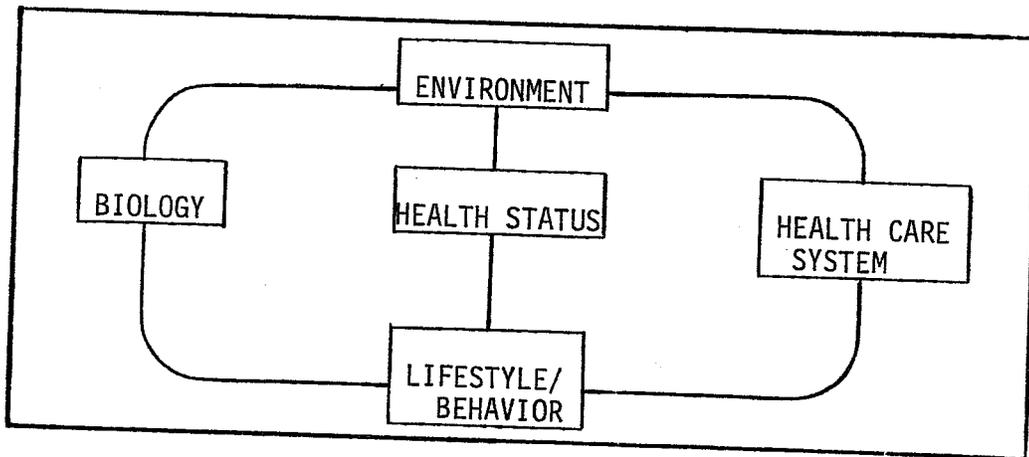


INTRODUCTION

The environment of the State of Alaska and the lifestyle of its residents are important causal factors affecting the health of the population and the organization of the health care system. A complete analysis of health status and health problems is therefore not possible without a strong focus on lifestyle, environment, and biology as well as the health care system. If the underlying causes of disease, injury, and death are not considered, solutions to the health problems in the state cannot be determined.

This profile of the State of Alaska includes descriptive information regarding the environment, lifestyle, and biological characteristics which influence the health status of the population and also determine the organization and utilization of the health care system. ENVIRONMENTAL causal factors include social-psychological factors such as population mobility and unemployment, as well as physical characteristics such as climate, terrain, housing, and other factors over which the individual has little personal control. LIFESTYLE causal factors include self-created risks such as recreational activities, nutritional intake, and consumption of alcohol, drugs, and cigarettes. BIOLOGICAL causal factors include demographic characteristics of the population such as age distribution. These elements comprise part of the overall framework identified in the "Scope" section of Chapter 1 and are again identified in the highlighted boxes in the following display:



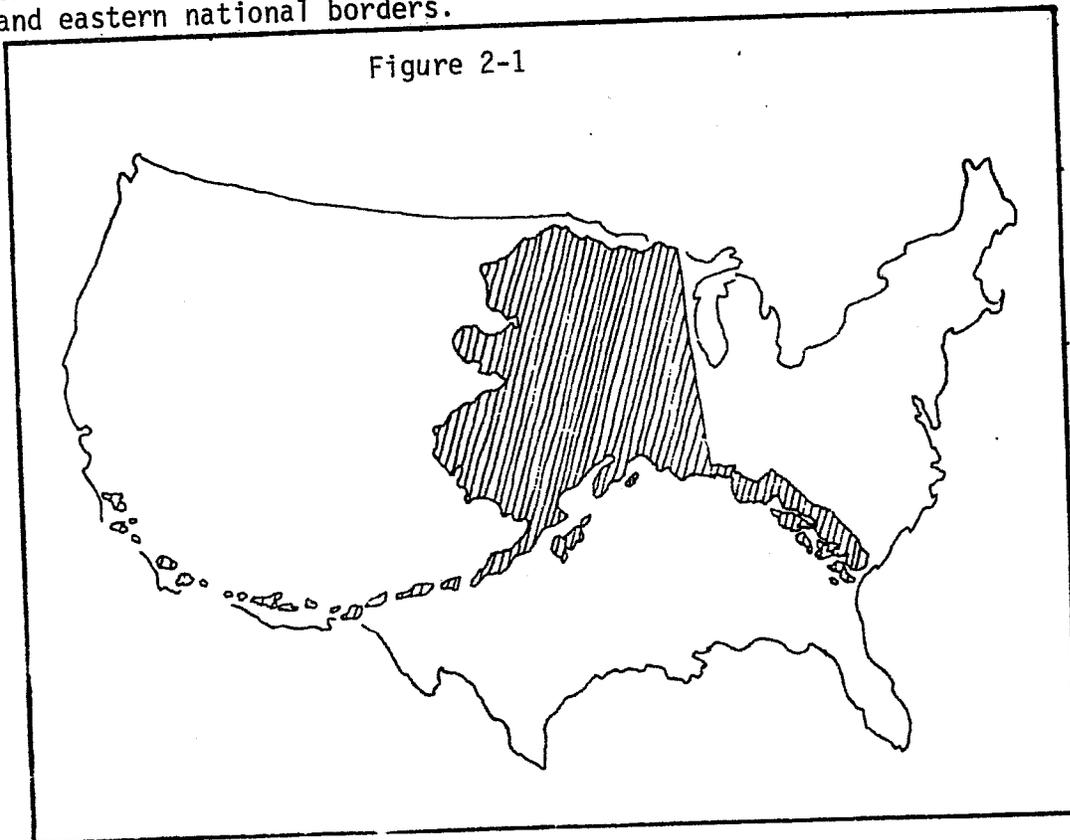
The Plan intends to emphasize the causal relationship between the elements in this framework. Therefore, the statistical description of each demographic and socio-economic variable is prefaced by a narrative explaining its impact on the health of the population and/or utilization of the health care system.

PHYSICAL CHARACTERISTICS

Impact on Health Status and Health System: Alaska's extreme climatic and geographic characteristics have a significant impact on the health of the population and the organization of the health care system. The harsh climate and terrain contribute heavily to the incidence of accidental injuries and death as evidenced by the data in Chapter 3, "Health Status." The Arctic winter and darkness influence the behavioral health of the population.

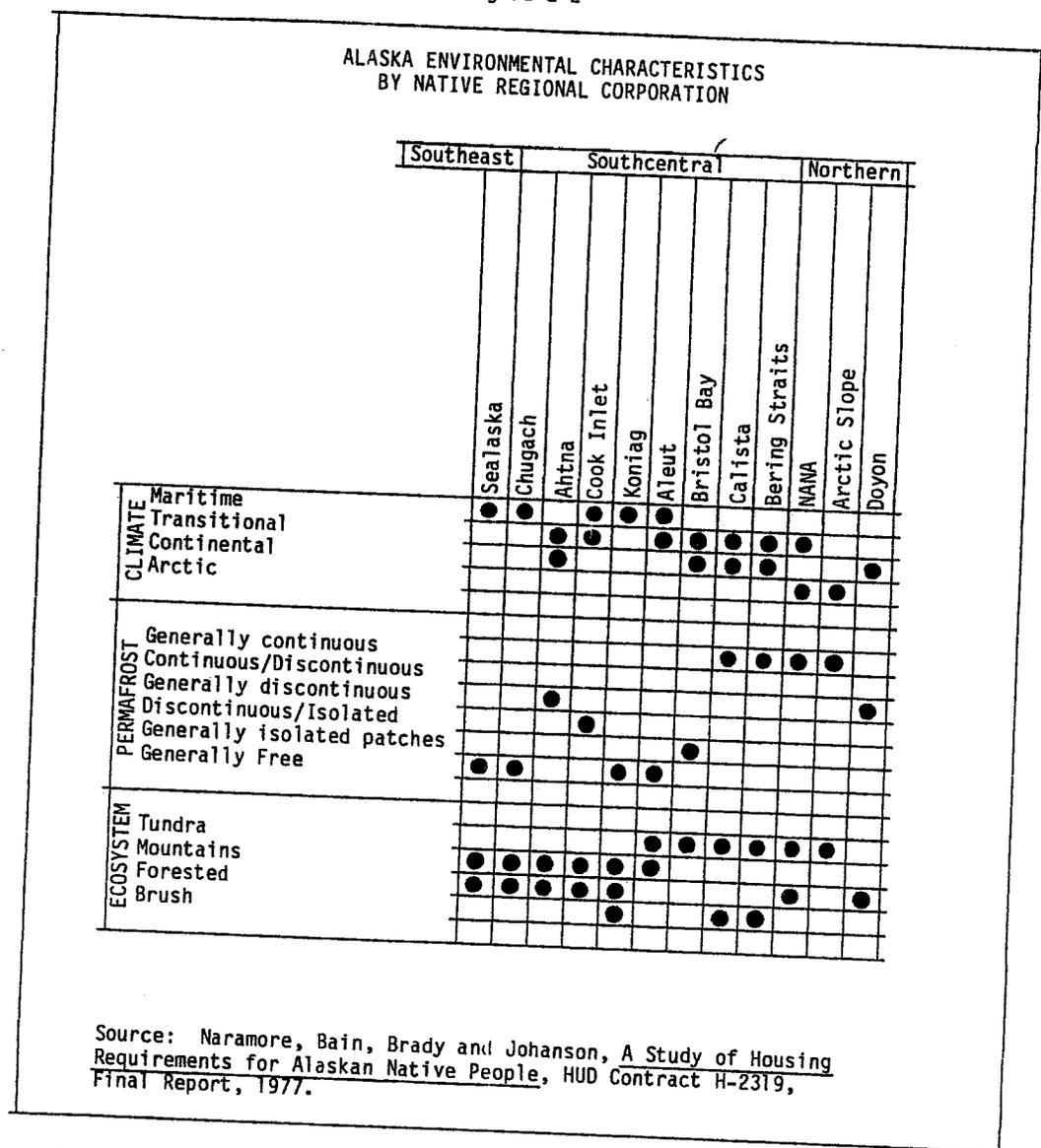
In addition, the geographic characteristics and the transportation and communication networks of the state determine the characteristics of the health care system. Alaska is separated by a distance of two thousand miles from the lower states, upon which it often depends for certain medical services. Communities within the state are likewise isolated from each other, separated by tremendous distances, vast mountain ranges, stretches of tundra, glaciers, impassable river systems, and are unconnected by a comprehensive highway system. Certainly the provision of health services is a challenging task in the face of these conditions.

Climate and Terrain: The most obvious and impressive geographic fact about Alaska is, of course, its tremendous size. The state includes 375 million acres of land and 47,300 miles of coastline, and until October 1983 spanned four time zones. The state is one-fifth the landmass of the lower 48 states combined; if transposed on a map of the continental U.S., it would reach the northern, southern, western, and eastern national borders.



Alaska has tremendous variation in climate and terrain, ranging from a mountainous maritime environment in southeast Alaska to an arctic plain in the Arctic Slope area. This diversity in climate and terrain is graphically described by Figure 2-2:

Figure 2-2



Alaska is traversed by two great mountain systems: the Rocky Mountain System which includes the Brooks Range and the Pacific Mountain System which includes the Alaska, Aleutian, and Pacific Border Ranges. The highest peaks in North America soar over 20,000 feet in the Alaska Mountain Range.

The State is dotted by over 3 million lakes, the majority of which are located in marshy lowlands. For example, the Yukon-Kuskokwim coastal lowland area has been estimated to be 30-50% lake surface.

The 1000 square-mile Lake Iliamna is the largest lake in Alaska and the 7th largest in the U.S. The State is drained by various river systems, including the Yukon and the Kuskokwim Rivers and their tributaries which drain the central region of Alaska. Lesser river systems are the Colville, north of the Brooks Range, and the Matanuska-Susitna and Copper river systems in southcentral Alaska.

The State is characterized by a variety of climates. There are four major climatic zones: a temperate maritime climate in the southern coastal area, a continental climate in interior Alaska, a transitional climate in western Alaska and in the southcentral area north of the Pacific border ranges, and an arctic climate in the region north of the Brooks Range (Figure 2-3).

Alaska, a peninsula, is affected by its neighboring seas. Warm, moist air from the Pacific Ocean deposits large amounts of precipitation upon the southern rim of the State as it meets the tall Pacific border ranges. Winds generated over the much colder Bering Sea sweep across the unprotected western coastal region. The northern coastal areas also experience strong winds, usually parallel to the coast, especially in the winter. With over 1/4 of Alaska above the Arctic Circle and 56% north of the 60th parallel, sunlight and darkness are dominant features of the Alaskan environment (Figure 2-4).

