NONCOMMERCIAL HARVESTS AND USES OF WILD RESOURCES IN KING COVE, ALASKA, 1992

by

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ABSTRACT

This report summarizes the results of research conducted in the southwest Alaska community of King Cove by the Division of Subsistence of the Alaska Department of Fish and Game in 1992 and 1993. The focus of the research was patterns of noncommerical uses of wild fish, game, and plant resources in 1992. Interviews were conducted with 75 randomly selected households, a sample of 47.5 percent, using a standardized data gathering instrument. In addition to resource harvest and use information, data on demography and aspects of the monetary sector of the local economy were also collected.

The first chapter of the report describes study objectives and methods. The second focuses on demography and the cash economy. Based upon the survey results, there were an estimated 158 year-round households in King Cove in 1992 with a population of 560. About 69.6 percent of the population was Alaska Native. The cash economy of King Cove was found to be relatively undiversified and employment was largely seasonal. On average, employed adults worked 8.5 months in 1992 with only 31 percent working year round. Commercial fishing dominated the cash economy; 53 percent of the total jobs were in commercial fishing and these jobs provided 47.6 percent of the total household cash income in the community. Per capita cash income in King Cove in 1992 was $19,485, which is higher than that of most other rural Alaska communities. In these characteristics, King Cove most closely resembles neighboring Sand Point, with similarities with the Alaska Peninsula communities of Chignik Bay and Chignik Lagoon as well.

Participation in the harvest and use of wild resources was virtually universal in King Cove in 1992. Every sampled household used wild foods and 96 percent harvested them. Additionally, 95 percent received gifts of wild foods from other households and 81 percent gave away wild resources. Resource harvests were relatively diverse. On average, households used 15.6 kinds of wild resources in 1992, harvested 9.9 kinds, received 7.3 kinds, and gave away 4.7 kinds. The average King Cove household harvested 908 pounds usable weight of wild foods for home use in 1992. The per capita harvest was 256.1 pounds. Of this, 53 percent was salmon, 17 percent was

fish other than salmon, 15 percent was land mammals, 7 percent was marine invertebrates, 4 percent was birds and eggs, 1 percent was marine mammals, and 3 percent was wild plants. Resources retained from commercial fisheries accounted for 38 percent of the total harvest for home use by weight.

The final chapter compares study findings for 1992 with information cdlected about King Cove for 1984/85. This comparison suggests that harvests of caribou in the community have decreased, while the portion of the harvest composed of salmon and other fish has increased. The chapter also compares study findings with those for other communities of Southwest, Southcentral, and Southeast Alaska in which the Division of Subsistence has conducted similar research. Compared to communities such as Kenai, Kodiak, Valdez, and Cordova, King Cove, along with Sand Point, has a relatively undiversified economy focused on commercial fishing. Noncommerical harvest patterns closely resemble those of Sand Point, Chignik Bay, and Chignik Lagoon. Harvest levels at King Cove in 1992 were relatively high; they were much higher than most larger communities of southern Alaska, but lower and generally less diverse than those of smaller communities of the Alaska Peninsula and Aleutian Islands region, such as Chignik Lake, Perryville, Ivanof Bay, False Pass, Nikolski, and Akutan. The report also summarizes subsistence resource issues of importance to the community which respondents brought up during the interviews. The report concludes that noncommerical resource uses remain important to the economy and way of life of King Cove.

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ACKNOWLEDGMENTS

First of all, we would like to thank the many residents of King Cove who graciously took the time to be interviewed as part of this study. Aleutians East Borough administrator Bob Juettner, Sand Point city manager Tim Troll, King Cove city manager Gary Hennigh, and Aleutians East Borough employees Denby Lloyd and Beth Stewart helped with project planning, and their assistance was greatly appreciated. Division of Subsistence staff who helped with project planning, data management, and report production included Lisa Scarbrough, Sandy Skaggs, Ana Lewis, and Sarah Carpenter. Stephen Braund, of Stephen R. Braund and Associates, who had previously conducted research in King Cove, kindly reviewed a draft of this report. Division of Subsistence research director Robert Wolfe also provided many useful comments on a draft of this technical paper. We are also grateful to King Cove residents Connie Newton and Simeon Kuzakin for the assistance they gave to the researchers during the fieldwork in their community. Finally, we also thank the U.S. Fish and Wildlife Service for providing funds which partially supported this research.

CHAPTER ONE: PROJECT BACKGROUND AND METHODS

BACKGROUND

This report presents the results of a research project conducted by the Division of Subsistence of the Alaska Department of Fish and Game in the Southwest Alaska community of King Cove in 1992 and 1993. King Cove is located on the Pacific Ocean side of the Alaska Peninsula (Fig. 1). The purpose of the research was to collect information about the role of noncommercial hunting, fishing, and gathering in the economy and way of life of King Cove. As part of the same project, comparable data were collected in the neighboring community of Sand Point. Those data are presented in a separate report (Fall et al. 1993), although some findings are included here for comparative purposes. The research in both communities was partially supported through a cooperative agreement with the U.S. Department of the Interior, Fish and Wildlife Service. Additionally, a contract with the National Marine Fisheries Service provided funding to study subsistence uses of harbor seals and sea lions in King Cove and Sand Point, as well as in about 60 other communities. Some findings for King Cove from the latter study are discussed here; the reader should consult Wolfe et al. (1993) for the full results of the harbor seal and sea lion study.

