venture of NANA Regional Corporation and Marriott Corporation, has the highest shareholder hire rate of the three subcontractors. Shareholders consistently comprised three-quarters of NANA-Marriott's total Red Dog employment. Arrow Transportation, the trucking subcontractor that hauls the zinc concentrate to the port, employed shareholders in more than half of its workforce throughout 1990. Arrow also trains shareholders how to drive the special two-trailer rigs used to haul concentrate. No shareholder works for the medical services subcontractor, but that subcontractor employs only two people.

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Work schedules have been an ongoing concern. Cominco Alaska presently employes a four-week-on/two-week-off (4/2) rotation; however, the company is also allowing departments to choose a two-week-on/one-week-off (2/1) schedule. Conversations with key informants pointed out the following concerns with the 4/2 schedule (Busch, pers. comm.):

Could seriously hamper employees' opportunities to pursue subsistence activities.

Could discourage stable, family-oriented employees.

Could cause stress, leading to substance abuse and/or failure to return to the job.

An increase in substance abuse generally would increase related social and medical problem areas.

Could encourage relocation out of the region.

Either the 4/2 or 2/1 rotation schedule could reduce potential employment.

Cominco prefers the 4/2 rotation because of better fits with on-site training, an integral part of the Red Dog operation. The 100 percent local hire goal of the operating agreement can be achieved only through extensive on-the-job training, according to Cominco. No local labor force exists with the skills and training required to operate the mine. Many NANA shareholders have some experience operating heavy equipment and possess basic mechanical and electrical skills. Even so, considerable additional training is required to teach local residents use of the specialized equipment and the project's rigorous operating standards.

Company officials have pointed out that such training has always been standard operating procedure for Cominco. The operating agreement's local-hire goal and the lack of an experienced local labor force has intensified Cominco's in-house training program at Red Dog relative to other Cominco operations. Cominco employs three full-time trainers whose sole responsibility is to train employees in specific aspects of mine and mill operations. These three employees (mine training supervisor (operations), mill training supervisor (operations) and mill training supervisor (mechanical)) are funded by a three-year federal grant awarded to NANA Regional Corporation, which in turn subcontracted the funds to Cominco.⁹ The federal program is authorized under the Vocational Education Indian Program established by the Carl D. Perkins Vocational Education Act. NANA Regional Corporation, as a federally recognized tribe, is eligible for such assistance. The grant was awarded to NANA on January 12, 1990 for the project year January 1, 1990 through December 31, 1990. The first year's funding was intended to train 94 employees. This compares to the Red Dog entry level workforce of 120 employees, according to Cominco officials.

Training programs such as this are critical to successful operation of the mine as well as to achieving the 100 percent local hire goal. Since there is no licensing program in Alaska for the journeyman classification in highly skilled trades--mechanical, electrical, pipefitter and millwright, for example--this generally requires four to five years. Cominco has to train employees and essentially qualify them for the journeyman level through their own programs.

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^{9.} Of these three full-time training supervisors, two had already been hired by Cominco prior to award of the grant. Cominco officials pointed out that there would have been a training program staffed by full-time training employees with or without the federal grant.

Since many entry-level employees lack even the most basic skills, the full four to five years of training most likely will be required.

Cominco officials stated that the more technical and top-level management positions eventually will be filled by Native residents because it is fast tracking qualified and successful training candidates.¹⁰ Cominco, in fact, recently promoted the first shareholder to a shift supervisor position in the mill, one of five such supervisory positions. This individual was able to advance quickly, partly because he was involved in writing the training manuals for Red Dog while stationed in the Anchorage office. This experience enabled him to acquire an overview of the entire mine and mill operation more rapidly and provided insight into management and mine operating procedures prior to his assuming management responsibilities.

The unusual local hire provisions of the joint NANA-Cominco operating agreement moot comparisons to other major resource development activities in Alaska. The oil companies at Prudhoe Bay, for example, also require highly skilled employees; however without a local-hire requirement they are under no obligation to train local residents for technical and managerial positions. Hence, highly skilled

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^{10.} Cominco officials noted that the shareholder preference for Red Dog was unique, compared to other Cominco mining operations. The Polaris mine in Resolute, Northwest Territories, Canada, operates under a socioeconomic agreement with the territorial government that specifies first employment preference be given to local residents but imposes no local-hire requirement or quota. On the other hand, local residents are few, as the community of Resolute was established by the territorial government to support operations in the northern territories. There is a training program in place at Polaris. The government of British Columbia adopted the standards established by Cominco at the Sullivan mine for its structural apprenticeship certification program. The same 20-year old certification program remains basically intact. The Sullivan mine continues its training programs. In fact, all Cominco mining operations have established training programs because many have remote locations far from any significant labor force.

personnel come from company operations outside the North Slope Borough, often from the Lower 48. This approach to staffing operations also eliminates the incentive for any form of intensive onsite training programs of the magnitude necessary at Red Dog.

The same argument holds true for the work schedule. An extended period of time on site is necessary, according to Cominco officials, to maintain continuity in training and maximize the benefits of on-the-job training. Shortening the work rotation would result in greater inefficiencies and longer training periods to achieve the same results. Not everyone accepts this argument, but this approach does represent a tradeoff in personal terms, especially for the residents of the borough region. Cominco and others presently are exploring options for balancing these competing values. The valid concerns expressed by interested parties recognize the potential impacts of Cominco's decision.

On the other side of the issue is money. A two week on, two week off (2/2) schedule, for example, results in less working time than a 4/2, which translates into less wages. Local informants report that younger, single, and often non-Native workers tend to prefer the higher 4/2 wages, while most locals seem to prefer the 2/2 (though no formal survey has been conducted).

Tradeoffs often occur between operating efficiency and working conditions. The 2/2 schedule reduces income and benefits by approximately 27 percent, according to Cominco officials. Proponents of the 2/2 rotation argue that a change in the rotation schedule conceivably could mean more employment opportunities would be available (Busch, pers. comm.).

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NANA Regional Corporation unanimously passed a resolution in 1989 supporting a 2/2 rotation, which stated that such a schedule is "consistent with the physical, cultural, social and economic needs of the shareholders of NANA." This decision does not reflect results of an informal survey conducted by Cominco at the mine in May and June 1990 regarding the 4/2 and 2/2 options for schedule rotations. The survey asked employees to state their preference for a 4/2 or 2/2 work rotation. These choices did not represent a narrowing of options by Cominco; they were simply picked as a point of departure.

Only 47 of 205 employees completing the questionnaire preferred the 2/2 rotation; 158 employees were not interested in that schedule (Cominco Alaska 1990a). Cominco is offering a 2/1 rotation at the mill only, limited initially to mill operators. Such a schedule requires a minimum of three people to have enough operators to complete a shift. To date, the required number of people has not volunteered for this rotation. Cominco has since expanded the offer of a 2/1rotation to all other operations (e.g., engineering and accounting). As of the first of the year (1991) approximately 24 people were working the 2/1 rotation, in all areas but the mine operations (Busch, pers. comm.). Cominco has pointed out that the 2/1 rotation would maintain the same level of employment but would require a rotation of employees twice as often as the 4/2 rotation. The 2/1rotation would not require the salary and benefit adjustments that a 2/2 rotation would, so it will be easier to implement on a trial basis. Cominco also noted that a 2/1 rotation might significantly reduce employees' time off as the extreme weather conditions common at Red Dog may increase the time workers find themselves stranded at the minesite or in transit. A 2/1 rotation also raises Cominco's costs of transporting workers to and from Red Dog.

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Most observers said that the work schedule issue was not yet significant enough to warrant bringing Multi-Board action. The consensus seems to be that Cominco will be given the opportunity to evaluate and develop options for satisfactorily resolving this situation. The Multi-Board option remains open, however, and most likely would be exercised if requested by the Elders.

2. Northwest Arctic Borough Economic Development Commission

The Northwest Arctic Borough established its Economic Development Commission (EDC) in 1986 as a local forum for discussion of economic issues (Minerals Management Service 1988). Its original purpose was to advise the mayor and borough assembly about how to assess impacts of private economic development and how to promote desirable development. In June 1989 the borough adopted Ordinance 89-11, which revised EDC's structure and charge (Northwest Arctic Borough 1989a) and created a seven-member EDC advisory council.

Ordinance 89-11 also defined the duties of the EDC as follows:

- To review and comment on all aspects of economic development and taxation that come before the assembly and the planning commission.
- To identify and promote services designed to encourage economic development to local communities and businesses within the borough.
- 3. To collect and distribute information relevant to the borough.
- 4. To coordinate between government of all levels, businesses, and the borough residents in implementing economic development activities.
- 5. To present to the assembly an annual request for funding of the activities of the commission.

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According to an EDC member, the roles of the EDC are:

- 1. To solve some of the problems facing businesses in the borough, for example, lack of support services.
- To encourage new enterprises to promote sustained economic health, whether large-scale resource developments or small businesses.
- To prepare the borough for the impacts of large-scale development.
- 4. To foster long-range planning by identifying issues and potential effects of development and to design ways to moderate negative impacts.
- 5. To educate residents and organizations in the borough about the realities of development and available options for capitalizing on opportunities it creates.

In January 1990 EDC members included the president of NANA Regional Corporation (who also served as chairman), the president of Cominco Alaska, two local private businesspeople, and the mayor of the Northwest Arctic Borough. The advisory council consisted of representatives of the transportation, professional and/or financial, labor, and social sectors, plus one or more elected officials. Advisory council members include the chairman of the borough planning commission (political representative), a borough assemblyperson (political representative), the superintendent of the borough school district (educational representative), the president of Maniilaq Association (social service representative), the branch manager of the local bank (professional representative), a local businessperson (labor representative), and the manager of the Kotzebue state airport (transportation representative) (Northwest Arctic Borough 1990). According to the mayor, the key issue facing the borough and the EDC is economic diversification. He stated that the borough must face the realities of declining state revenues and the likelihood that the borough will somehow have to make up the shortfall. The most reasonable means by which to do this is to diversify the borough economy through an expansion of the private sector. Determining what types of business would be appropriate and realistic in light of conditions, such as available labor skills, the traditional subsistence lifestyles of residents, and the rotation schedule ultimately implemented at Red Dog are also major considerations.

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The borough administration acknowledges that the private sector will most likely expand through creation of small businesses rather than through additional huge resource development projects like Red Dog. Accordingly, its posture must be one of providing startup and management help to new small businesses. Assistance could be provided in the areas of taxes, accounting, permitting, employee training and counseling, and basic management skills.

An EDC member interviewed for this study noted that one of the most significant impacts from Red Dog was an increase in demand for existing services, particularly in Kotzebue. This resulted not from an increase in population, but from an increase in the disposable income of the present population. Red Dog workers had more money to spend but few places in the borough to spend it. Support services, such as repair and retail stores, were largely nonexistent, so people spent their money outside the region.

Another result of increased spending power was higher expectations for services as well as goods. People desired a broader array of both as well as higher

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quality. When it became evident that the existing economic base could not 'satisfy that demand, people became frustrated. The same EDC member noted that some people had moved to Anchorage, made possible by the Red Dog work schedule and direct jet service from Anchorage to the mine. EDC might want to track how people change their consumption habits and preferences as well as looking at the amount of money entering the local economy (Busch, pers. comm.).

3. Northwest Arctic Borough Economic Development Planning A state program known as ARDOR (Alaska Regional Development Organization) spurred the borough to revise the EDC. The legislature established ARDOR to foster regional economic development. The program mandated creation of regional economic development organizations to prepare development strategies and the means to implement them. The state would provide matching planning grants to support them. The borough revamped its EDC to comply with requirements of this new program. The ordinance adopted by the borough in 1989 left the existing EDC largely intact but expanded its base of support by creating the advisory council. The borough retained an economic development adviser to provide ongoing assistance to this new structure.

The borough qualified for an ARDOR grant in June 1989. One of the tasks funded was to prepare an EDC work plan. EDC has concentrated on fashioning a regional economic strategy for the borough. Among the specific tasks to be addressed are (Northwest Arctic Borough 1989c):

> Data collection/historical assessment including, but not limited to a description of the following:

- Migration
- Jobs lost/created
- Infrastructure existing/needed
- Obstacles existing/overcome
- Development impediments
- Past problem resolution
- 2. A description of the Northwest Arctic Borough and its economy including:
 - General Description
 - Population and Labor Force
 - Economy
- 3. An identification of economic opportunities:
 - Analysis of development potentials
 - Description of problems and opportunities
- 4. Development strategy including the identification of:
 - Goals and objectives
 - Multiyear workplan
 - Annual implementation plan including:

Major work elements

Schedule outlining objective, timeframe, who will

implement

Resource identification

- 5. Develop economic and community profiles for the 10 organized and the one unorganized community located in the Northwest Arctic Borough, which shall include the following information:
 - Location
 - Population

Transportation services and facilities

Climate

Community facilities

Housing

Industry

Land ownership and development potential

Utilities and rates

Labor and employment

Local government services

More details can be found in a corollary work program developed by borough planning staff (Northwest Arctic Borough, undated).

Staff will study historical employment and economic data from 1981 through 1989 and then prepare analyses of economic trends in the borough. Development opportunities by economic sector will also be described. These materials will be submitted for consideration by the EDC as it develops the Regional Economic Strategy.

The borough also received an Economic Development Administration Area Planning Assistance Program grant. It combined these two grants to fund preparation of the Overall Economic Development Plan (OEDP¹¹). OEDP identified economic development issues and problems. A list of those particularly relevant to this study and potential outer continental shelf development follows (Northwest Arctic Borough 1990).

11. The OEDP and the Regional Economic Strategy are identical. The different names reflect different funding sources.

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- 1. Private sector is too small a part of the borough economy.
- 2. Lack of information on secondary business opportunities that will be created by the opening of the Red Dog Mine operation.
- 3. Goods and services are being purchased from businesses located outside the borough.
- 4. Profits earned in the borough are being invested outside of the borough.
- 5. Some outside contractors are insensitive to the borough's local-hire efforts and requests for participation.
- 6. Lack of borough residents in management and supervisory positions on construction jobs.
- 7. Alcohol and drug abuse.

8. Lack of employment opportunities for trainees.

In response to these issues the borough developed a number of goals to guide implementation of the OEDP. Goals pertinent to the OEDP include (Northwest Arctic Borough 1990a):

- To improve the economic well being of the borough residents by reducing costs to them in the following areas: (a) energy, (b) freight, and (c) goods and services.
- To develop an ongoing business assistance program that will assist new or existing businesses in the following areas:
 (a) accounting/legal, (b) financing, (c) business planning,
 (d) facility planning, (e) marketing, (f) personnel, and
 (g) equipment.

- 3. To develop a program that will identify the secondary business opportunities that will be needed due to the operation of the Red Dog Mine.
- 4. To hold workshops on establishing business for interested residents.
- 5. To have the borough's economic development planning effort be coordinated with the business and strategic plans undertaken by significant business interests such as NANA Regional Corporation and Kikiktagruk Iñupiat Corporation (Kotzebue village corporation).
- 6. To have businesses that are located and/or operated within the borough identify their near-term and long-term job requirements and the training needs for borough residents to qualify for those jobs. This effort should be made a part of their business plans, so that an overall effort is made to capture as many jobs for borough residents as possible.
- 7. To encourage alcohol and drug abstinence throughout the borough.
- 8. To identify future resource development projects in the borough.
- 9. To coordinate economic opportunities with the local school system to ensure that the future workforce has better joboriented skills.
- 10. To encourage consumer-oriented business practices throughout the borough.
- 11. To develop an ongoing regional development strategy for the Northwest Arctic Borough.