Figure 2-3

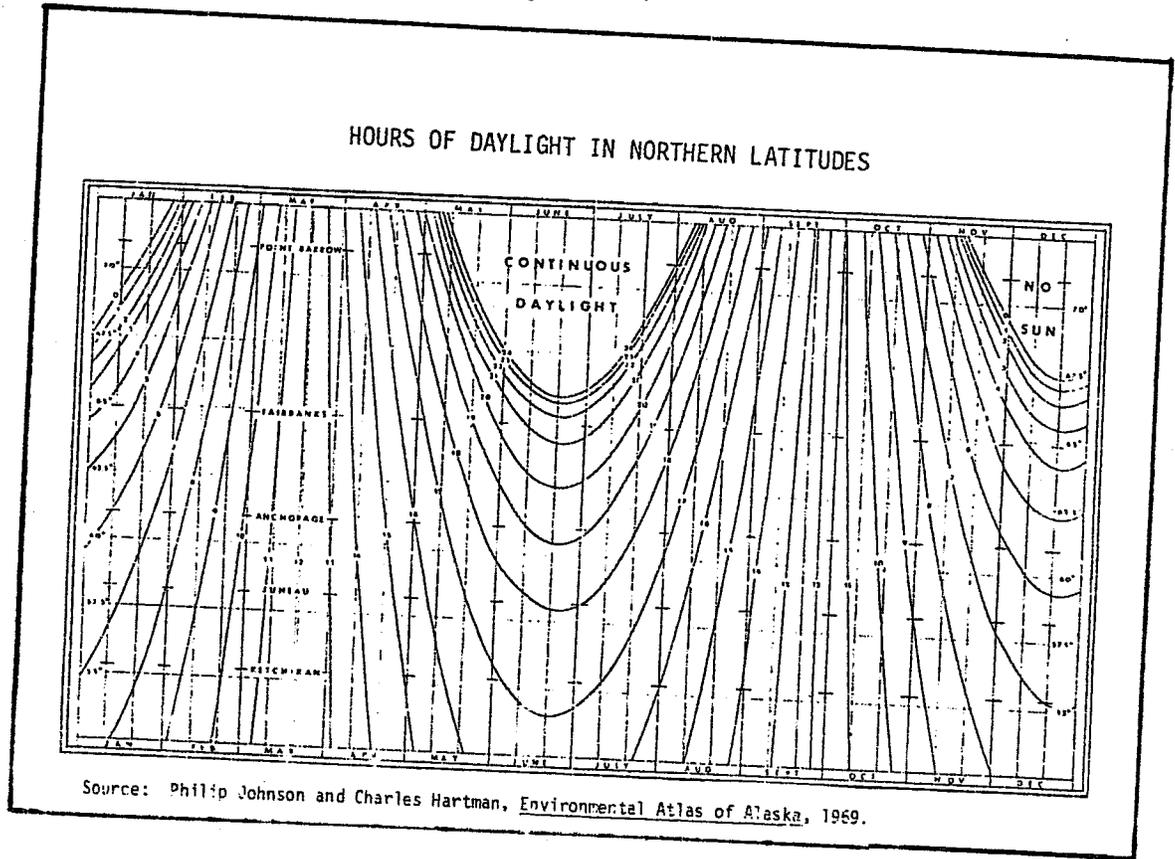
CLIMATIC CHARACTERISTICS OF SELECTED ALASKAN COMMUNITIES

Selected Communities	Range of mean Temperature (°F)		Extreme Temperature (°F)		Wind (Kts)		Precipitation (mean annual) (in.)	
	Summer	Winter	Summer	Winter	Mean Extreme			
55 Ketchikan	48 to 66	30 to 42	36	-8	N/A	N/A	154	
	Juneau	44 to 64	18 to 34	89	-22	7.4	50	55
Anchorage	46 to 66	4 to 42	86	-38	5.8	53	15	
	Kodiak	45 to 60	26 to 45	86	-5	8.7	99	54
65 Wak	41 to 56	29 to 41	75	3	12.6	84	36	
	Holy Cross	35 to 67	-7 to 20	93	-62	N/A	N/A	18
Nome	39 to 56	-3 to 14	86	-46	9	46	16.4	
75 Upernivik	42 to 62	-24 to 1	90	-68	N/A	N/A	17.3	
	Fairbanks	39 to 72	-22 to 26	99	-61	5.3	35	11
	Barrow	29 to 44	-25 to -6	78	-56	10.6	55	5

*Record High: 100°F - Fort Yukon - 6/27/15
 Record Low: -80°F - Prospect Creek - 1/23/71

Source: Arctic Environmental Information and Data Center, University of Alaska, Alaska Regional Profiles.

Figure 2-4

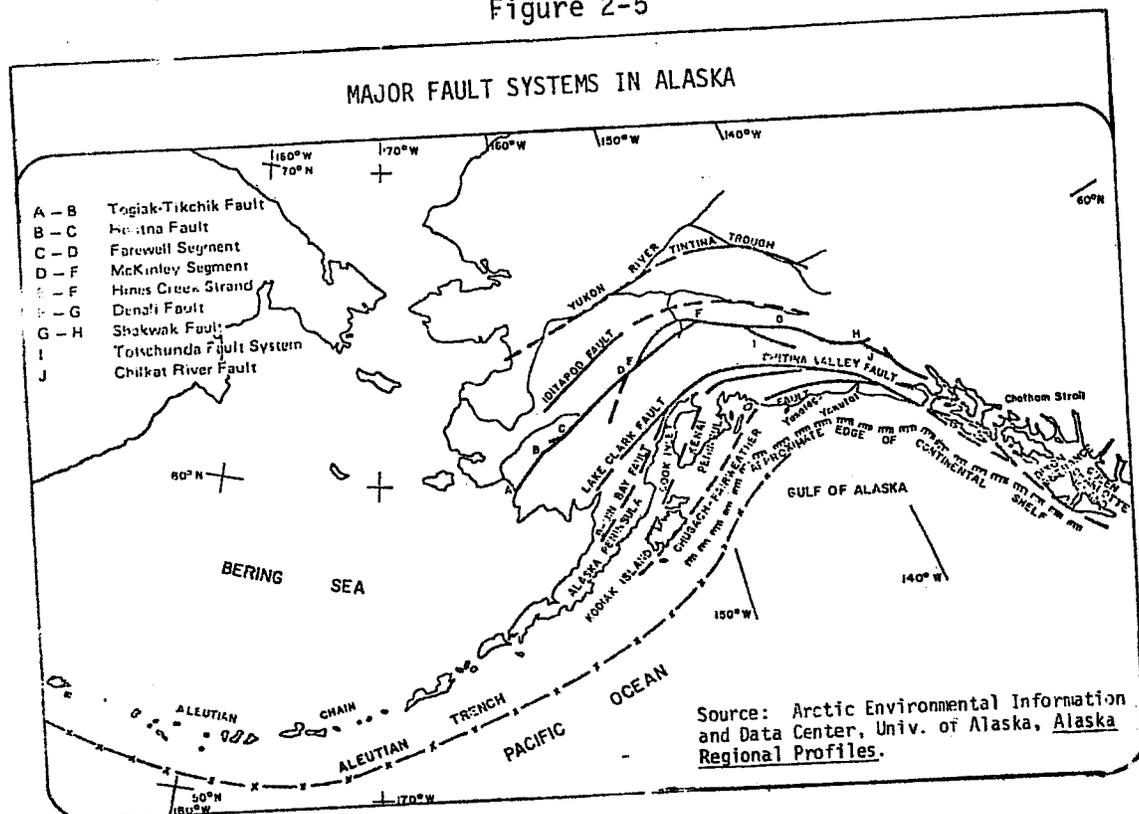


The state, or portions of it, is also characterized by an underlayer of permafrost, a few active volcanos, and principal faults and potential earthquake activity.

Much of the state, with the exception of the southern coastal areas, is underlain by permafrost (Figure 2-2). Local differences in topography, rock structure and drainage result in sharp local differences in the character and distribution of permafrost. The existence of permafrost is an important factor to consider in the construction and design of health facilities and health enhancing facilities such as water/sewer systems. Low precipitation occasionally limits groundwater supplies in much of interior Alaska. Supplies of groundwater in central and northern Alaska are also limited by the perennially frozen conditions of many potential water-bearing soils and rocks.

Most residents of the state are familiar with the major earthquake activities that have resulted in loss of lives and property. Portions of Alaska are traversed by fault systems and are identified in Figure 2-5.

Figure 2-5



Transportation: The majority of the villages in Alaska are isolated from each other by considerable geographic distances and are not connected by any highway system. Figure 2-8 identifies the highway network in the state of Alaska; it totals nearly 10,000 highway miles. The major highway networks connect Anchorage, the Kenai Peninsula, Fairbanks, and the Canadian border. The names of the largest Alaskan communities have been included for informational purposes. Southeast depends upon water or air transportation and is served by the State Marine Highway System, which provides ferry transportation at least weekly between major Southeastern communities. The regularly scheduled ferry routes in Southeast and Southcentral Alaska cover over 1,400 marine highway miles.

Air transportation is, by necessity, the primary means of travel on a statewide basis. The regularly scheduled major airline routes in Alaska are identified in Figure 2-9, which illustrates that Anchorage, Fairbanks, Nome, Bethel, and Juneau are examples of communities which serve as air transportation centers. The state's airport system ranges from world-class international airports to unimproved dirt landing strips and locations which are recognized as seaplane landing places. In terms of numbers, Alaska has more airports per capita than any other state. Over 1,000 landing fields and seaplane bases are known to exist (Figure 2-6). Of these, over 300 are available for public use. The remainder are mainly available on an emergency or "own-risk" basis. The Alaska Aviation System Plan, 1982 reports that runways are inadequate in length in 12 of the 18 airports classified as "Transport" and in 63 of the 163 airports classified as "Community." Alaska also has only 27% of the coverage by navigational aids that is found in the

rest of the country for air routes and terminal approaches. Air travel is always dependent upon the limitations of weather and large areas of the state are without a weather reporting system. Inadequate weather information, lack of navigational aids, and inadequate airport facilities are all cited by the Plan as contributing to the poor safety record of aviation in Alaska. The National Transportation Safety Board in a report prepared in 1980 revealed that the non-fatal air taxi accident rate in Alaska is more than double the rate in the rest of the United States.

Figure 2-6

NUMBER OF AIRPORTS/AIR FIELDS IN ALASKA				
Classification	DOT/PF Owned	Other State Agency Ownership	Other Ownership*	Total
Commercial Air Service Airports:				
International	2	0	0	2
Regional Center	8	0	2	10
Regional Transport	13	0	0	13
Community	15	0	3	18
	115	12	36	163
Special Use Airports:				
Local **	46	32	401	479
Seaplane	35	11	185	231
Heliport	12	0	34	46
Military & Coast Guard Base	0	0	67	67
Total	246	55	728	1,029

* Includes private, public domain, municipal, military, Coast Guard, and unknown ownership.

** Serves as recreational or emergency airstrip and is not primary access to a community.

Source: State of Alaska Department of Transportation and Public Facilities, "Alaska Aviation System Plan, Phase I, Alternatives," August, 1982.

Communication: The size of the state and the inaccessibility of many Alaskan communities make communication networks especially important. Until 1970 the communication system for Alaska was developed and operated by the U.S. military. As commercial and personal telecommunication requirements grew, the capacity of the military communication system to serve these demands became more and more inadequate. The Department of Defense sold portions of the Alaska Communication System in 1970 and Alascom now provides long-distance services within Alaska.

Larger communities in Alaska (level II, III, and IV communities) generally have a comprehensive range of communication services available; however, communication in rural villages is considerably limited in adequacy, reliability, and range of services.

Telephone exchange service includes local phone systems providing telephone service throughout a community. Long-distance service may be provided through small or mid-route earth stations. Only about 22% of

the level I communities (HSA designated) in Alaska have a local phone system (25% in Southeast, 18% in Southcentral, 29% in Northern).

"Bush phones" are the primary source of communication in most villages. (42% of the level I communities statewide are serviced by bush phones: 19% in Southeast, 44% in Southcentral, and 53% in Northern.) A bush phone is generally a single phone for the village connected to a toll network via a small earth station or a direct VHF link. Small earth stations have had repeated problems with failures and the major drawback has been the length of time to make repairs. This has been improving, however, with training of repairmen and some equipment replacement. Small earth stations averaged about 28 days between failures with an average of 201.7 hours (8.4 days) to repair the station for a total system availability of less than 76% during 1978.

Approximately 17% of the level I villages (particularly in the Southcentral area) are served by IMTS (Improved Mobile Telephone Service). Like the bush phones, only one telephone serves the community. A base-station serves several communities through two or more VHF frequency channels. A major problem with this type of communications system is the crowding of channels.

Radio communication is often unreliable because of heavy traffic on the channels and adverse weather conditions. Atmospheric conditions often make radio reception difficult. Northern lights can block the signals for days at a time.

Marine radio calls can generally be patched through existing telephone lines. The Coast Guard maintains a short range (20 mile) maritime distress communication system (VHF-FM), particularly important in the Southeast area.

The availability of telecommunication services in rural Alaska has expanded the availability and quality of social, educational, and health services to rural villages.