The primary reason for conducting the research on noncommercial resource uses in King Cove was to update previously collected subsistence use information for the community. The Division of Subsistence had conducted limited fieldwork in the community in 1982 and 1983. This included interviews with two local experts during which subsistence use area maps were drawn and information collected on the seasonal round of harvest activities (Wright et al. 1985). However, the division had conducted no systematic household surveys in King Cove, and therefore no harvest and other economic information was available in the division's Community Profile Database (Scott et al. 1992) or the technical paper series. A general description of subsistence use patterns in King Cove in the late 1970s and early 1980s was provided by Langdon (1982). A report by Stephen Braund and Associates (Braund et al. 1986) contains substantial information about noncommercial resource use patterns in King Cove, as well as a great deal of other information about the community, based on fieldwork conducted in 1984 and 1985. The report

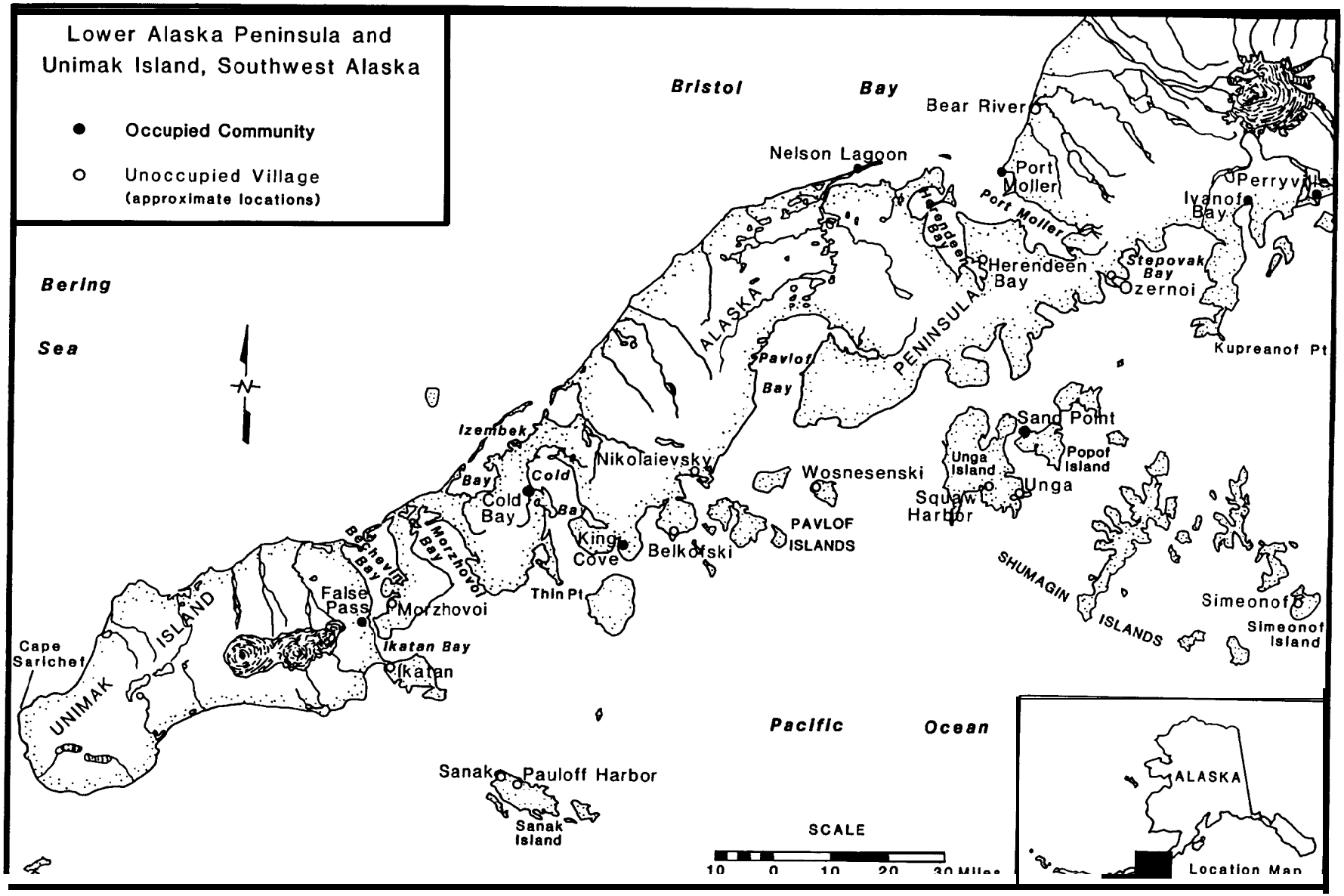


Figure 1. Lower Alaska Peninsula Area

contains information on subsistence harvest areas, methods and means of harvest, the seasonal round of harvest activities, and estimates of harvest quantities for a segment of King Cove's total population. The harvest data in Braund et al. (1986) are based on interviews with a nonrandomly selected sample of households who were active subsistence harvesters in King Cove. Thus, these data cannot necessarily be expanded to the entire community (Stephen Braund, personal communication, 9/93). Comparisons between the harvest data presented in Braund et al. (1986) and the results of the present study are discussed in Chapter Four, below. The present report serves as an update to and supplement of the information reported in Braund et al. (1986), but it does not attempt to review or repeat all the information contained in the earlier report. Information about noncommercial resource uses in King Cove has a variety of applications in resource management and allocation decisions, such as customary and traditional use findings, regulation review, marine mammal management, and use plans for federal (Alaska Peninsula National Wildlife Refuge, Alaska Maritime National Wildlife Refuge), state, and private lands.

RESEARCH METHODS

Research Objectives

Research objectives for the study of noncommercial resource harvests and uses in King Cove included the following for the study year running from January through December 1992.

1. A list of fish, mammal, bird, marine invertebrate, and plant resources presently used for subsistence purposes by residents of King Cove.
2. A seasonal round of resource harvest activities.
3. Estimates of the percentage of community residents and households which participated in the noncommercial harvest and use of wild resources.
4. Estimates of the percentage of households which received resources from others and who gave away resources during the study year.

5. Estimates of harvest quantities in numbers of animals or fish (or other appropriate units such as gallons) and in pounds usable weight for each resource for each household, plus estimates of harvests by gear type for salmon and other fish.

6. Estimates of households' involvement in commercial fishing actfviiies and the amount of resources removed from commercial harvests for home use or shared with other households.

7. Demographic data, including household size and composition, birthplaces of household members, length of residence in King Cove, and ethnicity.

8. Employment data for each adult in the household (age 16 years and older), including job type, employer type, months employed, hours worked per week, and amount earned for each job.