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Among the objectives outlined to accomplish the above goals are:

- To hold a regional development conference in Kotzebue in the fall of 1989.¹²
- To hold at least four meetings of the Northwest Arctic Borough Economic Development Commission during the grant period (FY90).
- 3. To develop an implementation plan for the goals and objectives contained in this report.

EDC and the advisory council held their first joint meeting in late January 1990. Among topics discussed was the number of assistance programs in the state available to small businesses and the statewide governor's conference on small business. The EDC adopted a resolution urging the governor and legislature to fund the ARDOR program at the same level as the previous fiscal year. Members discussed the borough's employment and population surveys conducted over a threeyear period from 1987 through 1989. A comparative analysis had been prepared for the borough in December 1989. The EDC expressed concern over discrepancies in unemployment figures determined by the borough's survey as compared to figures calculated by the state (Northwest Arctic Borough 1990c). Borough figures showed unemployment rates as high as 30 percent, but figures compiled by the state showed unemployment levels at 11 percent (McNabb 1989).

EDC also discussed the economic development conference under consideration for Kotzebue. One commission member suggested that this conference might be an opportunity for local businesses to obtain professional assistance for internal

12. Held in Kotzebue October 9-10, 1990.

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functions (e.g., accounting, taxes, employee relations, etc.). Members also discussed incentives for attracting small businesses to the conference.

The education representative to the advisory council suggested broadening council membership by adding a student. This would strengthen the ties between education and economic development, one of the EDC's goals. The representative noted that the school district and Maniilaq Manpower were jointly organizing a summer work program for youth of the region.

The borough also intends to seek a legislative appropriation to evaluate the feasibility of a regional utility corporation to lower energy costs--another OEDP goal.

Much of what the revamped EDC was dealing with and the OEDP contained originated with the first EDC. For example, at the April 27, 1989 meeting of the EDC, the president of Cominco Alaska suggested that the school district concentrate on providing courses more relevant to the types of employment skills that would be required of them upon graduation. He noted that this idea was brought to him by employees at Red Dog who had graduated from district schools but who were still having difficulty acclimating to their jobs. The skills they were taught were not the skills they needed for the jobs for which they were hired. The EDC considered expanding its membership to include a representative of the education community (Northwest Arctic Borough 1989b). Ordinance 89-11 achieved that by establishing the advisory council. 1

The EDC supported by resolution the borough's application to the state for an ARDOR grant. It discussed its goals as originally specified in its enabling legislation and voted to expand its role as follows:

- To cooperate with the education community in order to develop an educated workforce.
- To encourage drug and alcohol abstinence throughout the borough.
- To encourage consumer-oriented business practices throughout the borough.

As previously stated in this section, these eventually became the goals of the borough's OEDP as well as those of the EDC.

Members first broached the idea of a regional economic development conference at this meeting. It was agreed that an already scheduled employment survey would contain one or more questions to elicit interest in a regional economic development conference. Such a conference was originally scheduled for the fall of 1989, but, as mentioned above, it was held October 9-10, 1990 in Kotzebue.

The economic development adviser wants to investigate using local coal for power generation in Kotzebue. He believes that such a project might reduce the high costs of power. NANA Regional Corporation is investigating mining local coal to power Kotzebue's electric utility. At the time of this writing no commitments have been made beyond continuing to pursue the possibility of this as an alternative to burning diesel fuel for power.

In its FY 1990 final report to the Economic Development Administration, the borough listed the accomplishments of the OEDP (Northwest Arctic Borough 1990b).

The borough inventoried all private businesses in the borough utilizing Alaska business license and City of Kotzebue sales-tax data. Table 5-10 illustrates the distribution of the 265 businesses in the borough by community.

The borough then conducted a needs assessment survey of these businesses to determine what types of assistance businesses desired. The results of the 85 returned questionnaires were tabulated and used to develop the agenda for the economic development conference scheduled for the fall of 1990. The focus of that conference was to provide assistance to small businesses in the areas they needed the most, including taxes, licensing, accounting, and personnel management.

Community	Number of Businesses
Ambler	10
Buckland	2
Deering	6 .
Kiana	13
Kivalina	3
Kobuk	8
Kotzebue	191
Noatak	5
Noorvik	13
Selawik	10
Shungnak	4
Total	265

TABLE 5-10 BUSINESSES IN THE NORTHWEST ARCTIC BOROUGH LOCATION BY COMMUNITY, 1990

Source: Northwest Arctic Borough, 1990

The borough developed and implemented a financial management system for communities in the borough, and sent out an accountant to assist them with accounting procedures and fiscal management. Most of the communities had not maintained proper records to account for public funds received over the years. They found themselves in serious financial trouble, and the borough made helping them a priority.

The borough sponsored a financial/business management workshop in Kotzebue in October of 1989 conducted by the Alaska Business Development Center. A spring 1989 survey assessed the social and economic conditions of the communities and residents of the borough, and the followup report analyzed employment trends in the borough over the past three years (McNabb 1989). The borough assisted with a whitefish test marketing program in which 1,000 pounds of whitefish were sent to San Francisco to be processed into a number of commercial food products for test marketing. If successful, a winter commercial fishery in the borough region might be developed.

In July 1990 the borough hired an executive director for the Northwest Arctic Borough Economic Development Administration to carry out the borough's economic programs formulated under the EDA and ARDOR grants (Northwest Arctic Borough Bulletin 1990). An existing staff person in the borough planning department has been assigned to the Economic Development Administration as an economic development coordinator. The first task facing the executive director, a Native resident of Kotzebue, was to organize the economic development workshop scheduled for the fall. The focus of the workshop was to provide basic guidance to individuals about how to run a successful small business. The conference included a panel of successful Native business owners and another of suppliers and vendors. The workshops focused on practical information such as preparing taxes, bookkeeping, and marketing and included reference materials.

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The executive director also coordinates efforts with other organizations to make it easier to start and operate a small business. One way is to reduce freight costs. The executive director has initiated discussions with the major airlines that serve Kotzebue in an attempt to reduce freight costs for new businesses.

A second major effort will be made to foster competition, one of the long-range goals of the borough's economic development plan. The borough hopes to lower prices on important items such as gasoline through increased competition. Accomplishing this goal depends in part on the borough's program, described above, to aid new businesses.

The borough's economic planning efforts coincide with the borough comprehensive plan, also under development. To the extent that economic issues are raised in the borough, they will be addressed through the Borough Economic Development Administration and incorporated into the comprehensive plan as appropriate.

4. Conclusion

Although EDC and the borough's OEDP are relatively young, they have both fostered pertinent and timely economic development goals. EDC actions have been incorporated without change into the OEDP. Issues raised by the membership of the original EDC carried over into the recent ordinance revising the EDC and creating the advisory council. The private sector has begun to implement suggestions made at EDC meetings. This integration of individuals from various organizations into a working and viable structure is yet another legacy of the regional strategy and continues application of decision-making mechanisms formulated over decades of effort.

VI. LEADERSHIP

1. The Leadership Environment

The <u>Kotzebue Sociocultural Monitoring Study</u> (Technical Report No. 130) recognized the strengths and political acumen of Northwest Arctic Borough leadership (Minerals Management Service 1988). Preceding sections of this chapter alluded numerous times to that leadership's effectiveness in confronting and reconciling myriad regional issues. The ability to find solutions that complement individual and collective interests of a disparate group of regional and local organizations is the touchstone of decision-making in the borough.

Rather than single out individuals or groups, it is more appropriate and informative to explore the milieu in which these leaders evolved. The introduction to this chapter discussed the framework within which a group of young Natives emerged in the 1960s to represent the interests of their people. The land claims issue sparked creation of regional and statewide Native political organizations. Several organizations arose in what is now the borough to deal with a number of critical issues. The Northwest Alaska Native Association (N.A.N.A.) was formed in the mid-1960s to: (1) improve basic health and social needs of the residents of the region and (2) seek a just land settlement for the Alaska Natives. The Kotzebue Area Health Corporation formed shortly thereafter to deal exclusively with the health needs of the region (Northwest Arctic Borough 1990).

Following passage of the Alaska Native Claims Settlement Act (ANCSA) in December 1971, the for-profit NANA Regional Corporation was incorporated as ANCSA mandated. The corporation retained for its name the acronym of the Northwest Alaska Native Association and assumed responsibility for the land-based component

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of its predecessor. Subsequently, the social services arm of the Northwest Alaska Native Association merged with Kotzebue Area Health Corporation to form Mauneluk Association (later changed to Maniilaq Association).

Tremendous demands pressured these nascent organizations and their leaders to become established, complete the monumental task of land selections, and manage the money part of the settlement. NANA leadership recognized even greater stress on smaller village corporations. Most, even the smaller ones, had a sizeable land base and cash settlement to manage. Residents of these communities, however, remained predominantly hunter-gatherers with little or no experience with Western corporations.

In 1975 leaders of NANA Regional Corporation initiated merger talks with each village corporation. These discussions resulted in the merger of 10 of the 11 village corporations, with NANA Regional Corporation the surviving entity. Kikiktagruk Iñupiat Corporation (KIC), the Kotzebue village corporation and the largest of the 11, retained its autonomy. NANA expanded its board to include two representatives from each of the merged corporations' villages as well as a representative from Kotzebue. Thus, although NANA is a moderately sized corporation in terms of original shareholder enrollment, it has one of the largest boards (Gaffney 1981). The articles of merger also specified that the village council(s) (Indian Reorganization Act councils) would be consulted prior to any action being taken by NANA that would affect the lands that would have been owned by the respective corporation had it not merged with NANA Regional Corporation (NANA Regional Corporation 1976).

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The experiences of many of the smaller ANCSA village corporations around the state attest to the extreme difficulties they faced in coping with the realities of the western economic environment. Many of these corporations still lack the human resources to be effective and competitive in the state's economy. Opportunities for profitable local investment of settlement funds are limited in most rural communities, as are opportunities for employing shareholders in corporation businesses. Village corporations elsewhere in the state have placed their land base at risk through collateralizing the land for loans or investments. Numerous other village corporations have virtually no financial assets remaining as a result of ill-advised investments or poor financial management.

The merger of the smaller village corporations with NANA Regional Corporation has eliminated the strain on the management of the village corporations to wisely manage their land and financial resources while simultaneously attempting to satisfy the social and cultural expectations of their shareholders. Village residents do not have to fear loss of their land and, hence, their subsistence lifestyles. The expanded human and financial resources available to NANA following the merger have enabled the corporation to more effectively protect the corporation's natural resources. The corporation has also been able to absorb losses from businesses in the region that provide employment by realizing profits from investments outside the region. Such a business strategy would not have been possible for a smaller village corporation.

During merger discussions in 1976 villagers fretted that a merger would result in a loss of local control. As mentioned previously, merger documents contained specific provisions for consultation with the villages prior to any major

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decisions by NANA regarding land and resources. NANA's consistent financial success and recent high income have prompted criticism of the corporation for not doing enough to promote economic development and employment in the villages. Efforts are under way to investigate appropriate types of investments for NANA to make in the villages, but to date no definite plans have been formulated.

Merger discussions with KIC have taken place periodically since the original merger, but to date the matter has not been presented to KIC shareholders for a vote. The advent of the Red Dog Mine, the ensuing royalties to NANA, and the commensurate increase in the value of NANA's asset base have substantially altered merger conditions. NANA stock is increasing in value more rapidly than that of KIC. A merger would require cancellation of existing stock and reissuance of one or more classes of new stock. A greater number of shares of this new stock would have to be issued, resulting in a substantial reduction in the value of stock held by NANA shareholders compared to the present value of stock held by them.¹³

Nonetheless, NANA's leadership devised this solution to the limitations inherent in these smaller corporations. NANA could have decided that the survival of each village corporation was each village corporation's responsibility and not NANA's, but such a position would have been at odds with NANA's concept of unity and, more importantly, to the overall cultural philosophy of the borough region.

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^{13.} A recent decision by the NANA board of directors to consider issuing a special class of stock to "afterborns" (those Natives born after 1971 and hence ineligible for the original stock distribution), if approved by NANA shareholders, will further dilute the value of NANA stock and the amount of dividends NANA can afford to pay.

This prevailing philosophy held that the survival of the Native peoples of the borough region, and hence its culture and traditions, depended upon a cohesive and unified approach to the issues confronting them. Four conditions in the borough helped facilitate practical application of this philosophy (Gaffney 1981).

First, the borough region is culturally homogeneous with its common linguistic tradition and an historical network of social alliances and trading relationships among the 11 villages. Second, the relatively compact configuration of the region has enabled the development of reasonably manageable systems of communication and transportation. Third, jurisdictions of the three dominant institutions in the region--NANA Regional Corporation, Maniilaq Association, and the school district (pre-Borough)--are virtually identical and serve the same constituents. Last, the majority of the shareholders of NANA Regional Corporation reside in the region and participate in traditional subsistence activities. As a result, much less urban-rural and region-village tension arises than in many other ANCSA corporations.

These characteristics substantiated the region's efforts to incorporate as a borough under state law. As pointed out in the state's report to the Local Boundary Commission (State of Alaska 1986):

There is a remarkable degree of social, cultural and economic unity and stability within the boundaries of the proposed borough which ' has been formed over the thousands of years of interrelation between the groups in this region. The residents are predominantly Iñupiat Eskimo, all of whom speak the same language, share basically the same culture and depend on the same basic resources for their subsistence lifestyle. This report further elaborates on the homogeneity of the borough region. It notes that the boundaries of the regional corporation and the former Regional Educational Attendance Area (REAA) were identical. ANCSA required areal coverage of the regional corporations to be based on a common heritage and the shared interests of Natives residing within that area. Likewise, the boundaries of the REAAs encompassed areas of social, economic, linguistic, and cultural homogeneity.

Gaffney's four conditions are at the heart of the origins of the borough region's leadership. When compared to other regions in Alaska, the area experienced little of the infighting, distrust, and cultural animosities that have marred the transition from subsistence to a Western economy (Gaffney 1981).

2. Institutional Leadership Characteristics

Major institutions in the region also embodied this philosophy in management styles and operational procedures. The original goals of NANA Regional Corporation identified as priorities "instilling pride and confidence in the shareholders and Natives of the NANA region" and to "preserve and protect the resources essential for continued subsistence living" (Gaffney 1981). Corporation objectives elaborated on these goals by emphasizing sustained connection between cultural heritage and land use, fostering local employment opportunities, and the development of shareholder participant structures that encouraged solidarity and involvement. The corporation strives to attain these goals by rotating the annual meeting between villages, regularly consulting with the IRA or Traditional council on land matters, and affording shareholders the opportunity to vote on significant matters (such as the Red Dog Mine) prior to formal action by the board. Maniilaq Association similarly applies this participatory philosophy to its operations. The Maniilaq board also consists of representatives from all of the villages. The board routinely consults with village councils on major programmatic issues. Maniilaq and NANA officials travel to all of the villages twice a year to hold public meetings to discuss their programs and to solicit comments from residents.

School district officials travel to village meetings when educational issues are on the agenda, and like Maniilaq's, the school board includes village residents. Of 13 school board members, seven come from villages. Moreover, each village has an advisory school board which can interact with the school board and administration.