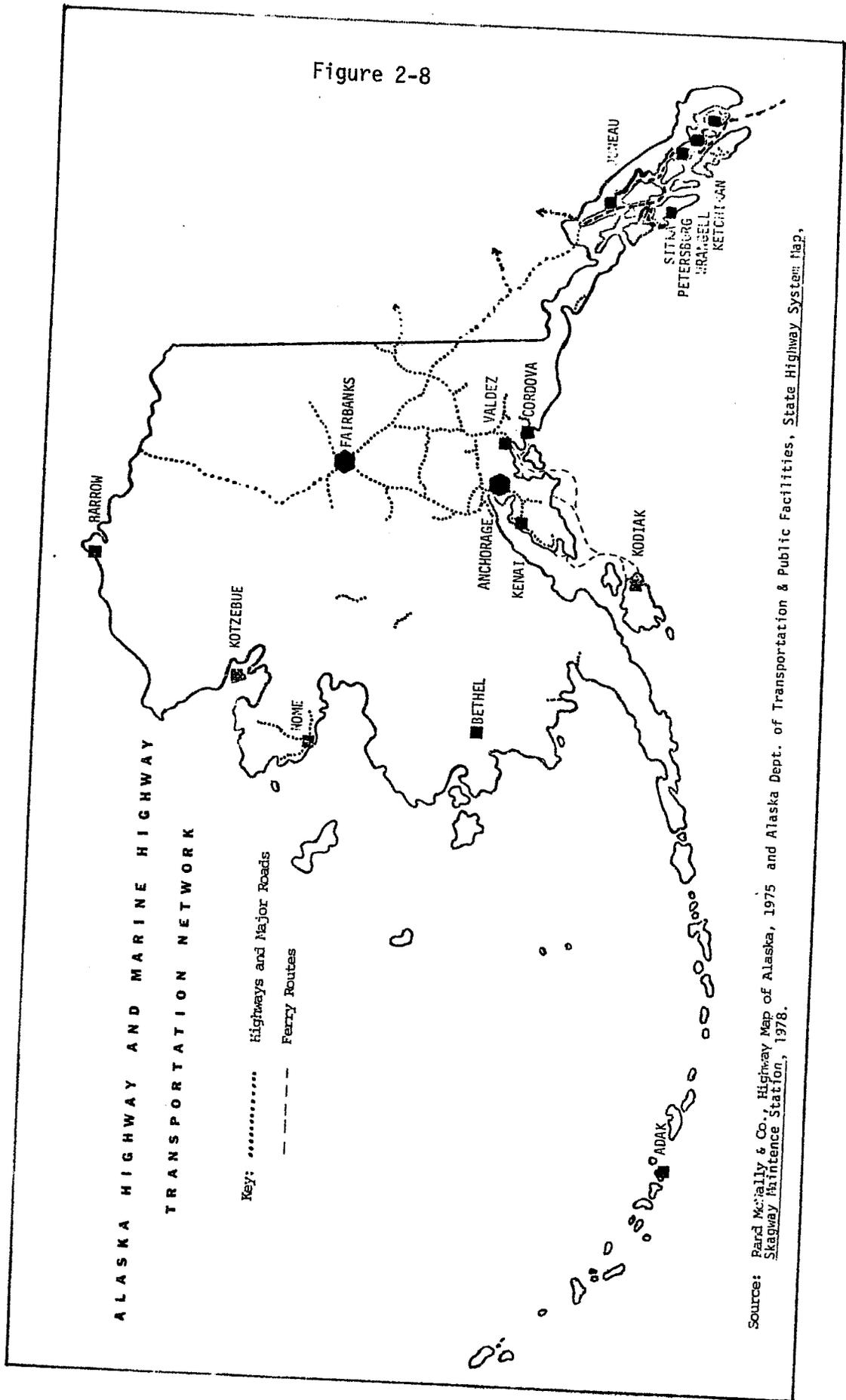
Figure 2-7

TELEPHONE SERVICE AVAILABLE IN ALASKAN VILLAGES (LEVEL I COMMUNITIES*)									
	Bush Phones		IMTS		Telephone Exchange		No Telephone Service		Total #
	#	%	#	%	#	%	#	%	
SE	7	19	1	3	9	25	19	53	36
SC	58	44	32	24	24	18	18	14	132
N	27	53	5	10	15	29	4	8	51
Statewide	92	42	38	17	48	22	41	19	219

*Level I communities as designated by the HSAs.

Source: Alaska Office of Telecommunications, Unpublished Data, 1979.
RCAAlascom, directory for bush villages with one phone, 1979.

Figure 2-8

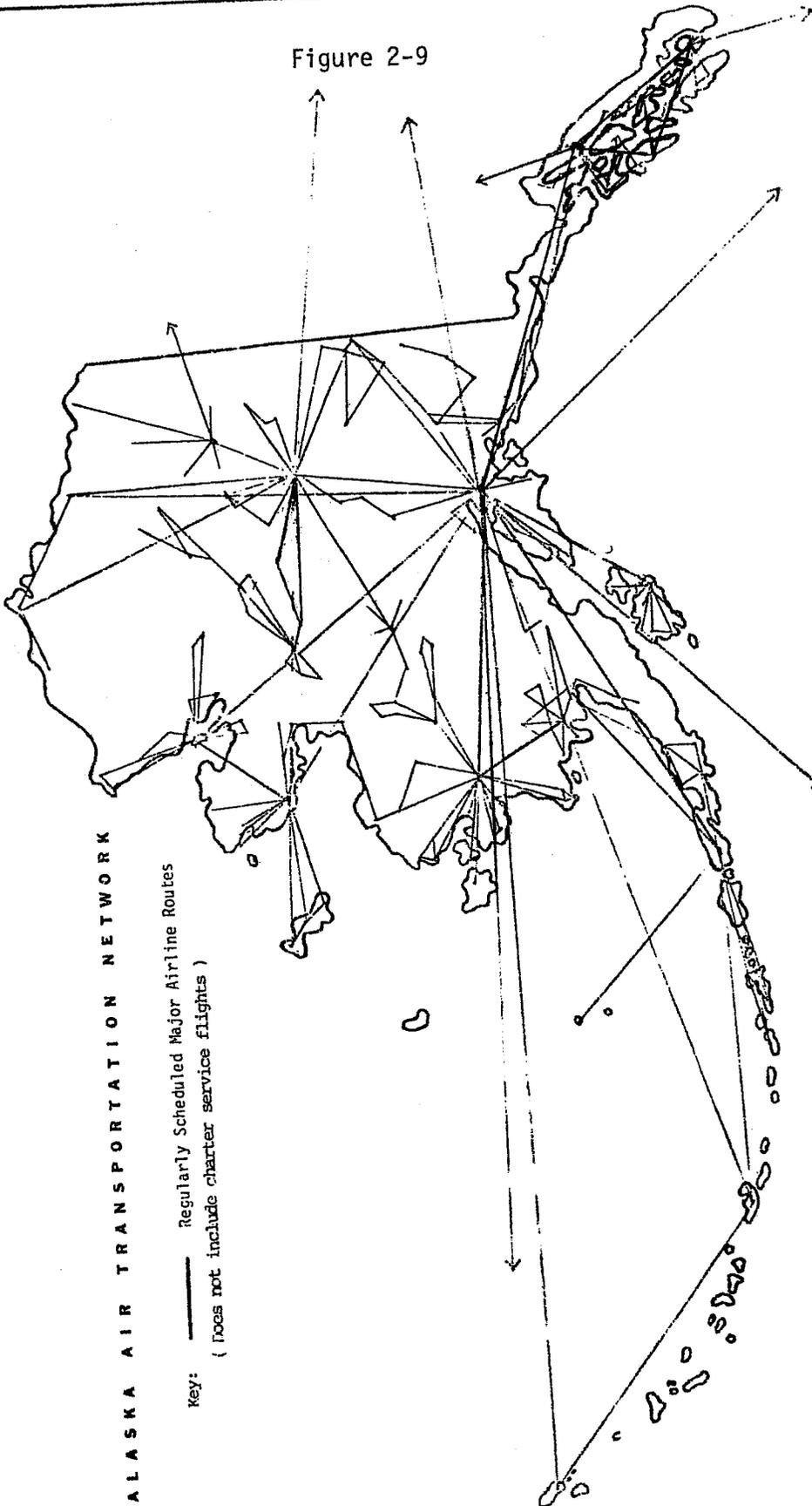


Source: Rand Mcially & Co., Highway Map of Alaska, 1975 and Alaska Dept. of Transportation & Public Facilities, State Highway System Map, Skagway Maintenance Station, 1978.

Figure 2-9

ALASKA AIR TRANSPORTATION NETWORK

Key: — Regularly Scheduled Major Airline Routes
(does not include charter service flights)



Source: Arctic Environment Information and Data Center, University of Alaska, Alaska Regional Profiles, 1976.

DEMOGRAPHIC CHARACTERISTICS

Population Growth: Despite our comparatively small population, the State has had a tremendous population growth during the past decade. Alaska historically has experienced a significant amount of in-migration from the "lower 48" which has contributed to this population growth. This migrational growth was particularly intense during the construction of the Trans-Alaska Pipeline (major activity 1972-1977). It is estimated that since the completion of pipeline construction, the statewide population is growing at a slower pace and that there has been a decline in population in some areas of the State. The accumulated population growth from 1970 to 1980 was 32.4% for the State of Alaska compared to 11.5% nationally.

Population growth in Alaska has not occurred at an equal rate in the various areas of the State. Figure 2-10 displays that the population of the Southeast region has grown at a comparatively slow, steady pace while the Southcentral and Northern areas have experienced sharp increases followed by more noticeable "post pipeline" declines.

Figure 2-10

ALASKA POPULATION ESTIMATES BY HEALTH SERVICE AREA												
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Southeast HSA	42596	43107	44181	50177	49208	47754	50851	53406	52766	50618	53794	55985
Southcentral HSA	195307	204779	211664	219042	223848	249379	276211	285340	273637	274303	271540	282452
Northern HSA	64677	63315	64155	64593	70945	85968	83638	74354	76108	76075	76562	83750
STATE TOTAL	302580	311200	320000	330000	340000	383100	410700	413100	403100	400600	401851	422187

Source: State of Alaska Department of Labor, Alaska Population Overview, 1979-1981; Population Release, July 2, 1980 (Memorandum); U. S. Department of Commerce, Bureau of the Census, 1980 Census of Population and Housing Alaska, PHC80-V-3.

Method: For years 1970-1979 proportion of subarea population to previously estimated statewide total population was applied to revised estimate of statewide population for those years developed by state demographer.

Note: Differences in population for Arctic Slope from 1980 to 1981 are attributable to differences in definition of residency used in the two censuses for Prudhoe Bay.

Similarly, the following table (Figure 2-11) depicts the percent change in population of the 1980 Census areas:

Figure 2-11

1980 Census Area	Population By 1980 Census Areas		Percent Change 1970-1980	1970 Rank	1980 Rank
	1970 Population	1980 Population			
Aleutian Islands C.A.	7,834	7,768	0.8	8	12
Anchorage Br.	126,385	173,017	36.9	1	1
Bethel C.A.	8,917	10,999	23.4	7	7
Bristol Bay Br.	1,147	1,094	4.6	23	23
Dillingham C.A.	3,872	4,616	19.2	18	18
Fairbanks North Star Br.	45,864	53,983	17.7	2	2
Haines Br.	1,401	1,680	19.9	22	22
Juneau Br.	13,556	19,528	44.1	4	4
Kenai Peninsula	16,586	25,282	52.4	3	3
Ketchikan Gateway Br.	10,041	11,316	12.7	5	6
Kobuk C.A.	4,048	4,831	19.3	16	16
Kodiak Island Br.	9,409	9,939	5.6	6	8
Matanuska-Susitna Br.	6,509	17,766	172.9	10	5
Nome C.A.	5,749	6,537	13.7	12	13
North Slope Borough	3,451	4,199	21.7	20	19
Prince of Wales- Outer Ketchikan C.A.	3,782	3,822	1.1	19	20
Sitka Borough	6,073	7,803	28.5	11	11
Skagway-Yakutat-Angoon C.A.	2,763	3,478	25.9	21	21
Southeast Fairbanks C.A.	4,326	5,770	33.4	15	15
Valdez-Cordova C.A.	4,965	8,348	68.1	13	9
Wade Hampton C.A.	3,917	4,665	19.1	17	17
STATE TOTAL	302,583*	400,481	32.4	--	--

*Revised, corrected counts to the 1970 Census of Population.
Source: Alaska Department of Labor, State Demographer.

Geographic Mobility: The Alaska Department of Labor estimated that the net in-migration for the period 1970 to 1980 for civilians under 65 years of age was approximately 48,712. The net in-migration for the period July 1, 1980 to July 1, 1982 was 25,427. These figures, however, do not indicate the substantial seasonal fluctuations in population that occur as a result of fishing, logging, and tourism, nor do they reflect the movement of people within the state from one census area to another.

The total population of Alaska and population by HSA Sub-Area are taken from estimates of the population published by the Alaska Department of Labor and the 1980 Census. The figures from 1970 through 1981 are presented in Figure 2-12.

Figure 2-12

	1970-1981											
	Population by HSA & Subareas											
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
SOUTHEAST HSA												
Ketchikan	13823	13530	14267	14220	15750	15577	15155	17154	15600	15000	15138	15414
Wrangell-Petersburg	4913	4986	4960	5085	5848	5270	5218	5236	5700	5200	6167	6541
Sitka	6109	5977	6059	6010	6428	6595	6383	7053	7800	7200	7803	7927
Juneau	17720	18853	19476	21102	22206	22995	23916	23719	24700	23900	24686	26103
SUB-TOTAL	42565	43346	44762	46417	50232	50437	50672	53162	53800	51300	53794	55985
SOUTHCENTRAL HSA												
Chugach	5528	5764	5767	5961	6272	9483	11643	11376	9900	9402	8436	8909
Ahtna	1802	1728	2018	2070	2220	5367	7153	4187	3200	2900	2816	2883
Cook Inlet (- Anchorage)	20822	21719	22354	22468	23846	23204	30892	35530	39100	42534	40239	42697
Anchorage	126333	135777	144215	149440	153112	177817	185179	192950	181200	178000	173017	180740
Koniag	9409	9723	8703	8868	9232	8801	9366	8893	10000	10000	9939	9728
Aleut	7664	7511	6891	6577	7338	6740	7878	7311	7000	6658	7768	8624
Bristol Bay	5025	4612	5048	5195	5490	6107	5156	4998	5800	5541	5710	5716
Calista	12834	13338	13643	13023	13995	14217	14041	12959	15900	16046	15664	15590
Bering Straits	5749	5743	5857	5682	7001	6660	6644	5824	6900	6800	6537	7565
SUB-TOTAL	195166	205915	214496	219284	228506	258396	277952	284028	279000	277881	270126	282452
NORTHERN HSA												
Nana	4048	4321	4197	3973	4388	4548	4788	5100	4800	4700	4831	4960
Arctic Slope	3451	3702	3373	3357	4284	6454	9609	9569	4500	4800	4199	7098
Doyon (- Fairbanks)	11267	11228	11385	11763	12987	24281	18257	12214	13500	13650	13643	13379
Fairbanks	45864	44415	46058	45571	50762	55517	51511	47131	54800	54000	53983	58312
SUB-TOTAL	64630	63666	65013	64664	72421	90800	84165	74014	77600	77150	76656	83749
TOTAL	302361	312927	324271	330365	351159	399633	412789	411204	410400	406331	400576	422186

Source: State of Alaska Department of Labor, Alaska Population Overview, 1979; Population Release, July 2, 1980 (Memorandum); U. S. Department of Commerce, Bureau of the Census, 1980 Census of Population and Housing, Alaska, PHC80-V-3

Note: Bureau of Census estimates used for 1978

Population Projections: Future population growth in the State is difficult to estimate and is dependent upon unpredictable factors such as the building of the gas pipeline, the discovery of new oil and gas reserves or mineral deposits, national and State resource development and conservation policies, and other economic and social occurrences. Currently, there is no universally accepted source of population projections for the State of Alaska. The Alaska Department of Labor is generally accepted as the source of yearly population estimates and is the agreed-upon source for the State Health Planning and Development Agency and the Health Systems Agencies. The Department of Labor, however, does not prepare population projections except for a statewide total figure.

