

Report on Proposed Nonsubsistence Areas

Fairbanks–Denali Park Nonsubsistence Area

Anchorage–MatSu Nonsubsistence Area

Kenai Peninsula Nonsubsistence Area

Whittier Nonsubsistence Area

Valdez Nonsubsistence Area

Juneau Nonsubsistence Area

Ketchikan Nonsubsistence Area

Alaska Joint Board of Fisheries and Game

November 1–7, 1992

Anchorage, Alaska

by

Alaska Department of Fish and Game

Division of Subsistence

November 1992

Alaska Department of Fish and Game

Division of Subsistence



Symbols and Abbreviations

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Weights and measures (metric)

| | |
|------------|----|
| centimeter | cm |
| deciliter | dL |
| gram | g |
| hectare | ha |
| kilogram | kg |
| kilometer | km |
| liter | L |
| meter | m |
| milliliter | mL |
| millimeter | mm |

Weights and measures (English)

| | |
|-----------------------|--------------------|
| cubic feet per second | ft ³ /s |
| foot | ft |
| gallon | gal |
| inch | in |
| mile | mi |
| nautical mile | nmi |
| ounce | oz |
| pound | lb |
| quart | qt |
| yard | yd |

Time and temperature

| | |
|--------------------|-----|
| day | d |
| degrees Celsius | °C |
| degrees Fahrenheit | °F |
| degrees kelvin | K |
| hour | h |
| minute | min |
| second | s |

Physics and chemistry

all atomic symbols

| | |
|---|--------|
| alternating current | AC |
| ampere | A |
| calorie | cal |
| direct current | DC |
| hertz | Hz |
| horsepower | hp |
| hydrogen ion activity (negative log of) | pH |
| parts per million | ppm |
| parts per thousand | ppt, ‰ |
| volts | V |
| watts | W |

General

all commonly-accepted abbreviations;

e.g., Mr., Mrs., AM, PM, etc.

all commonly-accepted professional

titles; e.g., Dr., Ph.D., R.N., etc.

| | |
|-------------------------------------|---|
| Alaska Administrative Code | AAC |
| Alaska Department of Fish and Game | ADF&G |
| at | @ |
| compass directions: | |
| east | E |
| north | N |
| south | S |
| west | W |
| copyright | © |
| corporate suffixes: | |
| Company | Co. |
| Corporation | Corp. |
| Incorporated | Inc. |
| Limited | Ltd. |
| District of Columbia | D.C. |
| <i>et alii</i> (and others) | et al. |
| <i>et cetera</i> (and so forth) | etc. |
| <i>exempli gratia</i> (for example) | e.g. |
| Federal Information Code | FIC |
| <i>id est</i> (that is) | i.e. |
| latitude or longitude | lat. or long. |
| monetary symbols (U.S.) | \$, ¢ |
| months (tables and figures): | first three letters (Jan,...,Dec) |
| registered trademark | ® |
| trademark | ™ |
| United States (adjective) | U.S. |
| United States of America (noun) | USA |
| U.S.C. | United States Code |
| U.S. state | use two-letter abbreviations (e.g., AK, WA) |

Measures (fisheries)

| | |
|----------------------|------|
| fork length | FL |
| mid-eye-to-fork | MEF |
| mid-eye-to-tail-fork | METF |
| standard length | SL |
| total length | TL |

Mathematics, statistics

*all standard mathematical signs, symbols
and abbreviations*

| | |
|------------------------------------|-------------------------------|
| alternate hypothesis | H_A |
| approximately | \sim |
| base of natural logarithm | e |
| catch per unit effort | CPUE |
| coefficient of variation | CV |
| common test statistics | $(F, t, \chi^2, \text{etc.})$ |
| confidence interval | CI |
| correlation coefficient (multiple) | R |
| correlation coefficient (simple) | r |
| covariance | cov |
| degree (angular) | $^\circ$ |
| degrees of freedom | df |
| expected value | E |
| greater than | $>$ |
| greater than or equal to | \geq |
| harvest per unit effort | HPUE |
| less than | $<$ |
| less than or equal to | \leq |
| logarithm (natural) | \ln |
| logarithm (base 10) | \log |
| logarithm (specify base) | $\log_2, \text{etc.}$ |
| mean | \bar{x} |
| minute (angular) | ' |
| not significant | NS |
| null hypothesis | H_0 |
| percent | % |
| plus or minus | \pm |
| population size | N |
| probability | P |
| sample size | n |
| second (angular) | " |
| standard deviation | σ or s |
| standard error (of the mean) | $s \bar{x}$ |
| type I error probability | P_a |
| type II error probability | P_b |
| variance | σ^2 or s^2 |

TECHNICAL PAPER NO. 335

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Whittier Nonsubsistence Area
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by

Alaska Department of Fish and Game,
Division of Subsistence, Anchorage

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Submitted by the Alaska Department of Fish and Game

Proposal No. 1 Fairbanks-Denali Park Nonsubsistence Area

Area Description

SEE FIG. 1 and 2

The proposed Fairbanks-Denali Park Nonsubsistence Area includes Game Management Unit 20(A) east of the Wood River drainage and south of the Rex Trail but including the upper Wood River drainage south of its confluence with Chicken Creek, Game Management Unit 20(B) within the North Star Borough, Game Management Unit 20(C) within Denali National Park and those portions east of the Teklanika River and south of a line west from Rex to the Teklanika River, Game Management Unit 20(D) west of the Tanana River between its confluence with the Johnson and Volkmar rivers, west of the west bank of the Johnson River, and north and west of the Volkmar drainage, including the Goodpaster River drainage, and Game Management Unit 25(C) in the Preacher and Beaver creek drainages. (See Figure 1.)

The proposed Fairbanks-Denali Area includes communities in the greater Fairbanks area and nearby suburban and satellite communities along the road network, including College, Fox, North Pole (within the Fairbanks North Star Borough), Ft. Wainwright, and the population south and east along the Alaska Highway to and including Delta Junction and Fort Greely. The area also includes the area within Denali National Park, and communities in a part of the Nenana River drainage (from MP 216 to MP 276 of the Parks Highway), including Ferry, Healy, McKinley Park Village (Fig. 2).

Because of the proximity of Cantwell and Nenana and their use of this area, resource use by these communities also is described. Other communities close to the boundary of the Fairbanks-Denali area include Minto and Dot Lake.

Historic Overview

SEE FIG. 3

At the time of European contact (about the 1830s), the inhabitants of the Fairbanks Area were a distinct society of Tanana Athabaskans (a description of the history, economy, and resource use patterns of the Fairbanks Area is contained in Schroeder et al 1987:161-215). The local economy was dependent upon fishing (salmon, whitefish, pike, and other fish) and hunting (caribou, moose, black bear, and other species) for food and simple commodity production for trade (especially furs).

A fur trade and mission period dated from about 1830-1885. Gold strikes along the Fortymile River in 1886 and Birch Creek in 1893 attracted thousands of gold seekers during a brief gold boom. By about 1915, there were dozens of small communities of Euro-Americans in the Fairbanks Area connected by trails and roadhouses. Fairbanks developed into the center for Euro-American settlement in Alaska's Interior. It was connected by railroad

to Seward by 1923. By 1930 its population numbered about 2,100 people. World War II caused a boom in the population, spurred by construction of Fort Wainwright (1938), the Alaska Highway, Eielson Air Force Base (1943), and Fort Greely (1942) (near Delta Junction). Development of the Prudhoe Bay oil field and construction of the Trans-Alaska Pipeline during the 1970s caused another temporary boom. Between 1950 and 1990 the Fairbanks Area grew from 18,129 people to 77,720 people (see Fig. 3).

For the Denali Area, at historic contact, portions of the area were traditional hunting areas of the Nenana-Toklat, Wood River, and Mouth-of-the-Toklat bands (currently centered at Nenana) and the upper Susitna Ahtna (currently centered at Cantwell). The Tanana bands consolidated at Nenana (a seasonal fishing site) circa 1900-1930, and Ahtna moved to Cantwell after 1916 because of employment connected with the building and operation of the railroad (and the Valdez Creek mines closed in 1935) (Shinkwin and Case 1984; Stratton and Georgette 1984).

A series of developments contributed to human population growth in the Denali area. About 1880-1915, the Kantishna and California Creek mining districts were developed. During the construction of the Alaskan Railroad (1915-23), Euro-American homesteaders and miners settled the Nenana Valley. McKinley National Park was established in 1917, and limited seasonal employment in guiding summer packtrips began soon after for local residents. In 1918, the Healy River Coal Corporation opened a mine at Suntrana up Healy Creek, and coal mining has been continuous since then in the area. The 1920s-30s was a period of homesteading, and many families settled the Nenana Valley. A temporary boom in coal production during World War II led to the establishment of Usibelli Coal Mine Inc. in 1943 centered near Healy. In 1952, the Denali Highway reached McKinley Park, and homes built on six trade and manufacturing sites led to a gradual growth of McKinley Park Village. In 1971, the Parks Highway was completed, linking Fairbanks and Anchorage through the Nenana Valley. During the 1980s, additional land disposals in the Nenana Valley attracted more homesteaders and in-migrants, and the Denali Borough was formed in 1990. Between 1950-90, the Ferry, Healy, and McKinley Park Village area grew from 319 people to 813 people, Cantwell grew from 67 people to 147 people, and Nenana grew from 242 people to 393 people.

Twelve Factors

1. The Social and Economic Structure

The social and economic structure of the Fairbanks area has been characterized as a type of "industrial-capitalism", a socioeconomic system common in the lower 48 that has developed in Alaska. This social and economic structure is distinct from another type of socioeconomic system in Alaska, called a "mixed, subsistence-cash economy", where the domestic household sector is a major producer and distributor of food. Industrial-capital systems generally have large wage sectors which provide the major means of livelihood to residents. In an industrial-capital system, households are not major producers or distributors of an area's food supply. Food production by households provides a very small portion of the community's

food, but may be of economic significance to those households actively involved in hunting and fishing. Most food and other goods and services are provided by businesses organized and financed separately from the household unit. Production and distribution of goods and services are organized by market forces or by government. Fishing and hunting by residents are primarily conducted as part of recreational or commercial industries. In the Parks Highway communities, the economy of particular segments of the population resembles an industrial-capital system, while for others food obtained by hunting and fishing provides a greater proportion of the household food supply. The specific characteristics of the Fairbanks-Denali Area socioeconomic system are described below.

2. The Stability of the Economy

SEE FIGS. 3, 4, 5

Over the past four decades, the economy of the Fairbanks Area has shown growth in spurts. There was substantial economic growth during the 1950s, little growth during the 1960s, a boom during the pipeline era of the 1970s (but not resulting in large permanent population gains), and substantial growth during the 1980s. One indicator of economic trends are population growth rates (see Figs. 3 and 4). The mean annual rates of growth for the area within the Fairbanks North Star Borough have been 8.1 percent (1950s), 0.6 percent (1960s), 1.6 percent (1970s), and 3.6 percent (1980s) (Fig. 3).

Fig. 5 shows recent trends in civilian wage employment in the Fairbanks North Star Borough during the last decade. The number of wage-paying jobs increased substantially from 21,100 in 1980 to 29,300 in 1985, dipped to 25,550 by 1988 (due to reduced state spending caused by declining world oil prices), and increased to 27,800 by 1991. An expansion of military personnel is the cause of some recent growth.

3. The Extent and Kinds of Employment for Wages, Including Full-Time, Part-Time, Temporary, and Seasonal Employment

SEE FIGS. 5, 6, 7, 8, 9

In 1991, most wage-paying jobs in the Fairbanks Area were in government (27 percent), military (21 percent), services (18 percent), trade (18 percent), and transportation (6 percent) (see Figs. 5 and 6). Manufacturing industries were few and provided only about 2 percent of wage jobs. Most manufactured goods are imported into the Fairbanks area from outside Alaska. Three percent of wage-paying jobs were in finance and real estate (FIRE) and 4 percent in construction. One percent of wage employment in 1991 was directly in mining. In commercial fishing, there were 91 limited entry commercial fishing permits fished by residents of the Fairbanks Area in 1991 (Fig. 7). The permits are for commercial fisheries around the state. The total gross value of the 1991 commercial fishing catch was about 1.3 million dollars.

Unemployment rates were 10.7 percent in the Fairbanks North Star Borough in April 1992 (Fig. 8). This compares to the Alaska rate of 9.2 percent.

A 1987 household survey was conducted in the Parks Highway communities of McKinley Park Village and Healy. Based on the survey, full time and seasonal employment at Denali National Park was the major source of employment for McKinley Park Village residents in 1987 (47 percent of the jobs were with the federal government) (Fig. 9). In the Healy area, mining was a major employer, representing 26 percent of jobs (Fig. 9). There were very few employment opportunities in retail (3 percent) and other government services. There were two limited entry commercial fishing permits fished by residents of Healy and McKinley Park Village in 1991 (Fig. 7). About 30 percent of surveyed households in McKinley Park community were unemployed during winter, but most were employed during summer (Fig. 23). Almost all surveyed households were employed year-round at Healy, which is near the Usibelli Coal Mine (Fig. 23). In the Ferry area (milepost 250-280), about 20 percent of surveyed households reported no employment in 1987, though this figure increased and decreased seasonally (Fig. 23).

For a sample of households in Nenana surveyed by the Division of Subsistence in 1982, 36 percent of households were employed in commercial fishing, 36 percent in commercial fish processing, 27 percent in trapping, 14 percent in local government, 9 percent each in services, transportation, and construction, and 5 percent in mining (Shinkwin and Case 1984). In 1991, there were 17 limited entry commercial fishing permits fished by residents of Nenana (Fig. 7). The total gross value of the 1991 commercial fishing catch was about \$175,000.

At Cantwell during the current decade, major employers have included the Alaska Department of Transportation, the Alaska Railroad, the Railbelt School District, and the National Park Service (Stratton and Georgette 1984). Many of these positions were seasonal. Tourism has supported a few small businesses in the Cantwell area, including a gas station, cafe, country store, laundromat, lodge, and welding shop.

4. The Amount and Distribution of Cash Income Among Those Domiciled in the Area or Community

SEE FIG. 10-18

In 1989, per capita incomes in the Fairbanks North Star Borough (\$15,914) were slightly below the state's average (\$17,610) (Fig. 10 and 11). According to U.S. Census income distribution records, incomes were distributed unevenly by racial or cultural group membership (Fig. 10). These income distributions are shown in more detail in Figs. 12 and 13.

In 1989, mean incomes were McKinley Park Village (\$20,917), Cantwell (\$20,128), Healy (\$18,160), Ferry (\$14,112), and Nenana (\$12,852) (Fig. 14). Income distributions by household for these communities are shown in Figs. 15-17.

In 1989, 11.5 percent of Fairbanks residents lived in households earning less than the federal poverty standards (Fig. 18). This rate is below the Alaska average (12.5 percent), and substantially below rates in some Alaska areas, like the Dillingham Census Area (30.9 percent).

5. The Cost and Availability of Goods and Services To Those Domiciled in the Area or Community

SEE FIG. 19

The Fairbanks area has a well-developed system of commerce through which a large range of goods and services are provided. Food prices can be used as an index of cost of living compared with other Alaska areas. The cost of food in Fairbanks relative to other selected communities in Alaska is shown in Fig. 19. The cost of food index in Fairbanks is relatively low for communities in Alaska. Current food costs in Fairbanks are about 7 percent higher than Anchorage. Food is relatively less expensive in the Fairbanks area because the area is on a major commercial transportation network (which reduces transportation costs) and because the area deals in large volume.

As shown in Fig. 19, the cost of food at Delta Junction is higher than Fairbanks. Current food costs at Delta Junction are 33 percent higher than Anchorage, due to greater shipping expenses and lower volume.

The cost of food in the Parks Highway area is between 49-82 percent higher than Fairbanks. There are only a few small food outlets offering a limited selection of items in Healy and McKinley Park Village. However, the communities are located along the Parks Highway, which allows access to Fairbanks where most families shop.

6. The Variety of Fish and Game Species Used by Those Domiciled in the Area or Community

SEE FIGS. 20-22

Residents of the communities in and adjacent to the proposed area use a variety of big and small game, furbearers, and fish (Fig. 20, 21, 22). Primary big game species used include moose, caribou, sheep, black and grizzly bears. Major fish species used include chum and coho salmon caught locally as well as other salmon species and halibut taken in other parts of the state.

7. The Seasonal Cycle of Economic Activity

SEE FIG. 23

Economic activity in the Fairbanks Area shows some seasonal fluctuations, primarily related to tourism. The number of nonagricultural jobs shows increases during the summer tourist season and decreases during winter season. Except for this, the types of jobs in the Fairbanks Area (primarily in government, military, services, and trade) are not particularly affected by

yearly natural cycles. Fishing and hunting activities by residents are influenced by resource availability and regulated seasons, such as salmon fishing during summer and fall and big game hunting during fall. Jobs in the local recreational industry (such as recreational retail outlets, fish guides, game guides, charter air transporters, and outfitters) are influenced by these seasonal harvesting cycles.

There were more marked seasonal cycles of employment for residents along the Parks Highway. In McKinley Park Village, 70 percent of surveyed households reported employment from October through February, compared with near 100 percent from May through August (Fig. 23). More jobs were available during summer because of work associated with Denali National Park tourism. Employment was not seasonal for surveyed Healy households (Fig. 23). In the Ferry area (mile 250-280), a significant rate of unemployment occurred year-round (Fig. 23).

In Nenana Village, commercial and subsistence fishing in summer are active seasonal periods for catching, selling, and processing fish for local use (Shinkwin and Case 1984). Some wage jobs are seasonal. Many jobs in Cantwell also are seasonally linked to the summer season. Based on a 1982 survey, Cantwell heads of households were employed a mean of 6.6 months a year (Stratton and Georgette 1984).

8. The Percentage of Those Domiciled in the Area or Community Participating in Hunting and Fishing Activities or Using Wild Fish and Game

SEE FIGS. 20, 24, 25, 26

Based on a random household survey in the Fairbanks North Star Borough in the mid-1980s, 50-59 percent of households hunted, 74-82 percent of households fished, and 13-20 percent of households trapped (Fox 1988) (see Fig. 24). In 1991, a total of 11,059 hunting/hunting combination licenses were sold to persons living in the Fairbanks North Star Borough (about 14.2 percent of the population). In 1991, 807 hunting/hunting combination licenses were sold to persons living in the Delta Junction-Fort Greely area. According to angler surveys, about 43-50 percent of the population in the Fairbanks North Star Borough fished with rod and reel during 1989-91 (Fig. 25).

In 1990 and 1991, Fairbanks Borough residents were issued 238 and 200 permits respectively for non-commercial net fishing in the Yukon-Tanana districts (Fig. 20). In 1990 and 1991, Delta Junction area residents were issued 8 and 15 permits for non-commercial net fishing in the Yukon-Tanana districts (Fig. 20).

Based on household surveys in McKinley Park Village in 1987, 70 percent of households fished and 45 percent of households hunted (Fig. 26). Seventy-five percent of households used wild fish and 65 percent used wild game. In the Healy-Ferry Area, 80 percent of households fished and 66 percent of households hunted (Fig. 26). Ninety-three percent of households used wild fish and 76 percent of households used wild game. In 1991, 270 hunting/hunting combination licenses were sold to persons living in the Parks Highway area (about 33.2 percent of the population).

9. The Harvest Levels of Fish and Game by Those Domiciled in the Area or Community

SEE FIGS. 22, 27, 28, 29

In the Fairbanks area, the total fish and game harvest was about 1.25 million lbs annually, based on state game harvest records for 1986-91, sport fish surveys for 1989-91, and noncommercial salmon records for 1990-91. The total annual per capita harvest of fish and game was 16.0 lbs per person in the Fairbanks Area (8.8 lbs of fish and 7.2 lbs of game) (Fig. 26). The harvest of wild foods provided a small portion of the food supply in the Fairbanks Area compared with other Alaska areas (Fig. 27). The wild food harvest contained about 10 percent of the area's protein requirements (Fig. 28). Low food production rates by households are characteristic of an industrial-capital system, where most foods are produced and distributed through commercial businesses and purchased by households with wage earnings. There is a high demand for wild meat in the Fairbanks area, and for individual households very active in hunting and fishing, harvest levels are commonly high and important sources of the household's diet. Because of currently depressed moose and populations in areas commonly hunted by Fairbanks residents, harvest of game in Fairbanks may be lower during the monitored period (1986-91) compared with other years.

Based on household surveys in 1987, per capita harvests were 132 lbs for residents of the Healy-Ferry area and 242 lbs for residents of the McKinley Park Village area (Fig. 28). The wild food harvest contained 86 percent of the protein requirements of the Healy-Ferry area, and all of the protein requirements of the McKinley Park Village area (Fig. 29). For McKinley Park residents, the harvest was primarily chum and coho salmon (164 lbs per person) and moose (41 lbs per person); for Healy-Ferry residents, the harvest was primarily chum and coho salmon (53 lbs per person) and moose (30 lbs per person) (Fig. 22).

Based on a household survey in 1982, per capita harvests in Cantwell were 112 lbs per person (Fig. 22 and 27). Based on game harvest tickets and subsistence fish permit records, the per capita harvests in Nenana were 449 lbs per person in 1985 (Fig. 22).

10. The Cultural, Social, and Economic Values Associated with the Taking and Use of Fish and Game

SEE FIG. 30

In the Fairbanks area, the predominant values associated with fish and wildlife harvests are recreational. Fishing and hunting are periodic outdoor activities, valued as breaks from the economic work routine, embodying fair chase ethics, and producing wild foods that are valued for their taste and healthful qualities. For many, fishing and hunting are valued as high quality outdoor experiences which supplement the household's diet. For residents directly employed in commercial fishing and outdoor recreational industries (such as recreational retail outlets, fish guides, game guides, charter air transporters, outfitters, and tour guides), values are commonly commercial in nature. That is, the use of fish and game produces monetary income for

the household, as well as all or some of the recreational values listed above. For many Fairbanks area residents, including hunters and fishers, values associated with fish and wildlife are related to environmental awareness and nonconsumptive uses (such as wildlife viewing). For some Fairbanks area residents, values of fishing and hunting are associated with Alaska Native cultural traditions, including food production for a local society of people, sharing with elders, and the provision of wild foods for ceremonial gatherings.

One indicator of value orientations of residents are the types and numbers of voluntary associations dealing with fish and wildlife in the Fairbanks area appearing on mailing lists compiled by ADF&G (see Fig. 30). Among the voluntary associations listed for the Fairbanks Area, there are at least 18 associated with recreational-sport fishing or hunting, 1 associated with dip net salmon fishing at Chitina for family use, 5 associated with the environment and/or nonconsumptive uses, 1 associated with trapping, and 1 associated with enforcement. For the Parks Highway Area, the list contains 1 association dealing with recreational-sport fishing or hunting and 1 association dealing with the environment. A broad spectrum of values related to fish and game can be found in the Parks Highway vicinity. For some families, fishing and hunting are primarily recreational activities. For other families who have moved to the area under various land disposal programs, fishing and hunting are valued as a part of a perceived homestead lifestyle.

11. The Geographic Locations Where Those Domiciled in the Area or Community Hunt and Fish

SEE FIG. 31-36

During the period 1986-91, residents of the Fairbanks area hunted throughout the state, but primarily in GMU 20, as shown by game harvest records (Fig. 31). GMU 20 is the most important hunting area for Fairbanks residents, particularly 20B and western 20A along the Parks Highway due to the area's accessibility from the Parks Highway via the Ferry Road, the Rex Trail, the Stampede Trail, and the Yanert Valley. A significant number of Fairbanks area residents also hunted in GMUs 13 and 25 (Fig. 31). In the proposed non-subsistence area, 79 percent of the moose, 49 percent of the caribou, 86 percent of the black bear, 60 percent of the brown bear, and 57 percent of the sheep reported killed on harvest tickets and permits were taken by Fairbanks Area residents. In the portions of Unit 20A outside the proposed non-subsistence area, 58 percent of the moose, 36 percent of the caribou, 57 percent of the black bear, and 96 percent of the brown bear reported killed on harvest tickets and permits were taken by Fairbanks Area residents.

Somewhat over 200 Fairbanks residents obtain permits to fish for salmon in the Tanana and Yukon Rivers; the Yukon River bridge is a common fishing location. A fair number of Fairbanks residents also travel to the Copper River to fish for salmon, primarily with dip nets at Chitina. Some Alaska Native residents in Fairbanks return to home villages to hunt and fish each year; however, no study has been done to estimate the frequency of this practice.

Figs. 32-33 show the hunting and fishing areas for residents of McKinley Park Village and Healy, based on a sample of households. Areas used for hunting include the Yanert Valley, the Ferry Road, the Rex Trail, and the Stampede Trail, and the Parks and Denali highway corridors.

Fig. 34 shows the moose hunting areas for residents of Nenana, based on a sample of households (Shinkwin and Case 1984). Areas used for hunting moose include the lower portions of the Wood, Tatlanika, Totatlanika, and Teklanika rivers, the Parks Highway, the Stampede Trail, the Tokalat, Kantishna, and Bearpaw rivers to Lake Minchumina and portions of the Tanana River and Minto Flats area.

Figs. 35-36 show the moose and caribou hunting areas for residents of Cantwell for the period 1964-84, based on 20 household interviews in 1983 and 1984 (Stratton and Georgette 1984). Hunting locations include the portions of the Yanert Fork drainage, the Parks Highway, and portions of GMU 13 along the Denali Highway.

12. The Extent of Sharing and Exchange of Fish and Game by Those Domiciled in the Area or Community

SEE FIG. 26

Sharing and exchange of wild fish and game occurs within and between families domiciled in and adjacent to the proposed Fairbanks-Denali Nonsubsistence Area, but the extent has not been quantified in all communities. The absolute amount of wild foods shared on a per capita basis is relatively small in the Fairbanks area because of the relatively small amounts harvested. Distribution of fish and game through noncommercial networks is not a significant mechanism for supplying food in the Fairbanks area. However, no systematic household surveys of sharing and exchange of fish and game have been made for Fairbanks area residents.

Sharing is relatively common in the Parks Highway communities. Based on household surveys, 45 percent of household received fish and 44 percent received game in McKinley Park Village in 1987 (Fig. 26). In the Healy-Ferry Area, 51 percent of households received fish and 55 percent received game in 1987 (Fig. 26). The volume of wild foods shared has not been documented.

Source Materials

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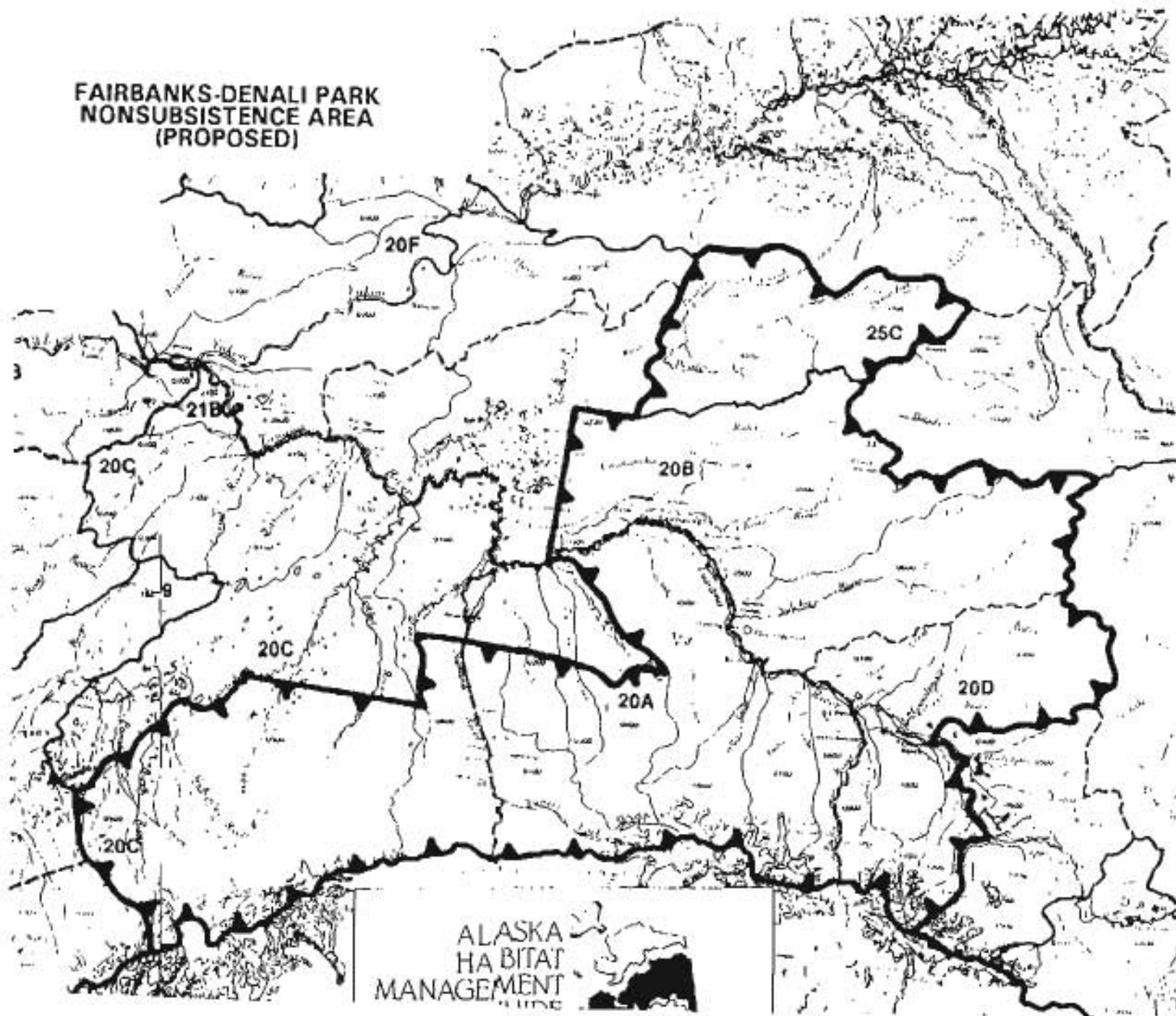
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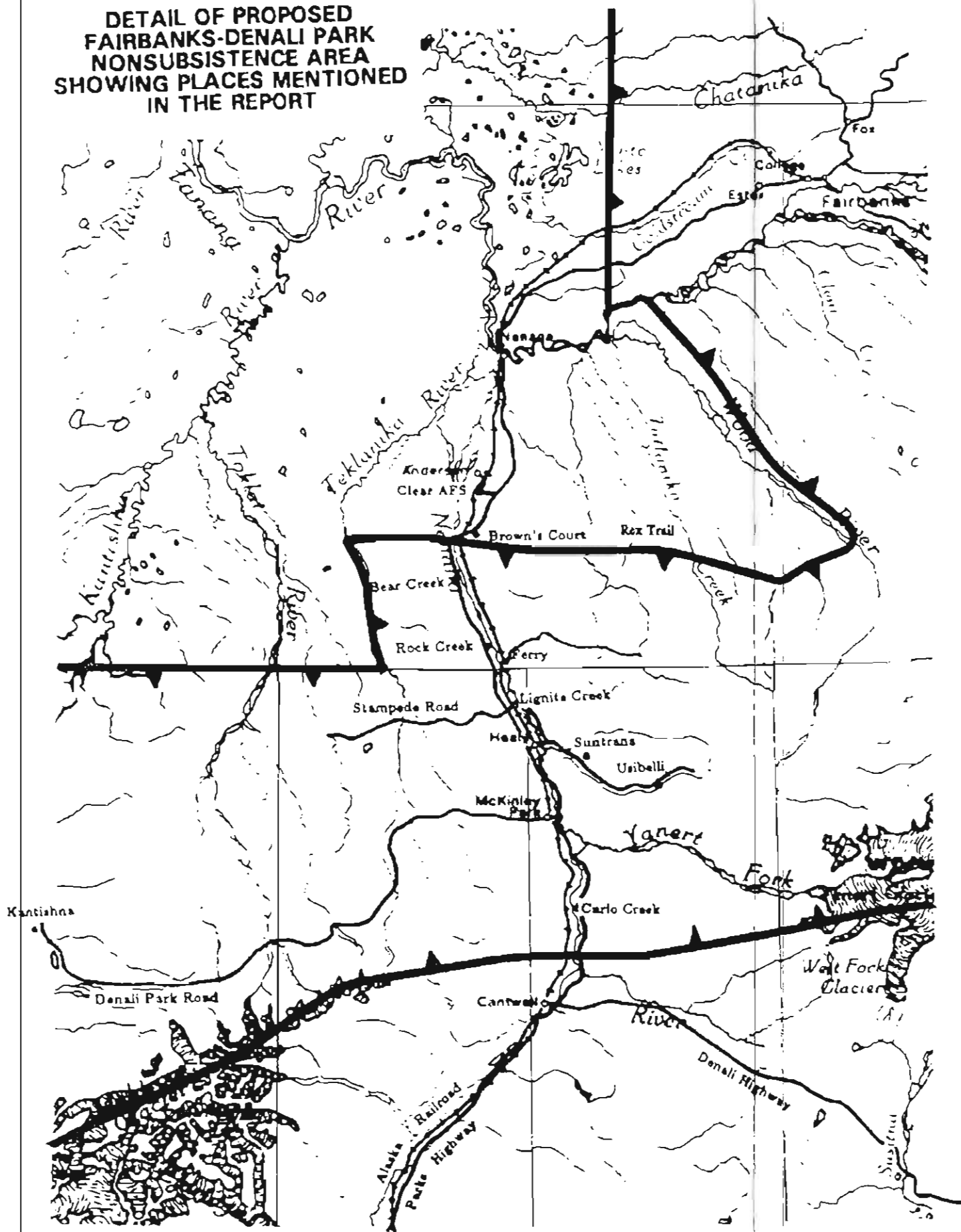
FAIRBANKS-DENALI PARK
NONSUBSISTENCE AREA
(PROPOSED)

14

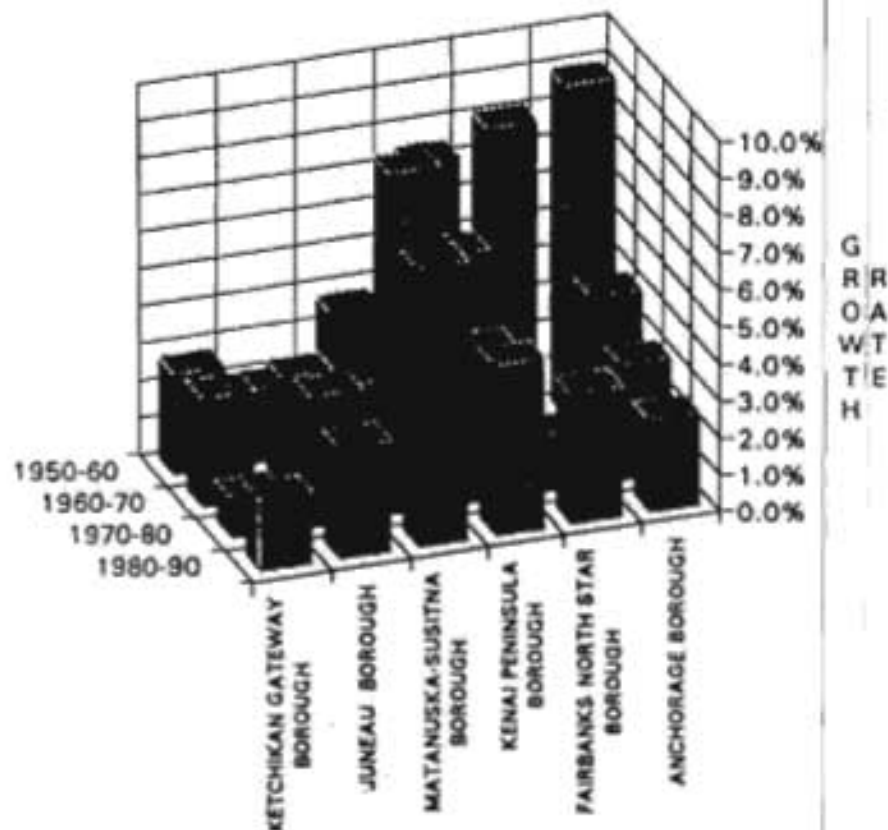


ALASKA
HABITAT
MANAGEMENT

**DETAIL OF PROPOSED
FAIRBANKS-DENALI PARK
NONSUBSISTENCE AREA
SHOWING PLACES MENTIONED
IN THE REPORT**

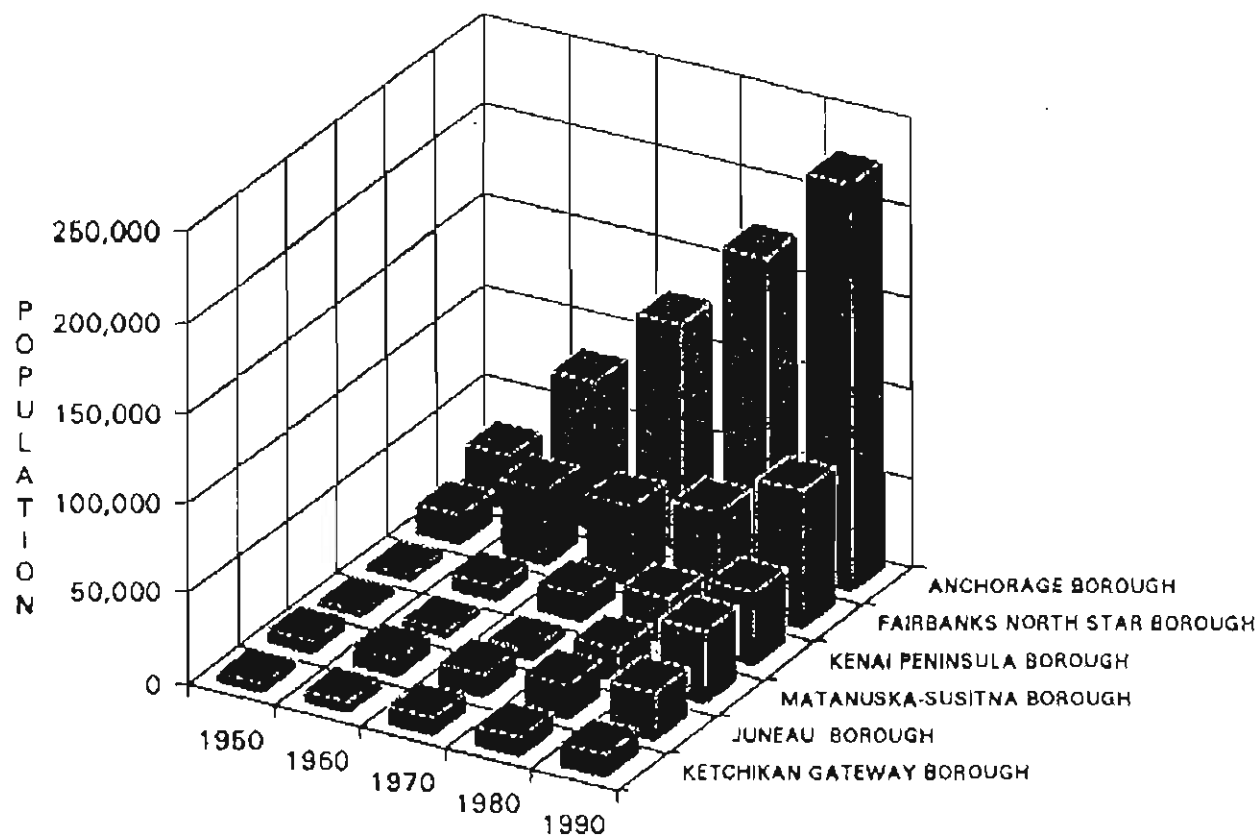


MEAN ANNUAL GROWTH RATES PER DECADE, FOR SELECT ALASKA AREAS, 1950-90



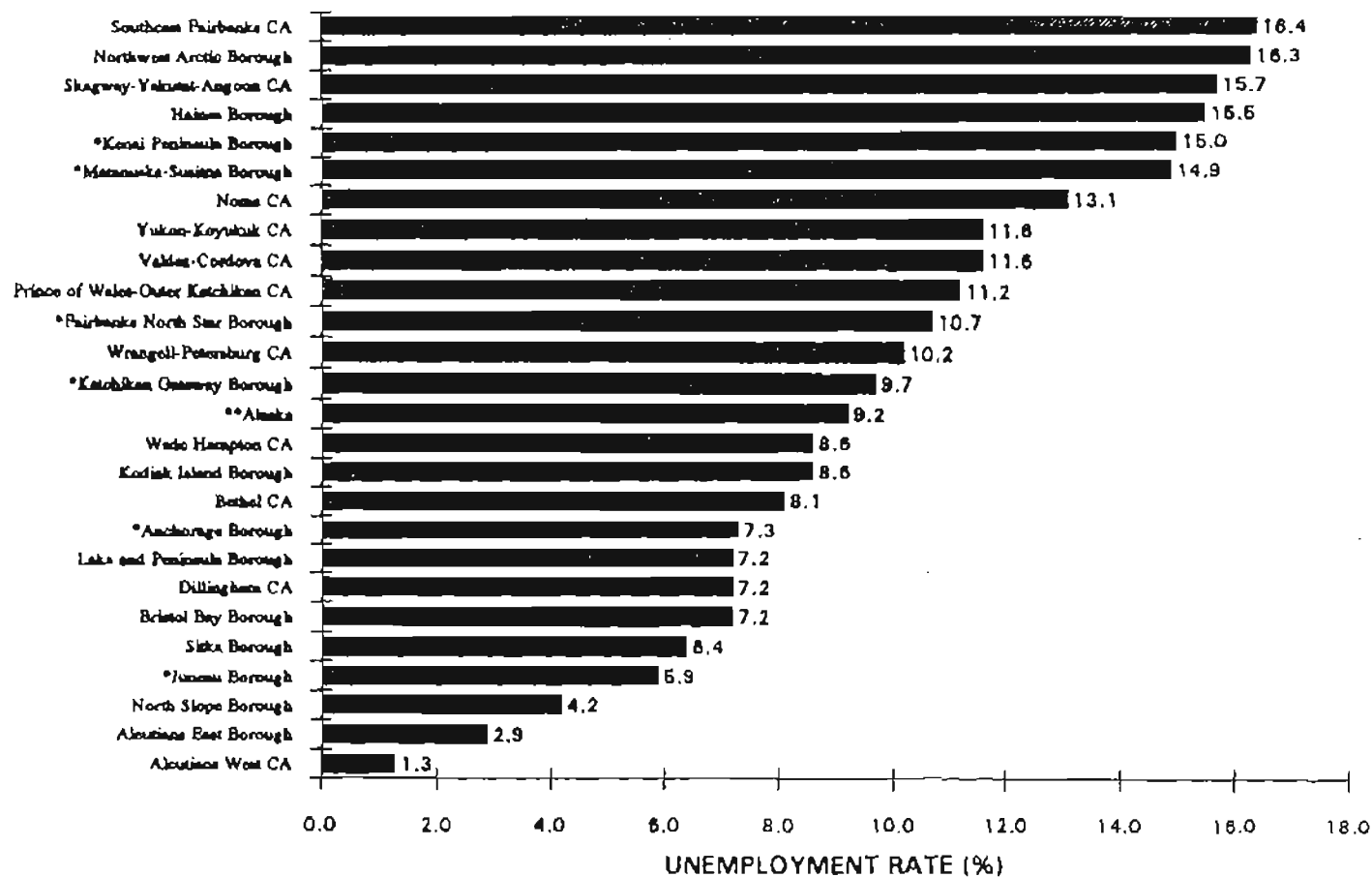
| | 1950-60 | 1960-70 | 1970-80 | 1980-90 |
|------------------------------|---------|---------|---------|---------|
| KETCHIKAN GATEWAY BOROUGH | 2.8% | 3.0% | 1.2% | 2.0% |
| JUNEAU BOROUGH | 2.1% | 3.3% | 3.6% | 3.1% |
| MATANUSKA-SUSITNA BOROUGH | 3.8% | 2.3% | 9.3% | 7.6% |
| KENAI PENINSULA BOROUGH | 7.5% | 5.9% | 4.2% | 4.7% |
| FAIRBANKS NORTH STAR BOROUGH | 8.1% | 0.6% | 1.6% | 3.6% |
| ANCHORAGE BOROUGH | 9.0% | 4.2% | 3.2% | 2.6% |

POPULATION TRENDS 1950-1990 SELECT ALASKA AREAS



| | 1950 | 1960 | 1970 | 1980 | 1990 |
|------------------------------|--------|--------|---------|---------|---------|
| KETCHIKAN GATEWAY BOROUGH | 5,581 | 7,406 | 10,041 | 11,316 | 13,828 |
| JUNEAU BOROUGH | 7,920 | 9,745 | 13,556 | 19,528 | 26,751 |
| MATANUSKA-SUSITNA BOROUGH | 3,534 | 5,188 | 6,509 | 17,816 | 39,683 |
| KENAI PENINSULA BOROUGH | 4,130 | 9,053 | 16,586 | 25,282 | 40,802 |
| FAIRBANKS NORTH STAR BOROUGH | 18,129 | 42,992 | 45,864 | 53,983 | 77,720 |
| ANCHORAGE BOROUGH | 31,487 | 82,833 | 126,385 | 174,431 | 226,338 |

UNEMPLOYMENT RATES BY ALASKA AREA, APRIL 1992



COMMERCIAL FISHING BY RESIDENTS OF FAIRBANKS AREA, 1991

Source: Commercial Fisheries Entry Commission

| Place | Number of People | Number of Permits Fished | Pounds | Estimated Gross Earnings |
|----------------|---------------------|-----------------------------|-----------|-----------------------------|
| Fairbanks Area | | | | |
| College | 2 | 2 | . | . |
| Ester | 2 | 3 | . | . |
| Fairbanks | 71 | 75 | 1,486,127 | \$1,047,683 |
| North Pole | 9 | 9 | 147,500 | \$104,088 |
| Selcha | 2 | 2 | . | . |
| Total | 86 | 91 | 1,788,080 | \$1,260,435 |

* Data not reported per confidentiality requirements

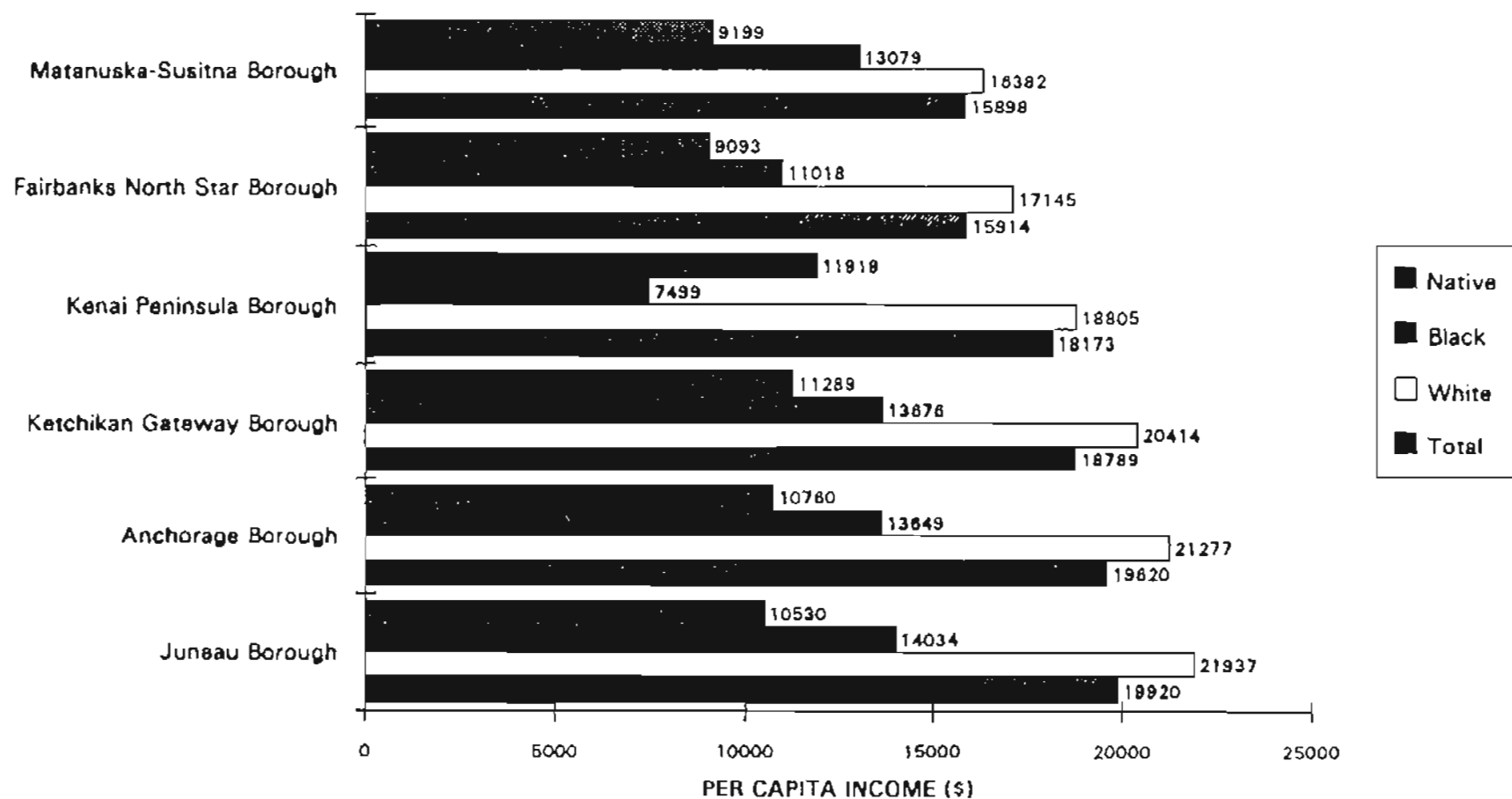
COMMERCIAL FISHING BY RESIDENTS OF NENANA VALLEY AREA, 1991

Source: Commercial Fisheries Entry Commission

| Place | Number of People | Number of Permits Fished | Pounds | Estimated Gross Earnings |
|--------------------|---------------------|-----------------------------|---------|-----------------------------|
| Nenana Valley Area | | | | |
| Anderson | 1 | 1 | . | . |
| Healy | 1 | 1 | . | . |
| McKinley Park | 1 | 1 | . | . |
| Nenana | 17 | 17 | 279,852 | \$138,550 |
| Total | 20 | 20 | 388,055 | \$174,672 |

* Data not reported per confidentiality requirements

PER CAPITA INCOME BY RACE, 1989:
PROPOSED NON-SUBSISTENCE AREAS



EMPLOYMENT OF HEALY RESIDENTS, 1987 **SOURCE: CPDB, DIVISION OF SUBSISTENCE**

| EMPLOYER CATEGORY | Percent Of Households (having employed members) (Estimated N= 253) | Percent Of Individuals (who were employed) (Estimated N= 387) | Percent Of Jobs (in the community) (Estimated N= 552) |
|---|--|---|---|
| Mining | 52.6 | 36.1 | 25.9 |
| Construction | 4.9 | 3.2 | 2.3 |
| Manufacturing | 4.0 | 2.6 | 2.4 |
| Transportation/Utilities/Communications | 20.1 | 13.1 | 9.2 |
| Trade | 7.2 | 4.7 | 3.3 |
| Financial/Insurance/Real Estate | 0.0 | 0.0 | 0.0 |
| Services | 18.7 | 15.5 | 14.9 |
| Local Government | 11.2 | 9.7 | 6.8 |
| State Government | 9.9 | 6.4 | 4.5 |
| Federal Government | 7.6 | 4.9 | 4.1 |
| Agriculture/Forestry | 1.3 | 0.9 | 0.6 |
| Commercial Fishing | 0.0 | 0.0 | 0.0 |
| Trapping | 19.1 | 12.5 | 8.8 |
| Other/Unclassified | 25.7 | 21.1 | 17.2 |

Jobs Comment:

One trapping job per household who harvested furbearers was added to the employment file and is shown in the percents above. The Other/Unclassified category includes self-employment and Native Corporation jobs.

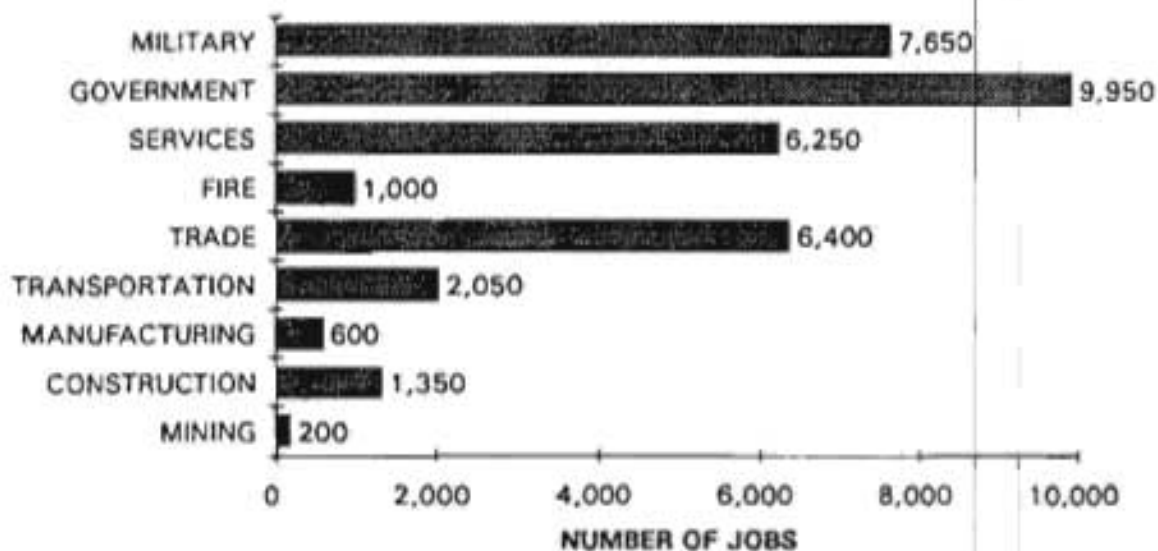
EMPLOYMENT OF MCKINLEY VILLAGE RESIDENTS, 1987 **SOURCE: CPDB, DIVISION OF SUBSISTENCE**

| EMPLOYER CATEGORY | Percent Of Households (having employed members) (Estimated N= 87) | Percent Of Individuals (who were employed) (Estimated N= 121) | Percent Of Jobs (in the community) (Estimated N= 143) |
|---|---|---|---|
| Mining | 10.1 | 7.2 | 6.1 |
| Construction | 3.2 | 2.3 | 1.9 |
| Manufacturing | 3.2 | 3.4 | 2.9 |
| Transportation/Utilities/Communications | 18.5 | 13.3 | 11.2 |
| Trade | 0.0 | 0.0 | 0.0 |
| Financial/Insurance/Real Estate | 0.0 | 0.0 | 0.0 |
| Services | 13.2 | 9.5 | 9.0 |
| Local Government | 6.3 | 4.6 | 3.8 |
| State Government | 3.2 | 3.4 | 2.9 |
| Federal Government | 65.1 | 55.1 | 46.5 |
| Agriculture/Forestry | 0.0 | 0.0 | 0.0 |
| Commercial Fishing | 0.0 | 0.0 | 0.0 |
| Trapping | 1.6 | 1.1 | 1.0 |
| Other/Unclassified | 19.6 | 17.5 | 16.7 |

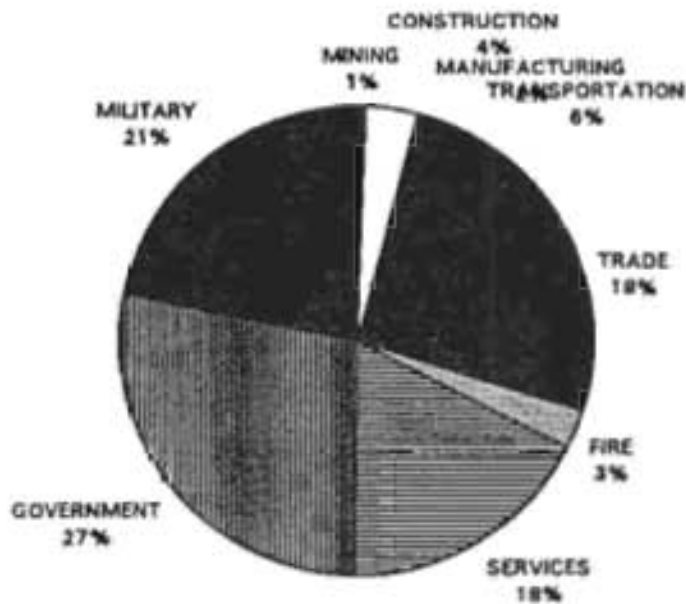
Jobs Comment:

One trapping job per household who harvested furbearers was added to the employment file and is shown in the percents above. The Other/Unclassified category includes self-employment and Native Corporation jobs.

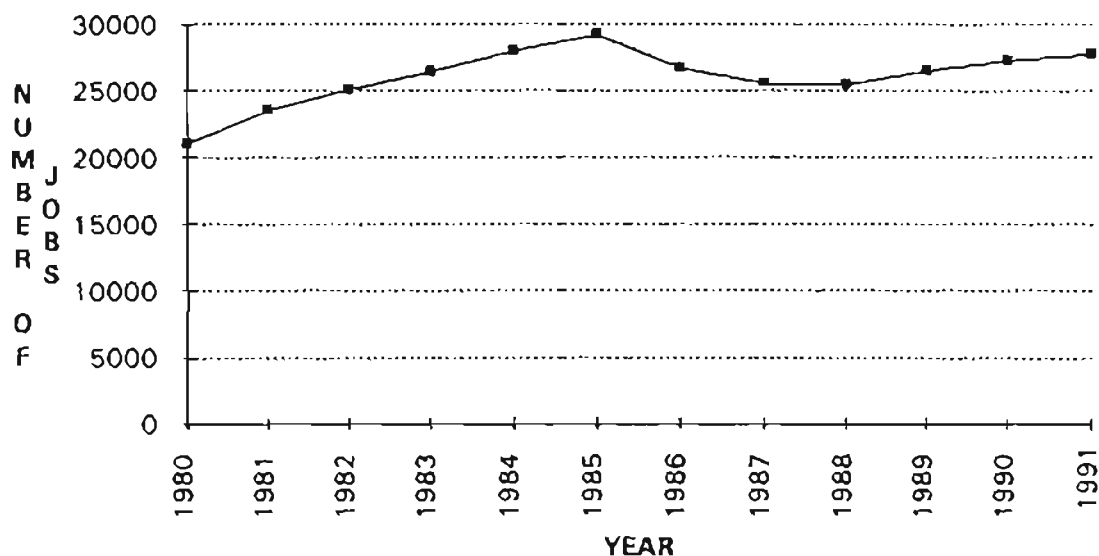
**FAIRBANKS WAGE EMPLOYMENT, 1991
NUMBER OF JOBS BY JOB CATEGORY**



**FAIRBANKS WAGE EMPLOYMENT, 1991
PERCENT OF JOBS BY JOB CATEGORY**



**FAIRBANKS NORTH STAR BOROUGH
CIVILIAN WAGE EMPLOYMENT, 1980-91
NUMBER OF JOBS**



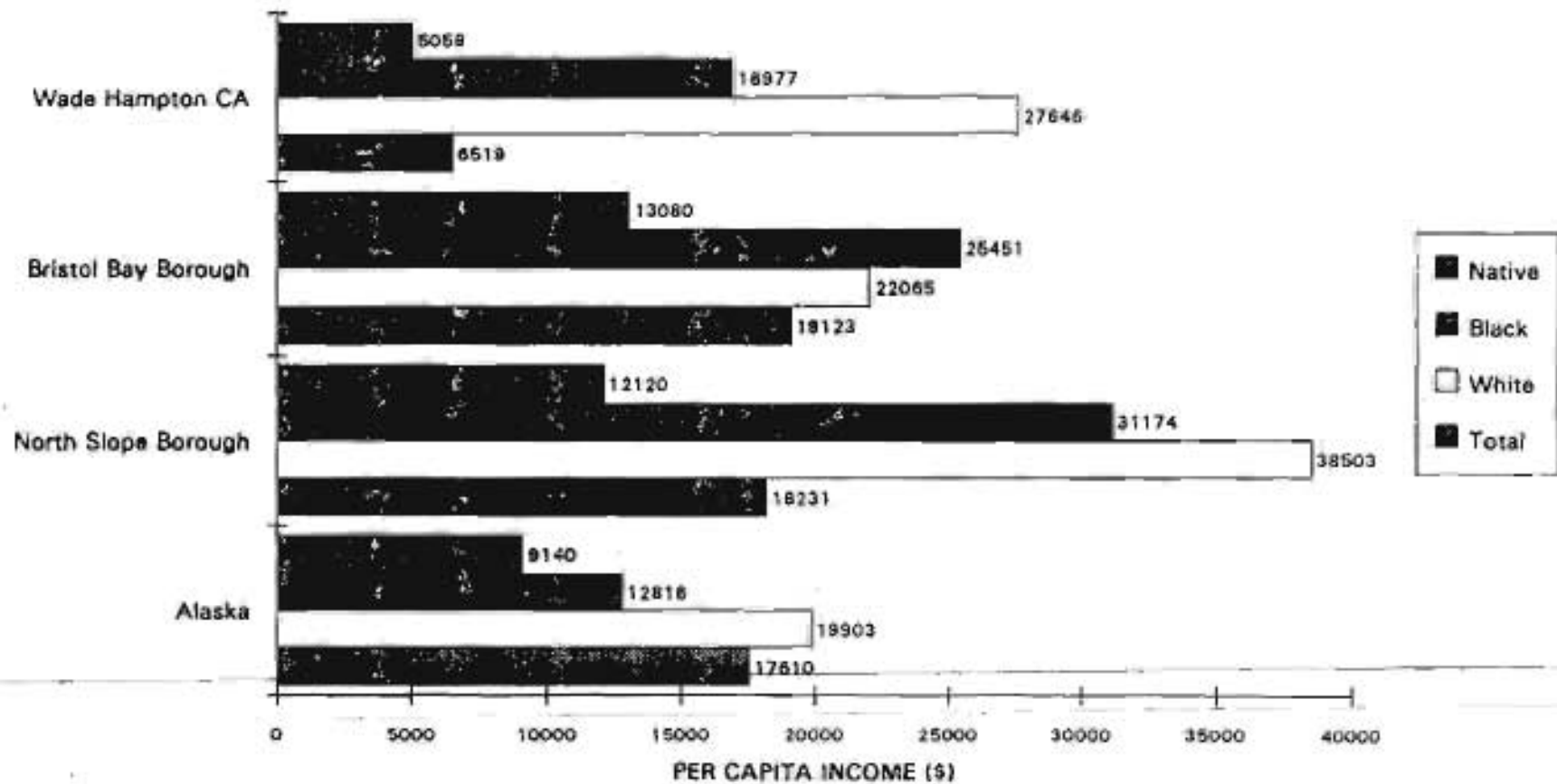
FAIRBANKS NORTH STAR BOROUGH WAGE EMPLOYMENT, 1980-91:

NUMBER OF JOBS BY JOB CATEGORY

SOURCE: ALASKA DEPARTMENT OF LABOR, RESEARCH AND ANALYSIS SECTION

| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|-----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Mining | 0 | 300 | 300 | 300 | 200 | 200 | 100 | 150 | 200 | 150 | 200 | 200 |
| Construction | 1600 | 1900 | 2200 | 2600 | 2900 | 3100 | 1700 | 1550 | 1450 | 1750 | 1450 | 1350 |
| Manufacturing | 600 | 500 | 500 | 500 | 500 | 600 | 600 | 550 | 600 | 550 | 600 | 600 |
| Transportation | 2600 | 2800 | 3000 | 3000 | 3000 | 2800 | 2050 | 2000 | 1800 | 1900 | 2000 | 2050 |
| Trade | 3900 | 4500 | 4800 | 5200 | 5800 | 6200 | 5800 | 5550 | 5700 | 5800 | 5950 | 6400 |
| FIRE | 700 | 800 | 900 | 1000 | 1000 | 1000 | 1100 | 850 | 850 | 800 | 900 | 1000 |
| Services | 4100 | 4500 | 5000 | 5100 | 5400 | 5800 | 5900 | 5800 | 5800 | 5950 | 6200 | 6250 |
| Government | 7600 | 8300 | 8400 | 8800 | 9200 | 9600 | 9550 | 9150 | 9150 | 9700 | 10050 | 9950 |
| Military | 5159 | - | - | - | - | - | - | - | - | - | 7650 | 7650 |
| Total Civilian | 21100 | 23600 | 25100 | 26500 | 28000 | 29300 | 26800 | 25600 | 25550 | 26600 | 27350 | 27800 |

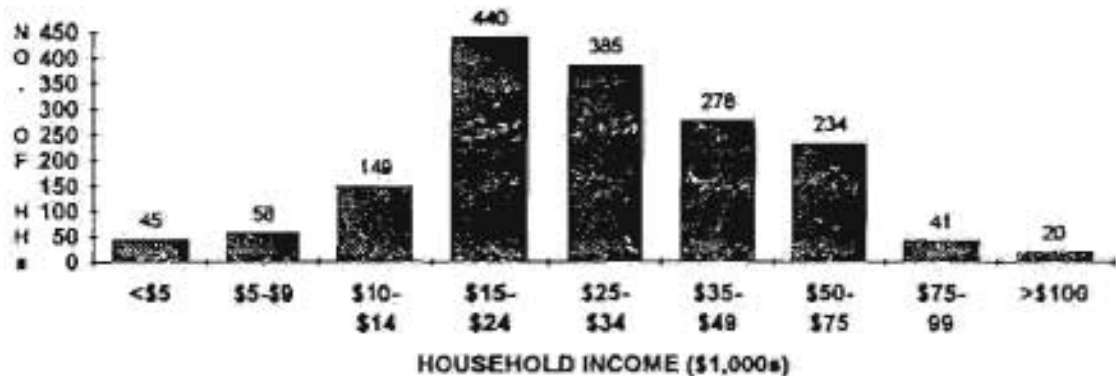
PER CAPITA INCOME BY RACE, 1989:
ALASKA, NORTH SLOPE BOROUGH, BRISTOL BAY
BOROUGH, AND WADE HAMPTON CENSUS AREA



HOUSEHOLD INCOMES OF WHITE RESIDENTS, FAIRBANKS NORTHSTAR BOROUGH, 1989



HOUSEHOLD INCOMES OF BLACK RESIDENTS, FAIRBANKS NORTHSTAR BOROUGH, 1989



HOUSEHOLD INCOMES OF ALASKA NATIVE RESIDENTS, FAIRBANKS NORTHSTAR BOROUGH, 1989



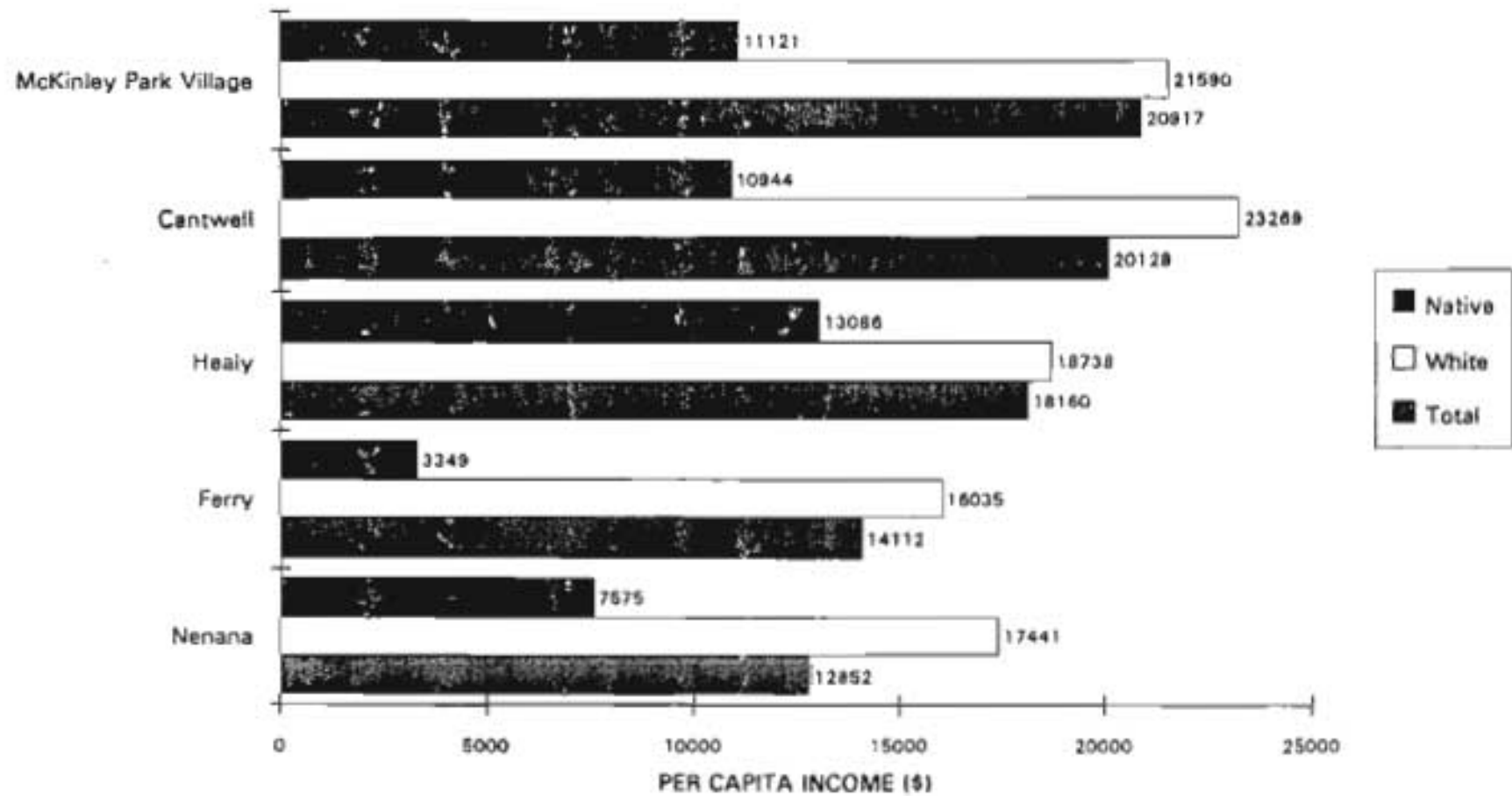
HOUSEHOLD INCOMES OF RESIDENTS,
DELTA JUNCTION, 1989



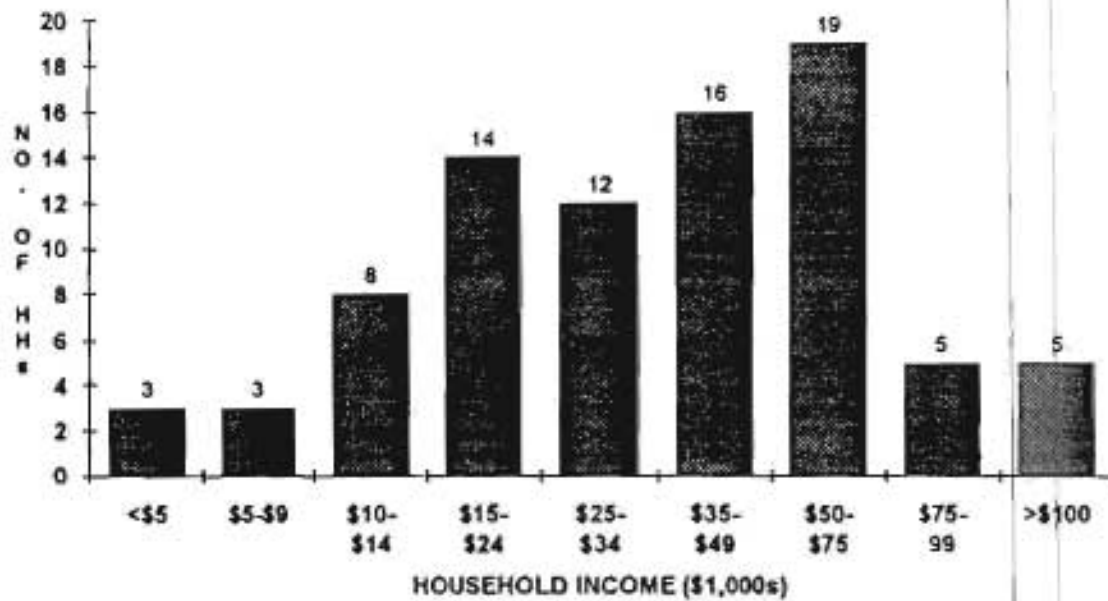
HOUSEHOLD INCOMES OF RESIDENTS,
FORT GREELY, 1989



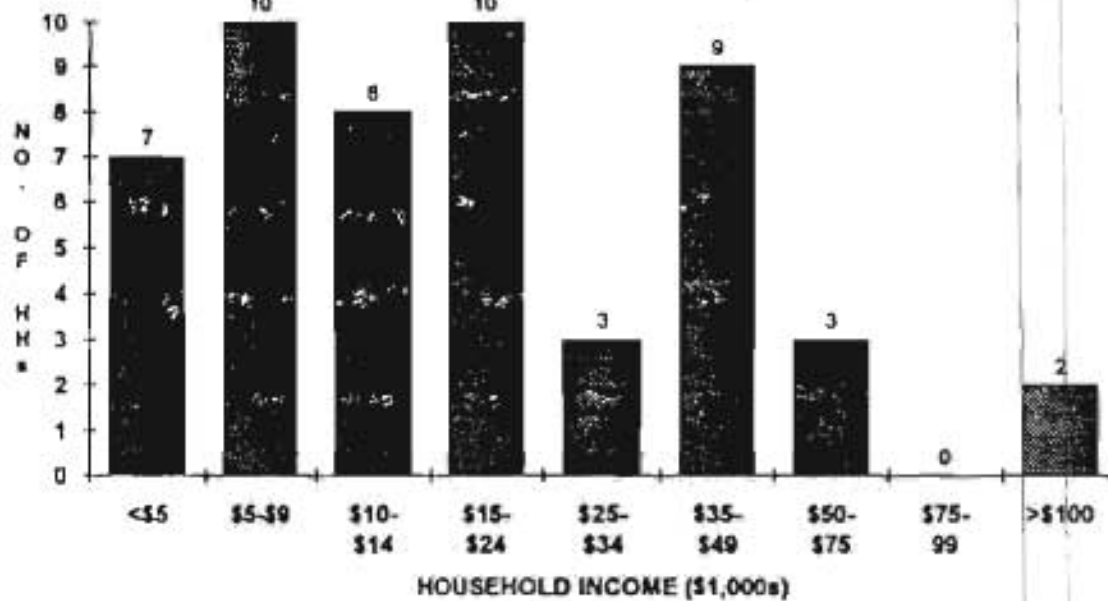
PER CAPITA INCOME BY RACE, 1989:
NENANA VALLEY AREA CENSUS PLACES



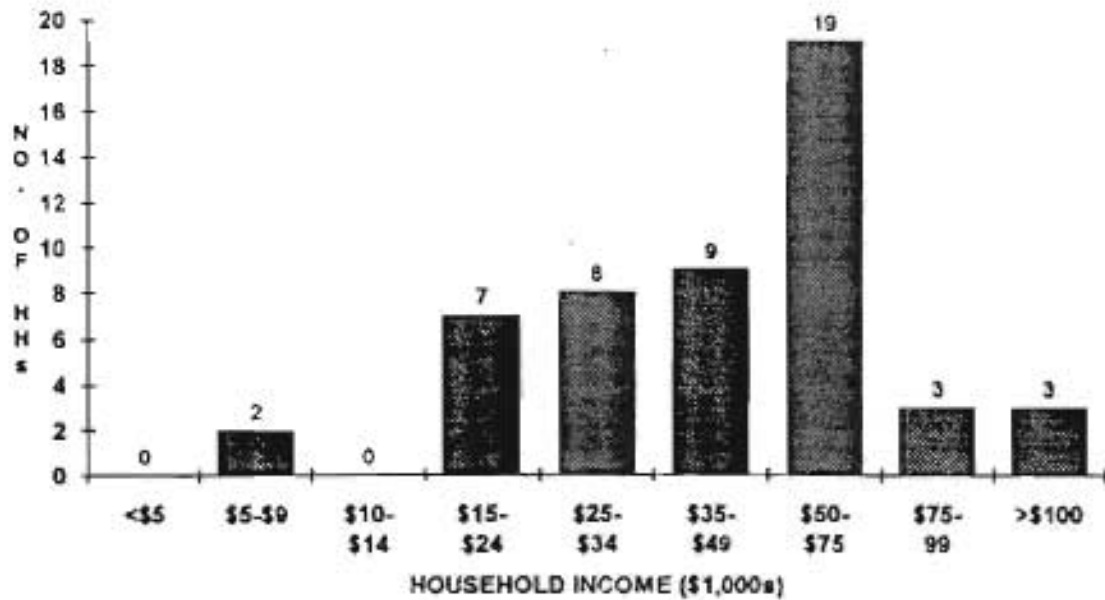
HOUSEHOLD INCOMES OF WHITE RESIDENTS, NENANA, 1989



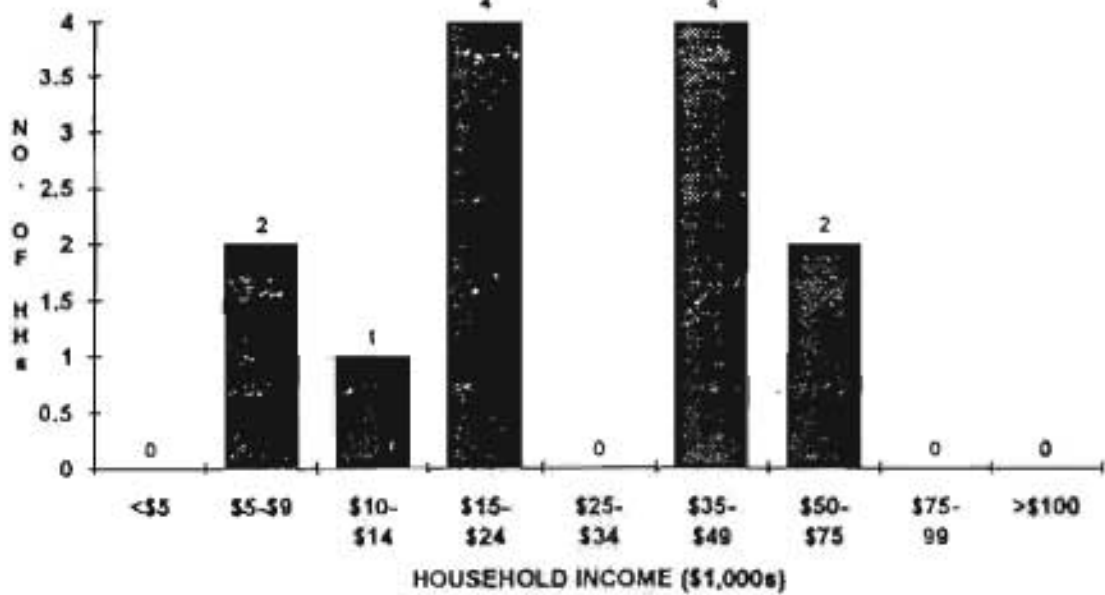
HOUSEHOLD INCOMES OF ALASKA NATIVE RESIDENTS, NENANA, 1989