9. Estimates of cash income for each household from sources other than jobs (such as social security, unemployment benefits, or Alaska Permanent Fund dividends).

Community Review and Approval

A two-page project description was provided to community leaders and other King Cove residents in September 1992 (Appendix A). Division personnel (James Fail, Craig Mishler, and Lisa Scarbrough) consulted several times with Aleutians East Borough officials to review the project goals and design. The borough officials identified community leaders and helped arrange community review of the study plan. Two division researchers (Mishler and Vicki Vanek) traveled to King Cove in early December 1992. Between December 1 and December 4, they met informally with community and corporation leaders. The King Cove City Council endorsed the study informally at a meeting held on December 2, 1992. The Agdaagux Tribal Council approved the project on December 23, 1992. Also, the Aleutians East Borough Assembly passed a formal resolution approving the project on December 10, 1992 (Appendix B). A project update was prepared in June 1993 (Appendix C).

Kev Resoondent interviews

The first phase of fieldwork occurred in King Cove from December 1 to December 4, 1992. in addition to introducing the project and obtaining community approvals, a purpose of this community visit was to conduct key respondent interviews on the range of resources used, the seasonal round of harvest activities, and patterns of marine mammal use. Researchers Craig Mishler and Vicki Vanek interviewed seven individuals about these topics. Also, many of the households randomly selected for the household survey (see below) provided additional comments which were recorded as field notes by the researchers.

Systematic Household Survey

Quantified information on participation in harvest activities, harvest quantities, community demography, involvement in commercial fisheries, and jobs was collected through a systematic household survey using a standardized data gathering instrument (Appendix D). The survey instrument was modeled after others which have been administered by the division in other communities of Southcentral and Southwest Alaska. it was designed to collect data comparable to that reported in the division's Community Profile Database (Scott et al. 1992). The list of resources on the survey instrument was based on previous research in Alaska Peninsula communities and the results of the key respondent interviews in Sand Point and King Cove conducted in December 1992. The instrument was intended to be administered in person, usually in respondents' homes.

Because of King Cove's relatively large size, the research design set a goal of 75 interviews with randomly selected year-round households. The city provided division researchers with a list of community households based upon a city census conducted in June 1992. This list was updated with the assistance of community officials when the study team arrived in the community in January 1993. The borough provided maps of the locations of ail community residences. The census list contained 178 households. Additionally, the list contained the names of 451 individuals who were living at the Peter Pan Seafoods employee dormitory (group quarters). The residents of this group quarters were not interviewed because they are not year-round residents of the community and because they usually obtain their meals at Peter Pan Seafoods' dining facility. including this group in the sample would seriously distort the picture of

subsistence uses in King Cove by underestimating participation levels, the average range of resources used, and harvest quantities.