Figure 2-13 presents population projections for Alaska prepared by Alaska's Health Systems Agencies.

Figure 2-13
Alaska Population Projections₁
by HSA Subarea, 1985, 1990

NO HSA ₂ Area/Subareas	1980 Population	NAHRA Projections	
		1985	1990
NANA	4831	5297	5763
North Slope Borough	4199	4655	5110
Doyon (- Fbks)	13549	17300	15080
Fairbanks North Star Borough	53983	66796	71636
NO TOTAL	76562	94048	97589

SC HSA Areas/Subareas	1980 Population	SCHPD Projections			
		1985		1990	
		Low	High	Low	High
Aleutian Pribilof	7768	7890	8600	8200	12700
Bristol Bay	5710	6000	6200	6300	7100
Cook Inlet	17766	21400	32250	23800	47000
- Mat Su	15286	16500	21600	16800	23800
- Kenai/Soldotna	7187	8900	11800	11200	15200
- Homer Area					
Copper River	2838	3200	4300	3900	7000
Kodiak	9939	10400	13400	11400	15800
North Pacific Rim	2809	3300	4300	3700	5200
- Seward	3386	3700	9000	4200	9500
- Valdez	2241	2400	2500	2600	2900
- Cordova					
Norton Sound	6537	7100	8800	7900	15800
Yukon Kuskokwim	15664	16750	18900	19000	30800
Anchorage	173017	200400	231500	225300	247700
SC TOTAL	270148	307940	373050	344300	440500

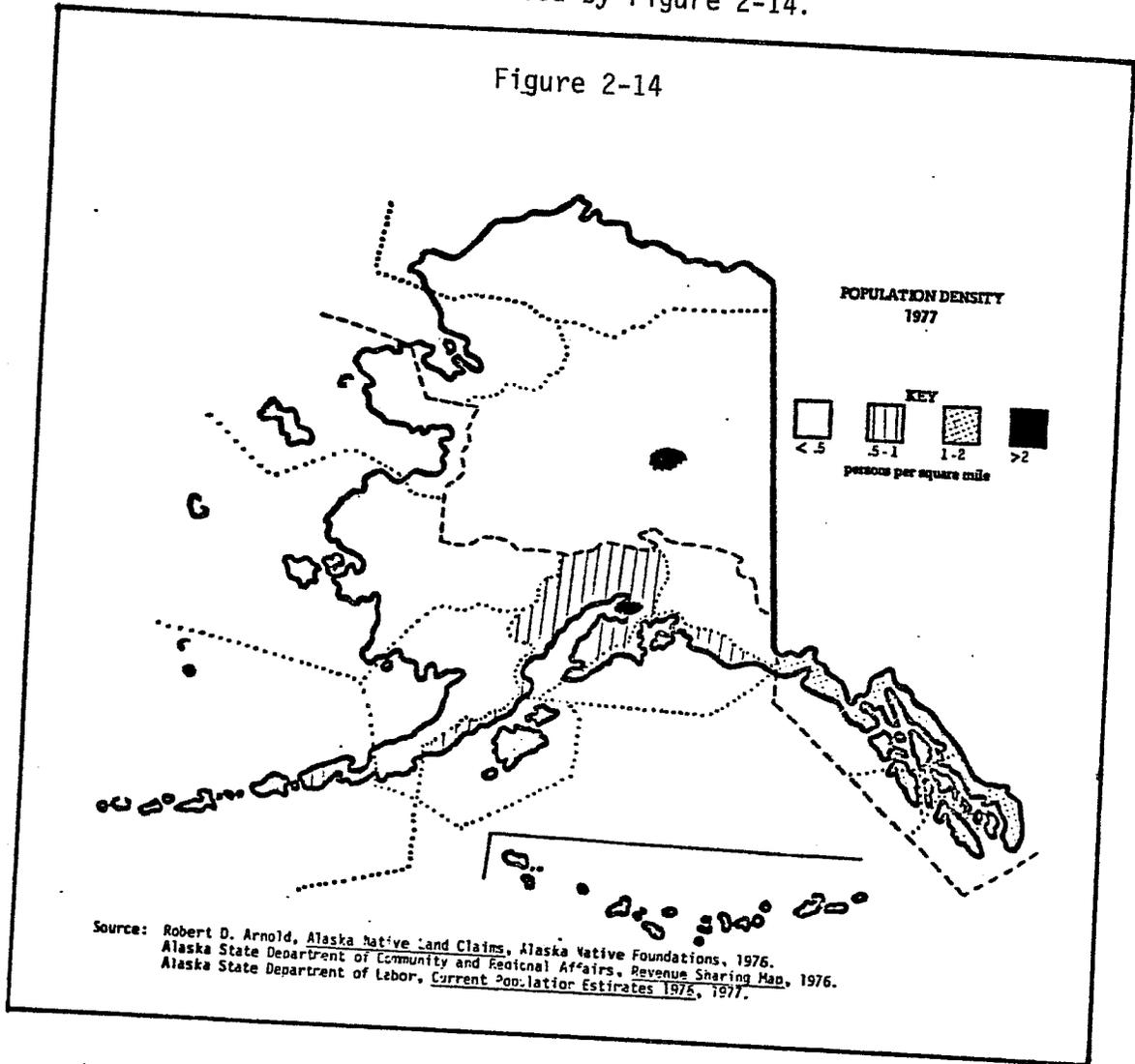
SE HSA	1980 Population	SEAHSA Projections	
		1985	1990
SE HSA	53794	61,400	N/A

Source: Northern Alaska Health Resources Assn, South Central Health Planning and Development, Inc. Southeast Alaska Health Systems Agency.

Note₁: The methodologies used in preparing population projections was different for each HSA and in some cases was different for each subarea within a given HSA. Southeast Alaska Health Systems Agency used a simple linear projection to estimate the 1985 population of the southeastern region. South Central Health Planning and Development, Inc. used a variety of methods for each subarea. When available SCHPD used local population information, including projections, supplied by individual communities. In addition, population projection data from the University of Alaska Institute of Social and Economic Research (ISER) study on the Railbelt was also used. Northern Alaska Health Resources Association, Inc. used simple linear projections for the Kobuk, North Slope Borough, and Yukon-Koyukuk areas while projections for the Fairbanks North Star Borough and the Southeast Fairbanks area were obtained from the ISER Railbelt study.

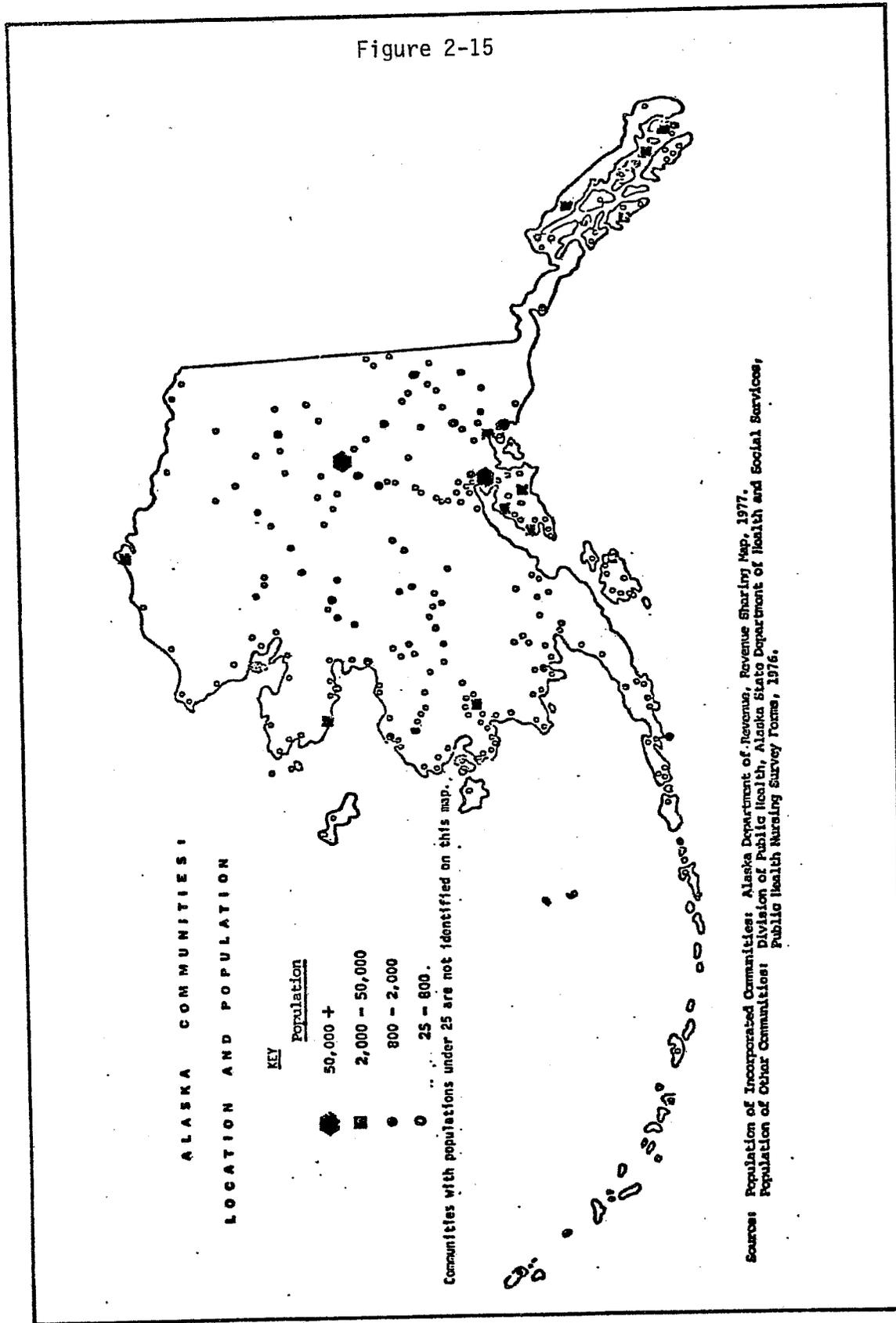
Note₂: The abbreviation "NO HSA" for Northern Health Service Area has been used throughout this document.

Population Density: Relative to the physical description of Alaska, perhaps the most readily apparent demographic factor influencing health status and the health care system is the population density. The total population of the state of Alaska according to the 1980 Census is 400,481 as of April 1, 1980. In contrast, the state includes 375 million acres (or 586,585 square miles) of land. This computes to a 1980 population density of 00.68 persons per square mile as compared to 64.0 nationally. The population density varies from one area of the state to another as indicated by Figure 2-14.



Location of Communities: The population density is a summary indicator and can be further clarified by the following descriptive facts. Geographically, much of the state of Alaska consists of great spans of land dotted by small, isolated "bush" communities. In addition, the majority of the population of the state is concentrated into a few major urban areas. A comparison of the population density map with Figure 2-15, which identifies the location and size of Alaskan communities, illustrates this correlation.

Figure 2-15



Population by Category: Certainly, demographic characteristics are factors that have major impact on the health status of Alaska's population and the organization of the health care system. The age, sex, racial, and military membership characteristics of the population are also important in identifying target population groups for health status analysis, health status and system goals, and health system objectives and action steps. An analysis of population groups will appear not only in the regional profile, but also in the health status portion of the Plan in order to support a population-based approach to health planning.

Age: The population age distribution tends to play a large role in determining the health status and health service needs of a given population. National and State studies have correlated age to the prevalence of acute and chronic conditions as well as to the utilization of health services. Generally, the very young are prone to acute disease and have a relatively high number of physician visits and relatively low rate of hospitalization. Older persons are more likely to experience a chronic condition and consequently have a higher rate of hospitalization.

Figure 2-16

PATIENT DAYS AND HOSPITAL DISCHARGES FOR POPULATION OVER 65 YEARS OF AGE U. S. - ALASKA COMPARISON			
	Percent of Population Over 65 Years of Age	Percent of Total Patient Days By Population Over 65 Years of Age (acute care beds)	Percent of Total Discharges By Population Over 65 Years of Age
U. S.	10%	30%	20%
ALASKA	2%	15%	8%

Source: 1980 Hospital Survey Questionnaire, Alaska Division of State Health Planning and Development

Based on this table, (Figure 2-16), it is evident that, nationwide, the elderly account for three times the patient days in hospitals that one would expect, based on their number proportional to the general population. Alaska's elderly account for seven times the number of patient days that one would expect, based on their proportion of the State's population.