HOUSEHOLD INCOMES OF WHITE RESIDENTS, CANTWELL, 1989



HOUSEHOLD INCOMES OF ALASKA NATIVE RESIDENTS, CANTWELL, 1989



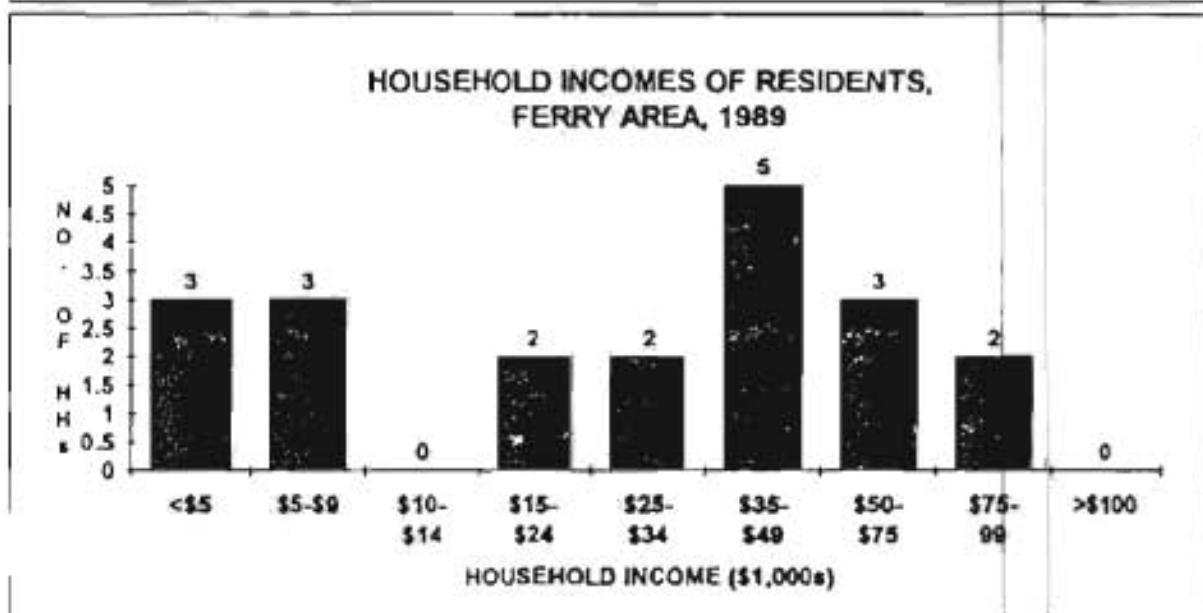
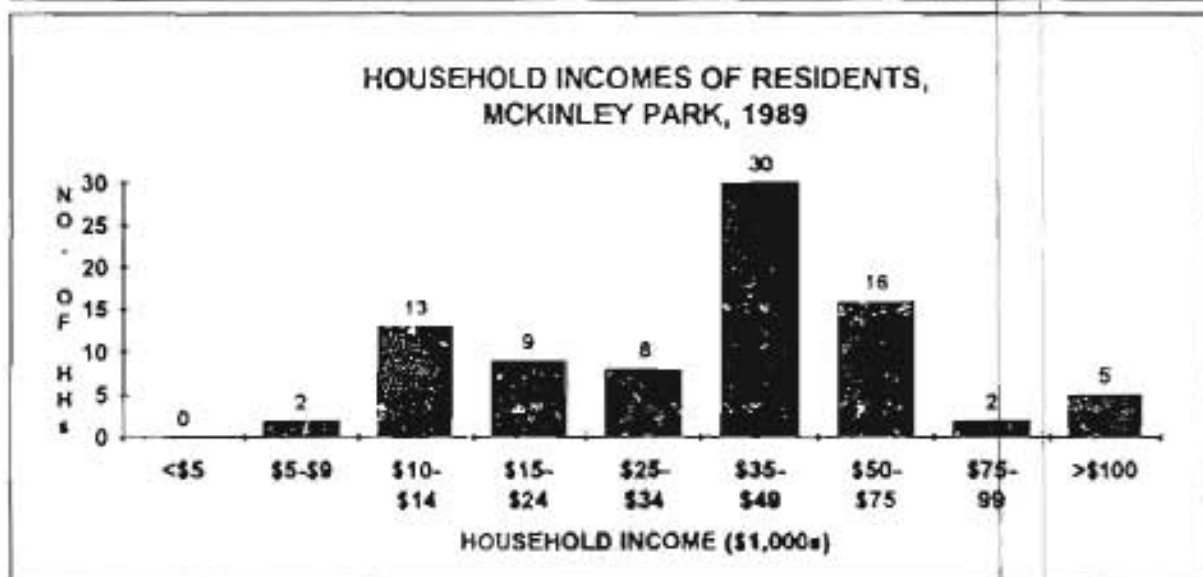
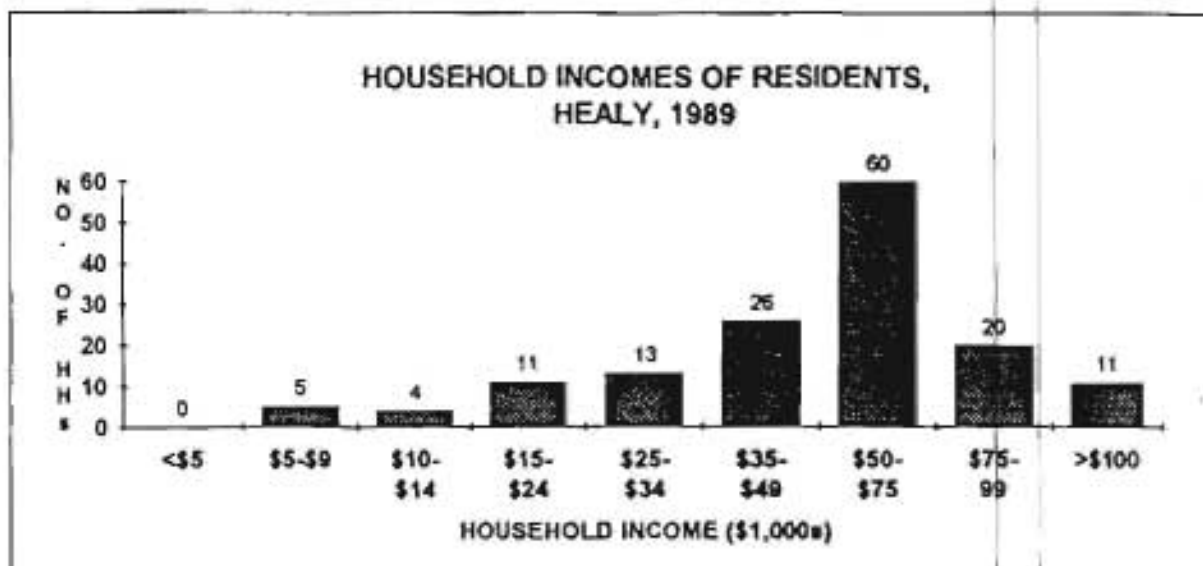
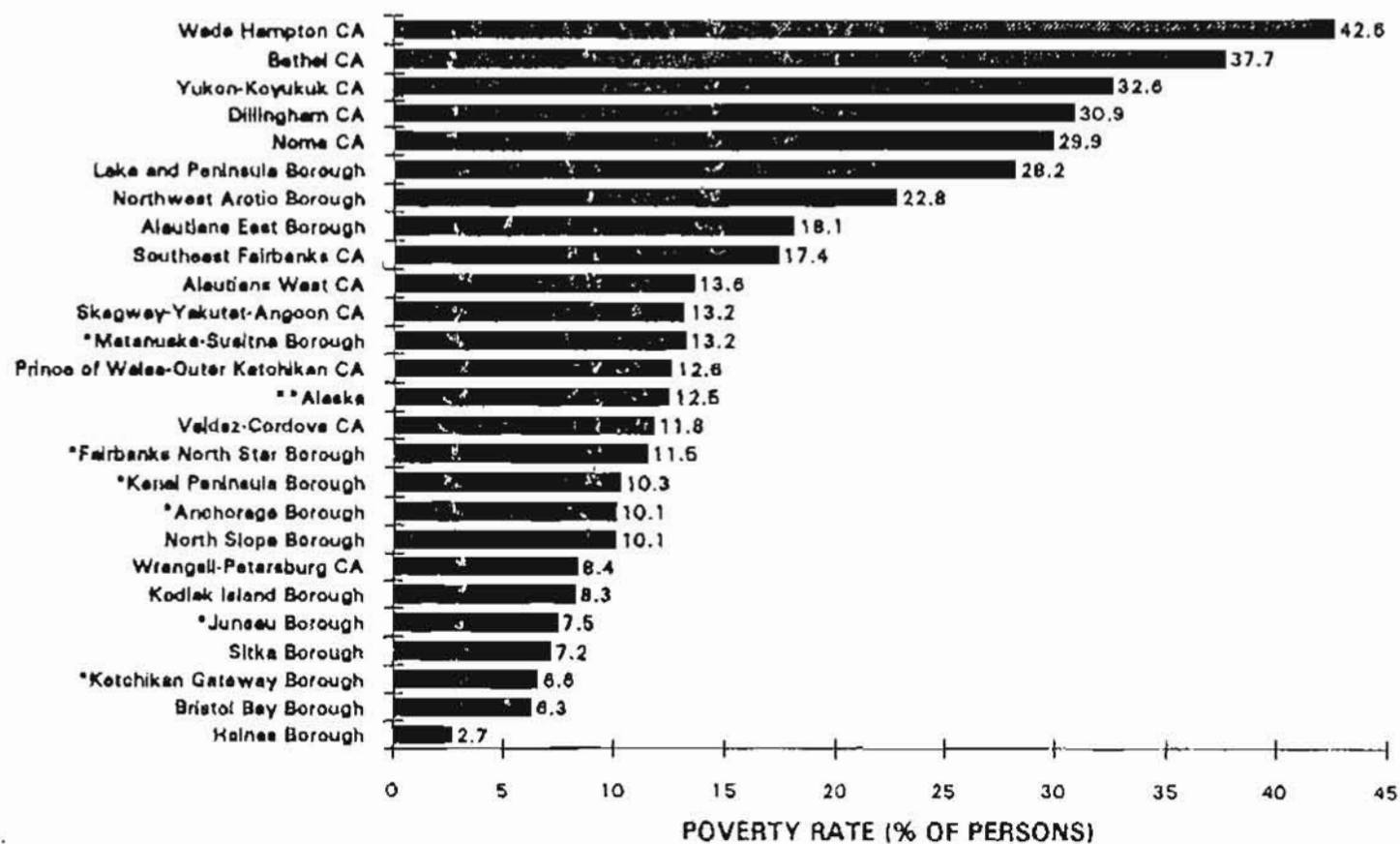
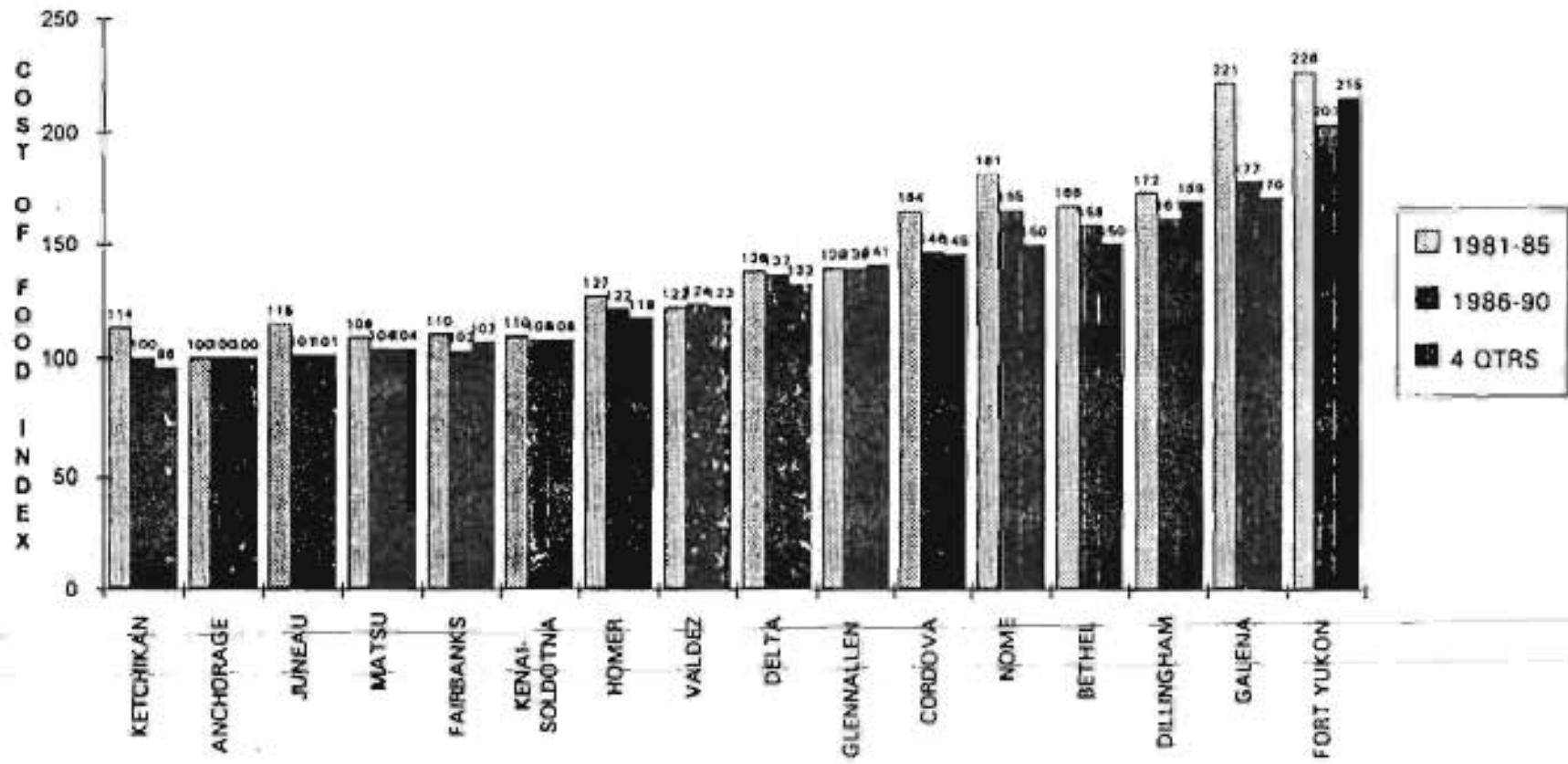


FIG. 17

**POVERTY RATES BY ALASKA AREA, 1989:
PERCENT OF PERSONS BELOW 125%
OF FEDERAL POVERTY STANDARDS**



COST OF FOOD INDEX
FOR SELECT COMMUNITIES,
1981-85, 1986-90, AND
MOST RECENT FOUR QUARTERLY PERIODS



WILDLIFE HARVESTS BY FAIRBANKS NORTH STAR BOROUGH RESIDENTS, 1986-91 MEAN

| | BLACK BEAR | BROWN BEAR | CARIBOU | ELK | GOAT | BISON | MOOSE | SHEEP | MUSKOX | TOTAL |
|----------------|------------|------------|---------|------|------|-------|--------|-------|--------|--------|
| Fairbanks Area | 145.8 | 75.8 | 204.8 | 4 | 12.3 | 3.7 | 978.5 | 169.8 | 5.7 | |
| Salcha | 3.8 | 2 | 8.8 | | 0.3 | | 29 | 2.8 | 0.2 | |
| Total Number | 149.6 | 77.8 | 211.6 | 4 | 12.8 | 3.7 | 1007.5 | 172.6 | 5.9 | |
| Conversion | 58 | 0 | 150 | 225 | 72.5 | 450 | 500 | 65 | 593 | |
| Total Pounds | 8677 | 0 | 31740 | 900 | 914 | 1665 | 503750 | 11219 | 3489 | 562363 |
| Per Capita Lbs | 0.11 | 0.00 | 0.41 | 0.01 | 0.01 | 0.02 | 8.48 | 0.14 | 0.05 | 7.24 |

WILDLIFE HARVESTS BY DELTA JUNCTION AREA RESIDENTS (INCLUDING FORT GREELY), 1986-91 MEAN

| | BLACK BEAR | BROWN BEAR | CARIBOU | ELK | GOAT | BISON | MOOSE | SHEEP | MUSKOX | TOTAL |
|----------------|------------|------------|---------|------|------|-------|-------|-------|--------|-------|
| Delta Junction | 8.8 | 5.2 | 44 | 0.3 | 0.7 | 0.7 | 87.3 | 18 | | |
| Fort Greely | | 0.2 | 2.2 | 0.2 | 0.3 | | 12 | 2.5 | | |
| Total Number | 8.8 | 5.4 | 46.2 | 0.5 | 1 | 0.7 | 99.3 | 18.5 | 0 | |
| Conversion | 58 | 0 | 150 | 225 | 72.5 | 450 | 500 | 65 | 593 | |
| Total Pounds | 510 | 0 | 6930 | 113 | 73 | 315 | 49650 | 1203 | 0 | 58793 |
| Per Capita Lbs | 0.13 | 0.00 | 1.73 | 0.03 | 0.02 | 0.08 | 12.39 | 0.30 | 0.00 | 14.7 |

NON-COMMERCIAL SALMON PERMITS ISSUED TO RESIDENTS OF THE FAIRBANKS NORTHSTAR BOROUGH, 1990-91 (YUKON-TANANA RIVERS) AND SALMON HARVESTS (NUMBERS AND POUNDS)

| | PERMITS | CHINOOK | CHUM | COHO | TOTAL |
|----------------|---------|---------|--------|--------|-------|
| 1990 | 238 | 3049 | 8072 | 1328 | 12449 |
| 1991 | 200 | 1337 | 5754 | 2509 | 9600 |
| Mean Number | 219.0 | 2193.0 | 6913.0 | 1918.5 | 11025 |
| Conversion | * | 18 | 8 | 6 | * |
| Total Pounds | * | 39474 | 41478 | 11511 | 92463 |
| Per Capita Lbs | * | 0.51 | 0.53 | 0.15 | 1.19 |

NON-COMMERCIAL SALMON PERMITS ISSUED TO RESIDENTS OF THE DELTA JUNCTION AREAS (INCLUDING FT. GREELY), 1990-91 (YUKON-TANANA RIVERS) AND SALMON HARVESTS (NUMBERS AND POUNDS)

| | PERMITS | CHINOOK | CHUM | COHO | TOTAL |
|----------------|---------|---------|-------|------|-------|
| 1990 | 8 | 0 | 750 | 0 | 750 |
| 1991 | 15 | 0 | 787 | 3 | 790 |
| Mean | 11.5 | 0.0 | 768.5 | 1.5 | 770 |
| Conversion | * | 18 | 6 | 8 | * |
| Pounds | * | 0 | 4611 | 9 | 4620 |
| Per Capita Lbs | * | 0.00 | 1.15 | 0.00 | 1.15 |

WILDLIFE HARVESTS BY NENANA VALLEY RESIDENTS

MCKINLEY PARK VILLAGE, 1987

| | Black | Brown | Birds | | | | | | | | | | | | | | | | | Halibut | Trout | Other | |
|---------------|-------|-------|---------|------|-------|-------|--------|------|-------|-------|-------|---------|------|---------|--------|----------|------|-------|-------|---------|-------|-------|--|
| | Bear | Bear | Caribou | Goat | Moose | Sheep | Beaver | Hare | (Lbs) | Chum | Coho | Chinook | Pink | Sockeye | Burbot | Grayling | Pike | (Lbs) | (Lbs) | (Lbs) | Total | | |
| Total Number | 2 | 2 | 11 | 0 | 15 | 2 | 65 | 45 | 517 | 2808 | 2215 | 21 | 0 | 49 | 50 | 896 | 0 | 385 | 614 | 1690 | | | |
| Conversion | 58 | 0 | 130 | 72.5 | 500 | 65 | 8.75 | 1.5 | 1 | 6 | 6 | 18 | 2 | 4 | 2.5 | 0.8 | 4.5 | 1 | 1 | 1 | | | |
| Total Pounds | 116 | 0 | 1430 | 0 | 7500 | 130 | 481.3 | 67.5 | 517 | 16848 | 13290 | 378 | 0 | 196 | 125 | 716.8 | 0 | 385 | 614 | 1690 | 44485 | | |
| Per Capita Lb | 0.8 | 0.0 | 7.8 | 0.0 | 40.8 | 0.7 | 2.6 | 0.4 | 2.8 | 91.7 | 72.3 | 2.1 | 0.0 | 1.1 | 0.7 | 3.9 | 0.0 | 2.1 | 3.3 | 9.2 | 242.0 | | |

HEALY-FERRY AREA, 1987

| | Black | Brown | Birds | | | | | | | | | | | | | | | | | Halibut | Trout | Other | |
|---------------|-------|-------|---------|------|-------|-------|--------|------|-------|-------|-------|---------|------|---------|--------|----------|------|-------|-------|---------|--------|-------|--|
| | Bear | Bear | Caribou | Goat | Moose | Sheep | Beaver | Hare | (Lbs) | Chum | Coho | Chinook | Pink | Sockeye | Burbot | Grayling | Pike | (Lbs) | (Lbs) | (Lbs) | Total | | |
| Total Number | 20 | 0 | 30 | 6 | 51 | 3 | 157 | 1243 | 2082 | 5236 | 2228 | 216 | 638 | 113 | 160 | 4474 | 980 | 7347 | 6477 | 4470 | | | |
| Conversion | 58 | 0 | 130 | 72.5 | 500 | 65 | 8.75 | 1.5 | 1 | 6 | 6 | 18 | 2 | 4 | 2.5 | 0.8 | 4.5 | 1 | 1 | 1 | | | |
| Total Pounds | 1160 | 0 | 3900 | 435 | 25500 | 195 | 1374 | 1865 | 2082 | 31416 | 13368 | 3870 | 1276 | 452 | 400 | 3579.2 | 4410 | 7347 | 6477 | 4470 | 113575 | | |
| Per Capita Lb | 1.3 | 0.0 | 4.5 | 0.5 | 29.7 | 0.2 | 1.6 | 2.2 | 2.4 | 36.5 | 15.5 | 4.5 | 1.5 | 0.5 | 0.5 | 4.2 | 5.1 | 8.5 | 7.5 | 5.2 | 132.1 | | |

CANTWELL, 1982

| | Black | | Brown | Birds | | | | | | | | | | | | | | Halibut | | Trout | Other | |
|---------------|-------|------|---------|-------|-------|-------|--------|-------|-------|------|-------|---------|------|---------|--------|----------|------|---------|-------|-------|-------|--|
| | Bear | Bear | Caribou | Goat | Moose | Sheep | Beaver | Hare | (Lbs) | Chum | Coho | Chinook | Pink | Sockeye | Burbot | Grayling | Pike | (Lbs) | (Lbs) | (Lbs) | Total | |
| Total Number | 1 | 0 | 23 | 0 | 12 | 0 | 7 | 425 | 508 | 0 | 54 | 26 | 7 | 37 | 0 | 2899 | 44 | 0 | 959 | 823 | | |
| Conversion | 58 | 0 | 130 | 72.5 | 500 | 65 | 8.75 | 1.5 | 1 | 6.1 | 6.1 | 18.1 | 2.7 | 4.2 | 2.5 | 0.7 | 2.8 | 1 | 1 | 1 | | |
| Total Pounds | 58 | 0 | 2990 | 0 | 6000 | 0 | 61.25 | 637.5 | 508 | 0 | 329.4 | 470.6 | 18.9 | 155.4 | 0 | 2099.3 | 123 | 0 | 959 | 823 | 15234 | |
| Per Capita Lb | 0.4 | 0.0 | 21.9 | 0.0 | 43.9 | 0.0 | 0.4 | 4.7 | 3.7 | 0.0 | 2.4 | 3.4 | 0.1 | 1.1 | 0.0 | 15.4 | 0.9 | 0.0 | 7.0 | 6.0 | 111.5 | |

NENANA, 1985

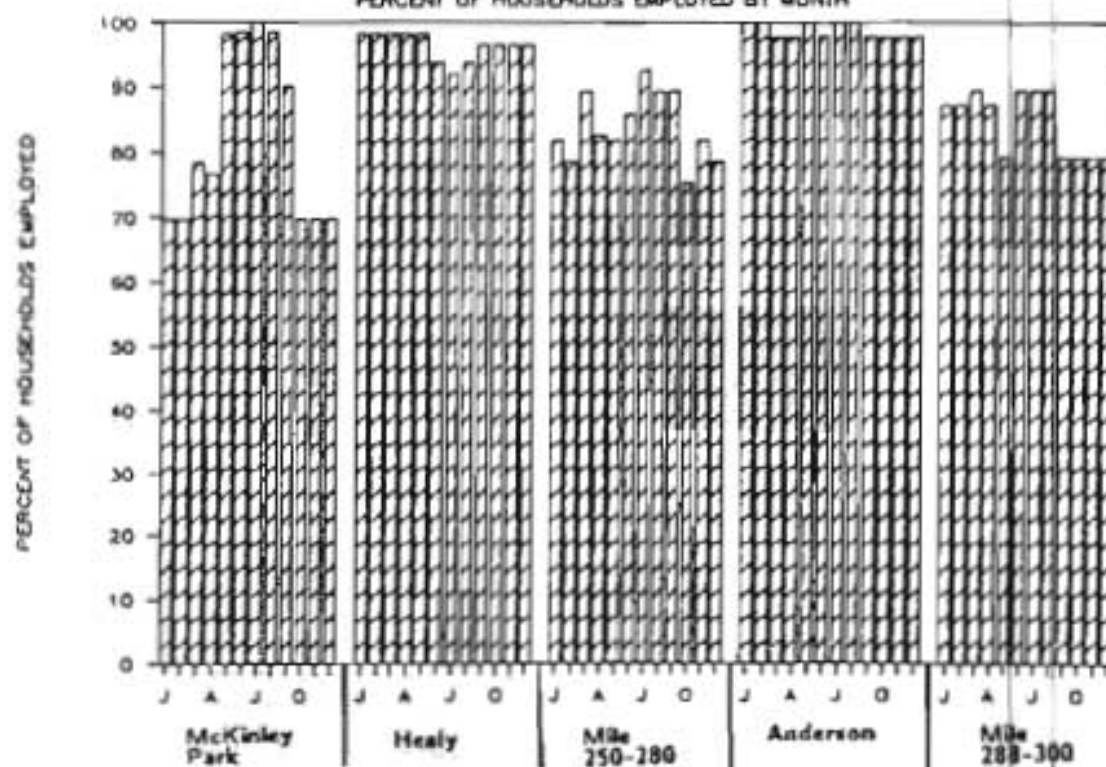
| | Moose | Beaver | Chum | Chinook | hitefish | Total |
|---------------|-------|--------|--------|---------|----------|--------|
| Total Number | 25 | 165 | 30515 | 4919 | 2397 | |
| Conversion | 460 | 8.75 | 4.8 | 15.9 | 1 | |
| Total Pounds | 15750 | 1444 | 146472 | 78212 | 2397 | 244275 |
| Per Capita Lb | 2.8 | 0.3 | 26.4 | 14.1 | 0.4 | 449.0 |

Sport Fish Harvest by Residents of Proposed Nonsubsistence Areas (1990), Numbers of Fish
Source: Division of Sport Fish Mailed Survey and Division of Subsistence

| | 1990 Population | Number Anglers | Anglers Percent | Small Chinook | Chinook | Coho | Landlocked Coho-Chinook | Landlocked Sockeye | Sockeye | Pink |
|-------------------|--------------------|-------------------|--------------------|------------------|---------|-----------------|----------------------------|-----------------------|---------|------------------|
| ANCHORAGE BOR | 228338 | 105723 | 46.7% | 1921 | 19924 | 92562 | 12542 | 83 | 106993 | 28796 |
| FAIRBANKS BOR | 77720 | 33616 | 43.3% | 219 | 3069 | 13187 | 11337 | 0 | 6123 | 11886 |
| JUNEAU BOR | 26751 | 13664 | 51.1% | 1050 | 7812 | 30592 | 310 | 0 | 1104 | 16430 |
| KENAI PENIN BOR | 40802 | 25899 | 63.5% | 486 | 4826 | 30811 | 261 | 406 | 27769 | 9451 |
| KETCHIKAN BOR | 13826 | 6365 | 46.0% | 114 | 4667 | 17586 | 0 | 16 | 709 | 7786 |
| MATANUSKA SUSITNA | 39683 | 19552 | 49.3% | 606 | 4854 | 14199 | 9443 | 119 | 10741 | 2211 |
| VALDEZ (CITY) | 4068 | 2075 | 51.0% | 18 | 142 | 2559 | 0 | 0 | 333 | 3796 |
| WHITTIER (CITY) | 243 | 54 | 22.2% | 0 | 0 | 108 | 0 | 0 | 311 | 0 |
| | | | | | | Dolly Varden | Brook Trout | Lake Trout | | Northern Pike |
| ANCHORAGE BOR | 3129 | 56824 | 253 | 82981 | 369 | 27421 | 0 | 3602 | 13348 | 2415 |
| FAIRBANKS BOR | 478 | 10671 | 44 | 47338 | 49 | 4317 | 0 | 3115 | 20901 | 5808 |
| JUNEAU BOR | 1817 | 10347 | 217 | 278 | 2183 | 7777 | 17 | 0 | 68 | 10 |
| KENAI PENIN BOR | 270 | 27222 | 62 | 7552 | 44 | 6132 | 0 | 1738 | 934 | 209 |
| KETCHIKAN BOR | 306 | 3839 | 1077 | 541 | 2323 | 1069 | 0 | 0 | 728 | 0 |
| MATANUSKA SUSITNA | 716 | 6519 | 17 | 14115 | 16 | 6119 | 0 | 814 | 4704 | 490 |
| VALDEZ (CITY) | 113 | 1436 | 0 | 504 | 0 | 742 | 0 | 34 | 199 | 0 |
| WHITTIER (CITY) | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Whitefish | Burbot | Sheefish | Rockfish | Smelt | Razor Clam | Other | | | |
| ANCHORAGE BOR | 3321 | 2253 | 67 | 14509 | 136218 | 313447 | 16174 | | | |
| FAIRBANKS BOR | 6608 | 3009 | 423 | 3337 | 179 | 23179 | 2396 | | | |
| JUNEAU BOR | 0 | 0 | 0 | 1687 | 0 | 1940 | 3336 | | | |
| KENAI PENIN BOR | 429 | 33 | 0 | 1626 | 16939 | 260746 | 3202 | | | |
| KETCHIKAN BOR | 0 | 0 | 0 | 5091 | 0 | 0 | 1016 | | | |
| MATANUSKA SUSITNA | 1603 | 1420 | 0 | 1062 | 12047 | 38487 | 976 | | | |
| VALDEZ (CITY) | 0 | 408 | 0 | 747 | 0 | 2264 | 1096 | | | |
| WHITTIER (CITY) | 0 | 0 | 0 | 28 | 0 | 0 | 0 | | | |

SEASONALITY OF EMPLOYMENT, 1987

PERCENT OF HOUSEHOLDS EMPLOYED BY MONTH



FAIRBANKS NORTH STAR BOROUGH
PERCENT OF HOUSEHOLDS WHO FISHED, HUNTED, OR
TRAPPED
(MIDPOINT OF ESTIMATES), CIRCA MID-1980s
SOURCE: FOX 1988

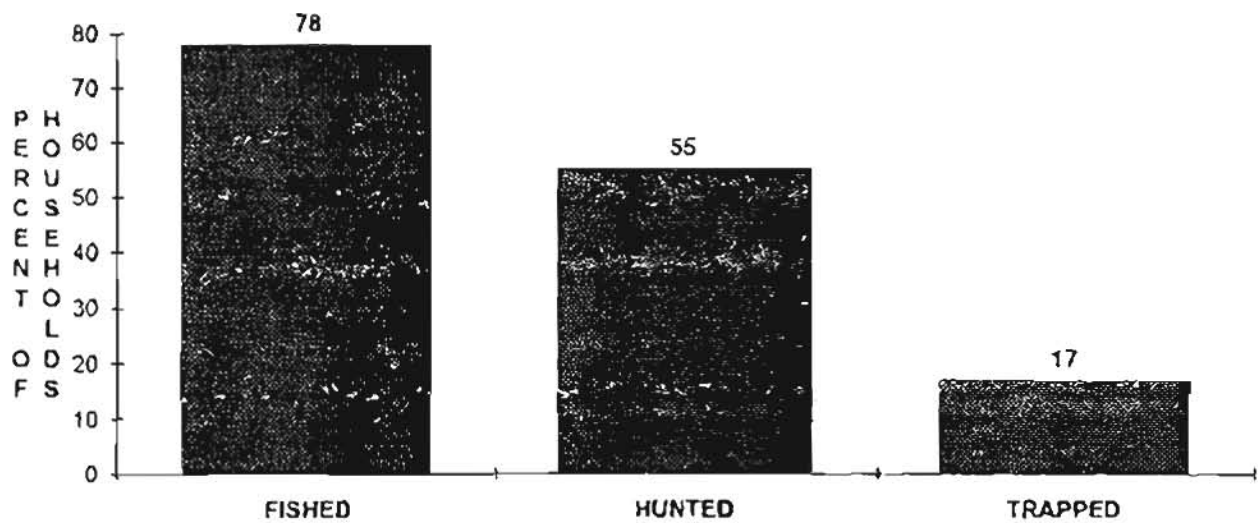


TABLE 1

ESTIMATED NUMBER OF ANGLERS AND PERCENT OF POPULATION

SOURCE: DIVISION OF SPORT FISH MAILED SURVEY

| | 1990 Population | 1989 Anglers | Percent of 1990 Pop | 1990 Anglers | Percent of 1990 Pop | 1991 Anglers | Percent of 1990 Pop |
|---------------------|--------------------|-----------------|------------------------|-----------------|------------------------|-----------------|------------------------|
| ANCHORAGE BOR | 226338 | 117802 | 52.0% | 105723 | 46.7% | 134565 | 59.5% |
| FAIRBANKS BOR | 77720 | 33648 | 43.3% | 33618 | 43.3% | 38461 | 49.5% |
| JUNEAU BOR | 26751 | 14569 | 54.5% | 13664 | 51.1% | 12544 | 46.9% |
| KENAI PENIN BOR | 40802 | 24761 | 60.7% | 25899 | 63.5% | 29819 | 73.1% |
| KETCHIKAN BOR | 13828 | 8021 | 58.0% | 6365 | 46.0% | 6251 | 45.2% |
| MATANUSKA SUSITNA B | 39683 | 20209 | 50.9% | 19552 | 49.3% | 27960 | 70.5% |
| VALDEZ (CITY) | 4068 | 1808 | 44.4% | 2075 | 51.0% | 2754 | 67.7% |

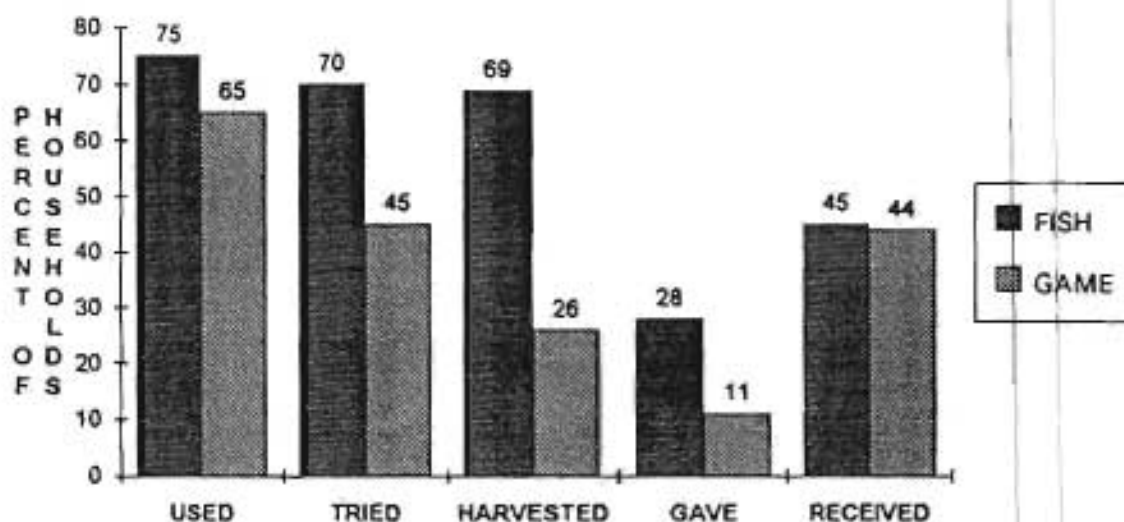
TABLE 2

FISH HARVESTS WITH ROD AND REEL BY AREA (LBS PER CAPITA)

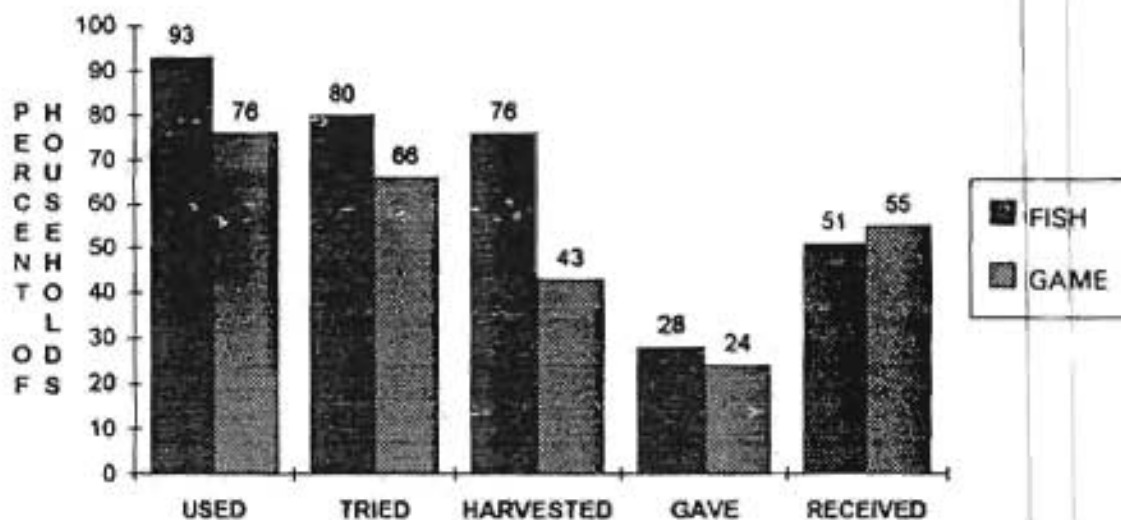
SOURCE: DIVISION OF SPORT FISH MAILED SURVEY

| | 1989 | 1990 | 1991 | MEAN 1989-91 |
|---------------------|------|------|------|-----------------|
| ANCHORAGE BOROUGH | 16.7 | 13.1 | 13.7 | 14.5 |
| FAIRBANKS BOROUGH | 8.3 | 7.2 | 7.2 | 7.8 |
| JUNEAU BOROUGH | 28.1 | 23.0 | 16.3 | 22.5 |
| KENAI PENIN BOROUGH | 29.1 | 26.4 | 23.9 | 26.5 |
| KETCHIKAN BOROUGH | 28.5 | 22.1 | 17.7 | 22.8 |
| MATANUSKA SUSITNA B | 15.0 | 10.7 | 14.4 | 13.4 |
| VALDEZ (CITY) | 16.1 | 15.3 | 15.2 | 15.5 |

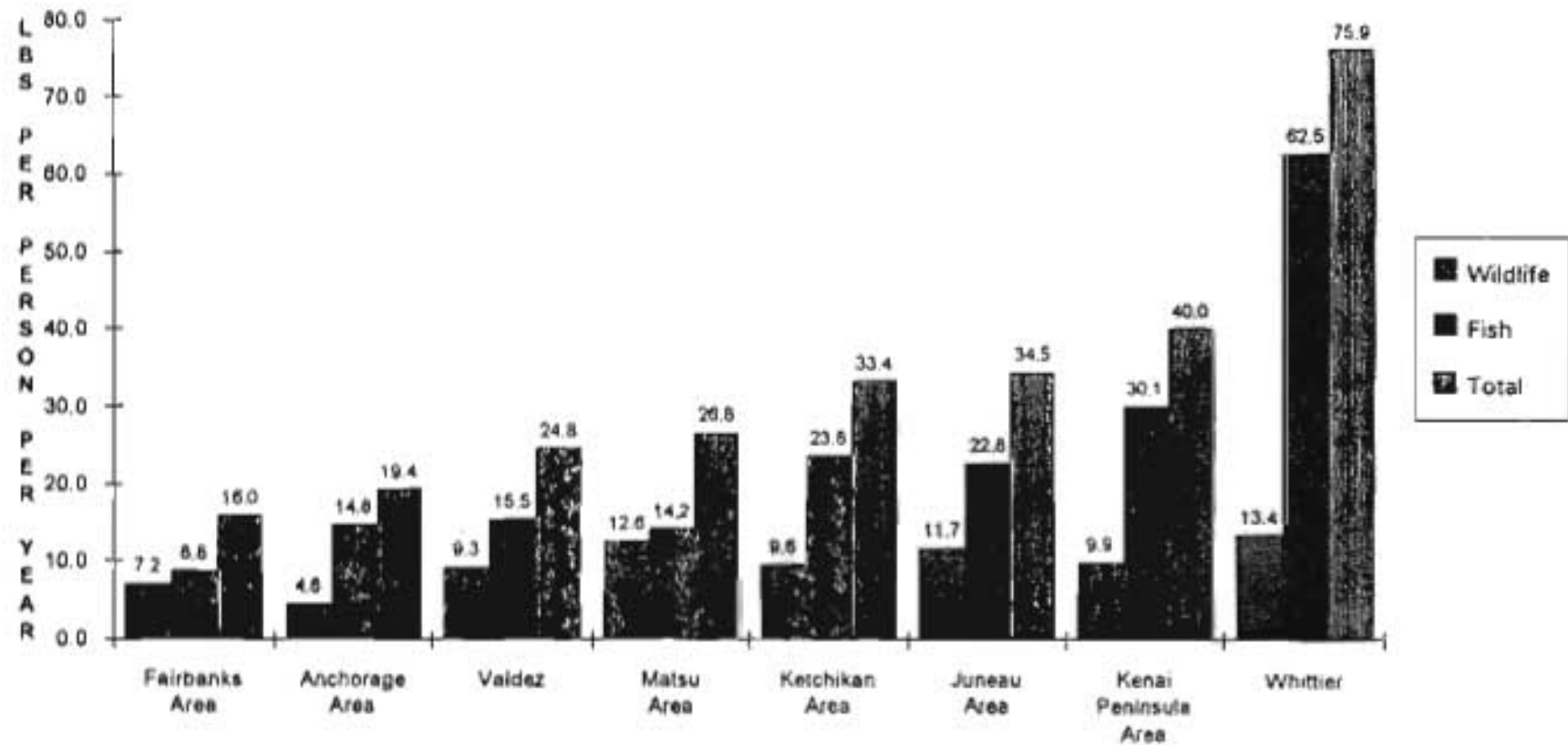
**MCKINLEY PARK VILLAGE
PERCENT OF HOUSEHOLDS USING, TRYING TO
HARVEST, HARVESTING,
GIVING, OR RECEIVING WILD FISH AND GAME, 1987**



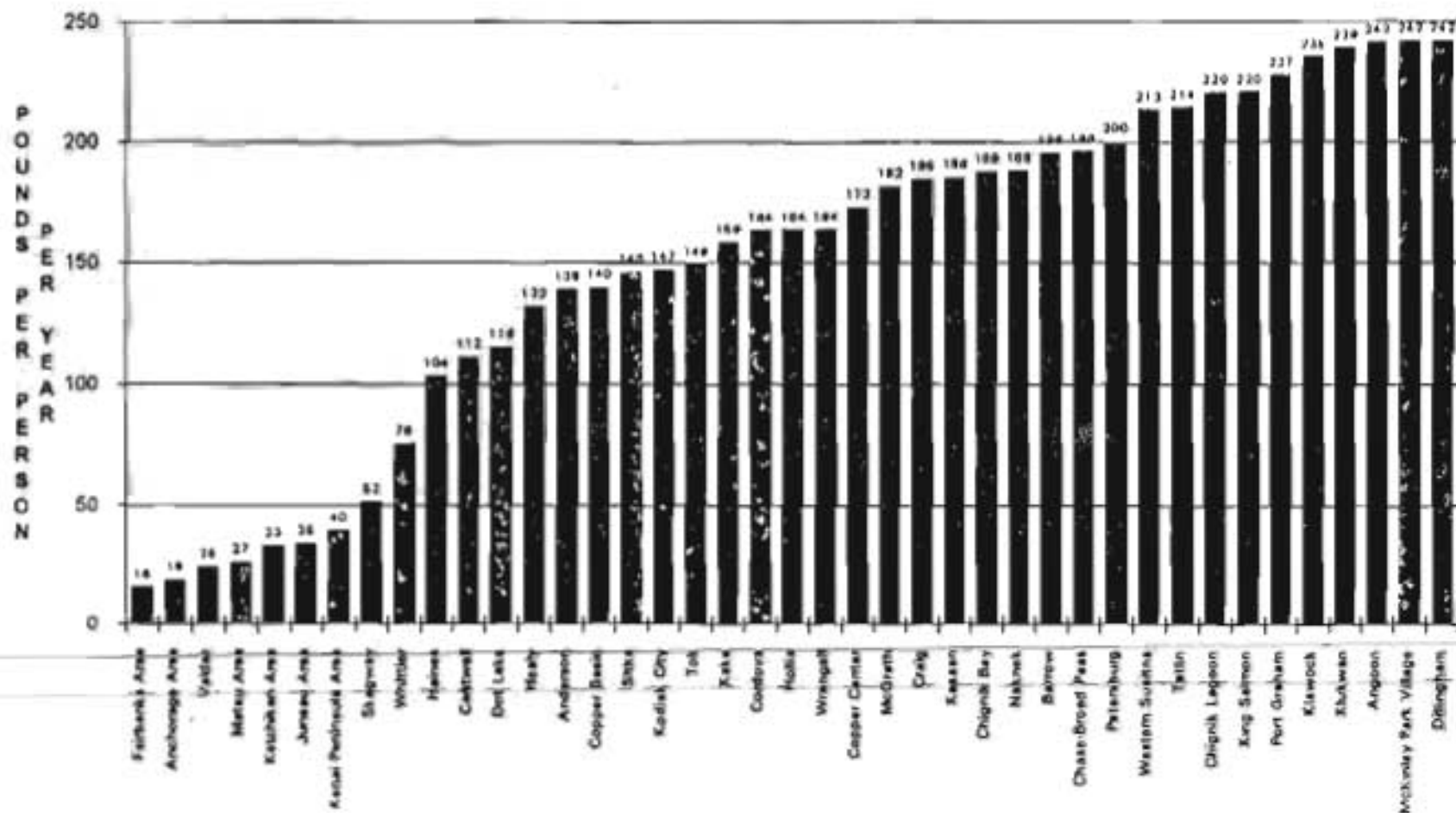
**HEALY AND FERRY AREA
PERCENT OF HOUSEHOLDS USING, TRYING TO
HARVEST, HARVESTING,
GIVING, OR RECEIVING WILD FISH AND GAME, 1987**



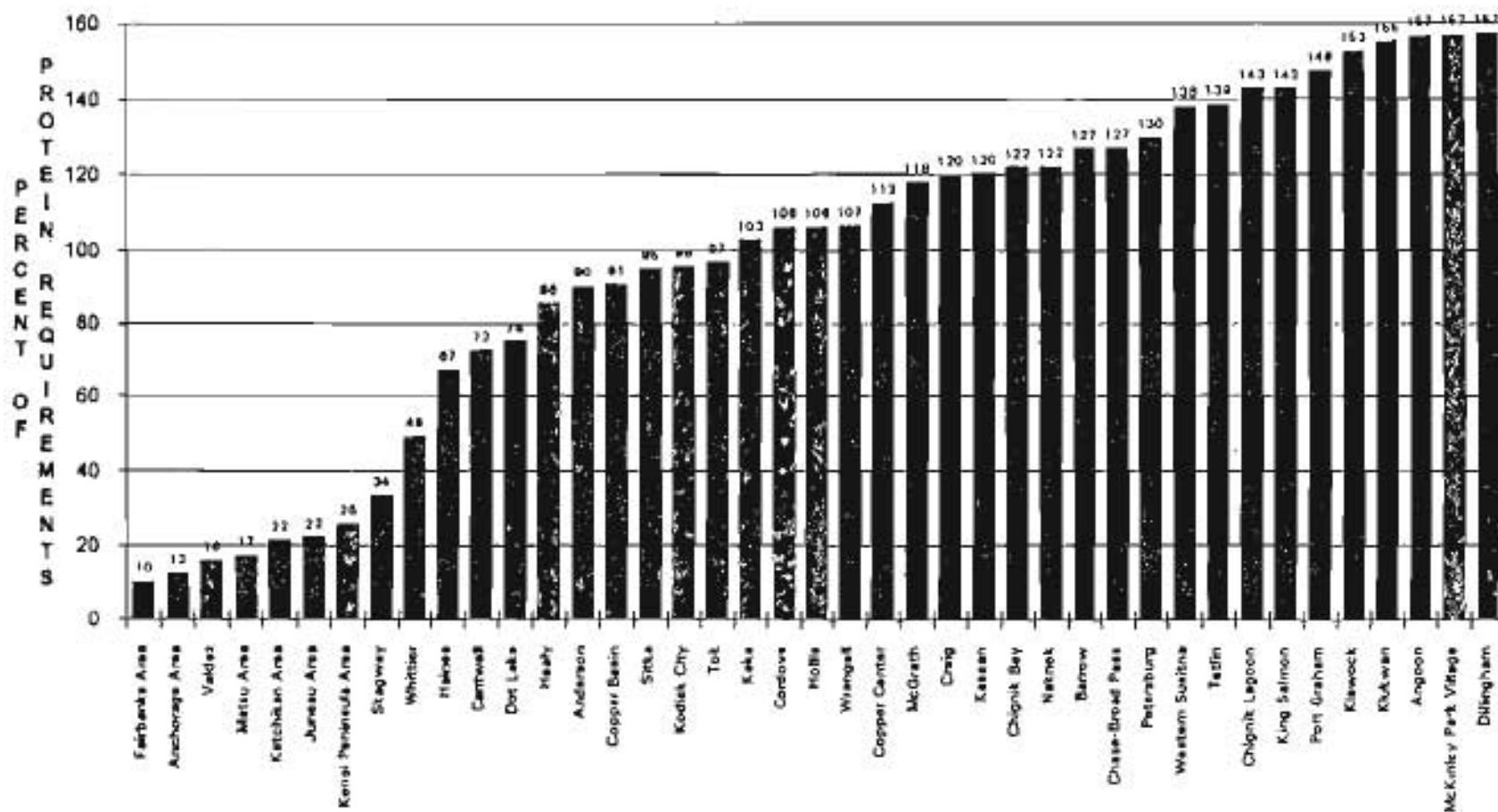
FISH AND WILDLIFE HARVEST LEVELS
BY RESIDENTS OF SELECTED ALASKA AREAS
(LBS PER PERSON PER YEAR;
NON-COMMERCIAL HARVESTS)



WILD FOOD HARVESTS BY COMMUNITY
POUNDS PER PERSON PER YEAR
SOURCE: DIVISION OF SUBSISTENCE, ADF&G



WILD FOOD HARVESTS BY COMMUNITY
PERCENT OF COMMUNITY PROTEIN REQUIREMENTS
(44 GRAMS PER PERSON PER DAY, OR .422 LBS OF WILD FOODS)
SOURCE: DIVISION OF SUBSISTENCE, ADF&G

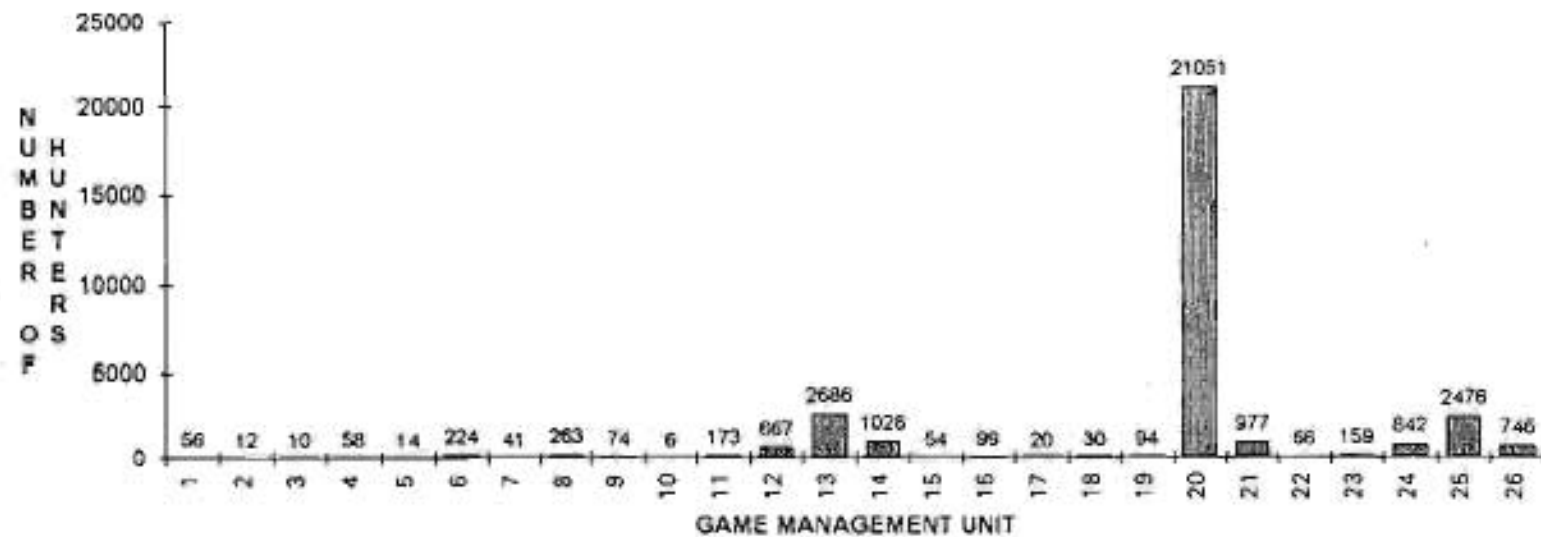


**VOLUNTARY ASSOCIATIONS DEALING WITH FISH, WILDLIFE, AND THE ENVIRONMENT
IN THE FAIRBANKS-DENALI AREA, COMPILED FROM ADF&G LISTS**

| Name of Organization | City | Area | Category |
|---|-------------|-------------|----------------------|
| Alaska Dog Musher's Assoc. | Fairbanks | Fbx-Denali | Sport Industry |
| Alaska Falconers Assoc. | North Pole | Fbx-Denali | Sport Industry |
| Alaska Outdoor Council-Interior | Fairbanks | Fbx-Denali | Sport Industry |
| Chitina Dipnetter's Assoc. | Fairbanks | Fbx-Denali | Sport-PU-Subsistence |
| Christian Sportsmen's Club | Fairbanks | Fbx-Denali | Sport Industry |
| Clear Sky Sportsmen's Assoc. | Clear | Fbx-Denali | Sport Industry |
| College Cubs Jr. Rifle Club | Fairbanks | Fbx-Denali | Sport Industry |
| Delta Sportsmen's Assoc. | Delta Jct | Fbx-Denali | Sport Industry |
| Fairbanks Retriever Club | Fairbanks | Fbx-Denali | Sport Industry |
| Ft. Wainwright Sportsmen's Assoc. | Fairbanks | Fbx-Denali | Sport Industry |
| Interior Alaska Airboat Assoc. | Fairbanks | Fbx-Denali | Sport Industry |
| Interior Alaska Gun Dog Assoc. | North Pole | Fbx-Denali | Sport Industry |
| Interior Wildlife Assoc. of Alaska | Fairbanks | Fbx-Denali | Sport Industry |
| Midnight Sun Flycasters | Fairbanks | Fbx-Denali | Sport Industry |
| Nanook Skeet and Trap Club | Delta Jct | Fbx-Denali | Sport Industry |
| Tanana Valley Sportsmen's Rifle and Pistol Club | Fairbanks | Fbx-Denali | Sport Industry |
| Tanana Valley Sportsmen's Assoc. | Fairbanks | Fbx-Denali | Sport Industry |
| Trout Unlimited-Midnight Sun Chapter | Fairbanks | Fbx-Denali | Sport Industry |
| Midnight Sun Sharpshooters 4-H Club | Fairbanks | Fbx-Denali | Sport Industry |
| Alaska Resource Policy Coalition | Fairbanks | Fbx-Denali | Environmental |
| Arctic Audubon Society | Fairbanks | Fbx-Denali | Environmental |
| Denali Citizens Council | Denali Park | Fbx-Denali | Environmental |
| Northern Alaska Environmental Center | Fairbanks | Fbx-Denali | Environmental |
| Sierra Club Denali Group | Fairbanks | Fbx-Denali | Environmental |
| UAF Wildlife Society | Fairbanks | Fbx-Denali | Environmental |
| Alaska Trapper's Assoc. | Fairbanks | Fbx-Denali | Trapping |
| Alaska Fish and Wildlife Safeguard | Fairbanks | Fbx-Denali | Protection |

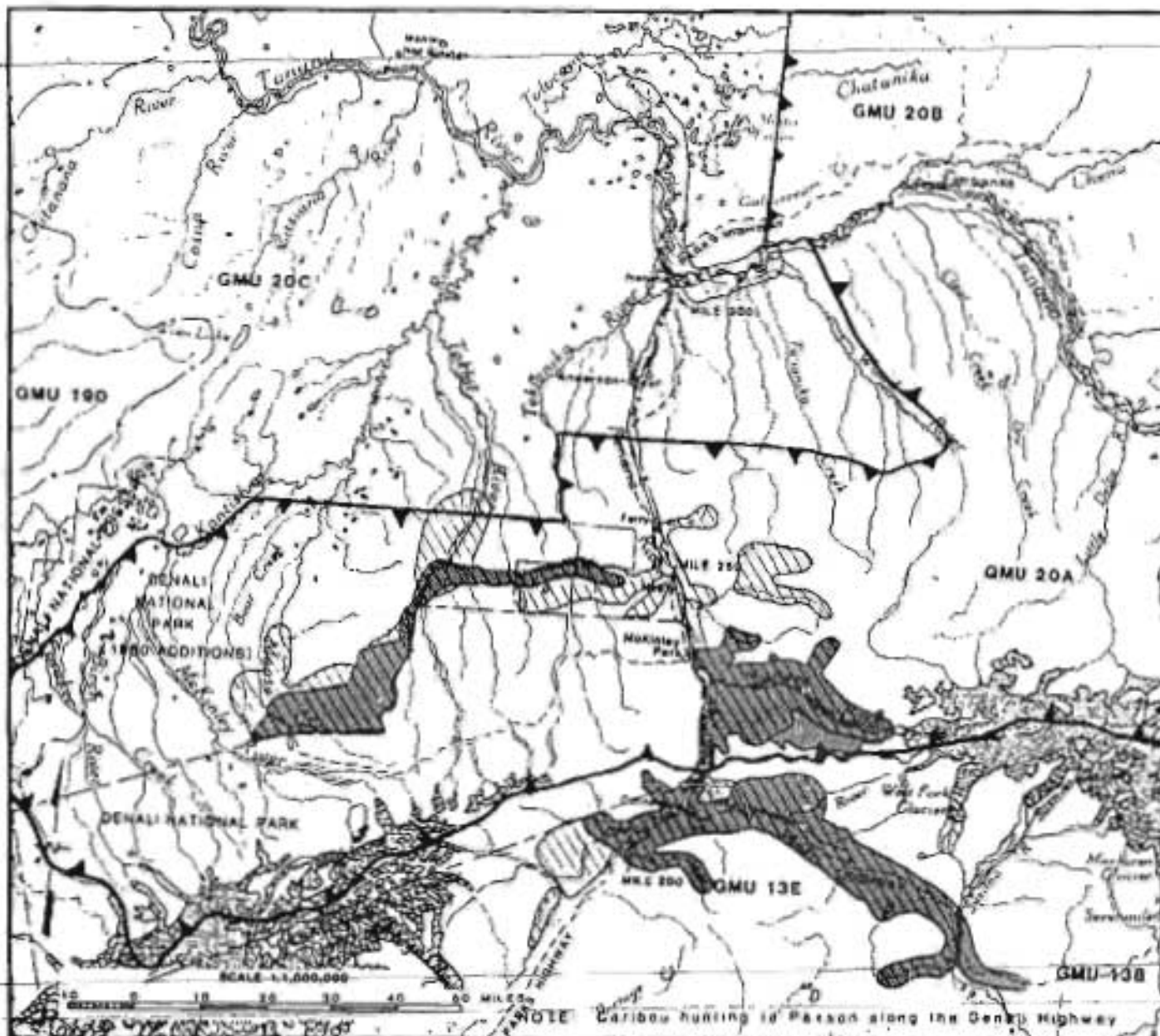
Sources: ADFG Public Communications Section; Division of Wildlife Conservation (Juneau, Anchorage, Cordova);
Division of Sport Fish (Juneau); Division of Subsistence (Dillingham, Kotzebue, Bethel, Fairbanks)
FNSB Library Data Cache)

HUNTING LOCATIONS OF FAIRBANKS AREA RESIDENTS (PORTION 20B), NUMBER OF HUNTERS, 1986-91



HUNT LOCATIONS FOR RESIDENTS OF FAIRBANKS AREA (PORTION 20B), 1986-91
NUMBER OF HUNTERS (*SUCCESSFUL HUNTERS) BY GAME MANAGEMENT UNIT

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
|-------------|----|----|----|----|----|-----|----|-----|----|-----|-----|------|------|------|----|----|----|----|-------|-------|-----|-----|-----|------|------|-----|
| Black Bear* | 8 | 12 | 10 | | 2 | 73 | 10 | | | | 4 | 9 | 12 | 6 | 5 | 4 | | | | 687 | 6 | | | 1 | 28 | |
| Brown Bear* | 10 | | | 55 | 5 | 25 | | 131 | 37 | 6 | 1 | 5 | 28 | 1 | 1 | 1 | | | | 120 | 3 | 6 | 8 | 86 | 42 | 44 |
| Caribou | | | | | | | 1 | | | | 10 | 91 | 916 | 3 | | | | | | 1195 | | | | | | 16 |
| Elk | | | | | | | | 120 | | | | | | | | | | | | | | | | | | |
| Goat | 38 | | | 3 | 6 | 110 | 20 | 12 | | | 12 | | 2 | 4 | 7 | | | | | | | | | | | |
| Bison | | | | | | | | | | | 6 | | | | | | | | 13 | 17 | | | | | | |
| Moose | | | | 1 | 16 | 6 | | 37 | | 22 | 153 | 1524 | 998 | 41 | 91 | 20 | 2 | 74 | 17870 | 968 | 60 | 140 | 607 | 1900 | 229 | |
| Sheep | | | | | | 2 | | | | 118 | 399 | 204 | 16 | | 3 | | | 7 | 1162 | | | | 11 | 148 | 492 | 467 |
| Muskox | | | | | | | | | | | | | | | | | 28 | | | | | | | | | 6 |
| Total | 56 | 12 | 10 | 58 | 14 | 224 | 41 | 263 | 74 | 6 | 173 | 667 | 2686 | 1026 | 54 | 99 | 20 | 30 | 94 | 21051 | 977 | 66 | 159 | 842 | 2476 | 746 |



McKinley Park Moose and Caribou Hunting Areas

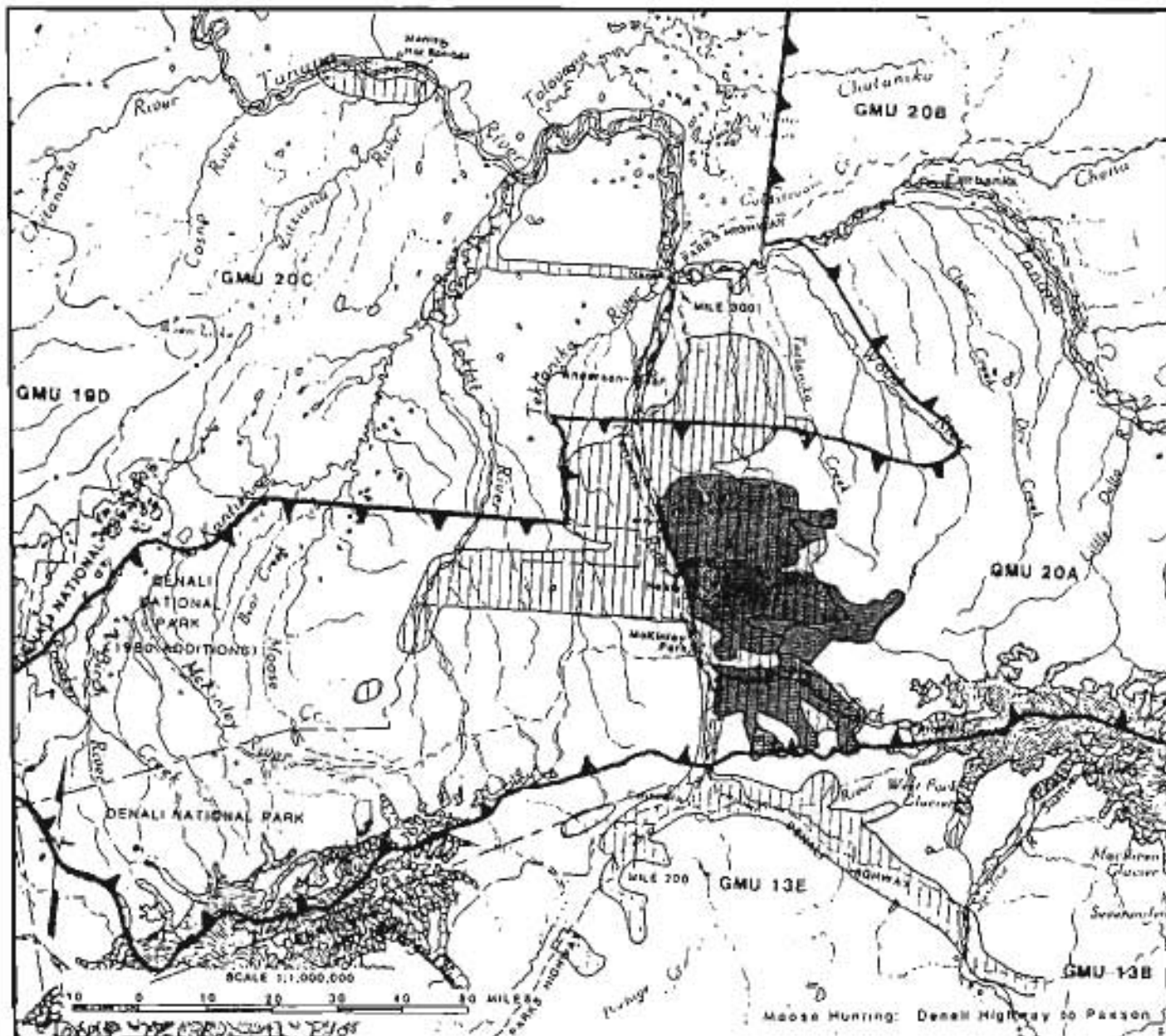
- MOOSE HUNTING
- CARIBOU HUNTING

Use areas are based on a key respondent sample of 14 community households between Mile 210 and 240 of the Parks Highway interviewed in January, 1988.

This map depicts areas where use of fish and wildlife resources by community residents has been documented. These areas shown are known to have been used during the lifetime of respondents. Undocumented use of areas other than those depicted may occur. Consult with local communities for definitive information.



STATE OF ALASKA
Department of Fish and Game
Subsistence Division



Healy Moose and Caribou Hunting Areas



MOOSE HUNTING



CARIBOU HUNTING

Use areas are based on a key respondent sample of 23 community households between Mile 243 and 275 of the Parks Highway interviewed in January, 1968.

This map depicts areas where use of fish and wildlife resources by community residents has been documented. Those areas shown are known to have been used during the lifetime of respondents. Undocumented use of areas other than those depicted may occur. Consult with local communities for definitive information.



STATE OF ALASKA
Department of Fish and Game
Subsistence Division

Moose Hunting: Denali Highway to Paxson

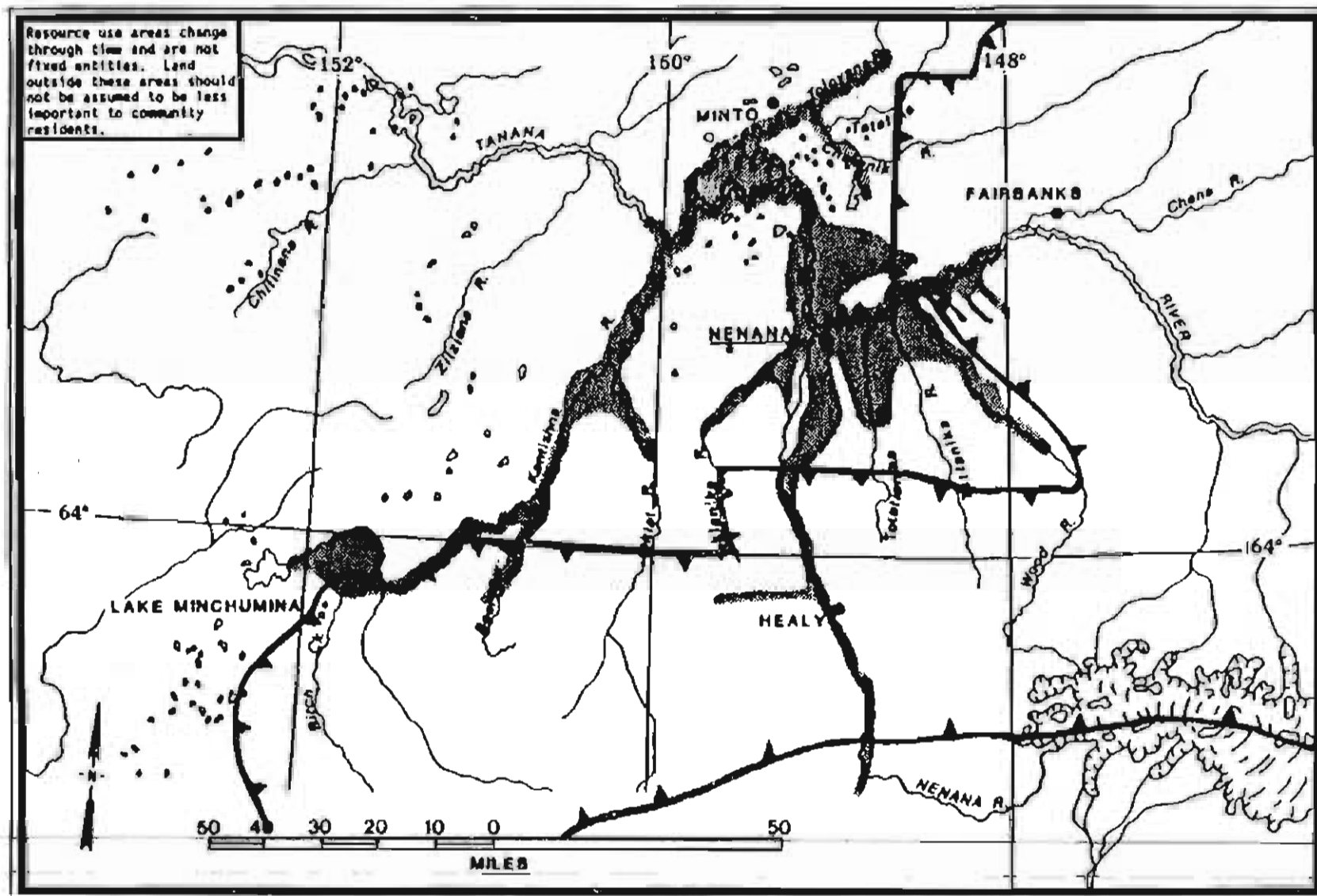
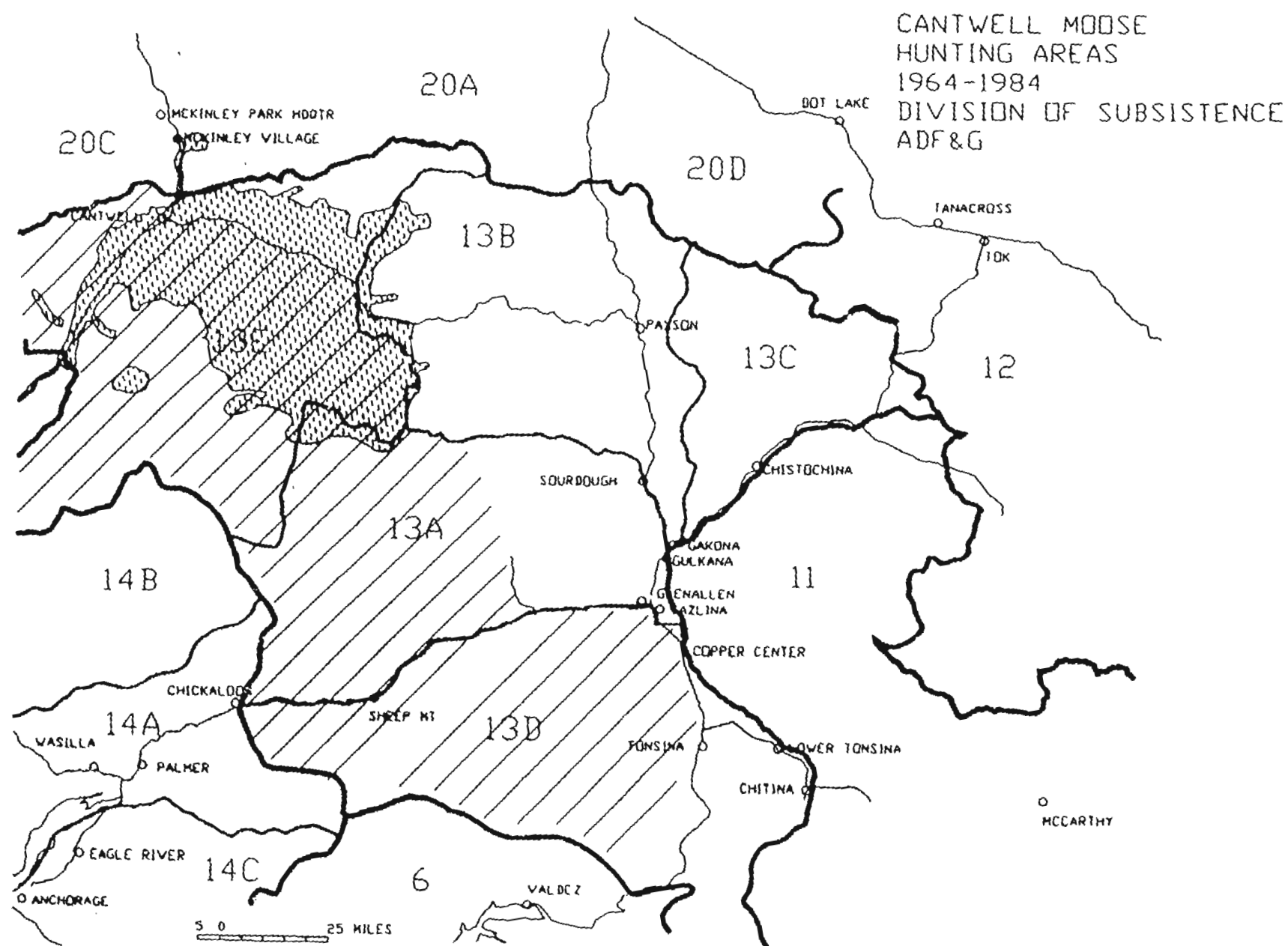
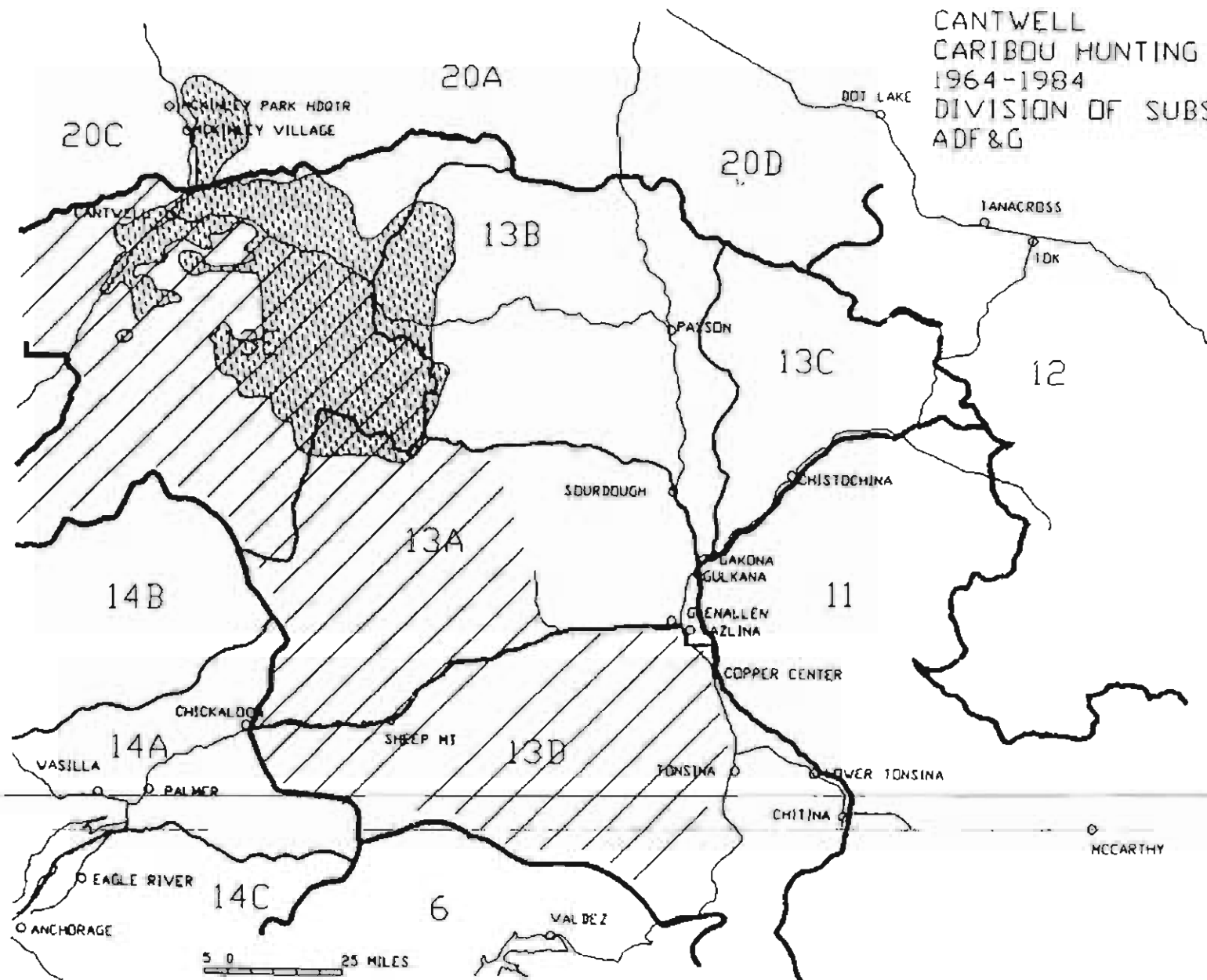


Fig. 8. Nenana Village Moose Hunting Areas (1981-1982)



CANTWELL
CARIBOU HUNTING AREAS
1964-1984
DIVISION OF SUBSISTENCE
ADF&G



Proposal No. 2 Anchorage-Matsu Nonsubsistence Area

Area Description

SEE FIG. 1

The proposed Anchorage-Matsu Nonsubsistence Area includes Game Management Units 14 and 16(A) and marine waters one mile offshore (see Fig. 1).

This area includes the metropolis of Anchorage and the nearby suburban and agricultural areas along Knik Arm and the Matanuska Valley, including Chugiak, Eagle River, Palmer, Wasilla, and Sutton. Within this area are historic Alaska Native communities at Eklutna and Knik. Farther north are communities along the highway and railbelt, including Big Lake, Houston, Willow, Trapper Creek, Talkeetna, and Petersville. To the south, the area includes the highway communities of Girdwood and Portage along Turnagain Arm.

Historic Overview

SEE FIG. 2

A description of the history, economy, and resource use patterns of this area is contained in Schroeder et al 1987:528-563. At the time of European contact (about 1778), the inhabitants of this area were a distinct society of the Tanaina (Dena'ina) Athapaskans known as the "Upper Inlet Tanaina". The local economy was dependent upon fishing and hunting for food and simple commodity production for trade (especially furs). Epidemics devastated the Tanaina population during the 1830s. Survivors concentrated at settlements around trading posts and missions at places such as Knik, Susitna Station, Eklutna, and Tyonek.

Anchorage was established in 1914 as a survey camp during construction of the Alaska Railroad and had a population of 2,000 people by 1920. Anchorage emerged as a hub of transportation and commerce serving the Cook Inlet region and interior Alaska because of the Seward-to-Fairbanks railroad (completed in 1923), port facilities, and aviation operations. During the mid-1930s, the Matanuska-Susitna Valley received more settlement by farmer-homesteaders as part of a federal New Deal relocation program. World War II boosted the area's economy with the construction of Fort Richardson and Elmendorf Air Force Base in 1940. Oil companies located at Anchorage with the discovery of oil in Cook Inlet and the Kenai Peninsula in the 1950s-1960s. The recent growth and expansion of Anchorage as the center of the state's petroleum, finance, transportation, and service functions was fueled by North Slope oil development in the late 1970s. During the last decade, neighboring areas along Knik Arm and the Matanuska Valley have been absorbed into the growing metropolis of Anchorage. Between 1950 to 1990 the Anchorage-Matsu Area grew from 35,021 people to 266,021 people. The area contained 48.4 percent of Alaska's population in 1990 (see Fig. 2).

Twelve Factors

1. The Social and Economic Structure

The social and economic structure of the Anchorage-Matsu Area has been characterized as a type of "industrial-capitalism", a socioeconomic system common in the lower 48 which has developed in Alaska. This social and economic structure is distinct from another type of socioeconomic system in Alaska, called a "mixed, subsistence-cash economy", where the domestic household sector is a major producer and distributor of food. Industrial capital systems generally have large wage sectors, which provide the major means of livelihood to residents. In an industrial-capital system, households are not major producers or distributors of an area's food supply. Food production by households provides a very small portion of the community's food, but may be of economic significance to those households actively involved in hunting and fishing. Most of the area's food and other goods and services are provided by businesses organized and financed separately from the household unit. Production and distribution of goods and services are organized by market forces or by government. Fishing and hunting by residents are primarily conducted as part of recreational or commercial industries. The specific characteristics of the Anchorage-Matsu Area's "industrial-capital" socioeconomic system are described below.

2. The Stability of the Economy

SEE FIGS. 2, 3, 4, 5

The economy of the Anchorage-Matsu area has shown substantial growth during the past four decades. One indicator of this growth is the large population increases in the area (see Figs. 2 and 3), primarily due to immigration of persons from outside the state drawn to the area by expanding employment opportunities. The mean annual rate of growth for the Anchorage Borough was 9.0 percent (1950s), 4.2 percent (1960s), 3.2 percent (1970s), and 2.6 percent (1980s) (Fig. 3). The mean annual rate of growth for the Matanuska-Susitna Borough was 3.8 percent (1950s), 2.3 percent (1960s), 9.3 percent (1970s), and 7.6 percent (1980s) (Fig. 3). During the oil boom period from the middle 1970s to the early 1980s, this growth was fueled by state spending; oil revenues created employment in capital construction projects and expanded government services, much of it serviced from the Anchorage-Matsu area. The economic boom had ended by 1985 with declining world oil prices and state spending.