After verifying the household list, a table of random numbers was used to select a sample for interviewing. Of the 107 households selected, 4 were vacant, 8 were occupied seasonally, and none were composed entirely of members who had lived in the community for less than six months in 1992. The latter would not have been considered year-round residents for purposes of the survey. This provided a revised estimate of 158 year-round households in Sand Point who had lived in the community for at least half of the study year (Table 1).

Subsistence Resource Specialists Rachel Mason and Terry Haynes, and Fish and Wildlife Technician Vicki Vanek administered the household surveys in person, usually in respondents' homes. After a training session in Anchorage on January 19, 1993, the study team arrived in King Cove on January 21 (after two failures due to bad weather). They left the community with the field work complete on February 1.

As reported in Table 1, the project goal of 75 household surveys was met. This represents a sample of 47.5 percent of the estimated 158 year-round households in King Cove. Ten households declined to participate in the project, resulting in a moderate refusal rate of 9.4 percent. Also, the interviewers failed to contact 10 randomly selected households after three attempts to arrange an interview. Most of these households probably were temporarily out of the community during the time that the interviews were conducted. On average, the household harvest surveys took 0.57 hours (34 minutes) to complete, with a range from 0.25 hours (15 minutes) to 1 .17 hours (70 minutes) (Table 2).

Data Analysis

Survey data were coded for computer entry and analysis by the division personnel who conducted the interviews. Most coding was finished before the study team left King Cove. For data analysis, resource harvests reported in numbers of animals or fish, gallons, or other commonly used units were converted into pounds usable weight using standard factors (Appendix E). Job titles and employers were coded using standard industrial categories as defined by the Alaska Department of Labor (Appendix F). Data analysis

Table 1. Sampling and Participation: King Cove, 1992

	VARIABLE	HOUSEHOLDS
	Estimated Household Structures	178
	Non-Residential Structures	0
A	Estimated Households	178
B	Interview Goal:	75
C	Households Interviewed	75
D	Failed to Contact	10
E	Refused	10
F	Vacant Households	4
G	Seasonal Households*	8
H	Non-Resident Household • *	0
I	Vacant and Invalid Households:	12
L	Total Households Attempted:	107
M	Refusal Rate:	9.35%
N	Non-Perm. HH Rate ("Vacancy Rate"):	11.2%
0	Interview Goal (Percentage)	100.0%
P	Total Permanent Households	158
Q	Percentage Interviewed	47.47%
R	Percentage of Total Households	100.00%
S	Interview Weighting Factor	2.107

NOTES:

- Seasonal households are households which maintain a permanent domicile elsewhere where they spend the majority of their time.
- * Non-resident households are households which were not present during the study year or which were resident less than the required number of months.

FORMULAE	
I = F + G + H	Total vacant or season households is the total of the two measures
J = C + D + E + F + G + H	Total HH attempted = sum of interviews, unavailable, refused, vacant, and seasonal HH
N = I I L	Non-Perm. rate ▫ non-perm. households divided by total households attempted
O = B / P	Interview goal percentage = interview goal divided by estimated permanent households
P = A * (1 - N)	Total permanent households = estimated households multiplied by 1 minus the vacancy rate
Q = C / P	Percentage interviewed = households interviewed divided by total permanent households
R = P / (SUM OF P)	Percentage of households = total permanent households divided by all permanent households
S = P / C	Interview weighting factor = total permanent households divided by households interviewed

Table 2. Average Length of Interviews, King Cove and Sand Point, 1993

	Number of Surveys	Length of Surveys (Hours)			
		Total	Mean	Maximum	Minimum
PROJECT TOTAL	179	114.35	0.64	2.00	0.08
King Cove TOTAL	75	42.67	0.57	1.17	0.25
King Cove Terry Haynes	19	12.33	0.65	0.92	0.33
King Cove Rachel Mason	33	18.00	0.55	1.00	0.25
King Cove Vicki Vanek	23	12.33	0.54	1.17	0.25
Sand Point TOTAL	104	71.68	0.69	2.00	0.08
Sand Point Dave Andersen	40	24.58	0.61	1.42	0.08
Sand Point Mike Coffing	33	27.27	0.83	2.00	0.33
Sand Point Amy Paige	31	19.83	0.64	1.50	0.33

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Household Surveys, 1993.

occurred using the Statistical Package for the Social Sciences (SPSS) program. These data are summarized in the Community Profile Database (Scott et al. 1993).