The State of Alaska has a young population relative to the nation. In 1980 the median age of the State population was 26.1 compared to a national median age of 30.0 years. Moreover, 70% of the 1980 Alaska population was under 35 years of age as compared to 58% nationally. An estimated 2.9% of the Alaska population is over age 65, compared to 11.3% nationally.

Figure 2-17

**Alaska Population Distribution
By Age and Sex
1970 and 1980**

	1970			1980		
	Total	Male	Female	Total	Male	Female
Total Number	302,382	183,258	137,124	401,851	213,078	188,773
Total Percent 1/	100.0	100.0	100.0	100.0	100.0	100.0
Under 5 Years	10.7	10.1	11.4	9.7	10.0	9.4
5 to 9 Years	12.2	11.5	13.1	8.8	8.6	8.7
10 to 14 Years	11.4	10.7	12.2	8.6	9.3	8.1
15 to 19 Years	8.9	8.7	9.2	9.2	9.2	9.3
20 to 24 Years	11.8	13.7	9.8	11.2	11.1	11.3
25 to 29 Years	8.9	8.7	9.2	11.6	11.8	11.7
30 to 34 Years	7.5	7.5	7.6	11.0	11.0	10.9
35 to 44 Years	12.8	13.0	12.3	13.5	12.9	13.9
45 to 54 Years	8.9	9.1	8.9	8.2	8.1	8.3
55 to 59 Years	2.8	3.0	2.7	3.4	3.2	3.6
60 to 64 Years	1.8	1.8	1.7	2.0	2.0	2.0
65 to 74 Years	1.5	1.6	1.5	2.1	2.2	2.0
75 and Over	0.7	0.7	0.7	0.8	0.9	0.7

1/ May not add due to rounding.

Source: Alaska Department of Labor, Demographics.

Age by Area: The age distribution differs among regions of the state. The Southeast area of the state has the largest proportion of the elderly in its population, while the Southcentral and Northern areas have a higher concentration of young adults.

Figure 2-18

ESTIMATED POPULATION BY AGE GROUP* BY HSA, STATEWIDE AND U. S. 1980										
AGE GROUP	NO HSA		SC HSA		SE HSA		AGE GROUP	ALASKA		U. S.
	#	%	#	%	#	%		#	%	%
<5	8616	11.2	26202	9.7	4686	9.1	<5	38910	9.7	7.2
5-14	16274	21.2	46462	17.2	10818	20.1	5-14	69319	17.2	15.5
15-24	17991	23.5	55376	20.5	11759	21.9	15-24	82319	20.5	18.7
25-34	12495	16.3	61048	22.6	6778	12.6	25-34	90767	22.6	16.4
35-44	8310	10.8	36197	13.4	6956	12.9	35-44	53936	13.4	11.4
45-54	6071	7.9	22960	8.5	5460	10.2	45-54	34273	8.5	10.4
55-64	4822	6.3	13777	5.1	4605	8.6	55-64	20758	5.2	9.6
65+	2077	2.7	7834	2.9	2544	4.7	65+	11569	2.9	11.3
TOTALS	76656	100.00	270126	100.00	53794	100.00	TOTALS	401851	100.0	100.00

Note: SCHSA distribution estimated by applying census derived statewide distribution; NO HSA and SE HSA distributions were estimated by SHPDA. Alaska and U.S. distributions taken directly from 1980 Census Data.

Source: U. S. Department of Commerce, Bureau of the Census, Supplementary Report, 1980 Census of the Population, PC 80-81-1; Memorandum: Revised 1980 Census Counts, dated September 15, 1981; Armed Forces Information Services, Defense '81 Almanac. Alaska Department of Labor, unpublished data on military population. Office of Information Services, DHSS, Vital Statistics 1970 - 1979.

Sex Ratio: The male/female ratio is also an important socio-demographic variable which influences the health of the population as well as the need for, or utilization of, health care services. National statistics indicate that adult females consume more physician and hospital services than do adult males. Certainly the major contributors to this high utilization are the obstetrical services needed by women of childbearing age. In relation to mortality, however, females generally have lower age-specific death rates than males, particularly in categories of infant death and death from accidents.

The ratio of males to females in Alaska has become more equal since territorial days. The ratio of males per 100 females was 113 in 1980 compared to 119 in 1970 and 162 in 1950. The U. S. sex ratio in 1980 was 94.5. The sex ratio varies somewhat among regions of the State with the Northern HSA area having a larger percentage of males than other regions of the State.

Alaska has a relatively large population of young adults, and therefore, a large population of women of childbearing age (15-44). Alaskan women of childbearing age contributed 26.2% of the State population in 1980 as compared to 21.8% in 1970.

More specific data regarding the population profile of the State is found in the Data Appendix to the State Health Plan⁴.

Race: The health status of the Native population differs somewhat from the non-Native population of the State, and Alaska Natives are generally served by a separate health care system, the Alaska Area Native Health Service. The 1980 Census identified 16% of the population of the State as Alaska Native. The racial composition of Alaska's population has changed slightly over the past decade. A decrease in the population of whites to total population occurred. Whites comprised 78.8% of the population in 1970 while the proportion decreased to 77.0% in 1980. A higher concentration of whites occurs in Anchorage, where 85% of the population are white. This decrease in the distribution of whites to total population resulted in a corresponding increase of all other races.

Figure 2-19

1980 Alaska Population
by HSA and HSA Subarea
Percent Native, Non-Native Civilians, and Active Military and Dependents₁

	Percent Native Civilians	Percent Non-Native Civilians	Percent Active Military & Dependents
SOUTHEAST			
Juneau Subarea	15.7	81.5	2.9
Ketchikan Subarea	20.2	76.5	3.3
Sitka Subarea	21.4	73.2	5.4
Wrangell-Petersburg Subarea	19.3	79.9	0.8
SOUTHCENTRAL			
Aleutian Chain Subarea	24.9	10.4	64.7
Anchorage Subarea	5.1	79.2	15.7
Bristol Bay Subarea	68.0	18.2	13.8
Cook Inlet Subarea	4.7	95.0	0.3
Copper River Subarea	19.2	80.8	0
Kodiak Subarea	19.0	54.0	26.5
North Pacific Rim Subarea	12.7	83.9	3.4
Yukon-Kuskokwim Subarea	87.0	12.5	0.7
Norton Sound Subarea	79.1	20.2	0.6
NORTHERN			
Arctic Slope Subarea	76.8	22.8	0.4
Fairbanks Subarea	5.5	69.8	24.7
NANA Subarea	85.1	14.5	0.4
Doyon Subarea	37.3	43.8	18.8

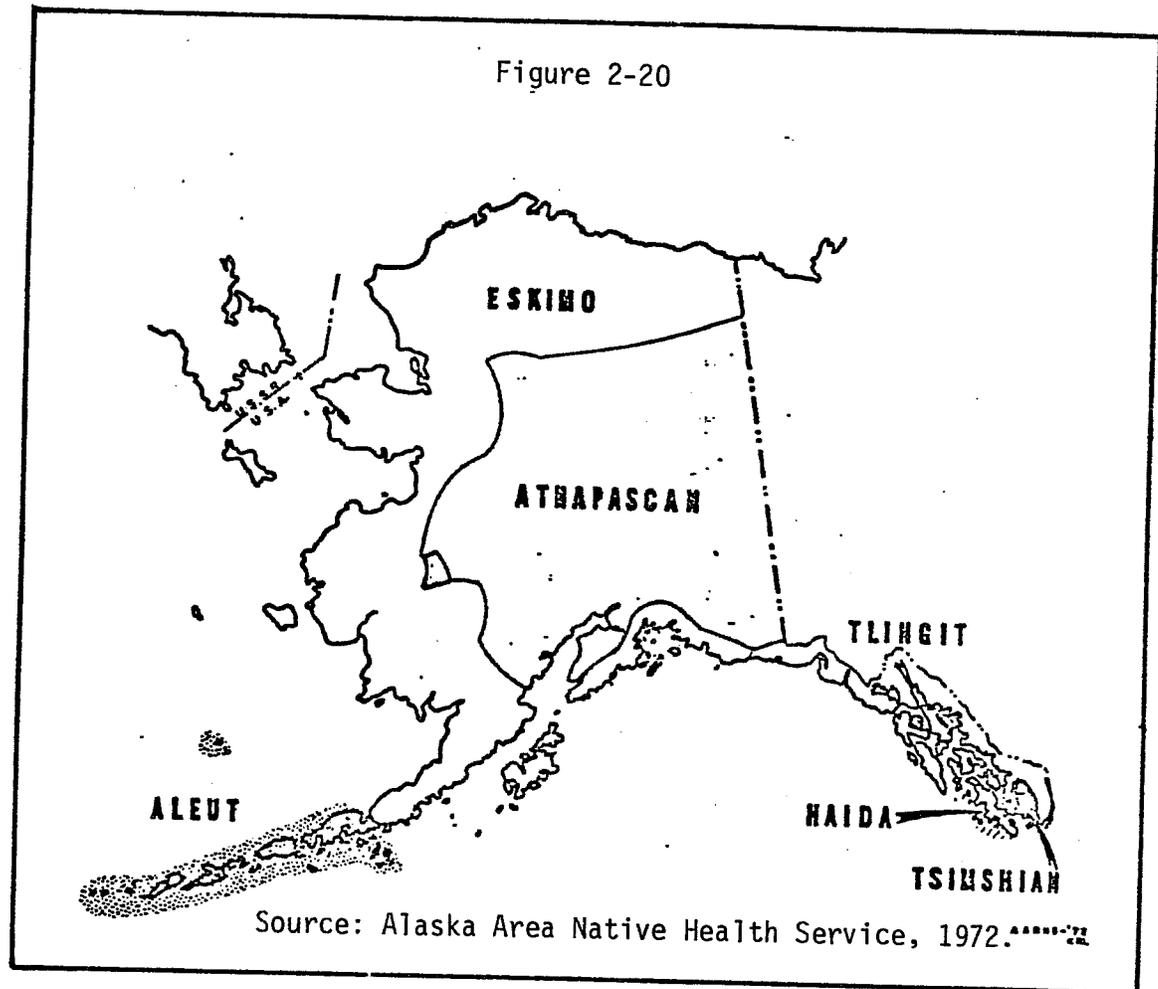
Source: U.S. Dept. of Commerce, Bureau of the Census, Supplementary Reports, 1980 Census of Population, PC80-S1-1/SC.

State of Alaska Department of Labor, unpublished data.

U.S. Department of the Air Force, Headquarters Alaska Air Command, unpublished data.

Note₁: SHPDA and SCHPD estimates of dependent population were used in determining the Active Military & Dependent population.

The Native cultures specific to geographic areas of the State are indicated on the following map (Figure 2-20).

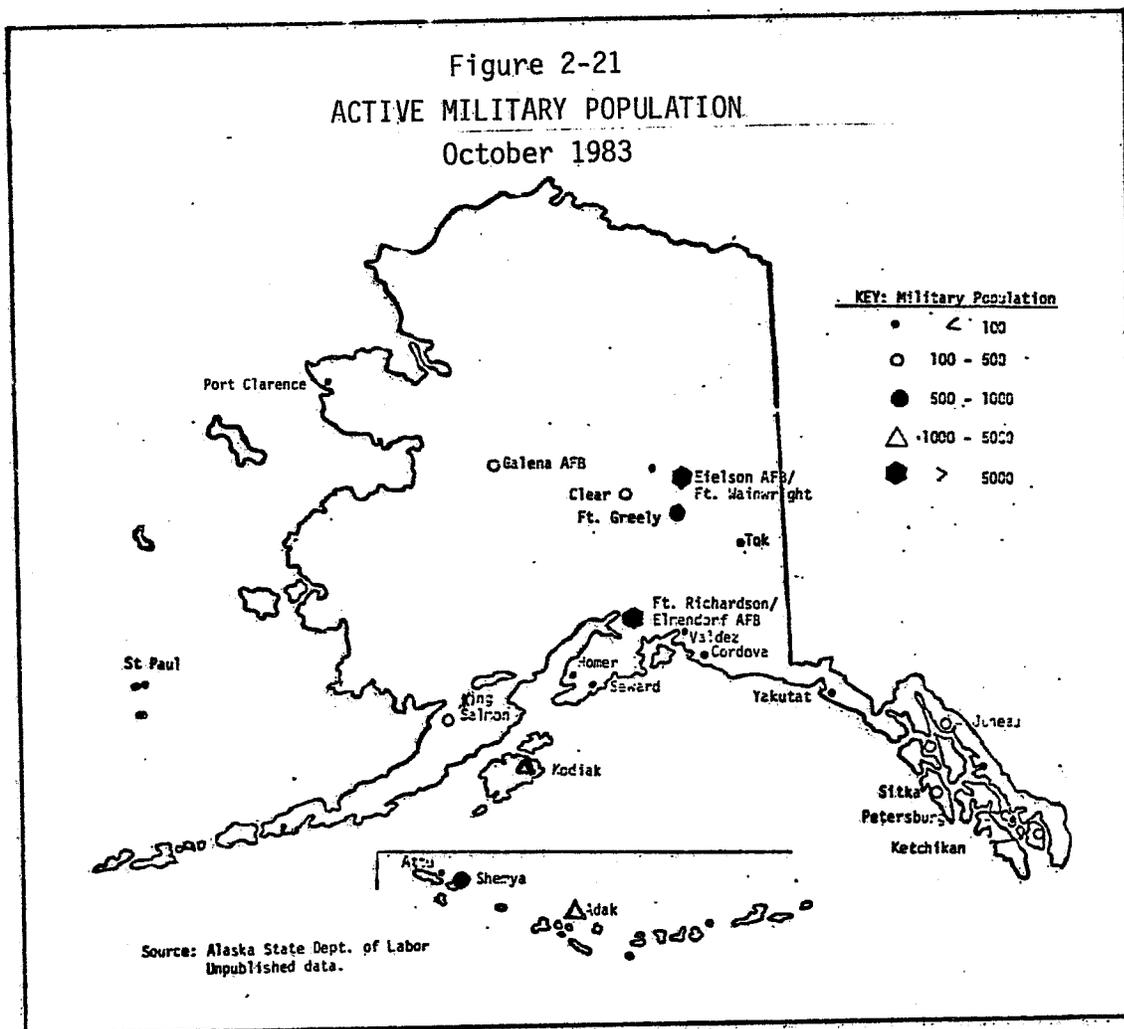


The age distribution of the Native population varies somewhat from that of the rest of the State's population. In general, the Native population has a comparatively large percentage of youth (42.7% Native as opposed to 30.6% non-Native are 17 years of age or younger) and elderly (4.6% of Native as opposed to 2.6% non-Native are 65 years of age or older). As another way of looking at this, the Alaska Native population represents 20.6% of the age group 17 years of age or younger and 25.0% of the age group 65 years or older, while only representing 16.0% of the total Alaska population (1980 Census).