Fig. 4 shows recent trends in civilian wage employment in Anchorage during the last decade. The number of wage-paying jobs increased substantially from 80,050 in 1980 to 114,400 in 1985, dipped to 100,250 by 1988, and increased to 113,100 by 1991. Fig. 5 shows trends in civilian wage employment in the Matanuska-Susitna Borough during the last decade. The number of wage-paying jobs increased substantially from 3,151 in 1980 to 6,991 in 1985, dipped to 6,052 by 1988, and increased to an all-time high of 7,663 by 1991. The rapid increase in Matsu area jobs during the early 1980s was due to the development of this area as a residential satellite community to Anchorage.

3. The Extent and Kinds of Employment for Wages, Including Full-Time, Part-Time, Temporary, and Seasonal Employment

SEE FIGS. 6, 7, 8, 9

In 1991, most wage-paying jobs in the Anchorage-Matsu Area were in government (22-35 percent), services (20-23 percent), trade (21-26 percent), and transportation (10 percent) (see Figs. 6 and 7). Manufacturing industries were few and provided only about 1-2 percent of wage jobs. Most manufactured goods are imported into the Anchorage-Matsu area from outside Alaska. In Anchorage, about 9 percent of all jobs were military, associated with Fort Richardson and Elmendorf Air Force Base. From 3-5 percent of wage-paying jobs were in finance and real estate (FIRE). Only 3 percent of Anchorage wage employment in 1991 was directly in mining.

In 1991, there were about 1,090 limited entry commercial fishing permits fished by residents of the Anchorage-Matsu Area (Fig. 8). In 1991, commercial fishers living in the Anchorage-Matsu Area sold fish with a gross value of about \$41.2 million.

Unemployment rates were 7.3 percent in the Anchorage Borough and 14.9 percent in the Matanuska-Susitna Borough in April 1992 (Fig. 9). This compares to the Alaska rate of 9.2 percent.

4. The Amount and Distribution of Cash Income Among Those Domiciled in the Area or Community

SEE FIG. 10, 11, 12, 13, 14

In 1989, per capita incomes in the Anchorage Borough (\$19,620) were above the state's average (\$17,610) (Fig. 10 and 11). Per capital incomes in the Matanuska-Susitna Borough (\$15,898) were below the state's average (Fig. 9 and 10). According to U.S. Census distribution records, incomes were distributed unevenly by racial or cultural group membership (Fig. 10). These income distributions are shown in Figs. 12 and 13.

In 1989, 10.1 percent of Anchorage residents lived in households earning less than the federal poverty standards (Fig. 14). This rate is below the Alaska average (12.5 percent), and substantially below rates in some Alaska areas, like the Dillingham Census Area (30.9 percent). About 13.2 percent of Matanuska-Susitna Borough residents lived below federal poverty standards, which is slightly higher than the state average (Fig. 14).

5. The Cost and Availability of Goods and Services To Those Domiciled in the Area or Community

SEE FIG. 15

As described in the historic section above, the Anchorage-Matsu area has a well-developed system of commerce through which a large range of goods

and services are provided. Food prices can be used as an index of cost of living compared with other Alaska areas. The cost of food in Anchorage and the Matanuska-Susitna Borough relative to other selected communities in Alaska is shown in Fig. 15. The cost of food index in Anchorage is among the lowest for communities in Alaska (only Ketchikan is lower in Fig. 15). Current food costs in the Matanuska-Susitna Borough are only about 4 percent higher than Anchorage. Food is relatively less expensive in the Anchorage-Matsu area because the area is a primary node in the state's commercial transportation network (which reduces transportation costs) and because the area deals in large volume.

6. The Variety of Fish and Game Species Used by Those Domiciled in the Area or Community

SEE FIGS. 16 AND 17

The residents of the Anchorage-Matsu Area use a variety of fish and wildlife, as shown in Figs. 16 and 17. Big game species used include black bear, brown bear, caribou, elk, goat, bison, moose, sheep, muskox, and deer (Fig. 16). Fish species used include chinook, coho, sockeye, pink, chum, halibut, steelhead, and varieties of trout, other freshwater fish, and shellfish (Fig. 17).

7. The Seasonal Cycle of Economic Activity

Economic activity in the Anchorage-Matsu Area shows some seasonal fluctuations, primarily related to tourism. The number of nonagricultural jobs show increases during the summer tourist season and decreases during winter season. Except for this, the types of jobs in the Anchorage-Matsu Area (primarily in government, trade, and services) are not particularly affected by yearly natural cycles.

Fishing and hunting activities by residents are influenced by the regulated seasons, such as salmon fishing during summer and fall and moose and caribou hunting during fall. Jobs in the local recreational industry (such as recreational retail outlets, fish guides, game guides, charter air transporters, and outfitters) are influenced by these seasonal cycles.

8. The Percentage of Those Domiciled in the Area or Community Participating in Hunting and Fishing Activities or Using Wild Fish and Game

SEE FIGS. 16, 18, 23, 24

A substantial percent of the residents of the Anchorage-Matsu Area fish with rod and reel. In the Anchorage Borough, about 47-60 percent of the population fished with rod and reel during 1989-91, based on surveys of anglers (Fig. 18). In the Matanuska-Susitna Borough, about 40-71 percent of the population fished with rod and reel during 1989-91 (Fig. 18). In 1991, 32,428 hunting/hunting combination licenses were sold to persons living in the Anchorage-Matsu area (about 12.2 percent of the population).

The Alaska Public Survey in 1979 of a random sample of households in Anchorage (N=2,476 households) showed that 18.7 percent of households in Anchorage hunted during 1979 (15 percent hunted big game; 11.7 percent hunted small game). The sample of households in Palmer-Wasilla (N=81) showed that 39.3 percent of households hunted during 1979 (28.6 percent hunted big game; 17.9 percent hunt small game) (Schroeder et al 1987:558).

In 1991, Anchorage Borough residents were issued an estimated 3,319 permits for non-commercial net fishing in Cook Inlet (Fig. 16). In 1991, Matanuska-Susitna Borough residents were issued an estimated 752 permits for non-commercial net fishing in Cook Inlet (Fig. 16).

9. The Harvest Levels of Fish and Game by Those Domiciled in the Area or Community

SEE FIGS. 16, 17, 19, 20, 21

In the Anchorage-Matsu area, the total fish and game harvest was about 5.16 million lbs annually, based on state game harvest records for 1986-91, sport fish surveys for 1989-91, and noncommercial salmon records for 1991. The total annual per capita harvests were 19.4 lbs in Anchorage (14.8 lbs of fish and 4.6 lbs of game) and 26.8 lbs in the Matsu area (14.2 lbs of fish and 12.6 lbs of game) (Fig. 19). The harvest of wild foods provided a small portion of the food supply in the Anchorage-Matsu Area compared with other Alaska areas (Fig. 20). The wild food harvest contained a relatively small percent of the community's protein requirements: 13 percent in Anchorage Area and 17 percent in the Matsu Area (Fig. 21). Low food production rates by households are characteristic of an industrial-capital system, where most foods are produced and distributed through commercial businesses and purchased by households with wage earnings.

The numbers of big game and fish harvested by residents of the Anchorage-Matsu Area are shown in Figs. 16 and 17, based on harvest ticket and permit records.

10. The Cultural, Social, and Economic Values Associated with the Taking and Use of Fish and Game

SEE FIG. 22

In the Anchorage-Matsu Area, the predominant values associated with fish and wildlife harvests are recreational. Fishing and hunting are periodic outdoor activities, valued as breaks from the economic work routine, embodying fair chase ethics, and producing wild foods that are valued for their taste and healthful qualities. For many, fishing and hunting are valued as high quality outdoor experiences which supplement the household's diet. For residents directly employed in commercial fishing and outdoor recreational industries (such as recreational retail outlets, fish guides, game guides, charter air transporters, outfitters, and tour guides), values are commonly commercial in nature. That is, the use of fish and game

game produces monetary income for the household, as well as all or some of the recreational values listed above. For many Anchorage-Matsu residents, including hunters and fishers, values associated with fish and wildlife are related to environmental awareness and nonconsumptive uses (such as wildlife viewing). For some Anchorage-Matsu Area residents, the values associated with fishing and hunting derive from Alaska Native cultural traditions, including food production for a local society of people, sharing with elders, and the provision of wild foods for ceremonial gatherings.

One indicator of the value orientations of residents are the types and numbers of voluntary associations dealing with fish and wildlife in the Anchorage-Matsu Area appearing on mailing lists compiled by ADF&G (see Fig. 22). As shown in Fig. 22, among the voluntary associations listed for the Anchorage-Matsu Area, there are at least 13 associated with recreational-sport fishing or hunting, 25 associated with environmental awareness and/or nonconsumptive uses, 3 associated with the commercial fishing industry, 1 associated with trapping, and 1 associated with enforcement.

Schroeder et al (1987) summarize values for the Anchorage-Matsu Area as follows:

"Whereas recreational use is the most widespread pattern of resource use by residents of an urbanized area, other patterns of resource uses also exist within segments of the urban population. Like most urban areas, the Anchorage-railbelt area contains a heterogeneous composite of neighborhoods, socioeconomic classes, ethnic enclaves, and other subgroups. Particular subgroups within the Anchorage-railbelt area undoubtedly exhibit patterns of resource uses that differ from the predominant recreational pattern... Resource surveys have not been designed to identify and describe distinct resource use patterns of discrete subcommunities of the Anchorage-railbelt area. Were such information available, it would likely show that even within the urban Anchorage-railbelt area there exist identifiable subcommunities in which the harvest of wild resources provides significant and particular social, economic, and nutritional values to the subgroup.

For instance, the traditional Tanaina villages of Knik and Eklutna now fall within the metropolitan shadow of Anchorage; their traditional hunting and fishing territories are bisected by roads and transformed by encroaching suburban development. Yet, a recent study found that even while the land, society, and economy were undergoing extraordinary conversion around them, residents of Knik and Eklutna still considered the use of wild resources to be of cultural, economic, and nutritional importance (Fall 1981b). As another example, some portion of the Alaska Natives living in urban areas continue to place special values on wild resource, returning regularly to "home" communities to hunt and fish. It is also known that traditional food products commonly are sent by kin and friends in rural villages to kin and friends in urban areas to satisfy these personal, cultural needs, although the precise characteristics of this rural-to-urban flow of wild foods has never been studied. As another example, the Western "frontiersman" or "outdoorsman" traditions of certain Anchorage residents, traced as a personal family history from the continental United States, undoubtedly

contain special values and relationships to wild resources and their use. These traditions are commonly passed on between members of outdoorsmen clubs and other voluntary associations within the urban setting.

Thus, it is a mistake to view the resource uses within the Anchorage railbelt area as a simple homogeneous recreational pattern. Other resource use patterns can be found in subgroups like formerly rural communities recently swallowed by expanding urban areas, formerly rural residents recently moved to the urban area, voluntary associations and families maintaining personal hunting traditions, as well as in socioeconomic groups like commercial fishermen and commercial guides...."

11. The Geographic Locations Where Those Domiciled in the Area or Community Hunt and Fish

SEE FIGS. 23, 24

During the period 1986-91, residents of the Anchorage-Matsu area hunted throughout the state, but primarily in GMUs 13, 14, and 16, which are connected to the Anchorage-Matsu Area by roads (Fig. 23 and 24). This indicates that most fishers and hunters domiciled in the Anchorage-Matsu Area travel to fishing and hunting locations along the state road network. A significant number of Anchorage-Matsu residents also hunted in GMU 7 and 15 (the Kenai Peninsula), GMU 20 (the Fairbank's area), and GMU 8 (Kodiak Island, for deer, brown bear, and elk).

12. The Extent of Sharing and Exchange of Fish and Game by Those Domiciled in the Area or Community

The absolute amount of wild foods shared on a per capita basis is relatively small in the Anchorage-Matsu Area because of the relatively small amounts harvested. Because of this, distribution of fish and game through noncommercial networks is not a significant mechanism for supplying food in the area. An estimate of sharing in the Anchorage-Matsu area was made by a household survey in 1978-79. At that time, 59.7 percent of Anchorage households and 66.7 percent of Palmer-Wasilla households reported not giving away any wild foods. About 33-36 percent of Anchorage-Matsu area households reported giving away "some" of their harvests, and 0-4.0 percent report giving away "half or more" of their harvests (Schroeder et al. 1987:561).

Source Materials

Schroeder, Robert F., David B. Andersen, Rob Bosworth, Judith M. Morris, and John M. Wright (1987) Subsistence in Alaska: Arctic, Interior, Southcentral, Southwest, and Western Regional Summaries. Technical Paper No. 150, Division of Subsistence, Alaska Department of Fish and Game.

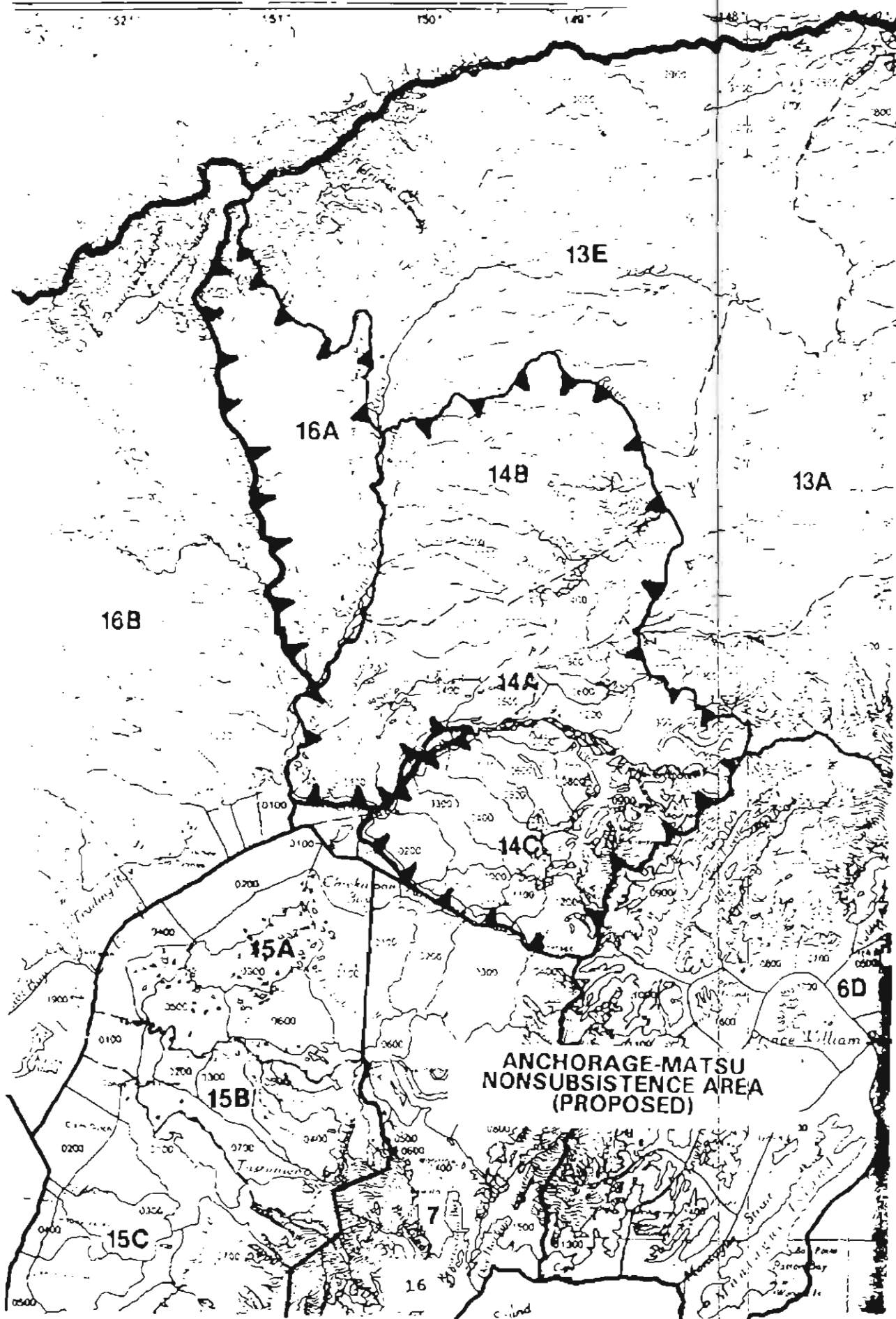
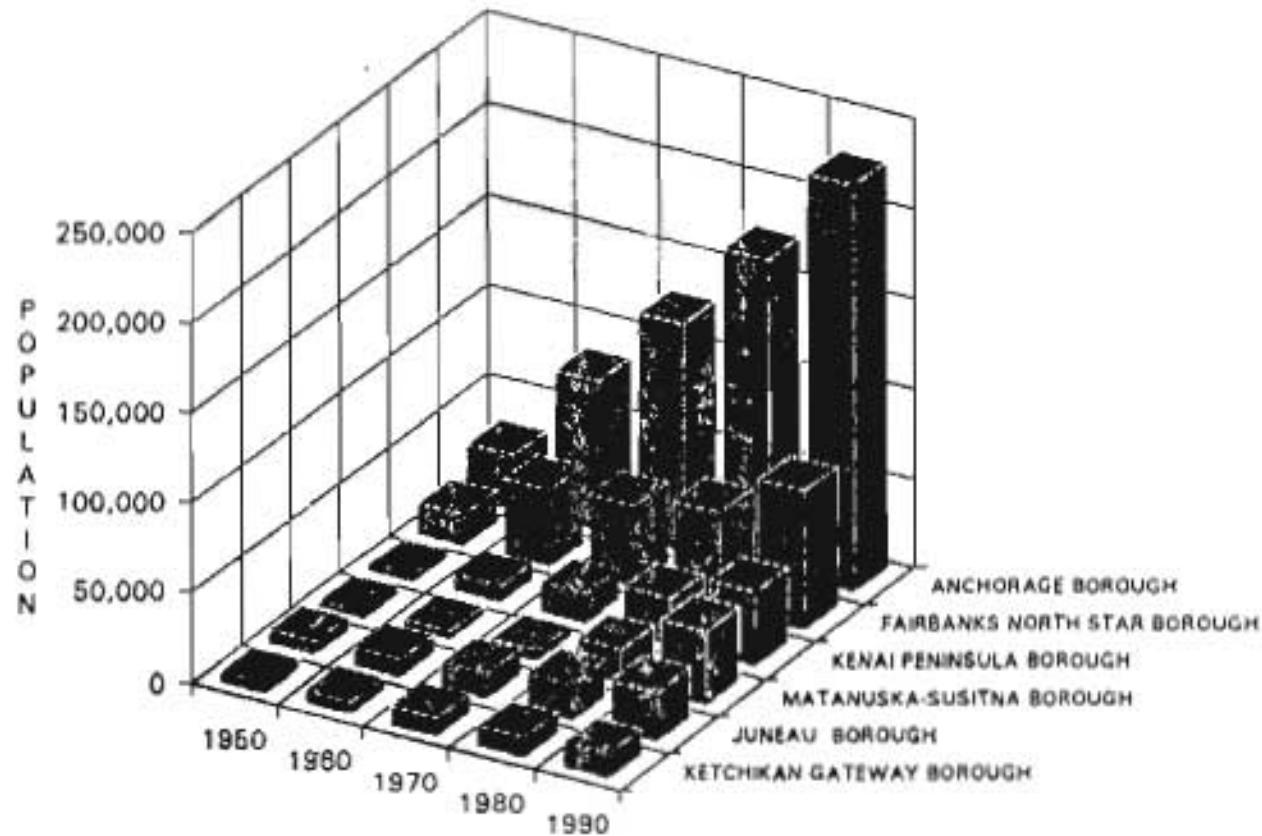


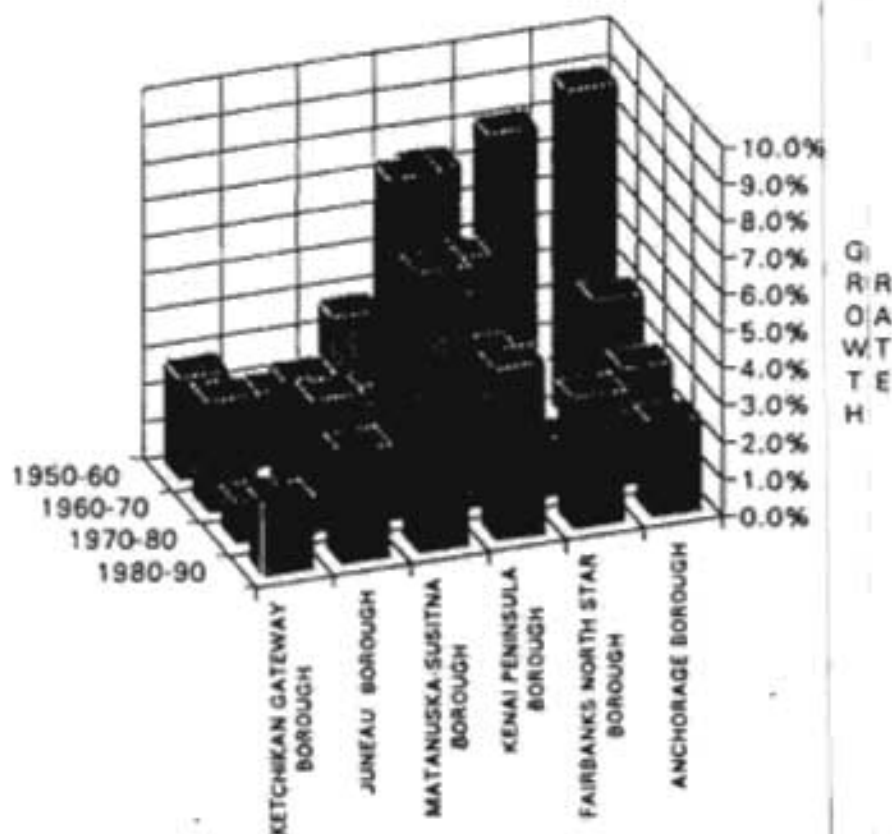
FIG. 1

POPULATION TRENDS 1950-1990 SELECT ALASKA AREAS



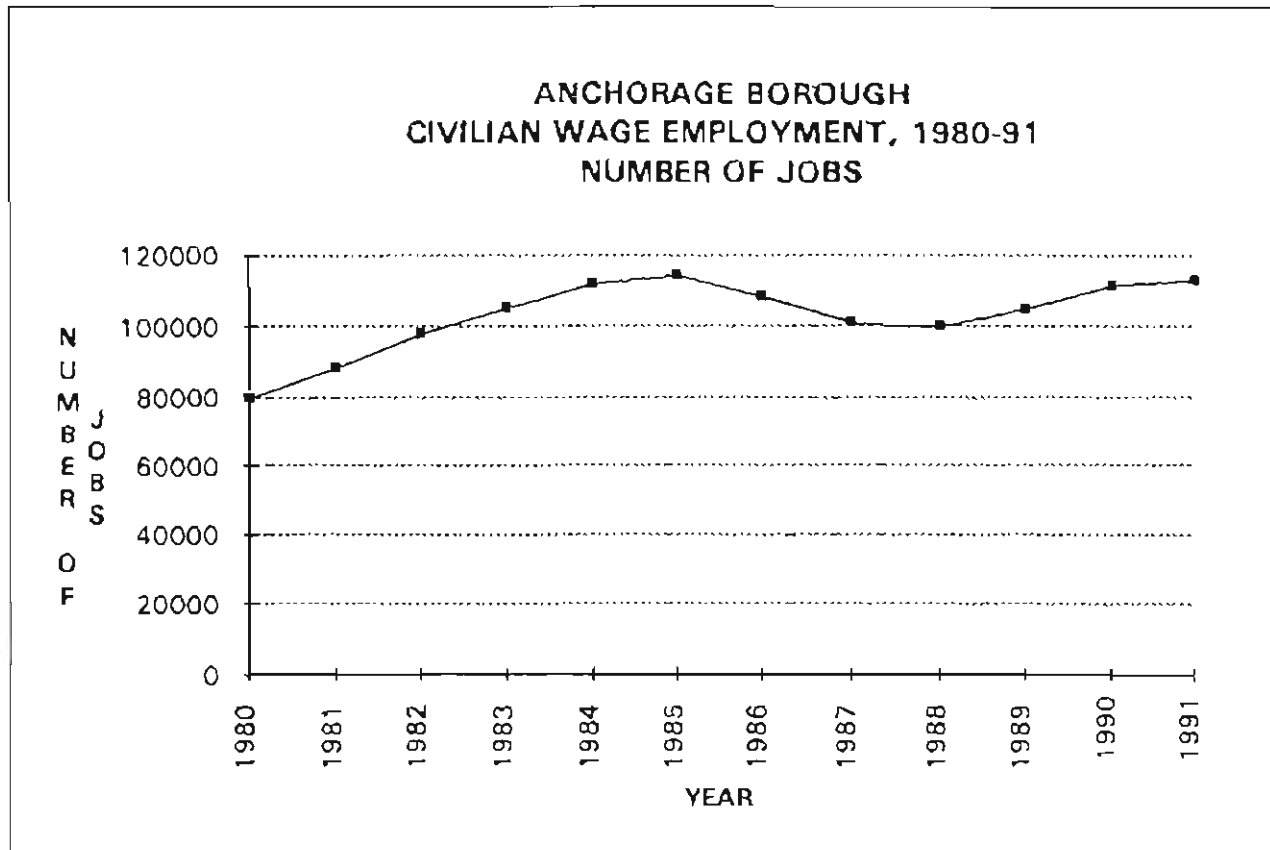
| | 1950 | 1960 | 1970 | 1980 | 1990 |
|------------------------------|--------|--------|---------|---------|---------|
| KETCHIKAN GATEWAY BOROUGH | 5,581 | 7,406 | 10,041 | 11,316 | 13,828 |
| JUNEAU BOROUGH | 7,920 | 9,745 | 13,556 | 19,528 | 26,751 |
| MATANUSKA-SUSITNA BOROUGH | 3,534 | 5,188 | 6,509 | 17,816 | 39,683 |
| KENAI PENINSULA BOROUGH | 4,130 | 9,053 | 16,586 | 25,282 | 40,802 |
| FAIRBANKS NORTH STAR BOROUGH | 18,129 | 42,992 | 45,864 | 53,983 | 77,720 |
| ANCHORAGE BOROUGH | 31,487 | 82,833 | 126,385 | 174,431 | 226,338 |

MEAN ANNUAL GROWTH RATES PER DECADE, FOR SELECT ALASKA AREAS, 1950-90



| | 1950-60 | 1960-70 | 1970-80 | 1980-90 |
|------------------------------|---------|---------|---------|---------|
| KETCHIKAN GATEWAY BOROUGH | 2.8% | 3.0% | 1.2% | 2.0% |
| JUNEAU BOROUGH | 2.1% | 3.3% | 3.6% | 3.1% |
| MATANUSKA-SUSITNA BOROUGH | 3.8% | 2.3% | 9.3% | 7.6% |
| KENAI PENINSULA BOROUGH | 7.5% | 5.9% | 4.2% | 4.7% |
| FAIRBANKS NORTH STAR BOROUGH | 8.1% | 0.6% | 1.6% | 3.6% |
| ANCHORAGE BOROUGH | 9.0% | 4.2% | 3.2% | 2.6% |

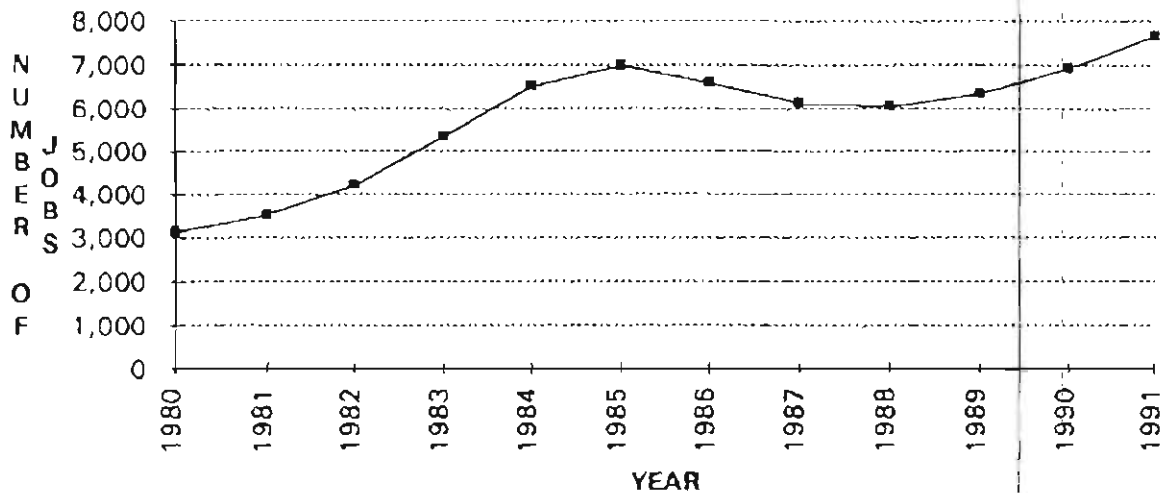
FIG. 3



ANCHORAGE BOROUGH WAGE EMPLOYMENT, 1980-1991: NUMBER OF JOBS BY JOB CATEGORY
SOURCE: ALASKA DEPARTMENT OF LABOR, RESEARCH AND ANALYSIS SECTION

| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|----------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Mining | 2650 | 3350 | 3700 | 3550 | 3800 | 4200 | 3650 | 3150 | 3300 | 3550 | 3800 | 3900 |
| Construction | 5450 | 5950 | 6400 | 9700 | 10100 | 9300 | 7250 | 5350 | 4350 | 4900 | 5800 | 5800 |
| Manufacturing | 2650 | 3100 | 2900 | 2700 | 2700 | 2800 | 2500 | 2350 | 2150 | 2150 | 2400 | 2600 |
| Transportation | 8000 | 8450 | 8450 | 8900 | 9350 | 9600 | 9800 | 9400 | 9250 | 10100 | 11100 | 11900 |
| Trade | 17050 | 19700 | 22900 | 25450 | 26950 | 27300 | 25800 | 23400 | 24150 | 25400 | 26200 | 26000 |
| FIRE | 5250 | 5700 | 6400 | 7300 | 8250 | 8600 | 8200 | 7600 | 7100 | 6700 | 6500 | 6600 |
| Services | 17050 | 19300 | 21400 | 22950 | 25200 | 26300 | 24900 | 24100 | 24450 | 26300 | 28800 | 28900 |
| Government | 21950 | 23000 | 23850 | 24700 | 25400 | 26300 | 26400 | 25900 | 25500 | 25900 | 26900 | 27400 |
| Military | 10914 | - | - | - | - | - | - | - | - | - | 11175 | 11175 |
| Total Civilian | 80050 | 88550 | 98000 | 105250 | 111750 | 114400 | 108500 | 101250 | 100250 | 105000 | 111500 | 113100 |

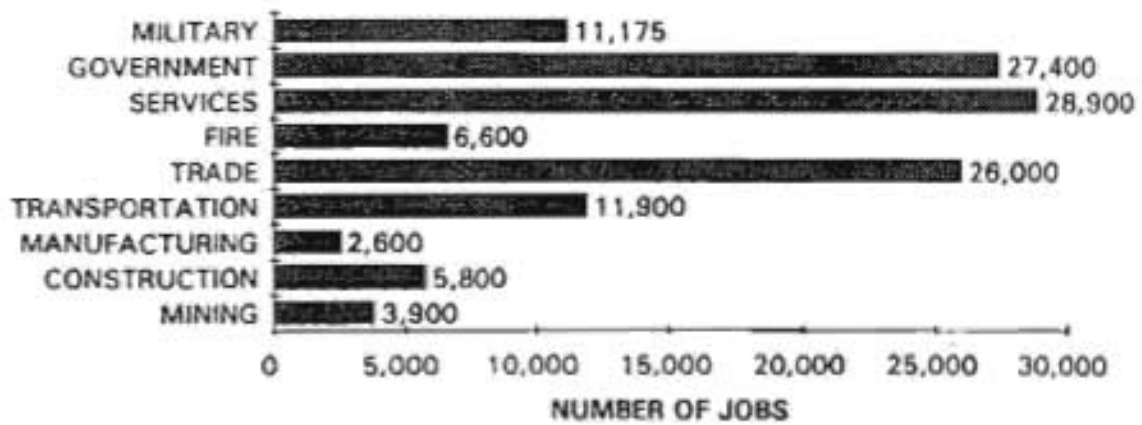
**MATANUSKA-SUSITNA BOROUGH
CIVILIAN WAGE EMPLOYMENT, 1980-91
NUMBER OF JOBS**



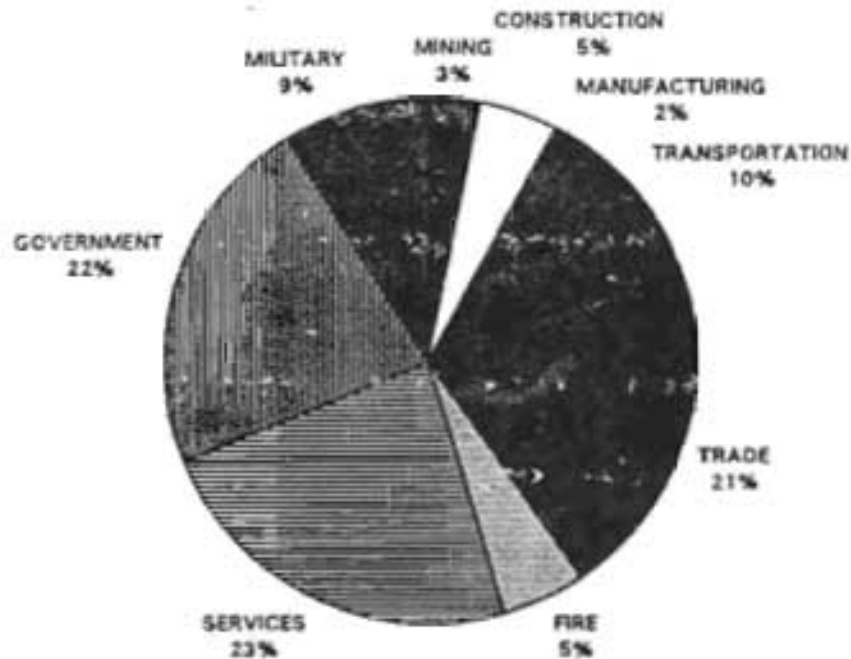
MATANUSKA-SUSITNA BOROUGH WAGE EMPLOYMENT, 1980-91: NUMBER OF JOBS BY JOB CAT
SOURCE: ALASKA DEPARTMENT OF LABOR, RESEARCH AND ANALYSIS SECTION

| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Mining | . | . | . | 21 | 9 | 12 | . | . | . | . | . | . |
| Construction | 178 | 253 | 518 | 778 | 971 | 710 | 427 | 261 | 179 | 222 | 304 | 397 |
| Manufacturin | . | 106 | 70 | 67 | 111 | 111 | 88 | 83 | 108 | 124 | 96 | 95 |
| Transportatio | 319 | 343 | 381 | 525 | 595 | 670 | 680 | 688 | 638 | 639 | 695 | 784 |
| Trade | 733 | 748 | 898 | 1173 | 1547 | 1736 | 1590 | 1643 | 1523 | 1600 | 1853 | 2012 |
| FIRE | 120 | 131 | 189 | 208 | 280 | 290 | 296 | 206 | 159 | 174 | 191 | 195 |
| Services | 460 | 537 | 604 | 793 | 991 | 1129 | 1101 | 1019 | 1088 | 1184 | 1316 | 1540 |
| Government | 1341 | 1418 | 1564 | 1734 | 1977 | 2229 | 2427 | 2248 | 2357 | 2416 | 2493 | 2640 |
| Misc. | . | . | . | 55 | 62 | 106 | . | . | . | . | . | . |
| Military | 57 | . | . | . | . | . | . | . | . | . | 0 | 0 |
| Total Civilian | 3151 | 3536 | 4223 | 5353 | 6543 | 6991 | 6609 | 6147 | 6052 | 6358 | 6947 | 7663 |

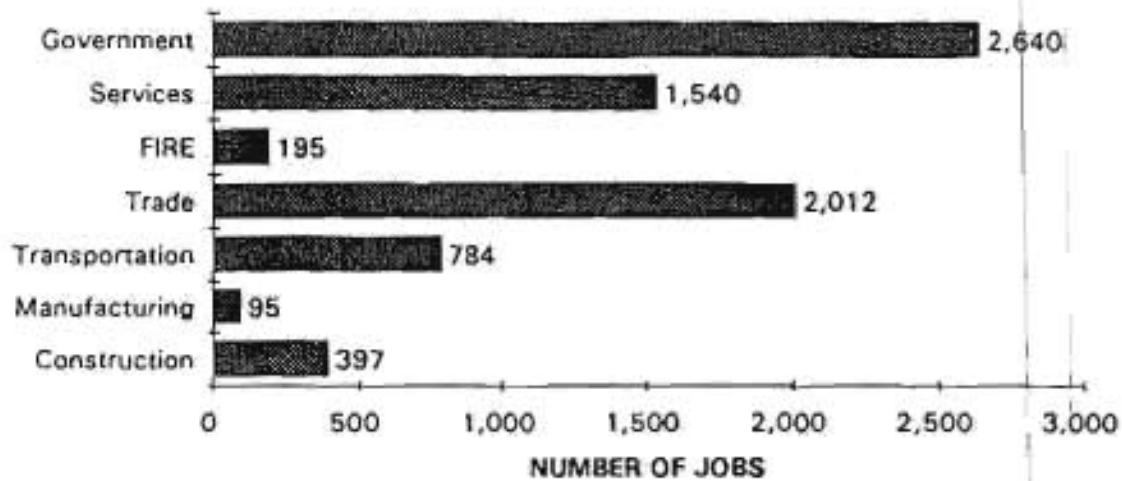
**ANCHORAGE BOROUGH
WAGE EMPLOYMENT, 1991
NUMBER OF JOBS BY JOB CATEGORY**



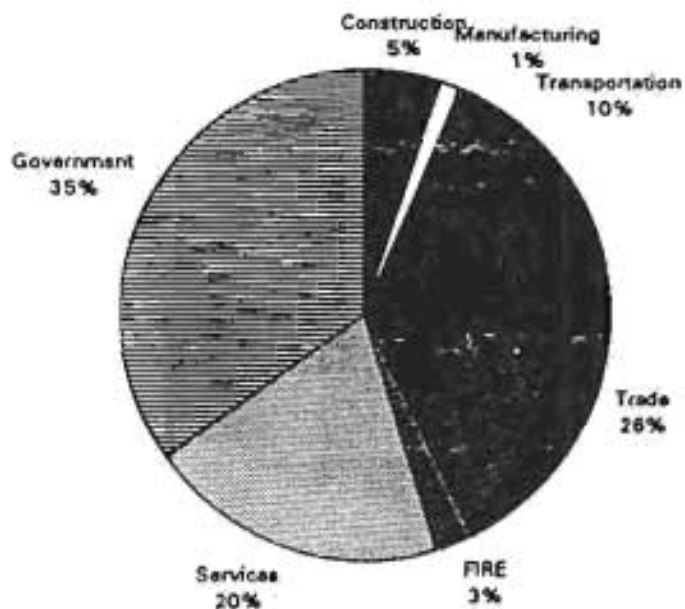
**ANCHORAGE BOROUGH WAGE EMPLOYMENT, 1991
PERCENT OF JOBS BY JOB CATEGORY**



**MATANUSKA-SUSITNA BOROUGH
WAGE EMPLOYMENT, 1991
NUMBER OF JOBS BY JOB CATEGORY**



**MATANUSKA-SUSTINA BOROUGH
WAGE EMPLOYMENT, 1991
PERCENT OF JOBS BY JOB CATEGORY**



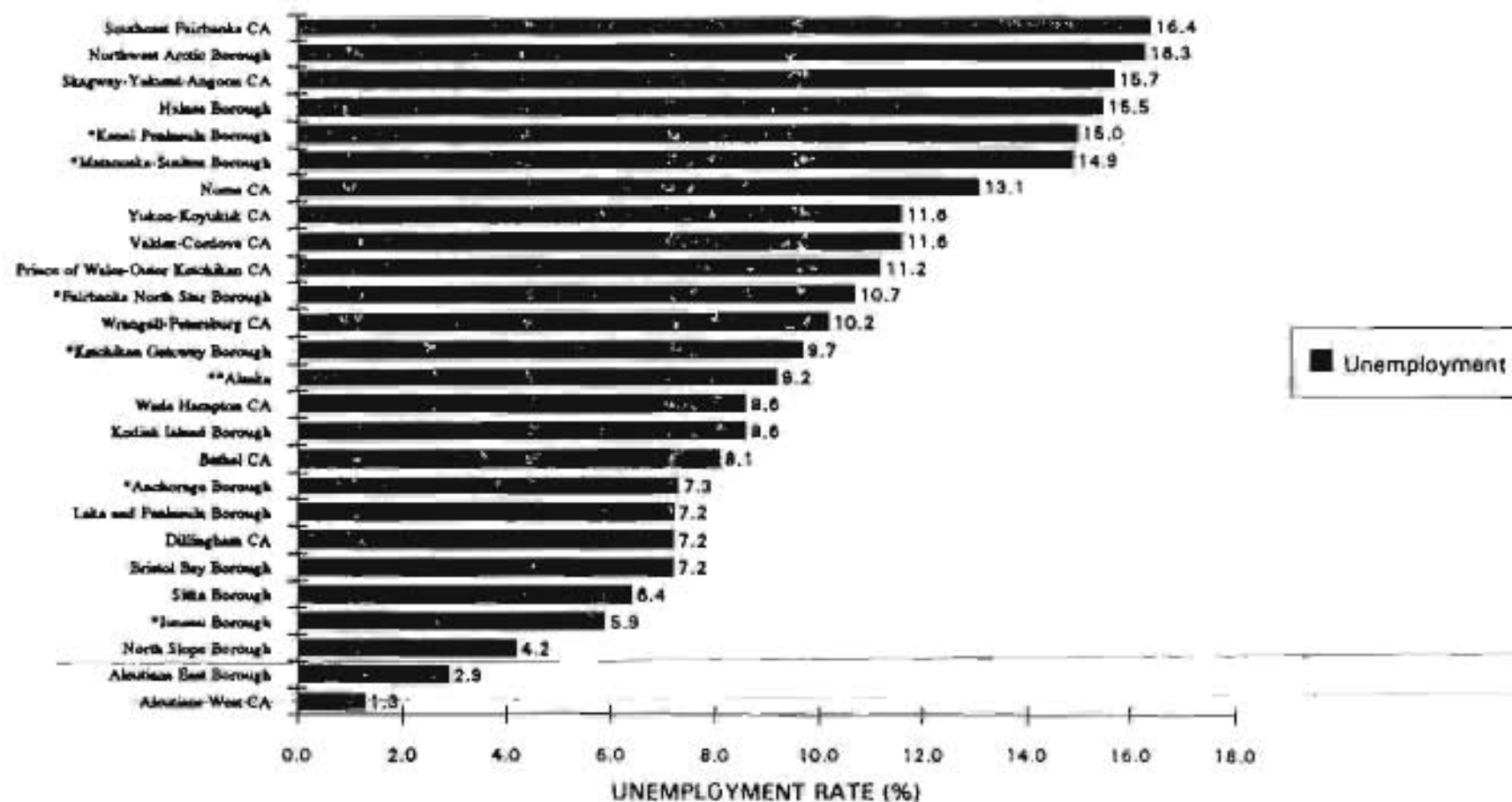
COMMERCIAL FISHING BY RESIDENTS OF ANCHORAGE-MATSU AREA, 1991

Source: Commercial Fisheries Entry Commission

| Place | Number of People | Number of Permits Fished | Pounds | Estimated Gross Earnings |
|----------------------------------|---------------------|-----------------------------|-------------------|-----------------------------|
| Anchorage | | | | |
| Anchorage | 621 | 739 | 49,199,131 | \$28,458,684 |
| Bird Creek | 1 | 1 | * | * |
| Chugiak | 31 | 34 | 1,376,857 | \$736,712 |
| Eagle River | 45 | 49 | 1,821,078 | \$1,018,500 |
| Girdwood | 20 | 25 | 2,813,470 | \$1,003,107 |
| Indian | 1 | 1 | * | * |
| Sub Total | 719 | 849 | 55,222,261 | \$31,229,414 |
| Matanuska-Susitna | | | | |
| Alexander Creek | 2 | 2 | * | * |
| Big Lake | 11 | 14 | 1,658,304 | \$596,526 |
| Chickaloon | 2 | 2 | * | * |
| Houston | 1 | 1 | * | * |
| Palmer | 55 | 67 | 11,456,520 | \$4,852,087 |
| Skwentna | 1 | 1 | * | * |
| Sutton | 1 | 1 | * | * |
| Talkeetna | 6 | 7 | 209,109 | \$119,192 |
| Trapper Creek | 5 | 5 | 29,489 | \$35,618 |
| Wasilla | 105 | 124 | 13,149,959 | \$3,869,434 |
| Willow | 13 | 17 | 702,580 | \$395,459 |
| Sub Total | 202 | 241 | 27,422,549 | \$10,011,465 |
| Total Anchorage/Matanuska | 921 | 1090 | 82,644,810 | \$41,240,879 |

* Data not reported per confidentiality requirements

UNEMPLOYMENT RATES BY ALASKA AREA, APRIL 1992



PER CAPITA INCOME BY RACE, 1989:
PROPOSED NON-SUBSISTENCE AREAS

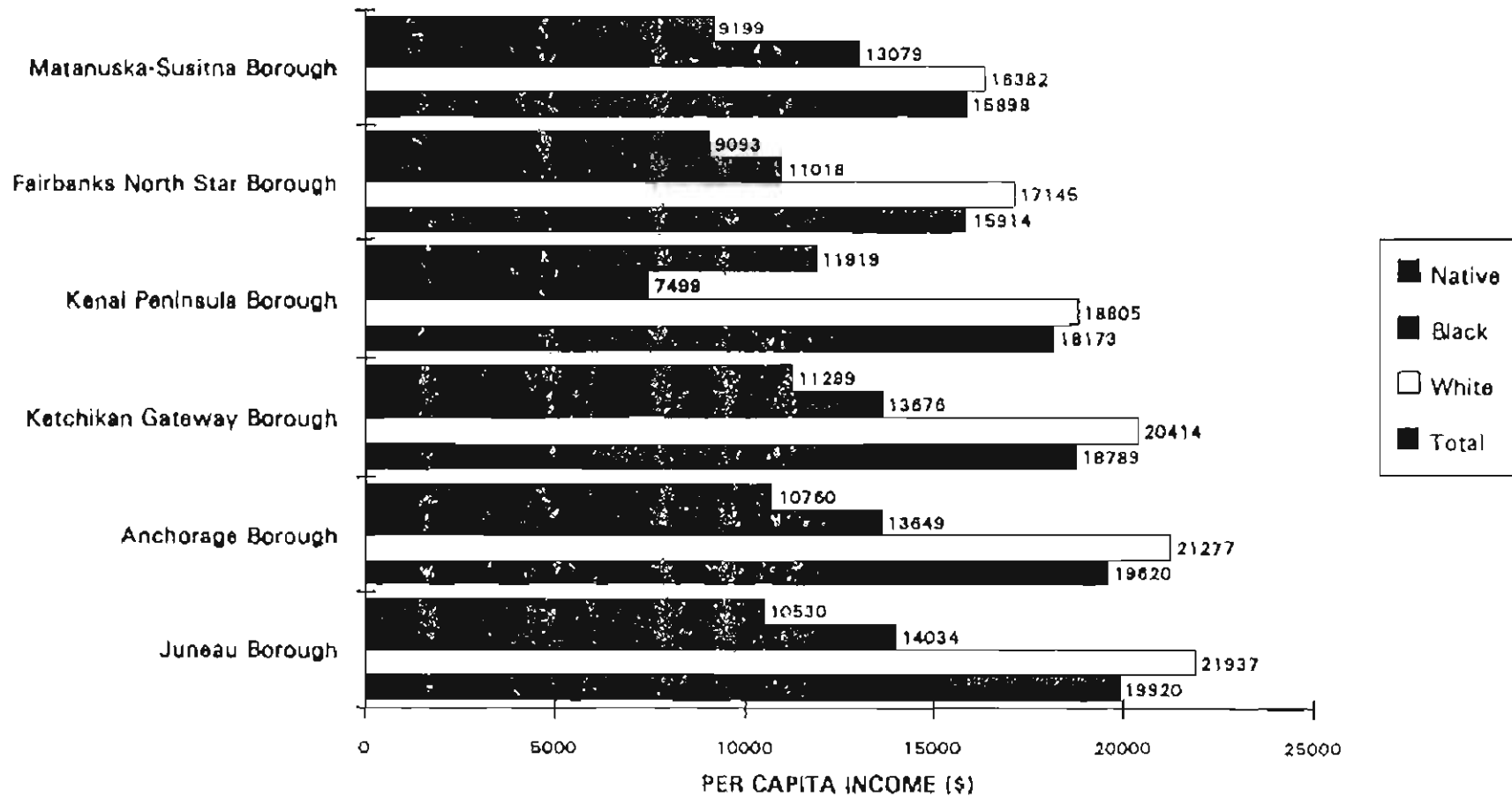


FIG. 10

PER CAPITA INCOME BY RACE, 1989:
ALASKA, NORTH SLOPE BOROUGH, BRISTOL BAY
BOROUGH, AND WADE HAMPTON CENSUS AREA

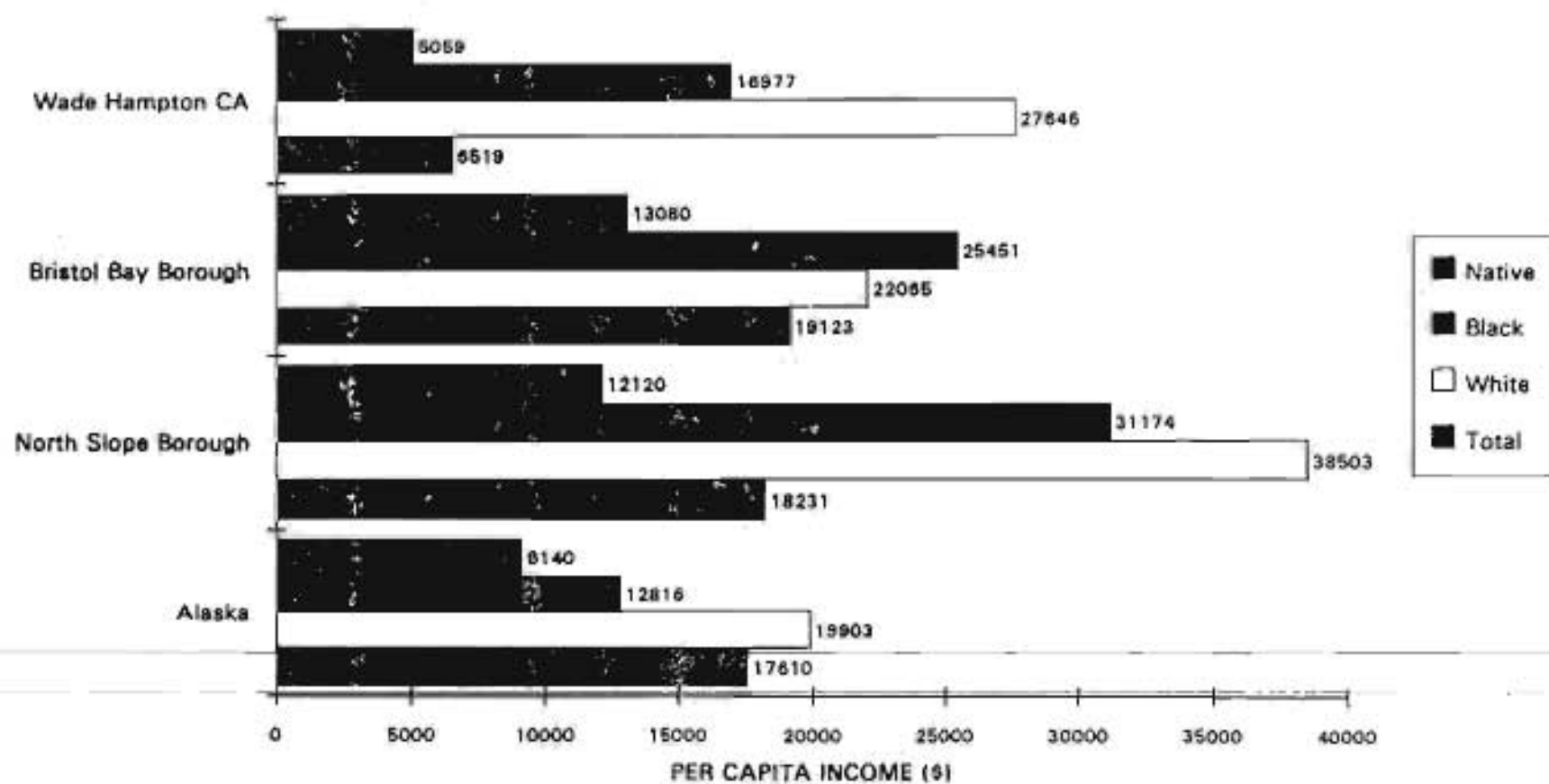


FIG. 11

HOUSEHOLD INCOMES OF WHITE RESIDENTS, ANCHORAGE BOROUGH, 1989



HOUSEHOLD INCOMES OF BLACK RESIDENTS, ANCHORAGE BOROUGH, 1989



HOUSEHOLD INCOMES OF ALASKA NATIVE RESIDENTS, ANCHORAGE BOROUGH, 1989

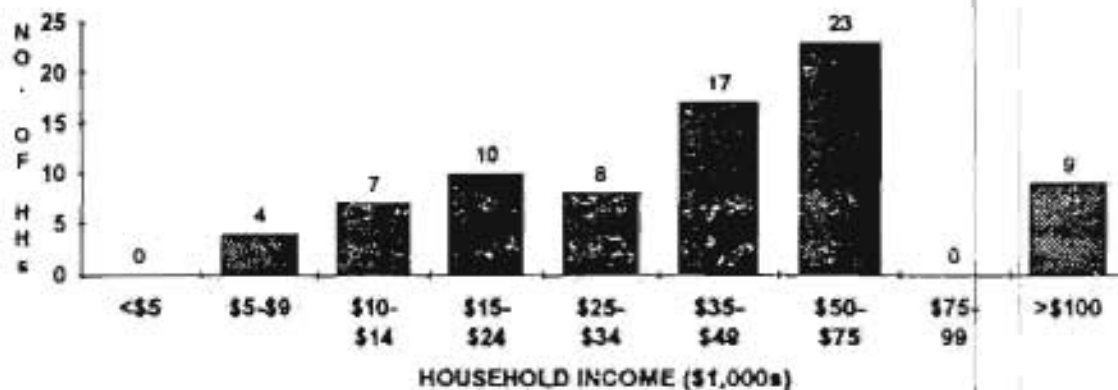


FIG. 12

HOUSEHOLD INCOMES OF WHITE RESIDENTS, MATANUSKA-SUSITNA BOROUGH, 1989



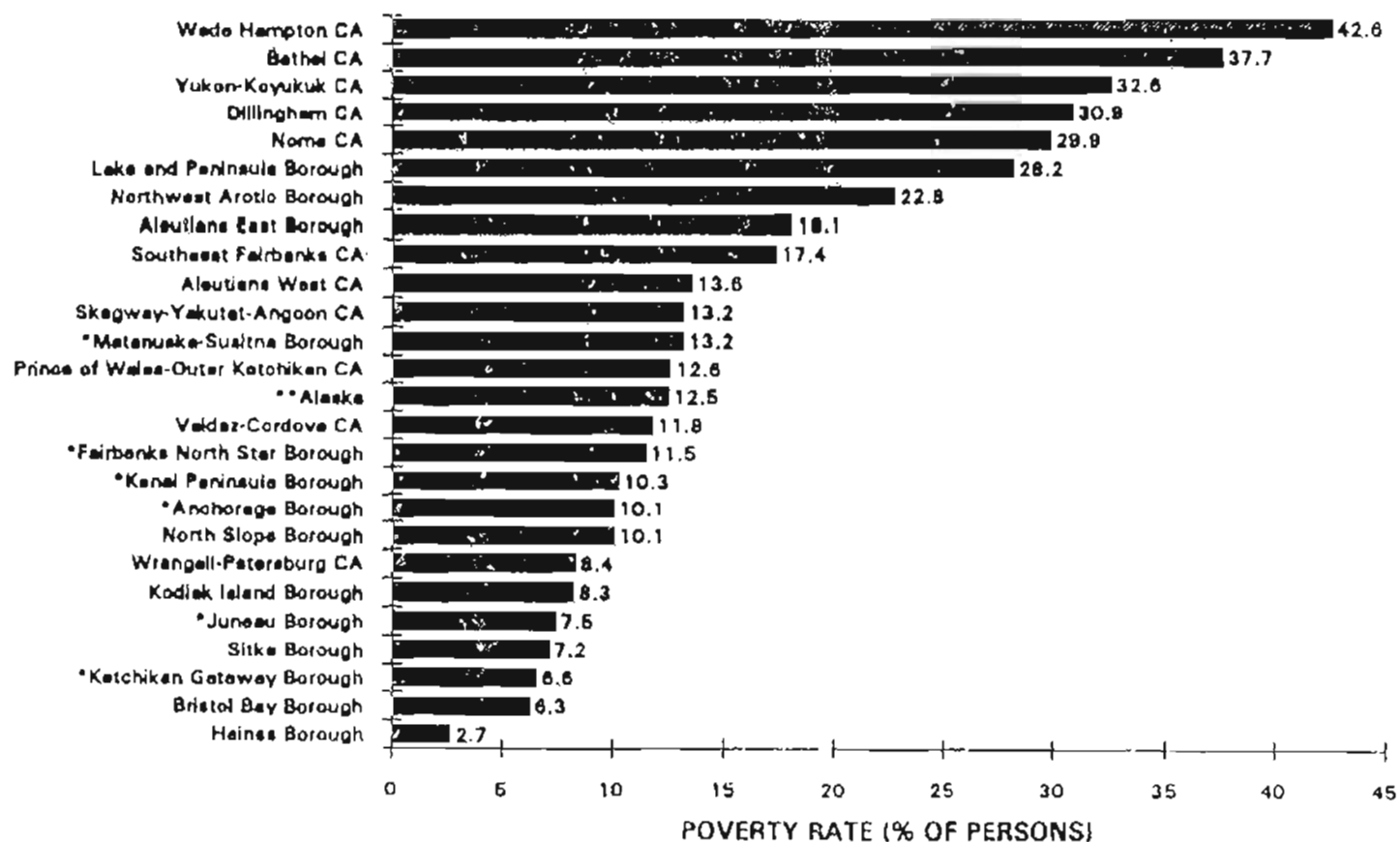
HOUSEHOLD INCOMES OF BLACK RESIDENTS, MATANUSKA-SUSITNA BOROUGH, 1989



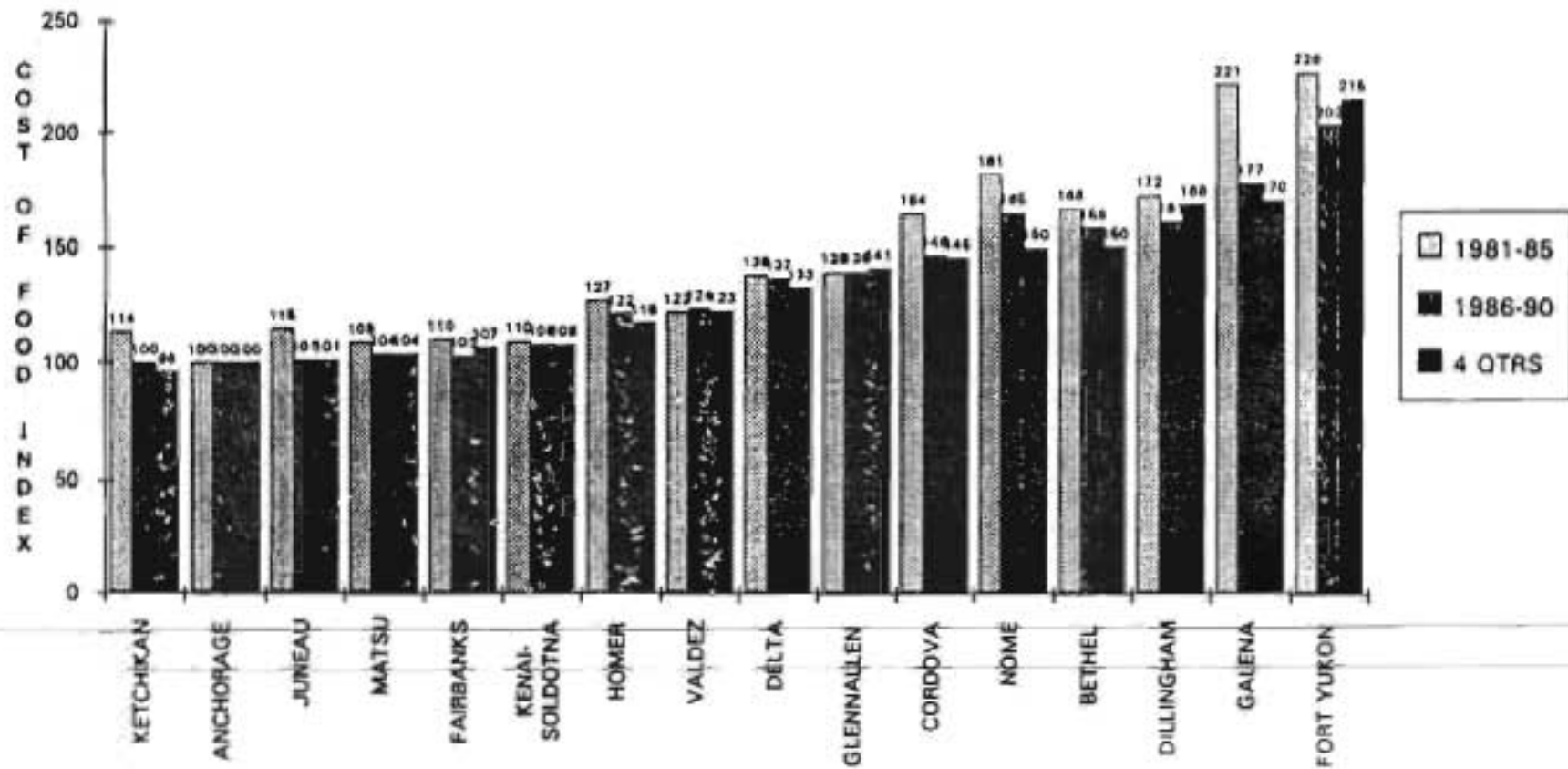
HOUSEHOLD INCOMES OF ALASKA NATIVE RESIDENTS, MATANUSKA-SUSITNA BOROUGH, 1989



**POVERTY RATES BY ALASKA AREA, 1989:
PERCENT OF PERSONS BELOW 125%
OF FEDERAL POVERTY STANDARDS**



COST OF FOOD INDEX
FOR SELECT COMMUNITIES,
1981-85, 1986-90, AND
MOST RECENT FOUR QUARTERLY PERIODS



**WILDLIFE HARVESTS BY RESIDENTS OF THE ANCHORAGE-MATSU AREA,
1986-91 MEAN (NUMBERS AND POUNDS)**

ANCHORAGE BOROUGH RESIDENTS

| | BLACK | | BROWN | | | | | | | | |
|----------------|-------|-------|---------|------|------|-------|--------|-------|--------|--------|---------|
| | BEAR | BEAR | CARIBOU | ELK | GOAT | BISON | MOOSE | SHEEP | MUSKOX | DEER | TOTAL |
| Number | 291.7 | 178.7 | 768.3 | 25.5 | 74.8 | 9.2 | 1512.8 | 32 | 15.3 | 2815 | |
| Conversion | 58 | 0 | 150 | 225 | 72.5 | 450 | 500 | 65 | 593 | 43.2 | |
| Total Pounds | 16919 | 0 | 115245 | 5738 | 5423 | 4140 | 756400 | 2080 | 9073 | 121608 | 1036625 |
| Per Capita Lbs | 0.07 | 0.00 | 0.51 | 0.03 | 0.02 | 0.02 | 3.34 | 0.01 | 0.04 | 0.54 | 4.58 |

MATANUSKA-SUSITNA BOROUGH RESIDENTS

| | BLACK | | BROWN | | | | | | | | |
|----------------|-------|------|---------|------|------|-------|--------|-------|--------|-------|--------|
| | BEAR | BEAR | CARIBOU | ELK | GOAT | BISON | MOOSE | SHEEP | MUSKOX | DEER | TOTAL |
| Number | 99.5 | 49.7 | 489.2 | 4.7 | 26.5 | 3.7 | 762 | 112.5 | 2.5 | 608.3 | |
| Conversion | 58 | 0 | 150 | 225 | 72.5 | 450 | 500 | 65 | 593 | 43.2 | |
| Total Pounds | 5771 | 0 | 73380 | 1058 | 1921 | 1665 | 381000 | 7313 | 1483 | 26279 | 499868 |
| Per Capita Lbs | 0.15 | 0.00 | 1.86 | 0.03 | 0.06 | 0.04 | 9.64 | 0.19 | 0.04 | 0.66 | 12.65 |

**NONCOMMERCIAL SALMON PERMITS ISSUED TO
RESIDENTS OF THE ANCHORAGE-MATSU AREA, 1991
AND SALMON HARVESTED (NUMBERS AND POUNDS)**

ANCHORAGE BOROUGH RESIDENTS

| | | | | | | | TOTAL |
|--------------------------------------|---------|---------|---------|-------|------|------|---------|
| | PERMITS | CHINOOK | SOCKEYE | COHO | PINK | CHUM | HARVEST |
| Upper Cook Inlet Subsistence | 3238 | 196 | 11185 | 1859 | 171 | 717 | 14128 |
| Lower Cook Inlet Personal Use | 27 | 0 | 3 | 281 | 21 | 1 | 308 |
| Kasilof and Fall Coho PU-Subsistence | 54 | 5 | 1257 | 405 | 0 | 0 | 1687 |
| Total Number | 3319 | 201 | 12445 | 2545 | 192 | 718 | 18101 |
| Conversion | * | 18 | 4 | 6 | 2 | 6 | * |
| Total Pounds | * | 3618 | 46780 | 15270 | 384 | 4308 | 73360 |
| Per Capita Pounds | * | 0.02 | 0.22 | 0.07 | 0.03 | 0.02 | 0.32 |

MATANUSKA-SUSITNA BOROUGH RESIDENTS

| | | | | | | | TOTAL |
|--------------------------------------|---------|---------|---------|------|------|------|---------|
| | PERMITS | CHINOOK | SOCKEYE | COHO | PINK | CHUM | HARVEST |
| Upper Cook Inlet Subsistence | 732 | 34 | 4122 | 1189 | 274 | 791 | 6410 |
| Lower Cook Inlet Personal Use | 2 | 0 | 0 | 20 | 1 | 0 | 21 |
| Kasilof and Fall Coho PU-Subsistence | 18 | 2 | 419 | 135 | 0 | 0 | 558 |
| Total Number | 752 | 36 | 4541 | 1344 | 275 | 791 | 6987 |
| Conversion: | * | 18 | 4 | 8 | 2 | 6 | * |
| Total Pounds | * | 648 | 18184 | 8084 | 550 | 4746 | 32172 |
| Per Capita Pounds | * | 0.02 | 0.46 | 0.20 | 0.01 | 0.12 | 0.81 |

Sport Fish Harvest by Residents of Proposed Nonsubsistence Areas (1990), Numbers of Fish
Source: Division of Sport Fish Mailed Survey and Division of Subsistence

| | 1990 Population | Number Anglers | Anglers Percent | Small Chinook | Chinook | Coho | Landlocked oho-Chinook | Landlocked Sockeye | Sockeye | Pink |
|-------------------|--------------------|-------------------|--------------------|------------------|---------|-------|---------------------------|-----------------------|---------|-------|
| ANCHORAGE BOR | 226338 | 105723 | 46.7% | 1921 | 19924 | 92582 | 12542 | 83 | 106993 | 28796 |
| FAIRBANKS BOR | 77720 | 33616 | 43.3% | 219 | 3069 | 13167 | 11337 | 0 | 5123 | 11886 |
| JUNEAU BOR | 28751 | 13864 | 51.1% | 1050 | 7812 | 30592 | 310 | 0 | 1104 | 16430 |
| KENAI PENIN BOR | 40802 | 25899 | 63.5% | 486 | 4826 | 30811 | 261 | 406 | 27769 | 9451 |
| KETCHIKAN BOR | 13828 | 6365 | 46.0% | 114 | 4867 | 17586 | 0 | 16 | 709 | 7766 |
| MATANUSKA SUSITNA | 39683 | 19552 | 49.3% | 606 | 4654 | 14199 | 9443 | 119 | 10741 | 2211 |
| VALDEZ (CITY) | 4068 | 2075 | 51.0% | 18 | 142 | 2559 | 0 | 0 | 333 | 3796 |
| WHITTIER (CITY) | 243 | 54 | 22.2% | 0 | 0 | 108 | 0 | 0 | 311 | 0 |

| | Chum | Halibut | Steelhead | Rainbow | Cutthroat | Dolly Varden | Brook Trout | Lake Trout | Grayling | Northern Pike |
|-------------------|------|---------|-----------|---------|-----------|-----------------|----------------|---------------|----------|------------------|
| ANCHORAGE BOR | 3129 | 56824 | 253 | 82981 | 369 | 27421 | 0 | 3602 | 13348 | 2415 |
| FAIRBANKS BOR | 478 | 10671 | 44 | 47338 | 49 | 4317 | 0 | 3115 | 20901 | 5808 |
| JUNEAU BOR | 1817 | 10347 | 217 | 278 | 2183 | 7777 | 17 | 0 | 68 | 10 |
| KENAI PENIN BOR | 270 | 27222 | 62 | 7562 | 44 | 8132 | 0 | 1738 | 934 | 209 |
| KETCHIKAN BOR | 306 | 3839 | 1077 | 541 | 2323 | 1069 | 0 | 0 | 728 | 0 |
| MATANUSKA SUSITNA | 716 | 8519 | 17 | 14115 | 16 | 6119 | 0 | 814 | 4704 | 490 |
| VALDEZ (CITY) | 113 | 1436 | 0 | 504 | 0 | 742 | 0 | 34 | 199 | 0 |
| WHITTIER (CITY) | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | Whitefish | Burbot | Sheefish | Rockfish | Smelt | Razor Clam | Other |
|-------------------|-----------|--------|----------|----------|--------|------------|-------|
| ANCHORAGE BOR | 3321 | 2253 | 87 | 14509 | 136218 | 313447 | 16174 |
| FAIRBANKS BOR | 6608 | 3009 | 423 | 3337 | 179 | 23179 | 2396 |
| JUNEAU BOR | 0 | 0 | 0 | 1687 | 0 | 1940 | 3336 |
| KENAI PENIN BOR | 429 | 33 | 0 | 1826 | 15939 | 260748 | 3202 |
| KETCHIKAN BOR | 0 | 0 | 0 | 5091 | 0 | 0 | 1016 |
| MATANUSKA SUSITNA | 1603 | 1420 | 0 | 1062 | 12047 | 38467 | 976 |
| VALDEZ (CITY) | 0 | 408 | 0 | 747 | 0 | 2264 | 1096 |
| WHITTIER (CITY) | 0 | 0 | 0 | 28 | 0 | 0 | 0 |

TABLE 1

ESTIMATED NUMBER OF ANGLERS AND PERCENT OF POPULATION

SOURCE: DIVISION OF SPORT FISH MAILED SURVEY

| | 1990 Population | 1989 Anglers | Percent of 1990 Pop | 1990 Anglers | Percent of 1990 Pop | 1991 Anglers | Percent of 1990 Pop |
|---------------------|--------------------|-----------------|------------------------|-----------------|------------------------|-----------------|------------------------|
| ANCHORAGE BOR | 226338 | 117802 | 52.0% | 105723 | 46.7% | 134565 | 59.5% |
| FAIRBANKS BOR | 77720 | 33648 | 43.3% | 33616 | 43.3% | 38461 | 49.5% |
| JUNEAU BOR | 26751 | 14569 | 54.5% | 13664 | 51.1% | 12544 | 46.9% |
| KENAI PENIN BOR | 40802 | 24761 | 60.7% | 25899 | 63.5% | 29819 | 73.1% |
| KETCHIKAN BOR | 13828 | 8021 | 58.0% | 6365 | 46.0% | 6251 | 45.2% |
| MATANUSKA SUSITNA B | 39683 | 20209 | 50.9% | 19552 | 49.3% | 27960 | 70.5% |
| VALDEZ (CITY) | 4068 | 1808 | 44.4% | 2075 | 51.0% | 2754 | 67.7% |

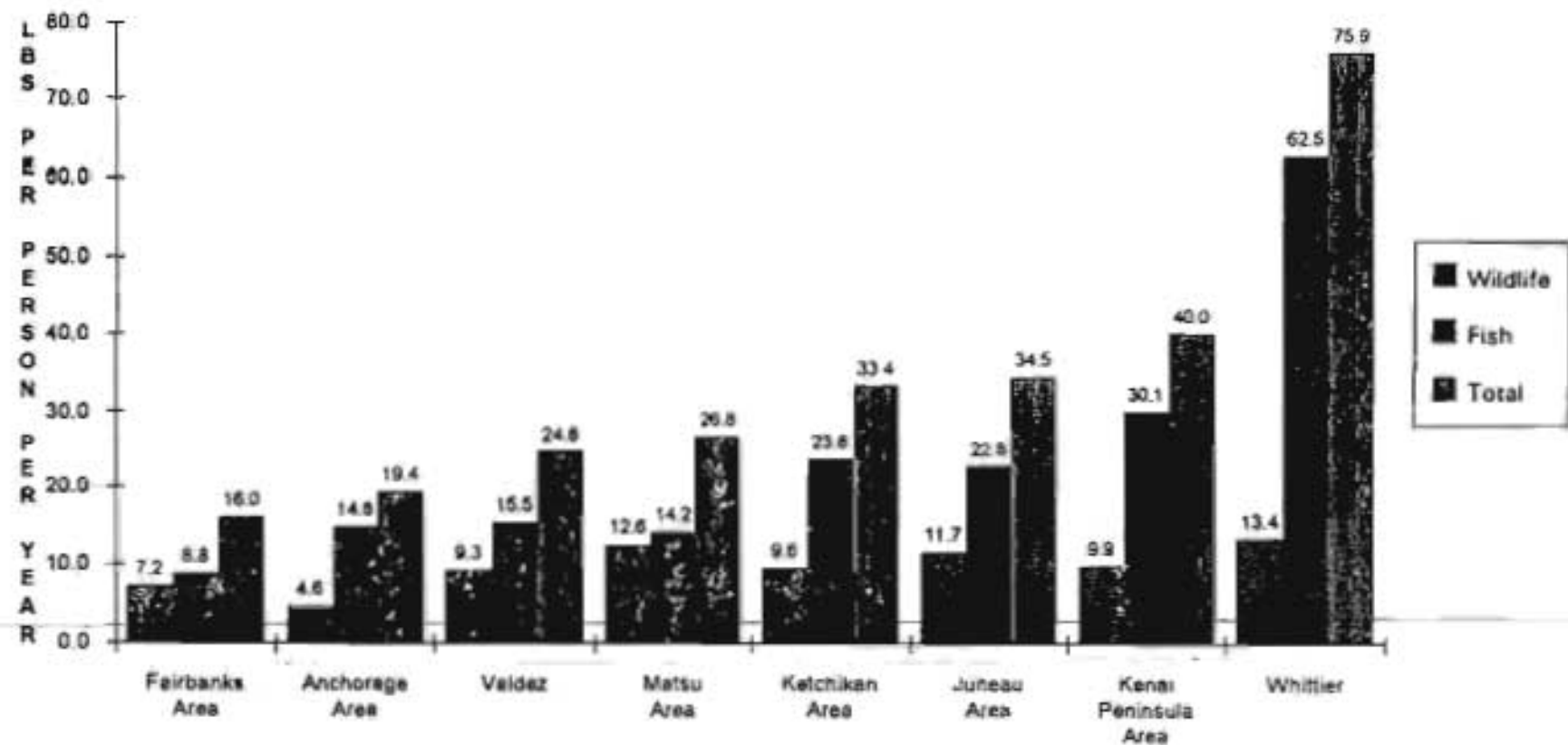
TABLE 2

FISH HARVESTS WITH ROD AND REEL BY AREA (LBS PER CAPITA)

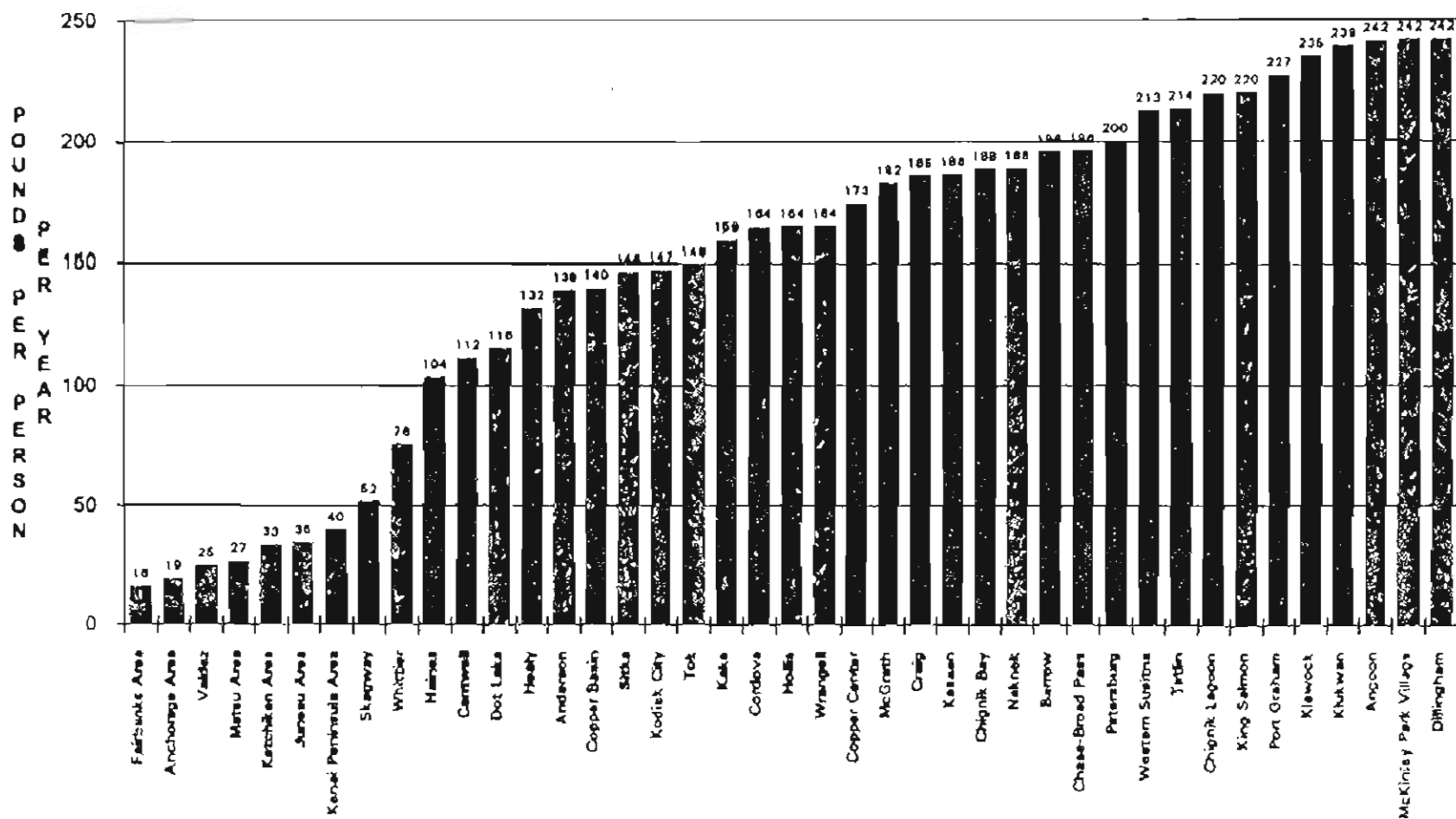
SOURCE: DIVISION OF SPORT FISH MAILED SURVEY

| | 1989 | 1990 | 1991 | MEAN 1989-91 |
|---------------------|------|------|------|-----------------|
| ANCHORAGE BOROUGH | 16.7 | 13.1 | 13.7 | 14.5 |
| FAIRBANKS BOROUGH | 8.3 | 7.2 | 7.2 | 7.6 |
| JUNEAU BOROUGH | 28.1 | 23.0 | 18.3 | 22.5 |
| KENAI PENIN BOROUGH | 29.1 | 26.4 | 23.9 | 26.5 |
| KETCHIKAN BOROUGH | 28.5 | 22.1 | 17.7 | 22.8 |
| MATANUSKA SUSITNA B | 15.0 | 10.7 | 14.4 | 13.4 |
| VALDEZ (CITY) | 16.1 | 15.3 | 15.2 | 15.5 |