This centralized yet inclusive management and decision-making philosophy has permeated other organizations. Village members comprised a majority of the Coastal Resource Service Area (CRSA) Board established under state law to oversee the region's coastal management program. In addition, each village designated two individuals as resource contacts to insure adequate consideration of village needs (Maniilaq Association 1985). (The Northwest Arctic Borough eventually absorbed this program, and the CRSA board was replaced by the borough assembly). Also, as previously discussed, the NANA Regional Strategy relied on village participation. The task force structure and the annual Regional Strategy Conference consolidated the villages' role in this planning process. The Northwest Arctic Borough Assembly includes village representatives, although the one man-one vote doctrine mandates proportionately greater representation from Kotzebue.

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Despite the extent of village-based representation on the boards of the region's organizations and the borough assembly, there is a surprising lack of duplication in membership. Tables 5-11 through 5-14 illustrate the membership of the key boards and the borough assembly as of 1990.

The institutionalization of this participatory decision-making framework attests to the abilities of borough leaders to operate effectively in a very demanding and time-consuming management environment. Conversely, the very success of this approach depends on the qualities and commitment of those individuals with administrative responsibilities. The persistent application of this philosophy-maximizing local participation and consensus--evidences continued support for this approach and to its perceived ability to achieve the desired results.

3. Evolution of Individual Leaders

The cadre of current leaders in the region evolved during a period of great change and challenge. One key informant postulated three elements critical to this process of evolution. The first factor mentioned was discipline. Individuals who assumed leadership roles had learned discipline from a number of sources--the Alaska National Guard, out-of-region boarding schools, and from Elders who taught them centuries-old survival skills. Also, the rigors of the Iñupiat's traditional lifestyle demanded that people be self-sufficient and selfconfident to be successful at providing their families food and the necessities of life through subsistence. These skills were often learned from their Elders, who also passed along Iñupiat values. The inculcation of these survival skills constituted the foundation of not only leadership qualities, but the culture itself. Thirdly, the values embedded in Iñupiat Ilitqusiat form the bedrock of

TABLE 5-11NORTHWEST ARCTIC BOROUGH ASSEMBLY, JANUARY 1991

Member

Village

Reggie Cleveland	Shungnak
Becky Norton	Kivalina
Willie P. Thomas	Buckland
Lloyd Davis	Selawik
Raymond Stoney	Kiana
Larry Westlake, Sr	Kiana
Marcy Baker	Kotzebue
Jeff Smith	Kotzebue
Elmer Armstrong, Jr.	Kotzebue
Suzy Erlich	Kotzebue
Helen Bolen	Kotzebue

Source: Northwest Arctic Borough

TABLE 5-12 NORTHWEST ARCTIC BOROUGH SCHOOL DISTRICT SCHOOL BOARD, JANUARY 1991

Member	Village
James Barefoot	Noorvik
Charlie Curtis	Kiana
Lynda Hadley	Kotzebue
Helena Jones	Ambler
Marie Jones	Deering
Velma Jones	Kotzebue
Reggie Joule	Kotzebue
Paula Mills	Noatak
June Nelson	Kotzebue
Vince Schuerch	Kiana
Bobby Schaeffer	Kotzebue
Brent Schuerch	Kiana (Student
	Representative)
Jennifer Stephens	Kotzebue (Student

Source: Northwest Arctic Borough School District

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NANA REGIONAL	CORPORATION	BOARD	0F	DIRECTORS.	JANUARY	1991

Member	Village
Charlie Curtis	Kiana
Stanley Custer	Shungnak
Gilbert Karmun	Deering
Bert Adams	Kivalina
Allen Ticket,Sr.	Selawik
Lester Hadley	Buckland
Rosa Horner	Kobuk
Frank Stein	Kotzebue
Axel Mills	Noatak
Miles Cleveland	Ambler
Jane Cleveland	Ambler
Don Sheldon	Noorvik
Christina Westlake	Kiana
Luke Sampson	At-Large
Martin Karmun	Deering
Raymond Hawley	Kivalina
Levi Cleveland	Shungnak
Grace Washington	Buckland
Henry Horner	Kobuk
Roland Booth	Noatak
Nellie Sheldon	Ambler
Alfred Wells	Noorvik
William Hensley	At-Large

Source: NANA Regional Corporation

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TABLE 5-14 MANIILAQ ASSOCIATION BOARD OF DIRECTORS, JANUARY 1991

Member	Village
Don Sheldon	Noorvik
Reggie Cleveland	Shungnak
Ben Atoruk	Kiana
Lydia Douglas	Ambler
Myra Adams	Kivalina
Cheryl Edenshaw	Kotzebue
Carol Wesley	Noatak
Rosie Ward	Kobuk
Hannah Washington	Buckland
Walter Gregg,Šr.	Deering
Hilda Foxglove	Selawik
Carolyn Nashookpuk	Pt. Hope

Source: Maniilag Association

the culture and of what it means to be an Iñupiaq. They also embody leadership qualities. (See preceding discussion of the Iñupiat Ilitqusiat program.)

Many of the region's leaders share similar backgrounds, particularly in John Schaeffer, who has held many posts, attended high school at education. Mount Edgecumbe (formerly a BIA boarding school now run by the state) in Sitka, Alaska. He also had extensive training in the national guard. Pete Schaeffer, an employee of NANA Regional Corporation since 1974 and a vice president since 1986, also attended Mount Edgecumbe. So did Al Adams, one of the region's elected representative since 1980. Willie Hensley, who has served in various capacities, was raised by elders, who saw in him innate ability and encouraged him to go on in school (Busch, pers. comm.). Hensley attended high school at Harrison-Chilhowee Baptist Academy in Tennessee. He then went on to the University of Alaska and George Washington University, where he graduated with a bachelors degree in political science and a minor in economics. Former legislator Frank Ferguson grew up in Fairbanks, where he attended high school. Marie Greene enrolled in Chukchi Community College the year after she became

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employed at Maniilaq Association and is seeking a bachelors degree in rural development.

One key informant postulated that the brightest individuals usually were the ones afforded the opportunity to attend out-of-region schools. School provided this generation of leaders the opportunity to meet with others from elsewhere in the state and to discuss current issues, particularly land claims. There, they laid the framework of trust necessary for the land claims settlement negotiations preceding passage of ANCSA.

The stability of the region's leadership has contributed significantly to its success. Until 1986 NANA Regional Corporation had had only one president--John Schaeffer. NANA Regional Corporation's chairman of the board, Robert Newlin, had served in that capacity from the corporation's inception until his death in 1989. Some board members have served since the corporation's founding. Of the 23 directors on the board in 1976, the first year the newly expanded board was seated following the merger, nine of those original members were still on the board in 1989 (NANA Regional Corporation 1976; 1989). Two new members were elected to the board out of seven up for election. One of those two seats was vacant due to the resignation of the incumbent. The remaining five seats were retained by incumbents. In addition, the board filled the seat left vacant by the death of Robert Newlin (Busch, pers. comm.). A new chairperson was elected for the first time in the corporation's history. At this board meeting the board selected a new president, the third in the corporation's history. Willie Hensley had created this most recent vacancy when he resigned to pursue higher public office in 1990 (lieutenant governor).

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Incorporated in 1986, the Northwest Arctic Borough's first mayor, John Schaeffer, resigned later that year when appointed adjutant general of the Alaska Department of Military and Veterans Affairs. Marie Greene served as acting mayor until early 1987 when Chuck Greene was elected mayor. Greene was reelected in 1989 for a three-year term.

Until recently the borough region also has had relatively stable and consistent political representation. In 1966 Willie Hensley was elected to the Alaska State House. After four years he served in the State Senate from 1970 to 1974. Frank Ferguson was the state representative from 1970 through 1974 and senator from District L from 1974 until 1986, when he stepped down for health reasons. Hensley was appointed for the duration of Ferguson's term. Al Adams was the state representative for District 22 between 1980 and 1988 when he was elected to the Senate, succeeding Hensley, who returned to his position as president of NANA. That same election also installed the first representative from outside the region (Eileen McLean of Barrow) since 1980.

4. Robert Newlin

Without a doubt the single most influential leader in the region, and the individual universally acknowledged as the guiding force behind the region's cohesiveness and sense of purpose, was Robert Newlin. All key informants emphasized his stature and prominence (Busch, pers. comm.). Newlin's contributions far exceeded those that arose simply from any titular positions he held. Individuals and organizations sought his insight and counsel on a wide variety of matters. One key informant discussed Newlin's background as it pertained to his development as a respected leader. Newlin's parents were among the first Friends Church pastors in the region. The Newlin family traveled

extensively, and Robert became widely recognized as one who knew the Iñupiaq language and culture. He gained a reputation as an excellent translator. People trusted him as they came to realize that his primary interest was serving his people. He also possessed a sense of humor, a trait highly valued in the Iñupiat culture.

When NANA Regional Corporation was established and Newlin was elected to the board, he was already in his forties. Most of the other board members were much younger. He was thus looked to for leadership and wisdom. The people had seen how he had been raised, and they recognized in him the strengths and values that proved to be critical in the eventual success of the corporation. These same strengths and values undergird Iñupiat culture and Iñupiat Ilitqusiat (Busch, pers. comm.).

The most telling commentary of Newlin was that he lived the Iñupiaq way and set an example for all to follow. He never lost sight of those values and how they could be applied to the problems facing his people and their institutions. A top official of NANA Regional Corporation, who has been an executive officer since 1975, stated that Newlin was primarily responsible for guiding the corporation to its present status and that he virtually singlehandedly insured that the corporation never veered from its overriding mission (Busch, pers. comm.). Newlin has been characterized as the father of the NANA region and the heart and soul of NANA (NANA September, 1989).

At its August 17, 1989, meeting in Kotzebue, one month after Newlin's death, the board of directors voted to select a new chairman the following month. It also decided to hold Newlin's seat open until March of 1990 to honor him and to

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signify how great his loss was to NANA. The board asked the residents of Noorvik to select a successor to Newlin. NANA Regional Corporation has established a memorial fund in Newlin's honor to provide financial support for aspiring leaders and other culturally relevant projects.

Many people stepped forward at the memorial service held in Anchorage following Newlin's death to attest to his accomplishments (Busch, pers. comm.). Newlin treated everyone with respect regardless of who they were or what they believed. He listened more than he talked, another core Iñupiat value. Newlin's life exhibited the ideal to which all Iñupiat should aspire. Through his efforts on behalf of the borough region, the Iñupiat Ilitqusiat program took form, and NANA Regional Corporation never lost sight of its roots and its social responsibilities to its shareholders.

5. Past and Present Leaders

The borough region has never lacked leaders with foresight and ability. Though Robert Newlin arguably was the "standard bearer" for leadership ideals, others also exemplified their commitment to their people through their deeds. John Schaeffer's tenure as president of NANA Regional Corporation for 14 years (from 1972 until 1986) indicates the stability of capable leaders in the borough region. Schaeffer credits his leadership style and success to his experience and training in the national guard, where he served from 1958 until 1972 (Maniilaq Association 1984). Schaeffer's military career was interrupted when he assumed the position of the presidency of NANA Regional Corporation.

The president of Maniilaq Association, Marie Greene, has held that post since 1981. Previously, she had been executive vice president for six years. Greene

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also serves on the borough assembly and has been a member of many statewide boards and commissions. She currently sits on the Kotzebue Telephone Cooperative Board, the Bureau of Indian Affairs Advisory Council for the Nome Agency, and the Alaska Federation of Natives Human Resources Board.

Other individuals in the borough region have also served in many capacities. For example, Pete Schaeffer, a vice president of NANA Regional Corporation, was president of the borough assembly, vice chairman of the Northwest Arctic Borough Charter Commission, chairman of the Kotzebue Fish and Game Advisory Committee, vice chairman of the board of directors of the Kotzebue Electric Association, and a member of the Community Advisory Council for Chukchi Community College.

Chuck Greene, mayor of the Northwest Arctic Borough, served the region as the governor's representative in the Hammond administration and currently serves on the board of directors of Kikiktagruk Iñupiat Corporation and the regional representative for the statewide Economic Development Commission. Frank Ferguson was a NANA board member for several years and president of the Alaska Federation of Natives for one term. He also served on the Kotzebue City Council for five years. Al Adams has been a member of the board of directors of Kikiktagruk Iñupiat Corporation, the village corporation for Kotzebue. He also served on the NANA Coastal Resource Service Area Board, the statewide Alcohol Beverage Control Board, and the board of the Community Enterprise Development Corporation (CEDC).

Willie Hensley, long an active leader in the borough region, has been involved in a wide range of activities of regional and statewide import in addition to those mentioned elsewhere in this section. As noted previously, he was a founder and the first executive director of the Northwest Alaska Native Association in

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1966, the precursor to NANA Regional Corporation. Since then he has held a number of positions in various organizations. He has been Chairman of the Board of the Tundra Times newspaper, National Committeeman (1979-1984) and Chairman (1968) of the Alaska Democratic Party, a member of the Alaska Statehood Commission (1980), Chairman of the State Advisory Committee of the U.S. Civil Rights Commission (1976-1979), and President of the Alaska Village Electric Cooperative (1969-1971), which supplies electricity to seven of the villages in He was a member of the National Council on Indian the borough region. Opportunity from 1968-1970. Awards and citations Hensley has received include the Alaska Federation of Natives Citizenship Award in 1981 and NANA Shareholder of the Year in 1980. He was among "The Most Powerful People for the 80's" as nominated by Next Magazine. Time Magazine included Hensley in its "50 Faces for the Future," which carried with it a Leadership in America Award. Hensley was also honored in 1982 with the Inupiat Ilitqusiat Award presented by the elders of the borough region (Hensley undated).

Leadership in the borough region has recently undergone some changes, as previously described; however, these changes have largely been confined to NANA Regional Corporation. Nonetheless, the demands of leadership have settled on a few individuals. People worry about the demands placed on these few individuals and the potential for "burnout." Although the rigors of leadership and the increasing demands cause concern, it is not an atypical situation. Nearly every successful or high profile person who is viewed as being in a position of leadership is under constant pressure to participate in or contribute to any number of organizations or causes. It is a measure of the leadership's capabilities is that it continues to be effective in spite of these extraordinary demands.

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Perhaps the following anecdote will illustrate one of the reasons why the borough region is noted for the unity and qualities of its leadership. The election in 1988 for state representative for District 22 (which includes the Northwest Arctic Borough and the North Slope Borough) was uncharacteristically divisive. Two candidates from Kotzebue and one from Barrow vied for the Democratic nomination. One of the two Kotzebue candidates was non-Native, the other Native. The non-Native was married to the daughter of a longstanding NANA board member, who was also the chairman of the Regional Elders Council. The Native candidate was on the NANA board and was widely respected. He was supported by the chairman of the board of NANA, Robert Newlin, who was also the cousin of the other candidate's father-in-law. The Native candidate also was supported by the borough mayor and one of the vice presidents of NANA. The Barrow candidate won, largely because voters in the Northwest Arctic Borough split their votes for the two Kotzebue candidates.

At the start of the Alcohol/Drug Conference held in Kotzebue in November of 1988, the NANA Board member who was the father-in-law of an unsuccessful candidate addressed the gathering. He stated that he was troubled by the fact that the two opposition camps had not reconciled. He stated "We are breaking up the unity of the NANA Region." Since this individual was the chairman of the Regional Elders Council, he had voiced his concerns at the Elders meeting just held. At that meeting he and Robert Newlin had shaken hands as a first step in restoring unity. Someone requested that the one candidate and the borough mayor step forward and shake hands. They did and were joined by the other candidate. The mayor referred to the theme of the conference and stated: "We must set examples. We need to be united and grow strong together" (Arctic Sounder 1988). Π

This commitment to unity and the strength to be gained by being of one purpose are perhaps the most critical of the region's leadership characteristics. For, even after an unusually bitter election campaign that pitted respected leaders of the region against each other, they buried their differences and publicly made amends. This is all the more remarkable considering the fact that this was the first seriously contested election in the region in years. Previously, candidates such as Adams and Ferguson, who were incumbents, generally ran unopposed.