The distribution of the Native population is divergent among regions of the State. In comparing total Health Service Areas, South-central has the smallest ratio of Natives to non-Natives; however, the distribution of the Native population is more accurately identified by comparing smaller geographic districts (Figure 2-15). The north and west coastal areas of the State have the highest concentration of Natives in relation to the non-Native population.

Military Population: The military population is important to identify as a target population for health planning. The military population has, by definition, different demographic and socio-economic characteristics than the civilian population; therefore, the health status of the military population can be expected to be somewhat different from the civilian population. In addition, the military is identified as a target population because a distinct health care system is designed to serve a portion of the health care needs of this group.

The military population of Alaska consists of the Navy, Army, Air Force, and Coast Guard. The total military population was estimated at 22,118 in 1983, which constitutes approximately 5% of the total population of the State. In addition, approximately 23,000 military dependents live in the State. The population is generally concentrated within the military posts which are identified in Figure 2-21.



SOCIO-ECONOMIC CHARACTERISTICS

Family Composition: Statistical indicators of the composition of Alaskan families include the size of households, number of children per family, the rate of marriage and divorce, the number of single heads of households, and the number of mothers in the labor force. The difference between the state and national averages for size of household is not significant, but the size of household does vary among regions of the state. The size of household ranges from 4.9 in the Wade-Hampton census area to 2.7 in the Juneau census area (see Data Appendix).

It is estimated that portions of Alaska have relatively large populations of mothers who are employed in full-time remunerative jobs. In 1980 57.9% of females in Alaska 16 years of age and older were in the civilian labor force. This compares to 46% participation level in 1970.

The divorce rate is a primary indicator of family stability. In the nation, Alaska is second only to Nevada in the rate of divorce. Alaska's rate compares to the national average as indicated by Figure 2-22. In 1979, the rate of divorce per 1,000 population for Alaska was 8.6, while for the nation as a whole the rate was 5.4. The rate of marriage in Alaska is slightly higher than the national norm as would be expected due to the large number of young adults in the state population.

Figure 2-22

Divorce in Alaska

1977-1981

for HSA, Alaska and U.S.

AREA	1977 Divorces		1978 Divorces		1979 Divorces		1980 Divorces		1981 Divorces	
	#	Rate Per 100 Marriages								
SE HSA	403	70.2	379	62.7	377	62.0	370	48.7	480	62.1
SC HSA	2014	60.1	1995	58.6	1928	58.8	2004	54.9	1878	48.0
NO HSA	572	56.0	594	63.7	572	62.4	556	58.3	541	51.7
ALASKA	3008	58.5	2977	58.2	2886	57.8	3517	65.6	3452	60.2
U.S.	----	49.5	----	49.5	----	49.5	----	49.0	----	N/A

Source: State of Alaska Department of Health and Social Services, Office of Information Systems, unpublished data, 1981, 1982; U.S. Department of Health and Human Services, National Center for Health Statistics, Monthly Vital Statistics Report Final Marriage Statistics Final Divorce Statistics, 1977, 1978; Monthly Vital Statistics Report Provisional Statistics, Annual Summary for the United States, 1979; Monthly Vital Statistics Report, Annual Summary of Births, Deaths, Marriages and Divorces: U.S., 1980.

Note: Divorce data is based on groom's residence.

Housing: The condition of housing in Alaska is an important issue, given the tremendous growth in the population of the state, the harsh climate and terrain, and the isolation of many Alaskan communities. A number of diseases are related to inadequate housing. Many respiratory infections, such as bronchitis and influenza, are related to inadequate heating or ventilation and inadequate sleeping arrangements. Digestive tract diseases are causally related to crowding and to inadequate water, sewage, and food-handling facilities. Accidents, also, are caused by conditions in the home, such as poor electrical connections, inadequate kitchens, and conditions contributing to the risk of fires.

The availability and quality of housing in Alaska is an important consideration for health planning. The 1970 Census supplied information regarding the crowding of housing units and the facilities available. At that time over 17% of Alaskan households were classified as crowded (more than 1.01 persons per room) compared to 7.7% nationally. The 1980 Census reported that 10.1% of Alaskan households were so classified. The existence of plumbing facilities in housing units is an important factor for environmental health purposes. In 1970, 17.2% of the households in Alaska were lacking some or all plumbing, compared with 6.9% of the nation at large. The 1980 Census figures reveal that 12.2% of year-round housing units in Alaska lacked complete plumbing for exclusive use.

There are many specific conditions in Alaska which act to impede the production of satisfactory housing, particularly in remote areas of the State. These factors include the extreme harshness of climate; land conditions such as permafrost, muskeg, floodplain, and steep terrain; rapid population growth and increased family size; difficulties in coordination and provision of utilities, clearing land titles, and other economic factors.

Figure 2-23

PERSONS PER HOUSEHOLD
ALASKA 1980 CENSUS AREAS

	Persons in Households	Persons in Group Quarters	House-Holds	Persons Per Household
Alaska	384,275	16,206	131,068	2.93
Aleutian Islands	5,220	2,548	1,598	3.27
Anchorage	168,169	4,848	60,042	2.80
Bethel	10,881	118	2,684	4.05
Bristol Bay	755	339	246	3.07
Dillingham	4,616	-	1,214	3.80
Fairbanks North Star	50,644	3,339	18,224	2.78
Haines	1,675	5	372	2.93
Juneau	19,255	273	7,035	2.74
Kenai Peninsula	24,962	320	8,546	2.92
Ketchikan Gateway	10,984	332	3,985	2.76
Kobuk	4,783	48	1,140	4.20
Kodiak Island	9,258	681	3,027	3.06
Matanuska-Susitna	17,442	324	5,699	3.06
Nome	6,449	88	1,741	3.70
North Slope	3,834	365	980	3.91
Prince of Wales - Outer Ketchikan	3,646	176	1,121	3.25
Sitka	7,436	367	2,440	3.05
Skagway-Yakutat-Angoon	3,386	92	1,087	3.11
Southeast Fairbanks	5,371	399	1,699	3.16
Valdez-Cordova	7,646	702	2,689	2.84
Wade Hampton	4,610	55	947	4.87
Wrangell-Petersburg	5,994	173	2,072	2.89
Yukon-Koyukuk	7,259	614	2,280	3.18

Source: 1980 Census data.

Education: The education of the population also impacts the health of the population and utilization of services. National studies show that the well-educated population groups consume more physician and dental services, especially for preventive health services, but as a rule have lower morbidity and mortality rates.

The overall education of Alaskans is higher than that of the nation in terms of the percentage of the population who reach a high level of educational attainment. In 1980, according to provisional estimates prepared by the Bureau of the Census, 82.8 percent of those Alaskans 25 years of age and over were high school graduates compared to 66.3 percent nationally. In addition, of the population 25 years of age and over, 22.4 percent had four or more years of college while nationally the figure was only 16.3 percent.

It should also be noted that while the state as a whole has a comparatively high level of educational attainment, the education of the Alaskan population is very divergent among the regions of the state and among different racial groups. According to the 1980 Census, of persons 25 years old and over, 87.0% of the urban population and 74.3% of the rural population were high school graduates. The differences by race are even more pronounced. For whites, 88.5% were high school graduates, for blacks 83.3%, for Asians 77.2%, but for Natives only 46.2%. The median years of school completed in 1980 were 13.0 for whites, 12.7 for blacks, 12.8 for Asians, and 11.1 for Natives.

Employment: The description of employment includes the occupational profile of the work force as well as unemployment estimates. The types of occupation are an important consideration for health planning, as various occupations are associated with risk of injury and poor health. Likewise, the level of unemployment in a population is associated with behavioral health and physical health problems. Blue-collar workers (craft workers, operators, and non-farm laborers) have a high risk of accidents associated with industry. Professional workers, on the other hand, are a high risk population for maladies aggravated by their sedentary occupations; for example, a significantly high occurrence of coronary heart disease. Figure 2-24 identifies the labor force of Alaska by occupation in 1982.

Figure 2-24

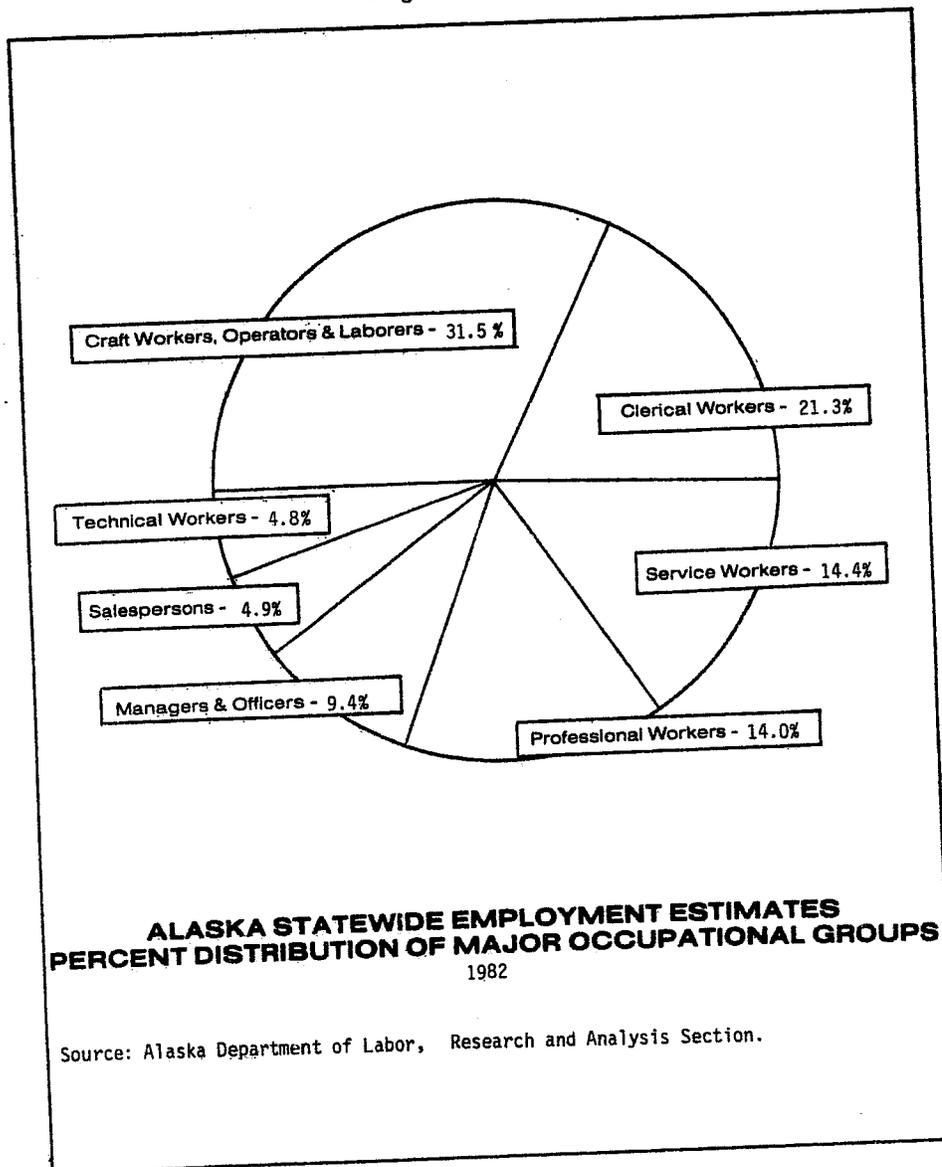


Figure 2-25

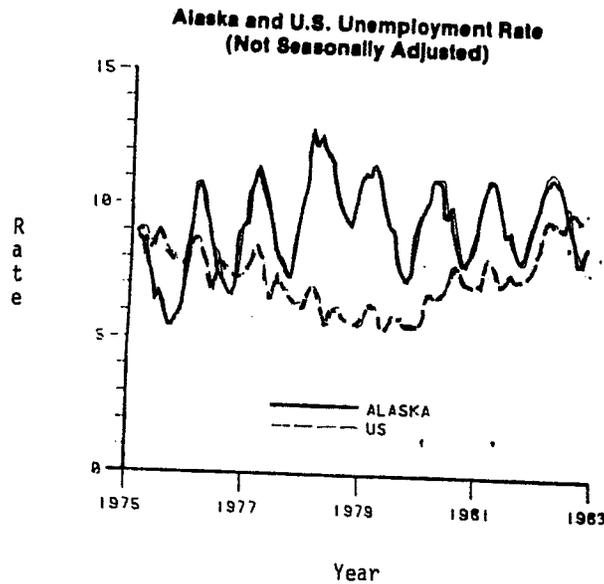
Annual Average
Unemployment Rate
(Not Seasonally Adjusted)

	Alaska	United States
1976	8.5	7.7
1977	9.3	7.1
1978	11.0	6.1
1979	9.3	5.8
1980	9.6	7.1
1981	9.4	7.6
1982	10.1	9.7

Source: Alaska Department of Labor, Research and Analysis, Benchmark 1981, and 1984 Annual Planning Information, p. 24.