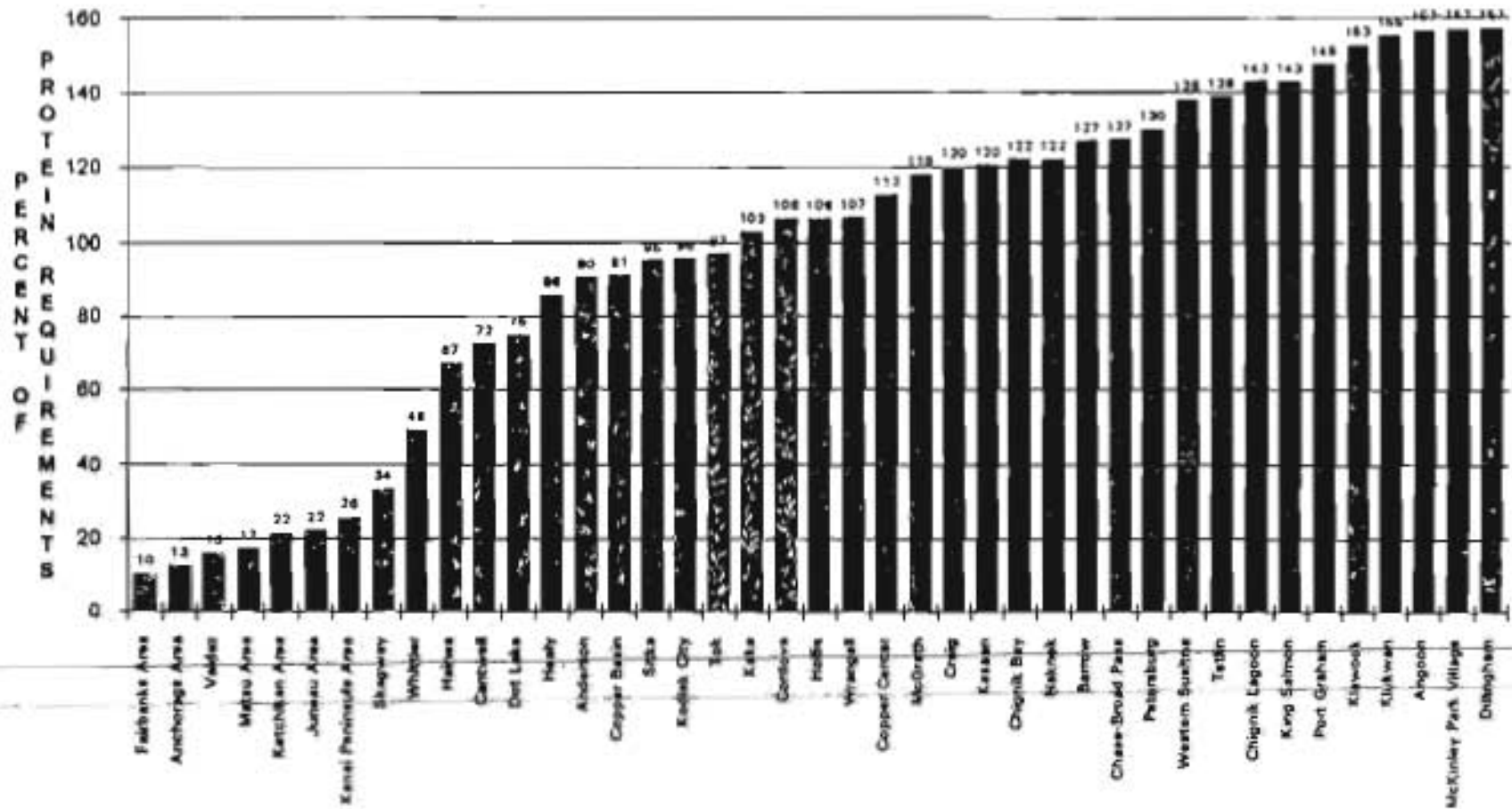
**FISH AND WILDLIFE HARVEST LEVELS
BY RESIDENTS OF SELECTED ALASKA AREAS
(LBS PER PERSON PER YEAR;
NON-COMMERCIAL HARVESTS)**



WILD FOOD HARVESTS BY COMMUNITY
POUNDS PER PERSON PER YEAR
SOURCE; DIVISION OF SUBSISTENCE, ADF&G



WILD FOOD HARVESTS BY COMMUNITY
PERCENT OF COMMUNITY PROTEIN REQUIREMENTS
(44 GRAMS PER PERSON PER DAY, OR .422 LBS OF WILD FOODS)
SOURCE: DIVISION OF SUBSISTENCE, ADF&G

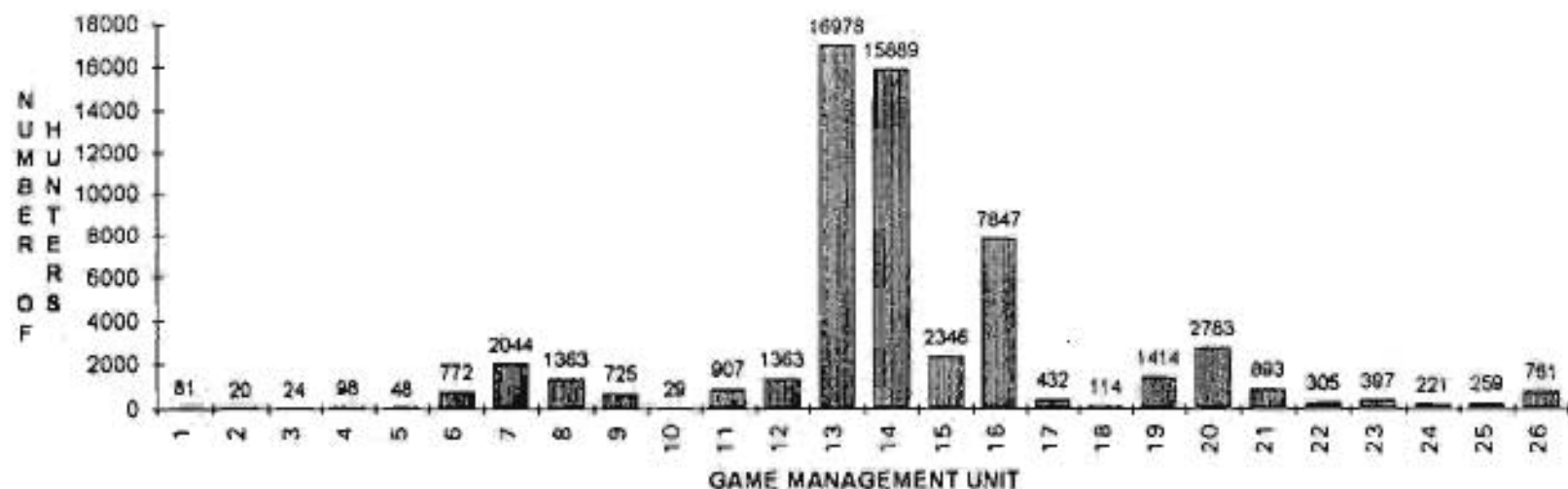


**VOLUNTARY ASSOCIATIONS DEALING WITH FISH, WILDLIFE, AND THE ENVIRONMENT
IN THE ANCHORAGE-MATSU AREA, COMPILED FROM ADF&G LISTS**

| Name of Organization | City | Area | Category |
|---|-------------|-------------|-----------------------------|
| Alaska Bowhunters Assoc. | Eagle River | Anch-Matsu | Sport Industry |
| Alaska Fly Fishers | Anchorage | Anch-Matsu | Sport Industry |
| Alaska Outdoor Council | Anchorage | Anch-Matsu | Sport Industry |
| Alaska Professional Hunters Assoc. | Anchorage | Anch-Matsu | Sport Industry |
| Alaska Professional Sportfishing Assoc. | Anchorage | Anch-Matsu | Sport Industry |
| Alaska Sportfishing Assoc. | Anchorage | Anch-Matsu | Sport Industry |
| Alaska Waterfowl Assoc. | Anchorage | Anch-Matsu | Sport Industry |
| Anchorage Sportsmen Assoc. | Anchorage | Anch-Matsu | Sport Industry |
| Kenai River Sportfishing Assoc. | Anchorage | Anch-Matsu | Sport Industry |
| Matanuska Valley Sportsmen's Assoc. | Palmer | Anch-Matsu | Sport Industry |
| Safari Club International, Alaska Chapter | Anchorage | Anch-Matsu | Sport Industry |
| Sportsmen's Game Preserve Assoc. | Eagle River | Anch-Matsu | Sport Industry |
| Trout Unlimited-Rainbow Chapter | Eagle River | Anch-Matsu | Sport Industry |
| Trout Unlimited-Susitna Basin Chapter | Wasilla | Anch-Matsu | Sport Industry |
| Alaska Center for the Environment | Anchorage | Anch-Matsu | Environmental |
| Alaska Conservation Foundation | Anchorage | Anch-Matsu | Environmental |
| Alaska Environmental Assembly | Anchorage | Anch-Matsu | Environmental |
| Alaska Lands Act Coordinating Committee | Anchorage | Anch-Matsu | Environmental |
| Alaska Natural Heritage Program | Anchorage | Anch-Matsu | Environmental |
| Alaska Natural History Assoc. | Anchorage | Anch-Matsu | Environmental |
| Alaska Public Interest Research Group | Anchorage | Anch-Matsu | Environmental |
| Alaska Survival | Talkeetna | Anch-Matsu | Environmental |
| Alaska Wildlife Alliance | Anchorage | Anch-Matsu | Environmental |
| Alaska Wildlife Society | Anchorage | Anch-Matsu | Environmental |
| American Wilderness Alliance | Anchorage | Anch-Matsu | Environmental |
| Clean Air Council | Anchorage | Anch-Matsu | Environmental |
| Friends of the Earth-Alaska | Anchorage | Anch-Matsu | Environmental |
| Greenpeace USA | Anchorage | Anch-Matsu | Environmental |
| National Audubon Society | Anchorage | Anch-Matsu | Environmental |
| National Wildlife Federation | Anchorage | Anch-Matsu | Environmental |
| Sierra Club Alaska Field Office | Anchorage | Anch-Matsu | Environmental |
| Sierra Club Knik Group | Anchorage | Anch-Matsu | Environmental |
| Sierra Club/Alaska Chapter | Anchorage | Anch-Matsu | Environmental |
| Susitna Valley Assoc. | Anchorage | Anch-Matsu | Environmental |
| The Nature Conservancy of Alaska | Anchorage | Anch-Matsu | Environmental |
| The Wilderness Society | Anchorage | Anch-Matsu | Environmental |
| Trustees for Alaska | Anchorage | Anch-Matsu | Environmental |
| Wildlife Federation/Alaska | Anchorage | Anch-Matsu | Environmental |
| Anchorage Waterways Council | Anchorage | Anch-Matsu | Environmental |
| Bering Sea Fishermen's Assoc. | Anchorage | Anch-Matsu | Commercial Fishing Industry |
| Bristol Bay Driftnetters' Assoc. | Anchorage | Anch-Matsu | Commercial Fishing Industry |
| Cook Inlet Fisheries Coalition | Anchorage | Anch-Matsu | Commercial Fishing Industry |
| Alaska Frontier Trappers Assoc. | Palmer | Anch-Matsu | Trapping |
| Alaska Fish and Wildlife Safeguard | Anchorage | Anch-Matsu | Protection |

Sources: ADFG Public Communications Section; Division of Wildlife Conservation (Juneau, Anchorage, Cordova);
Division of Sport Fish (Juneau); Division of Subsistence (Dillingham, Kotzebue, Bethel, Fairbanks);
FNSB Library Data Cache; ADPS Wildlife Protection Division (Glennallen)

HUNTING LOCATIONS OF ANCHORAGE BOROUGH RESIDENTS (GMU 14C), NUMBER OF HUNTERS, 1986-91

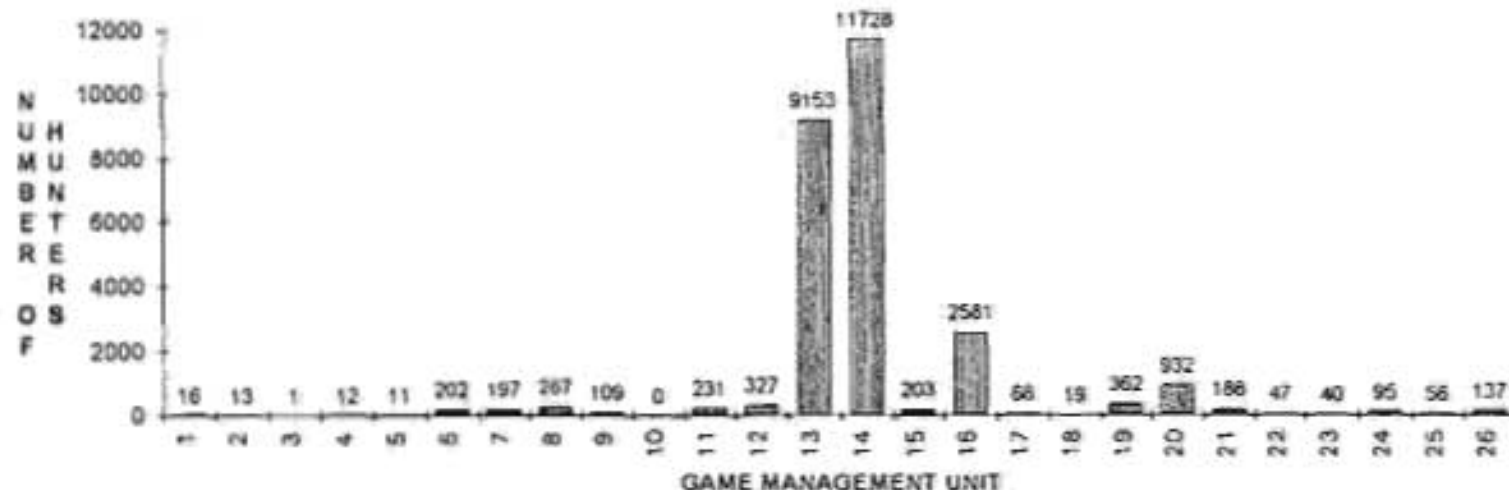


HUNT LOCATIONS FOR ANCHORAGE BOROUGH RESIDENTS (GMU 14C), 1986-91

NUMBER OF HUNTERS (*SUCCESSFUL HUNTERS) BY GAME MANAGEMENT UNIT

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
|------------|----|----|----|----|----|-----|------|------|-----|-----|-----|------|-------|-------|------|------|-----|------|------|------|-----|-----|-----|-----|-----|-----|
| Black Bear | 24 | 20 | 23 | | 3 | 457 | 219 | | 4 | | 14 | 7 | 128 | 277 | 143 | 366 | 2 | | 16 | 27 | 13 | | | 5 | 2 | |
| Brown Bear | 9 | | | 91 | 10 | 35 | 5 | 566 | 242 | 29 | 9 | 10 | 131 | 38 | 7 | 102 | 29 | 1 | 17 | 21 | 6 | 13 | 36 | 21 | 11 | 34 |
| Caribou | | | | | | | 159 | | | | 106 | 97 | 6093 | 51 | 3 | | | | | 733 | | | | | | |
| Elk | | | | | | | | 729 | | | | | | | | | | | | | | | | | | |
| Goat | 32 | | | 7 | 6 | 157 | 669 | 68 | | | 42 | | 18 | 345 | 155 | | | | | | | | | | | |
| Bison | | | | | | | | | | | -8- | | - | | | | | | -20 | -32- | | | | | | |
| Moose | 16 | | 1 | | 29 | 123 | 811 | | 475 | 255 | 366 | 9275 | 13699 | 1937 | 7325 | 401 | 22 | 1031 | 1525 | 874 | 292 | 308 | 153 | 168 | 123 | |
| Sheep | | | | | | | 181 | | 4 | 473 | 883 | 1333 | 1479 | 101 | 54 | | | | 330 | 445 | | | 53 | 42 | 78 | 512 |
| Muskox | | | | | | | | | | | | | | | | | | 91 | | | | | | | | 92 |
| Total | 81 | 20 | 24 | 98 | 48 | 772 | 2044 | 1363 | 725 | 29 | 907 | 1363 | 16978 | 15889 | 2346 | 7847 | 432 | 114 | 1414 | 2783 | 893 | 305 | 397 | 221 | 259 | 761 |

HUNTING LOCATIONS OF MATANUSKA-SUSITNA BOROUGH AREA RESIDENTS (GMUs 14A, 14B, 16A), NUMBER OF HUNTERS, 1986-91



HUNT LOCATIONS FOR RESIDENTS OF MATANUSKA-SUSITNA BOROUGH AREA (14A, 14B, AND 16A), 1986-91 NUMBER OF HUNTERS ('SUCCESSFUL HUNTERS') BY GAME MANAGEMENT UNIT

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
|-------------|----|----|---|----|----|-----|-----|-----|-----|----|-----|-----|------|-------|-----|------|----|----|-----|-----|-----|----|----|----|----|-----|
| Black Bear* | 7 | 13 | 1 | 0 | 1 | 93 | 19 | 0 | 0 | 0 | 6 | 1 | 78 | 243 | 18 | 66 | 4 | 0 | 6 | 10 | 3 | 0 | 0 | 1 | 2 | 0 |
| Brown Bear* | 0 | 0 | 0 | 9 | 2 | 13 | 0 | 106 | 46 | 0 | 2 | 5 | 97 | 17 | 1 | 37 | 7 | 0 | 2 | 10 | 0 | 6 | 1 | 3 | 2 | 13 |
| Caribou | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 35 | 35 | 4018 | 59 | 1 | 0 | 0 | 0 | 0 | 281 | 0 | 0 | 0 | 0 | 1 | 0 |
| Elk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 145 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Goat | 7 | 0 | 0 | 3 | 6 | 56 | 102 | 16 | 0 | 0 | 4 | 0 | 6 | 174 | 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bison | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 14 | 0 | 0 | 0 | 0 | 0 | 0 |
| Moose | 2 | 0 | 0 | 0 | 2 | 40 | 46 | 0 | 63 | 0 | 76 | 86 | 4135 | 10479 | 140 | 2427 | 57 | 4 | 257 | 462 | 165 | 41 | 33 | 67 | 43 | 44 |
| Sheep | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 95 | 200 | 759 | 756 | 17 | 31 | 0 | 0 | 93 | 155 | 0 | 0 | 6 | 24 | 8 | 80 |
| Muskox | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 16 | 13 | 1 | 12 | 11 | 202 | 197 | 267 | 109 | 0 | 231 | 327 | 9153 | 11728 | 203 | 2581 | 66 | 19 | 362 | 932 | 188 | 47 | 40 | 95 | 56 | 137 |

Proposal No. 3 Kenai Peninsula Nonsubsistence Area

Area Description

SEE FIG. 1

The proposed Kenai Peninsula Nonsubsistence Area includes Game Management Unit 7 and Game Management Unit 15 (except that portion west of a line from the Head of Tutka Bay south to the northern most point of Rocky Bay, the intertidal lands and marine waters of the remainder of Rocky Bay and Port Dick, and the Chugach Islands) and coastal waters one mile offshore. (See Figure 1.)

The proposed nonsubsistence area encompasses a number of communities, including Kenai, Soldotna, Ninilchik, Homer, Hope, Cooper Landing, Moose Pass, and Seward, as well as dispersed households between settlements. Just outside the proposed nonsubsistence area to the south are the communities of Seldovia, Port Graham, and English Bay (Nanwalek).

Historic Overview

SEE FIG. 2

A description of the history, economy, and resource use patterns of this area is contained in Schroeder et al 1987:564-585 and Wolfe and Ellanna 1983:124-218. At the time of Russian exploration almost 200 years ago, the Dena'ina Athabaskan Indians occupied most of the Kenai Peninsula, except for Alutiiq settlements across Katchemak Bay on the southern edge of the peninsula. The local economy was dependent upon fishing and hunting for food and simple commodity trade with the Koniag, Chugach and inland Dena'ina populations. Russian settlements were established between 1786-1835 near English Bay, Kasilof, Kenai, and Ninilchik. This period introduced a mixed, subsistence-cash economy to the area. During the American period, economic development on the Kenai Peninsula related to a variety of local resources. Homer was developed by coal and gold prospectors in 1895; Anchor Point arose as a stopover on the Kenai-to-Homer sled dog mail route; Cooper Landing began as a mining town; Moose Pass began as a construction camp for the Alaska Railroad. Commercial fisheries development has been important since the late 1880s for the Kenai Peninsula area. Between 1900 to 1940, the population of the area increased from about 439 to 2,510 people. Development of oil extraction and refining occurred in the Kenai-Soldotna area during the 1950s and 1960. Employment in government, the recreational fishing industry, and tourism also grew substantially over the past several decades. The area's diversifying economy has caused the peninsula's population to grow from about 4,130 people in 1950 to 40,802 people in 1990.

Twelve Factors

1. The Social and Economic Structure

The social and economic structure of the Kenai Peninsula Area has been characterized as a type of "industrial-capitalism", a socioeconomic system common in the lower 48 which has developed in Alaska. This social and economic structure is distinct from another type of socioeconomic system in Alaska, called a "mixed, subsistence-cash economy", where the domestic household sector is a major producer and distributor of food. Industrial capital systems generally have large wage sectors, which provide the major means of livelihood to residents. In an industrial-capital system, households are not major producers or distributors of an area's total food supply. Food production by households provides a very small portion of the entire community's food, but may be of economic significance to those households actively involved in hunting and fishing. Almost all the area's food and other goods and services are provided by businesses organized and financed separately from the household unit. Production and distribution of goods and services are organized by market forces or by government. Fishing and hunting by residents are primarily conducted as part of recreational or commercial industries. While this is the predominant economic pattern, the Kenai Peninsula is a large area, and certain segments of the area's population use more fish and game than other segments. Several communities have unique characters, and there are local variations in patterns of resource use. The specific characteristics of the Kenai Peninsula Area socioeconomic system are described below.

2. The Stability of the Economy

SEE FIGS. 2, 3, 4, 5, 6

The economy of the Kenai Peninsula Area has shown substantial growth during the past four decades. One indicator of this growth is the population increase in the area (see Figs. 2 and 3), primarily due to in-migration of persons drawn to the area by expanding employment opportunities in oil extraction and refining, government, tourism, and trade. The mean annual rates of growth for the Kenai Peninsula Borough were 7.5 percent (1950s), 5.9 percent (1960s), 4.2 percent (1970s), and 4.7 percent (1980s) (Fig. 3).

Fig. 4 shows recent trends in civilian wage employment in Kenai-Soldotna Area during the last decade. The number of wage-paying jobs increased from 5,637 in 1980 to 8,581 in 1985, dipped to 7,481 by 1987, and increased to 9,270 by 1991. Fig. 5 shows trends in civilian wage employment in the Homer Area during the last decade. The number of wage-paying jobs increased from 1,239 in 1980 to 1,676 in 1985, dipped to 1,397 by 1988, and increased to 2,311 by 1991. Fig. 6 shows trends in civilian wage employment in the Seward Area during the last decade. The number of wage-paying jobs was relatively stable from 1980 to 1988 (between about 1,000 to 1,200 jobs); jobs increased to about 1,800 after 1989, primarily due to the development of a correctional facility at Seward.

3. The Extent and Kinds of Employment for Wages, Including Full-Time, Part-Time, Temporary, and Seasonal Employment

SEE FIGS. 7-11

In 1991, wage-paying jobs in the Kenai-Soldotna Area were split between government (21 percent), services (22 percent), trade (19 percent), manufacturing (primarily oil refining and fish processing) (14 percent), mining (primarily in the oil industry) (11 percent), transportation (6 percent), and construction (5 percent) (see Figs. 7). In 1991, wage-paying jobs in the Homer Area were split between government (23 percent), services (18 percent), trade (23 percent), manufacturing (primarily fish processing) (18 percent), transportation (10 percent), and construction (6 percent) (see Figs. 8). In 1991, wage-paying jobs in the Seward Area were primarily in government (33 percent), with jobs also in services (13 percent), trade (17 percent), manufacturing (primarily fish processing) (18 percent), agriculture (forestry) (9 percent), transportation (6 percent), and construction (6 percent) (see Figs. 9).

Commercial fishing was a major industry on the Kenai Peninsula. In 1991, there were about 1,767 limited entry commercial fishing permits fished by residents of the Kenai Peninsula Area (Fig. 10). A large concentration of these permits were in the Homer Area, and relative to its size, the Seward area (Fig. 8). In 1991, commercial fishers living on the Kenai Peninsula sold fish with a gross value of about \$48.0 million.

Unemployment rates were 15.0 percent in the Kenai Peninsula Borough in April 1992 (Fig. 11). This compares to the Alaska rate of 9.2 percent. The relatively high unemployment rate reflects some short-term or seasonal characteristics of wage employment in the Kenai Borough.

4. The Amount and Distribution of Cash Income Among Those Domiciled in the Area or Community

SEE FIG. 12, 13, 14

In 1989, per capita incomes in the Kenai Peninsula Borough (\$18,173) were above the state's average (\$17,610), but below those in neighboring Anchorage (Fig. 12 and 13). According to U.S. Census income distribution records, incomes were distributed unevenly by racial or cultural group membership (Fig. 12).

In 1989, 10.3 percent of Kenai Borough residents lived in households earning less than the federal poverty standards, about the same as Anchorage (Fig. 14). This rate is below the Alaska average (12.5 percent), and substantially below rates in some Alaska areas, like the Dillingham Census Area (30.9 percent).

5. The Cost and Availability of Goods and Services To Those Domiciled in the Area or Community

SEE FIG. 15

The road-connected portions of the Kenai Peninsula Borough has a well-developed system of commerce through which a large range of goods and services are provided. However, costs of imported goods on the Peninsula are somewhat higher than those in Anchorage because of greater transportation costs, with prices increasing with the distance from Anchorage. Food prices can be used as an index of cost of living compared with other Alaska areas. The cost of food index in Kenai-Soldotna area is about 8 percent higher than in Anchorage (Fig. 15). The cost of food index in Homer is about 18 percent higher than in Anchorage (Fig. 15). Food prices have decreased in Homer relative to Anchorage over the past decade.

6. The Variety of Fish and Game Species Used by Those Domiciled in the Area or Community

SEE FIGS. 16 AND 17

The residents of the Kenai Borough Area use a variety of fish and wildlife, as shown in Figs. 16 and 17. Big game species used include black bear, brown bear, caribou, elk, goat, moose, sheep, and deer (Fig. 15). Fish species used include chinook, coho, sockeye, and pink salmon; halibut; and varieties of trout, other freshwater fish, and shellfish (Fig. 16).

7. The Seasonal Cycle of Economic Activity

Economic activity in the Kenai Peninsula Area shows some significant seasonal fluctuations, primarily related to tourism and the commercial fishing industry. The number of nonagricultural jobs increases substantially during the summer tourist season and decreases during winter season.

Fishing and hunting activities by residents are influenced by resource availability and the regulated seasonal cycles, such as salmon fishing during summer and fall and big game hunting during fall. Jobs in the local recreational industry (such as recreational retail outlets, fish charters, game guides, charter air transporters, and outfitters) are influenced by these seasonal cycles, as are commercial fishers.

8. The Percentage of Those Domiciled in the Area or Community Participating in Hunting and Fishing Activities or Using Wild Fish and Game

SEE FIGS. 16, 18, 19, 20, 26

A substantial percent of the residents of the Kenai Peninsula Area fish with rod and reel. In the Kenai Borough, about 61-73 percent of the population fished with rod and reel during 1989-91, based on surveys of anglers (Fig. 18). In 1991, a total of 8,282 hunting/hunting combination licenses were sold to persons living in the Kenai Peninsula Area (about 20.3 percent of the

population).

In 1991, Kenai Peninsula Area households were issued an estimated 3,714 permits for non-commercial net fishing in Cook Inlet (Fig. 16).

Household surveys conducted by the Division of Subsistence measured the percent of households participating in fishing and hunting for select communities on the Kenai Peninsula (Fig. 19). In 1982 in Kenai, 73 percent of households harvested fish, 26 percent harvested game, and 94 percent used fish (Fig. 19). By gear type, 17 percent of households harvested fish with nets, 65 percent with rod and reel, and 11 percent removed fish from commercial catches (Fig. 20). In Homer, while the harvest and use rates were similar to Kenai, the gear type was different: 51 percent harvested fish with nets, 43 percent with rod and reel, and 12 percent removed fish from commercial catches (Fig. 19 and 20). Outside the proposed Kenai Nonsubsistence Area in English Bay (Nanwalek) in 1987, 91 percent of households harvested fish, 27 percent harvested game, 97 percent used fish, and 73 percent used game (Fig. 19). By gear type, 79 percent of households harvested fish with nets, 91 percent with rod and reel, and 27 percent removed fish from commercial catches (Fig. 20).

9. The Harvest Levels of Fish and Game by Those Domiciled in the Area or Community

SEE FIGS. 21-24

In the Kenai Peninsula Area, the total fish and game harvest was about 1.63 million lbs annually, based on state game harvest records for 1986-91, sport fish surveys for 1989-91, and noncommercial salmon records for 1991. The total annual per capita harvest of fish and game was about 40 lbs per person per year (30.1 lbs of fish and 9.9 lbs of game) (Fig. 21). The harvest of wild foods provided a small portion of the food supply in the Kenai Peninsula Area compared with other Alaska areas (Fig. 22). The wild food harvest contained about 26 percent of the area's protein requirements (Fig. 23). Low food production rates by households are characteristic of an industrial-capital system, where most foods are produced and distributed through commercial businesses and purchased by households with wage earnings.

The numbers of big game and fish harvested by residents of the Kenai Peninsula Area are shown in Figs. 16 and 18.

According to household surveys conducted by the Division of Subsistence, wild food harvest levels vary between communities on the Kenai Peninsula (Fig. 24). Based on random household surveys, the per capita wild food harvests by year were Kenai, 38 lbs (1982), Ninilchik, 86 lbs (1982), Copper Landing, 92 lbs (1990), Homer, 94 lbs (1982), and Hope, 111 lbs (1990). Outside the proposed Kenai Nonsubsistence Area, the per capita wild food harvests by year were Seldovia, 51 lbs (1982), Port Graham, 227 lbs (1987), and English Bay (Nanwalek), 289 lbs (1987) (Fig. 24).

10. The Cultural, Social, and Economic Values Associated with the Taking and Use of Fish and Game

SEE FIG. 25

In the Kenai Peninsula Area, there are a number of cultural values associated with the taking and use of fish and game. For a segment of the area, the predominant values associated with fish and wildlife harvests are recreational. Fishing and hunting are periodic outdoor activities, valued as breaks from the economic work routine, embodying fair chase ethics, and producing wild foods that are valued for their taste and healthful qualities. For many, fishing and hunting are valued as high quality outdoor experiences which supplement the household's diet. For residents directly employed in commercial fishing and outdoor recreational industries (such as recreational retail outlets, fish charters, charter air transporters, and tour guides), values are commonly commercial in nature. That is, the use of fish and wildlife produces monetary income for the household, as well as all or some of the recreational values listed above. The Kenai Peninsula area supports the most active sportfish guiding industry in Alaska due to the accessibility of the area by highway vehicle. The area is a common destination for salmon, trout, and halibut fishing for Alaskans living outside the area and many tourists. For some Kenai Peninsula Area residents, values associated with fish and wildlife are related to environmental awareness and nonconsumptive uses (such as wildlife viewing). For many Kenai Peninsula Area residents, the values associated with fishing and hunting are associated with Alaska Native cultural traditions, including food production for a local society of people, sharing with elders, and the provision of wild foods for ceremonial gatherings.

One indicator of the value orientations of residents are the types and numbers of voluntary associations dealing with fish and wildlife in the Kenai Peninsula Area appearing on mailing lists compiled by ADF&G (see Fig. 25). As shown in Fig. 25, among the voluntary associations listed for the Kenai Peninsula, there are at least 9 associated with recreational-sport fishing or hunting, 5 associated with environmental protection and/or nonconsumptive uses, 6 associated with the commercial fishing industry, and 1 associated with trapping.

In the Kenai Peninsula Area, the Kenaitze are a subgroup whose use of fish and game may reflect values associated with Denai'na cultural traditions, as indicated by a description by Swan (1981: 3-4, 12-13):

"Although industry has greatly encouraged the growth of a cash-based economy, the lifestyle and diet of many Kenaitze still reflect the heritage of a traditional relationship between human beings and the natural resources... such activities as drying fish, smoking fish, berry picking persist over the years without any direct relationship to size of income."

There were about 3,000 Alaska Natives on the Kenai Borough in 1990 (about 7.2 percent of the population).

For other families who live on the Kenai Peninsula, fishing and hunting are valued as a way to produce food, as part of perceived "country living" or a

"homestead tradition" (Wolfe and Elianna 1984:159, 165). Fishing and hunting are a means for a family to achieve a degree of economic self-sufficiency ("living off the land"), combined with seasonal wage employment.

11. The Geographic Locations Where Those Domiciled in the Area or Community Hunt and Fish

SEE FIGS. 26

During the period 1986-91, residents of the Kenai Peninsula Area hunted throughout the state, but primarily in GMUs 15 and 7, which are within the Kenai Peninsula area (Fig. 26). Kenai Peninsula residents that hunted brown bear and caribou primarily hunted in other portions of the southcentral region, reflecting where much of the hunting opportunity for these species existed. Residents of the Kenai Peninsula that hunted sheep were distributed throughout the southcentral, interior, and northern regions.

The Kenai Peninsula area has a variety of rivers and salt-water areas for fishing. Salmon are taken with rod and reel in the area's major rivers, including the Kenai River, Kasilof River, and Deep Creek. Noncommercial set nets and dip nets for salmon have been allowed off and on throughout the recent decade in a number of coastal locations, including Kachemak Bay and the Kasilof River. Halibut, crab, and shrimp are taken in Kachemak Bay and lower Cook Inlet. Shellfish are taken along local beaches, such as Clam Gulch and Ninilchik.

12. The Extent of Sharing and Exchange of Fish and Game by Those Domiciled in the Area or Community

SEE FIG. 27

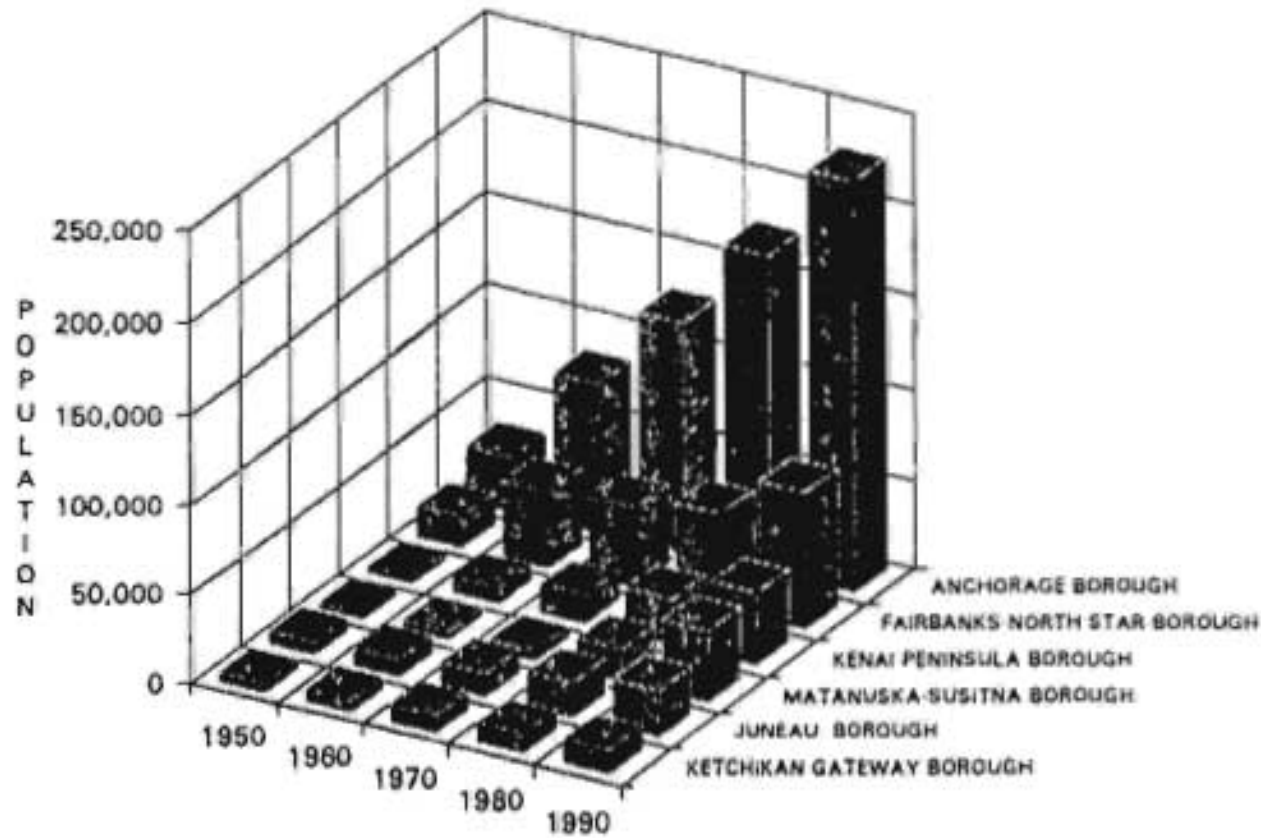
Household surveys conducted in select Kenai Peninsula communities indicate that fish and game are commonly shared and exchanged in the area (Fig. 27). The percent of households in select communities reporting receiving fish were Kenai (48 percent), Ninilchik (58 percent), Cooper Landing (64 percent), Homer (67 percent), and Hope (73 percent). By community, the percent of households receiving game was 66 percent in Hope (1990) and 43 percent in Cooper Landing (1990). The volume of sharing has never been documented.

Source Materials

Reed, Carolyn E. (1985) The Role of Wild Resource Use in Communities of the Central Kenai Peninsula and Kachemak Bay, Alaska. Technical Paper No. 106, Division of Subsistence, Alaska Department of Fish and Game.

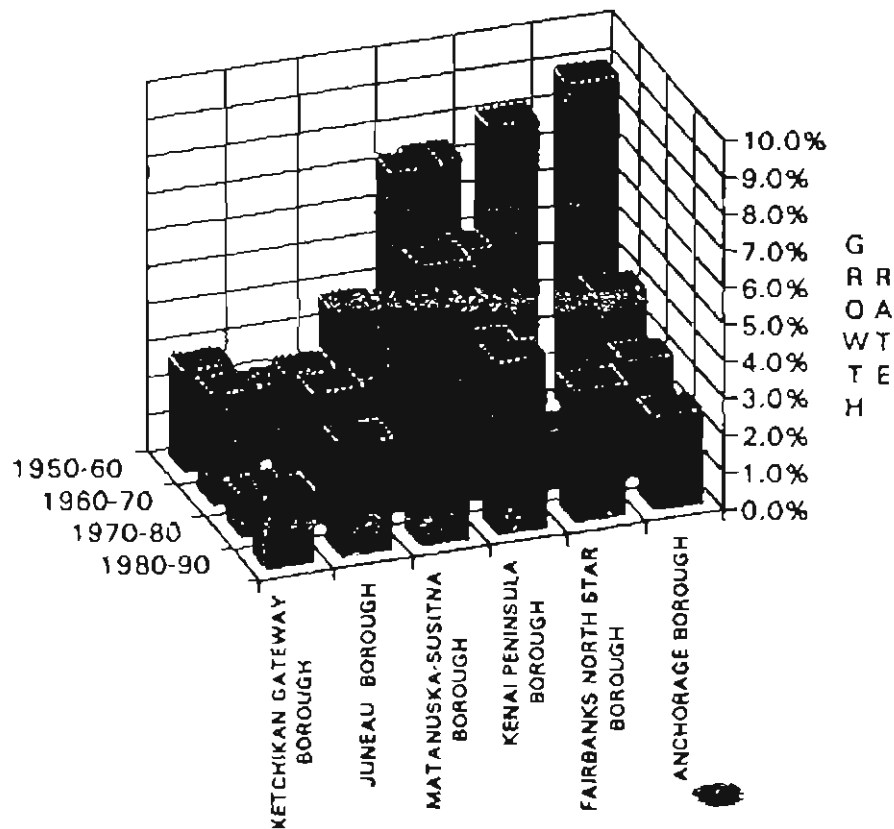
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- Seitz, Jody, Lisa Tomrdle, and James A. Fall (1992) The Use of Fish and Wildlife in the Upper Kenai Peninsula Communities of Hope, Whittier, and Cooper Landing. Division of Subsistence, Alaska Department of Fish and Game, Anchorage.
- Stanek, Ronald T. (1985) Patterns of Wild Resource Use in English Bay and Port Graham, Alaska. Technical Paper No. 104, Division of Subsistence, Alaska Department of Fish and Game.
- Swan, Clare (1981) Subsistence Research Project, Kenaitze Indian Tribe. Report submitted to the Bureau of Indian Affairs, September 15, 1981.
- Wolfe, Robert J. and Linda J. Ellanna (1983) Resource Use and Socioeconomic Systems: Case Studies of Fishing and Hunting in Alaskan Communities. Technical Paper No. 61, Division of Subsistence, Alaska Department of Fish and Game. (See Chapter 7, "Kenai Peninsula")

POPULATION TRENDS 1950-1990 SELECT ALASKA AREAS



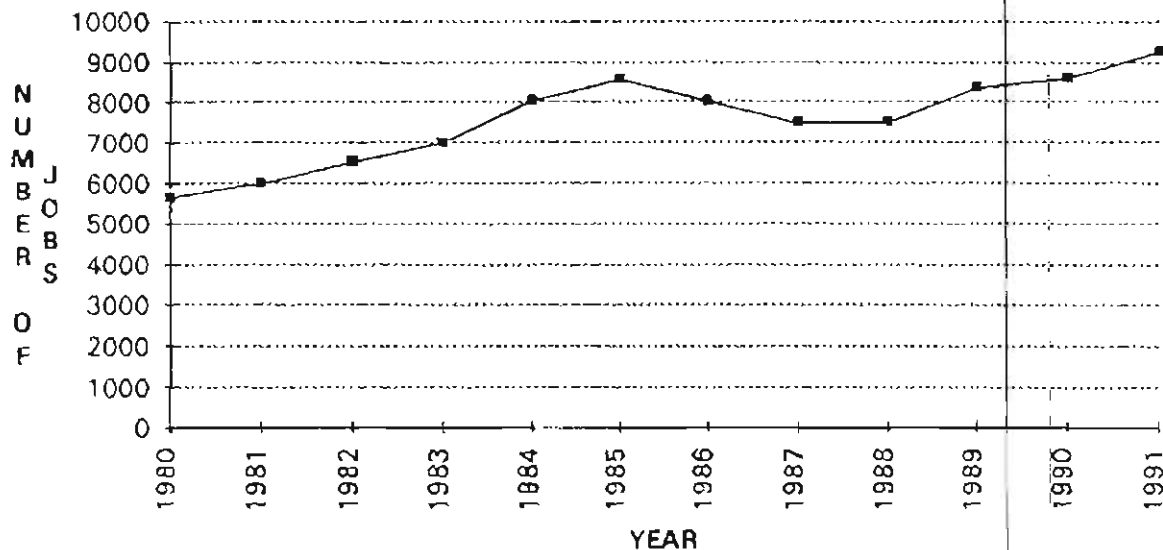
| | 1950 | 1960 | 1970 | 1980 | 1990 |
|------------------------------|--------|--------|---------|---------|---------|
| KETCHIKAN GATEWAY BOROUGH | 5,581 | 7,406 | 10,041 | 11,316 | 13,828 |
| JUNEAU BOROUGH | 7,920 | 9,745 | 13,556 | 19,528 | 26,751 |
| MATANUSKA-SUSITNA BOROUGH | 3,534 | 5,188 | 6,509 | 17,816 | 39,683 |
| KENAI PENINSULA BOROUGH | 4,130 | 9,053 | 16,586 | 25,282 | 40,802 |
| FAIRBANKS NORTH STAR BOROUGH | 18,129 | 42,992 | 45,864 | 53,983 | 77,720 |
| ANCHORAGE BOROUGH | 31,487 | 82,833 | 126,385 | 174,431 | 226,338 |

MEAN ANNUAL GROWTH RATES PER DECADE, FOR SELECT ALASKA AREAS, 1950-90



| | 1950-60 | 1960-70 | 1970-80 | 1980-90 |
|------------------------------|---------|---------|---------|---------|
| KETCHIKAN GATEWAY BOROUGH | 2.8% | 3.0% | 1.2% | 2.0% |
| JUNEAU BOROUGH | 2.1% | 3.3% | 3.6% | 3.1% |
| MATANUSKA-SUSITNA BOROUGH | 3.8% | 2.3% | 9.3% | 7.6% |
| KENAI PENINSULA BOROUGH | 7.5% | 5.9% | 4.2% | 4.7% |
| FAIRBANKS NORTH STAR BOROUGH | 8.1% | 0.6% | 1.6% | 3.6% |
| ANCHORAGE BOROUGH | 9.0% | 4.2% | 3.2% | 2.6% |

**KENAI-SOLDOTNA
(KENAI PENINSULA BOROUGH)
CIVILIAN WAGE EMPLOYMENT, 1980-91
NUMBER OF JOBS**



KENAI-SOLDOTNA WAGE EMPLOYMENT, 1980-1991: NUMBER OF JOBS BY JOB CATEGORY
SOURCE: ALASKA DEPARTMENT OF LABOR, RESEARCH AND ANALYSIS SECTION

| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Mining | 733 | 718 | 722 | 552 | 620 | 735 | 850 | 687 | 740 | 813 | 1034 | 1036 |
| Construction | 514 | 608 | 675 | 790 | 978 | 1029 | 618 | 421 | 389 | 475 | 327 | 490 |
| Manufacturing | 1024 | 856 | 924 | 922 | 891 | 1068 | 1009 | 1042 | 1151 | 1206 | 961 | 1310 |
| Transportation | 458 | 634 | 632 | 629 | 584 | 602 | 401 | 347 | 352 | 468 | 560 | 598 |
| Trade | 911 | 1017 | 1083 | 1262 | 1631 | 1823 | 1663 | 1622 | 1543 | 1587 | 1652 | 1722 |
| FIRE | 155 | 177 | 206 | 231 | 285 | 263 | 278 | 191 | 164 | 178 | 174 | 176 |
| Services | 688 | 758 | 911 | 1121 | 1153 | 1258 | 1369 | 1319 | 1358 | 1696 | 1862 | 1974 |
| Government | 1154 | 1218 | 1370 | 1512 | 1913 | 1803 | 1836 | 1854 | 1824 | 1946 | 2039 | 1966 |
| Total Civilian | 5637 | 5986 | 6523 | 7019 | 8034 | 8581 | 8024 | 7481 | 7521 | 8364 | 8608 | 9270 |

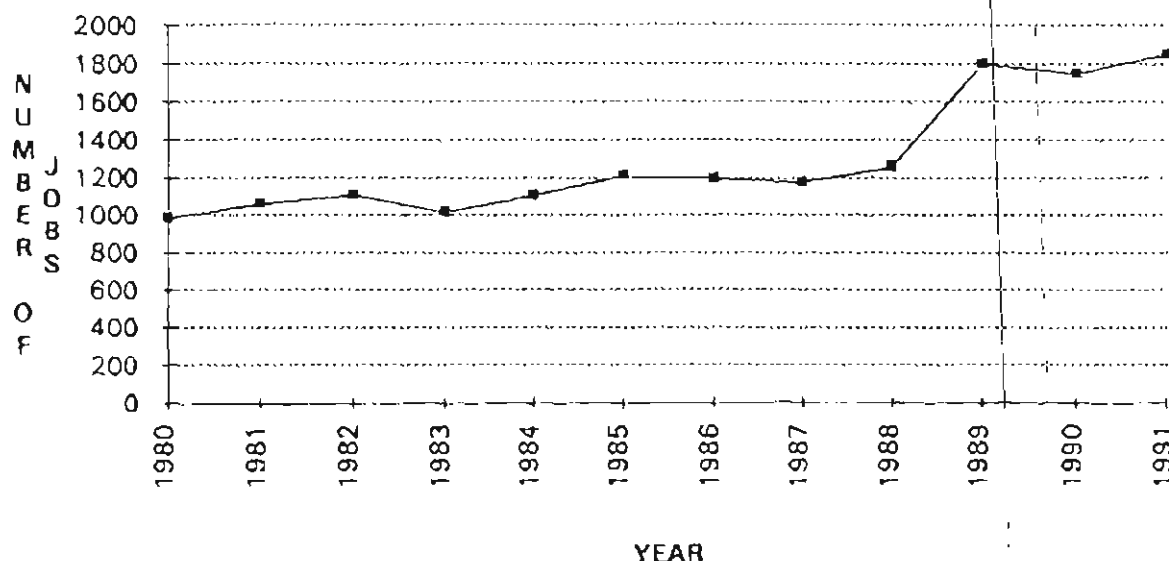
**HOMER (KENAI PENINSULA BOROUGH)
CIVILIAN WAGE EMPLOYMENT, 1980-91
NUMBER OF JOBS**



HOMER WAGE EMPLOYMENT, 1980-91: NUMBER OF JOBS BY JOB CATEGORY
SOURCE: ALASKA DEPARTMENT OF LABOR, RESEARCH AND ANALYSIS SECTION

| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Mining | 19 | 62 | 68 | 86 | 7 | 7 | 3 | 2 | 0 | 1 | 0 | 0 |
| Construction | 69 | 63 | 93 | 143 | 231 | 252 | 125 | 88 | 130 | 255 | 214 | 128 |
| Manufacturing | 313 | 452 | 384 | 307 | 241 | 175 | 138 | 115 | 163 | 181 | 304 | 414 |
| Trans.-Comm. | 186 | 184 | 190 | 158 | 176 | 188 | 177 | 159 | 196 | 306 | 245 | 226 |
| Trade | 203 | 222 | 224 | 270 | 275 | 314 | 334 | 335 | 312 | 336 | 450 | 546 |
| FIRE | 40 | 46 | 52 | 60 | 74 | 74 | 68 | 57 | 56 | 68 | 51 | 56 |
| Services | 186 | 260 | 272 | 231 | 262 | 270 | 268 | 230 | 234 | 303 | 375 | 413 |
| Government | 222 | 188 | 217 | 315 | 335 | 398 | 408 | 411 | 406 | 442 | 463 | 529 |
| Total Civilian | 1239 | 1476 | 1499 | 1568 | 1601 | 1676 | 1520 | 1397 | 1496 | 1891 | 2102 | 2311 |

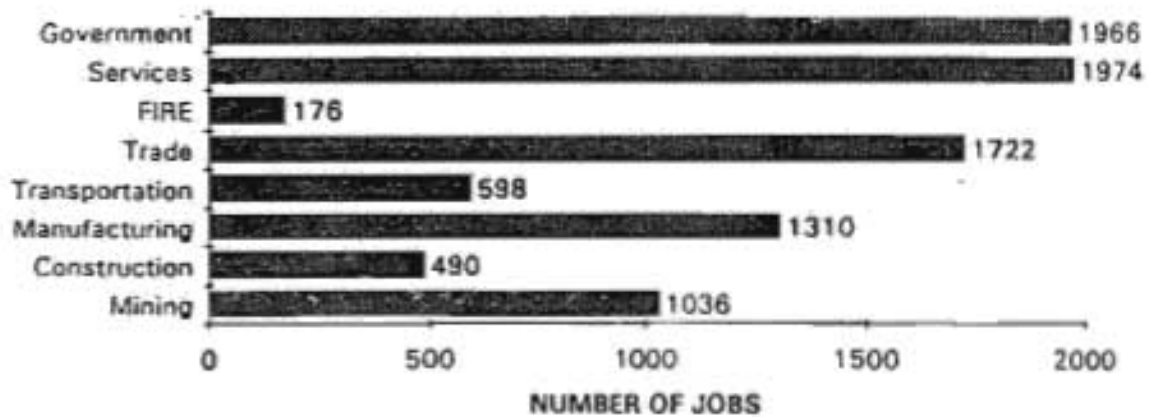
**SEWARD
(KENAI PENINSULA BOROUGH)
CIVILIAN WAGE EMPLOYMENT, 1980-91
NUMBER OF JOBS**



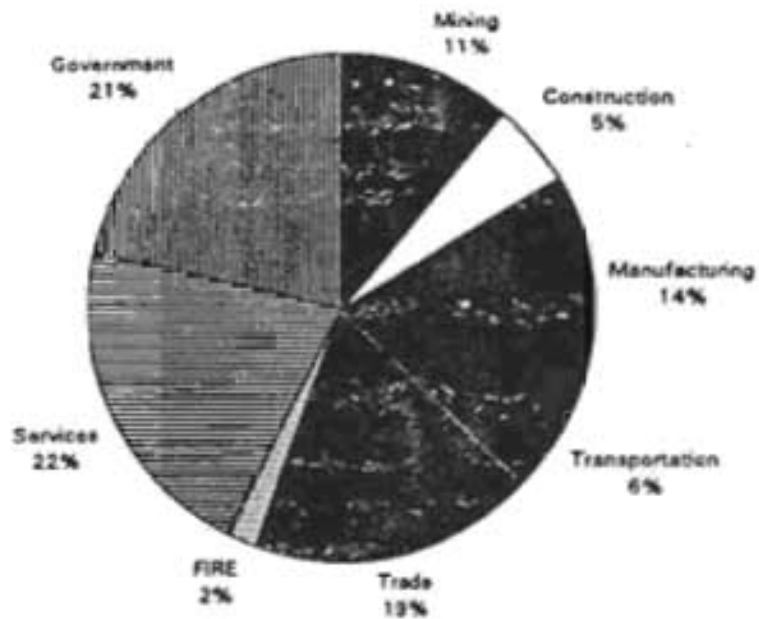
SEWARD WAGE EMPLOYMENT, 1980-91: NUMBER OF JOBS BY JOB CATEGORY
SOURCE: ALASKA DEPARTMENT OF LABOR, RESEARCH AND ANALYSIS SECTION

| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|-----------------------|------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Mining | . | . | . | . | . | . | . | . | . | 0 | 0 | 0 |
| Construction | 32 | 29 | 19 | 43 | 62 | 32 | 68 | 101 | 56 | 58 | 63 | 54 |
| Manufacturing | 243 | 316 | 278 | 183 | 169 | 171 | 139 | 157 | 179 | 239 | 312 | 334 |
| Transportatio | 45 | 48 | 73 | 46 | 96 | 138 | 98 | 60 | 84 | 213 | 106 | 118 |
| Trade | 141 | 132 | 147 | 142 | 146 | 175 | 202 | 212 | 173 | 281 | 266 | 323 |
| FIRE | 17 | 20 | 20 | 19 | 22 | 23 | 22 | 21 | 21 | 20 | 20 | 21 |
| Services | 175 | 169 | 200 | 197 | 205 | 242 | 228 | 205 | 212 | 190 | 223 | 242 |
| Agriculture | . | . | . | . | . | . | . | . | . | 164 | 135 | 173 |
| Government | 337 | 346 | 375 | 385 | 413 | 433 | 441 | 420 | 530 | 637 | 626 | 586 |
| Total Civilian | 989 | 1059 | 1112 | 1014 | 1112 | 1213 | 1195 | 1175 | 1256 | 1801 | 1750 | 1851 |

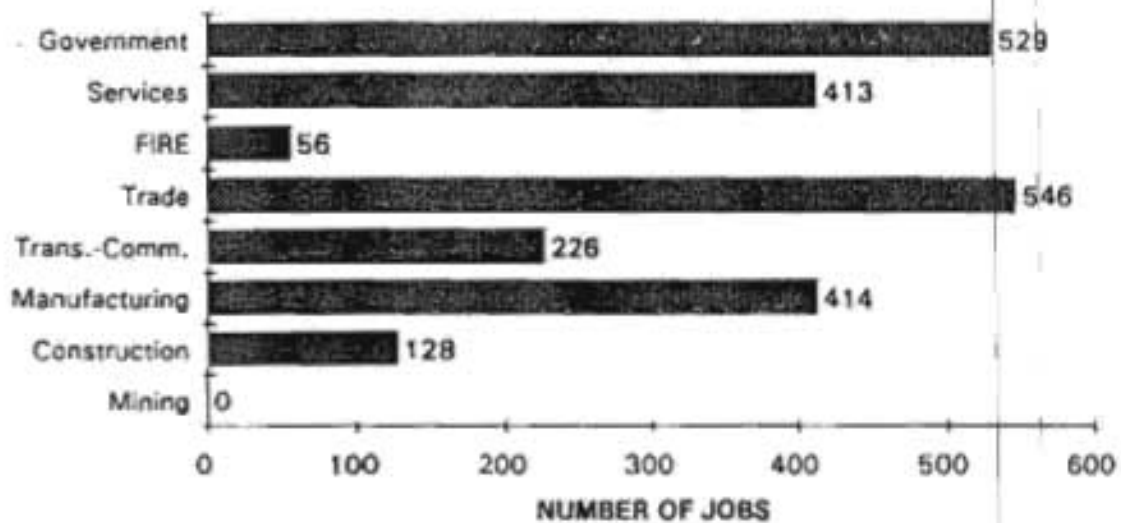
**KENAI-SOLDOTNA
(KENAI PENINSULA BOROUGH)
WAGE EMPLOYMENT, 1991
NUMBER OF JOBS BY JOB CATEGORY**



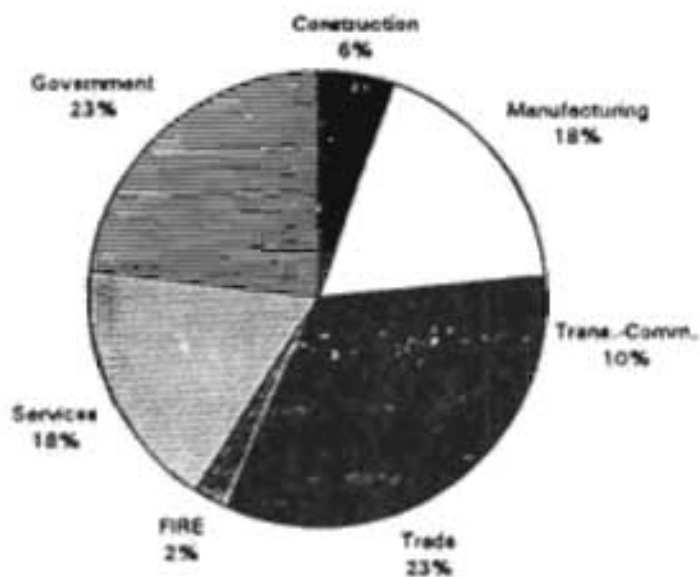
**KENAI-SOLDOTNA WAGE EMPLOYMENT, 1991
PERCENT OF JOBS BY JOB CATEGORY**



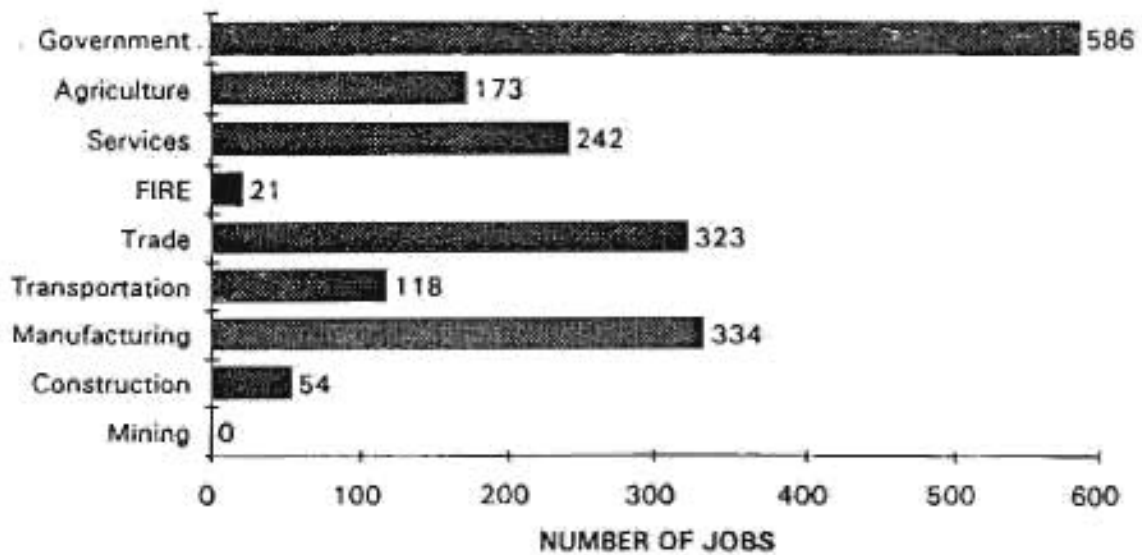
**HOMER (KENAI PENINSULA BOROUGH)
WAGE EMPLOYMENT, 1991
NUMBER OF JOBS BY JOB CATEGORY**



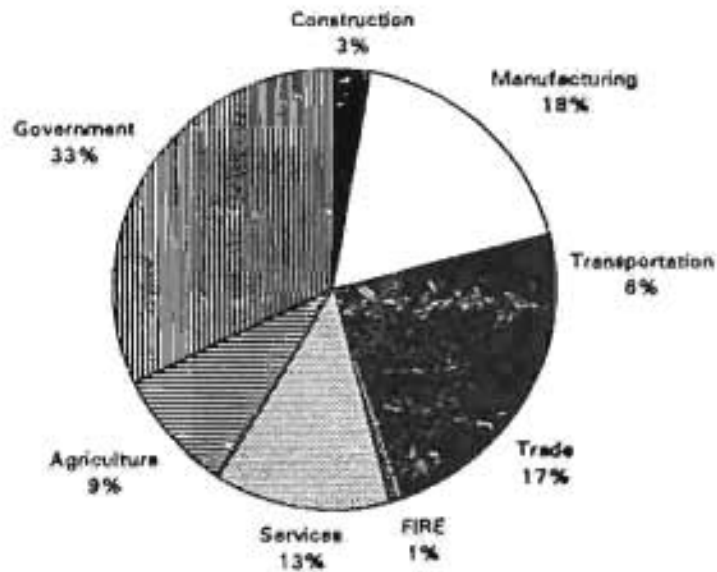
**HOMER WAGE EMPLOYMENT, 1991
PERCENT OF JOBS BY JOB CATEGORY**



**SEWARD (KENAI PENINSULA BOROUGH)
WAGE EMPLOYMENT, 1991
NUMBER OF JOBS BY JOB CATEGORY**



**SEWARD WAGE EMPLOYMENT, 1991
PERCENT OF JOBS BY JOB CATEGORY**



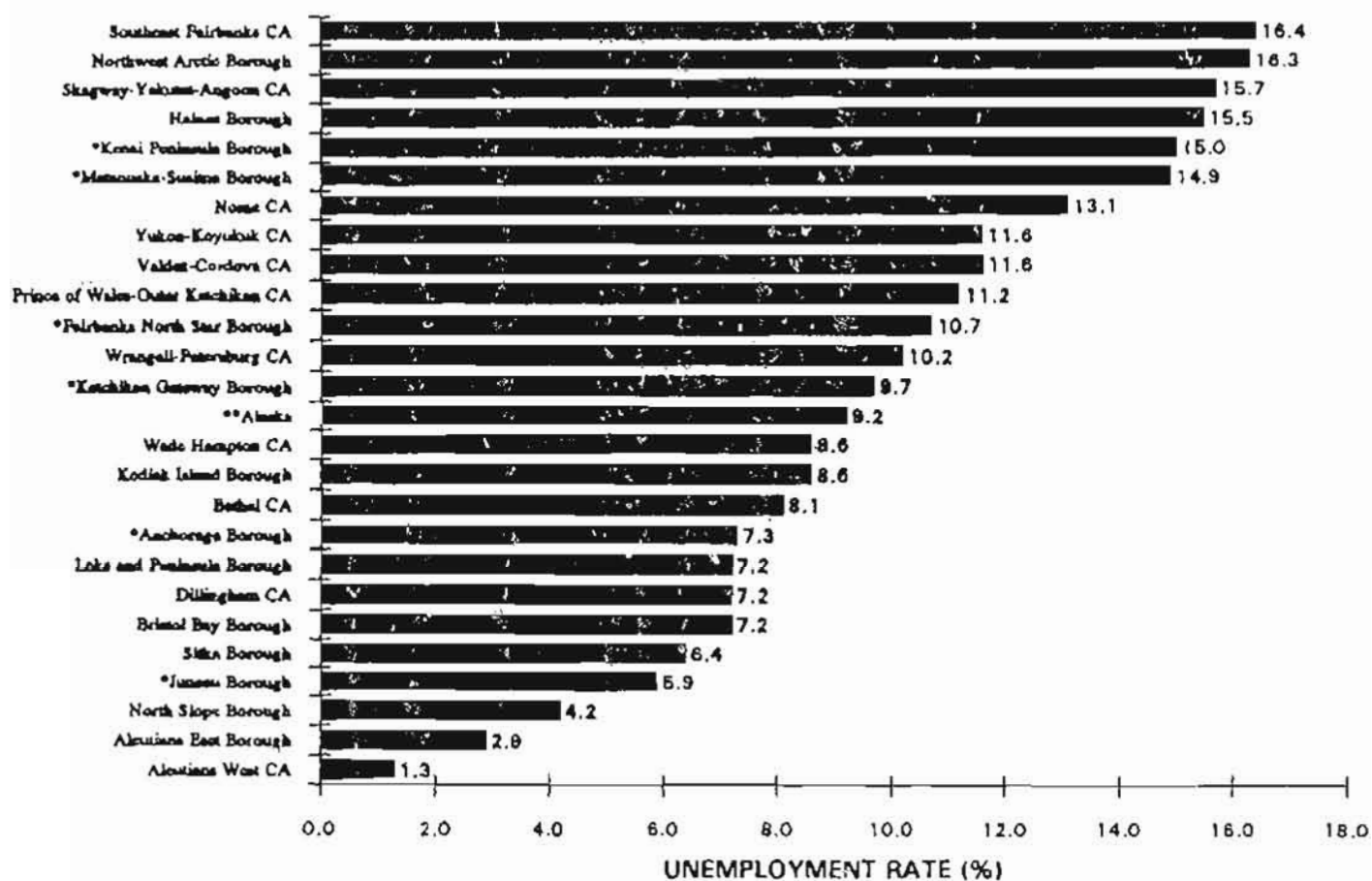
COMMERCIAL FISHING BY RESIDENTS OF KENAI PENINSULA AREA, 1991

Source: Commercial Fisheries Entry Commission

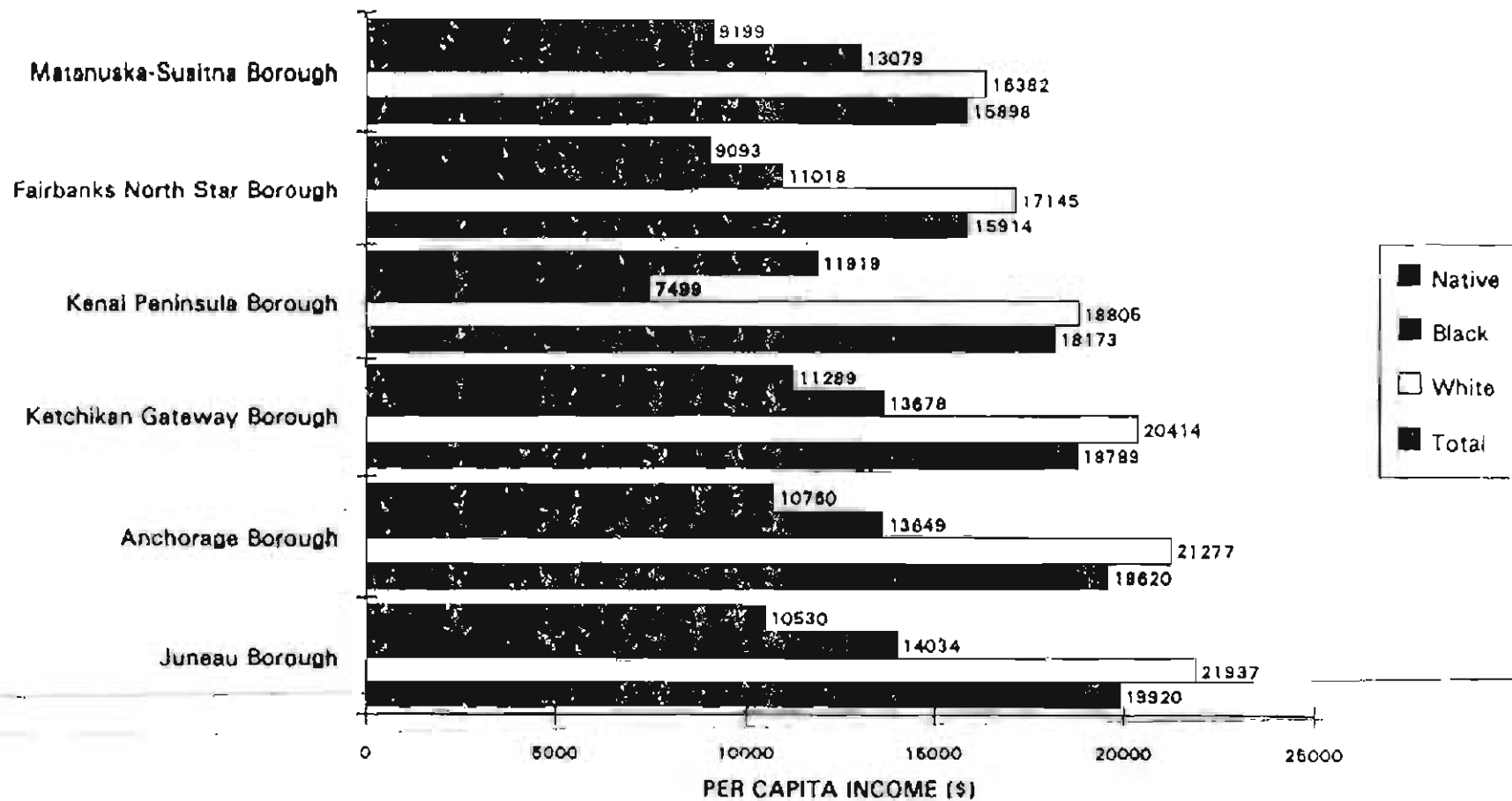
| Place | Number of People | Number of Permits Fished | Pounds | Estimated Gross Earnings |
|-----------------|---------------------|-----------------------------|------------|-----------------------------|
| Kenai Peninsula | | | | |
| Anchor Point | 84 | 131 | 4,143,183 | \$2,148,841 |
| Clam Gulch | 44 | 57 | 927,764 | \$687,070 |
| Cooper Landing | 6 | 6 | 168,618 | \$133,611 |
| Fritz Creek | 7 | 10 | 522,319 | \$260,737 |
| Halibut Cove | 7 | 8 | 77,364 | \$62,212 |
| Homar | 401 | 671 | 47,064,262 | \$23,809,512 |
| Kasilof | 129 | 151 | 5,384,032 | \$2,575,641 |
| Kenai | 218 | 251 | 6,506,232 | \$4,297,637 |
| Moose Pass | 3 | 3 | * | * |
| Nikishka | 7 | 77 | 106,955 | \$81,914 |
| Nikiski | 34 | 38 | 808,630 | \$3,981,776 |
| Nikolavsk | 2 | 6 | * | * |
| Ninitchik | 52 | 58 | 2,053,594 | \$1,104,479 |
| Seward | 71 | 120 | 12,889,802 | \$4,836,134 |
| Soldotna | 155 | 169 | 6,288,788 | \$3,754,686 |
| Sterling | 10 | 11 | 228,216 | \$162,703 |
| Total | 1230 | 1767 | 87,306,381 | \$48,038,768 |

* Data not reported per confidentiality requirements

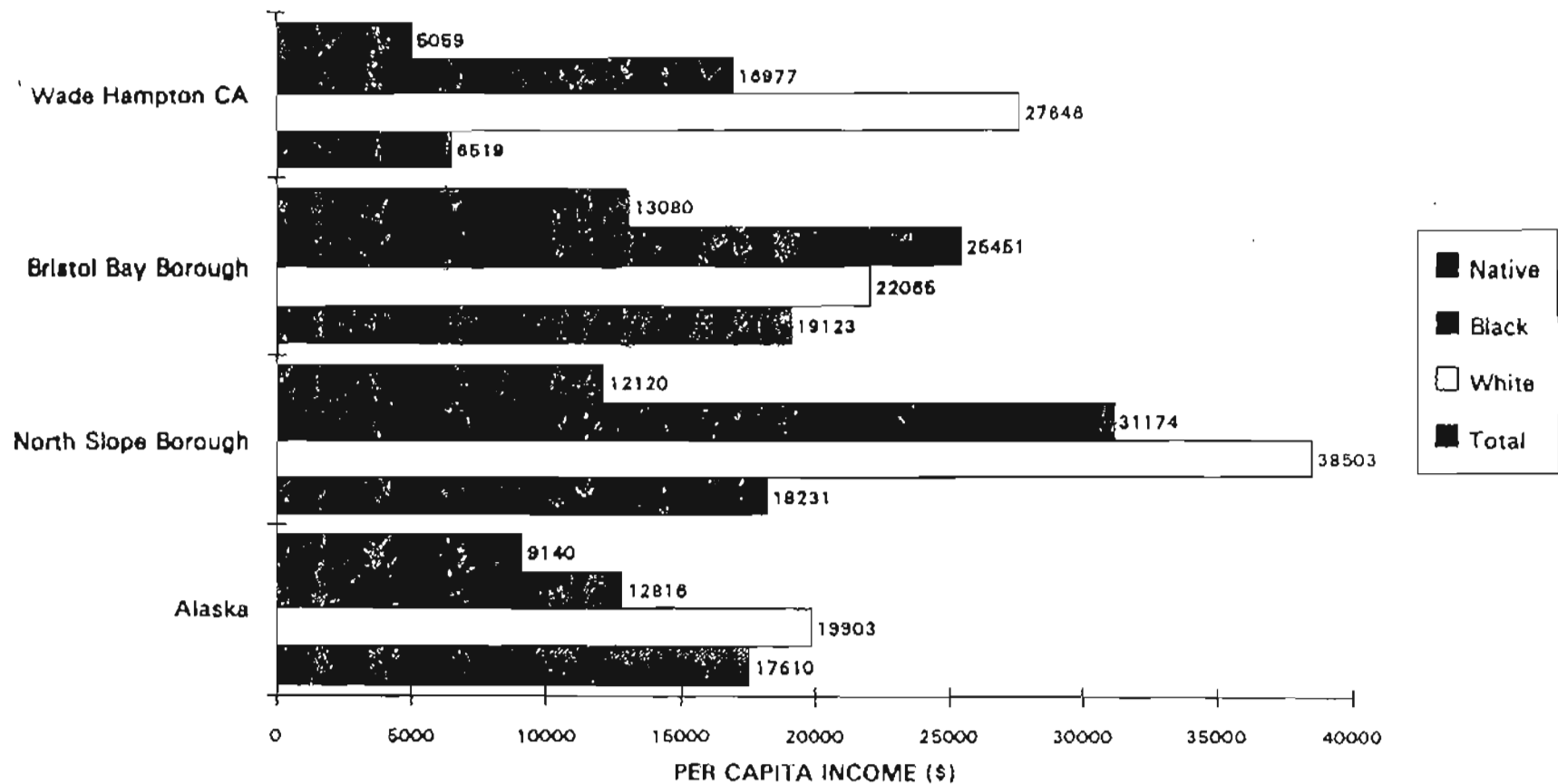
UNEMPLOYMENT RATES BY ALASKA AREA, APRIL 1992



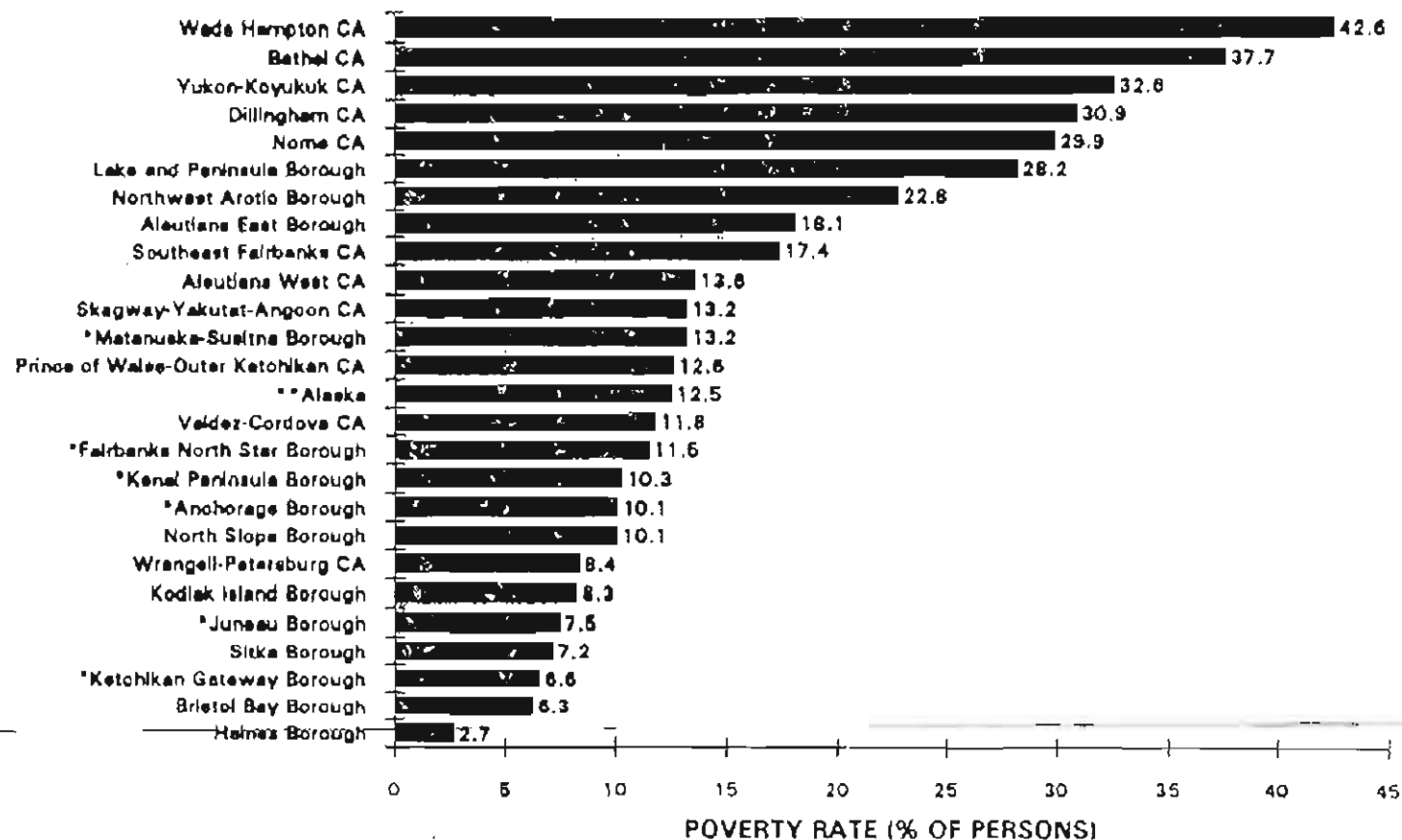
PER CAPITA INCOME BY RACE, 1989:
PROPOSED NON-SUBSISTENCE AREAS



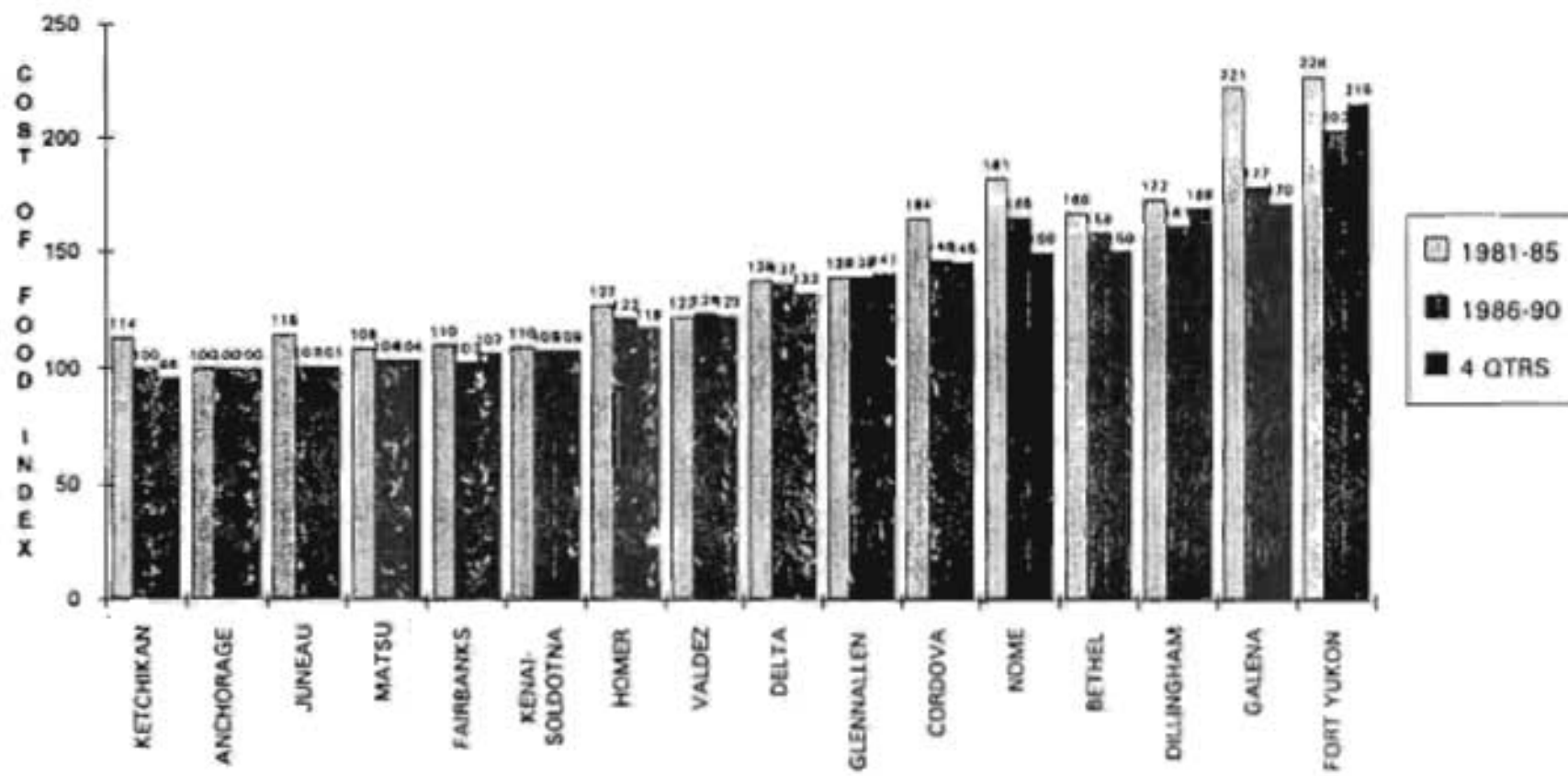
PER CAPITA INCOME BY RACE, 1989:
ALASKA, NORTH SLOPE BOROUGH, BRISTOL BAY
BOROUGH, AND WADE HAMPTON CENSUS AREA