A second event in the past decade further illustrates the leadership qualities extant in the borough region. The 1982 general election was one of the most critical elections in recent history for the Native peoples of Alaska. On the ballot was Ballot Measure No. 7, which, if passed, would have repealed the law guaranteeing a subsistence preference for fish and game resources. The leadership of NANA Regional Corporation and Maniilaq Association marshalled the region's resources in an effort to mobilize the largest possible voter turnout to defeat this measure.

A tally of all the unregistered Native voters in the region was prepared by comparing the state's voter registration lists with the computerized shareholder registry of NANA. One or two individuals in each of the region's communities were selected by NANA and Maniilaq to assist the registrars in each community to get as many unregistered voters as possible registered before the deadline. The names of all unregistered voters in each community were sent to these volunteers. NANA board members also assisted with voter registration in their respective community. In addition, letters naming the voter registrars were sent to all of these unregistered voters. NANA identified employees in its office in Anchorage

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as registrars to sign up shareholders there. Lists of voter registration places in southcentral Alaska were mailed to Anchorage shareholders. Rides to the polling places were provided.

A statewide advocacy organization, Alaskans for Sensible Fish and Game Management formed in 1982 to promote the defeat of Ballot Measure No. 7, chaired by Willie Hensley. The organization distributed brochures and posters to all of the communities in the borough region as well as statewide; held meetings in the region's communities to discuss the issue and explain ballot wording; released radio and television public service announcements, and held contests for borough community representatives to top the list of voter turnout.

The result for the general election, in which Ballot Measure No. 7 was to be voted upon, was 53 percent greater turnout than the primary election three months earlier. Table 5-15 presents the voter turnout figures for the August 1982 primary and the November 1982 general elections in the region.

Ballot Measure No. 7 was defeated in the borough region and statewide. The efforts of the region's leadership and residents to mobilize the region's political power by encouraging residents to vote proved effective. The borough established its abilities to effectively address an issue of critical concern to their constituents and to deliver favorable results. Not only was the borough region's leadership able to coalesce the political power of the region, but it also had one of its own leaders in a position of statewide importance on this issue.

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	Primary Election		General Election	
	Votes Cast/		Votes Cast/	
Community	Registered Voters	%	<u>Registered Voters</u>	%
Ambler	57/115	49.5	121/138	87.6
Buckland	56/109	51.3	96/124	77.4
Deering	39/76	51.3	63/78	80.7
Kiana	101/176	57.3	143/191	74.8
Kivalina	81/130	62.3	133/144	92.3
Kobuk	20/35	57.1	29/34	85.2
Kotzebue	699/905	77.2	884/1245	71.0
Noatak	73/120	60.8	159/165	96.3
Noorvik	128/236	54.2	210/252	83.3
Selawik	128/264	50.3	245/301	81.3
Shungnak	46/104	44.2	98/119	82.3
Total	1,428/2,270	62.9	2,181/2,791	78.1

TABLE 5-15 VOTER TURNOUT-1982 ELECTION DISTRICT 22-BOROUGH REGION PORTION

Source: NANA Regional Corporation

These two examples illustrate the cohesiveness and effectiveness of the leadership in the Northwest Arctic Borough over most of the last decade. When an issue arises that threatens the very fabric of the region's cultural vitality or that appears to be unusually divisive, the borough region's leaders have consistently and forcefully responded in a manner that (1) respects the cultural and social values of the region and (2) is also politically savvy. The ability of the leadership to balance these two often contradictory goals is testimony to the level of commitment that is brought to bear on the issue at hand.

6. Future Leadership

One key informant described the qualities in the next generation of leaders likely to emerge in the borough region. They must have the confidence of the people. They must understand and appreciate Iñupiaq ways. They must possess the ability and selflessness to deal with the Western world on behalf of their people

and not for personal gain. This informant noted that those who struggle and make sacrifices for the benefit of the region and not themselves will gain recognition and the respect of the people. They will become known and eventually will assume leadership positions. An example given was attending college, which requires leaving home for an extended period of time and living in a foreign and often intimidating environment (Busch, pers. comm.).

This same informant pointed out that other less known individuals in the borough provide leadership as well and these people should not be ignored. For example, the community health aides and community health practitioners in the villages provide an extremely valuable service under demanding conditions. Through their dedication and training, they not only offer leadership, but they also serve as role models for the youth. Iñupiat teachers, too, were categorized as leaders. Leadership positions such as the presidencies of organizations and legislative office often seem beyond the reach of many, but important positions of responsibility and trust exist closer to home.

The future leadership of the borough region will likely emerge from markedly different circumstances than their predecessors. These individuals probably also will face a range of issues and problems, some still unknown, that will demand new approaches and have few if any precedents.

Discussions with key informants point to one important trend relevant to the development of the region's future leaders. As discussed above, a number of present and past leaders attended schools outside of the region and outside of Alaska. They represented the most talented and the brightest of their generation. These traits were recognized by others who were able to provide them

the opportunity to obtain a better education. This educational environment was further enhanced by the attendance at the same schools of other youthful Native leaders from around the state. Personal relationships were forged which later led to professional and political ties that strengthened the Native community overall, not only in the borough region but statewide.

Conversely, the bulk of the present younger population of the borough region has attended or will attend the borough school system. The construction of schools in all of the communities has made it possible for students to stay at home while attending school. Leaving one's village to attend school has been a traumatic experience for many young people, resulting in high dropout rates.¹⁴ The successful completion of school under these circumstances by a number of current leaders is testimony to those very qualities that contributed to their accession as leaders. Accordingly, a case can be made that those graduating from local district schools are relatively equal in educational background and attainment, as compared to those who attended relatively higher quality schools outside of the region. They are not exposed to the educational and personal challenges to which members of their parent's generation responded. The concerns being increasingly voiced in the region over the guality of the education that local students are receiving is indicative of this trait.

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^{14.} One significant measure designed to counter this trauma is the NANA Dorm Project. Since 1984, NANA Regional Corporation has funded a student housing program in Fairbanks for freshman college students from the borough region. The dorm project has the capacity for up to six male and six female students. The dorm is managed by live-in house parents, a married couple from the borough region who offer the students the stability of a family environment. They also counsel students and help them deal with the rigors of college life and separation from home. Upper class students in the dorm act as student advisors and help the counselors work with new students. The dorm is available to Native and non-Native students from the region. Establishing a successful program required a number of years of experimentation with different approaches. NANA expends on average \$35,000.00 per year for the dorm project; these funds pay the dorm parents' salaries and cover operating expenses (Busch, pers. comm.).

People between the ages of 20 and 45, the next generation of leaders, matured during a period of greater social, economic, and cultural upheaval than did their parents. The historical erosion of traditional values and cultural traits that provided strength and the skills necessary for the Iñupiat to survive has only aggravated this situation. Survival took on a whole new meaning to the Native people of the borough region. The stability and life skills provided by organizations such as the national guard and the church were supplanted by other activities and interests pursued by the region's youth. The role of elders in raising young people had been diminishing. Increasing exposure to the materialism and social demands of the Western world competed with the acquisition of traditional skills and reduced the importance of those skills in the minds of It is no coincidence that those leaders instrumental in the many youth. development of the InI Program were raised in a more traditional manner. They recognized the importance of applying traditional values in raising their children. Thus, the InI Program was fashioned in large part to overcome these destructive influences on the region's youth and to restore the ability of the culture to prepare succeeding generations for success and self-esteem.

Future leaders will have to grapple with a plethora of issues, many of which will be new to them and to the region. They will also have to come to grips with the reality that they may not be as well-equipped to deal with them as their predecessors. This may produce as great a level of stress on the leaders of the future as the issues themselves.

A number of issues facing borough residents are long-standing and remain pervasive. These include the lack of jobs, substance abuse, and the need to provide a quality education. As has been discussed earlier in this report, these

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issues are interrelated; the region's organizations have recognized this, as evidenced by the resolutions passed by the Multi-Board and its predecessors and by the individual organizations themselves. Subsistence has now come to the fore once again as a critical issue that will demand a great deal of time and energy on the part of the leadership to fashion a solution to the present quandary.

The formation of the Northwest Arctic Borough in 1986 has to a certain extent placed additional demands on the region's human resources. Now there is one more representative body whose members are elected by the general population and who must dedicate time and energy to its operation. Furthermore, the borough must retain staff to carry out its responsibilities as a unit of local government. Under state law, the borough was also required to establish a planning commission. The borough, as mandated by the state's ARDOR program, established two bodies of citizens appointed to guide the borough's economic development program. On the other hand, participation in these various groups serves as valuable training for future leaders.

Following release of the 1990 Census figures, the state must reapportion its election districts and establish a new scheme of representation in the Alaska legislature. There is great concern that the rural areas of the state will lose representation in favor of the larger urban areas. What is not known at this juncture is where the adjustments in representation will be made and what effect that will have on the borough region. Expanding the election districts in which the borough is located will dilute the borough region's representation. The borough region has historically been successful in capturing state revenues to support public facilities and services. A dilution of the region's elected representation, or representation by elected officials from outside of the

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borough region, will place greater demands on the leadership to maintain, let alone increase, its current political influence.

Future leaders will be expected to continue development and application of the tenets of the IñI Program in the borough region. As more of today's elders pass away, the challenge to the leadership will be to capture their wisdom and experiences before it is too late. Future leaders increasingly will be looked to for guidance in the absence of the elders. Pressure probably will mount on these individuals to preserve the culture and to maintain the impetus of IñI. The future leadership will also be viewed as role models for the youth of successive generations.

As demand increases, opportunities for those with leadership abilities also should rise. With the advent of the Red Dog mine, an additional opportunity exists for people with leadership qualities. The 100 percent local hire goal will in part be met by individuals with the necessary knowledge, experience, and leadership skills needed to operate the mine. These will also be the same people who could serve as leaders in the region's various organizations, as elected officials, or as staff in state government. Given the finite human resources available in the borough region (or any region), resultant competing demands on qualified individuals may prove overwhelming. Pressure will build should there be additional large-scale resource development, such as OCS-related activities.

On the other hand, the opportunity for residents to participate in educational and vocational training programs will expand the pool of skilled people in the region. Over time the region's population with employable skills should grow. Eventually, as Cominco's training of residents to fill management positions at

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the Red Dog mine matures, there will likewise be a greater number of borough residents with the sort of skills that relate directly to positions of leadership.

Additional large-scale development will present new issues. Balancing economic development with traditional lifestyles will always be controversial as long as the Iñupiat choose to preserve that lifestyle. The maintenance of subsistence resources and opportunities is perhaps the most critical element of this issue. Formulating and enforcing local hire and related training and education programs require constant effort and diligent oversight, as evidenced by NANA's experiences at Red Dog. Large-scale resource development is most often carried out by large corporations from outside the state, complicating negotiations and acceptance of local needs.

Massive state capital expenditures in the early 1980s saddled the region's communities with facilities they were ill prepared to operate and maintain once the flow of state funds dwindled. Raised expectations for modern conveniences and services are now being replaced with the realities of the true costs of those facilities and services. Elected officials and other leaders in the borough region seek solutions. Pressure mounts for local organizations to assume the burden of operations and maintenance.

7. Conclusion

After years of relative stability and consistency in leadership, change has come to the Northwest Arctic Borough. Between 1986 and 1990 a number of key individuals departed. They have been replaced with minimal disruption. The decision-making mechanisms honed over years of effort are still functioning. A

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new institution--the Northwest Arctic Borough--has been incorporated, relieving the other institutions of the governmental responsibilities they had assumed by default. NANA Regional Corporation is stronger than ever in terms of profitability and net worth (NANA 1989). Maniilaq Association has solidified its role as the social services provider in the borough region now that it has transferred to the borough those quasi-governmental functions that it had previously assumed (e.g., planning). The Red Dog Mine promises to provide revenues and job opportunities never before available to the region.

In the past, the region's leadership has effectively identified the needs of the region's people and then formulated appropriate and workable mechanisms for addressing those needs. Pre-ANCSA, the creation of the nonprofit Northwest Alaska Native Association (N.A.N.A.) to represent the Iñupiat in their quest for a just land claims settlement was the first step in an evolution of institutions crafted to serve the region. Following the passage of ANCSA and the mandated creation of the regional and village corporations, NANA's leadership recognized the inherent limitations in this corporate structure for the villages. The result was the merger with NANA of 10 of the 11 village corporations, a prophetic action that strengthened the region as a whole. Maniilaq Association, as a spinoff of the former N.A.N.A., became the region's social services provider.

In response to a multitude of independent and often conflicting or duplicative public programs, the region's leadership initiated the NANA Regional Strategy. This was the first locally generated planning program in the Unorganized Borough to formulate a system of identifying and prioritizing public needs for facilities and services and to seek the voluntary compliance of the public agencies funding those facilities and services. The NANA Regional Strategy was so successful 3

that the state legislature established and funded a three-year program for the creation of additional regional strategies in the Unorganized Borough.

The most obvious outcome of the NANA Regional Strategy was formation of the Northwest Arctic Borough. The region's leadership recognized that the region's efforts at self-determination could be enhanced by a regional government created by the voters themselves. The positive and united position taken by the leaders on this issue was largely instrumental in the successful incorporation of the borough.

Iñupiat Ilitqusiat is yet another example of the range of programs fashioned by the region's leadership to deal with the issues at hand. An important facet of this program is that it will help develop future borough leaders.

Evolution and development of the future leadership will likely differ from that of the past leadership. The challenges that these individuals will face will in some instances be the same as those faced by their predecessors and in some instances will be quite different. There is no reason to believe, however, that the cultural and social characteristics that fostered the region's past and present leadership will be less important to the next generation of leaders. The conclusions reached by Gaffney in his inciteful analysis ought to be equally applicable in the near future as they were in the near past. Fortunately for the borough region, the preponderance of leaders that oversaw the transition of the region from a subsistence culture to a mixed subsistence and cash culture are still around. Those leaders, recognizing the root causes of many of the region's more severe problems, have initiated programs and put into place mechanisms to

address them. These individuals will undoubtedly be called upon to guide and assist the next generation of leaders as they assume their responsibilities.