Although data collection and analysis for this project followed standard division procedures, a modification was made to the method used to obtain estimates of fish removed from commercial harvests for home use. In the past, respondents had been asked to estimate the amount of fish they had removed from their commercial harvests for their own household's use (including fish consumed on their boats and fish which were subsequently shared), as well as fish from their catch that they gave away immediately after the harvest. It was uncertain if boat captains (permit holders) would include in the latter category fish that their crews brought home from the catch. It was also unclear if crew members would consider fish removed from commercial catches as "theirs," as opposed to belonging to the captain. If the latter were the case, they crew members might only report receiving the fish. Thus, the commercial removal could be overestimated if crew members counted fish as "their harvest" and captains reported these same fish as "given to others." On the other hand, there was potential for an underestimate if captains did not consider fish taken home by crew members as fish they (the captain) gave to the crew, but crew members were instructed by the interviewers not to include such fish in "their" harvests. Interviews with key respondents in King Cove, as well as Sand Point, established that local boat captains viewed fish taken home by their crew as belonging to the crew members. In other words, these are not fish "given" by the captain to the crew. Consequently, during the interviews, those respondents who participated in commercial fisheries as crew members were instructed to estimate the amount of resources they obtained from these commercial activities as part of their harvest. Boat captains were asked to distinguish between fish brought home by crew members and fish they (the captains) gave to people other than their crew. Although estimates for the former were obtained, they were not included in the estimates of the captains' households' harvests in order to avoid double counting.

Researchers obtained a list of 1992 subsistence salmon permit holders who lived in King Cove and their reported harvests from the Division of Commercial Fisheries in Kodiak. The primary application of the list during the fieldwork was as a reference if respondents could not offer a harvest estimate based on recall or asked the researchers to refer to their reported harvests on the returned permit. This happened in

only a few cases. In the field (but not during the interview), researchers compared respondents' harvest estimates with those from permit returns. The researchers did not alter recall estimates to match permit returns, however. A comparison of the two data sets is presented in Chapter Three. The permit holder list was not used initially to establish if the household had engaged in subsistence fishing because of the possibility that some households had fished without a permit or had assisted a permit holder from another household and obtained salmon through a joint effort. Also, there was concern that initial use of the list might discourage nonpermited households from estimating subsistence harvests or convey the impression that the interviews were being used for enforcement purposes.

REPORT ORGANIZATION

Much of this report is organized around a series of standard tables and figures. Chapter Two provides a brief overview of the history of King Cove and a community description. This is followed by the study findings regarding community demography and the cash sector of the local economy. Chapter Three contains the study findings regarding noncommercial harvests and uses of wild resources by King Cove residents in 1992. This includes data on levels of participation in the harvest, use, receiving, and giving away of each resource and resource category, harvest quantities, and descriptions of harvest methods for each resource category. If available, comparative data from other sources, such as subsistence salmon fishing permits, are incorporated in this discussion. The final chapter compares the 1992 study findings for King Cove with earlier data and with recent findings for other Alaska communities. It also contains an overview of resource issues which community residents identified during the research.

CHAPTER TWO: COMMUNITY DESCRIPTION, DEMOGRAPHY, AND ECONOMY

HISTORY

Prior to the arrival of Europeans in the mid eighteenth century, the areas surrounding present day King Cove on the lower Alaska Peninsula southwest of Port Moller, as well as the Shumagin Islands and the entire Aleutian Islands chain, was the territory of the Aleuts. Estimates of the precontact Aleut population range from 12,000 - *15,000* to 16,000 - 20,000 (Lantis 1984:163). The Aleuts of the lower Alaska Peninsula were called the "*Alagsgin*," while those of Unimak Island and the Sanak Islands were the *Quagagin* (The Easterners") and those of the Shumagin Islands were the *Qawaqngin* ('Those Beyond the Easterners") (Black 1980:82-83). Laughlin (1980) estimates that the Aleuts had occupied this territory for at least 4,000 years, and for perhaps as much as 9,000 years. Just as today, Aleut subsistence in precontact times was oriented towards the sea. In the precontact era, major resources included whales, seals, sea lions, sea otters, salmon, halibut, cod, flounder, herring, sculpin, sea urchins, clams, limpets, mussels, octopus, ducks, geese, cormorants and other sea birds, bird eggs, and wild plants such as berries, wild parsnip, and kelp. Aleuts living on and near the Alaska Peninsula also had access to caribou and brown bear (Lantis 1984:174-176).

The first recorded contact between the Aleuts and Europeans occurred in the Shumagin Islands during Bering's expedition for Russia in 1741. Although often met with armed resistance from the Aleuts, the Russians had established control over the Aleutian and Shumagin islands and the lower Alaska Peninsula Aleut communities by the close of 18th century (Black 1980). Russian trading companies organized Aleut men into sea otter hunting parties which often ranged far from their home villages, thereby leaving their families without adequate food. As a consequence of disease, warfare, malnutrition, and exposure during enforced sea otter hunting, by the early 19th century the Aleut population dropped 80 to 90 percent from the precontact estimates of 12,000 to 20,000 (Lantis 1984: 163).