Figure 2-25 illustrates the yearly unemployment rates for Alaska and the U.S. from 1976 to 1982. In Alaska the unemployment rate fluctuates considerably between seasons. Figure 2-26 indicates this large change for the years 1975 through 1983.

Figure 2-26



Source: Alaska Department of Labor, Alaska Planning Information, 1983, pg. 18.

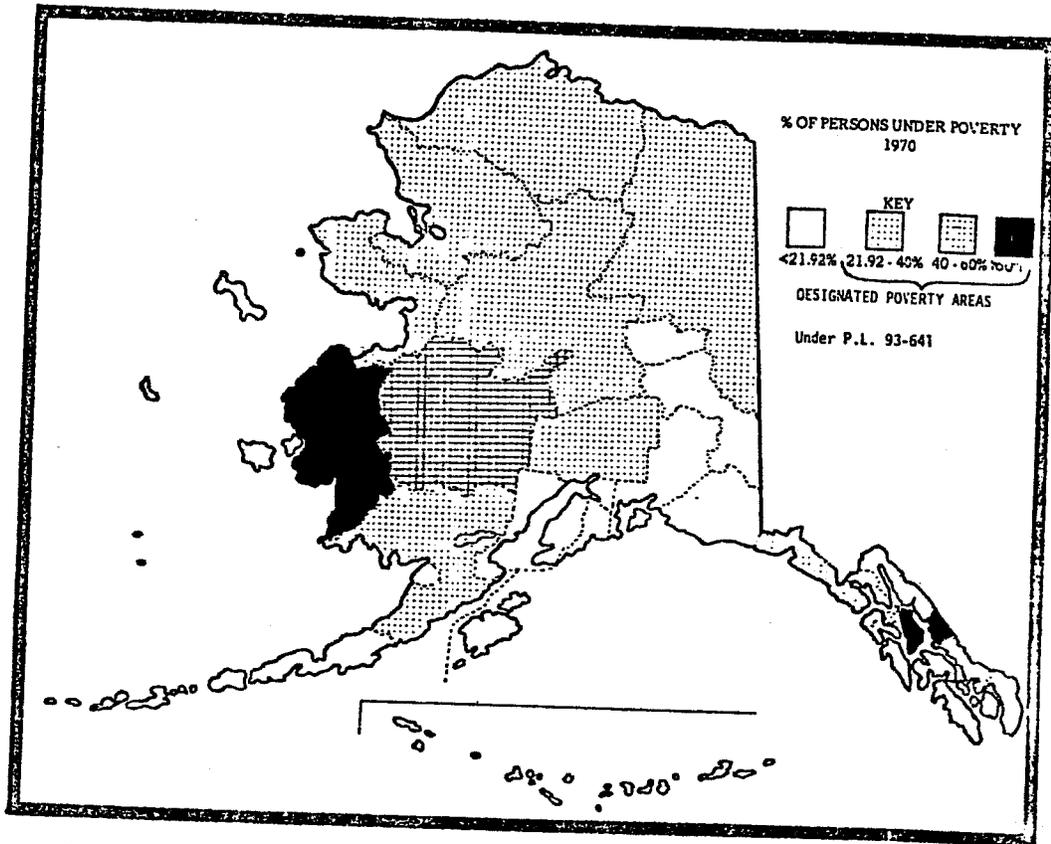
Income: The per capita income, population in poverty, and the cost of living all indirectly influence health status through such factors as housing quality, nutritional adequacy, and access to health services. National studies show that poverty and affluence have significant impacts on health. Poor children run twice the risk of affluent children of not surviving to their first birthday. Poor adults have a greater propensity to TB, heart disease and hypertension, mental disease, visual impairments, and orthopedic disease. Although epidemiological research shows that the affluent population groups are generally more healthy, some disease conditions increase with affluence. Affluence has created new health hazards, including conditions adversely affected by overeating, increased alcohol and drug consumption, and smoking. Rising income can stimulate demand for health care and utilization of physician services and preventive care.

In 1981 the per capita personal income of Alaskan residents was \$13,763, the highest of any state in the nation. However, the cost of living in Alaska far exceeds that of the "lower 48." Statistics regarding income and poverty must be evaluated with this cost of living variable in mind.

The number of persons in poverty is perhaps a more significant description than the per capita income alone. The state of Alaska had 41,615 persons under Federal poverty level in 1980. This represented 10.4% of the Alaskan population, compared to 14.0% nationally. The State Department of Labor estimated, however, that Alaska's poverty threshold was approximately 125% of the national level. The poverty threshold for a non-farm family of 4 for the "lower 48" was \$9,300 in 1982, but for Alaska it was \$11,630. By 1983 this figure had risen to \$12,380. Using the 125% guideline, 13.6% of Alaska's population was in poverty in 1980.

Public Law 93-641 states that those areas which are identified as rural and urban poverty areas will receive priority funding under Title XVI. Figures 2-27 and 2-28 identify poverty areas under P.L. 93-641 as defined in the January 27, 1978 Federal Register. The law specifies that these areas will be based on the poverty statistics from the U.S. Census.

Figure 2-27



Source: U.S. Bureau of Census, 1970 Census of Population, General Social and Economic Characteristics, Alaska, 1971.

Figure 2-28

Poverty Areas Under P.L. 93-641
1970 Census (more than 21.92% under poverty)

Census Division	Population	Population Under Poverty	Percent
Angoon	463	434	93.73
Barrow	2,599	689	26.51
Bethel	7,475	4,738	63.38
Bristol Bay	3,558	1,279	35.94
Kobuk	4,267	1,609	37.70
Kuskokwim	1,983	1,206	60.81
Matanuska-Susitna Borough	6,403	1,468	22.92
Nome	5,544	1,966	35.46
Outer Ketchikan	1,690	401	23.72
Yakutat Portion of Skagway-Yakutat	1,264	357	28.24
Upper Yukon	1,517	399	26.30
Wade Hampton	3,858	2,564	66.45
Yukon-Koyukuk	4,235	1,065	25.14

Source: Public Health Service, U.S. DHEW, Policy Notice 78-06, 1978.

LIFESTYLE AND BEHAVIORAL FACTORS

In addition to socio-economic and environmental factors, certain lifestyle factors such as leisure and recreational activities, nutrition, and other consumption patterns, and employment participation and occupation influence the health of the individual. These factors are theoretically distinct from environmental factors in the fact that lifestyle refers to the decisions and activities over which individuals generally have personal control and choice. Environment and lifestyle, however, are somewhat overlapping concepts; for example, employment participation and occupational risks involve both socio-economic environment and lifestyle factors.

A prior section of this chapter contains information on employment in Alaska. In general, blue-collar workers (crafts, operators, and laborers) have a high risk for industrial accidents. Over 30% of the Alaska work force is considered blue-collar workers. Construction-related accidents were of particular concern during the construction of the oil pipeline and are being addressed in the plans for offshore oil development and the natural gas pipeline.

Approximately one-fourth of Alaska's labor force is employed in professional and technical or managerial occupations. These professions are characterized by work pressures that may lead to stress, anxiety, and tension which are suspected of contributing to peptic ulcers, hypertension, and other stress-related health problems. Individuals are becoming more aware of various stress-reducing methods that have proven beneficial. (An additional 21.3% of the work force is employed in clerical positions and 14.4% as service workers or in sales.)

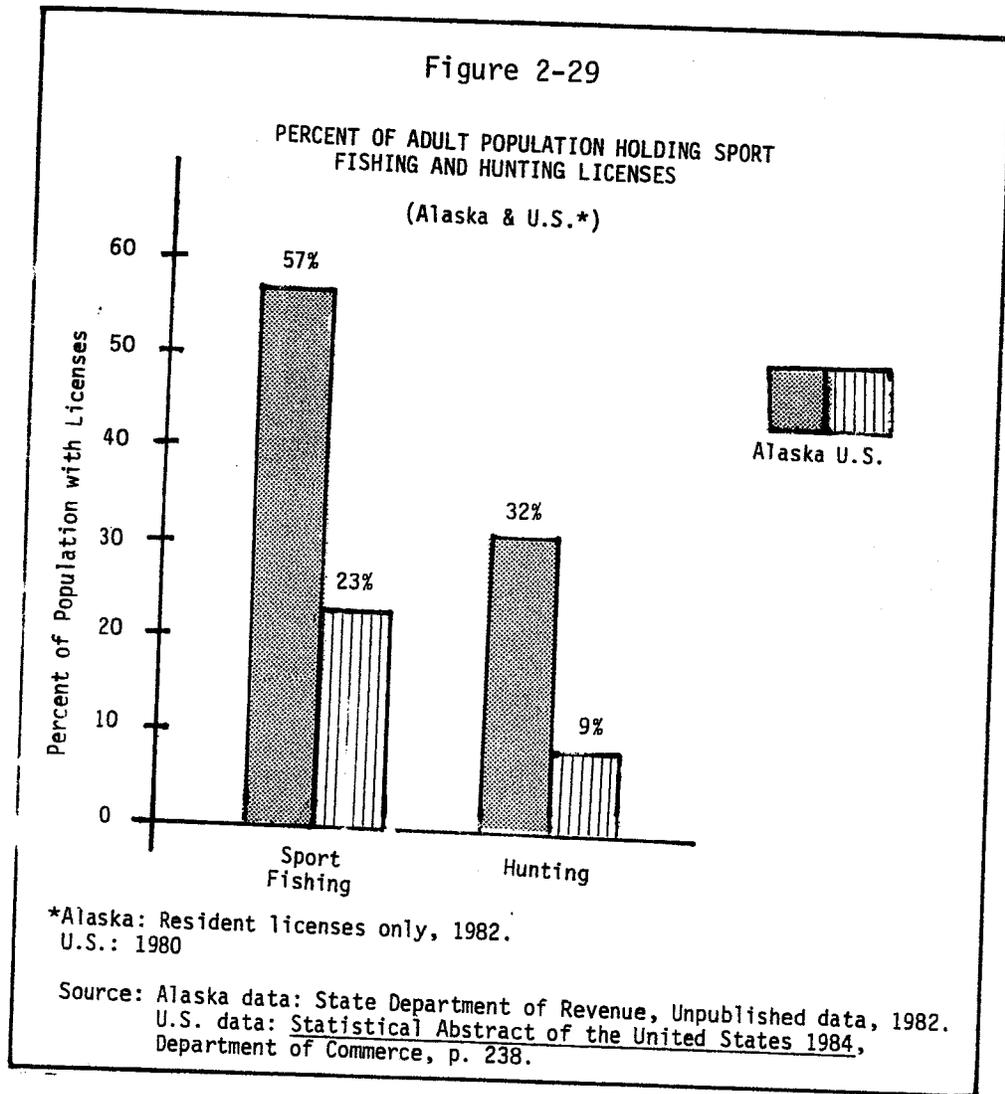
Alaska's vast wilderness and spectacular scenery are valuable resources which provide opportunities for both residents and non-residents to renew themselves physically and mentally. Certainly these outdoor recreational activities provide valuable potential resources for physical exercise as well as mental relaxation and enhancement.

The extreme climate and terrain of the State, however, add a great deal of risk to outdoor activities. During 1980, 14 deaths occurred in Alaska due to exposure or "other environmental factors," 43 deaths due to water transport, and 43 aircraft fatalities.

Wilderness activities in Alaska include subsistence hunting, fishing, and gathering and purely recreational outdoor activities such as hiking, skiing, and camping. Certainly there is considerable overlap for some residents between subsistence and recreational needs.

Alaskans actively participate in outdoor recreational activities. During 1982, Federal, State and local agencies reported that there were approximately eleven million visits to public recreational areas in Alaska. A random interview survey of 1,645 residents in 1968 recorded that 87% participated in trail-related activities, 64% in fishing, 54% in boating, 43% in camping, and 40% in hunting.

Sport fishing and hunting were important parts of the recreational life-style of Alaskans. During 1982, over 57% (156,324) of the resident adult population held fishing licenses and over 32% (88,716) held hunting licenses (Figure 2-29).



In addition, many of the visitors from other states seek outdoor activities in Alaska. During 1982, 105,014 residents from other states purchased Alaskan fishing licenses and 8,270 purchased hunting licenses. The Alaska health care system must respond to accidents that many occur to non-residents visiting the state.

Commercial fishing is a major industry in the state. In 1983, 17,486 commercial fishing vessels were registered in the state. In addition, 29,857 commercial crewmember licenses were issued.

Fishing for sport and for profit is very popular in Alaska. Registered boats in Alaska totaled 44,488 in 1983. This computes to approximately one boat for every 6 adult residents in the state. The Southeast area of Alaska has the largest number of registered boats in proportion to the population, as seen in Figure 2-30.