**POVERTY RATES BY ALASKA AREA, 1989:
PERCENT OF PERSONS BELOW 125%
OF FEDERAL POVERTY STANDARDS**



**COST OF FOOD INDEX
FOR SELECT COMMUNITIES,
1981-85, 1986-90, AND
MOST RECENT FOUR QUARTERLY PERIODS**



WILDLIFE HARVESTS BY KENAI PENINSULA AREA RESIDENTS, 1986-91 MEAN

| | Black Bear | Brown Bear | Caribou | Elk | Goat | Bison | Moose | Sheep | Muskox | Deer | Total |
|--------------|---------------|---------------|---------|------|------|-------|--------|-------|--------|--------|--------|
| Number | 116.7 | 38 | 53.8 | 15.7 | 40 | 2.5 | 649.7 | 78.2 | 3.4 | 1139.1 | |
| Conversion | 58 | 0 | 150 | 225 | 72.5 | 450 | 500 | 65 | 593 | 43.2 | |
| Total Pounds | 6769 | 0 | 8070 | 3533 | 2900 | 1125 | 324850 | 5083 | 2016 | 49209 | 403554 |
| Per Capita | 0.17 | 0.00 | 0.20 | 0.09 | 0.07 | 0.03 | 7.99 | 0.13 | 0.05 | 1.21 | 9.93 |

NONCOMMERCIAL SALMON PERMITS ISSUED TO RESIDENTS OF THE KENAI PENINSULA AREA, 1991 AND SALMON HARVESTED (NUMBERS AND POUNDS)

| | PERMITS | CHINOOK | SOCKEYE | COHO | PINK | CHUM | TOTAL HARVEST |
|--------------------------------------|---------|---------|---------|-------|------|------|------------------|
| Upper Cook Inlet Subsistence | 2997 | 310 | 16992 | 379 | 79 | 115 | 17875 |
| Lower Cook Inlet Personal Use | 429 | 5 | 45 | 4480 | 335 | 0 | 4865 |
| Kasilof and Fall Coho PU-Subsistence | 288 | 27 | 6704 | 2162 | 0 | 0 | 8893 |
| Total Number | 3714 | 342 | 23741 | 7021 | 414 | 115 | 31633 |
| Conversion | * | 18 | 4 | 6 | 2 | 8 | * |
| Total Pounds | * | 6156 | 94964 | 42128 | 828 | 690 | 144764 |
| Per Capita Pounds | * | 0.15 | 2.34 | 1.04 | 0.02 | 0.02 | 3.56 |

Sport Fish Harvest by Residents of Proposed Nonsubsistence Areas (1990), Numbers of Fish
Source: Division of Sport Fish Mailed Survey and Division of Subsistence

| | 1990 Population | Number Anglers | Anglers Percent | Small Chinook | Chinook | Coho | Landlocked oho-Chinook | Landlocked Sockeye | Sockeye | Pink |
|-------------------|--------------------|-------------------|--------------------|------------------|---------|-------|---------------------------|-----------------------|---------|-------|
| ANCHORAGE BOR | 226336 | 106723 | 48.7% | 1921 | 19924 | 92562 | 12542 | 83 | 106993 | 28798 |
| FAIRBANKS BOR | 77720 | 33618 | 43.3% | 219 | 3089 | 13167 | 11337 | 0 | 5123 | 11888 |
| JUNEAU BOR | 26751 | 13684 | 51.1% | 1050 | 7812 | 30592 | 310 | 0 | 1104 | 18430 |
| KENAI PENIN BOR | 46802 | 25899 | 63.5% | 488 | 4826 | 30811 | 261 | 406 | 27769 | 9451 |
| KETCHIKAN BOR | 13828 | 6365 | 46.0% | 114 | 4867 | 17586 | 0 | 16 | 709 | 7768 |
| MATANUSKA SUSITNA | 39883 | 19552 | 49.3% | 606 | 4654 | 14199 | 9443 | 119 | 10741 | 2211 |
| VALDEZ (CITY) | 4088 | 2075 | 51.0% | 18 | 142 | 2559 | 0 | 0 | 333 | 3796 |
| WHITTIER (CITY) | 243 | 64 | 22.2% | 0 | 0 | 108 | 0 | 0 | 311 | 0 |

| | Chum | Halibut | Steelhead | Rainbow | Cutthroat | Dolly Varden | Brook Trout | Lake Trout | Grayling | Northern Pike |
|-------------------|------|---------|-----------|---------|-----------|-----------------|----------------|---------------|----------|------------------|
| ANCHORAGE BOR | 3129 | 56824 | 253 | 82981 | 369 | 27421 | 0 | 3602 | 13348 | 2415 |
| FAIRBANKS BOR | 478 | 10671 | 44 | 47338 | 49 | 4317 | 0 | 3115 | 20901 | 5808 |
| JUNEAU BOR | 1817 | 10347 | 217 | 278 | 2183 | 7777 | 17 | 0 | 68 | 10 |
| KENAI PENIN BOR | 270 | 27222 | 62 | 7552 | 44 | 8132 | 0 | 1738 | 934 | 209 |
| KETCHIKAN BOR | 306 | 3839 | 1077 | 541 | 2323 | 1069 | 0 | 0 | 728 | 0 |
| MATANUSKA SUSITNA | 716 | 6519 | 17 | 14115 | 16 | 8119 | 0 | 814 | 4704 | 490 |
| VALDEZ (CITY) | 113 | 1438 | 0 | 504 | 0 | 742 | 0 | 34 | 199 | 0 |
| WHITTIER (CITY) | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | Whitefish | Burbot | Sheefish | Rockfish | Smelt | Razor Clam | Other |
|-------------------|-----------|--------|----------|----------|--------|------------|-------|
| ANCHORAGE BOR | 3321 | 2253 | 67 | 14509 | 136218 | 313447 | 16174 |
| FAIRBANKS BOR | 6608 | 3009 | 423 | 3337 | 179 | 23179 | 2396 |
| JUNEAU BOR | 0 | 0 | 0 | 1687 | 0 | 1940 | 3338 |
| KENAI PENIN BOR | 429 | 33 | 0 | 1826 | 16939 | 260748 | 3202 |
| KETCHIKAN BOR | 0 | 0 | 0 | 5091 | 0 | 0 | 1016 |
| MATANUSKA SUSITNA | 1603 | 1420 | 0 | 1062 | 12047 | 38487 | 976 |
| VALDEZ (CITY) | 0 | 408 | 0 | 747 | 0 | 2264 | 1096 |
| WHITTIER (CITY) | 0 | 0 | 0 | 28 | 0 | 0 | 0 |

TABLE 1

ESTIMATED NUMBER OF ANGLERS AND PERCENT OF POPULATION

SOURCE: DIVISION OF SPORT FISH MAILED SURVEY

| | 1990 Population | 1989 Anglers | Percent of 1990 Pop | 1990 Anglers | Percent of 1990 Pop | 1991 Anglers | Percent of 1990 Pop |
|---------------------|--------------------|-----------------|------------------------|-----------------|------------------------|-----------------|------------------------|
| ANCHORAGE BOR | 226338 | 117802 | 52.0% | 105723 | 46.7% | 134565 | 59.5% |
| FAIRBANKS BOR | 77720 | 33648 | 43.3% | 33618 | 43.3% | 38461 | 49.5% |
| JUNEAU BOR | 26751 | 14589 | 54.5% | 13684 | 51.1% | 12544 | 46.9% |
| KENAI PENIN BOR | 40802 | 24761 | 60.7% | 25899 | 63.5% | 29819 | 73.1% |
| KETCHIKAN BOR | 13828 | 8021 | 58.0% | 6365 | 46.0% | 6251 | 45.2% |
| MATANUSKA SUSITNA B | 39883 | 20209 | 50.9% | 19552 | 49.3% | 27960 | 70.5% |
| VALDEZ (CITY) | 4068 | 1808 | 44.4% | 2075 | 51.0% | 2754 | 67.7% |

TABLE 2

FISH HARVESTS WITH ROD AND REEL BY AREA (LBS PER CAPITA)

SOURCE: DIVISION OF SPORT FISH MAILED SURVEY

| | 1989 | 1990 | 1991 | MEAN 1989-91 |
|---------------------|------|------|------|-----------------|
| ANCHORAGE BOROUGH | 16.7 | 13.1 | 13.7 | 14.5 |
| FAIRBANKS BOROUGH | 8.3 | 7.2 | 7.2 | 7.6 |
| JUNEAU BOROUGH | 28.1 | 23.0 | 16.3 | 22.5 |
| KENAI PENIN BOROUGH | 29.1 | 28.4 | 23.9 | 26.5 |
| KETCHIKAN BOROUGH | 28.5 | 22.1 | 17.7 | 22.8 |
| MATANUSKA SUSITNA B | 15.0 | 10.7 | 14.4 | 13.4 |
| VALDEZ (CITY) | 16.1 | 15.3 | 15.2 | 15.5 |

**Percent of Households Harvesting or Using Fish and Game
Kenai Peninsula Area
By Community and Year**

| <u>Community</u> | <u>Study Year</u> | <u>Harvested Fish</u> | <u>Harvested Game</u> | <u>Used Fish</u> | <u>Used Game</u> |
|------------------|-----------------------|---------------------------|---------------------------|----------------------|----------------------|
| Cooper Landing | 1990 | 71.5 | 22.9 | 91.3 | 51.2 |
| Homer | 1982 | 67.1 | 28.3 | 97.1 | na |
| Hope | 1990 | 70.2 | 28.9 | 92.1 | 73.3 |
| Kenai | 1982 | 72.8 | 25.6 | 94.4 | na |
| Ninlchik | 1982 | 66.7 | 25.0 | 95.8 | na |
| Seldovia * | 1982 | 65.7 | 17.1 | 100.0 | na |
| English Bay * | 1987 | 90.9 | 27.3 | 97.0 | 72.7 |
| Port Graham * | 1987 | 92.8 | 11.1 | 98.1 | 72.7 |

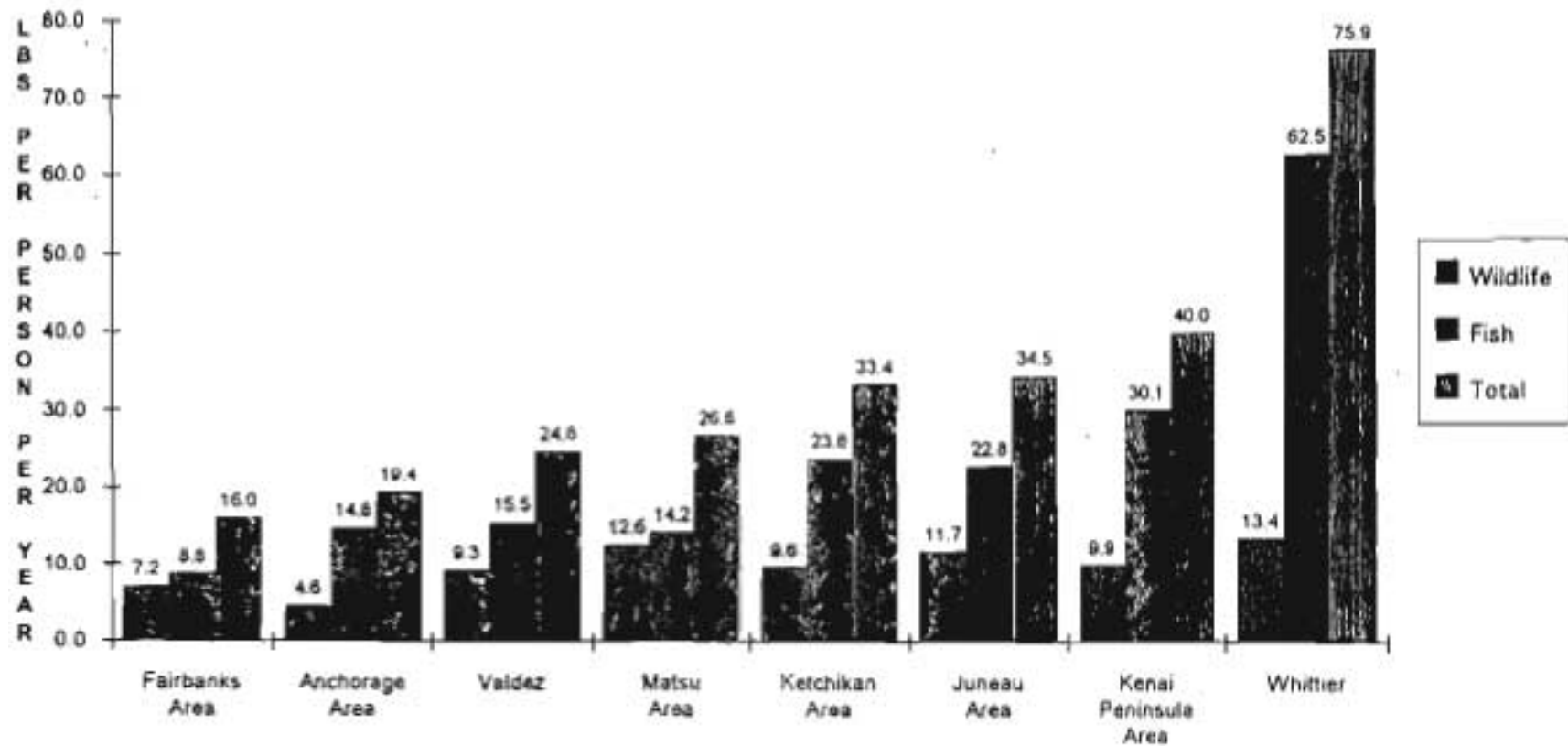
* Outside the Proposed Nonsubsistence Area

Percent of Households Harvesting Fish
Kenai Peninsula Area
By Community, Year and Gear Types

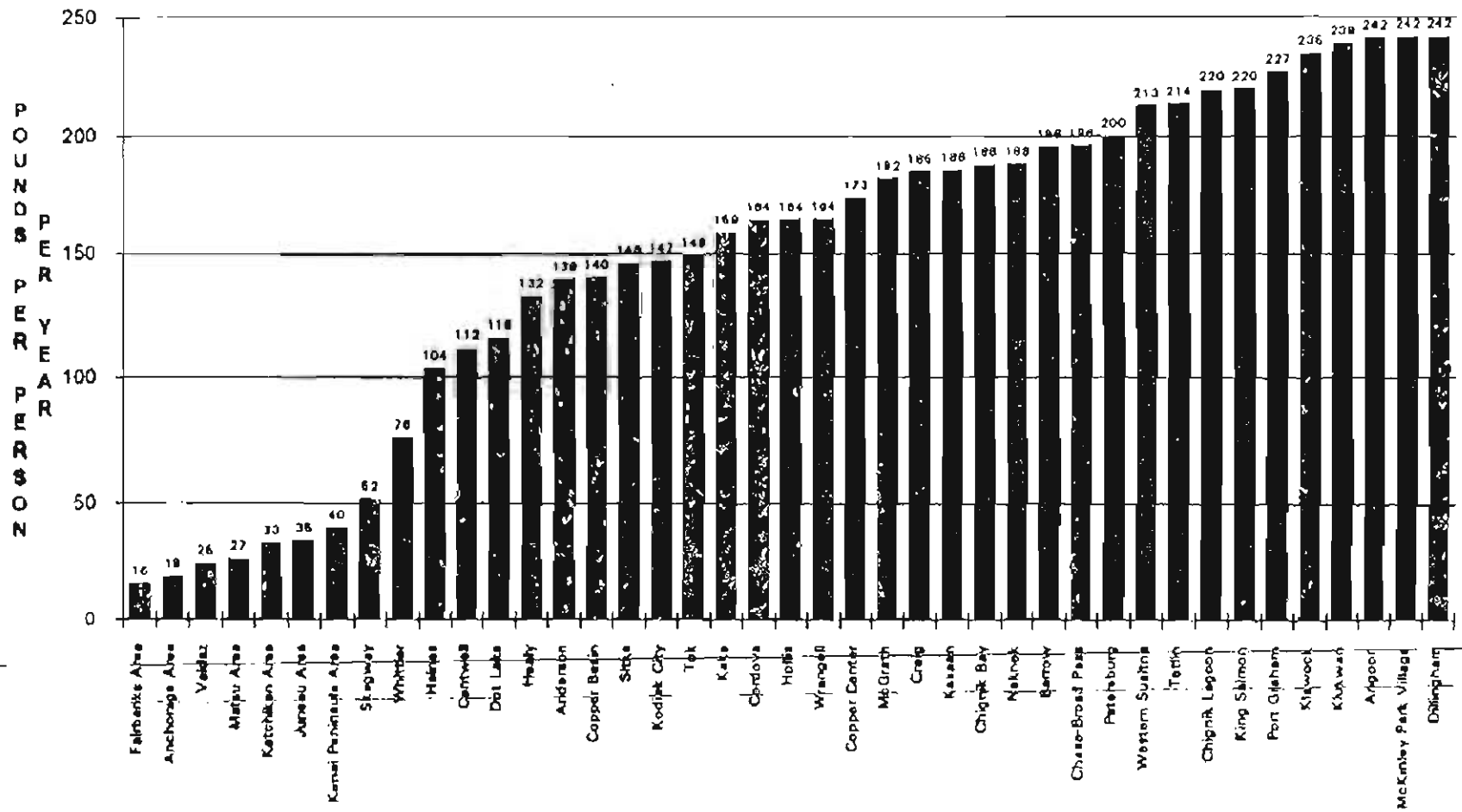
| Community | Study Year | Nets | Rod and Reel | Removed from Commercial Gear | All Gear Types |
|----------------|---------------|------|-----------------|------------------------------------|-------------------|
| Homer | 1982 | 50.9 | 43.4 | 11.6 | 67.1 |
| Kenai | 1982 | 16.9 | 64.6 | 11.3 | 72.8 |
| Ninilchik | 1982 | 29.2 | 58.3 | 37.5 | 66.7 |
| Hope | 1990 | 16.3 | 53.9 | 0.0 | 70.2 |
| Cooper Landing | 1990 | 15.0 | 54.9 | 1.2 | 71.5 |
| Seldovia * | 1982 | 28.6 | 57.1 | 20.0 | 65.7 |
| English Bay * | 1987 | 78.8 | 90.9 | 27.3 | 90.9 |
| Port Graham * | 1987 | 66.7 | 85.2 | 20.4 | 92.6 |

* Outside the Proposed Nonsubsistence Area

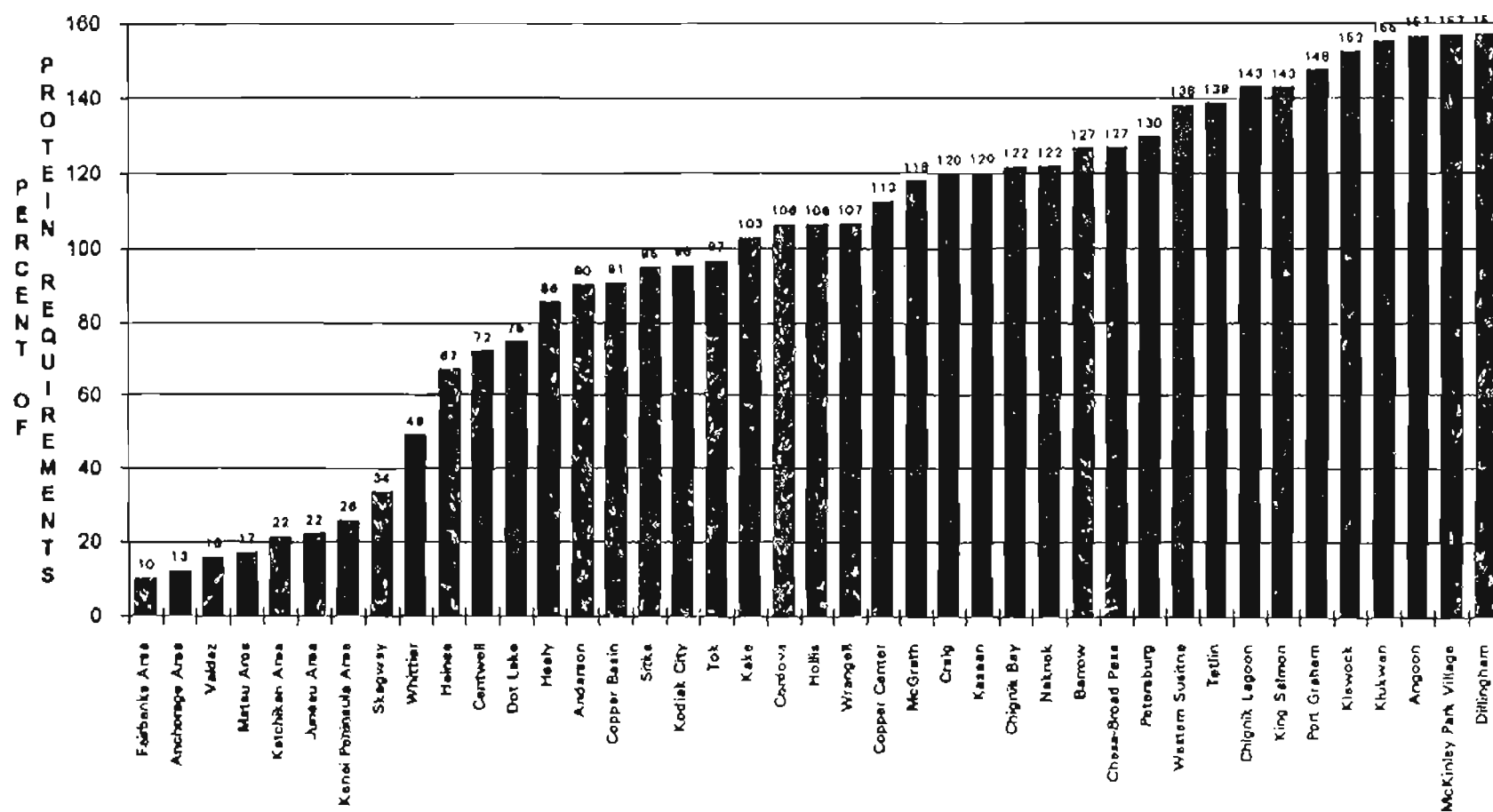
FISH AND WILDLIFE HARVEST LEVELS
BY RESIDENTS OF SELECTED ALASKA AREAS
(LBS PER PERSON PER YEAR;
NON-COMMERCIAL HARVESTS)



WILD FOOD HARVESTS BY COMMUNITY
POUNDS PER PERSON PER YEAR
SOURCE: DIVISION OF SUBSISTENCE, ADF&G



WILD FOOD HARVESTS BY COMMUNITY
PERCENT OF COMMUNITY PROTEIN REQUIREMENTS
(44 GRAMS PER PERSON PER DAY, OR .422 LBS OF WILD FOODS)
SOURCE: DIVISION OF SUBSISTENCE, ADF&G



Wild Food Harvest Levels (Lbs Per Person Per Year)
Kenai Peninsula Area
By Community and Year

| Community | Study Year | Fish & Shellfish | Game & Birds | Other [1] | Total |
|----------------|------------|------------------|--------------|-----------|-------|
| Cooper Landing | 1990 | 56.2 | 31.3 | 4.1 | 91.6 |
| Homer | 1982 | 66.3 | 25.8 | 1.7 | 93.8 |
| Hope | 1990 | 69.8 | 35.2 | 5.7 | 110.7 |
| Kenai | 1982 | 30.6 | 6.6 | 0.7 | 37.9 |
| Ninlchik | 1982 | 62.2 | 20.8 | 2.5 | 85.5 |
| Seldovia * | 1982 | 37.9 | 8.4 | 4.4 | 50.7 |
| English Bay * | 1987 | 239.0 | 13.1 | 36.7 | 288.8 |
| Port Graham * | 1987 | 190.7 | 8.6 | 28.1 | 227.4 |

* Outside the Proposed Nonsubsistence Area

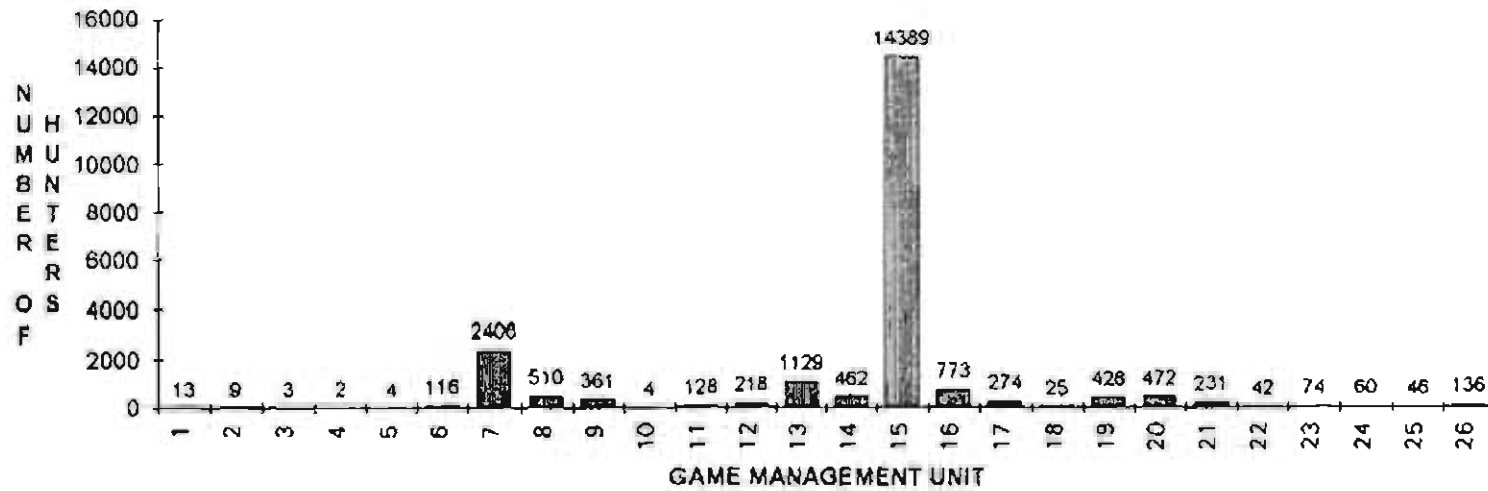
[1] Includes Marine Mammals and Plants

**VOLUNTARY ASSOCIATIONS DEALING WITH FISH, WILDLIFE, AND THE ENVIRONMENT
IN THE KENAI PENINSULA AREA, COMPILED FROM ADF&G LISTS**

| Name of Organization | City | Area | Category |
|---|-------------|-------------|-----------------------------|
| Cook Inlet Professional Sportfish Association | Soldotna | Kenai Pen. | Sport Industry |
| Ducks Unlimited-Soldotna | Soldotna | Kenai Pen. | Sport Industry |
| Ducks Unlimited-Ninilchik | Ninilchik | Kenai Pen. | Sport Industry |
| Ducks Unlimited-Kenai | Kenai | Kenai Pen. | Sport Industry |
| Ducks Unlimited-Homer | Homer | Kenai Pen. | Sport Industry |
| Kenai River Sportfish Association | Soldotna | Kenai Pen. | Sport Industry |
| Safari Club International-Kenai Peninsula Chapter | Soldotna | Kenai Pen. | Sport Industry |
| South Peninsula Sportsmen's Association | Homer | Kenai Pen. | Sport Industry |
| Trout Unlimited-C.I. Prof. Sportfish Assn Chapter | Soldotna | Kenai Pen. | Sport Industry |
| Alaskan Coastal Studies Center | Homer | Kenai Pen. | Environmental |
| Kachemak Bay Conservation Society | Homer | Kenai Pen. | Environmental |
| Kachemak Bay Heritage Land Trust | Homer | Kenai Pen. | Environmental |
| Kenai Audubon Society | Kasilof | Kenai Pen. | Environmental |
| Public Awareness Committee for the Environment | Kenai | Kenai Pen. | Environmental |
| Bristol Bay Setnetters Assoc. | Homer | Kenai Pen. | Commercial Fishing Industry |
| Cook Inlet Aquaculture Assoc. | Soldotna | Kenai Pen. | Commercial Fishing Industry |
| Cook Inlet Fisherman Fund | Ninilchik | Kenai Pen. | Commercial Fishing Industry |
| Kenai Peninsula Fishermen's Association | Soldotna | Kenai Pen. | Commercial Fishing Industry |
| North Pacific Fisheries Association | Homer | Kenai Pen. | Commercial Fishing Industry |
| United Cook Inlet Drift Assoc. | Kenai | Kenai Pen. | Commercial Fishing Industry |
| Kenai Peninsula Trappers | Soldotna | Kenai Pen. | Trapping |

Sources: ADFG Public Communications Section; Division of Wildlife Conservation (Juneau, Anchorage, Cordova); Division of Sport Fish (Juneau); Division of Subsistence (Dillingham, Kotzebue, Bethel, Fairbanks); FNSB Library Data Cache; ADPS Wildlife Protection Division (Glennallen)

HUNTING LOCATIONS OF KENAI PENINSULA BOROUGH RESIDENTS (GMUs 7 AND 15), NUMBER OF HUNTERS, 1986-91



HUNT LOCATIONS FOR KENAI PENINSULA BOROUGH RESIDENTS (GMUs 7, 15A, 15B, 15C), 1986-91

NUMBER OF HUNTERS (*SUCCESSFUL HUNTERS) BY GAME MANAGEMENT UNIT

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
|------------|----|---|---|---|---|-----|------|-----|-----|----|-----|-----|------|-----|-------|-----|-----|----|-----|-----|-----|----|----|----|----|-----|
| Black Bear | 4 | 9 | 3 | 0 | 1 | 49 | 146 | 0 | 0 | 0 | 1 | 4 | 5 | 4 | 410 | 42 | 4 | 0 | 10 | 7 | 1 | 0 | 0 | 0 | 0 | 0 |
| Brown Bear | 2 | 0 | 0 | 0 | 1 | 7 | 3 | 122 | 51 | 4 | 0 | 0 | 13 | 1 | 35 | 25 | 12 | 0 | 4 | 6 | 1 | 1 | 5 | 2 | 2 | 4 |
| Caribou | 0 | 0 | 0 | 0 | 0 | 0 | 205 | 0 | 0 | 0 | 6 | 10 | 351 | 2 | 8 | 0 | 0 | 0 | 0 | 106 | 0 | 0 | 0 | 0 | 0 | 0 |
| Elk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 384 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Goat | 4 | 0 | 0 | 2 | 0 | 36 | 362 | 4 | 0 | 0 | 10 | 0 | 1 | 11 | 414 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bison | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 10 | 0 | 0 | 0 | 0 | 0 | 0 |
| Moose | 3 | 0 | 0 | 0 | 2 | 24 | 1454 | 0 | 310 | 0 | 22 | 48 | 643 | 321 | 13089 | 695 | 258 | 5 | 347 | 233 | 229 | 41 | 56 | 34 | 33 | 10 |
| Sheep | 0 | 0 | 0 | 0 | 0 | 0 | 236 | 0 | 0 | 0 | 83 | 156 | 116 | 123 | 433 | 11 | 0 | 0 | 62 | 110 | 0 | 0 | 13 | 24 | 11 | 122 |
| Muskox | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 13 | 9 | 3 | 2 | 4 | 116 | 2406 | 510 | 361 | 4 | 128 | 218 | 1129 | 462 | 14389 | 773 | 274 | 25 | 428 | 472 | 231 | 42 | 74 | 60 | 46 | 136 |

**Percent of Households Giving and Receiving Fish
Kenai Peninsula Area
By Community and Year**

| <u>Community</u> | <u>Study</u> | | <u>Receiving</u> |
|------------------|--------------|---------------|------------------|
| | <u>Year</u> | <u>Giving</u> | |
| Cooper Landing | 1990 | 52.6 | 64.4 |
| Homer | 1982 | na | 66.5 |
| Hope | 1990 | 53.2 | 72.7 |
| Kenai | 1982 | na | 48.2 |
| Ninlchik | 1982 | na | 58.3 |
| Seldovia * | 1982 | na | 88.6 |
| English Bay * | 1987 | 84.8 | 93.9 |
| Port Graham * | 1987 | 72.2 | 92.6 |

* Outside the Proposed Nonsubsistence Area

Proposal No. 4 Whittier Nonsubsistence Area

Area Description

The Whittier Nonsubsistence Area includes Game Management Unit 6 within the Whittier City Limits (Fig. 1).

Historic Overview

SEE FIG. 2

A history of the Whittier Area is contained in Seitz et al 1992 and Schroeder et al 1987:633-653. Aboriginal occupation of the Prince William Sound subregion dates back at least 3,000 years. At the time of European contact (about 1741), the region's inhabitants were members of Eyak Indian and Chugach Eskimo cultural groups. The economy of the region was dependent on fishing and hunting for subsistence uses and trade. Russian contact had profound impacts on the Native population, which was reduced by epidemics and brought into trade networks for sea otter and seal hides throughout the 1800s.

The Whittier area had long been the beginning of an aboriginal trading route between Prince William Sound and Cook Inlet. Whittier is on a small triangular delta on ice-free Passage Canal, where a spur of the Alaska Railway starts north to Anchorage and the Interior. Whittier was constructed as a military complex in the early 1940s. Two railroad tunnels were built by the Army through the Chugach Mountains to connect with the Alaska Railroad system at Portage. At the height of military activities during the 1950s, over 1,000 people lived at Whittier, but the population rapidly declined as the Army pulled out during the early 1960s, reaching a low of 130 people in 1970. In recent decades, the city's economy has become oriented toward shipping, commercial fishing and processing, tourism, and government. By 1990, the permanent population had grown to 243 people, living in three multi-unit complexes and four single family dwellings.

Twelve Factors

1. The Social and Economic Structure

The social and economic structure of Whittier is a type of "industrial-capitalism", a socioeconomic system common to the lower 48. This social and economic structure is distinct from another type of socioeconomic system in Alaska, called a "mixed, subsistence-cash economy", where the domestic household sector is a major producer and distributor of food. Industrial capital systems generally have large wage sectors, which provide the major means of livelihood to residents. In an industrial-capital system, households are not major producers or distributors of an area's food supply. Food production by households provides a very small portion of the community's food, but may be of economic significance to those households actively involved in hunting and fishing. Most of the area's food and other goods and services are provided by businesses organized and financed separately from the household unit. Production and distribution of

goods and services are organized by market forces or by government. Fishing and hunting by residents are primarily conducted as part of recreational or commercial industries. The specific characteristics of the Whittier socioeconomic system are described below.

2. The Stability of the Economy

SEE FIG. 2

The economy at Whittier has seen substantial fluctuations, as shown by the population changes over the past several decades. The military pullout resulted in the loss of that sector of the community's economy during the 1960s, when the population decreased at an annual rate of 14.5 percent (Fig. 2). Since then, annual population growth rates have been 4.1 percent during the 1970s and 2.0 percent during the 1980s (Fig. 2). The job base related to shipping is fairly secure. The development of tourism and fish processing has also resulted in more seasonal employment in the area. In 1989, a number of jobs were created at Whittier related to the *Exxon Valdez* oil spill, although at the same time, local commercial fishing and fish processing were negatively impacted.

3. The Extent and Kinds of Employment for Wages, Including Full-Time, Part-Time, Temporary, and Seasonal Employment

SEE FIG. 3

Based on a survey of Whittier households in 1991 (Seitz et al 1992), most wage-paying jobs in Whittier were in government (28 percent), services (19 percent), transportation (18 percent) in 1990-91 (Fig. 3). Other jobs were in commercial fishing (12 percent), manufacturing (9 percent), trade (9 percent), and "other" (5 percent) (Fig. 3).

In 1991, 10 Whittier residents fished 16 limited entry permits, including salmon, sablefish, pot shrimp, and miscellaneous shellfish. Commercial Fisheries Entry Commission lists a substantially greater number of permits at Whittier; however, these include fishers who claim their residency is Whittier for the purposes of fisheries registration.

Based on the 1991 household survey, most households in Whittier (92.9 percent) had at least one adult who was employed at least part of the year. Of all adults over 16 years of age, 79 percent worked during the year. The mean number of months employed per household head was 9.9 months.

4. The Amount and Distribution of Cash Income Among Those Domiciled in the Area or Community

SEE FIG. 4, 5, 6

In 1989, per capita incomes in Whittier (\$17,032) were about the same as the state average (\$17,610) (Fig. 4 and 5). According to U.S. Census income distribution records, incomes were distributed unevenly by racial or

cultural group membership (Fig. 4). About 15 percent of Whittier's population was Alaska Native in 1991. Income distribution among households are shown in Fig. 6.

5. The Cost and Availability of Goods and Services To Those Domiciled in the Area or Community

In 1991, Whittier had small, locally-owned stores with limited selections for quick convenience shopping and the tourist trade. However, most shopping by households was done in Anchorage using the railroad for transportation, which ran six trains daily during summer, but only three trains weekly from September through April. The cost of travel (\$48-\$64 for a private vehicle depending on the season), and the need to sometimes stay overnight due to train schedules, increased monetary costs and the inconvenience of shopping for Whittier residents. In 1991, the average monthly household food expense at Whittier was \$510 (which compares with \$400 for Cooper Landing households and \$382 for Hope households surveyed during the same period).

6. The Variety of Fish and Game Species Used by Those Domiciled in the Area or Community

Based on a 1991 household survey, Whittier residents used about 73 different kinds of wild fish and game the survey year. Varieties used by more than 10 percent of households included five species of salmon, black cod, grey cod, ling cod, halibut, red rockfish, deer, black bear, moose, ptarmigan, tanner crab, octopus, and shrimp. The other varieties of resources were reported used by a few households the study year, including species such as burbot, Dolly Varden, rainbow trout, caribou, sheep, beaver, hare, harbor seal, sea otter, several species of waterfowl, several types of clams, king crab, and oysters, among others.

7. The Seasonal Cycle of Economic Activity

The economy at Whittier shows significant seasonal changes, with substantially more types of jobs and economic activity during summer due to commercial fishing, fish processing, and tourism. Many Anchorage fishers put into Prince William Sound at Whittier during summer. The amount of cars and goods shipped by the railroad also was substantially more during the summer season. The seasonality of employment is reflected by the fact that the mean number of months employed per household head was 9.9 months.

Commercial fishing was a seasonal activity that was related to wild fish and game use in Whittier. Removal of fish from commercial catches was the source of 13 kinds of resources in Whittier in 1990. About 21 percent of the total community harvest of wild food by weight was retained from commercial catches, including 56 percent of the sockeye, 80 percent of the black cod, 40 percent of the halibut, and 61 percent of the red rockfish used by households.

8. The Percentage of Those Domiciled in the Area or Community Participating in Hunting and Fishing Activities or Using Wild Fish and Game

FIG. 7

Based on a 1991 household survey, about 58 percent of Whittier residents fished, 11 percent hunted, and 2 percent trapped in 1990-91 (Fig. 7). During the study year, 90 percent of households used fish and 58 percent harvested fish; 57 percent of households used wildlife, 12 percent of household hunted, and 8 percent of households successfully harvested game. During the survey period, 94 percent of households used wild resources and 77 percent harvested wild resources (Fig. 7).

9. The Harvest Levels of Fish and Game by Those Domiciled in the Area or Community

FIG. 8, 9, 10

Based on the 1991 household survey, the per capita harvest of wild foods in Whittier was 75.9 lbs (62.5 lbs was fish, 13.4 lbs was game). Major resources harvested included salmon (34 lbs per capita), halibut (8 lbs), moose (17 lbs), deer (11 lbs), and marine invertebrates (9 lbs). Per capita harvest levels of fish and game in Whittier were two to three times the harvests in urbanized areas like Anchorage (19 lbs) and Juneau (35 lbs), but are lower than most other Alaska communities where harvest estimates are available (Fig. 9). The wild food harvest contained 49 percent of the community's protein requirements (Fig. 10).

10. The Cultural, Social, and Economic Values Associated with the Taking and Use of Fish and Game

A variety of values are found in Whittier associated with the taking and use of fish and game. Primary values include recreational values, commercial values, and the use of fish and game to supplement the household's diet. There have been no studies conducted to measure the extent of these types of values in Whittier.

11. The Geographic Locations Where Those Domiciled in the Area or Community Hunt and Fish

SEE FIG. 11

Whittier residents fished primarily in Prince William Sound. During the period 1986-91, residents of Whittier hunted primarily in GMUs 13, 6, 14, 15, and 16, according to harvest ticket records (Fig. 11).

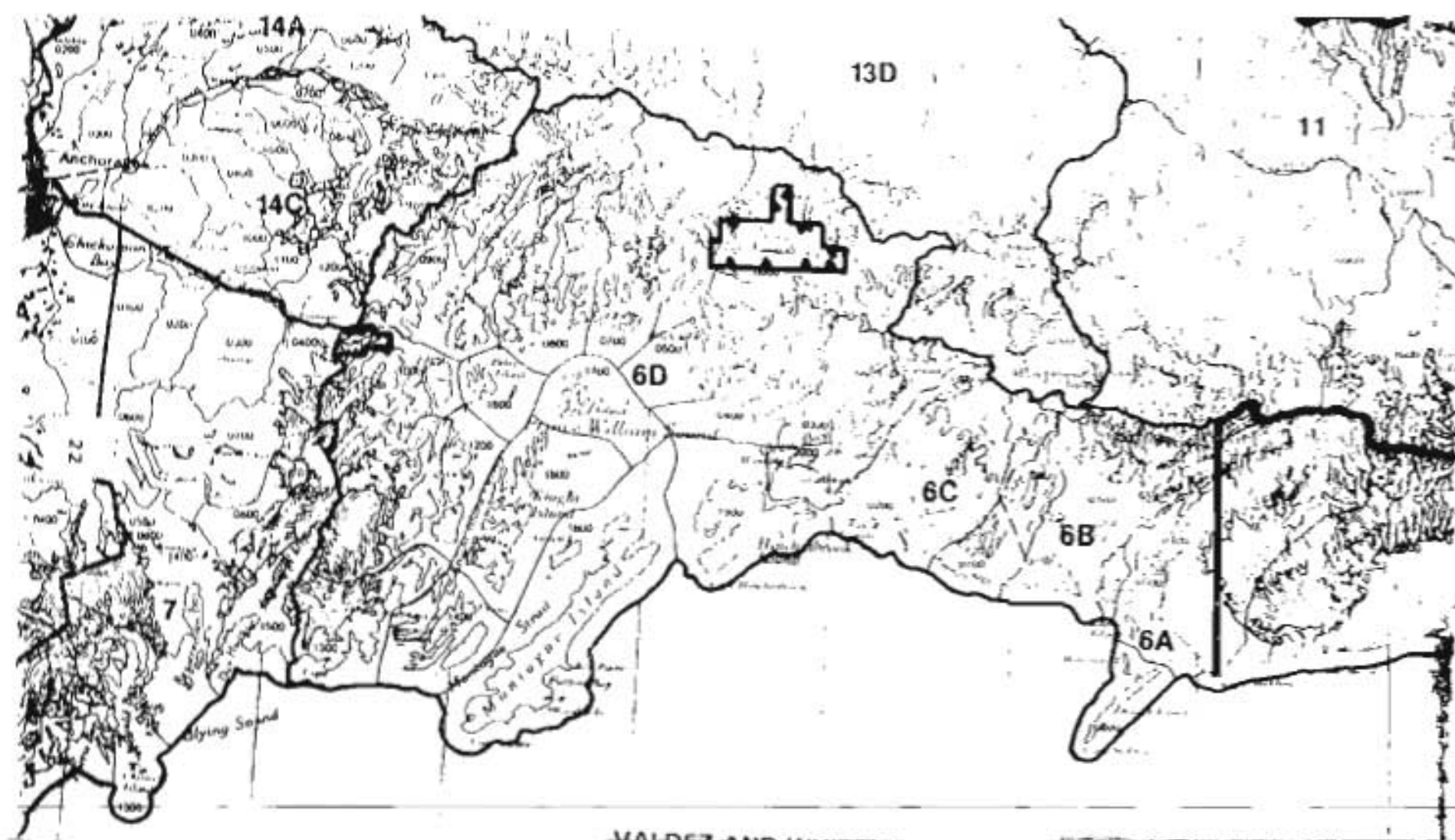
12. The Extent of Sharing and Exchange of Fish and Game by Those Domiciled in the Area or Community

SEE FIG. 7

Based on a 1991 household survey, 85 percent of Whittier households received wild foods and 66 percent gave away wild foods to other households (Fig. 7). On average, Whittier households received 4.6 kinds of wild resources and gave away 3.1 to other households. In Whittier, household with boats were able to hunt and fish in Prince William Sound; these households gave away the most variety of fish and game. For example, halibut was given away by 31 percent of households and received by 53 percent. Moose was given away by 12 percent of household and received by 42 percent. Marine invertebrates were given away by 18 percent of households and received by 44 percent. This indicates a network of sharing between households, facilitated in part by the small size of the community.

Source Materials

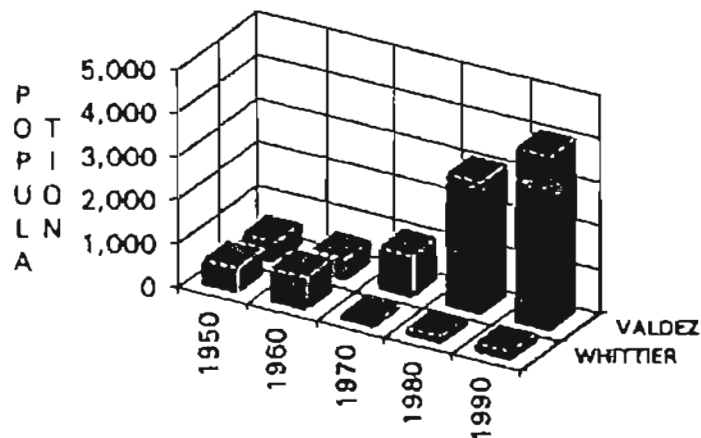
- Schroeder, Robert F., David B. Andersen, Rob Bosworth, Judith M. Morris, and John M. Wright (1987) Subsistence in Alaska: Arctic, Interior, Southcentral, Southwest, and Western Regional Summaries. Technical Paper No. 150, Division of Subsistence, Alaska Department of Fish and Game.
- Seitz, Jody, Lisa Tomrdle, and James A. Fall (1992) The Use of Fish and Wildlife in the Upper Kenai Communities of Hope, Whittier, and Cooper Landing. Division of Subsistence, Alaska Department of Fish and Game.



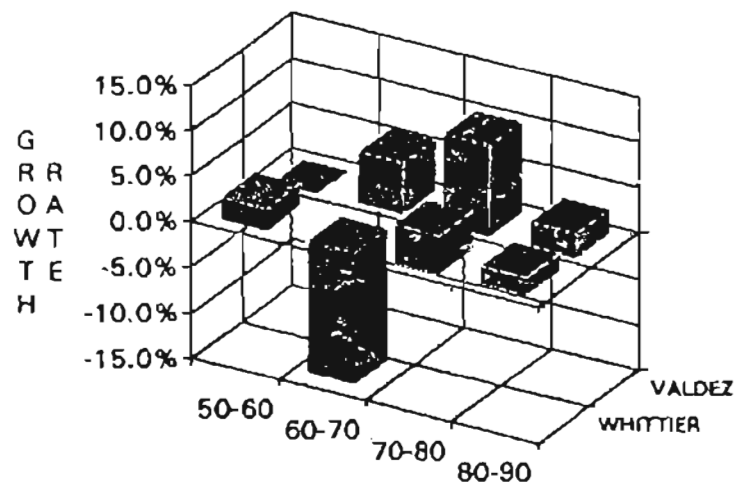
VALDEZ AND WHITTIER
NONSUBSISTENCE AREAS
(PROPOSED)

ALASKA
HABITAT

POPULATION TRENDS 1950-1990 SELECT ALASKA AREAS



MEAN ANNUAL GROWTH RATES PER DECADE, FOR VALDEZ AND WHITTIER, 1950-90



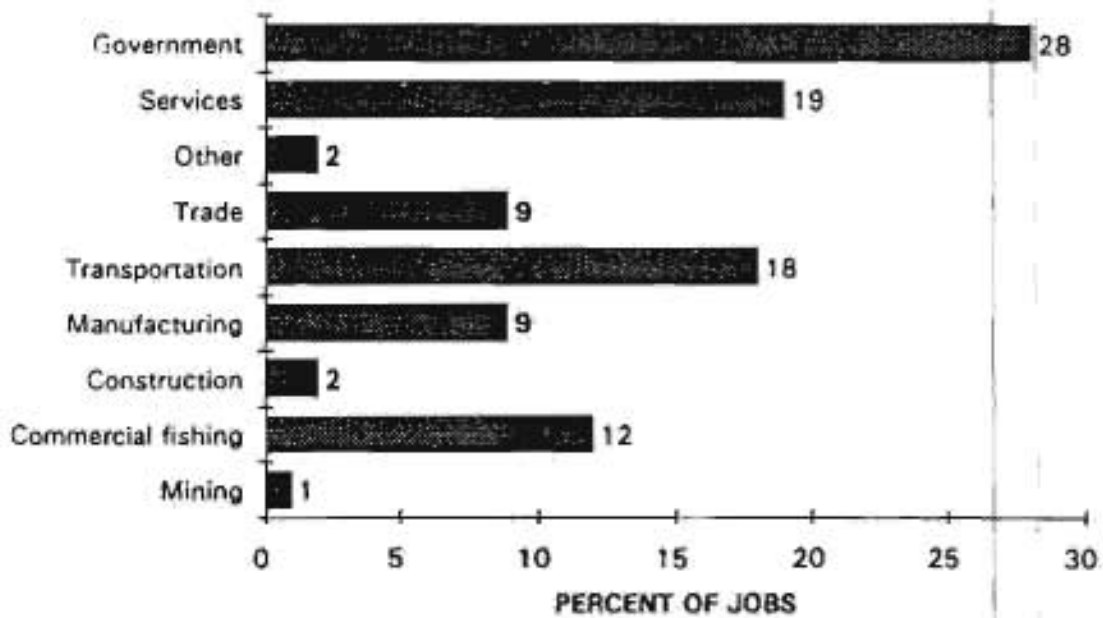
POPULATION TRENDS IN VALDEZ AND WHITTIER, 1950-1990

| | 1950 | 1960 | 1970 | 1980 | 1990 |
|----------|------|------|-------|-------|-------|
| WHITTIER | 627 | 809 | 130 | 198 | 243 |
| VALDEZ | 554 | 555 | 1,005 | 3,079 | 4,068 |

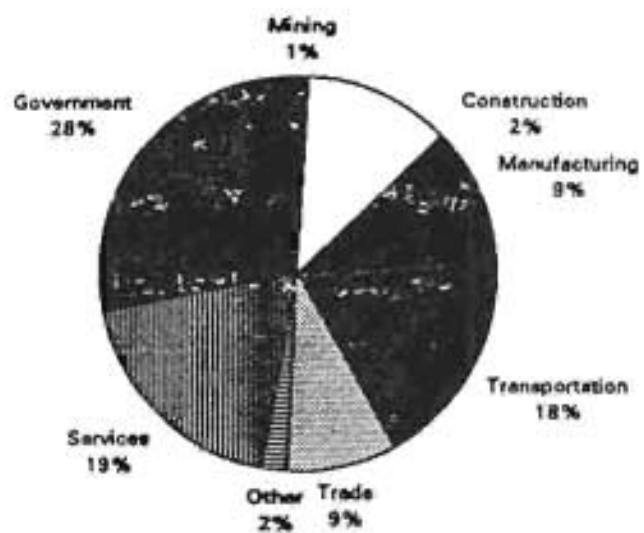
ANNUAL RATE OF CHANGE IN POPULATION, VALDEZ AND WHITTIER

| | 50-60 | 60-70 | 70-80 | 80-90 |
|----------|-------|--------|-------|-------|
| WHITTIER | 2.5% | -14.5% | 4.1% | 2.0% |
| VALDEZ | 0.0% | 5.8% | 10.2% | 2.8% |

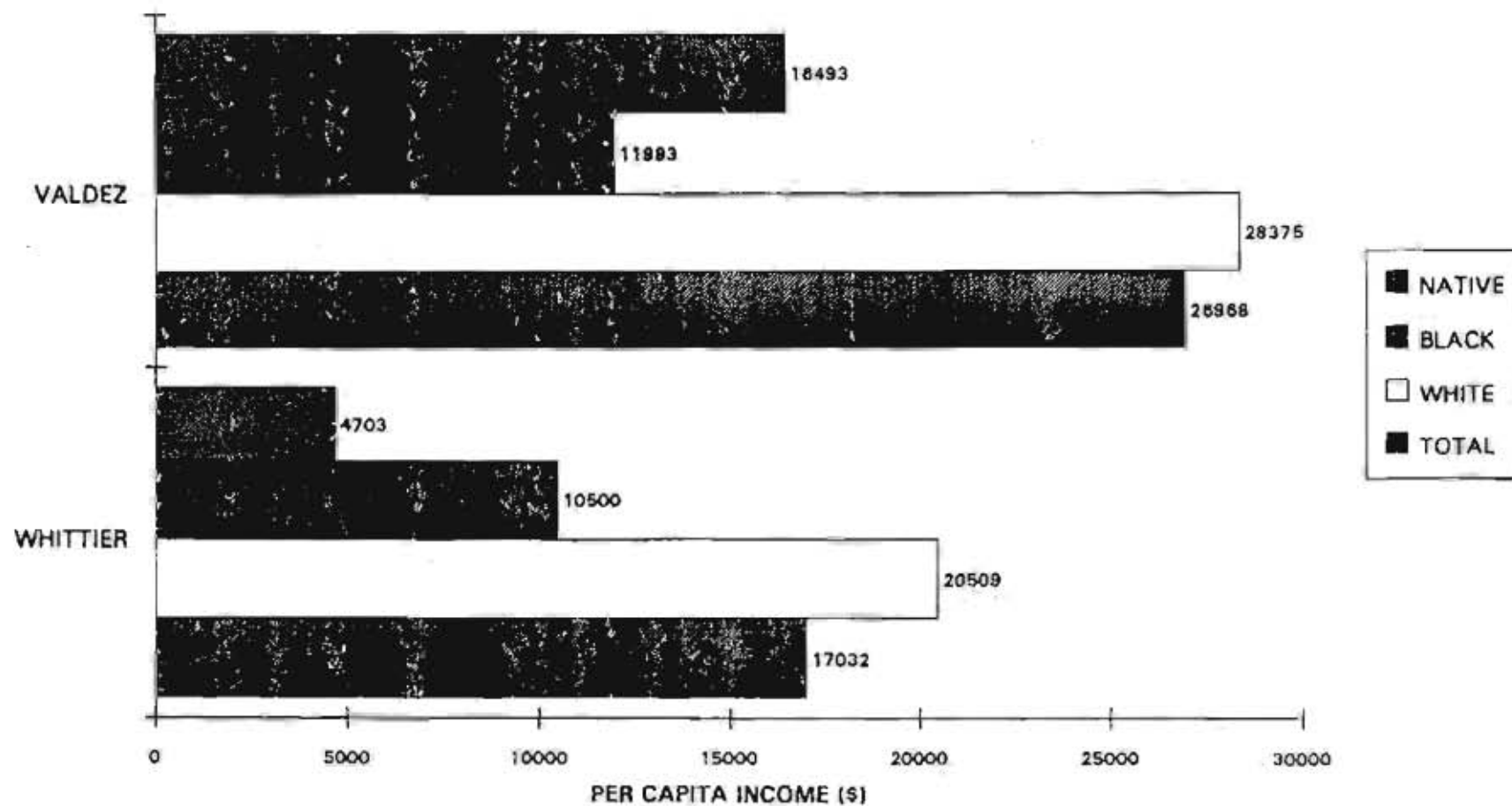
**WHITTIER WAGE EMPLOYMENT, 1990-91
PERCENT OF JOBS BY JOB CATEGORY**



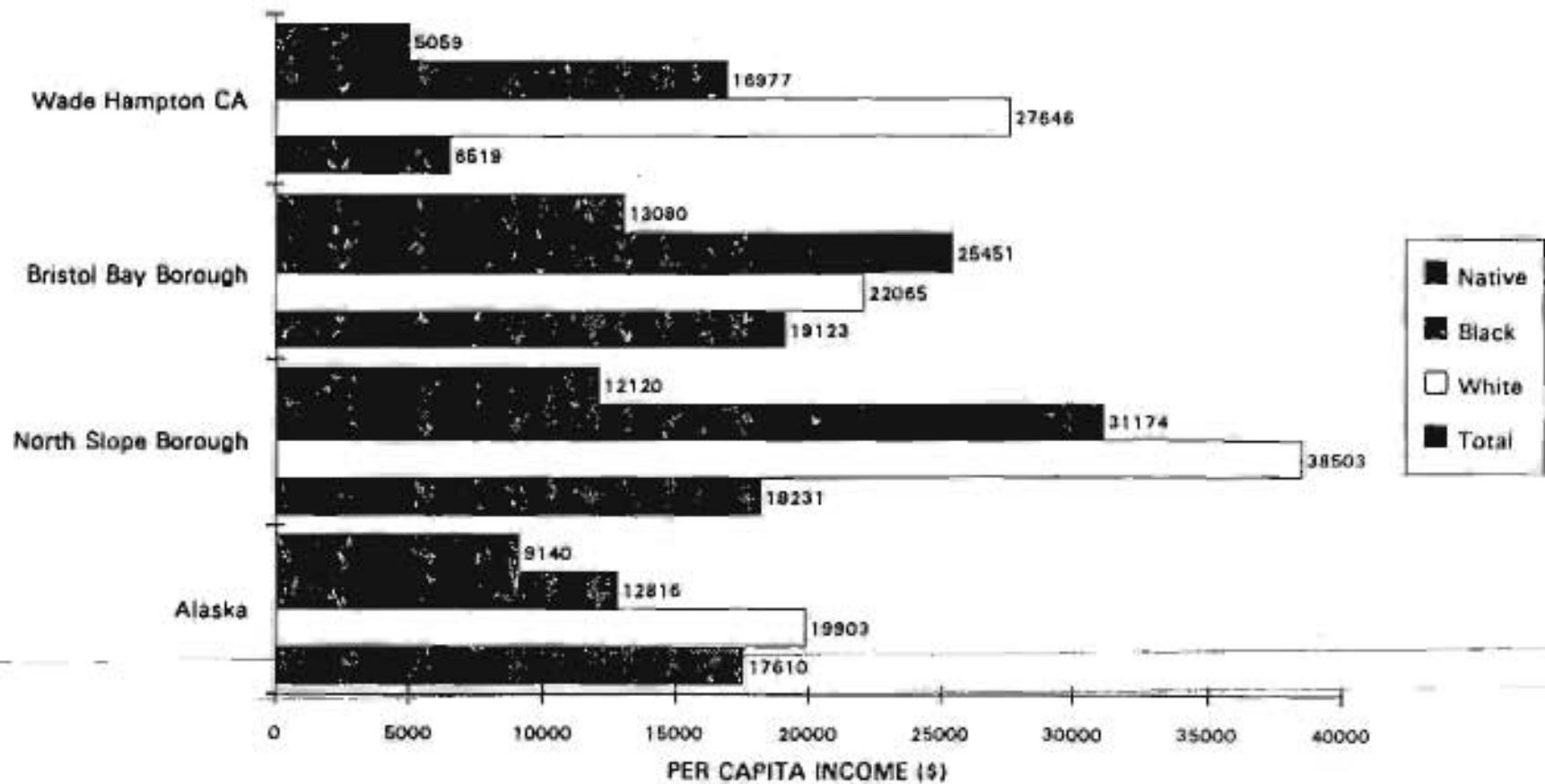
**WHITTIER WAGE EMPLOYMENT, 1990-91
PERCENT OF JOBS BY JOB CATEGORY**



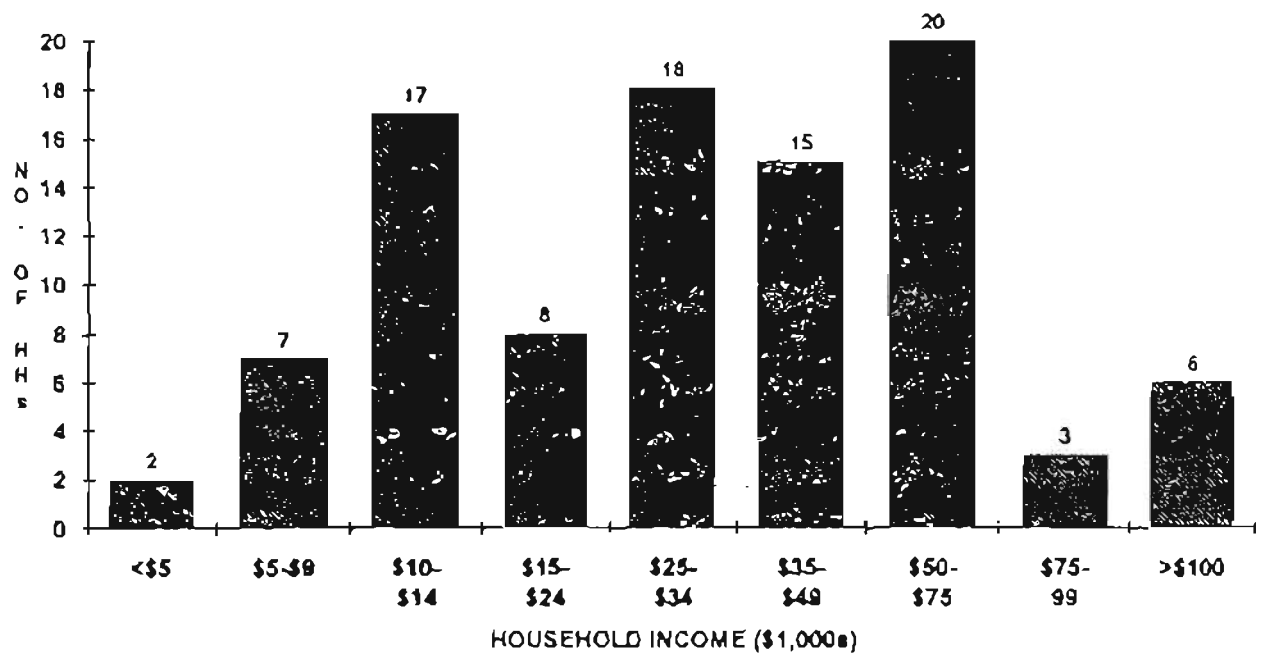
PER CAPITA INCOME BY RACE, 1989:
VALDEZ AND WHITTIER



PER CAPITA INCOME BY RACE, 1989:
ALASKA, NORTH SLOPE BOROUGH, BRISTOL BAY
BOROUGH, AND WADE HAMPTON CENSUS AREA



HOUSEHOLD INCOMES OF RESIDENTS,
WHITTIER, 1989



PERCENT OF WHITTIER HOUSEHOLDS
USING, HARVESTING, GIVING, AND RECEIVING
WILD RESOURCES, 1990-91

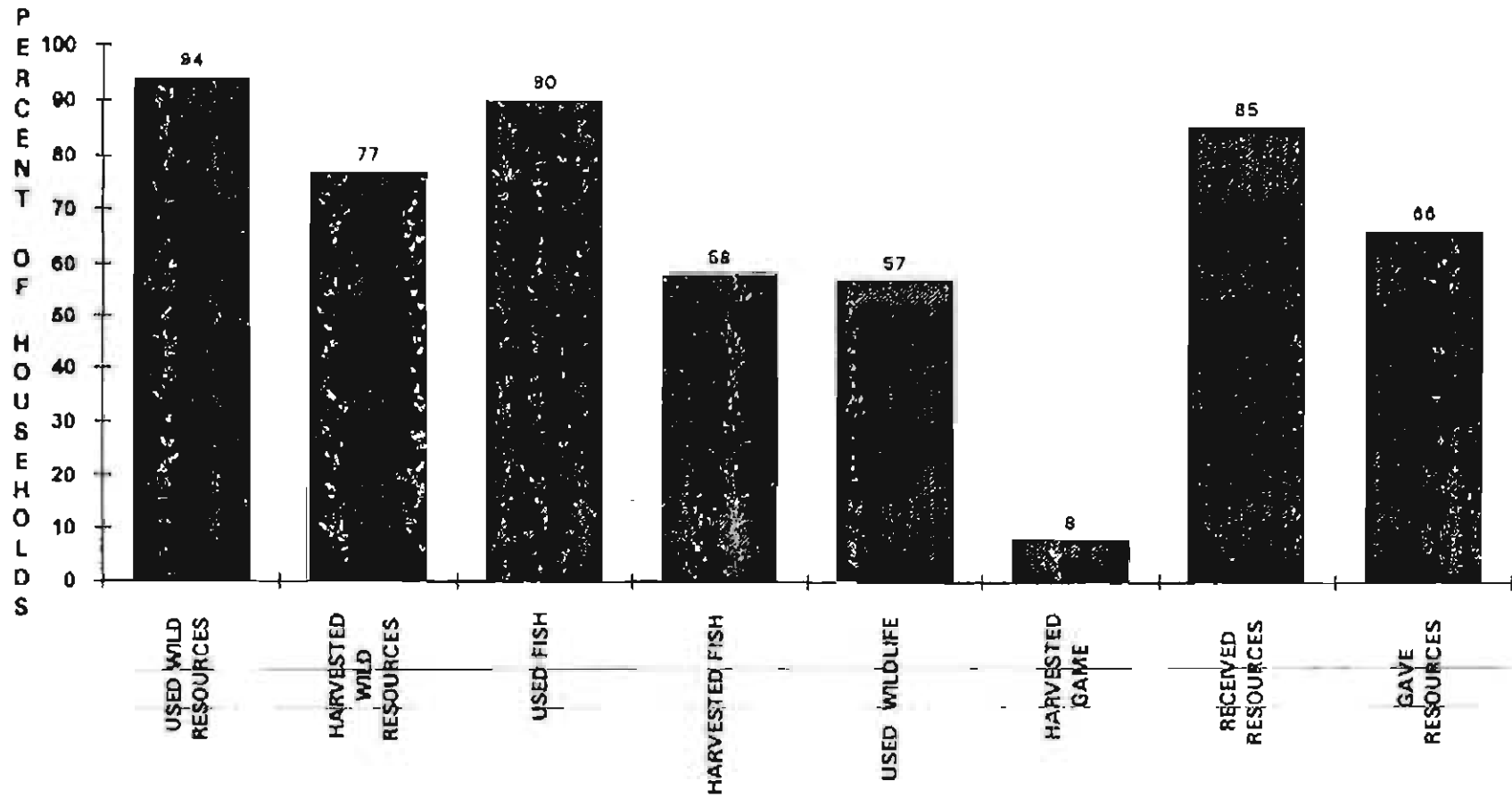
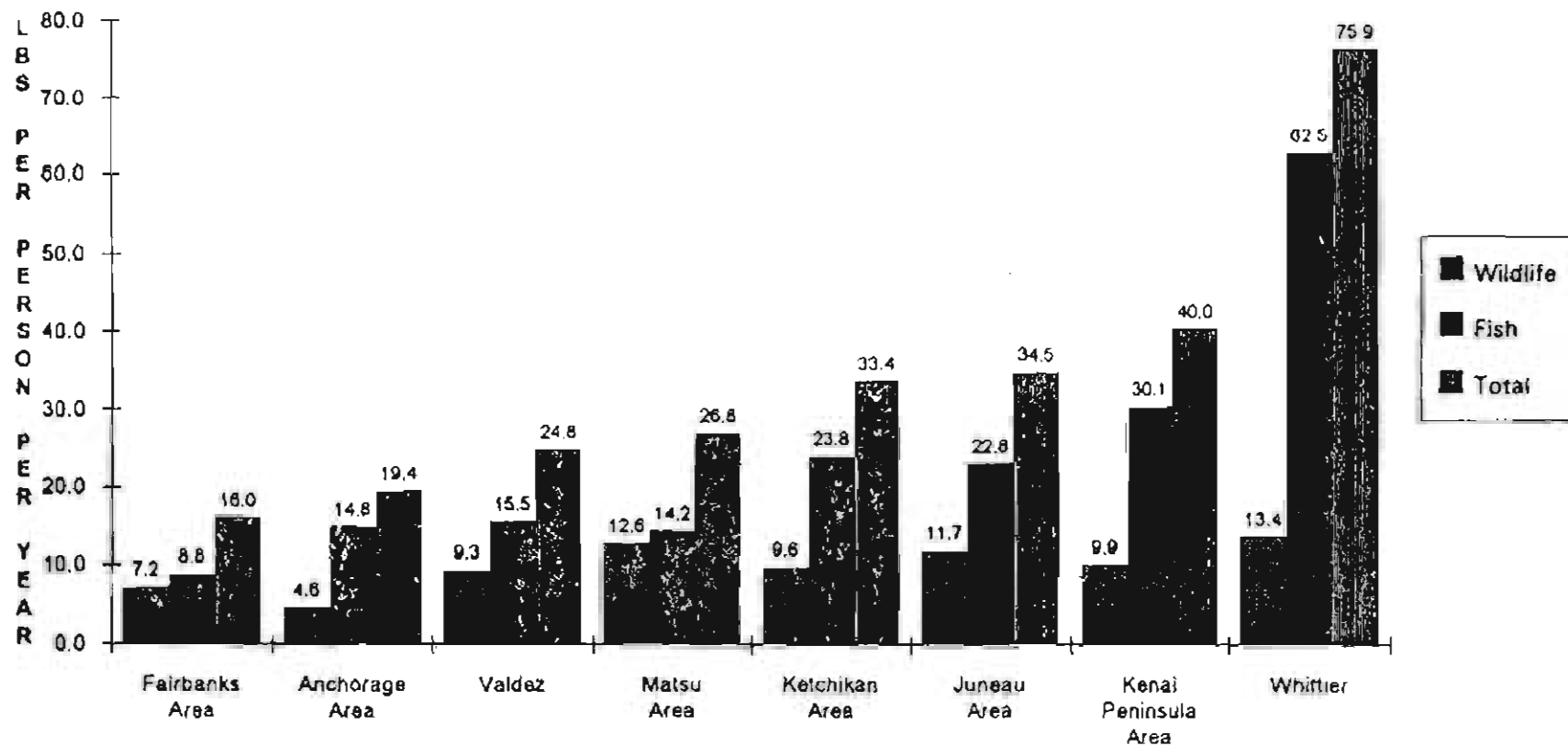
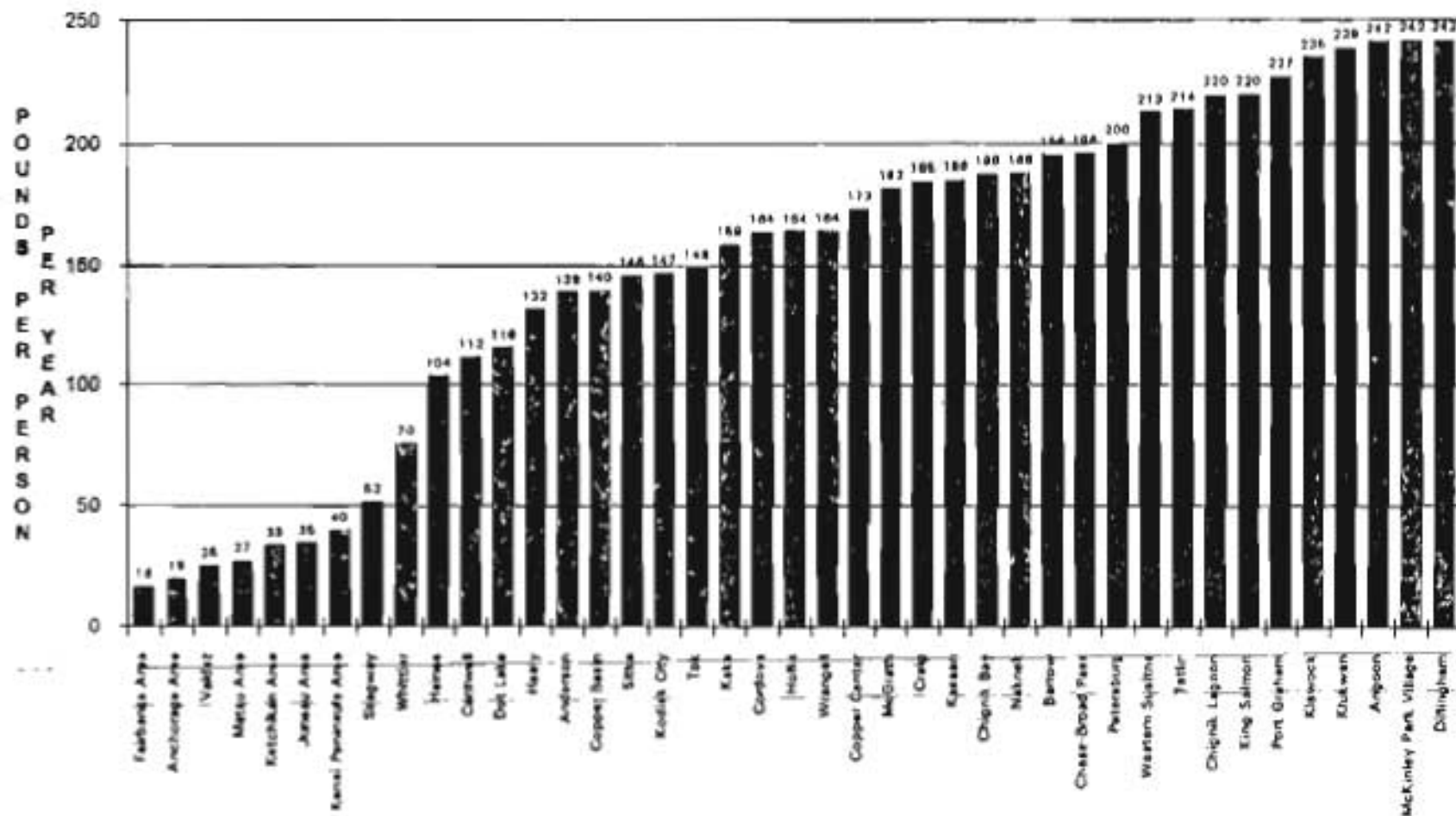


FIG. 7

**FISH AND WILDLIFE HARVEST LEVELS
BY RESIDENTS OF SELECTED ALASKA AREAS
(LBS PER PERSON PER YEAR;
NON-COMMERCIAL HARVESTS)**



WILD FOOD HARVESTS BY COMMUNITY
POUNDS PER PERSON PER YEAR
SOURCE: DIVISION OF SUBSISTENCE, ADF&G



WILD FOOD HARVESTS BY COMMUNITY
PERCENT OF COMMUNITY PROTEIN REQUIREMENTS
(44 GRAMS PER PERSON PER DAY, OR .422 LBS OF WILD FOODS)
SOURCE: DIVISION OF SUBSISTENCE, ADF&G

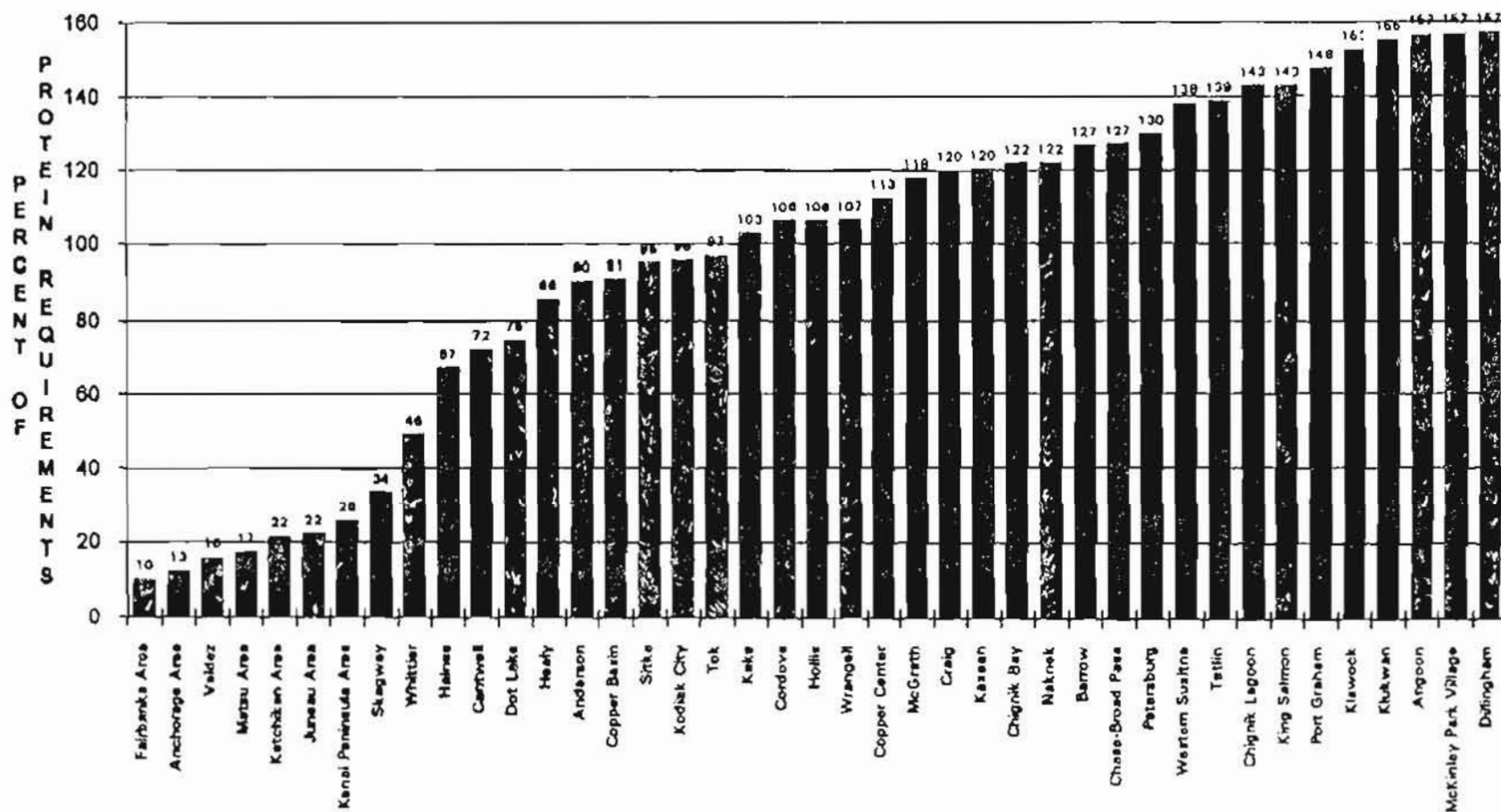


FIG. 10

HUNTING LOCATIONS OF WHITTIER RESIDENTS, NUMBER OF HUNTERS, 1986-91



HUNT LOCATIONS FOR RESIDENTS OF WHITTIER AREA 1986-91

NUMBER OF HUNTERS ("SUCCESSFUL HUNTERS") BY GAME MANAGEMENT UNIT

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
|-------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Black Bear* | | | | | | 3 | | | | | | | | | | | | | | | | | | | | |
| Brown Bear* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Caribou | | | | | | | | | | 2 | | 5 | | | | | | | | | | | | | | |
| Elk | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Goat | | | | | 4 | | | | | | | | | | 5 | | | | | | | | | | | |
| Bison | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Moose | | | | | | | | | 1 | | | 5 | 7 | | | 5 | 2 | | 3 | | | | | | | |
| Sheep | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Muskox | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 1 | 0 | 2 | 0 | 10 | 7 | 5 | 5 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Proposal No. 5 Valdez Nonsubsistence Area

Area Description

SEE FIG. 1

The proposed Valdez Nonsubsistence Area includes Game Management Unit 6 within the Valdez City limits.

Historic Overview

SEE FIG. 2

A history of the Prince William Sound region is contained in Schroeder et al 1987:633-653. Aboriginal occupation of the Prince William Sound subregion dates back at least 3,000 years. At the time of European contact (about 1741), the region's inhabitants were members of Eyak Indian and Chugach Eskimo cultural groups. The economy of the region was dependent on fishing and hunting for subsistence uses and trade. Russian contact had profound impacts on the Native population, which were reduced by epidemics and brought into trade networks for sea otter and seal hides throughout the 1800s. Gold discoveries on the upper Yukon spurred development of an "all-American" route to the Klondike over the Valdez glacier. Commercial fishing for salmon and other species developed around the turn of the century in the area. Copper mining also occurred in the region.