By any standard the achievements of the institutions in the borough region since 1971 have been remarkable. This is the true measure of the leadership capabilities of those individuals and organizations that have overseen this transformation. Π

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APPENDIX

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APPENDIX TABLE 1 FEDERAL INCOME TAXPAYER DATA NORTHWEST ARCTIC BOROUGH COMMUNITIES, 1983-1985

		TAX-	EXEMP-	ADJUSTED			
	RETURNS	PAYERS	TIONS	GROSS	DEDUC-	TAXABLE	TAX
1983	NUMBER	NUMBER	NUMBER	INCOME	TIONS	INCOME	PAID
AMBLER	. 75	111	244	\$1,042,417	\$46,954	\$801,042	\$132,885
BUCKLAND	54	81	175	791,729	16,655	618,029	89,524
DEERING	40	52	101	590,071	4,558	488,052	69,736
KIANA	117	154	305	1,796,763	80,018	1,444,584	227,629
KIVALINA	62	93	197	853,075	20,423	648,355	98,571
KOBUK	22	31	67	355,491	9,139	288,361	52,364
KOTZEBUE	933	1,256	2,273	21,402,344	1,485,469	18,219,151	3,504,299
NOATAK	96	130	250	1,304,622	28,486	1,039,110	156,693
NOORVIK	141	185	368	1,951,110	82,433	1,537,383	236,377
SELAWIK	160	215	525	1,935,823	83,269	1,367,537	174, 142
SHUNGNAK	80	102	178	1,122,733	29,859	930,759	149,493
NWAB TOTAL	1,780	2,410	4,683	\$33,146,178	\$1,887,263	\$27,382,363	\$4,891,713
STATE TOTAL	201,227	289,193	452,831	\$5,238,114,270	\$705,728,708	\$4,312,746,834	\$885,932,036

		TAX-	EXEMP-	ADJUSTED			
	RETURNS	PAYERS	TIONS	GROSS	DEDUC-	TAXABLE	TAX
1984	NUMBER	NUMBER	NUMBER	INCOME	TIONS	INCOME	PAID
AMBLER	74	107	224	\$1,134,073	\$67,947	\$888,512	\$153,276
BUCKLAND	58	85	175	983,559	15,343 -	803,340	116,249
DEERING	40	51	99	615,148	0	516,452	75,963
KIANA	122	162	313	1,751,194	49,502	1,410,514	202,196
KIVALINA	65	95	205	990,124	27,955	767,837	104,881
KOBUK	23	30	61	396,013	10,574	333,440	57,474
KOTZEBUE	1,001	1,354	2,454	23,923,409	1,680,053	20,396,024	3,878,220
NOATAK	98	134	266	1,259,624	34,553	988,951	136,012
NOORVIK	167	210	403	2,366,326	74,404	1,722,612	231,133
SELAWIK	149	202	449	1,764,542	36,742	1,319,299	164,724
SHUNGNAK	85	10 8	199	1,237,843	25,430	1,029,827	155,888
NWAB TOTAL	1,882	2,538	4,848	\$36,421,855	\$2,022,503	\$30,176,808	\$5,276,016

STATE TOTAL 205,105 298,179 470,272 \$5,684,154,794 \$864,771,179 \$4,612,811,831 \$928,118,934

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APPENDIX TABLE 1, (continued, page 2) FEDERAL INCOME TAXPAYER DATA NORTHWEST ARCTIC BOROUGH COMMUNITIES, 1983-1985

			ADJUSTED	EXEMP-	TAX-		
TA	TAXABLE	DEDUC-	GROSS	TIONS	PAYERS	RETURNS	
- PAI	INCOME	TIONS	INCOME	NUMBER	NUMBER	NUMBER	1985
\$107,05	\$839,154	\$40,335	\$1,134,996	267	122	88	AMBLER
111,50	851,185	33,744	1,086,809	224	102	67	BUCKLAND
82,36	549,808	0	651,515	101	51	41	DEERING
255,59	1,651,535	53,921	2,013,587	322	177	- 133	KIANA
94,84	744,394	26,579	971,646	220	101	. 73	KIVALINA
34,68	213,919	13,743	275,564	54	24	17	KOBUK
4,002,29	20,944,828	1,767,529	24,586,232	2,320	1,298	969	KOTZEBUE
200,73	1,253,654	37,615	1,538,729	263	139	104	NOATAK
251,68	1,812,517	80,371	2,303,376	426	221	174	NOORVIK
258,12	1,873,837	41,706	2,375,894	477	234	176	SELAWIK
153,99	1,040,993	50 , 446	1,269,248	208	118	94	SHUNGNAK
\$5,552,86	\$31,775;824	\$2,145,989	\$38,207,596	4,882	2,587	1,936	NWAB TOTAL
\$944,818,53	4,762,094,439	957,187,791.1	5,927,315,708	479,643	303,678	208,948	

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APPENDIX TABLE 2 MAIN SOURCES OF TAXABLE INCOME NORTHWEST ARCTIC BOROUGH COMMUNITIES, 1983-1985

				CAPITAL		TOTAL
1983	WAGES	INTEREST	DIVIDENDS	GAINS	PENSIONS	INCOME
AMBLER	\$978,683	\$39,832	\$37,479	\$14,850	\$6,446	\$1,077,290
BUCKLAND	716,030	16,323	36,497	18,986	0	787,836
DEERING	562,499	2,326	10,824	. 0	26	575,675
KIANA	1,641,436	48,252	69,612	28,232	15, 153	1,802,685
KIVALINA	826,619	12,013	28,254	. 0	0	866,886
KOBUK	365,994	6,547	7,659	0	0	380,200
KOTZEBUE	21,256,783	421,664	347,534	223,894	136,894	22,386,769
NOATAK	1,220,491	1,492	38,684	0	157	1,260,824
NOORVIK	1,833,933	19,334	68,964	0	1,331	1,923,562
SELAWIK	1,824,732	5,837	104,176	(2,692)	2,942	1,934,995
SHUNGNAK	1,097,704	3,526	25,179	0	0	1,126,409
NWAB TOTAL	\$32,324,904	\$577,146	\$774,862	\$283,270	\$162,949	\$34,123,131
STATE TOTAL	\$4,773,272,788	\$187,811,262	\$49,363,878	\$222,785,747	34,427,414	\$5,267,661,089

				CAPITAL		TOTAL
1984	WAGES	INTEREST	DIVIDENDS	GAINS	PENSIONS	INCOME
AMBLER	\$1,008,319	\$30,785	\$45,703	\$10,511	\$4,812	\$1,100,130
BUCKLAND	971,756	6,877	27,359	(1,877)) 0	1,004,115
DEERING	594,485	2,898	16,157	0	. 0	613,540
KIANA	1,719,900	6,727	96,254	1,496	. 0	1,824,377
KIVALINA	926,651	6,490	40,214	0	6,230	979,585
KOBUK	341,677	7,267	12,452	0	0	361,396
KOTZEBUE	23,829,517	417,308	470,366	339,344	171,247	
NOATAK	1,157,036	2,956	52,695	(3,000)) 10,570	1,220,257
NOORVIK	1,986,010	31,699	67,619	1,598	17,803	2,104,729
SELAWIK	1,652,867	6,714	106,692	17,536	1,612	1,785,421
SHUNGNAK	1,201,014	7,355	40,803	1,245	6,000	1,256,417
NWAB TOTAL	\$35,389,232	\$527,076	\$976,314	\$366,853	\$218,274	\$37,306,502
STATE TOTAL	\$5,220,793,321	\$221,304,799	\$51,061,034	\$204,391,522	\$44,983,463	\$5,742,534,139

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APPENDIX TABLE 2, (continued, page 2) MAIN SOURCES OF TAXABLE INCOME NORTHWEST ARCTIC BOROUGH COMMUNITIES, 1983-1985

1985 WAGES INTEREST DIVIDENDS GAINS PENSIONS SSI UIC INCOM AMBLER \$979,537 \$33,418 \$54,809 \$1,188 \$7,212 \$0 \$52,662 \$1,128,820 BUCKLAND 1,039,518 39,259 56,200 37,113 6,475 8,564 51,780 1,238,900 DEERING 624,421 2,290 15,281 0 0 0 19,245 661,233 KIANA 1,811,564 14,002 80,045 5,636 3,195 2,640 88,305 2,005,383 KIVALINA 943,901 6,023 34,154 0 11,214 656 46,121 1,042,069 KOBUK 212,886 5,094 6,049 0 9,816 0 10,741 244,584 KOTZEBUE 24,007,024 611,860 396,771 494,717 279,157 16,266 255,684 26,061,473 NOATAK 1,398,761 1,651 42,069 0 5,200 0									
AMBLER \$979,537 \$33,418 \$54,809 \$1,188 \$7,212 \$0 \$52,662 \$1,128,820 BUCKLAND 1,039,518 39,259 56,200 37,113 6,475 8,564 51,780 1,238,900 DEERING 624,421 2,290 15,281 0 0 19,245 661,233 KIANA 1,811,564 14,002 80,045 5,636 3,195 2,640 88,305 2,005,383 KIVALINA 943,901 6,023 34,154 0 11,214 656 46,121 1,042,069 KOBUK 212,886 5,094 6,049 0 9,816 0 10,741 244,588 KOTZEBUE 24,007,024 611,860 396,771 494,717 279,157 16,266 255,684 26,061,477 NOATAK 1,398,761 1,651 42,069 0 5,200 0 52,453 1,500,134 NOORVIK 2,077,499 34,654 79,265 (3,813) 33,038 3,681 79,274 2,303,594 SELAWIK 2,247,484 9,016 96,263 <th>TOTA</th> <th></th> <th>TAXABLE</th> <th></th> <th>CAPITAL</th> <th></th> <th></th> <th></th> <th></th>	TOTA		TAXABLE		CAPITAL				
AMBLER \$979,537 \$33,418 \$54,809 \$1,188 \$7,212 \$0 \$52,662 \$1,128,820 BUCKLAND 1,039,518 39,259 56,200 37,113 6,475 8,564 51,780 1,238,900 DEERING 624,421 2,290 15,281 0 0 0 19,245 661,233 KIANA 1,811,564 14,002 80,045 5,636 3,195 2,640 88,305 2,005,383 KIVALINA 943,901 6,023 34,154 0 11,214 656 46,121 1,042,066 KOBUK 212,886 5,094 6,049 0 9,816 0 10,741 244,586 KOTZEBUE 24,007,024 611,860 396,771 494,717 279,157 16,266 255,684 26,061,479 NOATAK 1,398,761 1,651 42,069 0 5,200 0 52,453 1,500,134 NOORVIK 2,077,499 34,654 79,265 (3,813) 33,038 3,681 79,274 2,303,590 SELAWIK 2,247,484 9,016	INCOM	JIU DIC	SSI	PENSIONS	GAINS	DIVIDENDS	INTEREST	WAGES	1985
BUCKLAND 1,039,518 39,259 56,200 37,113 6,475 8,564 51,780 1,238,900 DEERING 624,421 2,290 15,281 0 0 0 19,245 661,233 KIANA 1,811,564 14,002 80,045 5,636 3,195 2,640 88,305 2,005,383 KIVALINA 943,901 6,023 34,154 0 11,214 656 46,121 1,042,066 KOBUK 212,886 5,094 6,049 0 9,816 0 10,741 244,586 KOTZEBUE 24,007,024 611,860 396,771 494,717 279,157 16,266 255,684 26,061,479 NOATAK 1,398,761 1,651 42,069 0 5,200 0 52,453 1,500,134 NOORVIK 2,077,499 34,654 79,265 (3,813) 33,038 3,681 79,274 2,303,590 SELAWIK 2,247,484 9,016 96,263 0 14,711 3,048		\$52,662	\$0	\$7,212	\$1,188	\$54,809	\$33,418	\$979,537	AMBLER
DEERING 624,421 2,290 15,281 0 0 0 19,245 661,23 KIANA 1,811,564 14,002 80,045 5,636 3,195 2,640 88,305 2,005,38 KIVALINA 943,901 6,023 34,154 0 11,214 656 46,121 1,042,066 KOBUK 212,886 5,094 6,049 0 9,816 0 10,741 244,586 KOTZEBUE 24,007,024 611,860 396,771 494,717 279,157 16,266 255,684 26,061,479 NOATAK 1,398,761 1,651 42,069 0 5,200 0 52,453 1,500,134 NOORVIK 2,077,499 34,654 79,265 (3,813) 33,038 3,681 79,274 2,303,590 SELAWIK 2,247,484 9,016 96,263 0 14,711 3,048 63,144 2,433,660 SHUNGNAK 1,281,115 7,898 32,129 5,627 2,754 0	•••	•	8.564	6,475	37,113	56,200	39,259	1,039,518	BUCKLAND
KIANA 1,811,564 14,002 80,045 5,636 3,195 2,640 88,305 2,005,38 KIVALINA 943,901 6,023 34,154 0 11,214 656 46,121 1,042,065 KOBUK 212,886 5,094 6,049 0 9,816 0 10,741 244,586 KOTZEBUE 24,007,024 611,860 396,771 494,717 279,157 16,266 255,684 26,061,479 NOATAK 1,398,761 1,651 42,069 0 5,200 0 52,453 1,500,134 NOORVIK 2,077,499 34,654 79,265 (3,813) 33,038 3,681 79,274 2,303,590 SELAWIK 2,247,484 9,016 96,263 0 14,711 3,048 63,144 2,433,660 SHUNGNAK 1,281,115 7,898 32,129 5,627 2,754 0 46,904 1,376,422			0	•		15,281	2,290	624,421	DEERING
KIVALINA 943,901 6,023 34,154 0 11,214 656 46,121 1,042,066 KOBUK 212,886 5,094 6,049 0 9,816 0 10,741 244,586 KOTZEBUE 24,007,024 611,860 396,771 494,717 279,157 16,266 255,684 26,061,479 NOATAK 1,398,761 1,651 42,069 0 5,200 0 52,453 1,500,134 NOORVIK 2,077,499 34,654 79,265 (3,813) 33,038 3,681 79,274 2,303,590 SELAWIK 2,247,484 9,016 96,263 0 14,711 3,048 63,144 2,433,660 SHUNGNAK 1,281,115 7,898 32,129 5,627 2,754 0 46,904 1,376,423			2.640	3,195	5,636	80,045	14,002	1,811,564	KIANA
KOBUK 212,886 5,094 6,049 0 9,816 0 10,741 244,584 KOTZEBUE 24,007,024 611,860 396,771 494,717 279,157 16,266 255,684 26,061,475 NOATAK 1,398,761 1,651 42,069 0 5,200 0 52,453 1,500,134 NOORVIK 2,077,499 34,654 79,265 (3,813) 33,038 3,681 79,274 2,303,594 SELAWIK 2,247,484 9,016 96,263 0 14,711 3,048 63,144 2,433,664 SHUNGNAK 1,281,115 7,898 32,129 5,627 2,754 0 46,904 1,376,423	• •	•		•	0	34, 154	6,023	943,901	KIVALINA
KOTZEBUE 24,007,024 611,860 396,771 494,717 279,157 16,266 255,684 26,061,475 NOATAK 1,398,761 1,651 42,069 0 5,200 0 52,453 1,500,134 NOORVIK 2,077,499 34,654 79,265 (3,813) 33,038 3,681 79,274 2,303,594 SELAWIK 2,247,484 9,016 96,263 0 14,711 3,048 63,144 2,433,664 SHUNGNAK 1,281,115 7,898 32,129 5,627 2,754 0 46,904 1,376,423			0	•	0	6,049	5,094	212,886	KOBUK
NOATAK 1,398,761 1,651 42,069 0 5,200 0 52,453 1,500,134 NOORVIK 2,077,499 34,654 79,265 (3,813) 33,038 3,681 79,274 2,303,594 SELAWIK 2,247,484 9,016 96,263 0 14,711 3,048 63,144 2,433,664 SHUNGNAK 1,281,115 7,898 32,129 5,627 2,754 0 46,904 1,376,423	•		16.266		494,717	396,771	611,860	24,007,024	KOTZEBUE
NOORVIK 2,077,499 34,654 79,265 (3,813) 33,038 3,681 79,274 2,303,591 SELAWIK 2,247,484 9,016 96,263 0 14,711 3,048 63,144 2,433,661 SHUNGNAK 1,281,115 7,898 32,129 5,627 2,754 0 46,904 1,376,422	• •		generative 🕺 🔔 👘		· 2 0	42,069	1,651	1,398,761	NOATAK
SELAWIK 2,247,484 9,016 96,263 0 14,711 3,048 63,144 2,433,660 SHUNGNAK 1,281,115 7,898 32,129 5,627 2,754 0 46,904 1,376,423		-	3,681		(3,813)	79,265	34,654	2,077,499	NOORVIK
SHUNGNAK 1,281,115 7,898 32,129 5,627 2,754 0 46,904 1,376,42				14,711	0	96,263	9,016	2,247,484	SELAWIK
NWAB TOTAL \$36,623,710 \$765,165 \$893,035 \$540,468 \$372,772 \$34,855 \$766,313 \$39,996,318			•	2,754	5,627	32,129	7,898	1,281,115	SHUNGNAK
	\$39,996,31	\$766,313	\$34,855	\$372,772	\$540,468	\$893,035	\$765,165	\$36,623,710	NWAB TOTAL