Figure 2-30

REGISTERED BOATS IN ALASKA
1978

<u>AREA</u>	<u>NUMBER OF BOATS REGISTERED</u>
Alaska - Statewide	27,839
Southeast	8,720
Ketchikan	2,931
Wrangell-Petersburg	1,672
Sitka	1,061
Juneau	3,056
Southcentral	13,388
Chugach (North Pacific Rim)	1,093
Ahtna (Copper River)	24
Cook Inlet (Minus Anchorage)	1,944
Anchorage	7,244
Kodiak	922
Aleut	173
Bristol Bay	719
Calista	1,149
Bering Straits	120
Northern	1,305
NANA	175
Arctic Slope	10
Doyon (Minus Fairbanks)	226
Fairbanks	894
Unknown Location	359
Out-of-State Boats Registered in Alaska (Included in State Total)	4,067

Source: Department of Transportation, U.S. Coast Guard, Unpublished Data, 1978.

Air travel, for recreation as well as business, is characteristic of the Alaskan lifestyle. The Alaska DOT/PF, in a study released in 1982, reported that there are an estimated 6.5 ticketed intrastate (i.e., travel within Alaska) passenger enplanements per Alaska resident per year, which converts to 2.6 million passengers; additionally, there is about 800 pounds of enplaned intrastate revenue cargo per resident. This means that for each Alaskan, about 1,700 miles are flown each year as a passenger within Alaska on commercial aircraft and over 100 nautical ton-miles of cargo are flown annually within the state per resident.

Two key indicators of Alaska's dependence on air transportation (some rural communities can be reached only by air) are the number of general aviation (i.e., privately owned, non-commercial) aircraft and the number of hours flown per capita. Alaska has almost 17 times more general aviation aircraft per 1,000 population than the remainder of the U.S. The number of general aviation hours flown per 1,000 population is almost 16 times greater than that for the rest of the U.S. and air taxi hours flown per capita are 70 times greater than in the rest of the U.S.

Figure 2-31

	Alaska	U.S.
Active General Aviation Aircraft per 1,000 pop:	16.9	1.0
Hours Flown per 1,000 Population	Alaska	Rest of U.S.
In General Aviation Aircraft	2,820	180
In Air-Taxis	1,200	17
Source: DOT/PF, State of Alaska, <u>Alaska Aviation System Plan</u> , August, 1982		

The Alaska ferry system also serves the need for recreation as well as business and family travel, particularly in the Southeast area of the state. A total of 307,782 persons traveled in the Southeast area of Alaska and 55,520 persons traveled in Southwest Alaska in 1983.

Figure 2-32

EMBARKING PASSENGERS ON ALASKAN MAINLINE FERRIES BY PORT (In Thousands)						
	1978	1979	1980	1981	1982	1983
<u>Southeastern System</u>						
Seattle	19.0	24.4	25.7	24.6	21.9	18.8
Prince Rupert	24.8	21.7	24.9	27.2	32.6	31.8
Ketchikan	31.9	36.6	42.5	44.8	49.1	51.1
Wrangell	7.5	8.0	8.3	7.6	8.2	8.1
Petersburg	12.7	14.2	15.4	14.0	15.0	15.3
Sitka	9.7	12.2	15.9	16.8	17.6	17.6
Juneau	41.0	44.5	49.1	49.4	53.4	56.9
Haines	34.7	34.0	36.2	36.2	37.2	41.5
Skagway	19.1	23.2	27.5	27.9	28.6	28.2
Other	21.7	25.8	30.3	33.1	35.9	38.5
TOTAL:	222.1	244.6	275.8	281.6	299.5	307.8
<u>Southwestern System</u>						
Seward	4.6	3.9	4.5	4.7	4.8	4.8
Port Lions	0.3	0.4	0.4	0.5	0.5	0.6
Kodiak	5.0	4.7	5.5	6.5	6.6	6.4
Homer	5.0	6.2	5.9	7.6	7.3	6.8
Seldovia	2.5	2.5	2.5	3.3	2.9	3.3
Cordova	4.1	4.9	4.9	5.5	5.2	5.6
Valdez	14.8	15.9	15.2	17.0	16.4	16.8
Whittier	9.9	10.4	10.0	10.2	10.3	10.2
Other:	0.4	0.5	0.6	0.5	0.6	1.0
TOTAL:	46.6	49.4	49.5	55.8	54.5	55.5
TOTAL SYSTEM	268.7	294.0	325.3	337.4	354.0	363.3

Alaska hosts a considerable number of visitors from outside the state for pleasure as well as for business. This influx of tourists and non-resident workers represents another population group which utilizes the health care system in the state. The Alaska Department of Commerce and Economic Development estimates that about 690,000 persons visited Alaska during 1982 and spent a total of \$457 million. The last year for which detailed information is available is 1977. Estimates then were that 321,000 persons had visited Alaska during the summer of 1977 and about 184,000 persons had visited during the winter 1976-1977 period (visitors for the month of October were not included in these figures). Summer visitors stayed in Alaska an average of 16.8 nights and winter visitors averaged 18.4 nights, which computes to a total of nearly 9 million persons days or the equivalent of an average daily census of over 44,000 persons during the summer and about 16,000 persons during the winter. The median age of visitors to Alaska was about 35 for winter visitors and almost 50 for summer visitors. Only about 9% of the winter visitors reported that they were retired while over one-fourth of the summer visitors were. The cruise ship passengers contribute to the number of elderly and retired visitors during the summer months. The places most often visited by tourists in Alaska were Anchorage, Fairbanks, and Juneau in summer and winter months, with McKinley Park, Skagway, Ketchikan, and Glacier Bay joining the list in the summer season. The following table records visitor census data for the last year for which detailed information is available.

Figure 2-33

SELECTED STATISTICS REGARDING VISITORS TO ALASKA		
VISITOR CENSUS 1977*		
	WINTER	SUMMER
NUMBER OF VISITORS	184,210	320,979
TOTAL EXPENDITURES (\$000)	\$122,868	\$245,809
PURPOSE OF TRIP		
Pleasure only	30%	69%
Business only	42%	13%
POINT OF ENTRY INTO ALASKA		
Anchorage	66%	48%
Juneau	6%	10%
Ketchikan	5%	10%
Tok	1%	6%
Fairbanks	5%	6%
MALE	64%	53%
FEMALE	36%	47%
MEDIAN AGE	35.9	49.2

*Winter = Nov. 1976 thru May 1977; Summer = June thru Sept. 1977. October not included in this survey data.

SOURCE: Alaska Visitor Industry - A Summary. Department of Commerce and Economic Development, State of Alaska, March 1978.

Consumption of Alcohol: The consumption of alcohol is a contributing causal factor for a wide range of health and social problems. Alaska ranks quite high in terms of the current per capita consumption of alcohol. In 1979, Alaskans consumed 3.72 gallons of absolute alcohol, a consumption rate 30% greater than that of the nation at large. By 1982, the per capita consumption for Alaskans had reached 4.58 gallons (Figure 2-34).

Figure 2-34

Per Capita Sale of Legal Alcohol Beverages,
By Beverage Class in Gallons of Absolute Alcohol, for Persons 19 Yrs of Age & Older

FY	Distilled spirits	Wine	Beer	Total	Statewide 19 + Pop.
1975	2.42	.54	1.68	4.64	216,226
1976	1.99	.42	1.53	3.44	263,876
1977	1.90	.44	1.53	3.87	271,546
1978	1.80	.45	1.54	3.79	269,570
1979	1.71	.47	1.54	3.72	271,439
1980	1.75	.51	1.67	3.93	264,991
1981	1.99	.60	1.89	4.48	259,806
1982	1.98	.63	1.97	4.58	272,796
US 1979*	1.19	.38	1.29	2.86	

Note: U.S. Consumption figure based on 1977 U.S. Population of individuals 18 years of age and older.

Source: State of Alaska, Dept. of Revenue, Div. of Admin., Services (Unpublished tables) Alcohol Beverages Shipped into Alaska plus Direct Shipment to Retailers and Military. FY 75, 76, 77, 78, 79, 80, 81, 82.

Alaska Office of Alcoholism & Drug Abuse, DHSS, The Alaska State Alcoholism & Drug Abuse Plan 1980-1983, 1981.

State Health Planning and Development, DHSS, Unpublished table, Population by Age, Statewide, 1970-1980, 1981.

Alaska Department of Labor, Alaska Population Overview 1981. Series A projections.

Cigarette Smoking: Cigarette smoking results in increased risk for cancer, coronary heart disease, digestive diseases, respiratory ailments, perinatal mortality, and other health problems. Epidemiological studies confirm that cigarette smoking is one of the major risk factors contributing to the development of coronary heart disease.

Cigarette smoking also increases the risk of perinatal mortality. The incidence of babies of low birth weight (considered at high risk) increases with the number of cigarettes smoked per day.

Figure 2-35 shows the number of cigarette packages sold per capita in Alaska and the U.S. for the period 1976-1980. Although cigarette consumption per capita in Alaska has varied from year to year, the net change for the five years being examined is 0.0%, while as a nation per capita consumption has gone down 3.6% for the same period. In addition, it should be noted that cigarette consumption per capita in Alaska is on the average about 10% greater than the national per capita consumption.

Figure 2-35

CIGARETTES SOLD, ALASKA, U.S., 1976-1980

YEAR	# CIGARETTE PACKAGES SOLD PER CAPITA		% DIFFERENCE
	ALASKA	U.S.	
1976	191	175	9.1
1977	193	175	10.3
1978	190	172	10.5
1979	183	171	7.0
1980	191	169	13.0
% Change 1976-1980	-0-	-3.6	

Note: Per capita rates are figured on a population figure of 15 years old and above.

- Sources:
- 1) Tobacco Tax Council, Richmond, Virginia.
 - 2) Population figures for Alaska derived using current estimates provided by Alaska Department of Labor and U.S. Census.
 - 3) U.S. population figures are from U.S. Census Bureau.

Summary

The distinct physical, demographic, behavioral and socio-economic characteristics of the State of Alaska determine the health status of the population and the organization of the health care system. It is therefore important to reflect on the profile of the State when addressing health status and health system concerns. The health system goals and objectives will include efforts to improve the environmental health of the State, as well as efforts to alter behavioral characteristics of the population which are detrimental to health.

The following list reflects environmental, lifestyle, and biological characteristics of the State that were identified in this chapter and the influence that could be expected upon health status and health systems. Because the environmental and lifestyle characteristics of the State have such a significant impact upon the health of a population, many of the health system responses suggested by the Plan are activities to bring about a change in the behavior of the public or improve the environmental characteristics.

General Characteristics of the State:

Expected Impact on Health Status & System:

Young population.

- The very young are prone to acute disease.
- Youth are more at risk to accidents.
- Hospitalization is low for young population.
- The youth of the population is one of the factors in the short length of stay for patients in Alaska's hospitals.

More males than females.

- Males generally have a higher age-specific death rate.
- Males are generally more at risk for accidents and violent death.

Comparatively large population of women of child-bearing age.

- Adult females (15-44) consume more physician services than males.
- Require obstetric/GYN services.

Elderly population.

- Because of the relatively small percent of elderly in the state, it is difficult to get accurate statistics regarding health status.
- Because of remoteness, severe climatic and terrain conditions, the elderly have some unique health related needs.

General Characteristics
of the State:

Large growth in population
and high mobility.

Alaska Native population.
(16% of State population)

Large military population.
(13% including dependents)

Higher divorce rate.

Considerable population of
employed mothers and single
headed households.

Harsh climate and terrain.

Much of State dependent
on air transport (limited
navigational equipment and
runway quality).

Remoteness of communities.

Poor quality housing and
sanitary facilities,
crowded housing.

Expected Impact on
Health Status & System:

-Mental health problems have often
been associated with highly chang-
ing and mobile populations.
-Health System must be responsive
to sudden changes in population.

-Separate health care system pro-
vided through AANHS & Regional
Health Corporations.
-Increasing use of private insurance
plans.

-Separate health care system.
(AF, Army, CG)

-Sometimes used to reflect the mental
health status of a given population.
(Indicator of family stability).

-Day care services may be needed
to support this population

-High risk of accidental injury/death.
-Increases risk involved in outdoor
activities.
-Complicates delivery of health care
(Particularly emergency care requir-
ing transport).

-Emergency or other medical transport
complicated.
-Increases need for resident trained
emergency care.
-High risk for aircraft accidents.

-Long distance from special care of-
ten requires extension of hospital
stay.

-High risk for household fires and
other accidents.

-Crowding and inadequate water/
plumbing facilities increase the
risk of communicable diseases.

General Characteristics
of the State:

Bimodal distribution of population in terms of educational attainment.

High overall per-capita income--but a high percentage of population is in poverty.

Generally high cost of living.

High unemployment.

Large population of professional and managerial workers.

Major population of commercial fisherman, loggers, trappers, and persons performing subsistence hunting/gathering.

Considerable outdoor recreational and wilderness activity.

High alcohol consumption rate.

High rate of cigarette smoking.

Expected Impact on
Health Status and System:

-Well educated groups generally consume more preventive health services.

-Need for a sound third party reimbursement system and services accessible to low income population.

-Contributes to expense of health services within the State.

-Increases the stress of unemployment and low income.

-Generally contributes to behavioral health problems and violent actions.

-Generally at high risk for stress related conditions.

-High risk for accidental injury due to environmental factors.

-Seasonal impact on health care system.

-High risk for accidental injury and death.

-Contributes to accidents, cirrhosis of the liver, behavioral health problems, alcoholism, violent crimes, family violence, etc.

-High risk of cancer, heart disease, and other health related problems.