Valdez was founded in 1887-1898 as a debarkation point for Klondike gold seekers. A wagon road from Valdez to Fairbanks, the forerunner of the Richardson Highway, was completed in 1910. Valdez became a transportation center because of its ice-free harbor. Fish processing has played a role in the town's growth. The town was rebuilt after the 1964 earthquake. After Valdez was chosen as the terminus of the trans-Alaska pipeline, its population tripled in the 1970s. Between 1950 to 1990 Valdez grew from 554 people to 4,068 people (Fig. 2).

Twelve Factors

1. The Social and Economic Structure

The social and economic structure of Valdez has been characterized as a type of "industrial-capitalism", a socioeconomic system common to the lower 48 which has developed in Alaska. This social and economic structure is distinct from another type of socioeconomic system in Alaska, called a "mixed, subsistence-cash economy", where the domestic household sector is a major producer and distributor of food. Industrial capital systems generally have large wage sectors, which provide the major means of livelihood to residents. In an industrial-capital system, households are not major producers or distributors of an area's food supply. Food production

by households provides a very small portion of the community's food, but may be of economic significance to those households actively involved in hunting and fishing. Most of the area's food and other goods and services are provided by businesses organized and financed separately from the household unit. Production and distribution of goods and services are organized by market forces or by government. Fishing and hunting by residents are primarily conducted as part of recreational or commercial industries. The specific characteristics of the Valdez socioeconomic system are described below.

2. The Stability of the Economy

SEE FIG. 2

The economy of Valdez has shown growth during the past four decades, primarily due to its selection as the terminus of the oil pipeline from Prudhoe Bay. One indicator of this growth is the population increase in the area (see Fig. 2). The mean annual rates of growth for Valdez were 0.0 percent (1950s), 5.8 percent (1960s), 10.2 percent (1970s), and 2.8 percent (1980s) (Fig. 3).

Fig. 3 shows recent trends in civilian wage employment in Valdez during the last decade. The number of wage-paying jobs was essentially stable from 1980 to 1988 (between 1,696 and 1,884 jobs), with a sharp increase to 2,886 jobs in 1989 due to jobs created in response to the EXXON Valdez oil spill, followed by a decrease to 2,225 jobs in 1990 and 2,183 jobs in 1991.

3. The Extent and Kinds of Employment for Wages, Including Full-Time, Part-Time, Temporary, and Seasonal Employment

SEE FIGS. 4, 5, 6

In 1991, most wage-paying jobs in Valdez were in transportation (31 percent) and government (27 percent) (Fig. 4). This reflects the importance of shipping oil in the local economy. Other jobs were in services (14 percent), manufacturing (13 percent), trade (10 percent), construction (2 percent), and the military (2 percent).

In 1991, there were about 48 limited entry commercial fishing permits fished by persons giving their residence as Valdez (Fig. 5). In 1991, Valdez commercial fishers sold fish with a gross value of about \$887,809.

Unemployment rates were 11.6 percent in the Valdez-Cordova Census Area in April 1992 (Fig. 6). The Valdez-Cordova Census Area includes Valdez, Cordova, other Prince William Sound communities, and Copper River Basin communities. This compares to the Alaska rate of 9.2 percent.

4. The Amount and Distribution of Cash Income Among Those Domiciled in the Area or Community

SEE FIG. 7, 8, 9, 10

In 1989, per capita income in Valdez (\$26,968) was above the state's average (\$17,610) (Fig. 7 and 8). According to U.S. Census income distribution records, incomes were distributed unevenly by racial or cultural group membership (Fig. 7). These income distributions are shown in Fig. 9.

In 1989, 11.8 percent of the residents of the Valdez-Cordova Census Area lived in households earning less than the federal poverty standards (Fig. 10). This rate is below the Alaska average (12.5 percent), and substantially below rates in some Alaska areas, like the Dillingham Census Area (30.9 percent).

5. The Cost and Availability of Goods and Services To Those Domiciled in the Area or Community

SEE FIG. 11

Valdez has a well-developed system of commerce through which goods are provided, however, the variety is restricted and the prices are higher in Valdez because of transportation costs and relatively small volume. Food prices can be used as an index of cost of living compared with other Alaska areas (Fig. 11). The cost of food index in Valdez is about 23 percent higher than Anchorage.

6. The Variety of Fish and Game Species Used by Those Domiciled in the Area or Community

SEE FIGS. 12 AND 13

The residents of Valdez use a variety of fish and wildlife, as shown in Figs. 12 and 13. Big game species used include black bear, brown bear, caribou, goat, moose, sheep, and deer (Fig. 12). Fish species used include chinook, coho, sockeye, pink, chum, halibut, and varieties of trout, other freshwater fish, and shellfish (Fig. 13).

7. The Seasonal Cycle of Economic Activity

Year-round employment in wage-paying jobs is the norm for workers in Valdez. However, there is a seasonal increase in work related to tourism and commercial fishing during summer.

8. The Percentage of Those Domiciled in the Area or Community Participating in Hunting and Fishing Activities or Using Wild Fish and Game

SEE FIGS. 14, 19

A substantial percent of the residents of Valdez fish with rod and reel. In Valdez, about 44-68 percent of the population fished with rod and reel during 1989-91, based on surveys of anglers (Fig. 14). In 1991, 788 hunting/hunting combination licenses were sold to persons living in Valdez (about 19.4 percent of the population). There are no significant non-commercial net fisheries for salmon or other fish in the Valdez vicinity. Some Valdez residents travel to Chitina in the Copper Basin to dip net salmon.

9. The Harvest Levels of Fish and Game by Those Domiciled in the Area or Community

SEE FIGS. 15, 16

Per capita harvest levels of fish and game in Valdez were among the lowest in the state (Fig. 15 and 16). The total annual per capita harvest, based on harvest tickets, permits, and an annual sport fish survey, was estimated to be 24.8 lbs in Valdez (15.5 lbs of fish, and 9.3 lbs of game). This was the third lowest of Alaska communities where harvest estimates are available. The wild food harvest contained 16 percent of the community's protein requirements (Fig. 17). Low food production rates by households are characteristic of an industrial-capital system, where most foods are produced and distributed through commercial businesses and purchased by households with wage earnings.

The numbers of big game and fish harvested by residents of Valdez, broken out by species are shown in Figs. 12 and 13.

10. The Cultural, Social, and Economic Values Associated with the Taking and Use of Fish and Game

SEE FIG. 18

In Valdez, the predominant values associated with fish and wildlife harvests are recreational. Fishing and hunting are periodic outdoor activities, valued as breaks from the economic work routine, embodying sport ("fair chase") ethics, and producing wild foods that are valued for their taste and healthful qualities. For many, fishing and hunting are valued as high quality outdoor experiences which supplement the household's diet. For residents directly employed in commercial fishing and outdoor recreational industries (such as recreational retail outlets, fish guides, game guides, charter air transporters, outfitters, and tour guides), values are commonly commercial in nature. That is, the use of fish and hunt produces monetary income for the household, as well as all or some of the recreational values listed above. For some Valdez residents, values associated with fish and wildlife are related to environmental awareness and nonconsumptive uses (such as wildlife viewing).

One indicator of the value orientations of residents are the types and numbers of voluntary associations dealing with fish and wildlife in Valdez appearing on mailing lists compiled by ADF&G (see Fig. 18). As shown in Fig. 18, among the voluntary associations listed for Valdez, there are at least 2 associated with recreational-sport fishing or hunting and 1 associated with the environment and/or nonconsumptive uses.

11. The Geographic Locations Where Those Domiciled in the Area or Community Hunt and Fish

SEE FIG. 19

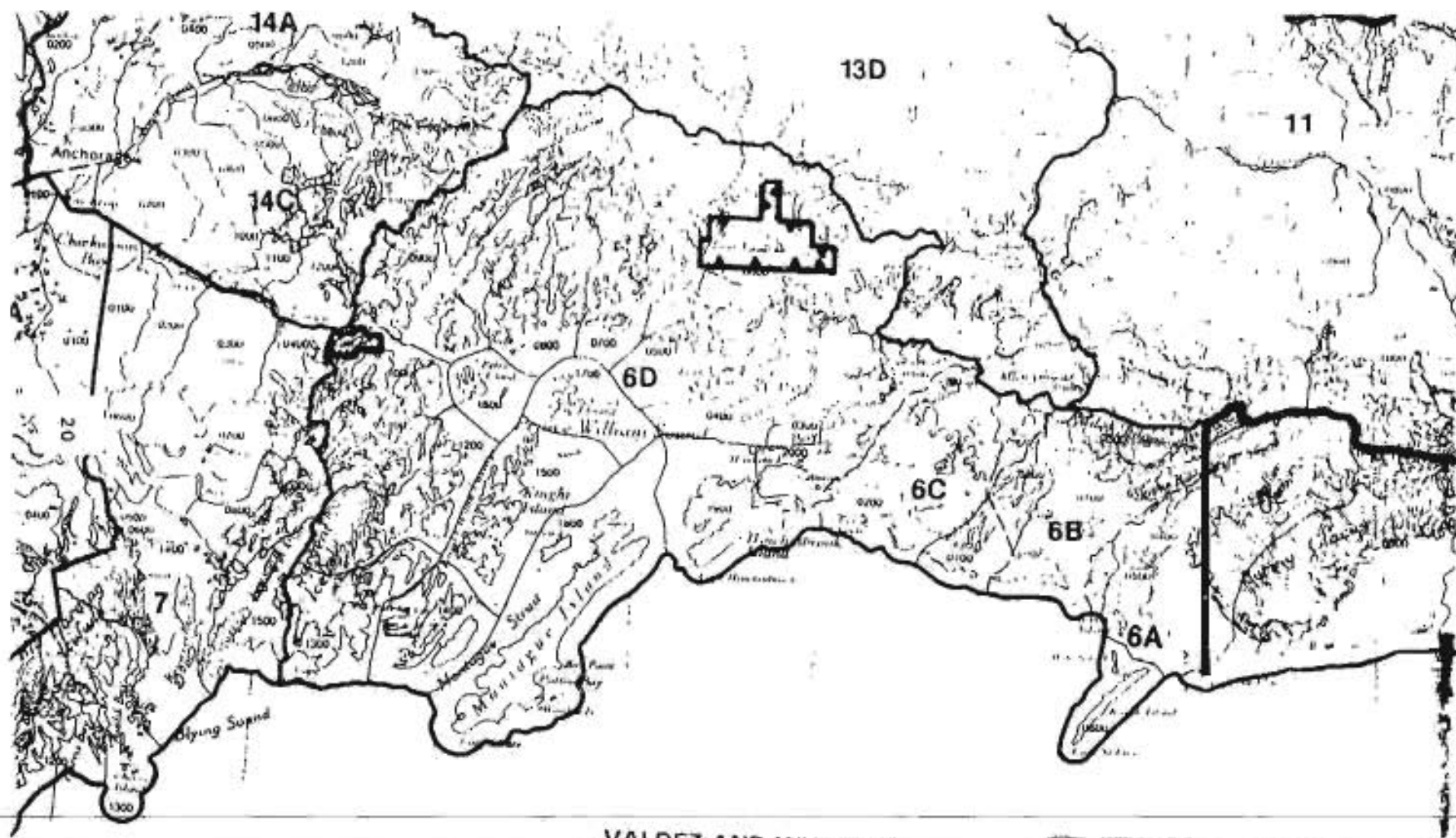
During the period 1986-91, residents of Valdez hunted primarily in GMUs 13, 6, 20, 11, and 12. Other than most of Unit 6 (Prince William Sound), these GMUs are accessible from Valdez by road (Fig. 19).

12. The Extent of Sharing and Exchange of Fish and Game by Those Domiciled in the Area or Community

The absolute amount of wild foods shared on a per capita basis is probably relatively small in Valdez because of the relatively small amounts harvested. However, no estimate of the degree of sharing and exchange has ever been made in Valdez.

Source Materials

Schroeder, Robert F., David B. Andersen, Rob Bosworth, Judith M. Morris, and John M. Wright (1987) Subsistence in Alaska: Arctic, Interior, Southcentral, Southwest, and Western Regional Summaries. Technical Paper No. 150, Division of Subsistence, Alaska Department of Fish and Game.

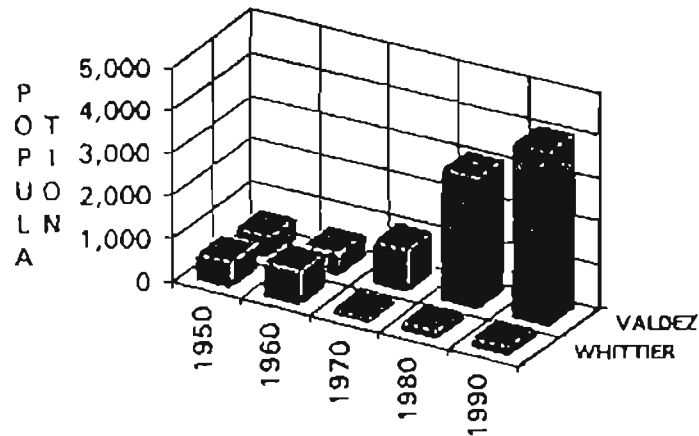


VALDEZ AND WHITTIER
NONSUBSISTENCE AREAS
(PROPOSED)

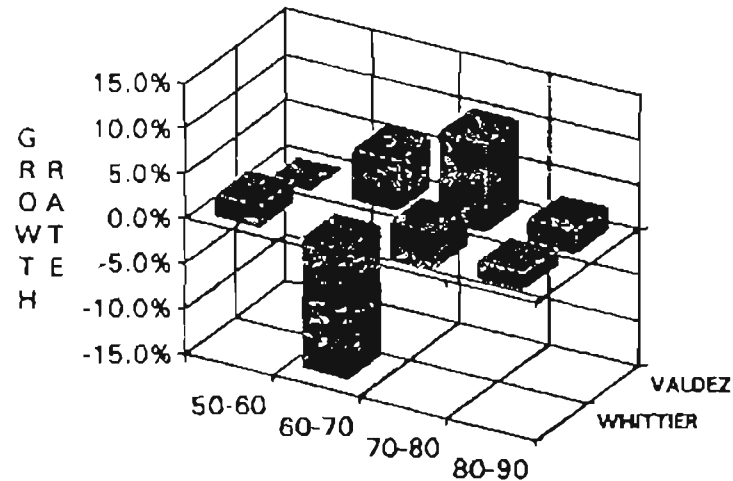
ALASKA
HABITAT

FIG. 1

POPULATION TRENDS 1950-1990 SELECT ALASKA AREAS



MEAN ANNUAL GROWTH RATES PER DECADE, FOR VALDEZ AND WHITTIER, 1950-90



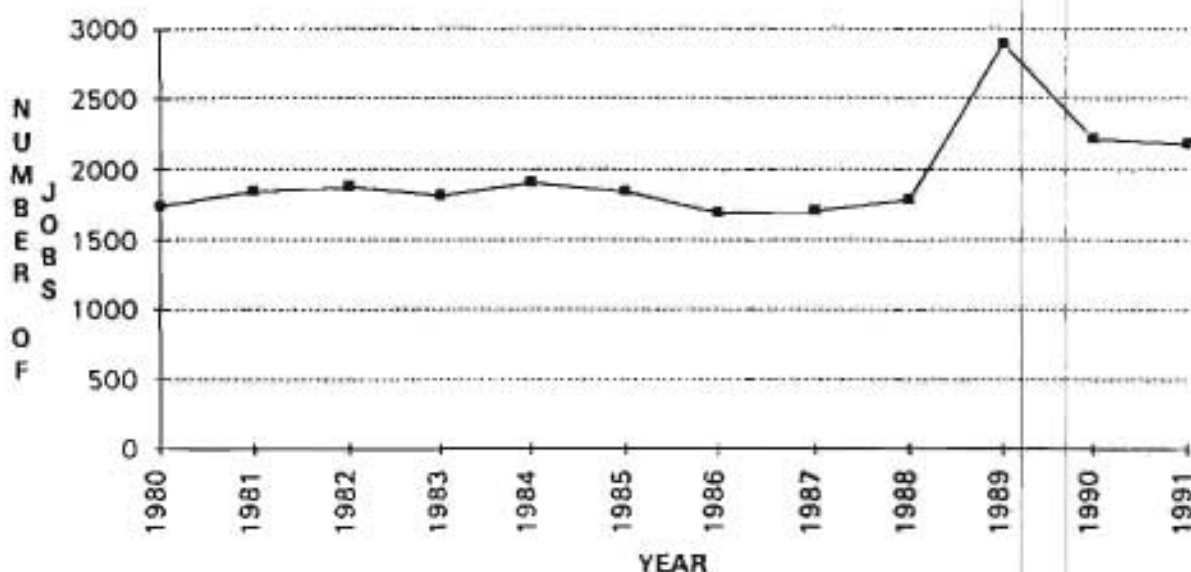
POPULATION TRENDS IN VALDEZ AND WHITTIER, 1950-1990

| | 1950 | 1960 | 1970 | 1980 | 1990 |
|----------|------|------|-------|-------|-------|
| WHITTIER | 627 | 809 | 130 | 198 | 243 |
| VALDEZ | 554 | 555 | 1,005 | 3,079 | 4,068 |

ANNUAL RATE OF CHANGE IN POPULATION, VALDEZ AND WHITTIER

| | 50-60 | 60-70 | 70-80 | 80-90 |
|----------|-------|--------|-------|-------|
| WHITTIER | 2.5% | -14.5% | 4.1% | 2.0% |
| VALDEZ | 0.0% | 5.8% | 10.2% | 2.8% |

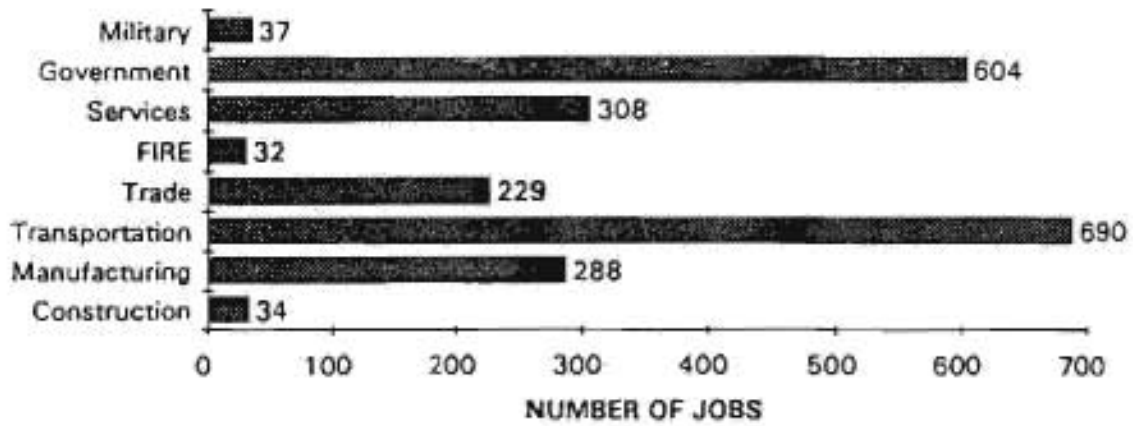
**VALDEZ
CIVILIAN WAGE EMPLOYMENT, 1980-91
NUMBER OF JOBS**



VALDEZ WAGE EMPLOYMENT, 1980-1991: NUMBER OF JOBS BY JOB CATEGORY
SOURCE: ALASKA DEPARTMENT OF LABOR, RESEARCH AND ANALYSIS SECTION

| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|----------------|------|------|------|------|------|------|------|------|------|-------|------|------|
| Mining | 0 | 87 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Construction | 226 | 196 | 181 | 116 | 153 | 112 | 59 | 39 | 38 | 23 | 26 | 34 |
| Manufacturing | 9 | 10 | 70 | 85 | 155 | 171 | 188 | 200 | 206 | 261 | 247 | 288 |
| Transportation | 449 | 488 | 504 | 481 | 456 | 416 | 373 | 374 | 388 | 1,129 | 563 | 690 |
| Trade | 105 | 135 | 148 | 157 | 161 | 155 | 121 | 144 | 175 | 237 | 265 | 229 |
| FIRE | 36 | 28 | 23 | 20 | 22 | 20 | 20 | 18 | 15 | 24 | 30 | 32 |
| Services | 242 | 207 | 257 | 218 | 233 | 251 | 253 | 264 | 294 | 462 | 346 | 308 |
| Government | 680 | 698 | 704 | 745 | 730 | 725 | 686 | 674 | 673 | 751 | 749 | 604 |
| Military | 109 | . | . | . | . | . | . | . | . | . | 37 | 37 |
| Total Civilian | 1746 | 1848 | 1884 | 1822 | 1909 | 1850 | 1696 | 1712 | 1789 | 2886 | 2225 | 2183 |

**VALDEZ
WAGE EMPLOYMENT, 1991
NUMBER OF JOBS BY JOB CATEGORY**



**VALDEZ WAGE EMPLOYMENT, 1991
PERCENT OF JOBS BY JOB CATEGORY**

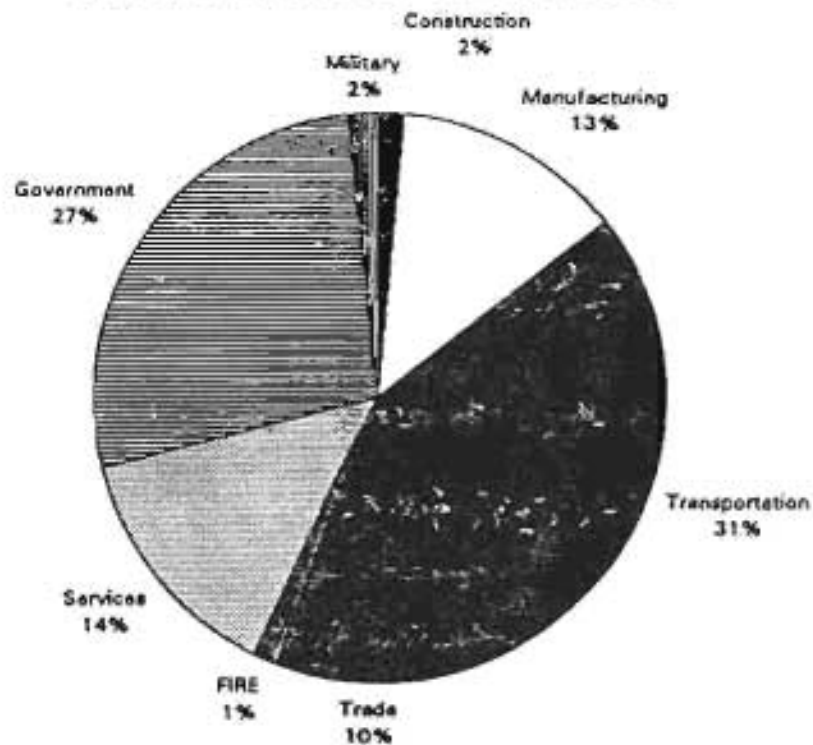


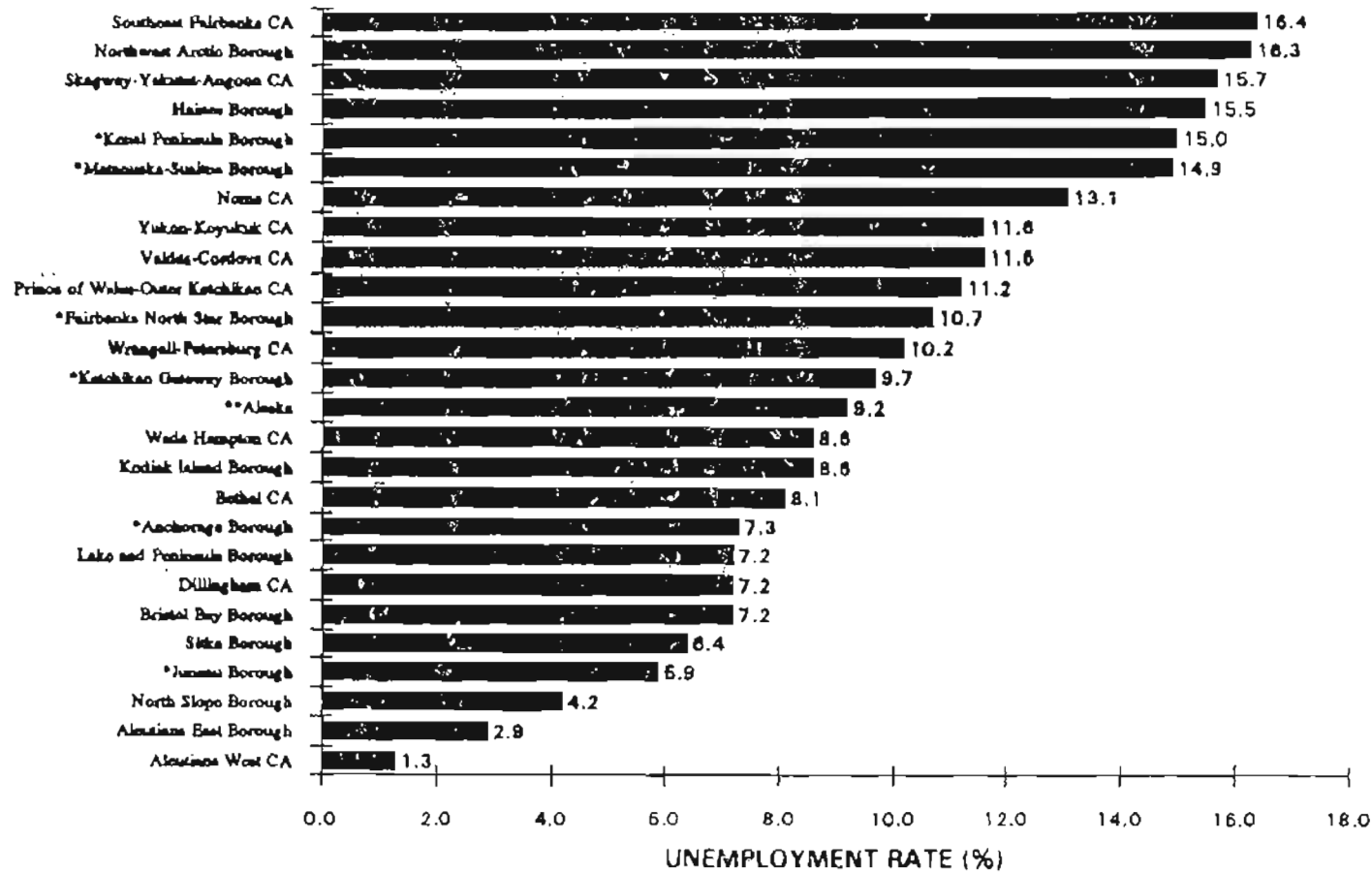
FIG. 4

COMMERCIAL FISHING BY RESIDENTS OF VALDEZ AND WHITTIER, 1991

Source: Commercial Fisheries Entry Commission

| Place | Number of People | Number of Permits Fished | Pounds | Estimated Gross Earnings |
|----------|---------------------|-----------------------------|------------|-----------------------------|
| Valdez | 33 | 48 | 3,529,169 | \$887,809 |
| Whittier | 454 | 719 | 69,565,627 | \$23,520,432 |

UNEMPLOYMENT RATES BY ALASKA AREA, APRIL 1992



PER CAPITA INCOME BY RACE, 1989:
VALDEZ AND WHITTIER

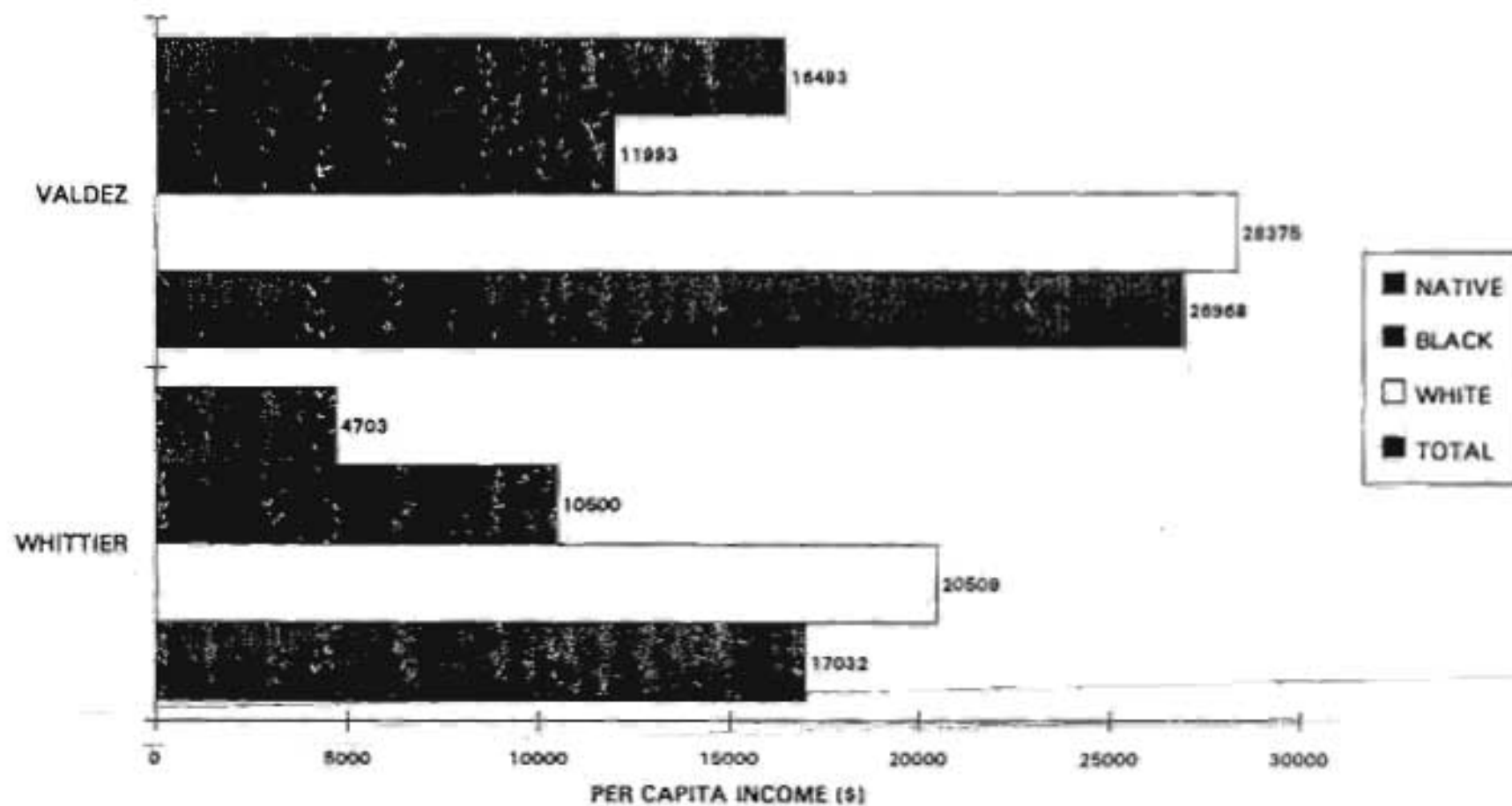
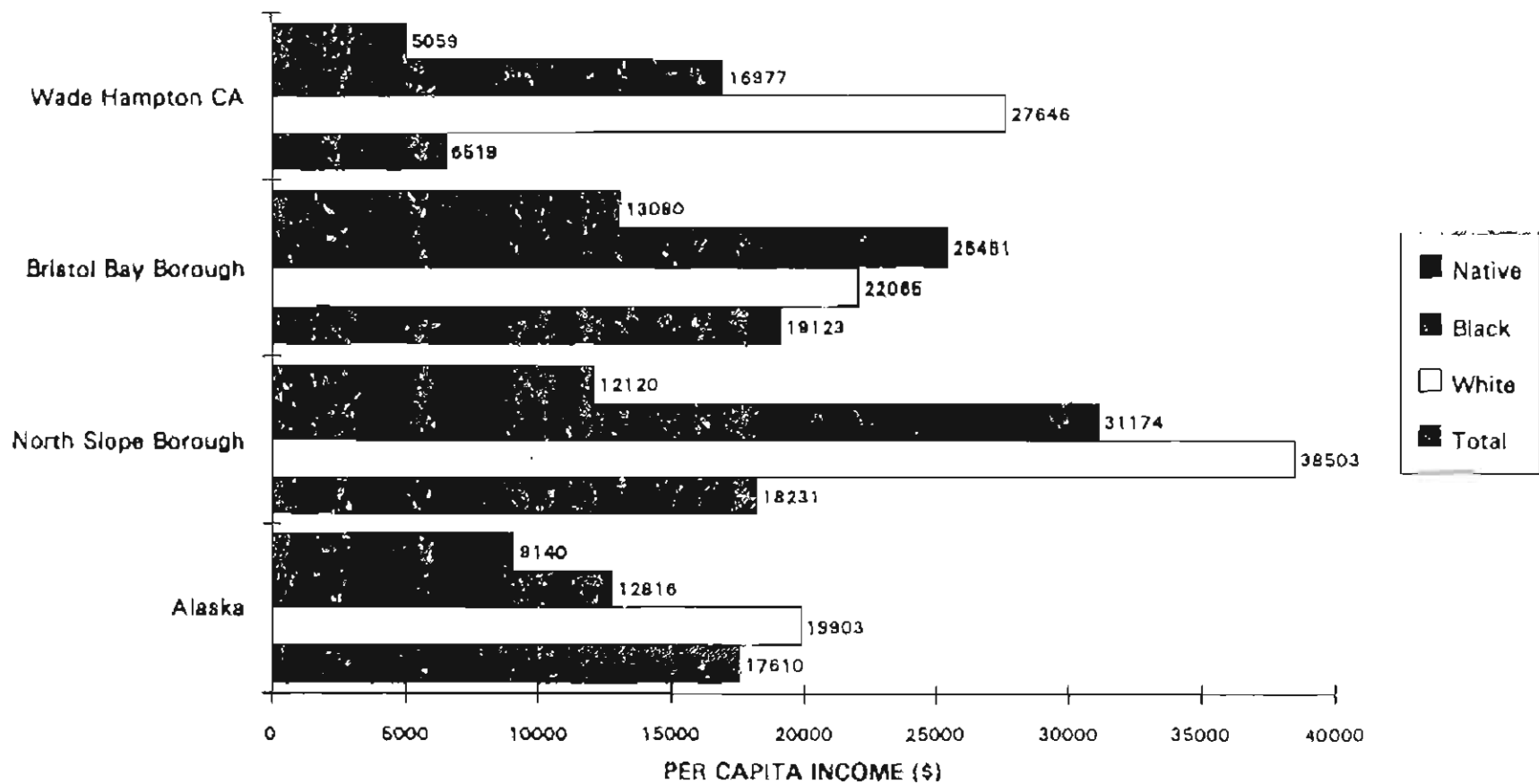


FIG. 7

PER CAPITA INCOME BY RACE, 1989:
ALASKA, NORTH SLOPE BOROUGH, BRISTOL BAY
BOROUGH, AND WADE HAMPTON CENSUS AREA



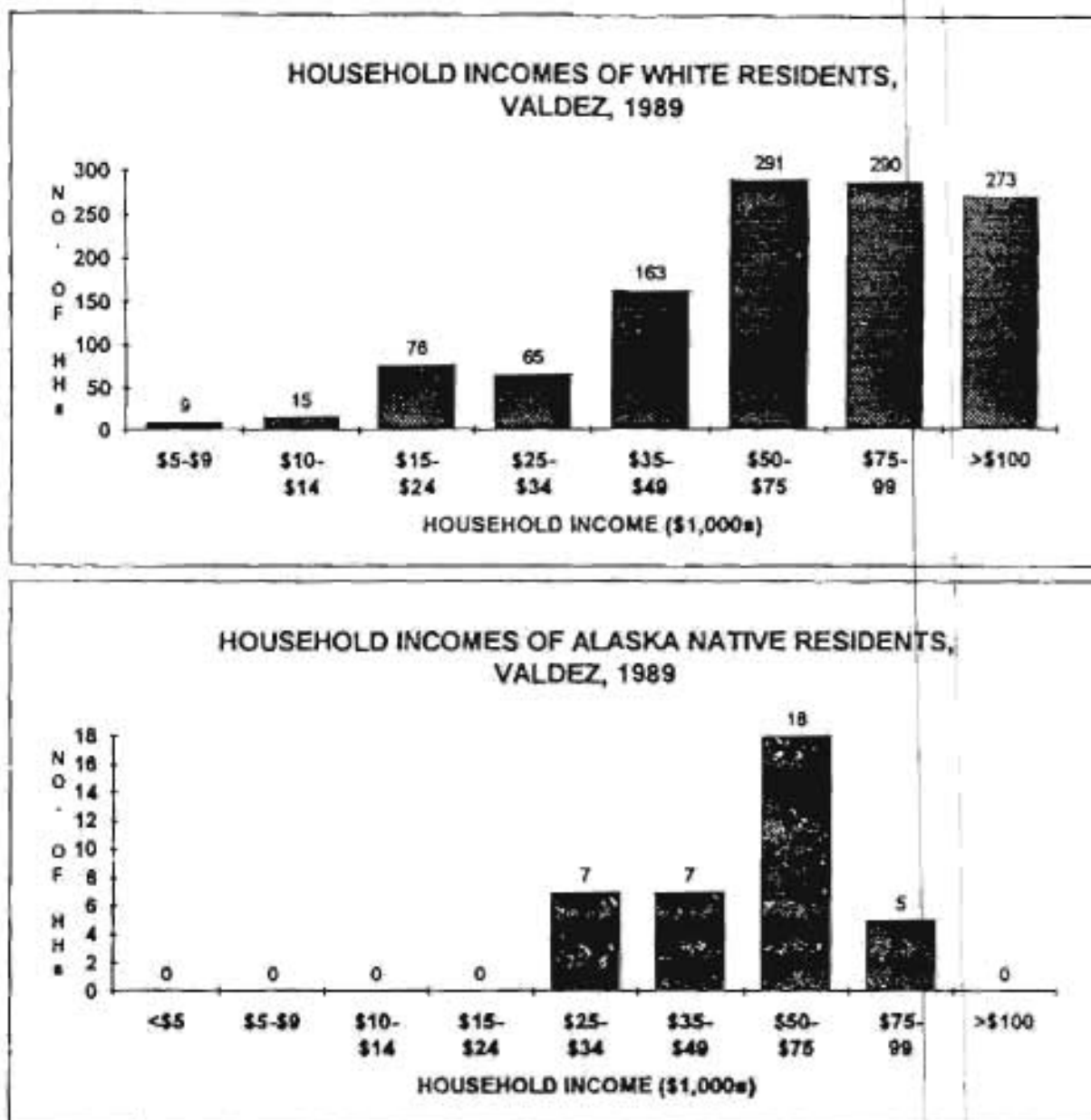
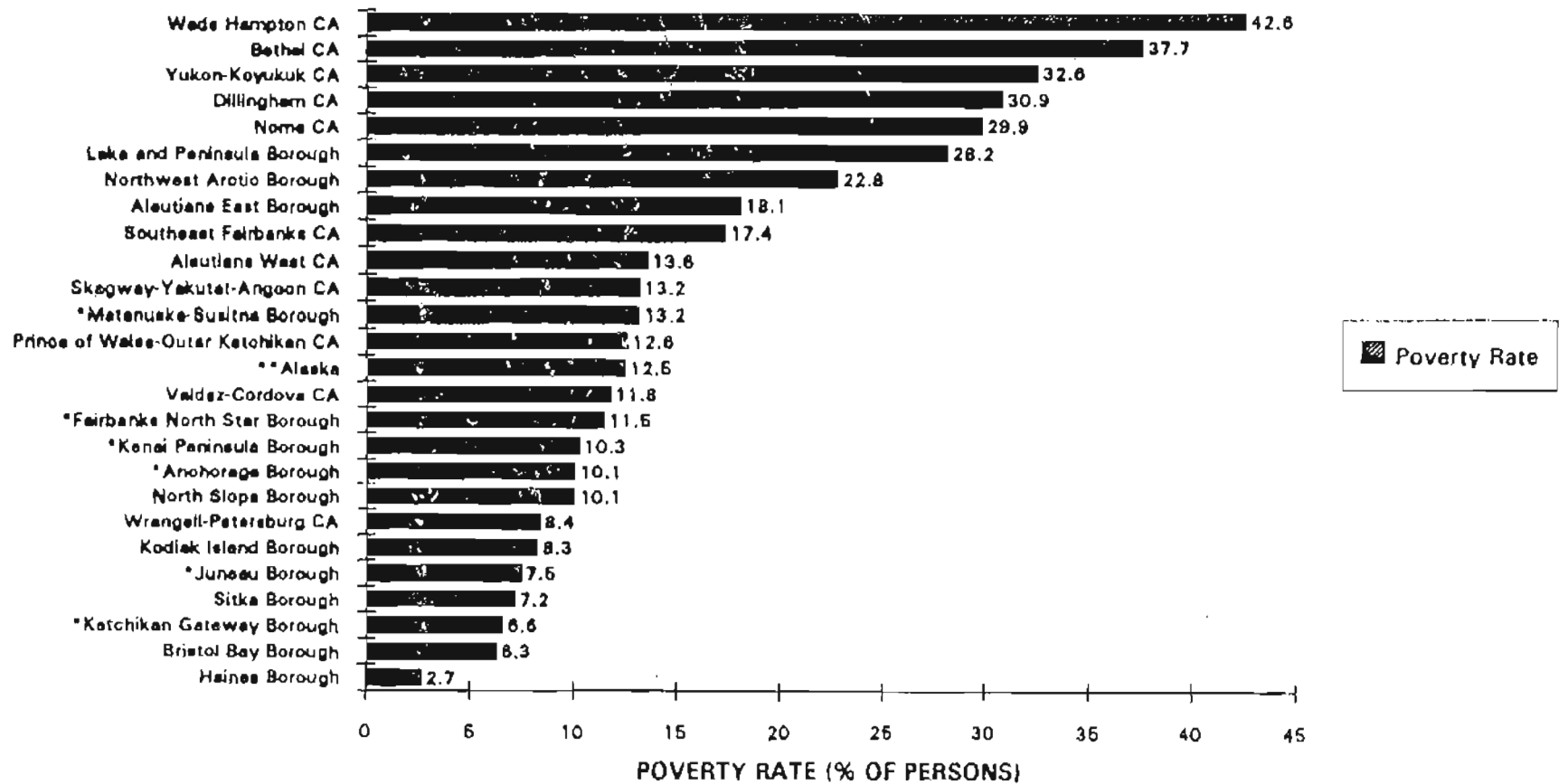


FIG. 9

**POVERTY RATES BY ALASKA AREA, 1989:
PERCENT OF PERSONS BELOW 125%
OF FEDERAL POVERTY STANDARDS**



COST OF FOOD INDEX
FOR SELECT COMMUNITIES,
1981-85, 1986-90, AND
MOST RECENT FOUR QUARTERLY PERIODS

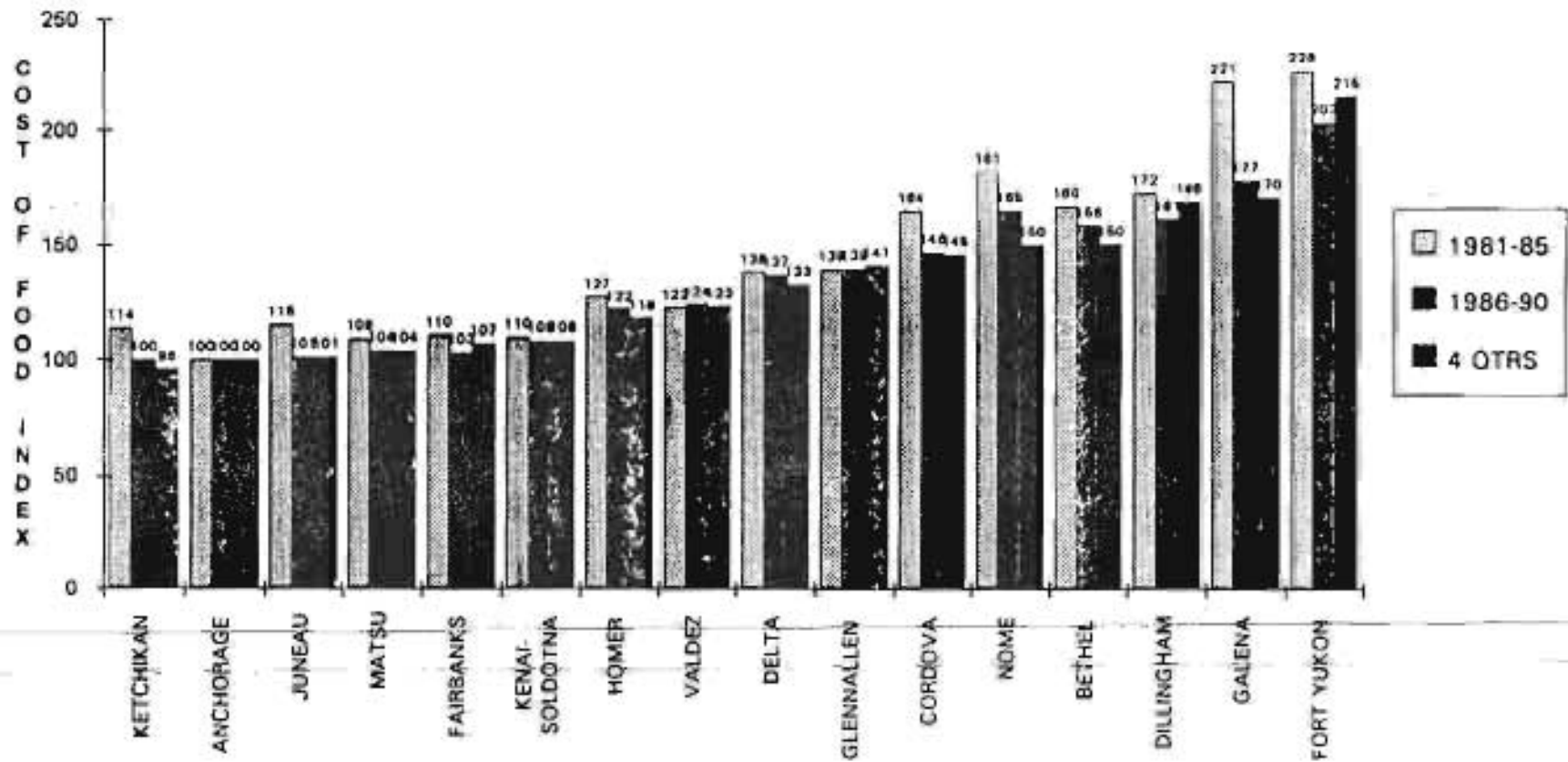


FIG. 11

WILDLIFE HARVESTS BY VALDEZ RESIDENTS, 1986-91 MEAN

| | Black Bear | Brown Bear | Caribou | Elk | Goat | Bison | Moose | Sheep | Muskox | Deer | Total |
|--------------|---------------|---------------|---------|------|------|-------|-------|-------|--------|-------|-------|
| Valdez | 17.8 | 7.2 | 28.5 | 1.3 | 4.2 | 0.8 | 40.7 | 19.2 | 1 | 219.9 | |
| Conversion | 58 | 0 | 150 | 225 | 72.5 | 450 | 500 | 65 | 593 | 43.2 | |
| Total Pounds | 1032 | 0 | 4275 | 293 | 305 | 360 | 20350 | 1248 | 593 | 9500 | 37955 |
| Per Capita | 0.25 | 0.00 | 1.05 | 0.07 | 0.07 | 0.09 | 5.00 | 0.31 | 0.15 | 2.34 | 9.3 |

Sport Fish Harvest by Residents of Proposed Nonsubsistence Areas (1990), Numbers of Fish
Source: Division of Sport Fish Mailed Survey and Division of Subsistence

| | 1990 Population | Number Anglers | Anglers Percent | Small Chinook | Chinook | Coho | Landlocked Coho-Chinook | Landlocked Sockeye | Sockeye | Pink |
|-------------------|--------------------|-------------------|--------------------|------------------|--------------|----------------|----------------------------|-----------------------|----------------|--------------|
| ANCHORAGE BOR | 228336 | 105723 | 46.7% | 1921 | 19924 | 92562 | 12542 | 83 | 106993 | 28798 |
| FAIRBANKS BOR | 77720 | 33616 | 43.3% | 219 | 3069 | 13167 | 11337 | 0 | 5123 | 11866 |
| JUNEAU BOR | 26751 | 13664 | 51.1% | 1050 | 7812 | 30592 | 310 | 0 | 1104 | 16430 |
| KENAI PENIN BOR | 40802 | 25899 | 63.5% | 486 | 4826 | 30811 | 261 | 406 | 27769 | 9451 |
| KETCHIKAN BOR | 13828 | 8365 | 46.0% | 114 | 4667 | 17586 | 0 | 16 | 709 | 7766 |
| MATANUSKA SUSITNA | 39683 | 19552 | 49.3% | 606 | 4654 | 14199 | 9443 | 119 | 10741 | 2211 |
| VALDEZ (CITY) | 4068 | 2075 | 51.0% | 18 | 142 | 2559 | 0 | 0 | 333 | 3796 |
| WHITTIER (CITY) | 243 | 54 | 22.2% | 0 | 0 | 108 | 0 | 0 | 311 | 0 |

| | Chum | Halibut | Steelhead | Rainbow | Cutthroat | Dolly Varden | Brook Trout | Lake Trout | Grayling | Northern Pike |
|-------------------|------|---------|-----------|---------|-----------|-----------------|----------------|---------------|----------|------------------|
| ANCHORAGE BOR | 3129 | 56824 | 253 | 82981 | 389 | 27421 | 0 | 3602 | 13348 | 2415 |
| FAIRBANKS BOR | 478 | 10671 | 44 | 47338 | 49 | 4317 | 0 | 3115 | 20901 | 5808 |
| JUNEAU BOR | 1817 | 10347 | 217 | 278 | 2183 | 7777 | 17 | 0 | 68 | 10 |
| KENAI PENIN BOR | 270 | 27222 | 82 | 7552 | 44 | 8132 | 0 | 1738 | 934 | 209 |
| KETCHIKAN BOR | 306 | 3839 | 1077 | 541 | 2323 | 1069 | 0 | 0 | 728 | 0 |
| MATANUSKA SUSITNA | 718 | 6519 | 17 | 14115 | 18 | 6119 | 0 | 814 | 4704 | 490 |
| VALDEZ (CITY) | 113 | 1436 | 0 | 504 | 0 | 742 | 0 | 34 | 199 | 0 |
| WHITTIER (CITY) | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | Whitefish | Burbot | Sheefish | Rockfish | Smelt | Razor Clam | Other |
|-------------------|-----------------|--------------|--------------|-----------------|--------------|-----------------|-----------------|
| ANCHORAGE BOR | 3321 | 2253 | 67 | 14509 | 136218 | 313447 | 16174 |
| FAIRBANKS BOR | 6608 | 3009 | 423 | 3337 | 179 | 23179 | 2396 |
| JUNEAU BOR | 0 | 0 | 0 | 1687 | 0 | 1940 | 3336 |
| KENAI PENIN BOR | 429 | 33 | 0 | 1826 | 16939 | 260748 | 3202 |
| KETCHIKAN BOR | 0 | 0 | 0 | 5091 | 0 | 0 | 1016 |
| MATANUSKA SUSITNA | 1603 | 1420 | 0 | 1062 | 12047 | 38487 | 976 |
| VALDEZ (CITY) | 0 | 408 | 0 | 747 | 0 | 2264 | 1096 |
| WHITTIER (CITY) | 0 | 0 | 0 | 28 | 0 | 0 | 0 |

TABLE 1
ESTIMATED NUMBER OF ANGLERS AND PERCENT OF POPULATION
SOURCE: DIVISION OF SPORT FISH MAILED SURVEY

| | 1990 Population | 1989 Anglers | Percent of 1990 Pop | 1990 Anglers | Percent of 1990 Pop | 1991 Anglers | Percent of 1990 Pop |
|---------------------|--------------------|-----------------|------------------------|-----------------|------------------------|-----------------|------------------------|
| ANCHORAGE BOR | 226338 | 117802 | 52.0% | 105723 | 46.7% | 134565 | 59.5% |
| FAIRBANKS BOR | 77720 | 33648 | 43.3% | 33616 | 43.3% | 38461 | 49.5% |
| JUNEAU BOR | 26751 | 14569 | 54.5% | 13664 | 51.1% | 12544 | 46.9% |
| KENAI PENIN BOR | 40802 | 24761 | 60.7% | 25899 | 63.5% | 29819 | 73.1% |
| KETCHIKAN BOR | 13828 | 8021 | 58.0% | 6365 | 46.0% | 6251 | 45.2% |
| MATANUSKA SUSITNA B | 39683 | 20209 | 50.9% | 19552 | 49.3% | 27960 | 70.5% |
| VALDEZ (CITY) | 4068 | 1808 | 44.4% | 2075 | 51.0% | 2754 | 67.7% |

TABLE 2
FISH HARVESTS WITH ROD AND REEL BY AREA (LBS PER CAPITA)
SOURCE: DIVISION OF SPORT FISH MAILED SURVEY

| | 1989 | 1990 | 1991 | MEAN 1989-91 |
|---------------------|------|------|------|-----------------|
| ANCHORAGE BOROUGH | 16.7 | 13.1 | 13.7 | 14.5 |
| FAIRBANKS BOROUGH | 8.3 | 7.2 | 7.2 | 7.6 |
| JUNEAU BOROUGH | 28.1 | 23.0 | 16.3 | 22.5 |
| KENAI PENIN BOROUGH | 29.1 | 26.4 | 23.9 | 26.5 |
| KETCHIKAN BOROUGH | 28.5 | 22.1 | 17.7 | 22.8 |
| MATANUSKA SUSITNA B | 15.0 | 10.7 | 14.4 | 13.4 |
| VALDEZ (CITY) | 16.1 | 15.3 | 15.2 | 15.5 |

**FISH AND WILDLIFE HARVEST LEVELS
BY RESIDENTS OF SELECTED ALASKA AREAS
(LBS PER PERSON PER YEAR;
NON-COMMERCIAL HARVESTS)**

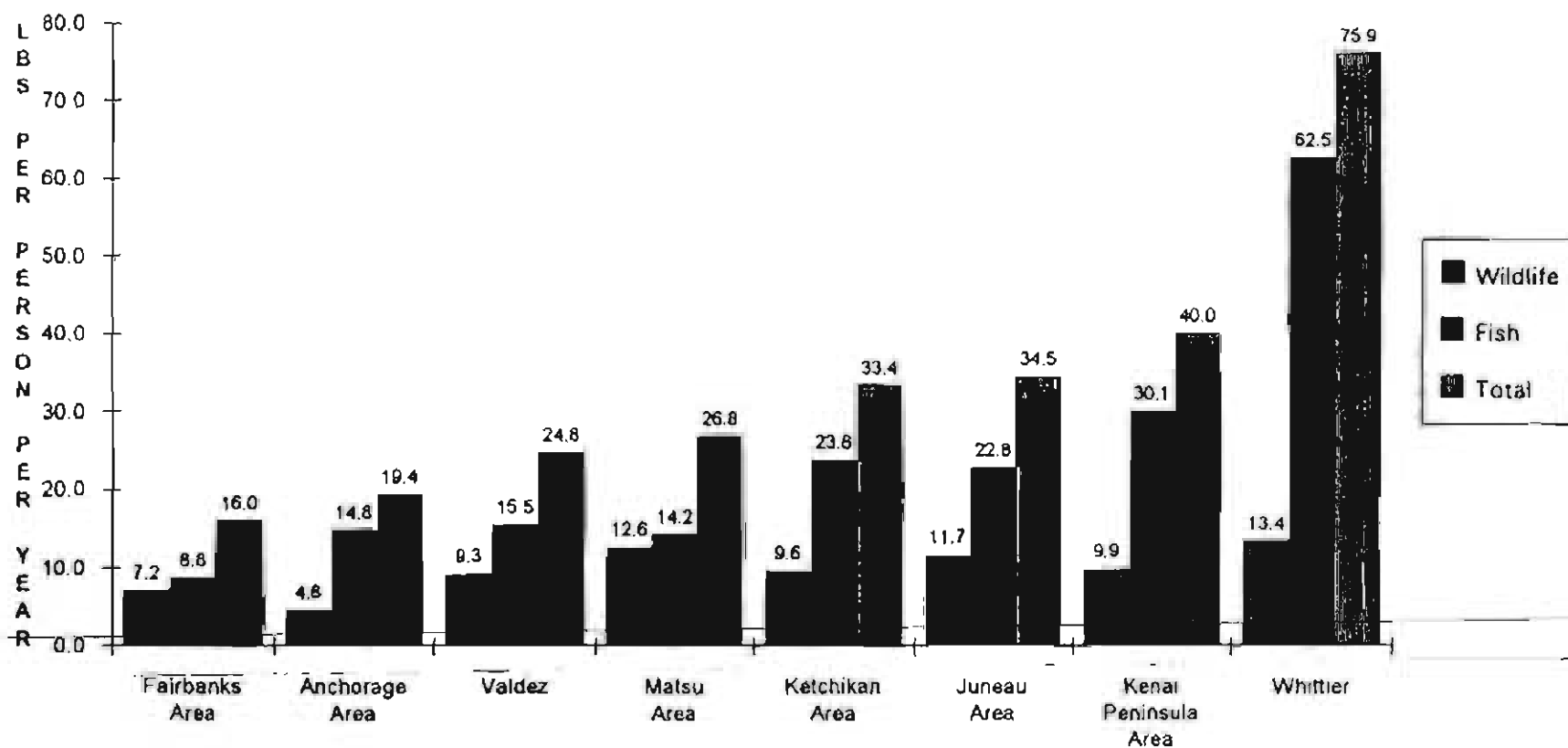


FIG. 15

WILD FOOD HARVESTS BY COMMUNITY
POUNDS PER PERSON PER YEAR
SOURCE: DIVISION OF SUBSISTENCE, ADF&G

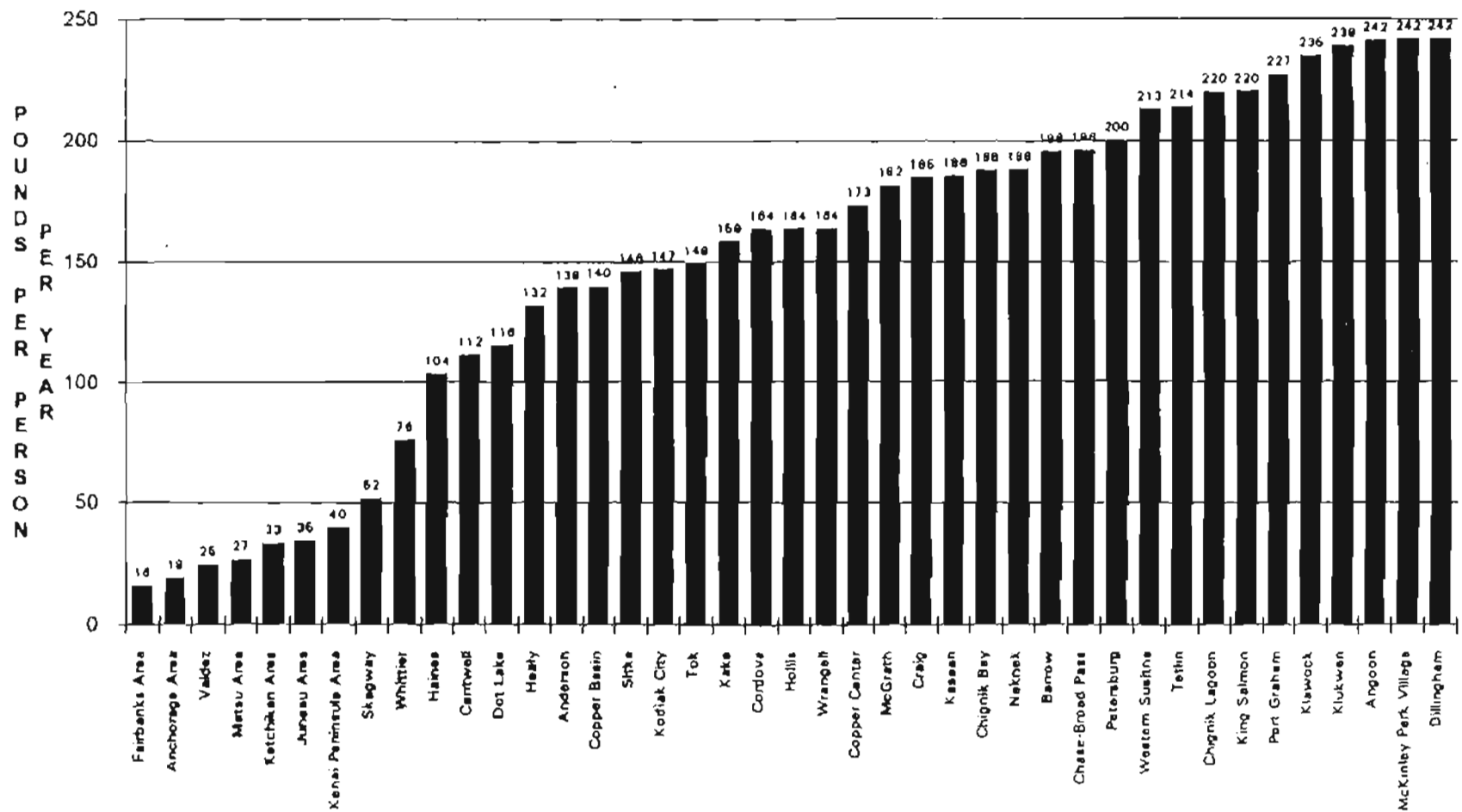


FIG. 16

WILD FOOD HARVESTS BY COMMUNITY
PERCENT OF COMMUNITY PROTEIN REQUIREMENTS
(44 GRAMS PER PERSON PER DAY, OR .422 LBS OF WILD FOODS)
SOURCE: DIVISION OF SUBSISTENCE, ADF&G

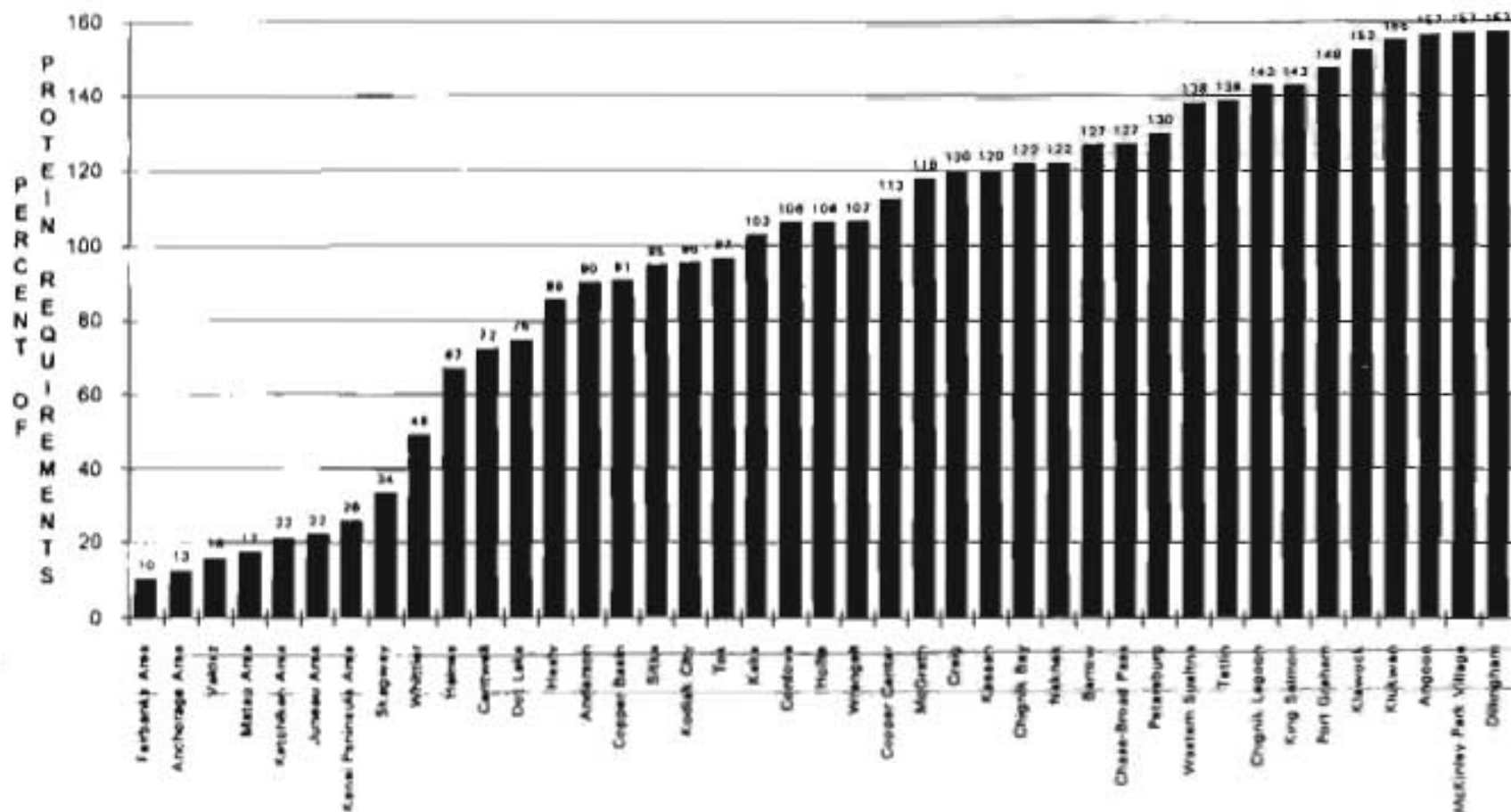


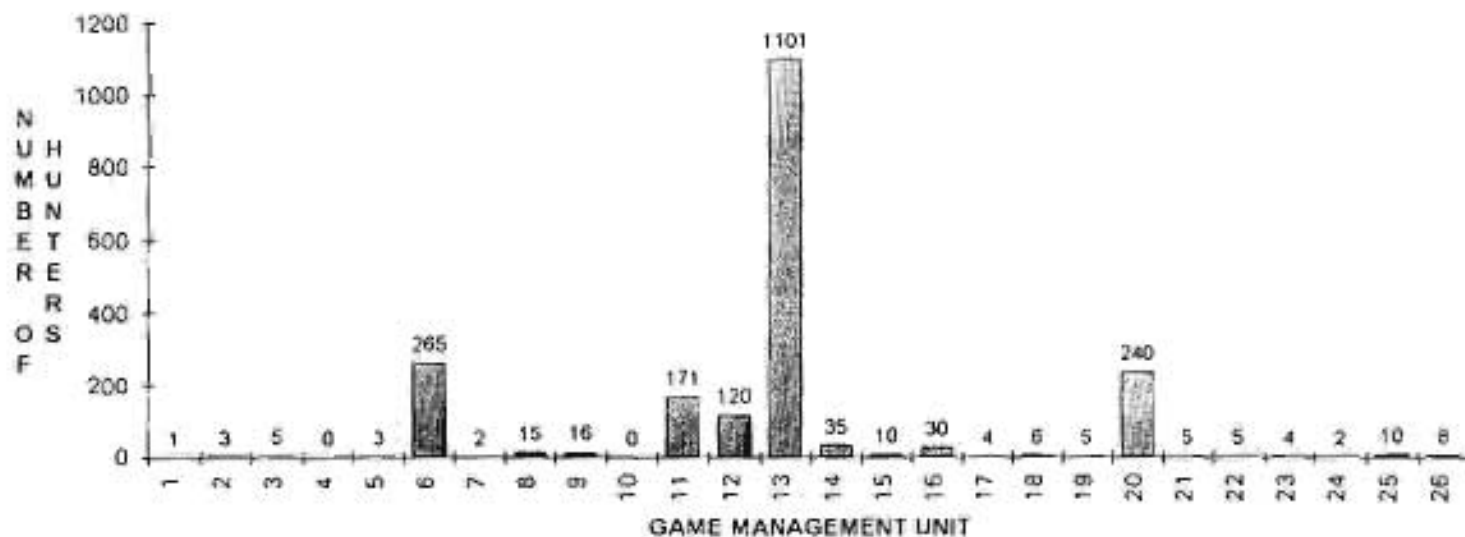
FIG. 17

**VOLUNTARY ASSOCIATIONS DEALING WITH FISH, WILDLIFE, AND THE ENVIRONMENT
IN THE VALDEZ AREA, COMPILED FROM ADF&G LISTS**

| Name of Organization | City | Area | Category |
|---|-------------|-------------|-----------------|
| Alaska Wilderness Recreation and Tourism Assoc. | Valdez | Valdez | Sport Industry |
| Valdez Sportsman's Assoc | Valdez | Valdez | Sport Industry |
| Prince William Sound Conservation Alliance | Valdez | Valdez | Environmental |

Sources: ADFG Public Communications Section; Division of Wildlife Conservation (Juneau, Anchorage, Cordova),
Division of Sport Fish (Juneau); Division of Subsistence (Dillingham, Kotzebue, Bethel, Fairbanks);
FNSB Library Data Cache; ADPS Wildlife Protection Division (Glennallen)

HUNTING LOCATIONS OF VALDEZ RESIDENTS, NUMBER OF HUNTERS, 1986-91



HUNT LOCATIONS FOR RESIDENTS OF VALDEZ AREA 1986-91

NUMBER OF HUNTERS (*SUCCESSFUL HUNTERS) BY GAME MANAGEMENT UNIT

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
|-------------|---|---|---|---|-----|-----|---|----|----|----|-----|-----|------|----|----|----|----|----|----|-----|----|----|----|----|----|----|
| Black Bear* | 1 | 3 | 5 | | 2 | 70 | | | | | | 1 | 25 | | | | | | | | | | | | | |
| Brown Bear* | | | | | 1 | 10 | | 3 | 11 | | 4 | 3 | 9 | | | | | | | 2 | | | | 1 | | 1 |
| Caribou | | | | | | | | | | | 53 | 3 | 185 | | | | | | | 51 | | | | | | |
| Elk | | | | | | | | 10 | | | | | | | | | | | | | | | | | | |
| Goat | | | | | | 77 | | 2 | | | 2 | | 9 | | | | | | | | | | | | | |
| Bison | | | | | | | | | | | 6 | | | | | | | | | 3 | | | | | | |
| Moose* | | | | | 168 | 2 | | 5 | | | 55 | 24 | 783 | 28 | 10 | 30 | 4 | | 5 | 147 | 5 | 5 | 2 | | 5 | 1 |
| Sheep | | | | | | | | | | | 51 | 89 | 90 | 7 | | | | | 37 | | | 2 | 1 | 5 | 6 | |
| Muskox | | | | | | | | | | | | | | | | | | 6 | | | | | | | | |
| Total | 1 | 3 | 5 | 0 | 3 | 265 | 2 | 15 | 16 | 0 | 171 | 120 | 1101 | 35 | 10 | 30 | 4 | 6 | 5 | 240 | 5 | 5 | 4 | 2 | 10 | 8 |

Proposal No. 6 Juneau Nonsubsistence Area

Area Description

The proposed Juneau Nonsubsistence Area includes that portion of Game Management Unit 1(C) including all drainages on the mainland east of Lynn Canal and Stephens Passage from the latitude of Eldred Rock to Point Coke, Lincoln Island, Shelter Island, Douglas Island, and all the marine waters of Fishing Subdistricts 11A and 11B.

Historic Overview

At the time of European contact (about 1770s), the people of the Juneau area were members of two distinct societies (*kwaans*) of coastal Tlingit, comprising the Auk and the Taku (and its subgroup, the Sumdum). Each had their respective territories in the Juneau area. The local economy depended upon the harvest of marine fish and invertebrates, mammals, and plants for food, trade, and ceremonial exchange. The Hudson Bay Company established a trading post in the Juneau area circa 1841-43. Euro-Americans rapidly settled the Juneau area after the discovery of gold in 1880, and the Auk and Taku Tlingit began to consolidate at Juneau-Douglas. By 1900, the Juneau area's population had grown to 3,211 people. Juneau became the seat of Alaska's territorial government in 1906, and growth in federal and territorial-state jobs has continued since. A variety of other industries were centered in Juneau during the first half of the 20th century: mining, fur trading (based largely on fox farms during the 1920s-30s), timber, and commercial fishing and processing. Juneau's gold mines closed in 1944, although exploration has continued periodically since then. By the 1950s, fishing, transportation, and tourism, as well as government and services, arose as the economic sectors of the community. Juneau's population increased from 7,789 in 1950 to 26,751 in 1990, to contain 39 percent of the southeast region's total population.

Twelve Factors

1. The Social and Economic Structure

The social and economic structure of the Juneau Area has been characterized as a type of "industrial-capitalism", a socioeconomic system common to the lower 48 which has developed in Alaska. This social and economic structure is distinct from another type of socioeconomic system in Alaska, called a "mixed, subsistence-cash economy", where the domestic household sector is a major producer and distributor of food. Industrial capital systems generally have large wage sectors, which provide the major means of livelihood to residents. In an industrial-capital system, households are not major producers or distributors of an area's food supply. Food production by households provides a very small portion of the community's food, but may be of economic significance to those households actively involved in hunting and fishing. Almost all the area's food and other goods and services are provided by businesses organized and financed separately

from the household unit. Production and distribution of goods and services are organized by market forces or by government. Fishing and hunting by residents are primarily conducted as part of recreational or commercial industries.

The social structure of Juneau contains a number of distinct cultural subgroups, including Euro-Americans, Tlingit, and Filipino. This heterogeneous social structure is associated with some differences in types of economic activities and uses of wild resources by group members, as indicated in some of the following descriptions. However, no recent systematic studies of wild fish and game use has been made of Juneau's cultural subgroups.

2. The Stability of the Economy

SEE FIGS. 2, 3, 4

The economy of the Juneau area has shown steady growth during the past four decades. One indicator of this steady growth is rate of population increases in the area (see Figs. 2 and 3). The mean annual rate of growth for the Juneau Borough was 2.1 percent (1950s), 3.3 percent (1960s), 3.6 percent (1970s), and 3.1 percent (1980s) (Fig. 3).

Fig. 4 shows recent trends in civilian wage employment in the Juneau Borough during the last decade. The number of wage-paying jobs increased from 10,801 in 1980 to 13,543 in 1985, dipped to 12,451 by 1987, and increased to 14,011 by 1991.

3. The Extent and Kinds of Employment for Wages, Including Full-Time, Part-Time, Temporary, and Seasonal Employment

SEE FIGS. 5, 7

In 1991, most wage-paying jobs in the Juneau Area were in government (50 percent), services (16 percent), and trade (17 percent). Additional employment was in transportation (6 percent), finance (4 percent), and construction (4 percent) (see Fig. 5). Manufacturing industries were few and provided only about 1 percent of wage jobs. Most manufactured goods are imported into the Juneau area from outside Alaska.

In 1991, there were 547 limited entry commercial fishing permits fished by residents of the Juneau area (Fig. 6). Commercial fishers sold an estimated 18.8 million pounds of fish in 1991, with a gross value of \$11.6 million.

Unemployment rates were 5.9 percent in the Juneau Borough in April 1992 (Fig. 7). This compares to the Alaska rate of 9.2 percent.

4. The Amount and Distribution of Cash Income Among Those Domiciled in the Area or Community

SEE FIGS. 8, 9, 10, 11

In 1989, per capita income in the Juneau Borough (\$19,920) was above the state's average (\$17,610) (Fig. 8 and 9). According to U.S. Census income distribution records, incomes were distributed unevenly by racial or cultural group membership (Fig. 8). These income distributions are shown in Fig. 10.

In 1989, 7.5 percent of Juneau residents lived in households earning less than the federal poverty standards (Fig. 11). This rate is below the Alaska average (12.5 percent), and substantially below rates in some Alaska areas, like the Dillingham Census Area (30.9 percent).

5. The Cost and Availability of Goods and Services To Those Domiciled in the Area or Community

SEE FIG. 12

The Juneau area has a well-developed system of commerce through which a large range of goods and services are provided. Food prices can be used as an index of cost of living compared with other Alaska areas. The cost of food index in Juneau is among the lowest for communities in Alaska (Fig. 12). Current food costs in the Juneau Borough are about 1 percent higher than Anchorage. Food is relatively less expensive in the Juneau area because the area is a primary node in the state's commercial transportation network (which reduces transportation costs) and because the area deals in large volume.

6. The Variety of Fish and Game Species Used by Those Domiciled in the Area or Community

SEE FIGS. 13 AND 14

The residents of the Juneau Area use a variety of fish and wildlife, as shown in Figs. 13 and 14. Big game species used include black bear, brown bear, goat, moose, sheep, and deer (Fig. 13). Fish species used include chinook, coho, sockeye, pink, and chum salmon; halibut; steelhead; and varieties of trout, other freshwater fish, and shellfish (Fig. 14).

7. The Seasonal Cycle of Economic Activity

Economic activity in the Juneau Area shows some seasonal fluctuations, primarily related to tourism during summer and the state legislative session from January through May. Except for this, the types of jobs in the Juneau Area (primarily in government) are not particularly effected by yearly natural cycles.

Fishing and hunting activities by residents are influenced by resource

availability and regulated seasons, such as salmon fishing during summer, big game hunting during fall, and bear hunting in spring. Jobs related to the local recreational industry (such as recreational retail outlets, fishing charters, and charter air transporters) are influenced by these seasonal cycles. Commercial fishing also is influenced by seasonal cycles.

8. The Percentage of Those Domiciled in the Area or Community Participating in Hunting and Fishing Activities or Using Wild Fish and Game

SEE FIGS. 15, 16

A substantial percent of the residents of the Juneau Area fish with rod and reel. In the Juneau Area, about 47-55 percent of the population fished with rod and reel during 1989-91, based on surveys of anglers (Fig. 15). In 1991, a total of 3,683 hunting/hunting combination licenses were sold to persons living in the Juneau Borough (about 13.8 percent of the population).

From 1985-1991, Juneau Area residents were issued about 177 permits each year for non-commercial net fishing for salmon (Fig. 16).

9. The Harvest Levels of Fish and Game by Those Domiciled in the Area or Community

SEE FIGS. 17, 18, 19

In the Juneau Borough, the total fish and game harvest was about 923,000 lbs annually, based on state game harvest records for 1986-91, sport fish surveys for 1989-91, and noncommercial salmon records for 1985-91. The total annual per capita harvest of fish and game was 34.5 lbs per person in the Juneau area (22.8 lbs of fish and 11.7 lbs of game) (Fig. 17). The harvest of wild foods provided a small portion of the food supply in Juneau compared with other Alaska areas (Fig. 18). The wild food harvest contained 22 percent of the community's protein requirements (Fig. 19). However, for households very active in hunting and fishing, harvest levels are commonly high and important sources of the household's diet. Low food production rates by households are characteristic of an industrial-capital system, where most foods are produced and distributed through commercial businesses and purchased by households with wage earnings.

The numbers of big game and fish harvested by residents of the Juneau Area broken out by species are shown in Figs. 13, 14, and 16.

10. The Cultural, Social, and Economic Values Associated with the Taking and Use of Fish and Game

SEE FIG. 20

In the Juneau Area, there are a number of cultural values associated with the taking and use of fish and game. For a segment of the community, the predominant values associated with fish and wildlife harvests are

recreational. Fishing and hunting are periodic outdoor activities, valued as breaks from the economic work routine, embodying fair chase ethics, and producing wild foods that are valued for their taste and healthful qualities. For many, fishing and hunting are valued as high quality outdoor experiences which supplement the household's diet. For residents directly employed in commercial fishing and outdoor recreational industries (such as recreational retail outlets, fish charters, charter air transporters, and tour guides), values are commonly commercial in nature. That is, the use of fish and game produces monetary income for the household, as well as all or some of the recreational values listed above. For a significant number of Juneau Area residents, values associated with fish and wildlife include environmental awareness and nonconsumptive uses (such as wildlife viewing). For a number of Juneau Area residents, values of fishing and hunting are associated with Alaska Native cultural traditions, including food production for a local society of people, sharing with elders, and the provision of wild foods for ceremonial gatherings.

One indicator of the value orientations of residents are the types and numbers of voluntary associations dealing with fish and wildlife in the Juneau Area appearing on mailing lists compiled by ADF&G (see Fig. 28). Among the voluntary associations listed for the Juneau Area, there are at least 6 associated with recreational-sport fishing or hunting, 9 associated with the environment and/or nonconsumptive uses, 5 associated with the commercial fishing industry, 1 associated with enforcement, and 1 associated with subsistence.