King Cove was first settled in 1911 by cannery operators and commercial fishermen, many of them Scandinavian immigrants who married local Aleut women. The older Aleut community in the area was

Belkofski, which itself was established in 1823 when the Russian America Company resettled the Aleuts of Sanak there in order to conserve the sea otter populations of the Sanak islands (Black 1980:105). Because Belkofski was located close to these prime sea otter hunting grounds, it became a key link in the fur trade during the Russian-American period. Belkofski remained a viable community even after the first cannery was built in King Cove in 1911 because the cannery processed salmon and provided only seasonal employment. However, in the 1970s the cannery began to process crab and bottomfish and remained open year-round, and one-by-one, Belkofski families began to move to King Cove to secure more steady employment. Belkofski's former residents primarily lived in King Cove in 1992, retaining their own tribal council.

In addition to Belkofski, King Cove drew residents from other settlements in the area, including Thin Point, False Pass, Morzhovoi, Ikatan, Unga, and Sanak (Braund et al. 1986:4-9). The community incorporated as a second class city in 1949, and became a first class city in 1974 (Braund et al. 1986:4-11). For a more detailed discussion of King Cove's history and the development of the area's commercial fisheries, the reader should consult Braund et al. (1986).

COMMUNITY DESCRIPTION

The community of King Cove sits at the head of a small cove on the south side of the Alaska Peninsula between Belkofski Bay on the east and Cold Bay on the west. Large treeless mountains surround the community on three sides, with the Pacific Ocean on the fourth. The climate in King Cove is wet and rainy for much of the year, and the area is subject to frequent high winds in the fall and winter months. These winds make landings at the community's airport unreliable. Visitors coming from Anchorage must travel by turboprop aircraft to the nearby community of Cold Bay and then transfer to a small bush plane to reach King Cove. The King Cove airport is a five or six mile drive from the downtown area.

King Cove is largely built along the waterfront, where a large cannery is operated by the Peter Pan Corporation. This cannery, with a labor force made up largely of nonresident Filipino immigrants, provides stability to the local economy by remaining open year-round to purchase locally caught fish and shellfish.

As for commercial facilities, the cannery operates a grocery store and a dining hall, both of which are open to the public. The community also has a second privately operated grocery store and a pizza shop. Tightly clustered into one two-story building are the King Cove city offices, the King Cove Tribal Corporation offices, a hotel called the Fleet's Inn, a restaurant, and a bar.

The bustling King Cove boat harbor located on the west side of the cannery contains a large number of heavily capitalized vessels of varying gear types, including purse seiners, trawlers, crabbers, and driftnetters. A long string of private residences extends east of the cannery along the shoreline. Expansion of the town's population during the 1980s has led to a substantial number of new housing starts about four miles east of the downtown, in an area known as the Ram Creek subdivision. More new housing construction is planned in the immediate future.

DEMOGRAPHY

Table 3 provides an overview of historic population estimates for King Cove, Belkofski, and other communities of the Lower Alaska Peninsula area. Figure 2 illustrates King Cove's population history from 1920 until 1990. The community's population has grown markedly since 1950. In contrast, some other communities of the area, such as Belkofski, Unga, Squaw Harbor, and Paulof Harbor (on Sanak Island) have lost their year-round populations.

The 1990 federal census estimated King Cove's population at 677.[1] Of this, 189 lived in group quarters. The remaining 488 people lived in 144 households for an average household size of 3.39 in 1990. As noted in Chapter One, the division's household survey did not include residents of group quarters.

[1] The original published U.S. Census population estimate for King Cove, as reported by the Alaska Department of Labor (1991) (and elsewhere) of 451 was in error in that it failed to include residents of the Ram Creek Subdivision in the community total. This section of King Cove was incorrectly reported as part of the "balance of the Aleutians East Borough" population. The correct U.S. Census estimate of King Cove's 1990 population is 677 (Alaska Department of Labor 1993:82).