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APPENDIX TABLE 3 PERCENT NONRESIDENT WORKERS AND EARNINGS, AVERAGE NONRESIDENT EARNINGS BY CENSUS AREA, ALASKA, 1987

Census Area	Nonresident Workers as % of Total	Nonresident Earnings as % of Total	Average Nonresident Earnings
Anchorage	10.9%	4.8%	\$ 7,483
Matanuska-Susitna	8.6	2.6	3,855
Kenai Peninsula	15.0	5.9	4,807
Kodiak Island	27.5	12.3	4,101
Valdez-Cordova	25.4	13.7	5,015
Fairbanks North Star	12.2	7.2	8,659
Southeast Fairbanks	10.8	4.2	3,236
Yukon-Koyukuk	8.8	5.1	6,131
Nome	9.0	7.4	9,907
North Slope	17.5	15.0	23,901
Northwest Arctic	5.6	3.7	7,946
Haines	25.1	18.2	10,077
Juneau	11.2	5.2	5,927
Ketchikan Gateway	20.6	9.2	5,915
Prince of Wales-Outer Ketchikan	29.4	16.5	4,525
Sitka	16.9	7.9	5,429
Skagway-Yakutat-Angoon	28.6	18.2	5,883
Wrangell-Petersburg	32.2	19.5	6,278
Aleutian Islands	52.9	36.4	6,582
Bethel	7.7	4.8	5,828
Bristol Bay	42.8	26.5	4,427
Dillingham	35.7	25.3	5,255
Wade Hampton	7.3	3.4	4,454
Geographic Area Unknown	34.1	30.2	7,043
Alaska Statewide	15.5%	7.0%	\$ 8,088

Source: Nonresidents Working In Alaska 1987, Alaska Department of Labor.

Note: Wages paid to state government employees are excluded from all regions and census areas, but included at the statewide level.

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APPENDIX TABLE 4 PERCENT NONRESIDENT WORKERS AND EARNINGS, AVERAGE NONRESIDENT EARNINGS BY CENSUS AREA, ALASKA, 1988

<u>Census Area</u>	Nonresident Workers as % of Total	Nonresident Earnings as % of Total	Average Nonresident Earnings
Northwest Arctic	7.7%	6.4%	\$ 9,717
Wade Hampton	9.2	5.3	4,845
Bethel	9.3	5.8	6,078
Matanuska-Susitna	8.0	2.5	3,747
Yukon-Koyukuk	11.2	7.2	6,636
Nome	9.8	9.4	11,610
Southeast Fairbanks	11.0	5.4	4,268
Anchorage	11.9	5.2	7,503
Juneau	13.3	5.9 ~	5,429
Fairbanks North Star	13.2	6.7	7,084
Kenai Peninsula	17.5	8.1	5,701
Sitka	17.0	8.6	6,527
North Slope	17.5	15.8	26,097
Ketchikan Gateway	24.8	12.1	6,677
Haines	25.2	.18.3	10,618
Valdez-Cordova	31.5	17.6	4,847
Kodiak Island	28.7	12.5	4,054
Skagway-Yakutat-Angoon	27.3	15.5	5,923
Prince of Wales-Outer Ketchikan	29.6	16.0	4,235
Wrangell-Petersburg	35.1	20.8	6,425
Dillingham	33.5	22.8	5,541
Bristol Bay	53.0	40.1	5,016
Aleutian East Borough	61.7	53.5	6,632
Aleutians West	50.5	30.1	7,570
Geographic Area Unknown	37.6	33.3	7,297
Alaska Statewide	17.3%	7.9%	\$ 8,211

Source: Nonresidents Working In Alaska 1988, Alaska Department of Labor.

Note: State government earnings and workers are excluded from all regions and census areas, but included at the statewide level.

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APPENDIX TABLE 5 RESIDENT AND NONRESIDENT TOTAL EARNINGS AND WORKERS BY MAJOR INDUSTRIAL GROUP NORTHWEST ARCTIC BOROUGH, 1987

		Earn	ings			Work	ers	
Industrial Group	Resid	dent	Nonres	ident	Resi	dent	Nonre	sident
	(\$1,000)	Percent	(\$1,000)	Percent	Number	Percent	Number	Percent
Agriculture ¹	\$ 0	0.0%	\$ 0	0.0%	0	0.0%	0	0.0%
Mining	817	82.7	170	17.3	50	82.0	11	18.0
Construction	X	X	Х	X	Х	x	X	x
Manufacturing	0	0.0	0	0.0	. 0	0.0	0	0.0
Transportation	3,705	94.1	232	5.9	244	94.2	15	5.8
Wholesale Trade	· 0	0.0	0	0.0	0	0.0	0	0.0
Retail Trade	2,826	96.3	109	3.7	368	92.2	31	7.8
Fin./Ins./Real Est.	1,429	96.8	47	3.2	166	92.7	13	7.3
Services	6,183	97.1	184	2.9	692	96.1	28	3.9
Nonclassifiable	X	X	X	X	x	X	X	т ^а Х
Local Government	15,715	97.3	433	2.7	1,411	96.2	56	3.8

Source: Nonresidents Working in Alaska, 1987. Alaska Department of Labor.

Note: "x" indicates that information is nondisclosable.

¹ Data includes only nonagricultural wage and salary workers covered by unemployment insurance. Consequently, data provided for this industry may not be representative of the industry as a whole.

Employer	Industry	Total <u>Employees</u>	Resident Employees	Nonresident Employees
Ambler, City of	Public Administration	76	71 (93.4%)	5 (6.6%)
Buckland City Council	Public Administration	70	69 (98.6 %)	1 (1.4%)
Cominco American Inc.	Mining	48	40 (83.3%)	8 (16.7%)
Hanson Trading Co./KDC	Retail Trade	88	77 (87.5%)	11 (12.5%)
Kiana, City of	Public Administration	65	64 (98.5%)	1 (1.5%)
Kikiktagruk Inupiat Corp.	Finance, Ins. and R.E.	27	23 (85.2%)	4 (14.8%)
Kotzebue, City of	Public Administration	187	179 (95.7%)	8 (4.3%)
Kotzebue Electric Assn. Inc.	Trans., Comm., Util.	92	87 (94.6%)	5 (5.4%)
Maniilaq Association Inc.	Services	435	418 (96.1%)	17 (3.9%)
Maniilaq Manpower	Services	33	32 (97.0%)	1 (3.0%)
Noatak Village Council	Services	49	46 (93.9%)	3 (6.1%)
Noorvik, City of	Public Administration	65	56 (86.2%)	9 (13.8%)
Northwest Arctic Bor. SD	Services	783	754 (96.3%)	29 (3.7%)
Nul Luk Vik Hotel	Services	89	86 (96.6%)	3 (3.4%)
NW Inupiat Housing Authority	Finance, Ins. and R.E.	84	80 (95.2%)	4 (4.8%)
OTZ Telephone Coop. Inc.	Trans., Comm., Util.	48	46 (95.8%)	2 (4.2%)
R S Store Inc.	Retail Trade	129	114 (88.4%)	15 (11.6%)
Selawik, City Council	Public Administration	113	105 (92.9%)	8 (7.1%)
Shungnak, City Council	Public Administration	47	45 (95.7%)	2 (4.3%)

APPENDIX TABLE 6 RESIDENCY STATUS OF EMPLOYEES MAJOR EMPLOYEES, NORTHWEST ARCTIC BOROUGH, 1987

Source: An Analysis of the Residency Status of Alaska's Workers by Firm. Alaska Department of Labor, 1989.

Note: "Major" defined to include employers who employed at least 20 workers during any month of 1987. All employees of major firms were counted, regardless of duration of employment. Worker residency was determined inferred by reference to Alaska Department of Revenue 1987 Permanent Fund Dividend application files; employees not filing for a Permanent Fund Dividend were presumed to be nonresidents of Alaska.

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APPENDIX TABLE 7 RED DOG PROJECT CONSTRUCTION EMPLOYMENT STATISTICS* AS OF AUGUST 17, 1988

Company	Residents	Others	Total
Green Construction	76	139	215
Alaska Tank	0	6	6
Pacific Constructors	5	47	52
NANA/Marriott	21	9	30
R.M. Parsons	1	36	37
Enserch	15	85	100
Osborne	29	21	50
Rockford	3	23	26
МКВ	0	19	19
Others	0	8	8
Cominco/AIDEA	1	3	· 4
TOTAL	151	396	547

Includes all road, port and mine site construction. *

Source: Cominco Alaska Incorporated, Red Dog Hi Lites, September 1988.

APPENDIX TABLE 8

RED DOG PROJECT CONSTRUCTION EMPLOYMENT STATISTICS, 1988*

Company	Residents	Others	Total
Green Construction	234	274	508
Alaska Tank	1	8	9
Pacific Constructors	69	158	227
NANA/Marriott	41	15	56
R.M. Parsons	4	85	89
Enserch**	73	206	279
Osborne**	41	66	107
Rockford**	6	32	38
MKB**	4	72	76
Others	0	9	9
Cominco/AIDEA**	2	3	5
TOTAL	475	928	1,403

Includes all road, port and mine site construction. * ****** July-October employment figures only ones available.

Source: Cominco Alaska Incorporated, Red Dog Hi Lites, January 1989.

Appendix

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APPENDIX TABLE 9 RED DOG PROJECT CONSTRUCTION EMPLOYMENT STATISTICS* AS OF APRIL 2, 1989

Company	Residents	Others	Total
Green Construction	49	126	175
Pacific Constructors	6	9	15
NANA/Marriott	14	5	19
R.M. Parsons	0	27	27
Osborne	7	4	11
МКВ	2	27	29
Others	0	6	6
Cominco/AIDEA	2	7	9
TOTAL	80	211	291

* Includes all port and mine site construction.

Source: Cominco Alaska Incorporated, Red Dog Hi Lites, April 1989.

APPENDIX TABLE 10 RED DOG PROJECT CONSTRUCTION EMPLOYMENT STATISTICS* AS OF JUNE 25, 1989

Company	Residents	Others	Total
Cominco/Exploration	6	12	18
Green Construction	118	173	291
Arrow Trans.	12	· · · 11	23
Garco	1	12	· 13·
NANA/Marriott	29	9	38
R.M. Parsons	3	31	34
Osborne	13	29	42
Mammoet	0	18	18
Rockford	. 8	14	22
MKB	· 1	8	. 9
Others	· · · O	15	5 15
AIDEA	1	2	3
TOTAL	192	334	536

* Includes all port and mine site construction.

Source: Cominco Alaska Incorporated, Red Dog Hi Lites, July 1989.

APPENDIX TABLE 11 RED DOG PROJECT CONSTRUCTION EMPLOYMENT STATISTICS* AS OF SEPTEMBER 24, 1989

Company	Residents	Others	Total
Veco	23	84	107
Osborne	8	-24	32
NANA/Marriott	~ 28	8	36
Garco	2	6	8
Rockford	4	4	. 8
Green Construction	28	60	88
NANA/Veco	-51	292	-343
R.M. Parsons	1	42	43
Others	0	10	10
AIDEA	Ō	2	2
Cominco Alaska**	128	104	232
TOTAL	273	636	909

* Includes port and mine site construction.
** Includes operations personnel.

Source: Cominco Alaska Incorporated, Red Dog Hi⁻Lites, October 1989.

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APPENDIX TABLE 12 GOVERNMENT TRANSFER PAYMENTS TO INDIVIDUALS, PER CAPITA NORTHWEST ARCTIC BOROUGH, STATE OF ALASKA AND UNITED STATES, 1982-1987

NORTHWEST ARCTIC BOROUGH	1982	1983	1984	1985	1986	1987
Ret. & Disab. Ins. Benefit Pay.	522	585	671	699	692	714
Medical Payments	383	484	553	646	644	739
Income Maintenance Benefit Payme	567	564	622	696	644	676
Unemployment Ins. Benefit Paymen	181	232	232	414	517	372
Veterans Benefit Payments	24	22	21	17	18	20
Fed Educ & Trng Asst Pay (exc. V	14	10	11	11	8	5
Subtotal	1,692	1,897	2,111	2,483	2,522	2,526
Other Payments to Individuals	831	728	347	584	679	812
Total Gov't Payments to Individuals	2,523	2,625	2,458	3,067	3,201	3,338
Total Transfer Payments	2,648	2,752	2,600	3,342	3,517	3,697
STATE OF ALASKA	1982	1983	1984	1985	1986	1987
Ret. & Disab. Ins. Benefit Pay.	587	616	659	727	765	831
Medical Payments	184	219	222	261	290	344
Income Maintenance Benefit Payme	159	154	166	192	19 9	214
Unemployment Ins. Benefit Paymen	172	185	183	218	255	191
Veterans Benefit Payments	36	37	38	36	39	44
Fed Educ & Trng Asst Pay (exc. V	15	13	14	15	12	10
Subtotal	1,154	1,222	1,282	1,450	1,561	1,635
Other Payments to Individuals	765	721	352	57 3	657	781
Total Govit Payments to Individuals	1,919	1,943	1,634	2,023	2,218	2,416
Total Transfer Payments	2,038	2,071	1,776	° 2 ,293	2,529	2,769
UNITED STATES	1982	1983	1984	1985	1986	1987
Ret. & Disab. Ins. Benefit Pay.	949	1,017	1,067	1,138	1,202	1,258
Medical Payments	367	407	444	490	532	579
Income Maintenance Benefit Payme	161	1 73	179	186	196	202
Unemployment Ins. Benefit Paymen	109	114	69	68	72	64
Veterans Benefit Payments	70	71	.70	71	72	. 71
Fed Educ & Trng Asst Pay (exc. V	20	23	22	23	22	22
Subtotal	1,677	1,805	1,851	1,978	2,095	2,197
Other Payments to Individuals	2	2	2	2	3	- 3
Total Govit Payments to Individuals	1,679	1,807	1,853	1,980	2,098	2,200
Total Transfer Payments	1,775	1,911	1,971	2,113	2,249	2,368
Source: Rureau of Economic Analysis.		×				

Source: Bureau of Economic Analysi

Appendix

APPENDIX TABLE 13							
CASH TRANSFER PAYMENTS TO INDIVIDUALS							
NORTHWEST ARCTIC BOROUGH, 1987							

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	Dollars	Per
<u>Category of Transfer Payment</u>	<u>(thousands)</u>	<u>Capita</u>
Retirement & Disability Ins. Benefits	\$4,211	\$ 714
Old-Age, Survivors' & Disab. Ins.	1,784	302
Railroad Retirement & Disability	. 0	0
Federal Civilian Employee Retirement	456	77
Military Retirement	105	18
State & Local Gov't Empl. Ret.	1,797	305
Workers' Compensation	69	12 .
Other	. 0	0
Medical Payments	4,360	739
Income Maintenance Benefit Payments	3,987	676
Supplemental Social Security	736	125
AFDC	1,760	298
Food Stamps	1,187	201
Other Income Maintenance	304	52
Unemployment Insurance Benefits	2,196	372
State Unemployment Ins.	2,154	365
Other Unemployment Compensation	42	303 7
Veterans Benefit Payments	117	20
Vets Pensions & Comp. Payments	87	15
Other Assistance to Veterans	30	· 15
	31	5 5
Federal Education & Training Asst.		
Other Payments to Individuals	4,790	812
Total Government Payments to Individuals	19,692	3,338
Payments to Nonprofit Institutions	1,328	225
Federal Government Payments	92	16
State and Local Gov't Payments	1,038	176
Business Payments	198	34
Business Payments to Individuals	791	134
Total Transfer Payments	\$21,811	\$3,697

Add footnotes to table.