11. The Geographic Locations Where Those Domiciled in the Area or Community Hunt and Fish

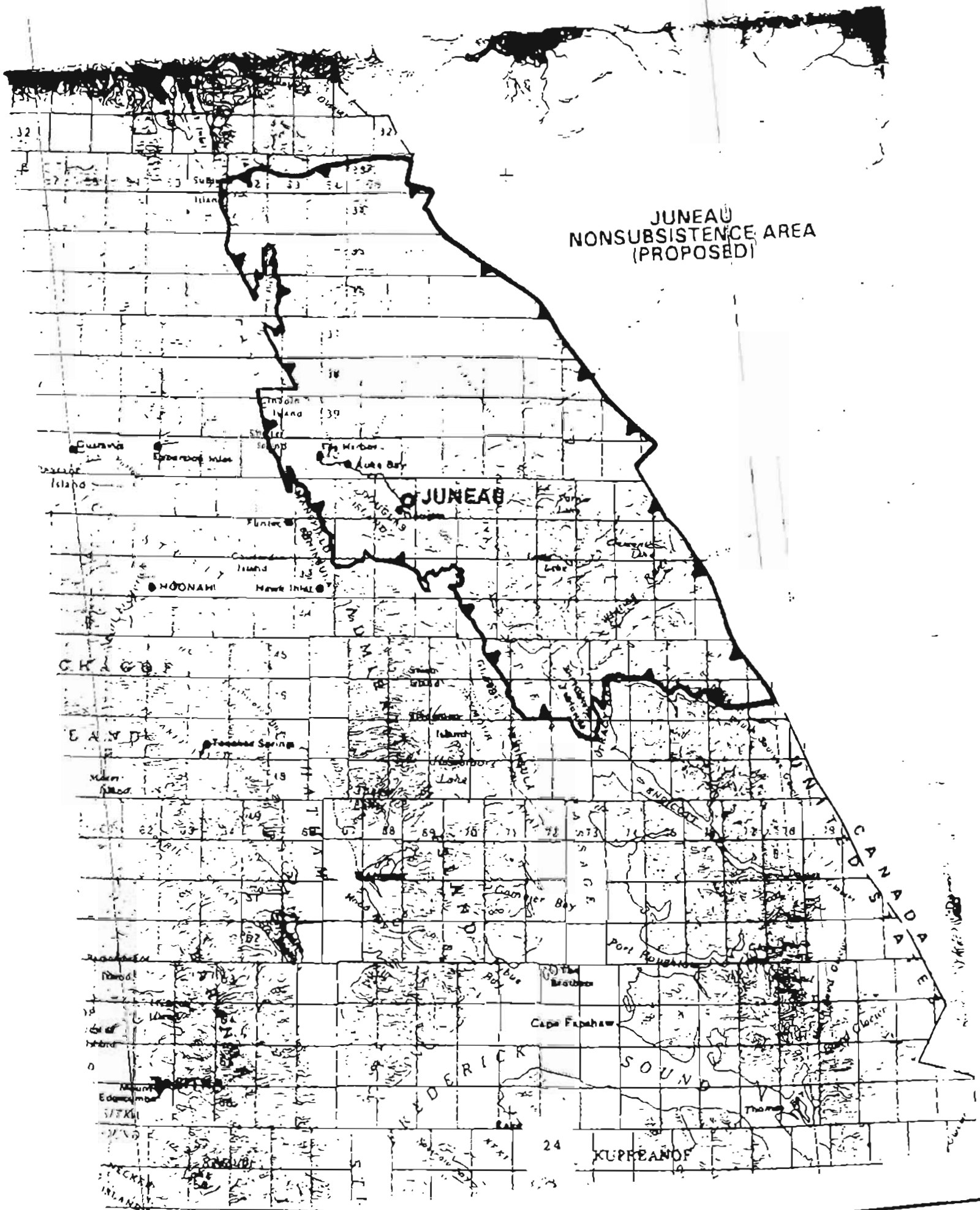
SEE FIG. 21

During the period 1986-91, residents of the Juneau Area hunted throughout the state, but primarily in GMUs 1 and 4, which are in the southeast region (Fig. 21). Juneau hunters hunt northeast Chichagof Island and areas on Admiralty Island, especially Mansfield Peninsula, Seymour Canal, and Glass Peninsula. Some Juneau hunters traveled to more distant locations, such as GMU 12 and 13 (the Copper Basin), GMU 20 (Fairbanks Area), and other areas.

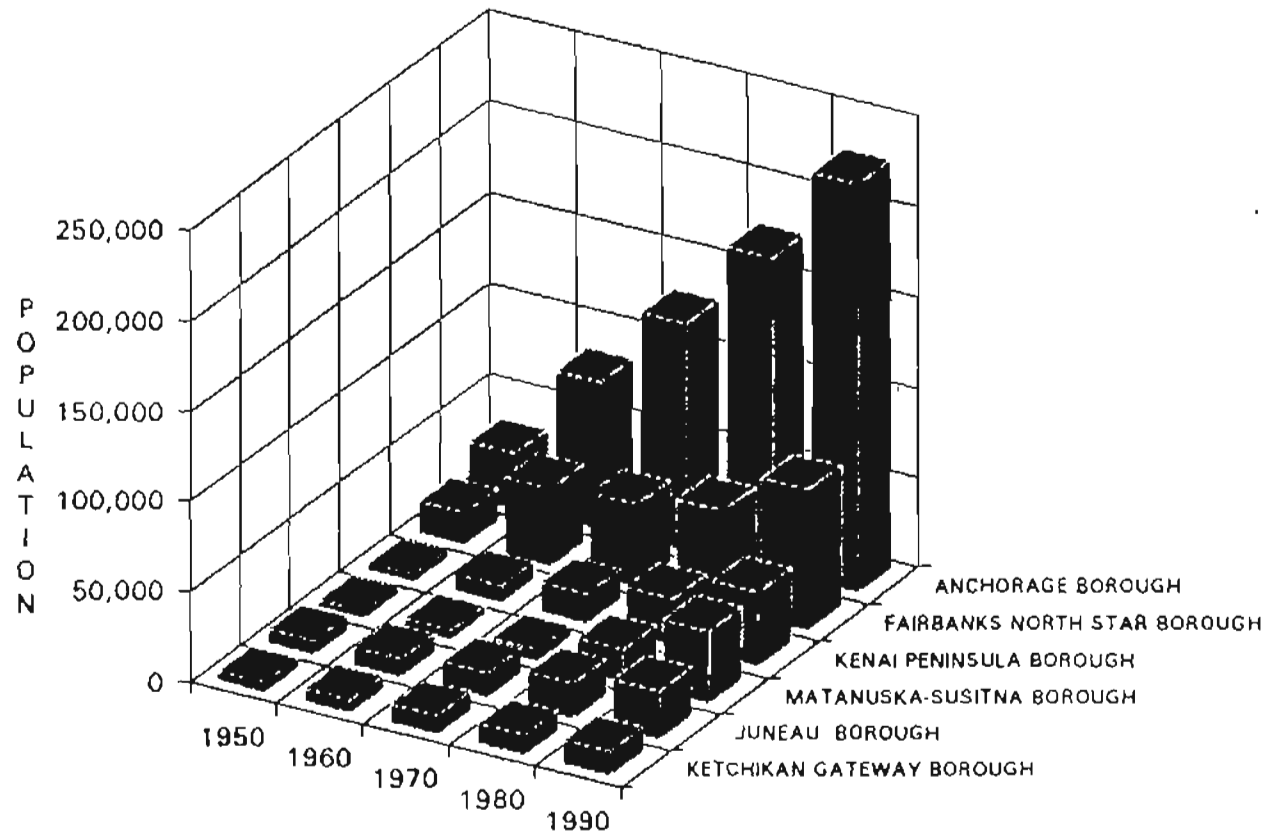
12. The Extent of Sharing and Exchange of Fish and Game by Those Domiciled in the Area or Community

Sharing and exchange of wild fish and game by residents of the Juneau Area occurs, but the extent has not been quantified. The absolute amount of wild foods shared on a per capita basis is probably relatively small in the Juneau Area because of the relatively small amounts harvested. Regional Tlingit gatherings which regularly take place in Juneau commonly involve feasts where wild foods are served as parts of the menu. Certain wild food products which regularly come into Juneau include herring roe on hemlock branches, hooligan oil, and dried salmon.

JUNEAU
NONSUBSISTENCE AREA
(PROPOSED)

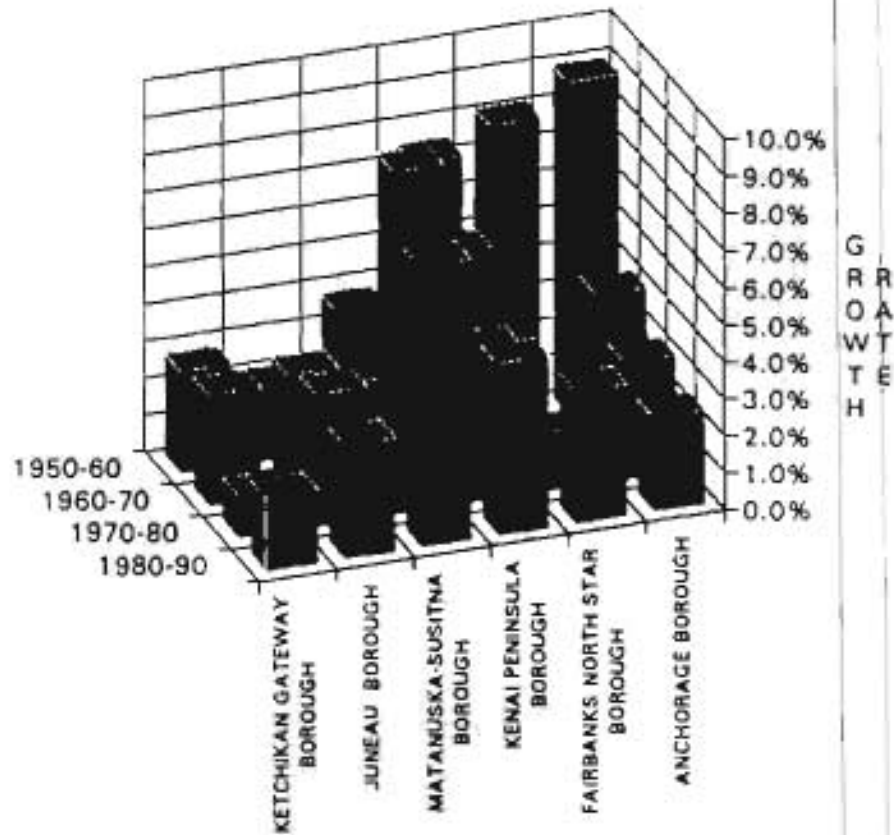


POPULATION TRENDS 1950-1990 SELECT ALASKA AREAS



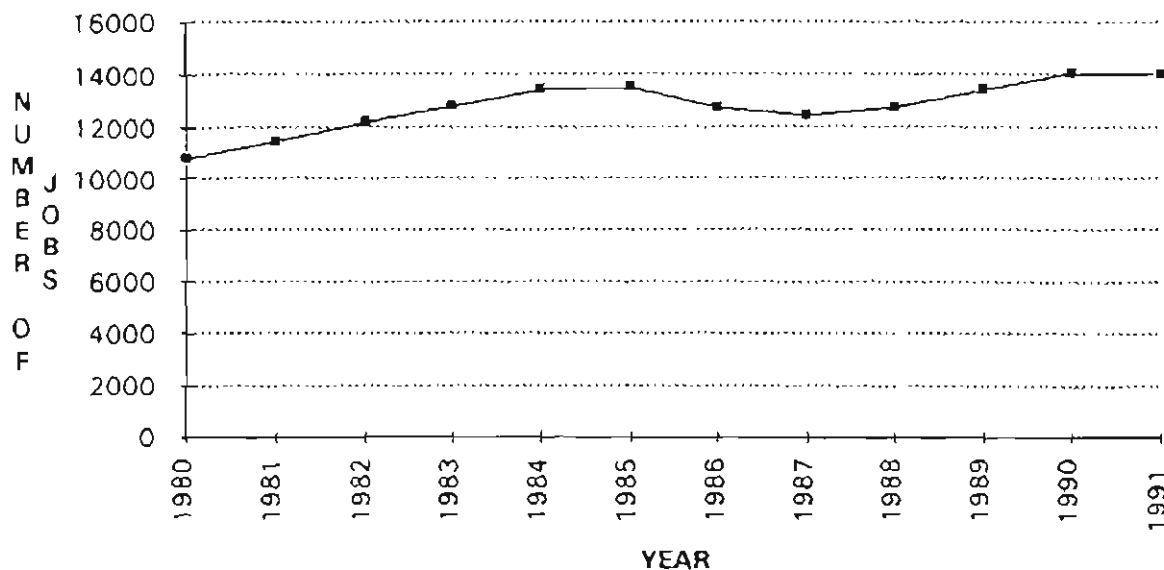
| | 1950 | 1960 | 1970 | 1980 | 1990 |
|------------------------------|--------|--------|---------|---------|---------|
| KETCHIKAN GATEWAY BOROUGH | 5,581 | 7,406 | 10,041 | 11,316 | 13,828 |
| JUNEAU BOROUGH | 7,920 | 9,745 | 13,556 | 19,528 | 26,751 |
| MATANUSKA-SUSITNA BOROUGH | 3,534 | 5,188 | 6,509 | 17,816 | 39,683 |
| KENAI PENINSULA BOROUGH | 4,130 | 9,053 | 16,586 | 25,282 | 40,802 |
| FAIRBANKS NORTH STAR BOROUGH | 18,129 | 42,992 | 45,864 | 53,983 | 77,720 |
| ANCHORAGE BOROUGH | 31,487 | 82,833 | 126,385 | 174,431 | 226,338 |

MEAN ANNUAL GROWTH RATES PER DECADE, FOR SELECT ALASKA AREAS, 1950-90



| | 1950-60 | 1960-70 | 1970-80 | 1980-90 |
|------------------------------|---------|---------|---------|---------|
| KETCHIKAN GATEWAY BOROUGH | 2.8% | 3.0% | 1.2% | 2.0% |
| JUNEAU BOROUGH | 2.1% | 3.3% | 3.6% | 3.1% |
| MATANUSKA-SUSITNA BOROUGH | 3.8% | 2.3% | 9.3% | 7.6% |
| KENAI PENINSULA BOROUGH | 7.5% | 5.9% | 4.2% | 4.7% |
| FAIRBANKS NORTH STAR BOROUGH | 8.1% | 0.6% | 1.6% | 3.6% |
| ANCHORAGE BOROUGH | 9.0% | 4.2% | 3.2% | 2.6% |

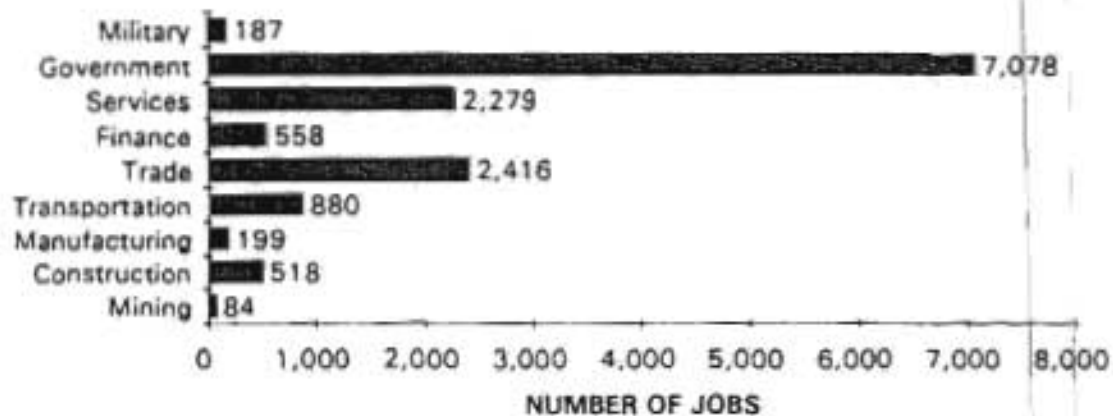
**JUNEAU BOROUGH
CIVILIAN WAGE EMPLOYMENT, 1980-91
NUMBER OF JOBS**



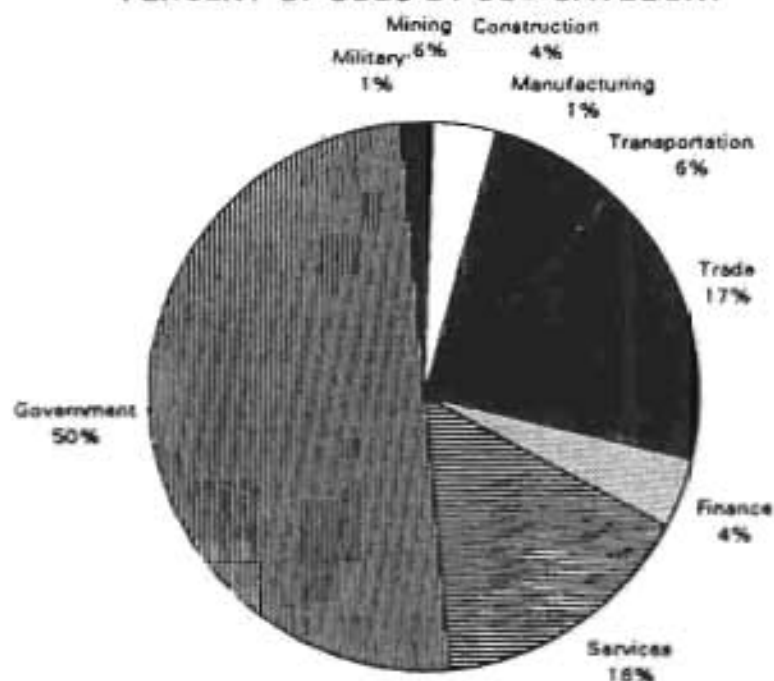
JUNEAU BOROUGH WAGE EMPLOYMENT, 1980-91: NUMBER OF JOBS BY JOB CATEGORY
SOURCE: ALASKA DEPARTMENT OF LABOR, RESEARCH AND ANALYSIS SECTION

| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|-----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Mining | * | * | 12 | 26 | 27 | * | * | 80 | 169 | 112 | 75 | 84 |
| Construction | 375 | 506 | 540 | 763 | 797 | 733 | 396 | 391 | 341 | 343 | 414 | 518 |
| Manufacturing | 92 | 126 | 151 | 152 | 180 | 253 | 196 | 261 | 341 | 319 | 148 | 199 |
| Transportatio | 913 | 1029 | 918 | 794 | 775 | 777 | 707 | 782 | 747 | 857 | 911 | 880 |
| Trade | 1554 | 1687 | 1873 | 1968 | 2204 | 2120 | 1925 | 1937 | 2023 | 2203 | 2239 | 2416 |
| Finance | 428 | 517 | 512 | 533 | 572 | 615 | 637 | 565 | 561 | 535 | 496 | 558 |
| Services | 1381 | 1367 | 1694 | 1857 | 1991 | 2034 | 2075 | 2146 | 2014 | 2152 | 2333 | 2279 |
| Government | 6049 | 6220 | 6432 | 6567 | 6766 | 6976 | 6782 | 6291 | 6490 | 6900 | 7449 | 7078 |
| Military | 182 | * | * | * | * | * | * | * | * | * | 187 | 187 |
| Agriculture | * | 17 | 32 | 24 | 30 | 36 | 44 | * | 49 | * | * | * |
| Nonclassifiabl | * | * | 34 | 83 | 99 | * | * | * | 13 | * | * | * |
| Total Civilian | 10801 | 11467 | 12195 | 12765 | 13439 | 13543 | 12761 | 12451 | 12747 | 13421 | 14062 | 14011 |

**JUNEAU BOROUGH
WAGE EMPLOYMENT, 1991
NUMBER OF JOBS BY JOB CATEGORY**



**JUNEAU BOROUGH
WAGE EMPLOYMENT, 1991
PERCENT OF JOBS BY JOB CATEGORY**

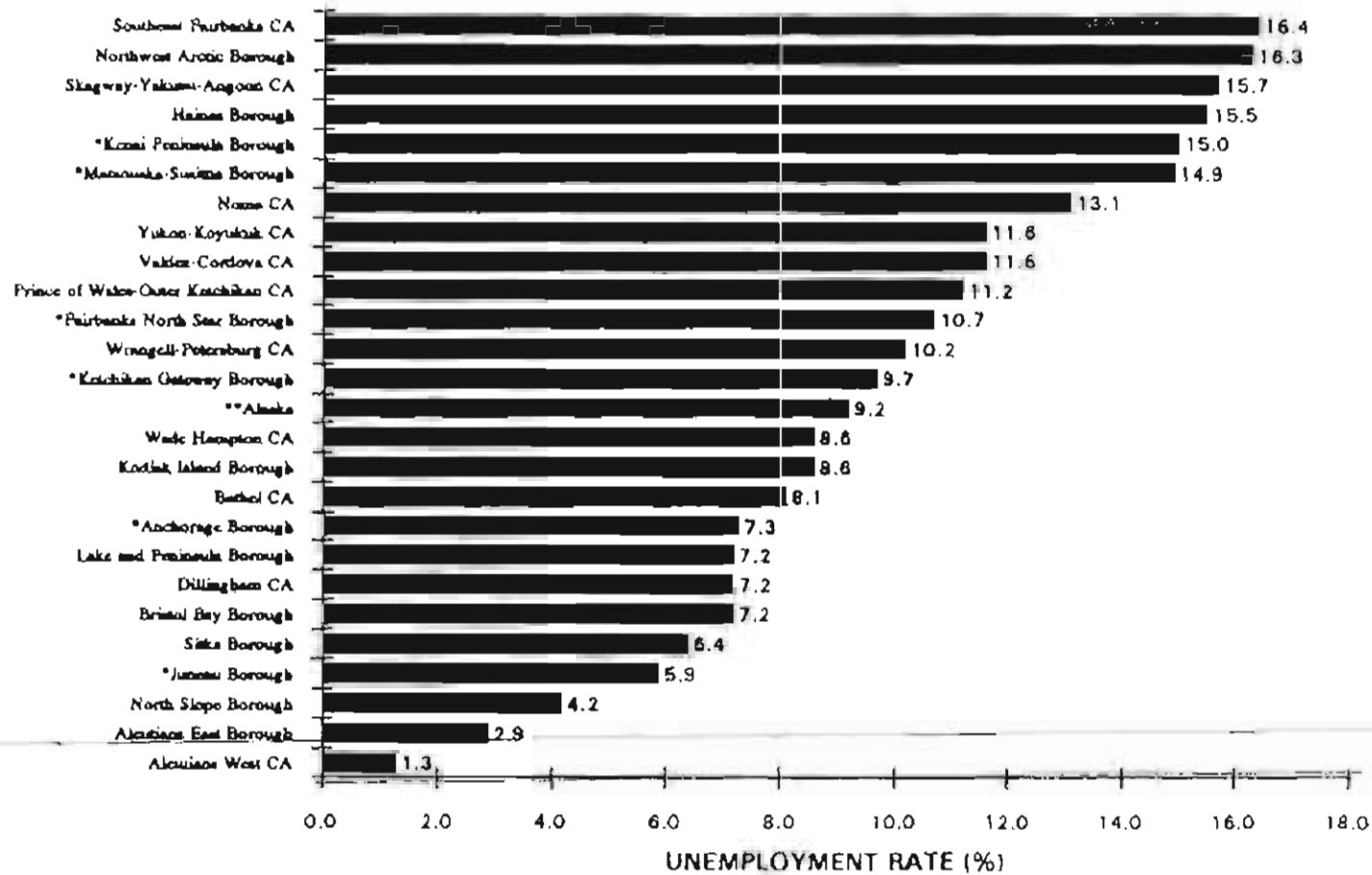


COMMERCIAL FISHING BY RESIDENTS OF JUNEAU AREA, 1991

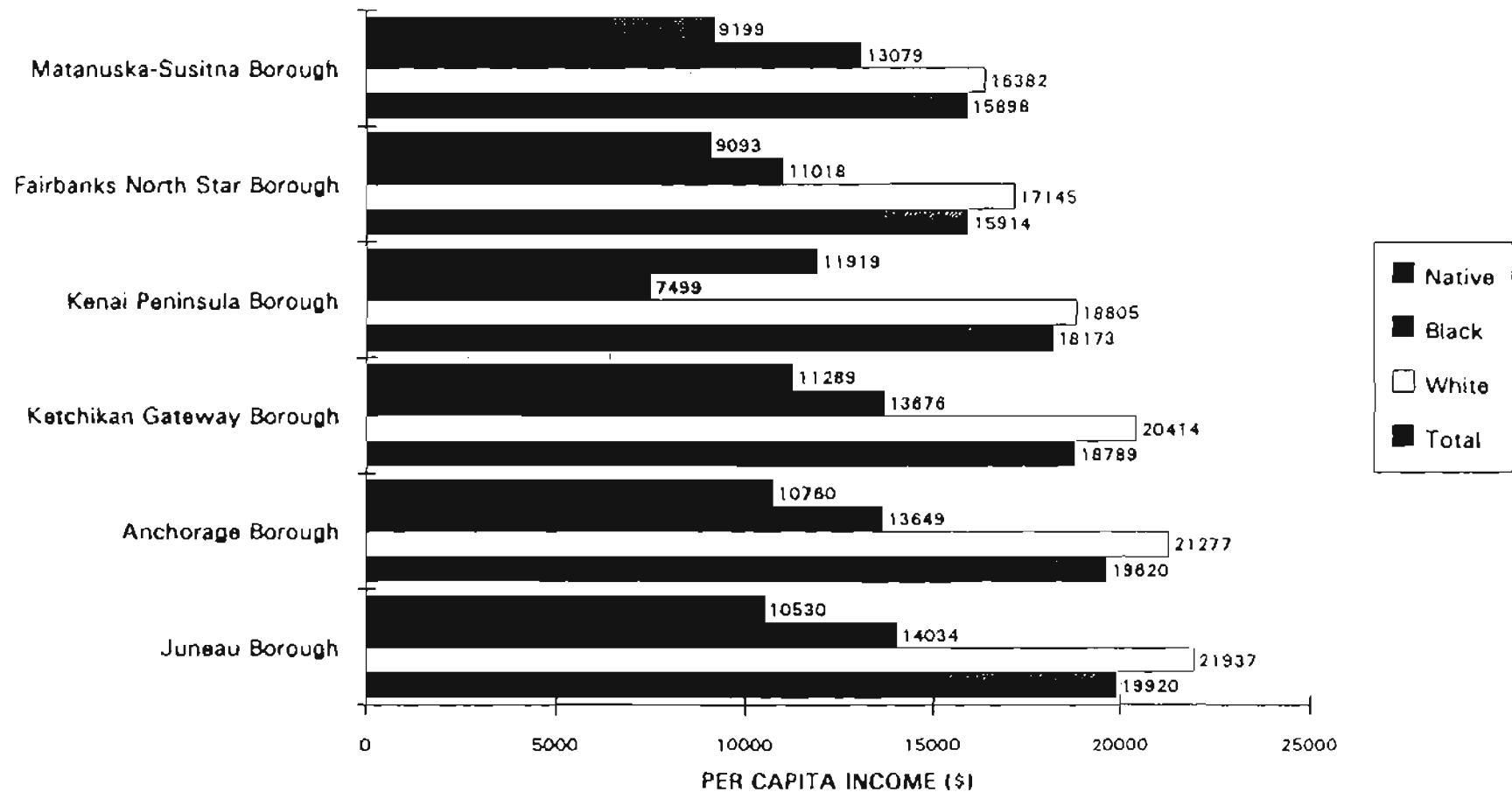
Source: Commercial Fisheries Entry Commission

| Place | Number of People | Number of Permits Fished | Pounds | Estimated Gross Earnings |
|----------|---------------------|-----------------------------|------------|-----------------------------|
| Juneau | | | | |
| Auke Bay | 29 | 49 | 1,138,127 | \$1,009,663 |
| Douglas | 55 | 88 | 2,783,104 | \$2,312,033 |
| Juneau | 252 | 410 | 14,901,695 | \$8,261,982 |
| Total | 336 | 547 | 18,820,926 | \$11,583,678 |

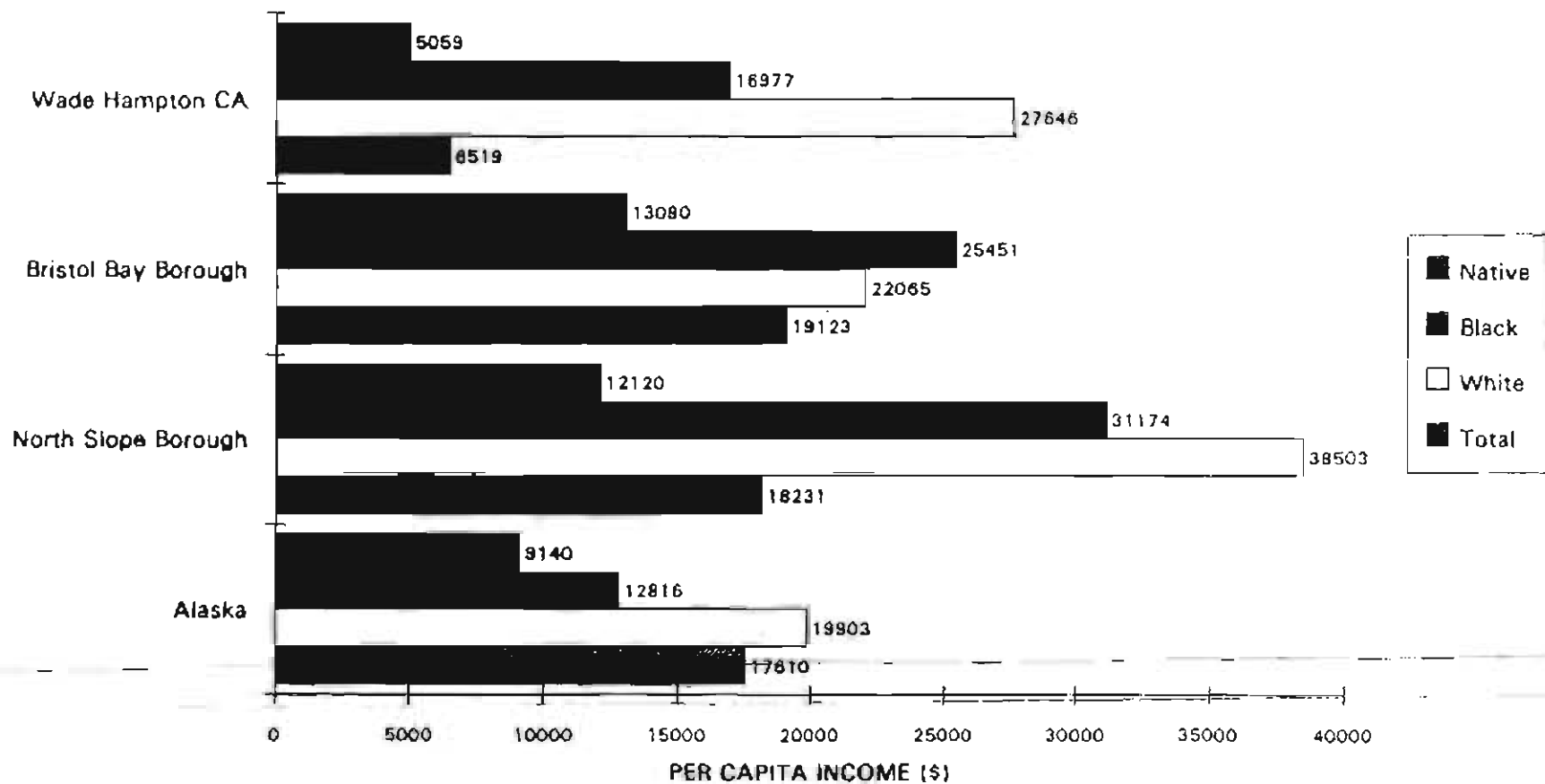
UNEMPLOYMENT RATES BY ALASKA AREA, APRIL 1992



PER CAPITA INCOME BY RACE, 1989:
PROPOSED NON-SUBSISTENCE AREAS



PER CAPITA INCOME BY RACE, 1989:
ALASKA, NORTH SLOPE BOROUGH, BRISTOL BAY
BOROUGH, AND WADE HAMPTON CENSUS AREA



HOUSEHOLD INCOMES OF WHITE RESIDENTS, JUNEAU BOROUGH, 1989



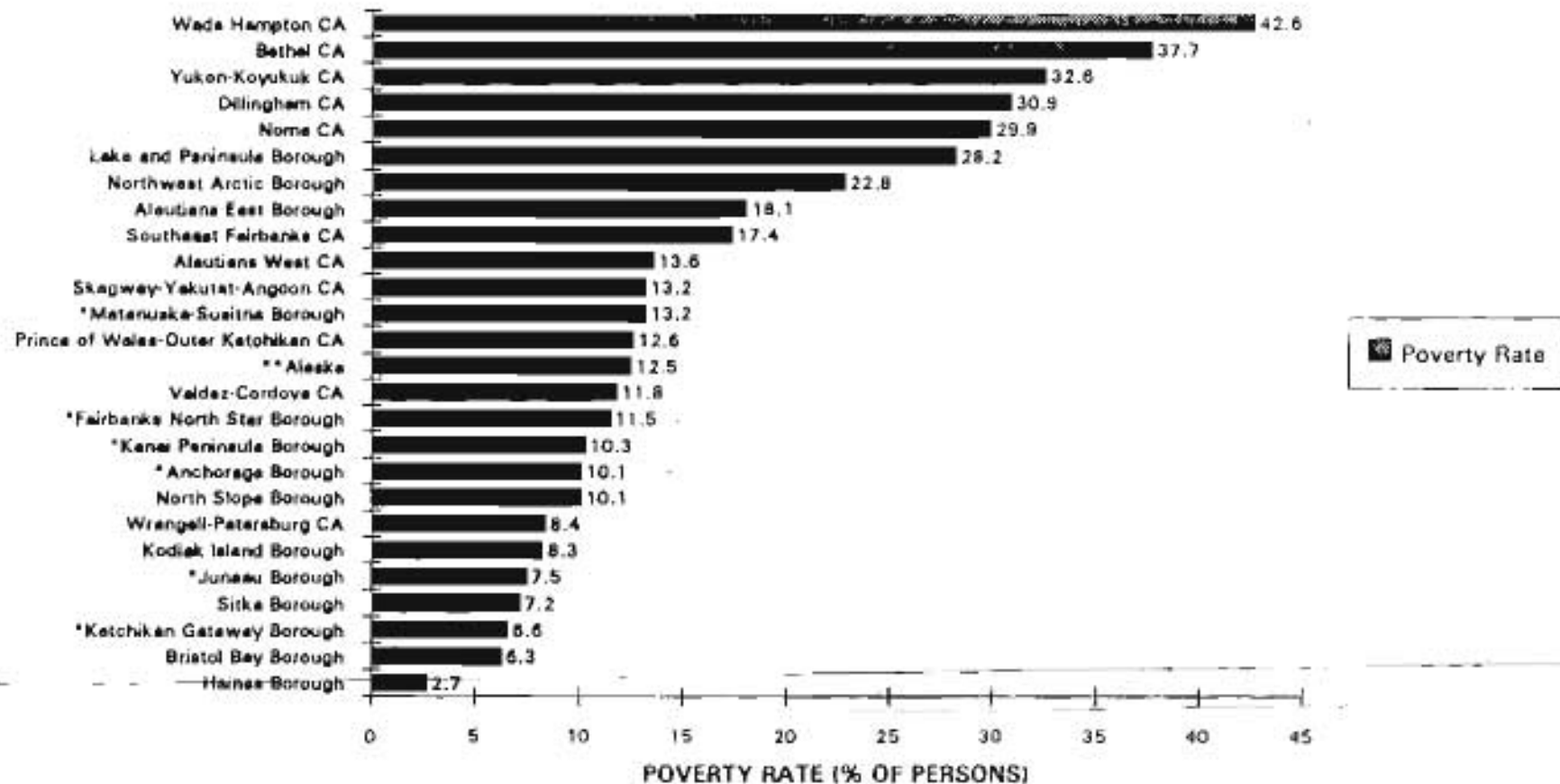
HOUSEHOLD INCOMES OF BLACK RESIDENTS, JUNEAU BOROUGH, 1989



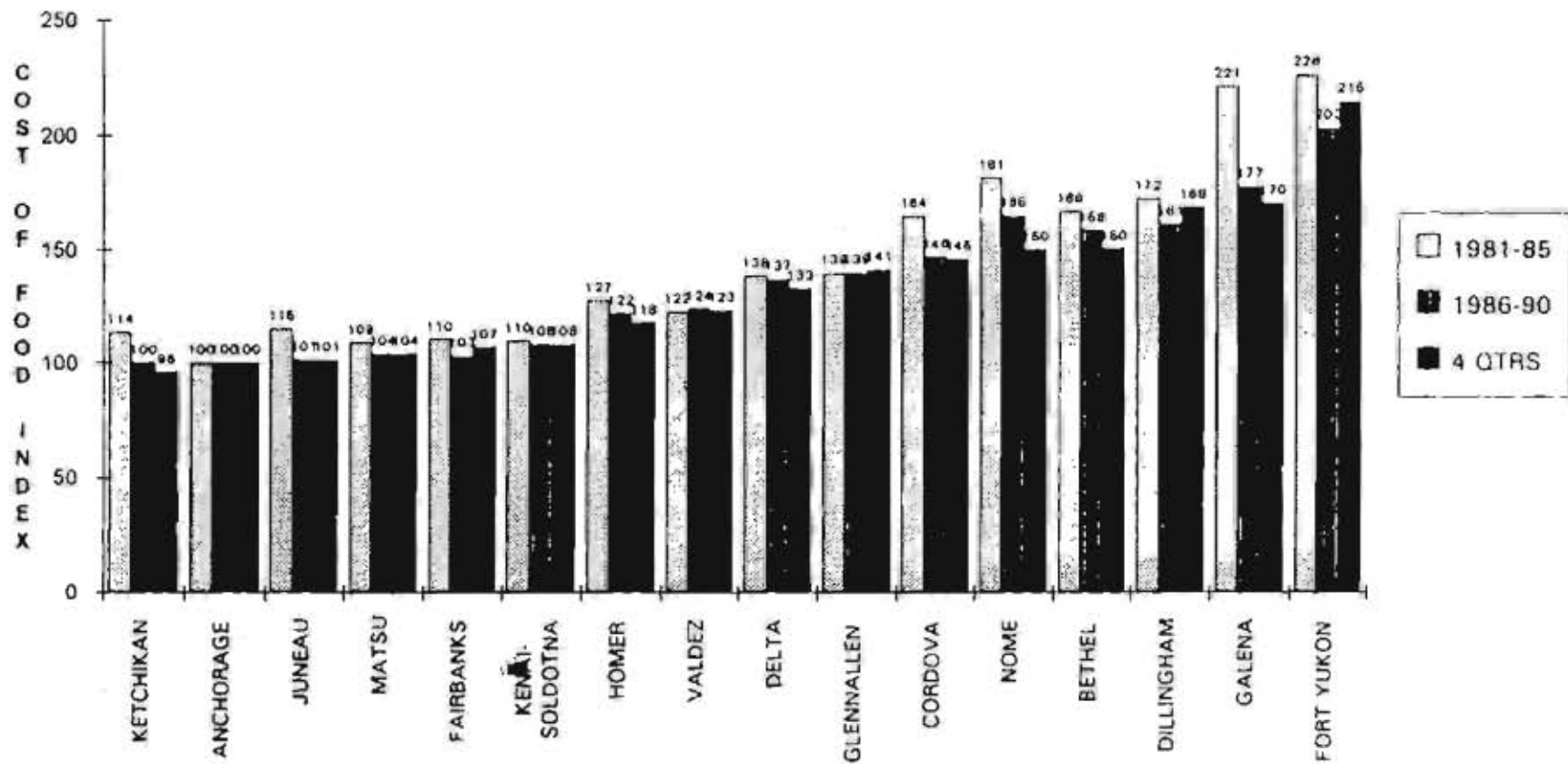
HOUSEHOLD INCOMES OF ALASKA NATIVE RESIDENTS, JUNEAU BOROUGH, 1989



POVERTY RATES BY ALASKA AREA, 1989:
PERCENT OF PERSONS BELOW 125%
OF FEDERAL POVERTY STANDARDS



COST OF FOOD INDEX
FOR SELECT COMMUNITIES,
1981-85, 1986-90, AND
MOST RECENT FOUR QUARTERLY PERIODS



WILDLIFE HARVESTS BY JUNEAU BOROUGH RESIDENTS, 1986-91 MEAN

| | Black Bear | Brown Bear | Caribou | Elk | Goat | Bison | Moose | Sheep | Muskox | Deer | Total |
|--------------|---------------|---------------|---------|------|------|-------|-------|-------|--------|--------|--------|
| Auke Bay | 12.2 | 1.5 | 0.2 | | 2.5 | | 4.8 | 0.2 | 0.2 | | |
| Douglas | 7.7 | 2 | 0.3 | | 1.7 | | 6.5 | 0.3 | | | |
| Juneau | 95 | 39.3 | 3.7 | 0.3 | 41 | 0.2 | 90.2 | 20.7 | 0.7 | | |
| Total Number | 114.9 | 42.8 | 4.2 | 0.3 | 45.2 | 0.2 | 101.5 | 21.2 | 0.9 | 3125 | |
| Conversion | 58 | 0 | 150 | 225 | 72.5 | 450 | 500 | 65 | 593 | 80 | |
| Total Pounds | 6664 | 0 | 630 | 68 | 3277 | 90 | 50750 | 1378 | 534 | 250000 | 313390 |
| Per Capita | 0.25 | 0.00 | 0.02 | 0.00 | 0.12 | 0.00 | 1.90 | 0.05 | 0.02 | 9.35 | 11.7 |

Sport Fish Harvest by Residents of Proposed Nonsubsistence Areas (1990), Numbers of Fish
Source: Division of Sport Fish Mailed Survey and Division of Subsistence

| | 1990 Population | Number Anglers | Anglers Percent | Small Chinook | Chinook | Coho | Landlocked oho-Chinook | Landlocked Sockeye | Sockeye | Pink |
|-------------------|--------------------|-------------------|--------------------|------------------|---------|-------|---------------------------|-----------------------|---------|-------|
| ANCHORAGE BOR | 228336 | 105723 | 46.7% | 1921 | 19924 | 92562 | 12542 | 83 | 106993 | 28796 |
| FAIRBANKS BOR | 77720 | 33616 | 43.3% | 219 | 3069 | 13167 | 11337 | 0 | 5123 | 11886 |
| JUNEAU BOR | 26761 | 13684 | 51.1% | 1050 | 7812 | 30592 | 310 | 0 | 1104 | 16430 |
| KENAI PENIN BOR | 40802 | 25899 | 63.5% | 486 | 4826 | 30811 | 261 | 406 | 27769 | 9451 |
| KETCHIKAN BOR | 13828 | 8365 | 48.0% | 114 | 4867 | 17586 | 0 | 16 | 709 | 7766 |
| MATANUSKA SUSITNA | 39683 | 19552 | 49.3% | 606 | 4654 | 14198 | 9443 | 119 | 10741 | 2211 |
| VALDEZ (CITY) | 4068 | 2075 | 51.0% | 18 | 142 | 2558 | 0 | 0 | 333 | 3796 |
| WHITTIER (CITY) | 243 | 54 | 22.2% | 0 | 0 | 108 | 0 | 0 | 311 | 0 |

| | Chum | Halibut | Steelhead | Rainbow | Cutthroat | Dolly Varden | Brook Trout | Lake Trout | Grayling | Northern Pike |
|-------------------|------|---------|-----------|---------|-----------|-----------------|----------------|---------------|----------|------------------|
| ANCHORAGE BOR | 3129 | 56824 | 253 | 82981 | 369 | 27421 | 0 | 3602 | 13348 | 2415 |
| FAIRBANKS BOR | 478 | 10871 | 44 | 47338 | 49 | 4317 | 0 | 3115 | 20901 | 5808 |
| JUNEAU BOR | 1817 | 10347 | 217 | 278 | 2183 | 7777 | 17 | 0 | 68 | 10 |
| KENAI PENIN BOR | 270 | 27222 | 62 | 7552 | 44 | 8132 | 0 | 1738 | 934 | 209 |
| KETCHIKAN BOR | 306 | 3839 | 1077 | 541 | 2323 | 1069 | 0 | 0 | 728 | 0 |
| MATANUSKA SUSITNA | 718 | 8519 | 17 | 14115 | 16 | 6119 | 0 | 814 | 4704 | 490 |
| VALDEZ (CITY) | 113 | 1436 | 0 | 504 | 0 | 742 | 0 | 34 | 199 | 0 |
| WHITTIER (CITY) | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| | Whitefish | Burbot | Sheefish | Rockfish | Smelt | Razor Clam | Other |
|-------------------|-----------------|--------|----------|----------|--------|------------|-------|
| ANCHORAGE BOR | 3321 | 2253 | 67 | 14509 | 136218 | 313447 | 16174 |
| FAIRBANKS BOR | 6608 | 3008 | 423 | 3337 | 179 | 23179 | 2396 |
| JUNEAU BOR | 0 | 0 | 0 | 1687 | 0 | 1940 | 3336 |
| KENAI PENIN BOR | 429 | 33 | 0 | 1826 | 16939 | 260748 | 3202 |
| KETCHIKAN BOR | 0 | 0 | 0 | 5091 | 0 | 0 | 1016 |
| MATANUSKA SUSITNA | 1603 | 1420 | 0 | 1062 | 12047 | 38487 | 976 |
| VALDEZ (CITY) | 0 | 408 | 0 | 747 | 0 | 2264 | 1096 |
| WHITTIER (CITY) | 0 | 0 | 0 | 28 | 0 | 0 | 0 |

TABLE 1

ESTIMATED NUMBER OF ANGLERS AND PERCENT OF POPULATION

SOURCE: DIVISION OF SPORT FISH MAILED SURVEY

| | 1990 Population | 1989 Anglers | Percent of 1990 Pop | 1990 Anglers | Percent of 1990 Pop | 1991 Anglers | Percent of 1990 Pop |
|---------------------|--------------------|-----------------|------------------------|-----------------|------------------------|-----------------|------------------------|
| ANCHORAGE BOR | 226338 | 117802 | 52.0% | 105723 | 46.7% | 134565 | 59.5% |
| FAIRBANKS BOR | 77720 | 33648 | 43.3% | 33818 | 43.3% | 38481 | 49.5% |
| JUNEAU BOR | 26751 | 14569 | 54.5% | 13664 | 51.1% | 12544 | 46.9% |
| KENAI PENIN BOR | 40802 | 24761 | 60.7% | 25899 | 63.5% | 29819 | 73.1% |
| KETCHIKAN BOR | 13828 | 8021 | 58.0% | 6365 | 46.0% | 6251 | 45.2% |
| MATANUSKA SUSITNA B | 39683 | 20209 | 50.9% | 19652 | 49.3% | 27960 | 70.5% |
| VALDEZ (CITY) | 4068 | 1808 | 44.4% | 2075 | 51.0% | 2754 | 67.7% |

TABLE 2

FISH HARVESTS WITH ROD AND REEL BY AREA (LBS PER CAPITA)

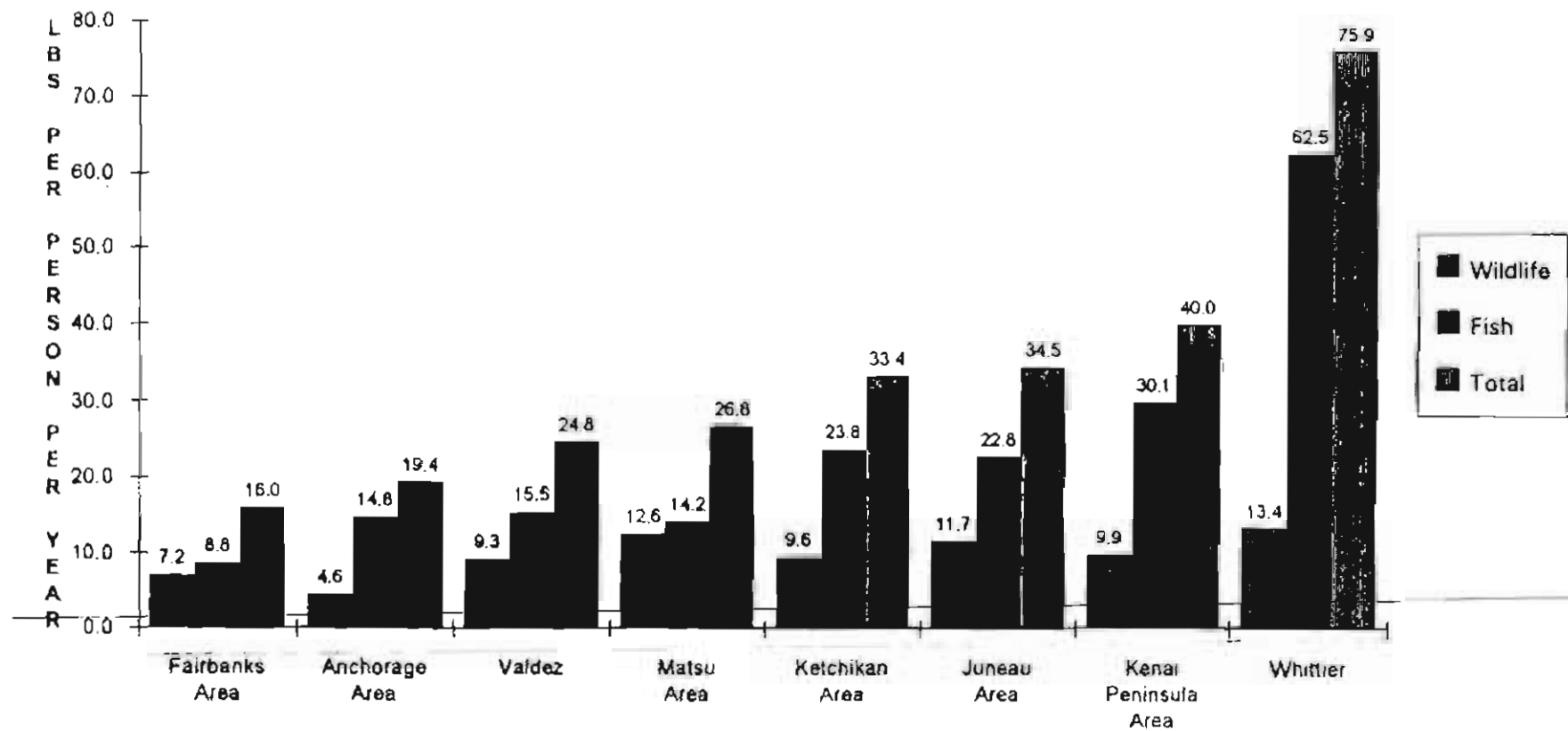
SOURCE: DIVISION OF SPORT FISH MAILED SURVEY

| | 1989 | 1990 | 1991 | MEAN 1989-91 |
|---------------------|------|------|------|-----------------|
| ANCHORAGE BOROUGH | 16.7 | 13.1 | 13.7 | 14.5 |
| FAIRBANKS BOROUGH | 8.3 | 7.2 | 7.2 | 7.6 |
| JUNEAU BOROUGH | 28.1 | 23.0 | 16.3 | 22.5 |
| KENAI PENIN BOROUGH | 29.1 | 26.4 | 23.9 | 26.5 |
| KETCHIKAN BOROUGH | 28.5 | 22.1 | 17.7 | 22.8 |
| MATANUSKA SUSITNA B | 15.0 | 10.7 | 14.4 | 13.4 |
| VALDEZ (CITY) | 16.1 | 15.3 | 15.2 | 15.5 |

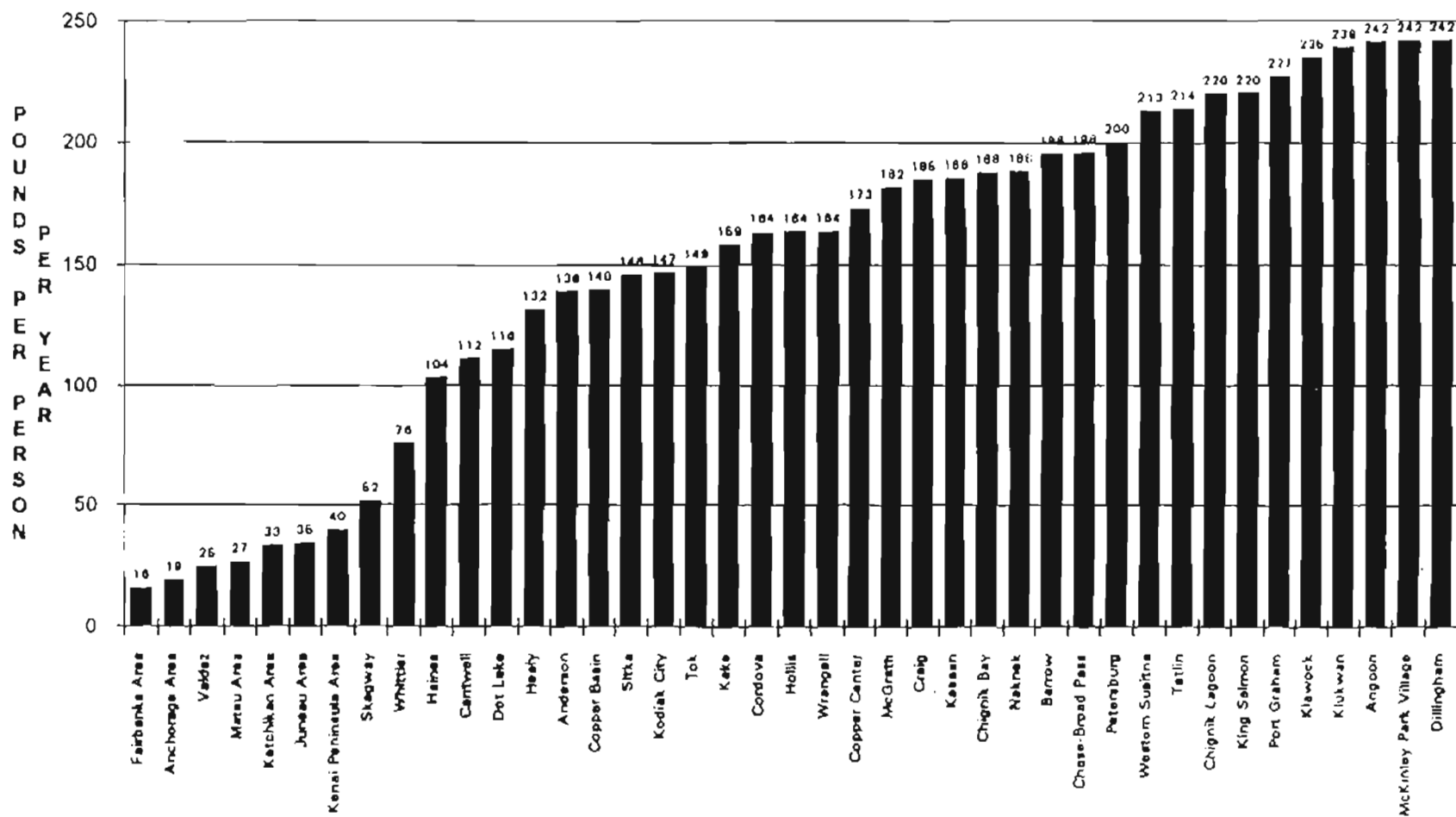
**NON-COMMERCIAL SALMON PERMITS ISSUED TO RESIDENTS OF THE
JUNEAU BOROUGH, 1985-1991, AND SALMON HARVESTS (NUMBERS AND POUNDS)**

| | PERMITS | CHINOOK | SOCKEYE | COHO | PINK | CHUM | TOTAL |
|------------|---------|---------|---------|------|-------|-------|--------|
| 1985 | 127 | 0 | 1374 | 35 | 360 | 69 | 1838.0 |
| 1986 | 77 | 1 | 880 | 0 | 31 | 107 | 1019.0 |
| 1987 | 65 | 0 | 7 | 5 | 84 | 242 | 1073.0 |
| 1988 | 148 | 1 | 619 | 46 | 54 | 265 | 985.0 |
| 1989 | 287 | 31 | 1305 | 87 | 712 | 65 | 2200.0 |
| 1990 | 275 | 31 | 1623 | 186 | 224 | 249 | 2313.0 |
| 1991 | 261 | 41 | 1996 | 109 | 140 | 275 | 2561.0 |
| MEAN | 177.3 | 15.0 | 1219.9 | 66.9 | 229.3 | 181.7 | 1712.7 |
| CONVERSION | * | 18 | 4 | 6 | 2 | 6 | * |
| POUNDS | * | 270 | 4879 | 401 | 459 | 1090 | 7099.4 |
| PER CAPITA | * | 0.01 | 0.18 | 0.01 | 0.02 | 0.04 | 0.27 |

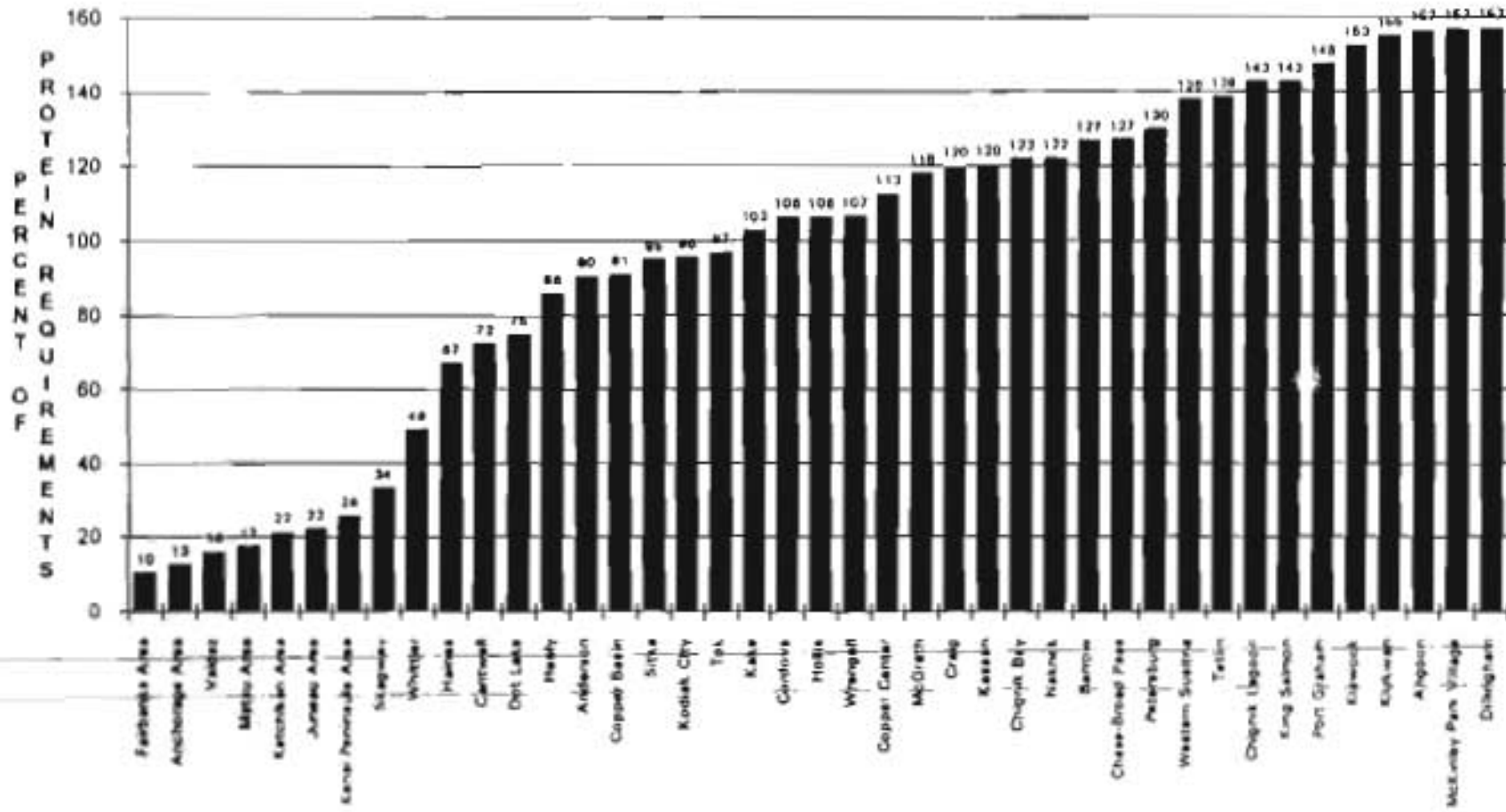
**FISH AND WILDLIFE HARVEST LEVELS
BY RESIDENTS OF SELECTED ALASKA AREAS
(LBS PER PERSON PER YEAR;
NON-COMMERCIAL HARVESTS)**



WILD FOOD HARVESTS BY COMMUNITY
POUNDS PER PERSON PER YEAR
SOURCE: DIVISION OF SUBSISTENCE, ADF&G



WILD FOOD HARVESTS BY COMMUNITY
PERCENT OF COMMUNITY PROTEIN REQUIREMENTS
(44 GRAMS PER PERSON PER DAY, OR .422 LBS OF WILD FOODS)
SOURCE: DIVISION OF SUBSISTENCE, ADF&G

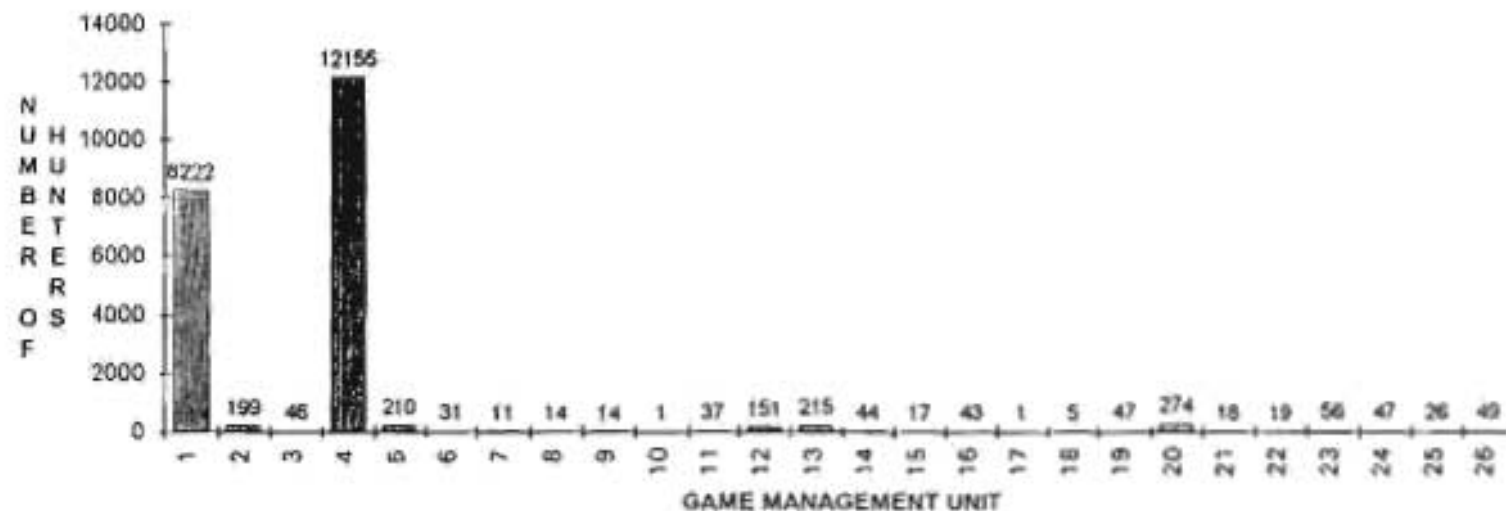


**VOLUNTARY ASSOCIATIONS DEALING WITH FISH, WILDLIFE, AND THE ENVIRONMENT
IN THE JUNEAU AREA, COMPILED FROM ADF&G LISTS**

| Name of Organization | City | Area | Category |
|---|-------------|-------------|-----------------------------|
| Alaska Outdoor Council-Southeast | Juneau | Juneau | Sport Industry |
| Auke Bay Charter Assoc. | Juneau | Juneau | Sport Industry |
| Juneau Charter Assoc. | Juneau | Juneau | Sport Industry |
| National Rifle Association | Juneau | Juneau | Sport Industry |
| Rain Country Fly Fishers | Juneau | Juneau | Sport Industry |
| Territorial Sportsmen | Juneau | Juneau | Sport Industry |
| Alaska Environmental Lobby | Juneau | Juneau | Environmental |
| Alaska Natural Resources Outdoor Education Assoc. | Auke Bay | Juneau | Environmental |
| Juneau Audubon Society | Juneau | Juneau | Environmental |
| Sierra Club Legal Defense Fund | Juneau | Juneau | Environmental |
| Sierra Club/Juneau Group | Juneau | Juneau | Environmental |
| Southeast Alaska Conservation Council | Juneau | Juneau | Environmental |
| Southeast Alaska Natural Resources Center | Juneau | Juneau | Environmental |
| Taku Conservation Society | Juneau | Juneau | Environmental |
| Wilderness Society | Juneau | Juneau | Environmental |
| Alaska Mariculture Assoc. | Juneau | Juneau | Commercial Fishing Industry |
| Alaska Trollers Assoc. | Juneau | Juneau | Commercial Fishing Industry |
| Pacific Seafood Processors Assoc. | Juneau | Juneau | Commercial Fishing Industry |
| United Fishermen of Alaska | Juneau | Juneau | Commercial Fishing Industry |
| United Southeast Alaska Gillnetters Assoc. | Juneau | Juneau | Commercial Fishing Industry |
| Southeast Alaska Subsistence Commission | Juneau | Juneau | Subsistence |
| Alaska Fish and Wildlife Safeguard | Juneau | Juneau | Protection |

Sources: ADFG Public Communications Section; Division of Wildlife Conservation (Juneau, Anchorage, Cordova);
Division of Sport Fish (Juneau); Division of Subsistence (Dillingham, Kotzebue, Bethel, Fairbanks);
FNSB Library Data Cache

HUNTING LOCATIONS OF JUNEAU AREA RESIDENTS, NUMBER OF HUNTERS, 1986-91



HUNT LOCATIONS FOR RESIDENTS OF JUNEAU AREA (PORTION OF 1C), 1986-91

TOTAL NUMBER OF HUNTERS (*SUCCESSFUL HUNTERS) BY GAME MANAGEMENT UNIT

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
|-------------|------|-----|----|-------|-----|----|----|----|----|----|----|-----|-----|----|----|----|----|----|----|-----|----|----|----|----|----|----|
| Black Bear* | 640 | 14 | 27 | | | 2 | | | | | | | | 2 | | | | | | 4 | | | | | | |
| Brown Bear* | 84 | | | 361 | 4 | | | 3 | 3 | 1 | | 1 | 3 | | | | | | | 2 | | | 3 | 1 | | 1 |
| Caribou | | | | | | | 2 | | | | 4 | 2 | 25 | | | | | | | 46 | | | | | | |
| Deer | 5282 | 185 | 17 | 11785 | | | | | | | | | | | | | | | | | | | | | | |
| Elk | | | | | | | | 11 | | | | | | | | | | | | | | | | | | |
| Goat | 656 | | | 9 | 4 | 3 | | | | | 1 | | | | 1 | | | | | | | | | | | |
| Bison | | | | | | | | | | | | | | | | | | | 2 | 1 | | | | | | |
| Moose | 1560 | | 2 | | 202 | 26 | 5 | | 11 | | 14 | 55 | 147 | 32 | 18 | 43 | 1 | | 31 | 193 | 18 | 19 | 30 | 44 | 15 | 9 |
| Sheep | | | | | | | 4 | | | | 18 | 93 | 40 | 10 | | | | | 14 | 28 | | | 23 | 2 | 11 | 39 |
| Muskox | | | | | | | | | | | | | | | | | | 5 | | | | | | | | |
| Total | 8222 | 199 | 46 | 12155 | 210 | 31 | 11 | 14 | 14 | 1 | 37 | 151 | 215 | 44 | 17 | 43 | 1 | 5 | 47 | 274 | 18 | 19 | 56 | 47 | 26 | 49 |

Proposal No. 7 Ketchikan Nonsubsistence Area

Area Description

The proposed Ketchikan Nonsubsistence Area includes that portion of Game Management Unit 1(A) including all drainages from Revillagigedo, Gravina, Pennock, Smeaton, Bold, Betton, and Hassler islands and marine waters one mile offshore.

Historic Overview

SEE FIG. 2

At the time of European contact (about 1770s), the people of the Ketchikan area were members of two distinct societies (*kwaans*) of coastal Tlingit, comprising the Tongass and the Sanya (or Cape Fox). Each had their respective territories in the Ketchikan area. The local economy depended upon the harvest of marine fish and invertebrates, mammals, and plants for food, trade, and ceremonial exchange. During the 1880s-90s, commercial salmon and herring fisheries were developed in the southeast region by Euro-American businesses from the continental United States. Ketchikan was founded in 1888 by about 40 people to service a newly established salmon cannery and saltery. In 1894, Cape Fox and Tongass Tlingit settled three miles south of Ketchikan at Saxman. By 1900, Ketchikan had grown to 460 people and Saxman to 142 people. While commercial fishing has continued to be important in Ketchikan, the commercial timber industry grew in importance after 1954, when a pulp mill went into operation. Ketchikan also grew to become a center of transportation and services for southern southeast Alaska. The population of Ketchikan area grew from 6,446 people in 1950 to 13,828 in 1990, containing 20 percent of the southeast population. Saxman grew from 167 people in 1950 to 369 people in 1990.

Twelve Factors

1. The Social and Economic Structure

The social and economic structure of the Ketchikan Area has been characterized as a type of "industrial-capitalism", a socioeconomic system common to the lower 48 which has developed in Alaska. This social and economic structure is distinct from another type of socioeconomic system in Alaska, called a "mixed, subsistence-cash economy", where the domestic household sector is a major producer and distributor of food. Industrial capital systems generally have large wage sectors, which provide the major means of livelihood to residents. In an industrial-capital system, households are not major producers or distributors of an area's food supply. Food production by households provides a very small portion of the community's food, but may be of economic significance to those households actively involved in hunting and fishing. Most of the area's food and other goods and services are provided by businesses organized and financed separately from the household unit. Production and distribution of goods and services

are organized by market forces or by government. Fishing and hunting by residents are primarily conducted as part of recreational or commercial industries.

The social structure of the Ketchikan area contains a number of distinct cultural subgroups, including the Tongass and Cape Fox groups. Saxman, which is 77 percent Alaska Native, is a city about 3 miles southeast of Ketchikan City along the road system and is part of the Ketchikan Gateway Borough. The heterogeneous social structure of the Ketchikan area is associated with some differences in types of economic activities and uses of wild resources by group members, as indicated in some of the following descriptions. While a recent (1987) study of the economy and resource uses of Saxman residents has been made (Kruse and Frazier 1988), no recent, systematic studies have been made of Ketchikan's other subgroups, or of Ketchikan as a whole.

2. The Stability of the Economy

SEE FIGS. 2, 3, 4

The economy of Ketchikan has shown growth during the past four decades. One indicator of growth is rate of population increases in the area (see Figs. 2 and 3). The mean annual rates of growth for the Ketchikan Gateway Borough were 2.8 percent (1950s), 3.0 percent (1960s), 1.2 percent (1970s), and 2.0 percent (1980s) (Fig. 3).

Fig. 4 shows recent trends in civilian wage employment in Ketchikan Gateway Borough during the last decade. The number of wage-paying jobs showed little change from 1980 to 1985, fluctuating between about 5,500 and 6,000 jobs. Jobs increased from 5,941 in 1985 to 7,861 in 1990, but decreased to 7,313 in 1991.

3. The Extent and Kinds of Employment for Wages, Including Full-Time, Part-Time, Temporary, and Seasonal Employment

SEE FIGS. 5, 6, 7, 8

In 1991, most wage-paying jobs in the Ketchikan Gateway Borough were in government (24 percent), manufacturing (primarily timber and fish processing) (22 percent), trade (18 percent), services (16 percent), and transportation (8 percent). Additional employment was in construction (5 percent), finance (4 percent), and the military (3 percent) (see Fig. 5).

In 1991, there were 487 limited entry commercial fishing permits fished by residents of the Ketchikan Gateway Borough (Fig. 6). Commercial fishers caught an estimated 34.9 million pounds of fish in 1991 with an ex vessel value of \$11.0 million.

Unemployment rates were 9.7 percent in the Ketchikan Gateway Borough in April 1992 (Fig. 7). This was about the same as the Alaska rate of 9.2 percent.

4. The Amount and Distribution of Cash Income Among Those Domiciled in the Area or Community

SEE FIGS. 8, 9, 10, 11

In 1989, per capita income in the Ketchikan Gateway Borough (\$18,789) was above the state's average (\$17,610) (Fig. 8 and 9). According to U.S. Census income distribution records, incomes were distributed unevenly by racial or cultural group membership (Fig. 8). These income distributions are shown in Fig. 10.

In 1989, 6.6 percent of Ketchikan residents lived in households earning less than the federal poverty standards (Fig. 11). This rate is below the Alaska average (12.5 percent) and among the lowest in the state. It is substantially below rates in some Alaska areas, like the Dillingham Census Area (30.9 percent).

5. The Cost and Availability of Goods and Services To Those Domiciled in the Area or Community

SEE FIG. 12

The Ketchikan Gateway Borough has a well-developed system of commerce through which a large range of goods and services are provided. The cost of food in the Ketchikan Gateway Borough relative to other selected communities in Alaska is shown in Fig. 12. Current food costs in the Ketchikan Gateway Borough are 4 percent lower than Anchorage. Food is relatively less expensive in Ketchikan because the area is relatively close to supply points in the Lower 48 and is a primary node in the state's commercial transportation network (which reduces transportation costs); the area also deals in relatively large volume.

6. The Variety of Fish and Game Species Used by Those Domiciled in the Area or Community

SEE FIGS. 13 AND 14

The residents of the Ketchikan Gateway Borough use a variety of fish and wildlife, as shown in Figs. 13 and 14. Big game species used include black bear, brown bear, goat, moose, sheep, and deer (Fig. 13). Fish species used include chinook, coho, sockeye, pink, and chum salmon; halibut; steelhead; and varieties of trout, other freshwater fish, and shellfish (Fig. 14).

7. The Seasonal Cycle of Economic Activity

Economic activity in the Ketchikan Borough shows some seasonal fluctuations, primarily related to tourism and commercial salmon fishing during summer. Fishing and hunting activities by residents are influenced by

resource availability and regulated seasons, such as salmon fishing during summer and big game hunting during fall. Jobs related to the local recreational industry (such as recreational retail outlets, fishing charters, and charter air transporters) are influenced by these seasonal cycles. The commercial fishers in Ketchikan also are influenced by the seasonal cycle of salmon and halibut fisheries.

8. The Percentage of Those Domiciled in the Area or Community Participating in Hunting and Fishing Activities or Using Wild Fish and Game

SEE FIGS. 15, 16, 17

A substantial percent of the residents of the Ketchikan Borough fish with rod and reel. In Ketchikan, about 45-58 percent of the population fished with rod and reel during 1989-91, based on surveys of anglers (Fig. 15). In 1991, 2,648 hunting/hunting combination licenses were sold to persons living in the Ketchikan area (about 19.1 percent of the population).

From 1985-1991, Ketchikan Borough residents were issued about 554 permits each year for non-commercial net fishing for salmon (Fig. 16).

Based on a random household in Saxman in 1987, 64.1 percent of households harvested fish, 26.3 percent harvested game, 42.9 percent harvested marine invertebrates, and 83.4 percent harvested some wild resource (Kruse and Frazier 1988) (Fig. 17). In 1987, 93.4 percent of households used noncommercial fish, 57.5 percent used game, 72.1 percent used noncommercial marine invertebrates, and 96.7 percent used wild resources. Of the surveyed households, 35 percent fished with noncommercial nets, 50 percent fished with rod and reel, and 17 percent removed fish from commercial catches for home use.

9. The Harvest Levels of Fish and Game by Those Domiciled in the Area or Community

SEE FIG. 13, 14, 16, 18, 19, 20

In the Ketchikan area, the total fish and game harvest was about 462,000 lbs annually, based on state game harvest records for 1986-91, sport fish surveys for 1989-91, and noncommercial salmon records for 1985-91. The total annual per capita harvest was 33.4 lbs per person in the Ketchikan area (23.8 lbs of fish and 9.6 lbs of game) (Fig. 18). The harvest of wild foods provided a small portion of the food supply in Ketchikan compared with other Alaska areas (Fig. 19). The wild food harvest contained 22 percent of the community's protein requirements (Fig. 20). However, for households very active in hunting and fishing, harvest levels are commonly and important sources of the household's diet. Low food production rates by households are characteristic of an industrial-capital system, where most foods are produced and distributed through commercial businesses and purchased by households with wage earnings.

The numbers of big game and fish harvested by residents of the Ketchikan Borough broken out by species are shown in Figs. 13, 14, and 16.

Based on the 1987 household survey in Saxman, the per capita harvest of wild foods was estimated to be 89.3 lbs per person in 1987, about 2.5 times greater than the estimate for Ketchikan as a whole (Fig. 21). The harvest was composed of fish (52.1 lbs per person), game (21.9 lbs), birds (0.7 lbs), marine mammals (2.4 lbs), marine invertebrates (8.9 lbs), and plants, seaweeds, and berries (3.2 lbs) (Fig. 21).

10. The Cultural, Social, and Economic Values Associated with the Taking and Use of Fish and Game

SEE FIG. 22

In the Ketchikan Area, there are a number of cultural values associated with the taking and use of fish and game. For a significant segment of the community, the predominant values associated with fish and wildlife harvests are recreational. Fishing and hunting are periodic outdoor activities, valued as breaks from the economic work routine, embodying fair chase ethics, and producing wild foods that are valued for their taste and healthful qualities. For many, fishing and hunting are valued as high quality outdoor experiences which supplement the household's diet. For residents directly employed in commercial fishing and outdoor recreational industries (such as recreational retail outlets, fish charters, charter air transporters, and tour guides), values are commonly commercial in nature. That is, the use of fish and hunt produces monetary income for the household, as well as all or some of the recreational values listed above. For some Ketchikan Borough residents, values associated with fish and wildlife include environmental awareness and nonconsumptive uses (such as wildlife viewing). For a number of Ketchikan Borough residents, values of fishing and hunting are associated with Alaska Native cultural traditions, including food production for a local society of people, sharing with elders, and the provision of wild foods for ceremonial gatherings.

One indicator of the value orientations of residents are the types and numbers of voluntary associations dealing with fish and wildlife in the Ketchikan Borough appearing on mailing lists compiled by ADF&G (Fig. 22). Among those listed for the Ketchikan Borough, there are at least 5 associated with recreational-sport fishing or hunting, 1 associated with the environment and/or nonconsumptive uses, 2 associated with the commercial fishing industry, 1 associated with subsistence-commercial fishing, and 1 associated with enforcement.

11. The Geographic Locations Where Those Domiciled in the Area or Community Hunt and Fish

SEE FIG. 23, 25-27

During the period 1986-91, residents of the Ketchikan Borough hunted primarily in GMUs 1, 2, and 4, which are in the southeast region (Fig. 23). Other hunters traveled to more distant locations, such as GMU 14 and 20.

Fishing and hunting areas by residents of Saxman were mapped in a 1987 study (Figs. 25-27). The maps indicate that the Ketchikan area, including

portions of Revillagigedo Island, Carroll Inlet, Gravina Island, Clarence Strait, and Behm Canal, is used for harvesting a variety of wild resources, including salmon, deer, shellfish, and other finfish. Other areas in southern southeast, such as Prince of Wales Island, are also used (Figs. 25-27).

12. The Extent of Sharing and Exchange of Fish and Game by Those Domiciled in the Area or Community

SEE FIG. 24

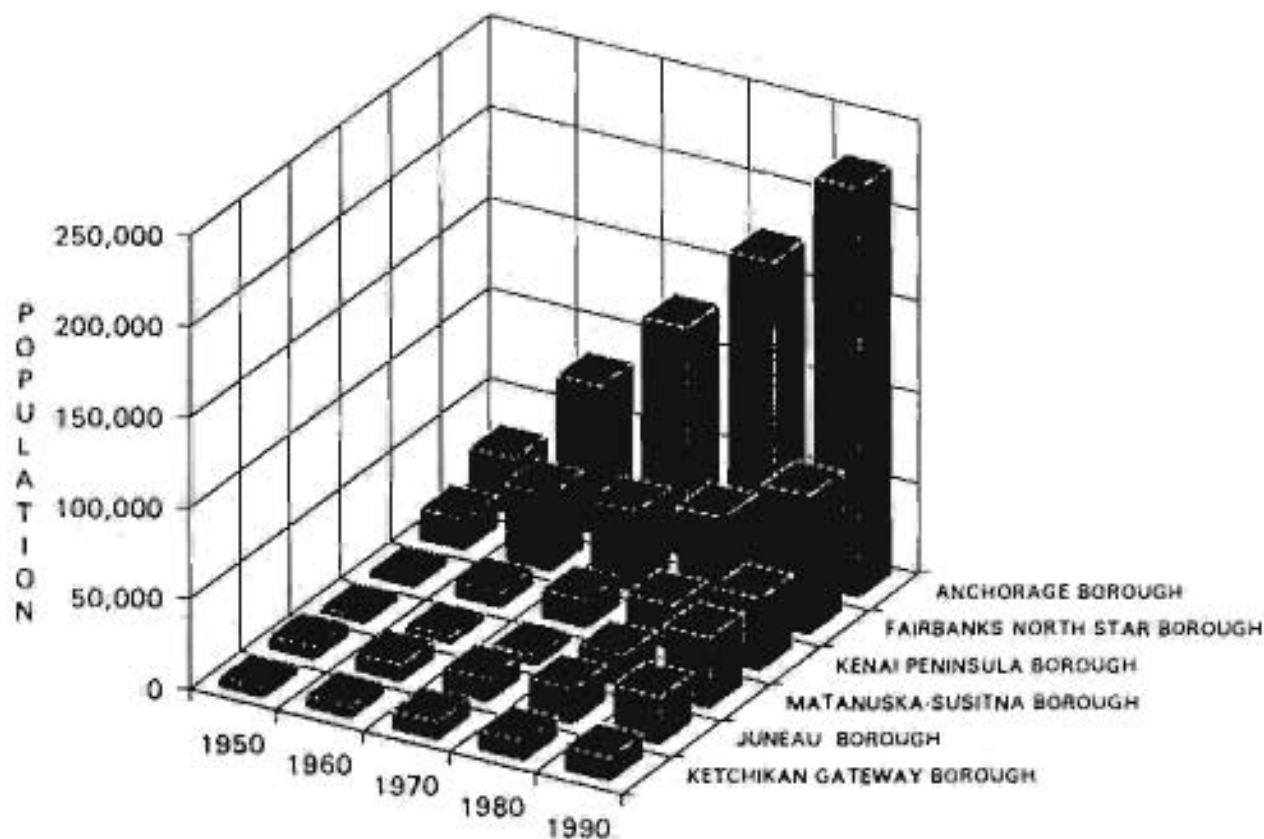
Sharing and exchange of wild fish and game by Ketchikan Area residents occurs, but the extent has not been quantified. The absolute amount of wild foods shared on a per capita basis is probably relatively small in the Ketchikan Area because of the relatively small amounts harvested. However, no estimate of sharing and exchange has ever been made for the Ketchikan Borough as a whole. Wild food products which regularly come into Ketchikan include herring roe on hemlock branches, roe on kelp, hooligan oil, and dried salmon.