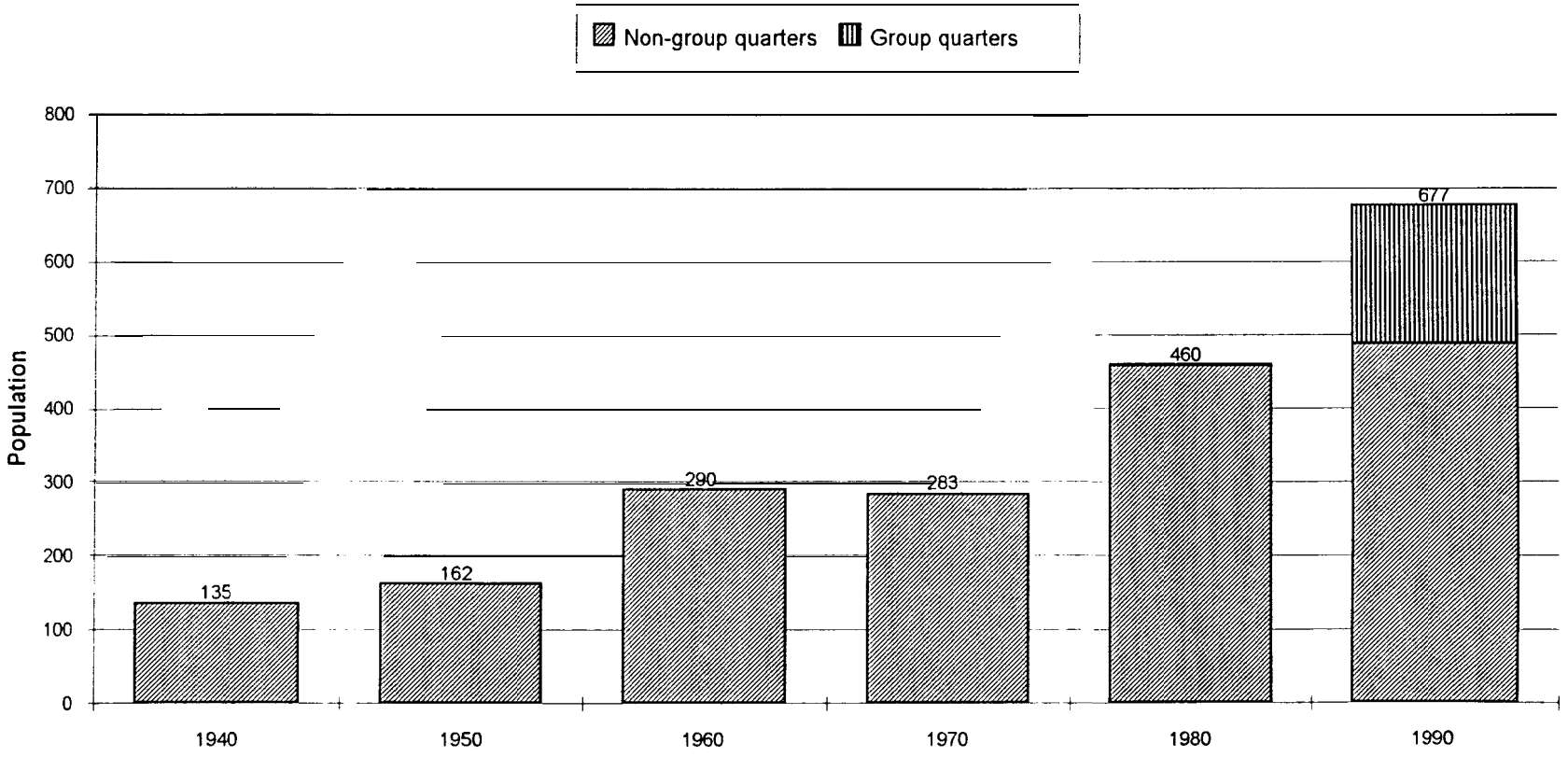
TABLE 3. POPULATION OF LOWER ALASKA PENINSULA AND UNIMAK ISLAND AREA COMMUNITIES, 1880-1990

Community	1880	1890	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990
Belkofski	268	185	147		129	123	140	119	57	59	10	0
Cold Bay									86	256	192	148
Company Harbor					45	22						
False Pass*						59	88	42	41	62	70	68
Herendeen Bay					51		13					
Ikatan								29				
King Cove							135	162	290	283	460	677
Korovinsky		41										
Nelson Lagoon										43	59	83
Morshovoi**	100	68			60	22	17					
Nikolaievsky	43											
Ozernoi		45										
Pavlof (Pauloff) Harbor***					62	52	61	68	77	39	0	
Popof Island****	7	146			98							
Port Moller*****	40						45	33			1	
Sanak		132					39					
Sand Point			16		60	69	99	107	254	360	625	878
Simeonof Island							13					
Squaw Harbor								45		65	6	
Thin Point		231										
Unga	185	159	175	108	313	150	152	107	43		0	
Unga Island (other)							79					
Wosnesenski (Voznesensky)		43										

* Called "Unimak Village" in 1930 and 1940.
** Called "Protassof" in 1880 census (cf. Orth 1967: 659)
*** Called "Panloff Harbor" in 1920; Pauloff Harbor in 1950, 1980.
**** Also includes Pirate Cove (1920).
***** Called "Mashikh" in 1880.

Sources: Rollins 1978 for 1880 - 1970; Alaska Department of Labor 1990 and 1991 for 1980; Alaska Department of Labor 1993 for 1990.

Figure 2. Population of King Cove, 1940 - 1990



Sources: Rollins 1978; Alaska Department of Labor 1991, 1993.

Consequently, the surveys' demographic findings should only be compared with the non-group quarters population from the federal census.