Source: Bureau of Economic Analysis.

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APPENDIX TABLE 14 ANNUAL FEDERAL GRANT AWARDS, CONTRACT AWARDS AND LOANS & INSURANCE NORTHWEST ARCTIC BOROUGH, BY COMMUNITY, FY 1983-88

<u>FY1983</u> Community	General Revenue Sharing	All Other Grants	Civilian Procurement Contract Awards	Direct & Guar- anteed Loans and Insurance	Total
Ambler	\$ 14,508	S 0	S	<u>\$ 0 \$</u>	14,508
Buckland	2,714	Ŭ,	11,000	Ŭ Ŭ	13,714
Deering	16,308	Ō	10,000	Ŏ.	26,308
Kiana	30,110	Ŭ,	32,000	· Ö	62,110
Kivalina	4,551	Ō		. O	4,551
Kobuk	0	Ō	1,336,000	Ō	1,336,000
Kotzebue	239,918	4,552,120	2,195,000	Ŭ,	6,987,038
Noorvik	51,703	0	86,000	Ō	137,703
Selawik	17,079	0	38,000	0	55,079
Shungnak	20,370	0	0	0	20,370
Balance of Regio		0	. 0	0	0
Undistributed	4,673	0	165,915	95,000	265,588
TOTAL	\$401,934	\$4,552,120	\$3,873,915	\$95,000 \$	8,922,969

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FY1984			LIVIIIan		
	General	A11	Procurement	Direct & Gu	iar-
	Revenue	Other	Contract	anteed Loar	IS STATES
Community	Sharing	Grants	Awards	and Insurar	nce Total
Ambler	\$ 8,256	\$ 0	\$ 0	\$ 0	\$ 8,256
Buckland	40,670	0	0.0	· · · 0	40,670
Deering	18,734	0	0	0	18,734
Kiana	25,547	20,833	0	0	46,380
Kivalina	40,852	0	0	0	40,852
Kobuk	1,668	0	0	0	1,668
Kotzebue	265,573	3,690,641	3,342,000	724,000	8,022,214
Noorvik	48,787	0	0	0	48,787
Selawik	124,177	210,000	7,000	0	341,177
Shungnak	4,830	10,160	0	0	14,990
Balance of Region	n 0.	485,000	0	0	485,000
Undistrib uted	59,588	1,565,097	160,602	353,800	2,139,087
TOTAL	\$638,682	\$5,981,731	\$3,509,602	\$1,077,800	\$11,207,815

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APPENDIX TABLE 14, (continued, page 2) ANNUAL FEDERAL GRANT AWARDS, CONTRACT AWARDS AND LOANS & INSURANCE NORTHWEST ARCTIC BOROUGH, BY COMMUNITY, FY 1983-88

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<u>1985</u>			Civilian		
	General	A11	Procurement	Direct & Gu	lar-
FY1985	Revenue	Other	Contract	anteed Loar	IS
Community	Sharing	Grants	Awards	and Insurar	<u>nce Total</u>
Ambler	\$ 4,293	\$ 10,770	\$ 0	\$ 180,000	\$ 195,063
Buckland	14,906	0	0	0	14,906
Deering	12,031	0	́О.	0	12,031
Kiana	16,176	0	0	0	16,176
Kivalina	20,110	. 0	11,000	0	31,110
Kobuk	991	62,000	0	0	62,991
Kotzebue	189,313	7,179,719	1,909,000	3,207,746	12,485,778
Noorvik	32,429	16,646	0	0	49,075
Selawik	63,241	62,400	. O	0	125,641
Shungnak	11,403	10,104	0	0	21,507
Balance of Regio	on Ó	0	0	0	0
Undistributed	22,839	1,594,795	131,588	342,500	2,091,722
TOTAL	\$387,732	\$8,936,434	\$2,051,588	\$3,730,246	\$15,106,000

<u>FY1986</u>			Civilian		
	General	A11	Procurement	Direct & G	uar-
	Revenue	Other	Contract	anteed Loa	ns
Community	Sharing	Grants	Awards	and Insura	n <u>ce Total</u>
Ambler	\$ 3,268	\$ 0	\$ 0	\$ 0	\$ 3,268
Buckland	13,662	0	0	0	13,662
Deering	2,440	0	· 0	0	2,440
Kiana	11,218	0	. 0	0	11,218
Kivalina	15,850	3,498	0	0	19,348
Kobuk 🦿	685	0	0	0	685
Kotzebue	147,345	6,328,416	2,726,000	2,000,000	11,201,761
Noorvik	19,373	· 0	· 0	0	19,373
Selawik	36,397	0	0	0	36,397
Shungnak	9,797	0	0	. 0	9,797
Balance of Regio	n 16,816	0	13,000	0	29,816
Undistributed	0	2,062,918	133,192	1,123,628	3,319,738
TOTAL	\$276,851	\$8,394,832	\$2,872,192	\$3,123,628	\$14,667,503

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APPENDIX TABLE 14, (continued, page 3) ANNUAL FEDERAL GRANT AWARDS, CONTRACT AWARDS AND LOANS & INSURANCE NORTHWEST ARCTIC BOROUGH, BY COMMUNITY, FY 1983-88

FY1987 Community	General Revenue Sharing	All Other Grants	Civilian Procurement Contract Awards	Direct & G anteed Loan and Insura	ns
Ambler	\$ Ö	\$ 0	S 0	S 0	S 0
Buckland	289	0	0	Ū.	289
Deering	0	3,572	0	Ō	3,572
Kiana	210	0	0	0	210
Kivalina	320	0	0		320
Kobuk	0	0.	0	0	- 0
Kotzebue	2,796	6,855,799	0	1,420,650	8,279,245
Noorvik	0	256,940	0	0	256,940
Selawik	737	0	0	0	737
Shungnak	· · · O	0	0	0	0
Balance of Region	327	· 0	Ó	. 0	327
Undistributed	0	2,934,625	162,739	1,226,700	4,324,064
TOTAL	\$4,679	\$10,050,936	\$162,739	\$2,647,350	\$12,865,704

<u>FY1988</u> Community	General Revenue Sharing	All Other Grants	Civilian Procurement Contract Awards	Direct & Gu anteed Loar and Insurar	ıs
Ambler	0	\$ 01 ancs	< <u>(</u>		
Buckland	0	ф. О	J	→ ↓ ↓ ↓ ↓
Deering	Ő	4,000	0	· * 0	4,000
Kiana	, Õ	,	0	0	+,000
Kivalina	ŏ	4,000	0	Ő	4,000
Kobuk	Ō	0	o o s	Ő	4,000
Kotzebue	0	9,469,000	510,000	229,000	10,208,000
Noorvik	0	263,000	0	0	263,000
Selawik	0	0	0 -	Ŭ.	0
Shungnak	0	0	Ō	Ŭ,	Ō
Balance of Region	0	0	0	~ . 0	Ō
Undistributed	χ Ο	3,095,962	2,039,000	908,000	6,042,962
TOTAL	.5 0	\$12,835,962	\$2,549,000	\$1,137,000	\$16,521,962
Source: Consolidat	ted Feder	al Funds.			

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Community		FY 83		FY 84 ¹		FY 85		FY 86		FY 87		FY 88	FY 89
Ambler	. \$	75,516	\$	110,696	-\$	80,434	\$	129,118	\$	122,154	\$	123,267	\$125,184
Buckland		0		0		0		. 0		0		16,393	39,193
Deering		0		32,727		0		0		0		0	26,255
Kiana		87,406		134,344		101,188		153,457		133,687		127,924	126,483
Kivalina		50,801		70,939		54,090		79,901		73,662		71,180	82,116
Kobuk		0		3,282		0		22,424		16,660		20,142	0
Kotzebue		465,283		629,527		482,739		645,938		622,844		668,909	499,470
Noatak		81,355		95,128		72,535		102,670		109,632		105,983	100,481
Noorvik		126,000		156,168		115,746		169,315		157,067		162,233	170,369
Selawik		104,722		144,706		105,746		167,057		152,263		164,229	178,451
Shungnak		62,284		79,488		56,749		107,887		104,037		96,314	94,916
TOTAL	\$ 1	.053.367	\$ 1.	457.005	\$1	.069.227	\$1	.577.767	\$1	.492.006	\$1	.556.574	\$1,442,918

APPENDIX TABLE 15 POWER COST EQUALIZATION PROGRAM PAYMENTS NORTHWEST ARCTIC BOROUGH COMMUNITIES, FY 1983-1989

¹ Calculated from data in Alaska's Energy Plan 1986, Vol.III.

Source: Alaska's Energy Plan 1986, Volume III (FY 1983-85 data); Statistical Report of the Power Cost Equalization Program, 1988 ff.; unpublished data for FY 1989, Alaska Energy Authority.

APPENDIX TABLE 16 LOW INCOME HOUSING ENERGY ASSISTANCE PROGRAM GRANTS NORTHWEST ARCTIC BOROUGH COMMUNITIES, 1984, 1985, 1988-1990

			1	
FY1984	FY1985	FY1988	FY1989	FY1990 ¹
\$20,450	\$24,286	\$13,152		\$5,274
24,870	30,614			19,234
22,050	17,774			11,767
47,837	52,524		•	21,428
28,401	31,975			16,758
85,462	7,879	•	•	4,352
101,916	110,886	76,928	•	44,313
28,792	33,848	20,640		16,595
44,519	47,928	28,591		27,924
62,437	71,457	53,674	•	42,106
20,019	21,178	11,399	•	4,959
\$486,753	\$450,349	\$318,156	\$273,784	\$214,710
	\$20,450 24,870 22,050 47,837 28,401 85,462 101,916 28,792 44,519 62,437 20,019	\$20,450 \$24,286 24,870 30,614 22,050 17,774 47,837 52,524 28,401 31,975 85,462 7,879 101,916 110,886 28,792 33,848 44,519 47,928 62,437 71,457 20,019 21,178	\$20,450 \$24,286 \$13,152 24,870 30,614 33,205 22,050 17,774 14,623 47,837 52,524 32,516 28,401 31,975 27,194 85,462 7,879 6,234 101,916 110,886 76,928 28,792 33,848 20,640 44,519 47,928 28,591 62,437 71,457 53,674 20,019 21,178 11,399	\$20,450 \$24,286 \$13,152 \$9,913 24,870 30,614 33,205 26,435 22,050 17,774 14,623 14,775 47,837 52,524 32,516 24,936 28,401 31,975 27,194 20,270 85,462 7,879 6,234 5,087 101,916 110,886 76,928 63,925 28,792 33,848 20,640 17,201 44,519 47,928 28,591 34,228 62,437 71,457 53,674 48,626 20,019 21,178 11,399 8,388

¹ First three-quarters of FY 1990.

Note: Data not available for FY 1986-87.

Source: Unpublished data, Alaska Department of Health and Social Services, Division of Public Assistance.

Appendix

APPENDIX TABLE 17 STATE OF ALASKA ANNUAL CAPITAL APPROPRIATIONS NORTHWEST ARCTIC BOROUGH, FY 1983-1990

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FISCAL YEAR 1983	
Ambler Windmill Project	\$40,000
Ambler Heavy Equipment	180,000
Ambler Emergency Vehicle	35,000
Ambler Dump Fencing	30,000
Ambler Agricultural Project	20,000
Kiana Dump Fencing	30,000
Kiana Disposal Truck	80,000
Kiana Warm Equipment Storage	200,000
Kivalina Warm Equipment Storage	200,000
Kobuk Heavy Equipment	180,000
Kobuk Revenue Sharing Grant	33,589
Kotzebue Technical Center Operating Expenses	866,000
Kotzebue Utility System Construction	400,000
Kotzebue Electrification	1,500,000
Kotzebue Fire Training Center	750,000
Kotzebue Supplemental Housing Funds	267,800
Kotzebue Day Care Center	647,000
Kotzebue Street Lights	175,000
Kotzebue Public Works Building	520,000
Kotzebue Health & Social Services Delivery Programs	1,400,000
Kotzebue Fire Suppression System	230,000
Kotzebue Senior Citizens' Building	200,000
Foundation Stabilization	,
Noatak Warm Storage Building	200,000
Noorvik Heavy Equipment	180,000
Noorvik Dump Fencing	30,000
Noorvik Sawmill	25,000
Northwest Arctic REAA Bi-lingual Materials	634,000
Development Center	
Northwest Arctic REAA Instructional Television Program	415,300
Shungnak Heavy Equipment	250,000
Shungnak Barge Landing	70,000
University of Alaska for Chukchi Community	700,000
College Operating Expenses	,

TOTAL

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\$10,488,689

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APPENDIX TABLE 17 (continued, page 2) STATE OF ALASKA ANNUAL CAPITAL APPROPRIATIONS NORTHWEST ARCTIC BOROUGH, FY 1983-1990

FISCAL YEAR 1984	
Ambler Clinic Improvements	\$40,000
Ambler Fire-fighting Equipment	25,000
Ambler Small Garden Project	15,000
Ambler Water & Sewer System	150,000
Buckland Street Lights	10,000
Buckland Water & Sewer System	250,000
Buckland Community Center	300,000
Deering Road Construction	150,000
Deering Runway Lights & Generator	415,000
Kiana Health Clinic	275,000
Kiana Heavy Equipment	90,000
Kiana Search & Rescue	60,000
Kivalina Heavy Equipment	150,000
Kivalina Water & Sewer System	150,000
Kobuk Heavy Equipment & Road Construction	300,000
Kobuk Runway Lights	325,000
Kotzebue NANA Search & Rescue	290,000
Kotzebue Education Projects	100,000
Kotzebue Fire Training Center	140,000
Kotzebue Maniilag Senior Center Improvements	300,000
Kotzebue Recreation Center	500,000
Kotzebue Armory & Facilities	1,955,200
Kotzebue Senior Citizens Cultural Center Improvements	694,100
Kotzebue NANA Trade Center	25,000
Kotzebue Snorkel Ladder & Fire Truck	250,000
Kotzebue Water & Sewer Expansion	1,100,000
Kotzebue Water & Sewer Expansion	1,000,000
Noorvik Runway Lights	325,000
Noorvik Water & Sewer Expansion	600,000
Noorvik Fire Equipment & Station Upgrade	25,000
Northwest Arctic REAA Facilities Construction	2,500,000
Northwest Arctic REAA Noatak Tank Farm Relocation	283,000
Northwest Arctic REAA Water Facility Construction	50,000
Selawik Emergency Rescue Communications	20,000
Selawik Agricultural Project	600,000
Selawik Airport Power Source	30,000
Selawik Fuel Tank Project	100,000
Selawik Water & Sewer System	500,000
Selawik Erosion Control	100,000
Shungnak Clinic Remodel	40,000
Shungnak Fire-fighting Equipment	25,000
Shungnak Combined Facility	160,000
Shungnak Water & Sewer System	400,000
Shungnak Street Lights	10,000
Shungnak Runway Lights	325,000