In Saxman in 1987, 45 percent of households reported giving wild foods and 95 percent of households reported receiving wild foods (Fig. 24). The following percent of households reported receiving these resources: salmon (51 percent), halibut (47 percent), herring roe (47 percent), hooligan (24 percent), deer (42 percent), harbor seal (19 percent), marine invertebrates (51 percent), seaweed (36 percent) (Fig. 24).

Source Materials

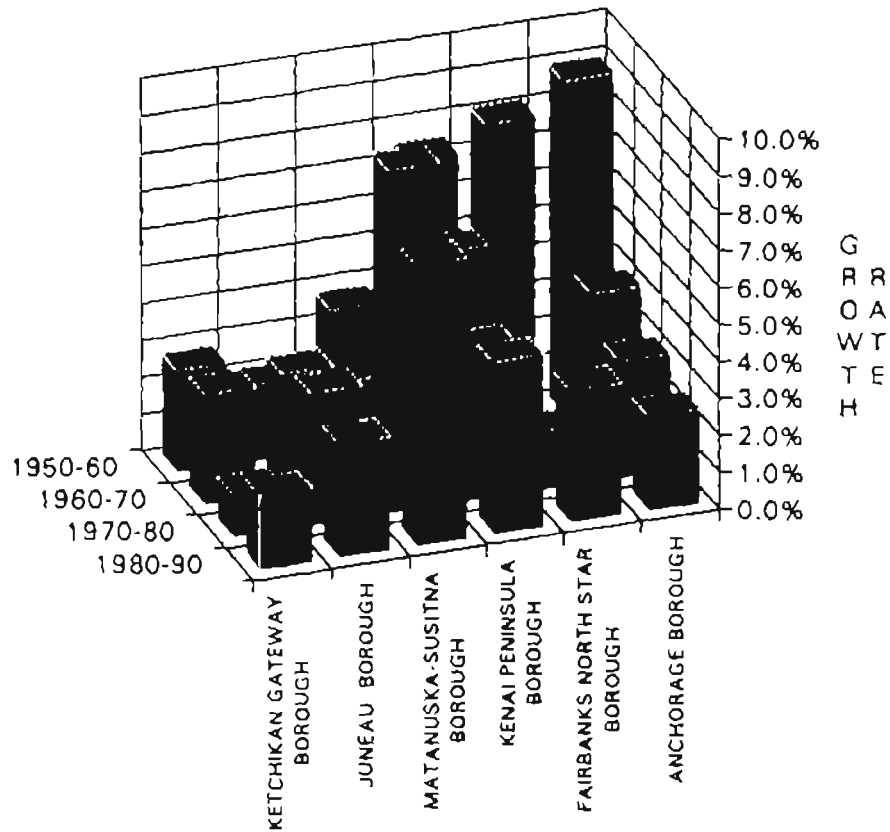
Kruse, Jack and Rosyland Frazier (1988) Saxman: Community Profile Series, Tongass Resource Use Cooperative Study. Institute of Social and Economic Research, University of Alaska, Anchorage.

POPULATION TRENDS 1950-1990 SELECT ALASKA AREAS



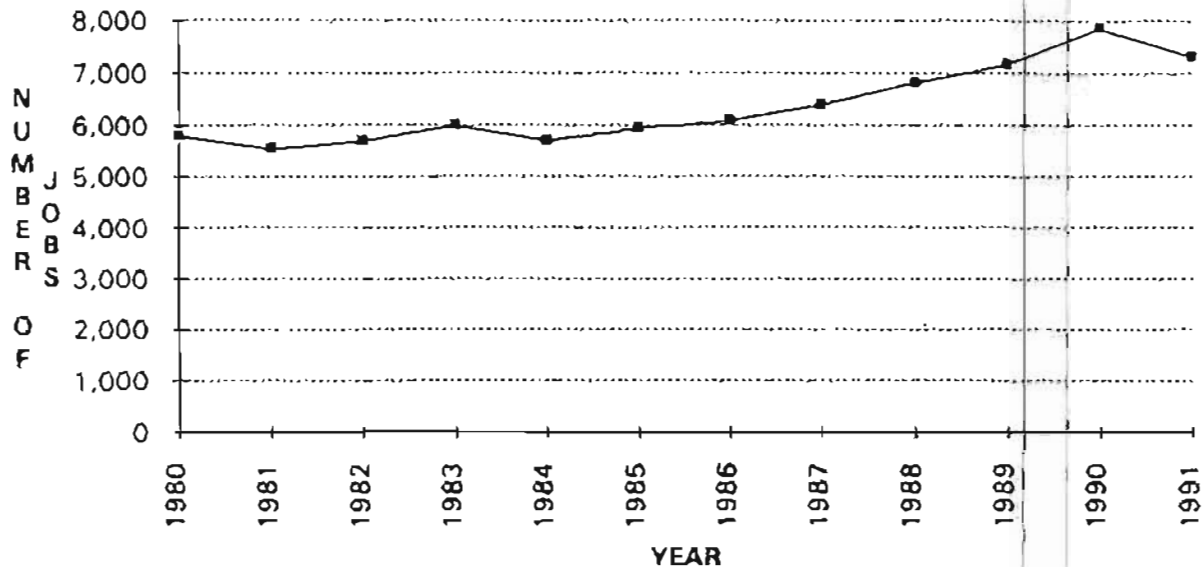
| | 1950 | 1960 | 1970 | 1980 | 1990 |
|------------------------------|--------|--------|---------|---------|---------|
| KETCHIKAN GATEWAY BOROUGH | 5,581 | 7,406 | 10,041 | 11,316 | 13,828 |
| JUNEAU BOROUGH | 7,920 | 9,745 | 13,556 | 19,528 | 26,751 |
| MATANUSKA-SUSITNA BOROUGH | 3,534 | 5,188 | 6,509 | 17,816 | 39,683 |
| KENAI PENINSULA BOROUGH | 4,130 | 9,053 | 16,586 | 25,282 | 40,802 |
| FAIRBANKS NORTH STAR BOROUGH | 18,129 | 42,992 | 45,864 | 53,983 | 77,720 |
| ANCHORAGE BOROUGH | 31,487 | 82,833 | 126,385 | 174,431 | 226,338 |

MEAN ANNUAL GROWTH RATES PER DECADE, FOR SELECT ALASKA AREAS, 1950-90



| | 1950-60 | 1960-70 | 1970-80 | 1980-90 |
|------------------------------|---------|---------|---------|---------|
| KETCHIKAN GATEWAY BOROUGH | 2.8% | 3.0% | 1.2% | 2.0% |
| JUNEAU BOROUGH | 2.1% | 3.3% | 3.6% | 3.1% |
| MATANUSKA-SUSITNA BOROUGH | 3.8% | 2.3% | 9.3% | 7.6% |
| KENAI PENINSULA BOROUGH | 7.5% | 5.9% | 4.2% | 4.7% |
| FAIRBANKS NORTH STAR BOROUGH | 8.1% | 0.6% | 1.6% | 3.6% |
| ANCHORAGE BOROUGH | 9.0% | 4.2% | 3.2% | 2.6% |

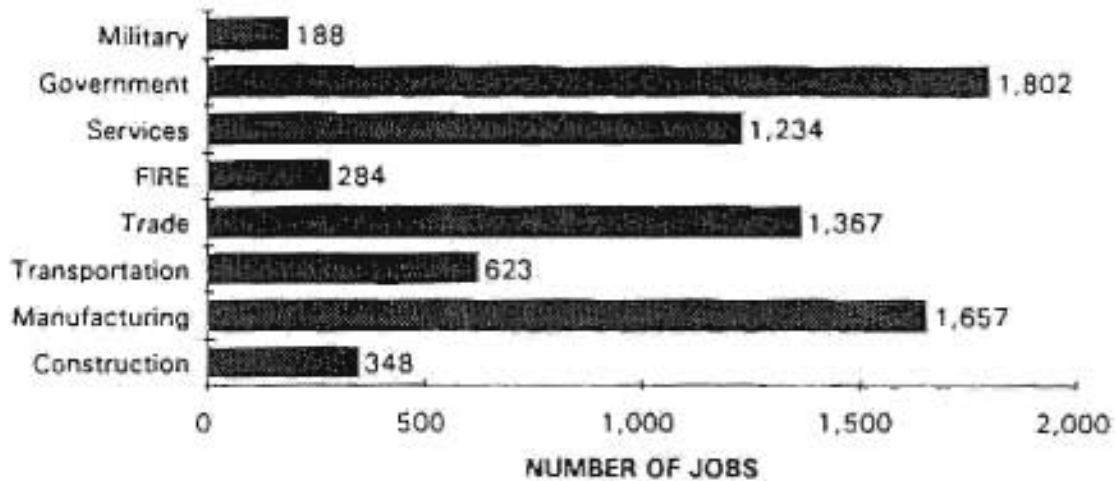
**KETCHIKAN BOROUGH
CIVILIAN WAGE EMPLOYMENT, 1980-91
NUMBER OF JOBS**



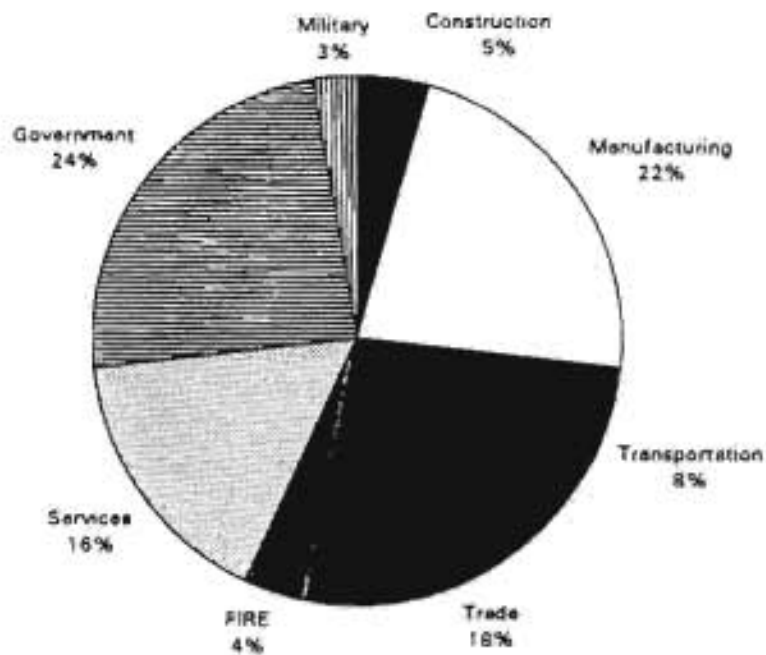
KETCHIKAN BOROUGH WAGE EMPLOYMENT, 1980-91: NUMBER OF JOBS BY JOB CATEGORY
SOURCE: ALASKA DEPARTMENT OF LABOR, RESEARCH AND ANALYSIS SECTION

| | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Construction | 392 | 258 | 270 | 424 | 435 | 338 | 268 | 366 | 375 | 299 | 320 | 348 |
| Manufacturing | 1239 | 959 | 973 | 822 | 560 | 937 | 1197 | 1282 | 1378 | 1868 | 1936 | 1657 |
| Transportation | 627 | 630 | 499 | 488 | 430 | 441 | 509 | 584 | 675 | 590 | 668 | 623 |
| Trade | 969 | 980 | 1061 | 1189 | 1091 | 1113 | 1105 | 1132 | 1225 | 1305 | 1438 | 1367 |
| FIRE | 229 | 234 | 212 | 202 | 210 | 218 | 231 | 230 | 209 | 243 | 290 | 284 |
| Services | 872 | 947 | 1036 | 1119 | 1148 | 1129 | 1108 | 1121 | 1265 | 1302 | 1382 | 1234 |
| Government | 1484 | 1542 | 1641 | 1786 | 1818 | 1769 | 1898 | 1881 | 1895 | 1754 | 1828 | 1802 |
| Military | 213 | . | . | . | . | . | . | . | . | . | . | 188 |
| Total Civilian | 5812 | 5549 | 5691 | 6009 | 5691 | 5941 | 6114 | 6397 | 6821 | 7150 | 7861 | 7313 |

**KETCHIKAN BOROUGH
WAGE EMPLOYMENT, 1991
NUMBER OF JOBS BY JOB CATEGORY**



**KETCHIKAN BOROUGH WAGE EMPLOYMENT, 1991
PERCENT OF JOBS BY JOB CATEGORY**

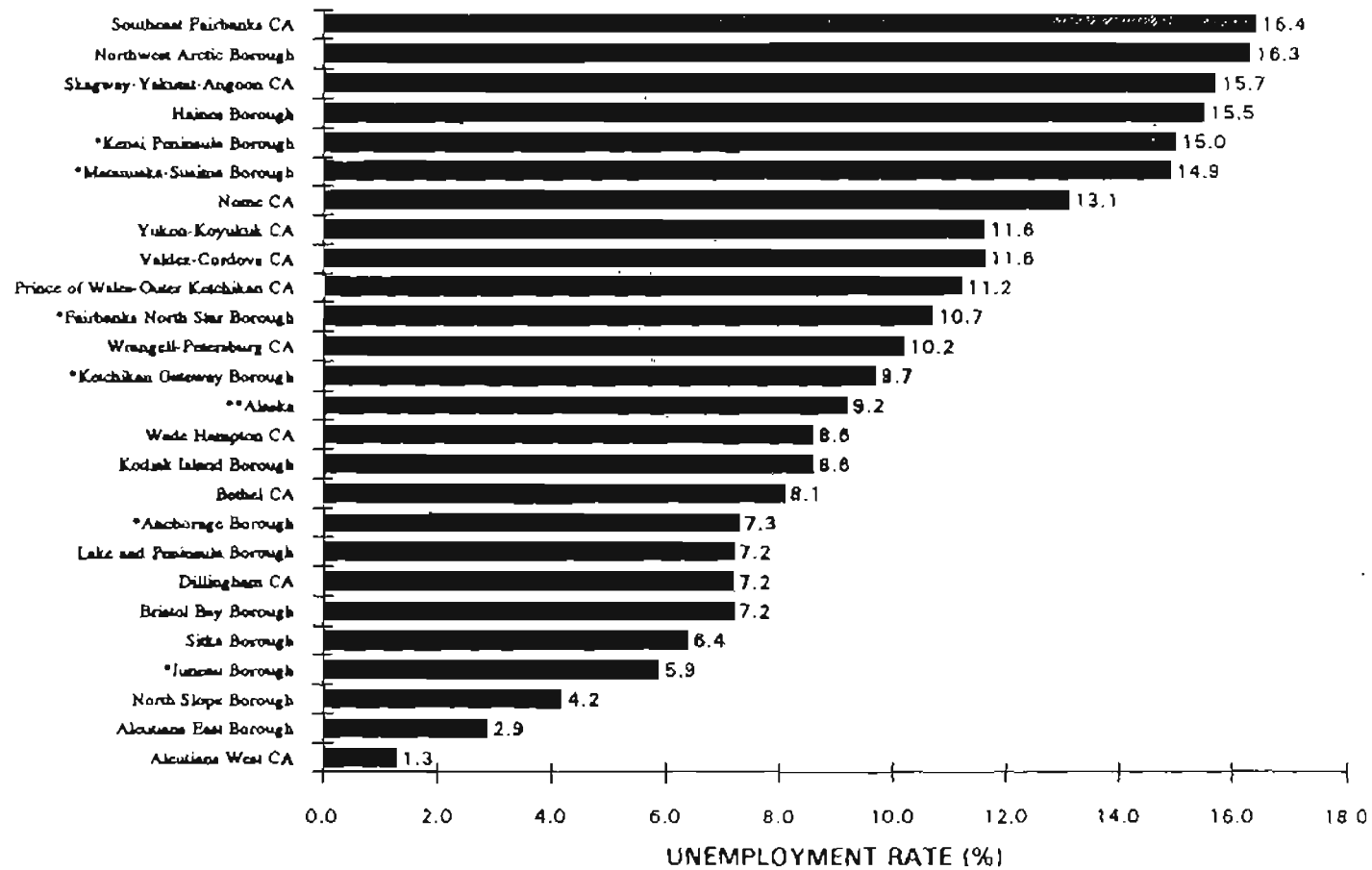


COMMERCIAL FISHING BY RESIDENTS OF KETCHIKAN AREA, 1991

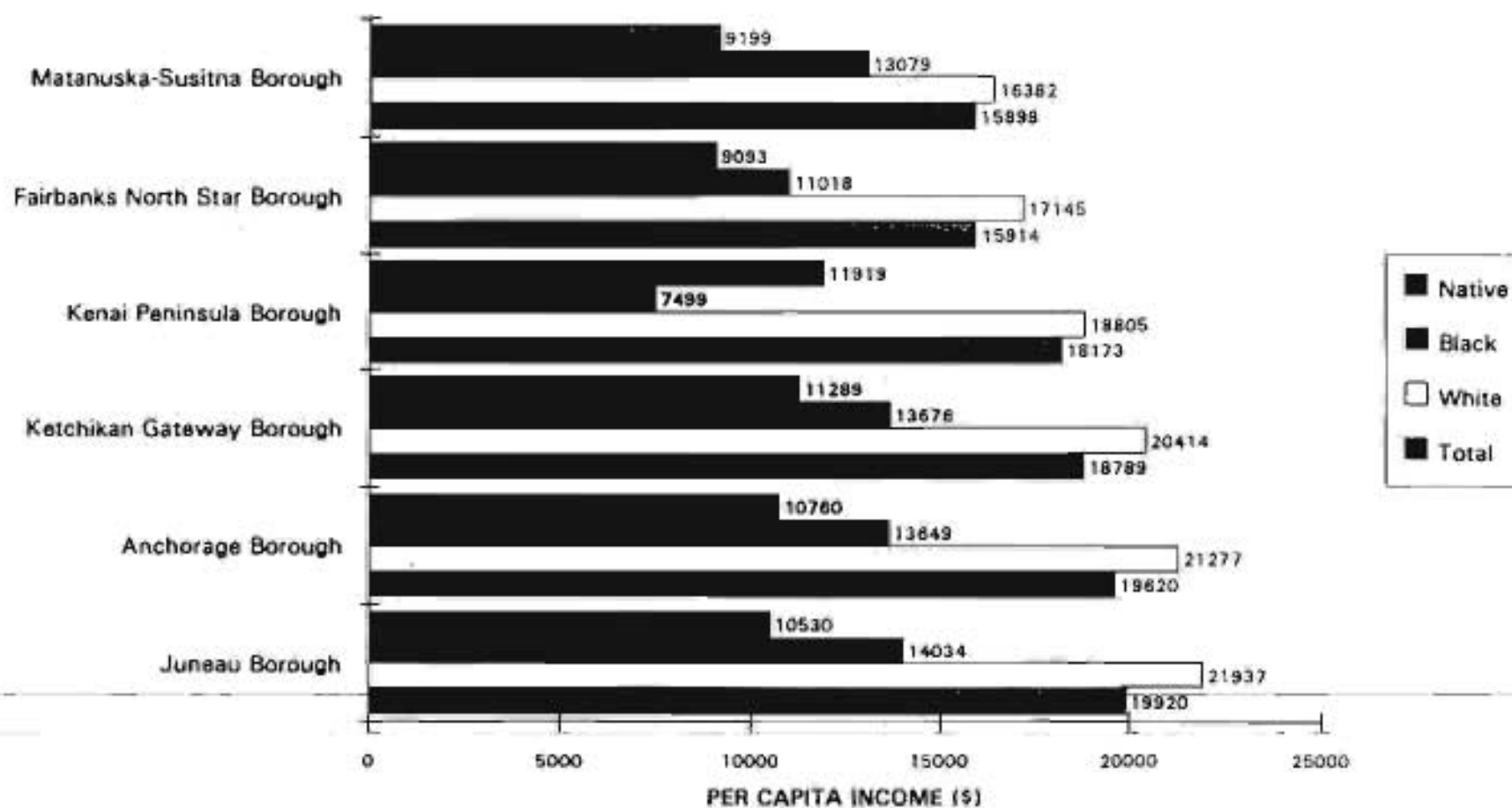
Source: Commercial Fisheries Entry Commission

| Place | Number of People | Number of Permits Fished | Pounds | Estimated Gross Earnings |
|-----------|---------------------|-----------------------------|------------|-----------------------------|
| Ketchikan | 270 | 444 | 31,414,121 | \$9,979,010 |
| Ketchikan | 29 | 43 | 3,484,361 | \$1,060,865 |
| Ward Cove | | | | |
| Total | 299 | 487 | 34,898,482 | \$11,039,875 |

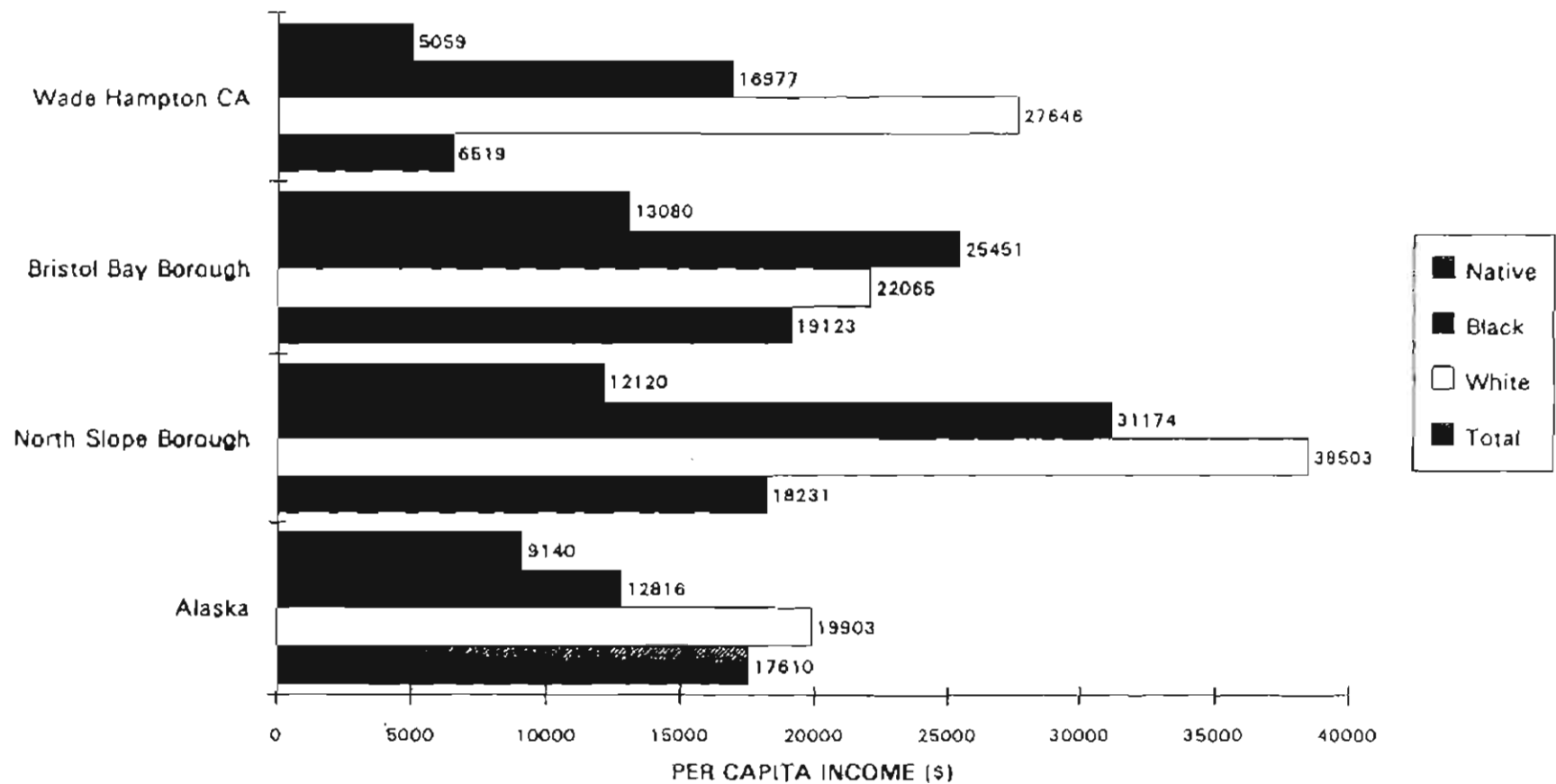
UNEMPLOYMENT RATES BY ALASKA AREA, APRIL 1992



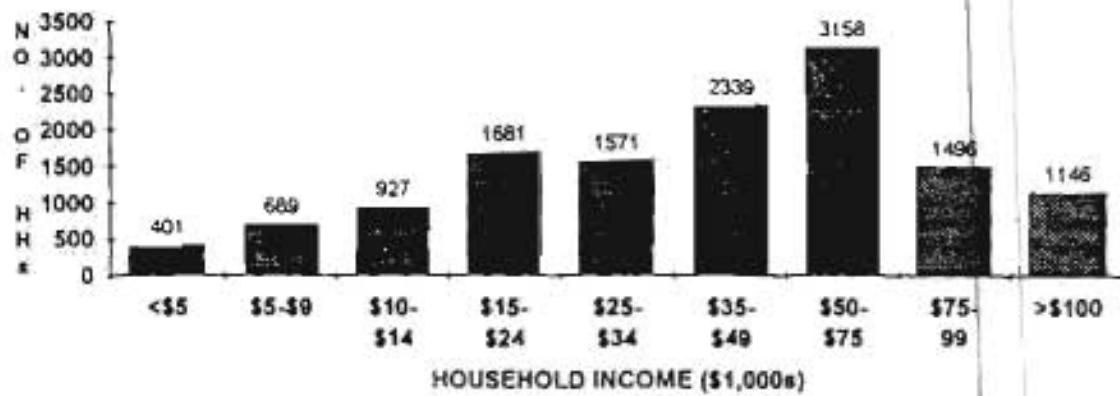
PER CAPITA INCOME BY RACE, 1989:
PROPOSED NON-SUBSISTENCE AREAS



PER CAPITA INCOME BY RACE, 1989:
ALASKA, NORTH SLOPE BOROUGH, BRISTOL BAY
BOROUGH, AND WADE HAMPTON CENSUS AREA



HOUSEHOLD INCOMES OF WHITE RESIDENTS, KETCHIKAN GATEWAY BOROUGH, 1989



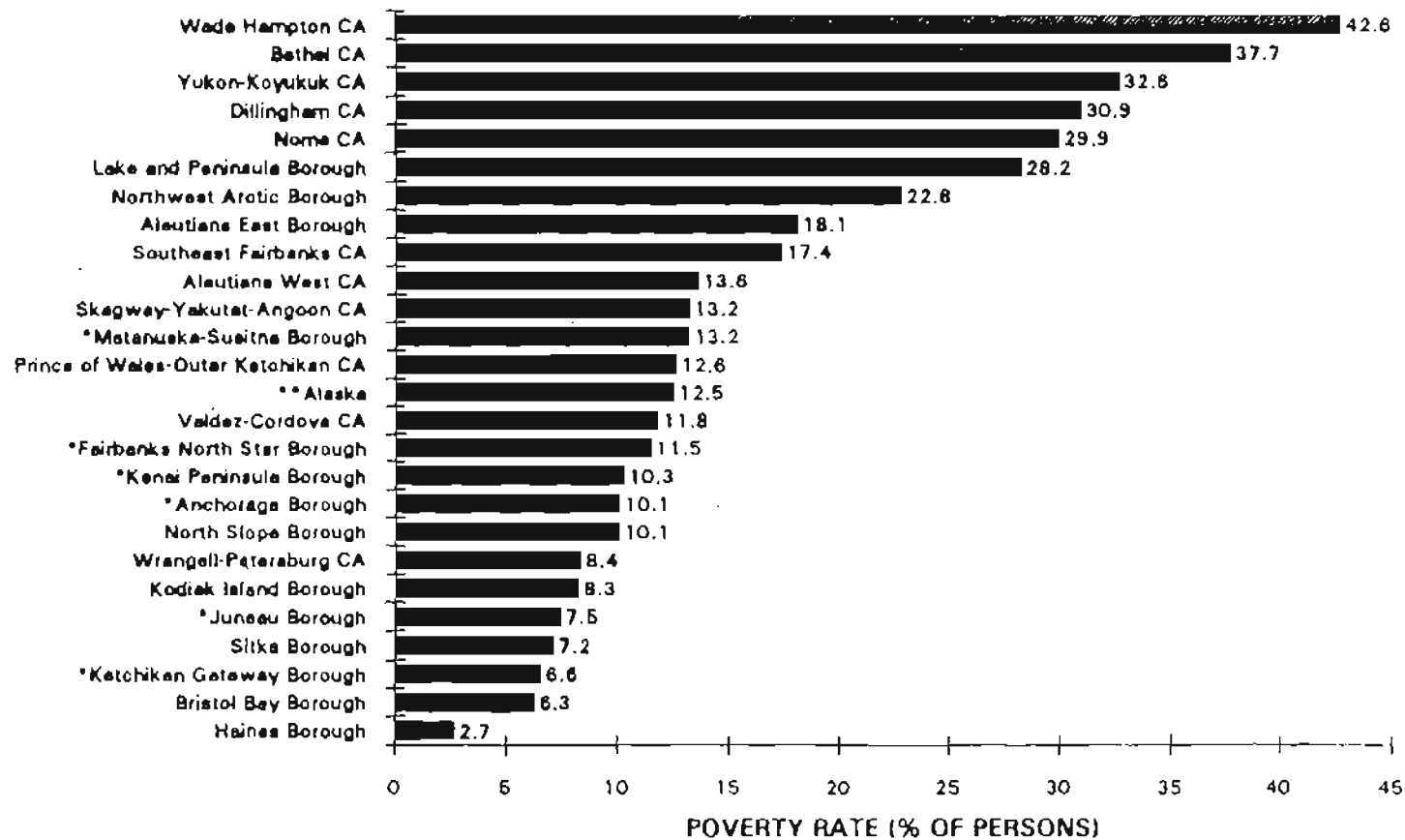
HOUSEHOLD INCOMES OF BLACK RESIDENTS, KETCHIKAN GATEWAY BOROUGH, 1989



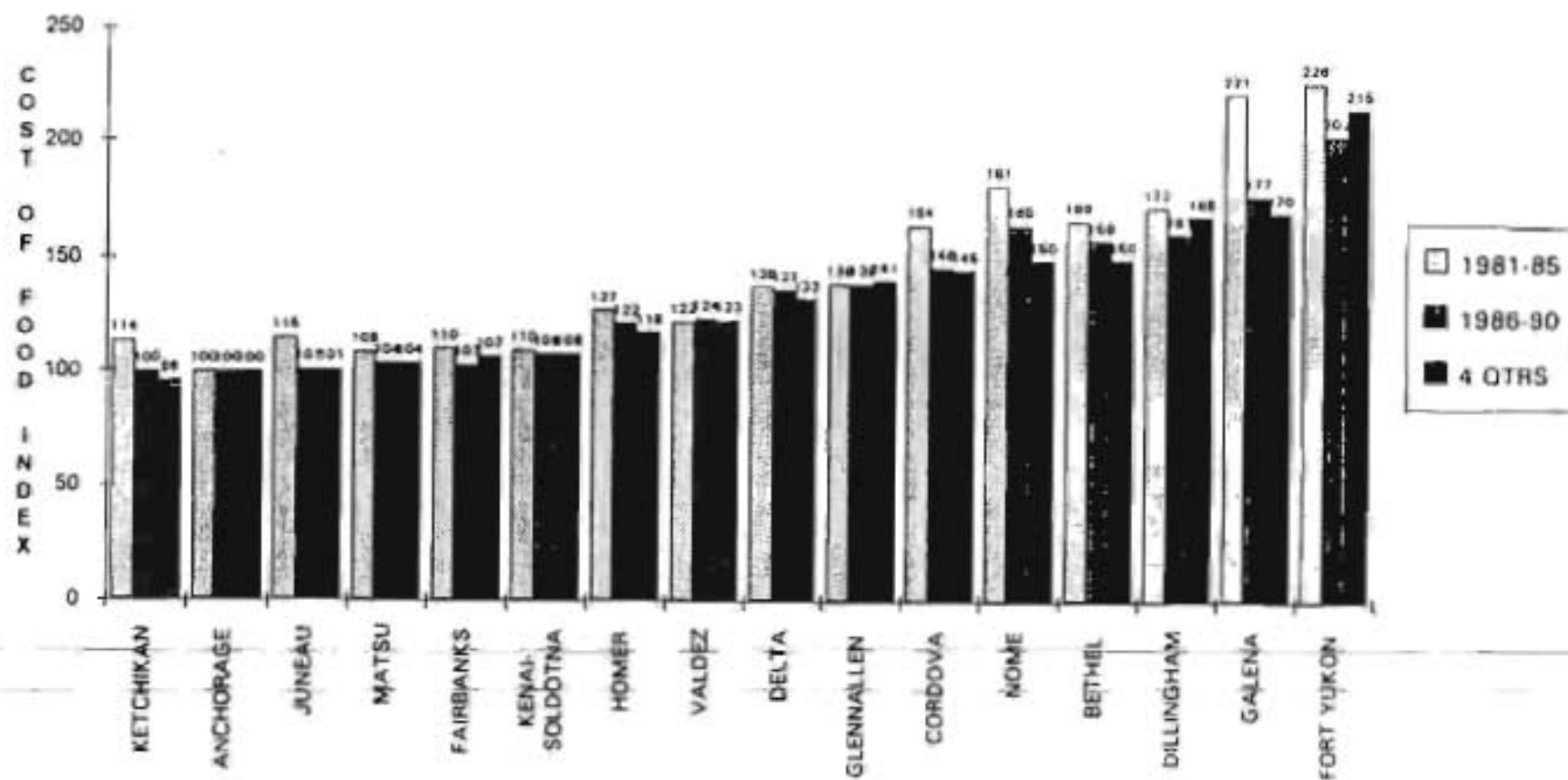
HOUSEHOLD INCOMES OF ALASKA NATIVE RESIDENTS, KETCHIKAN GATEWAY BOROUGH, 1989



**POVERTY RATES BY ALASKA AREA, 1989:
PERCENT OF PERSONS BELOW 125%
OF FEDERAL POVERTY STANDARDS**



**COST OF FOOD INDEX
FOR SELECT COMMUNITIES,
1981-85, 1986-90, AND
MOST RECENT FOUR QUARTERLY PERIODS**



WILDLIFE HARVESTS BY KETCHIKAN BOROUGH RESIDENTS, 1986-91 MEAN

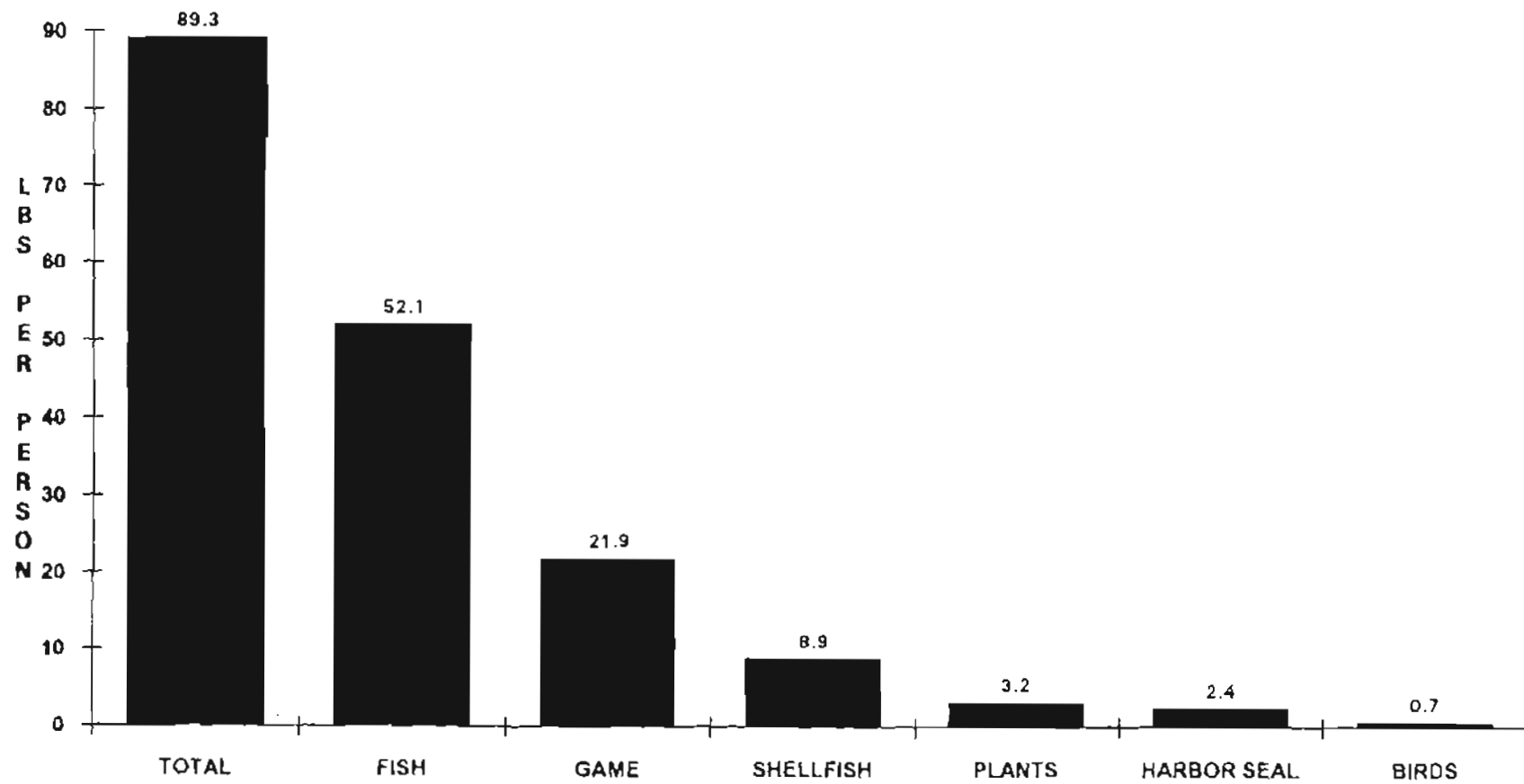
| | Black Bear | Brown Bear | Caribou | Elk | Goat | Bison | Moose | Sheep | Muskox | Deer | Total |
|--------------|---------------|---------------|---------|------|------|-------|-------|-------|--------|--------|--------|
| Ketchikan | 82.7 | 11.5 | 0.3 | 0 | 24.2 | | 18.2 | 3.2 | | | |
| Ward Cove | 16.3 | 0.8 | 0.3 | | 2.7 | | 2 | | | | |
| Total Number | 99 | 12.3 | 0.6 | 0 | 26.9 | 0 | 20.2 | 3.2 | 0 | 1429 | |
| Conversion | 58 | 0 | 150 | 225 | 72.5 | 450 | 500 | 65 | 593 | 80 | |
| Total Pounds | 5742 | 0 | 90 | 0 | 1950 | 0 | 10100 | 208 | 0 | 114320 | 132410 |
| Per Capita | 0.42 | 0.00 | 0.01 | 0.00 | 0.14 | 0.00 | 0.73 | 0.02 | 0.00 | 8.27 | 9.6 |

Sport Fish Harvest by Residents of Proposed Nonsubsistence Areas (1990), Numbers of Fish

Source: Division of Sport Fish Mailed Survey and Division of Subsistence

| | 1990 Population | Number Anglers | Anglers Percent | Small Chinook | Chinook | Landlocked Coho | Landlocked oho-Chinook | Landlocked Sockeye | Sockeye | Pink |
|-------------------|--------------------|-------------------|--------------------|------------------|-----------|--------------------|---------------------------|-----------------------|----------|------------------|
| ANCHORAGE BOR | 228338 | 105723 | 46.7% | 1921 | 19924 | 92562 | 12542 | 83 | 106893 | 28796 |
| FAIRBANKS BOR | 77720 | 33818 | 43.3% | 219 | 3089 | 13167 | 11337 | 0 | 5123 | 11886 |
| JUNEAU BOR | 20751 | 13884 | 51.1% | 1050 | 7812 | 30592 | 310 | 0 | 1104 | 18430 |
| KENAI PENIN BOR | 40602 | 25899 | 63.5% | 486 | 4826 | 30811 | 261 | 406 | 27769 | 9451 |
| KETCHIKAN BOR | 13828 | 6365 | 46.0% | 114 | 4867 | 17586 | 0 | 16 | 709 | 7766 |
| MATANUSKA SUSITNA | 39683 | 19552 | 49.3% | 606 | 4654 | 14199 | 9443 | 119 | 10741 | 2211 |
| VALDEZ (CITY) | 4088 | 2075 | 51.0% | 18 | 142 | 2659 | 0 | 0 | 333 | 3796 |
| WHITTIER (CITY) | 243 | 54 | 22.2% | 0 | 0 | 108 | 0 | 0 | 311 | 0 |
| | Chum | Halibut | Steelhead | Rainbow | Cutthroat | Dolly Varden | Brook Trout | Lake Trout | Grayling | Northern Pike |
| ANCHORAGE BOR | 3129 | 56824 | 253 | 82981 | 369 | 27421 | 0 | 3602 | 13348 | 2415 |
| FAIRBANKS BOR | 478 | 10871 | 44 | 47338 | 49 | 4317 | 0 | 3115 | 20901 | 5808 |
| JUNEAU BOR | 1817 | 10347 | 217 | 278 | 2183 | 7777 | 17 | 0 | 68 | 10 |
| KENAI PENIN BOR | 270 | 27222 | 82 | 7552 | 44 | 8132 | 0 | 1738 | 934 | 209 |
| KETCHIKAN BOR | 308 | 3839 | 1077 | 541 | 2323 | 1069 | 0 | 0 | 728 | 0 |
| MATANUSKA SUSITNA | 716 | 6519 | 17 | 14115 | 16 | 6119 | 0 | 814 | 4704 | 480 |
| VALDEZ (CITY) | 113 | 1436 | 0 | 504 | 0 | 742 | 0 | 34 | 199 | 0 |
| WHITTIER (CITY) | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Whitefish | Burbot | Sheefish | Rockfish | Smelt | Razor Clam | Other | | | |
| ANCHORAGE BOR | 3321 | 2253 | 87 | 14509 | 136218 | 313447 | 16174 | | | |
| FAIRBANKS BOR | 6608 | 3009 | 423 | 3337 | 179 | 23179 | 2396 | | | |
| JUNEAU BOR | 0 | 0 | 0 | 1687 | 0 | 1940 | 3336 | | | |
| KENAI PENIN BOR | 429 | 33 | 0 | 1826 | 16938 | 260748 | 3202 | | | |
| KETCHIKAN BOR | 0 | 0 | 0 | 5091 | 0 | 0 | 1016 | | | |
| MATANUSKA SUSITNA | 1603 | 1420 | 0 | 1062 | 12047 | 38487 | 976 | | | |
| VALDEZ (CITY) | 0 | 408 | 0 | 747 | 0 | 2264 | 1096 | | | |
| WHITTIER (CITY) | 0 | 0 | 0 | 28 | 0 | 0 | 0 | | | |

**WILD FOOD HARVEST LEVELS
BY SAXMAN RESIDENTS, 1987
(POUNDS PER PERSON PER YEAR)**

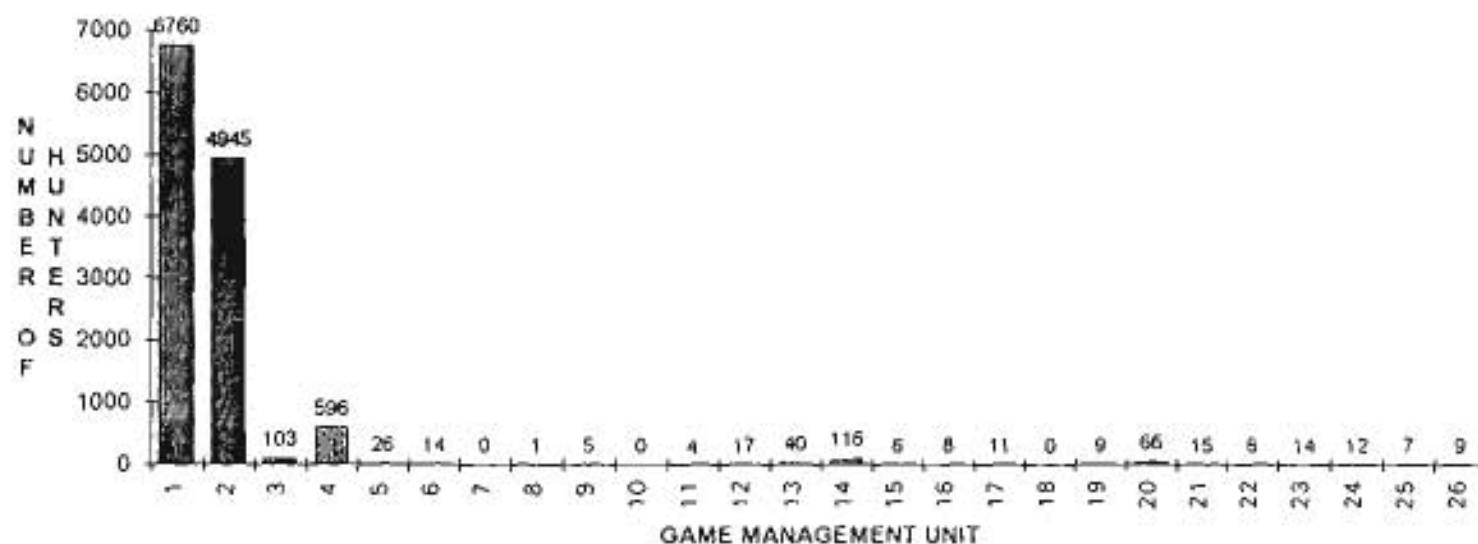


**VOLUNTARY ASSOCIATIONS DEALING WITH FISH, WILDLIFE, AND THE ENVIRONMENT
IN THE KETCHIKAN AREA, COMPILED FROM ADF&G LISTS**

| Name of Organization | City | Area | Category |
|---|-------------|-------------|-----------------------------|
| Alaska Sports and Wildlife Club | Ketchikan | Ketchikan | Sport Industry |
| Ketchikan Charter Assoc. | Ketchikan | Ketchikan | Sport Industry |
| Ketchikan Rod & Gun Club | Ketchikan | Ketchikan | Sport Industry |
| Tongass Sportfish Assoc. | Ketchikan | Ketchikan | Sport Industry |
| Trout Unlimited-Tongass Sportfishing Assn Chapter | Ketchikan | Ketchikan | Sport Industry |
| Tongass Conservation Society | Ketchikan | Ketchikan | Environmental |
| Southeast Alaska Seiners | Ketchikan | Ketchikan | Commercial Fishing Industry |
| Southern Southeast Region Aquaculture | Ketchikan | Ketchikan | Commercial Fishing Industry |
| Alaska Native Brotherhood Fish Committee | Ketchikan | Ketchikan | Commercial-Subsistence Fish |
| Alaska Fur Trappers | Ketchikan | Ketchikan | Trapping |

Sources: ADFG Public Communications Section; Division of Wildlife Conservation (Juneau, Anchorage, Cordova);
Division of Sport Fish (Juneau); Division of Subsistence (Dillingham, Kotzebue, Bethel, Fairbanks);
FNSB Library Data Cache; ADPS Wildlife Protection Division (Glennallen)

HUNTING LOCATIONS OF KETCHIKAN AREA RESIDENTS, NUMBER OF HUNTERS, 1986-91

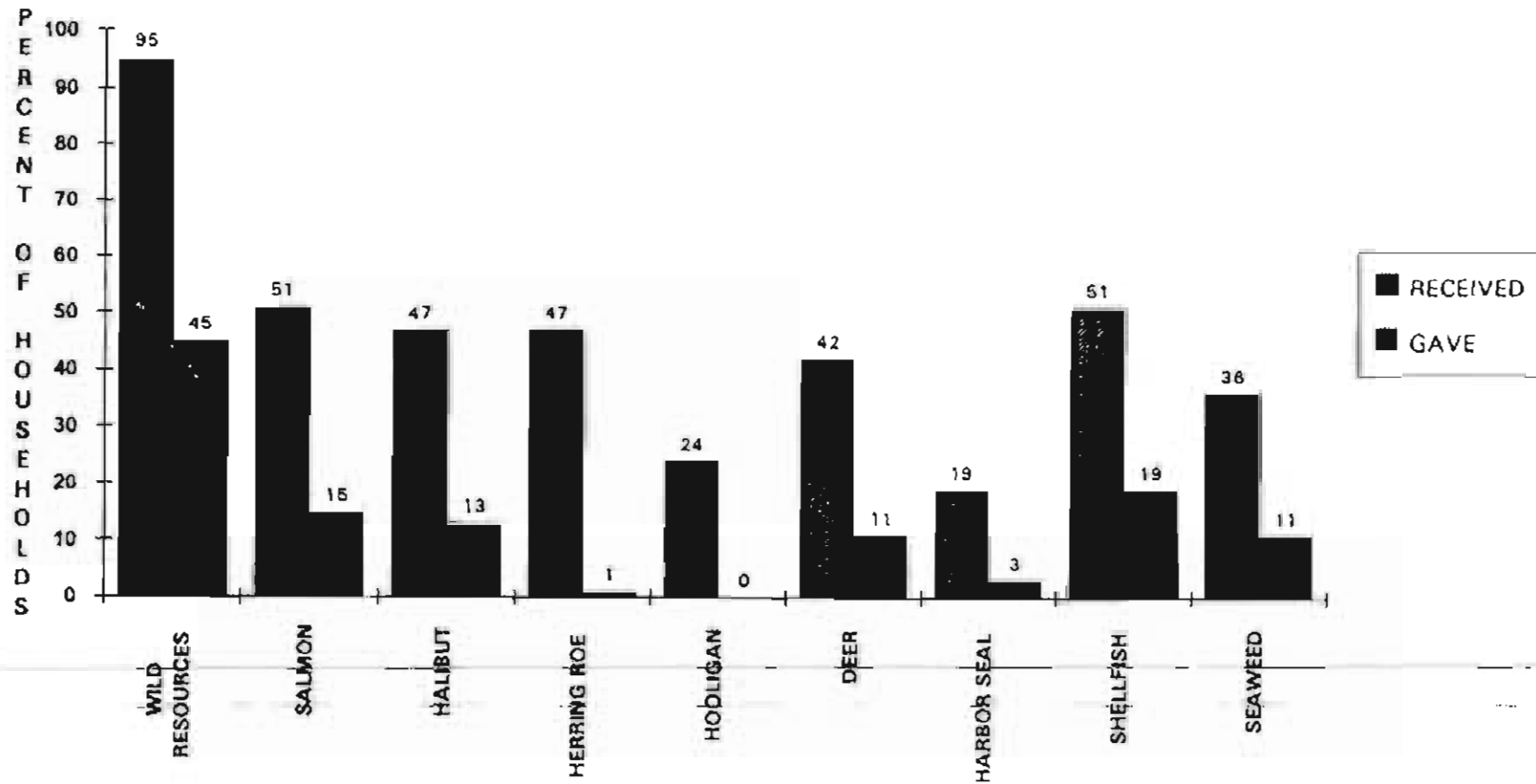


HUNT LOCATIONS FOR RESIDENTS OF KETCHIKAN AREA 1986-91

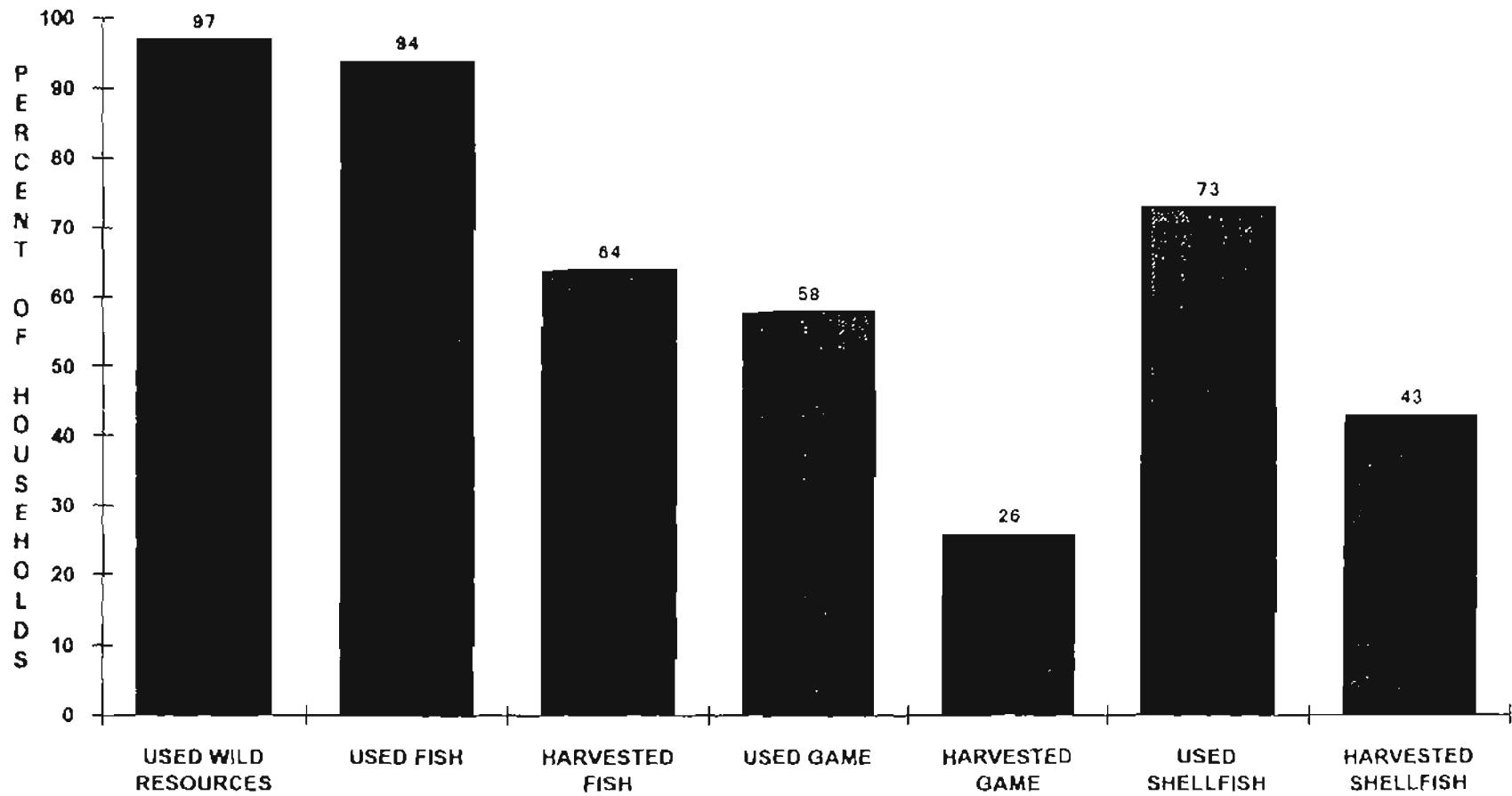
NUMBER OF HUNTERS (*SUCCESSFUL HUNTERS) BY GAME MANAGEMENT UNIT

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |
|-------------|------|------|-----|-----|----|----|---|---|---|----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|
| Black Bear* | 438 | 147 | 6 | | | | | | | | | | | 98 | | | | | 1 | 1 | | | | | | |
| Brown Bear* | 152 | | | 22 | | | | | 3 | | | | | | | | | | | 2 | | | 1 | 1 | | 1 |
| Caribou | | | | | | | | | | | 1 | | 3 | 1 | | | | | | 7 | | | | | | |
| Deer | 5256 | 4796 | 97 | 574 | | | | | | | | | | | | | | | | | | | | | | |
| Elk | | | | | | | | 1 | | | | | | | | | | | | | | | | | | |
| Goat | 548 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Bison | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Moose | 366 | | | | 26 | 14 | | | 2 | | 1 | 13 | 26 | 15 | 6 | 8 | 11 | | 5 | 52 | 15 | 8 | 10 | 7 | 5 | 5 |
| Sheep | | | | | | | | | | | 2 | 4 | 11 | 2 | | | | | 3 | 4 | | | 3 | 4 | 2 | 3 |
| Muskox | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | 6760 | 4945 | 103 | 596 | 26 | 14 | 0 | 1 | 5 | 0 | 4 | 17 | 40 | 116 | 6 | 8 | 11 | 0 | 9 | 66 | 15 | 6 | 14 | 12 | 7 | 9 |

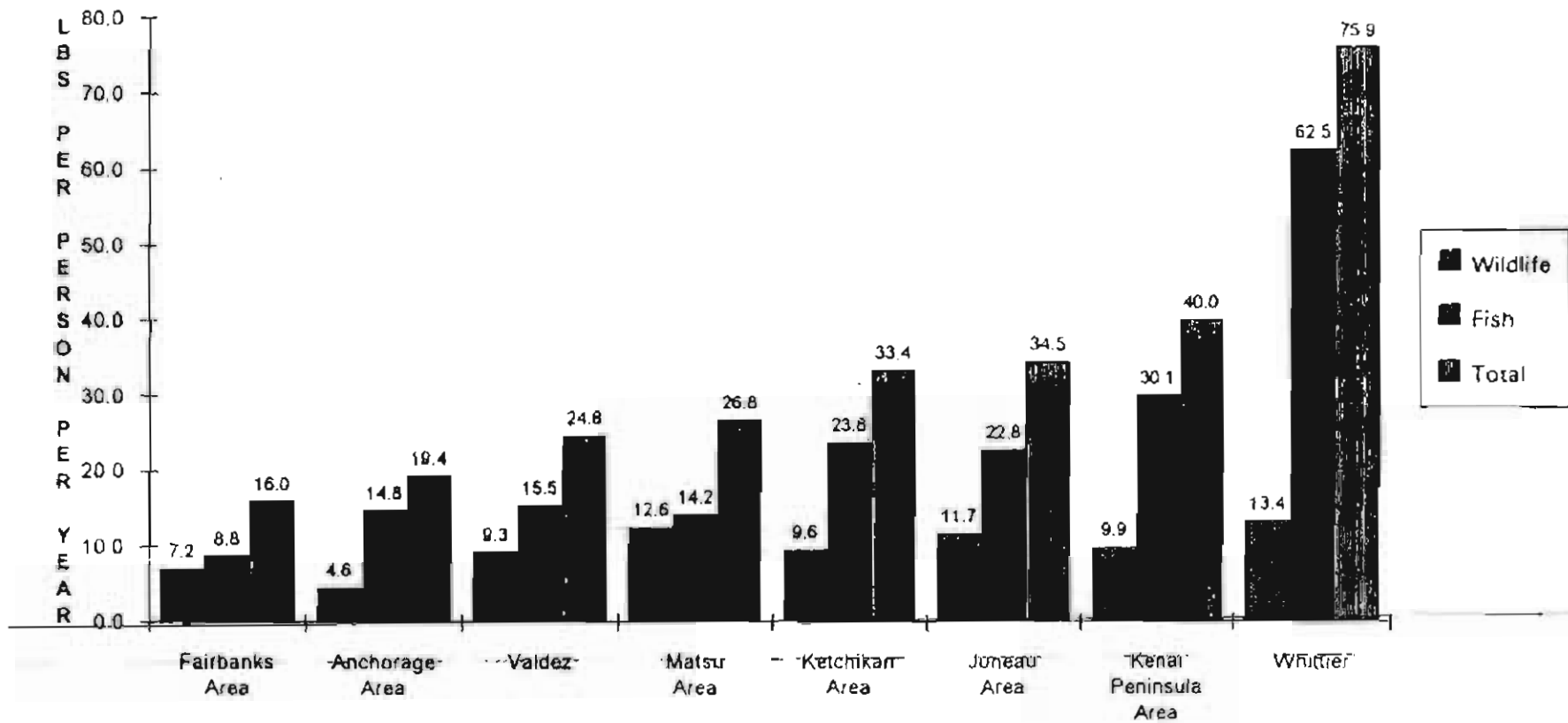
PERCENT OF SAXMAN HOUSEHOLDS
GIVING AND RECEIVING
SELECT WILD RESOURCES, 1987



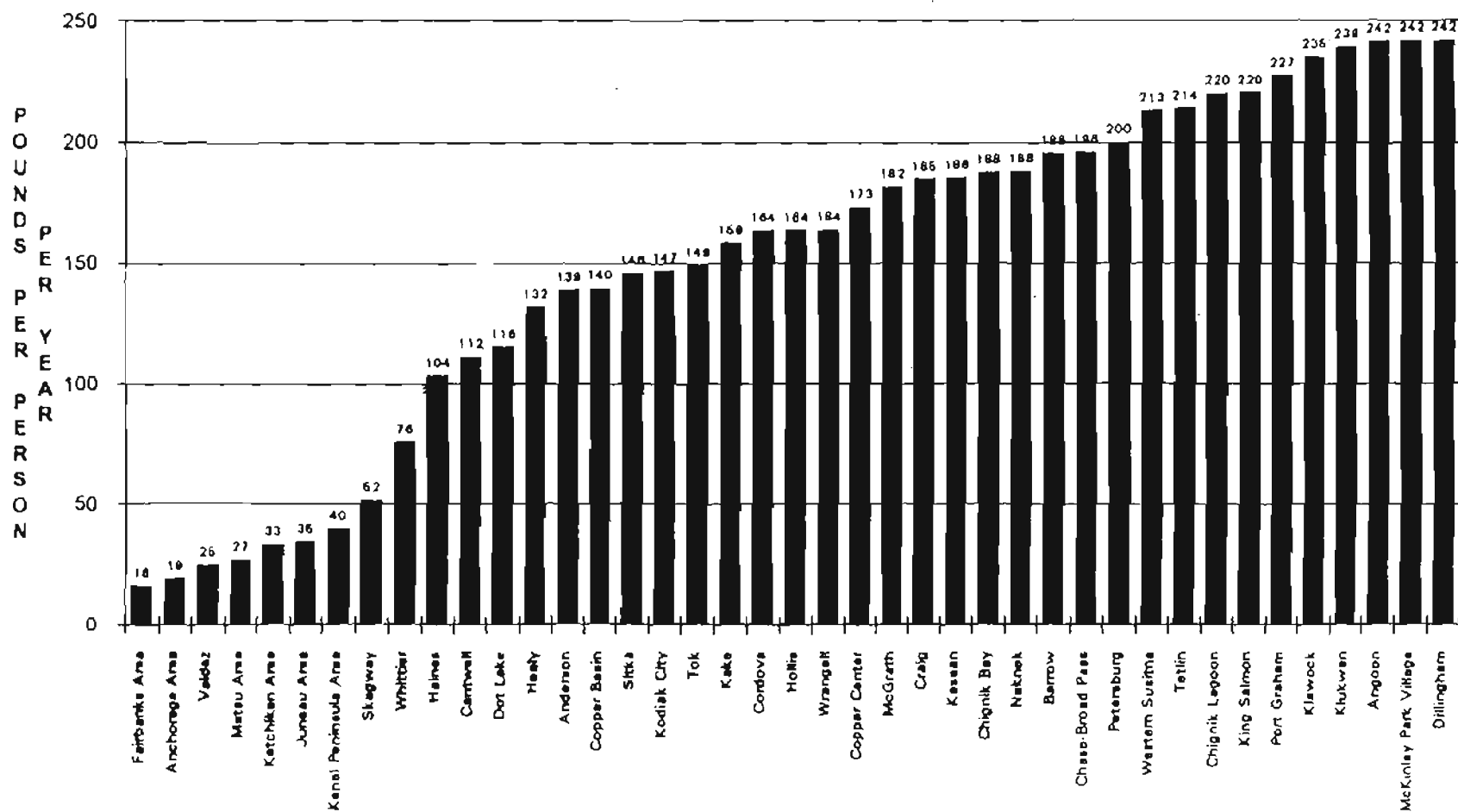
PERCENT OF SAXMAN HOUSEHOLDS
USING OR HARVESTING WILD RESOURCES, 1987



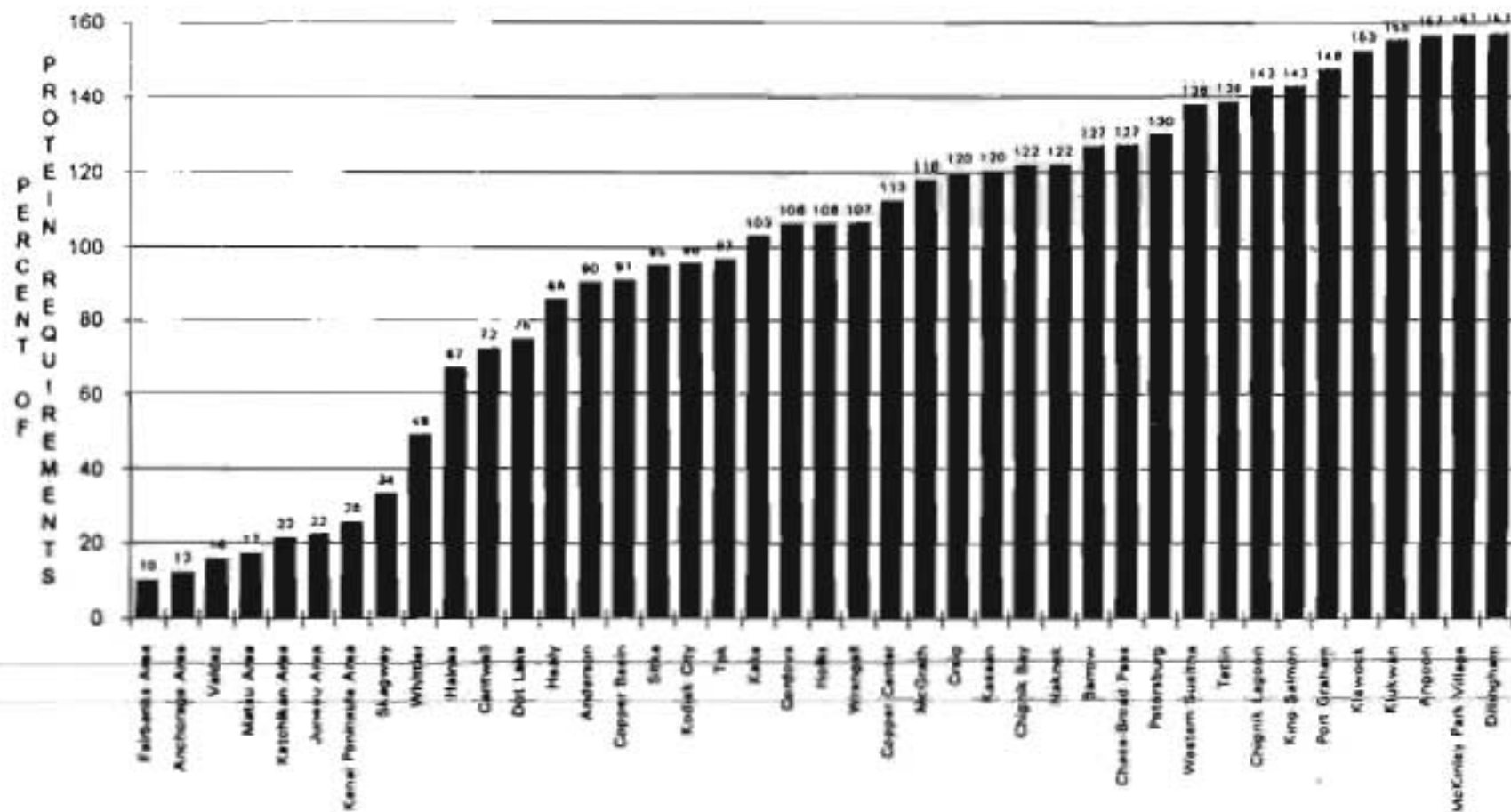
**FISH AND WILDLIFE HARVEST LEVELS
BY RESIDENTS OF SELECTED ALASKA AREAS
(LBS PER PERSON PER YEAR;
NON-COMMERCIAL HARVESTS)**



WILD FOOD HARVESTS BY COMMUNITY
POUNDS PER PERSON PER YEAR
SOURCE: DIVISION OF SUBSISTENCE, ADF&G



WILD FOOD HARVESTS BY COMMUNITY
PERCENT OF COMMUNITY PROTEIN REQUIREMENTS
(44 GRAMS PER PERSON PER DAY, OR .422 LBS OF WILD FOODS)
SOURCE: DIVISION OF SUBSISTENCE, ADF&G



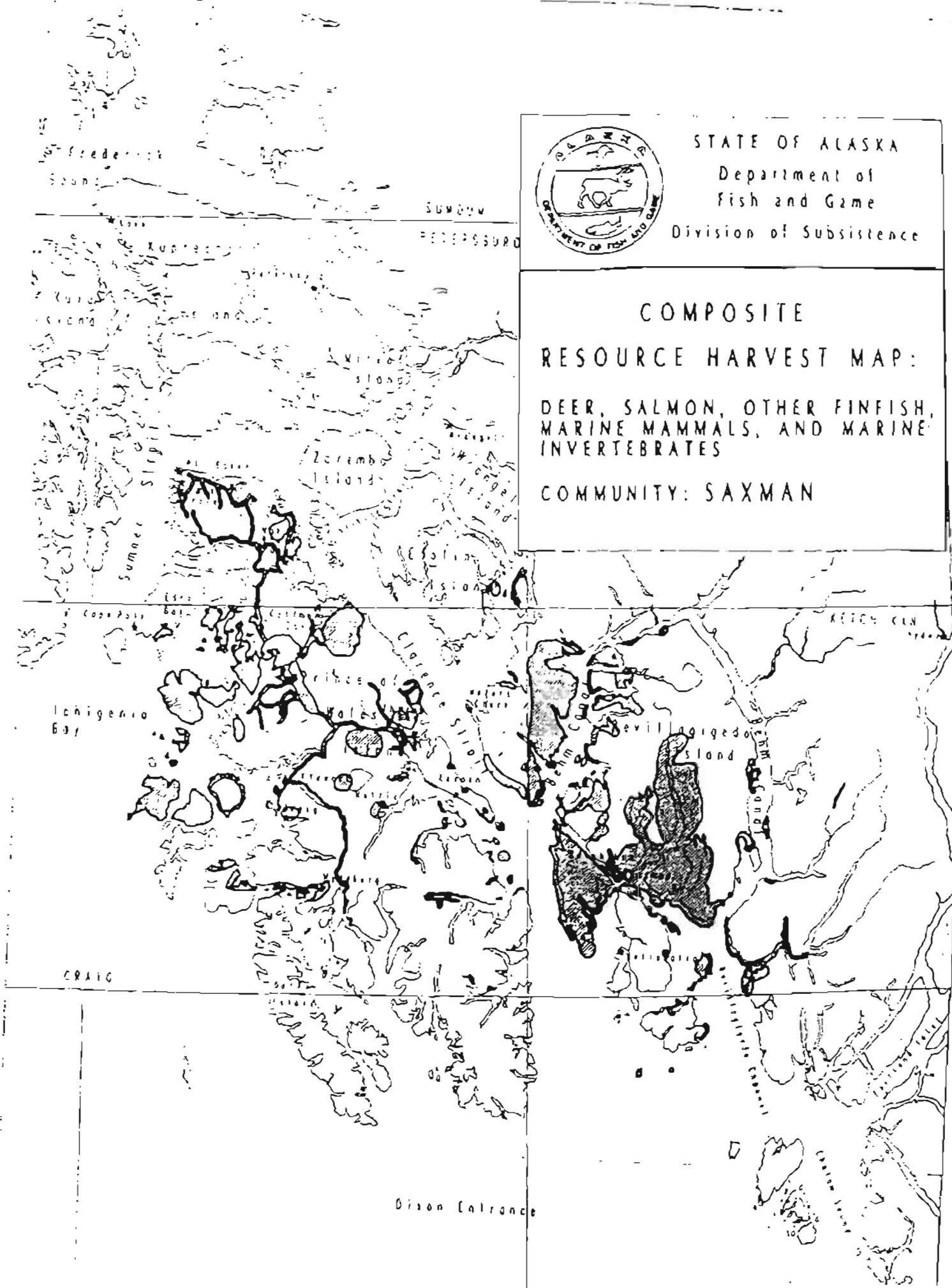


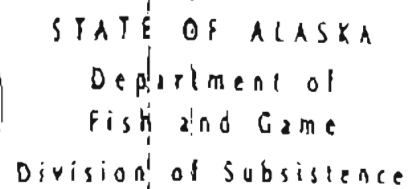
STATE OF ALASKA
Department of
Fish and Game
Division of Subsistence

COMPOSITE
RESOURCE HARVEST MAP:

DEER, SALMON, OTHER FINFISH,
MARINE MAMMALS, AND MARINE
INVERTEBRATES

COMMUNITY: SAXMAN





DEER, SALMON

COMMUNITY: SAXMAN

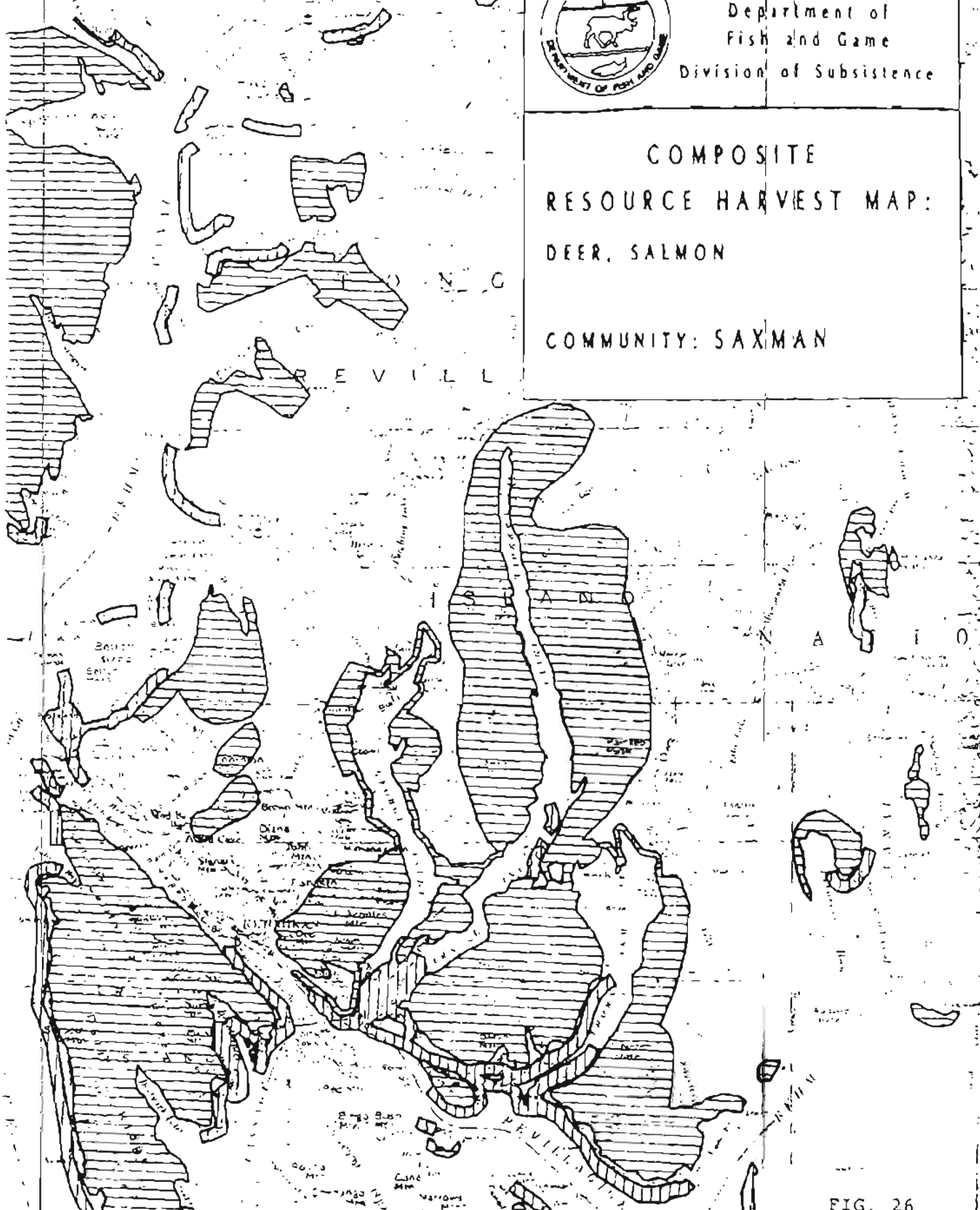


FIG. 26



STATE OF ALASKA
Department of
Fish and Game
Division of Subsistence

COMPOSITE
RESOURCE HARVEST MAP:
FINFISH,
MARINE MAMMALS, AND MARINE
INVERTEBRATES
COMMUNITY: SAXMAN

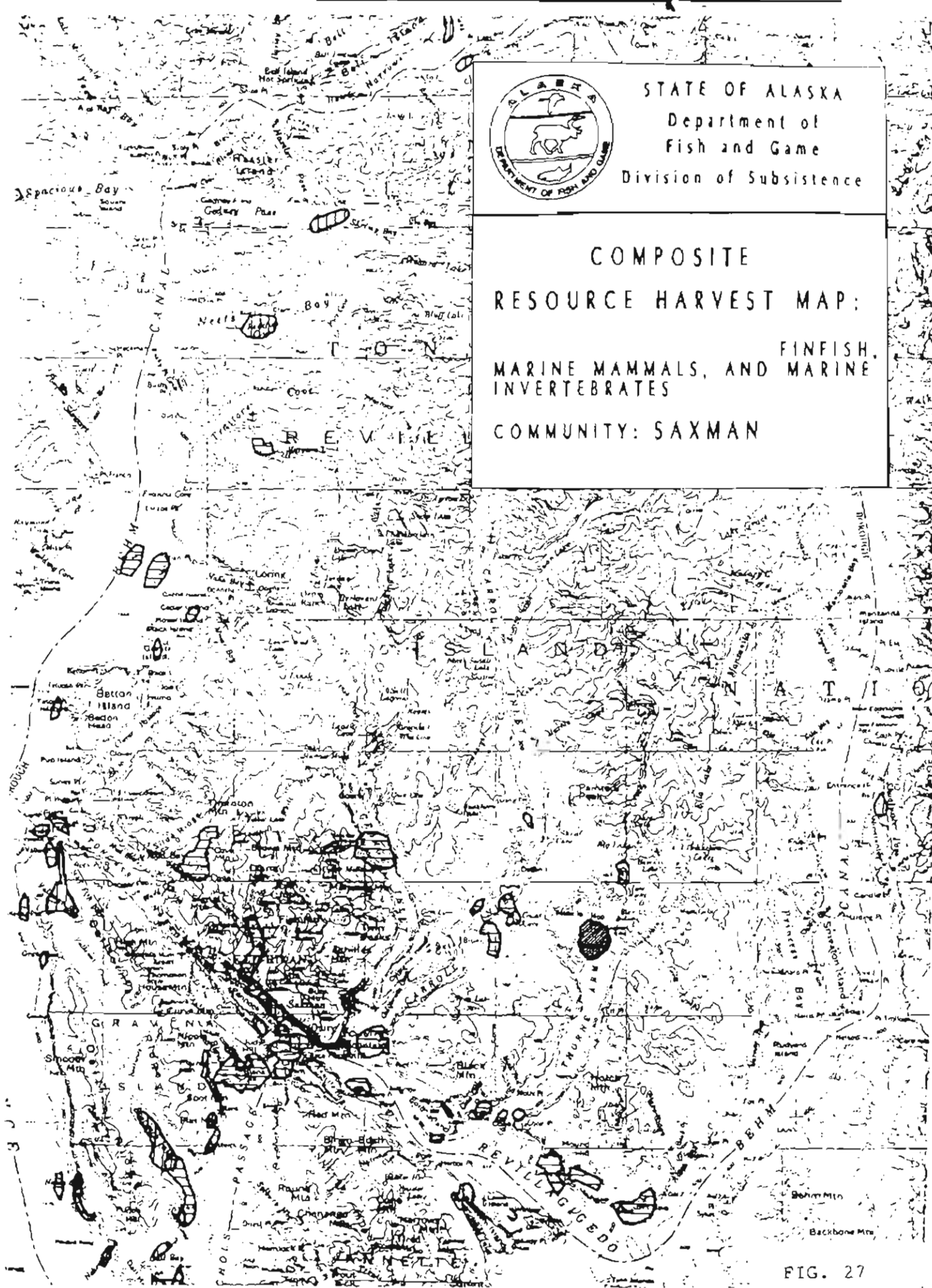


FIG. 27