\$15,152,300

TOTAL

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APPENDIX TABLE 17 (continued, page 3) STATE OF ALASKA ANNUAL CAPITAL APPROPRIATIONS NORTHWEST ARCTIC BOROUGH, FY 1983-1990

FISCAL YEAR 1985	
AIDA Geotechnical Studies, Etc.	\$3,400,000
Ambler Water & Sewer Project	561,000
Ambler Street Lighting	25,000
Ambler Community Building	200,000
Buckland Shelter Cabins	75,000
Buckland Dump Site Road	300,000
Buckland Water & Sewer Dump Road	125,000
Buckland Erosion Control	30,000
Buckland Electrification	108,000
Chicago Creek Coal Project	400,000
	200,000
Community Planning Deering Water & Sewer Vehicles	250,000
Deering Water a Sewer Venicies Deering Youth Work Experience Program	27,600
Deering Frosion Control	400,000
	45,000
Deering Survey & Platting	250,000
Deering Electric Project	25,000
Kiana Street Lighting	300,000
Kiana Laundromat	70,000
Kiana Survey & Platting	75,000
Kiana Whitefish Marketing	30,000
Kiana Clinic EMS Vehicle	300,000
Kiana Beach Access Road	100,000
Kiana Boat Dock	250,000
Kivalina Heavy Equipment Building	
Kivalina Erosion Control	135,000
Kobuk Multi-purpose Office	200,000
Kobuk Dump Site Fencing	50,000
KOTZ New Antenna & Generator	119,000
Kotzebue Vortac Reservoir Improvements	210,000
Kotzebue Waste Heat Recovery	420,000
Kotzebue Water Treatment	178,400
Kotzebue Water & Sewer Expansion	1,230,300
Kotzebue Teen Center	25,000
Kotzebue Technical Center Dormitory	1,700,000
Kotzebue Fire Training Center	125,000
Kotzebue Recreation Center	400,000
Kotzebu e NANA EMS	70,000
Kotzebue NANA Region SAR	70,000
Maniilaq Association Rural Eye Care Facility	100,000
Maniilaq Association Mosquito Control Program	25,000
Maniilaq Association Homemakers Program	51,300
NANA Region TV Transmitters	50,000
Noatak Érosion Control	6,000

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APPENDIX TABLE 17 (continued, page 4) STATE OF ALASKA ANNUAL CAPITAL APPROPRIATIONS NORTHWEST ARCTIC BOROUGH, FY 1983-1990

Nortal Flootuin Duringt	75 000
Noatak Electric Project	75,000
Noorvik Bridge Repairs	\$33,600
Noorvik Community Facility	15,000
Noorvik Dump Site Road	500,000
Noorvik Erosion Control	63,000
Noorvik Heavy Equipment Garage	150,000
Noorvik Laundromat	175,000
Noorvik Survey & Platting	
	75,000
Selawik Agriculture Farm	396,700
Selawik Boardwalk	75,000
Selawik Erosion Control	15,000
Selawik Fire-fighting Equipment	8,000
Selawik Fuel Tanks Relocation	150,000
Selawik Library & Multiple Use	400,000
Selawik Youth Vocational Work Experience Program	42,000
Shungnak Bridge Repairs	60,000
Shungnak Dock Repairs	45,000
Shungnak Heavy Equipment	250,000
Shungnak Sewer System Improvements	300,000
Shungnak Survey & Platting	60,000
University of Alaska/Chukchi Community College	1. S.
Regional Audio Conference Bridge	61,000
Rural Alaska Johns Hopkins	100,000
Harat Haaka oomo Hohkina	100,000

TOTAL

\$15,760,900

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APPENDIX TABLE 17 (continued, page 5) STATE OF ALASKA ANNUAL CAPITAL APPROPRIATIONS NORTHWEST ARCTIC BOROUGH, FY 1983-1990

FISCAL YEAR 1986	
Ambler Community Building	\$200,000
Ambler Runway Improvements	4,500,000
Buckland Heavy Equipment	180,000
Chicago Creek Coal Study	30,000
Deering Erosion Control	600,000
Kiana Heavy Equipment	100,000
Kivalina Elementary School	1,200,000
Kobuk Electricity & Water & Sewer	75,000
Kotzebue Electric Association Utility Project	300,000
Kotzebue NANA Region EMS Equipment	60,000
Kotzebue Fire Training Center	120,000
Kotzebue Water & Sewer	740,000
Maniilaq Association Camp Innuailiq Youth Program	213,000
Maniilaq Manpower SCAN project	110,000
Maniilaq Association Health & Social Services Programs	125,000
Noatak Dump Fencing	20,900
Noatak Airport Improvements	2,250,000
Noorvik City Office Upgrade	31,400
Noorvik Road Equipment	500,000
Northwest Arctic REAA Instructional TV	40,000
Northwest Arctic REAA Educational Enhancements	45,000
Northwest Arctic REAA Major Maintenance	800,000
Selawik Farm Project	400,000
Selawik Multi-purpose Facility	300,000
Selawik Airport Improvements	2,070,000
Selawik Regional Rural Student Vocational Program	60,600
Shungnak Water & Sewer	300,000

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\$15,370,900

APPENDIX TABLE 17 (continued, page 6) STATE OF ALASKA ANNUAL CAPITAL APPROPRIATIONS NORTHWEST ARCTIC BOROUGH, FY 1983-1990

	*
FISCAL YEAR 1987	
Ambler Erosion Control	\$400,000
Buckland Water, Sewer & Solid Waste	500,000
Deering Crosswind Runway	2,360,000
Kiana Fire Hall & Equipment	210,000
Kivalina Water & Sewer Expansion	800,000
Kobuk Public Safety Building	75,000
Kotzebue Technical Center Dormitory Operation	56,000
Kotzebue Public Safety Facility	1,200,000
Kotzebue Administration of 1986 Inuit Circumpolar Conf.	136,000
Kotzebue Community Facility Matching Grant Funds	50,000
Kotzebue Airport Apron & Taxiway	1,875,000
Kotzebue Elementary School Remodel/Addition	5,400,000
Kotzebue Fire Training	150,000
Maniilaq Manpower SCAN Program	50,000
Maniilaq Manpower Summer Youth Program	69,600
NANA Museum of the Arctic/Elders' Conference	15,000
Noorvik Erosion Control	500,000
Noorvik Erosion Control	500,000
Noorvik, Deering (& Shishmaref) Erosion Repairs	50,000
Selawik Student Vocational Program	45,000
Selawik Water & Sewer	161,772
Selawik Spud Farm Project	210,000
Shungnak Water & Sewer	363,600
Sikusuilaq Hatchery Improvements	232,000
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TOTAL

\$15,408,972

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APPENDIX TABLE 17 (continued, page 7) STATE OF ALASKA ANNUAL CAPITAL APPROPRIATIONS NORTHWEST ARCTIC BOROUGH, FY 1983-1990

Ambler Erosion Control\$375,000Buckland Water/Sewer325,000Deering Crosswind Runway Lighting150,000Kobuk Water/Sewer50,000Kotzebue Armory Contingency60,000Kotzebue Airport Improvements2,200,000Kotzebue Water/Sewer800,500
Deering Crosswind Runway Lighting150,000Kobuk Water/Sewer50,000Kotzebue Armory Contingency60,000Kotzebue Airport Improvements2,200,000Kotzebue Water/Sewer800,500
Kobuk Water/Sewer50,000Kotzebue Armory Contingency60,000Kotzebue Airport Improvements2,200,000Kotzebue Water/Sewer800,500
Kotzebue Armory Contingency60,000Kotzebue Airport Improvements2,200,000Kotzebue Water/Sewer800,500
Kotzebue Airport Improvements2,200,000Kotzebue Water/Sewer800,500
Kotzebue Water/Sewer 800,500
Noorvik Erosion Control 85,000
Noorvik Airport Runway Repairs 200,000
Northwest Arctic School District Health & Life 425,000
Northwest Arctic Borough Municipal Building 100,000
Northwest Arctic Borough Water/Sewer & Erosion Control 200,000
Buckland Generator -9,400*
Kivalina Warm Equipment Storage -79,900*
Kivalina Heavy Equipment Building -700*
Kotzebue/Kivalina Recreational Equipment -9,000*
Kotzebue Maniilag/Kivalina Combined Facility -105,000*
Kotzebue Fire Training Center 100,000*
Maniilaq Manpower Youth Employment Career Program 106,000*
Maniilaq Association Sawmill Project -1,000*
NANA Region TV Transmitters -44,500*
NWASD Center for Native Studies 105,000*

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\$4,970,500

* Items repealed or appropriated by House Bill 29.

Appendix

APPENDIX TABLE 17 (continued, page 8) STATE OF ALASKA ANNUAL CAPITAL APPROPRIATIONS NORTHWEST ARCTIC BOROUGH, FY 1983-1990

ETCCAL VEAD 1000	
FISCAL YEAR 1989	
Ambler Road Improvements & Equipment Repair	\$60,000
Buckland Gravel Access Road	60,000
Deering Bulk Fuel & Landfill	30,000
Kiana Landfill & Building	75,000
Kivalina Landfill Improvements & Sewer	60,000
Kobuk Public Facilities Repair & Water	20,000
Kotzebue Water Source	800,000
Kotzebue Public Safety FAcility	
Kotzebue Junior High School	220,000
	3,500,000
Kotzebue Runway Preliminary	300,000
Maniilaq River Camps	10,000
Noatak Water/Sewer	60,000
Noorvik Landfill & Road Improvements	75,000
Noorvik Airport Erosion	900,000
Selawik Water/Sewer	80,000
Selawik Water/Waste	180,000
Selawik Airport	2,950,000
Shungnak Landfill/Public Facilities Improvements	
Sikusuilag Hatchery	60,000
Sirusuitay hacchery	131,000

TOTAL

\$9,571,000

NOTE: Does not include House Bill 543, which repealed and reappropriated numerous small unexpended balances from prior year budgets.

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APPENDIX TABLE 17 (continued, page 9) STATE OF ALASKA ANNUAL CAPITAL APPROPRIATIONS NORTHWEST ARCTIC BOROUGH, FY 1983-1990

FISCAL YEAR 1990	
Ambler Community Improvements	\$34,500
Ambler Lagoon Rehabilitation	100,000
Buckland Generator Building	34,500
Deering Water/Sewer Facilities	34,500
Kiana Water Sewer Facilities	34,500
Kiana Runway Reconstruction	900,000
Kivalina Facility Improvements	34,500
Kobuk Facility Improvements	34,500
Kotzebue Public Safety Facilities	92,500
Kotzebue Runway Resurfacing	3,000,000
Noatak Lagoon/Erosion	400,000
Noatak Facility Improvements	34,500
Noatak Water System	500,000
Noorvik Facility Improvements	34,500
Northwest Arctic Borough Water/Sewer Repair	2,500,000
Northwest Arctic School Upgrades	500,000
Selawik Facility Improvements	34,500
Shungnak Facility Improvements	34,500
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\$8,337,500

Note: Does not include following items from SCS CSHB 163 which repealed and reappropriated numerous small unexpended balances from prior year budgets:

Ambler Agriculture Project	-\$7,800
Ambler Emergency Vehicle	-6,700
Ambler Small Garden Project	-11,000
Ambler Water/Sewer Project	-5,100
Ambler Water/Sewer Project/Repair/Hook-up Windmill	30,600
Buckland Electrification	-4,500
Buckland Erosion Control Project	-9,200
Buckland Water/Sewer/Erosion Control/Electrification	102,000
Buckland Water/Sewer Project	-88,300
Kiana Heavy Equipment	-29,500
Kiana Purchase Heavy Equipment & Equipment Parts	29,500

Source: Alaska State Legislature, Operating and Capital Budget, Election District Report, Fiscal Years 1983-1990.

APPENDIX TABLE 18 STATE REVENUE SHARING AND MUNICIPAL ASSISTANCE NORTHWEST ARCTIC BOROUGH GOVERNMENTS, FY 1980-1990

Community	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Ambler	\$24,569	\$57,143	\$76,769	\$62,612	\$66,531	\$71,898	\$70,818	\$62,124	\$55,384	\$55,281	\$82,382
Buckland	9,947	52,650	75,621	63,565	57,929	66,375	66,605	59,408	86,611	86,644	89,863
Deering	10,433	47,232	63,600	55,949	51,085	53,449	54,028	49,136	96,330	96,349	97,209
Kiana	25,621	70,631	105,717	85,090	76,170	88,852	87,998	78,321	79,767	79,727	76,644
Kivalina	14,671	58,806	80,217	68,244	64,048	69,377	69,205	60,452	57,557	57,453	57,196
Kobuk	15,529	38,930	12,647	42,604	41,948	44,932	45,694	42,688	39,721	39,659	40,714
Kotzebue -	187,353	496,589	739,266	567,956	652,080	707,277	697,077	757,391	556,792	554,841	638,684
Noatak	. 0	0	. 0	. 0	21,037	23,104	22,754	. 0	. 0	0	0
Noorvik	25,476	84,807	135,739	106,167	97,895	175,700	178,101	132,600	122,565	124,000	114,834
Selawik	15,199	86,017	109,227	83,236	104,319	119,594	111,360	93,062	142,848	142,682	139,661
Shungnak	12,000	54,812	74,878	64,470	68,044	66,314	64,750	59,380	54,823	54,716	67,547
NAB								161,791	433,979	432,240	428,000

TOTAL \$340,798 \$1,047,617 \$1,473,681 \$1,199,893 \$1,301,086 \$1,486,872 \$1,468,390 \$1,558,353 \$1,726,377 \$1,723,592 \$1,832,734

Source: Alaska Department of Community and Regional Affairs.

Appendix

APPENDIX TABLE 19 COVERED INDUSTRY EMPLOYMENT NORTHWEST ARCTIC BOROUGH, 1988

Industry Classification	Jan	Feb	Mar	Apr	May	Jun	Jul	<u>Auq</u>	Sep	<u> 0ct</u>	Nov	Dec	Year
Mining		*	*	*	*	*	*	*	*	*	*	*	*
Construction	*	*	*	*	*	*	61	77	117	*	*	*	*
Transportation, Communication and Public Utilities	135	138	140	136	142	149	169	177	159	164	161	163	153
Retail Trade	194	194	191	141	146	148	176	172	164	176	173	173	171
Finance, Insurance and Real Estate	89	91	94	65	69	82	83	98	83	90	73	89	84
Services	332	324	333	348	350	345	381	349	352	367	371	391	354
Government Federal State Local	93 96 800	101 90 776	97 87 826	102 95 751	114 82 742	66	116 74 511	77	95 96 818	96 103 910		79 95	101 88 743
Miscellaneous	*	*	*	*	*	*	*	*	*	*	*	*	*
TOTAL	1,761	1,739	1,794	1,665	1,682	1,527	1,629	1,707	1,942	2,076	1,980	1,914	1,785
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*Figures withheld to comply with disclosure regulations.

Source: Alaska Department of Labor.

As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. Administration.