Table 4 summarizes some findings from the household survey regarding demographic characteristics of King Cove in 1992. An estimated 158 households with 560 people had lived in the community for at least six months in 1992. The mean household size was 3.55. The average length of residency in the community was 12.5 years for the population overall and 14.5 years for household heads. More than two-thirds of the study population (69.6 percent) were, by self ascription, Alaska Natives. The majority of King Cove households (74.7 percent) were headed by at least one Alaska Native in 1992. According to the 1990 federal census, 402 of King Cove's 677 (59.4 percent) residents were Alaska Native (Alaska Department of Labor 1991:65).[2] However, as noted above, the total population includes 189 people living in group quarters (processing facilities). If this group is removed from the total population and it is assumed that there were no Alaska Natives in this group, the estimated portion of the 1990 population that was Alaska Native is 82.4 percent, which is slightly higher than the survey estimate for 1992.

Table 5 and Figure 3 provide a population profile (age/sex pyramid) for King Cove in 1992. The population was evenly balanced with 49.6 percent male and 50.4 percent female. The average age was 26.3 (Table 4).

As shown in Figure 4, 66 percent of the residents of the sampled King Cove households were born in the local region.[3] The local region was defined as the area traditionally inhabited by Aleut communities. In addition to King Cove itself, local birthplaces of members of interviewed households included Akutan, Atka, False Pass, Nelson Lagoon, Port Moller, Sand Point, Unalaska, Belkofski, Ikatan, and Sanak. Table 6 lists the percentage of the sampled population which was born at each of these local places. Also, about six percent of the sampled population was born in other Alaska communities outside the local region, and the remainder (28 percent) were born outside of Alaska (Fig. 4).

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[2] As noted in Footnote 1, the initial U.S. Census population estimate for King Cove was in error. Revised estimates for the number of Alaska Native inhabitants of King Cove are not available. For this comparison, the number of Alaska Native inhabitants of King Cove and the balance of the Aleutians East Borough, as originally reported by the census, are combined to give the King Cove total. If some of the latter group were not actually residents of King Cove, the estimate of 402 Alaska Natives living in King Cove in 1990 might be a slight overestimate.

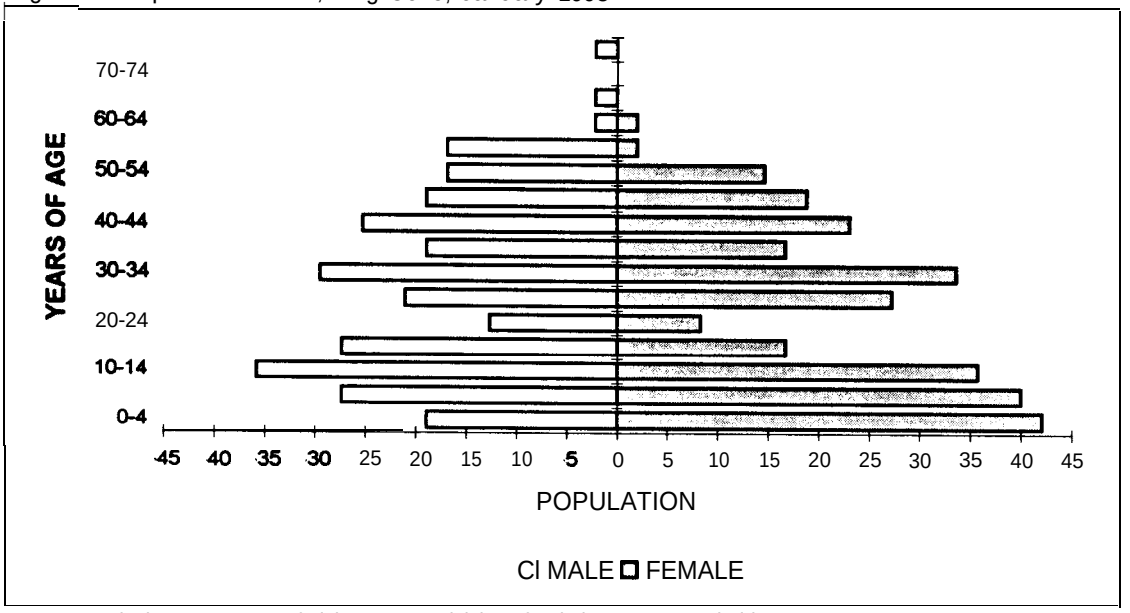
[3] In this study, "birthplace" was defined as the place of residence of the parents of the individual at the time of the person's birth. Thus, if, for example, an individual's birth took place in a hospital in Anchorage, but this person's parents were domiciled in King Cove at the time, the birthplace was recorded as King Cove.

Table 4. Demographic Characteristics of Households, King Cove, January 1993

haracteristfcs	
Sampled Households	75
Number of Households in the Community	158
ercentage of Households Sampled	17.47%
lousehold Size	
Mean	3.55
Minimum	1
Maximum	9
Sample Population	266
Estimated Community Population	560.37
Age	
Mean	26.26
Minimum	0.04
Maximum	76.53
Median	27.51
Length of Residency - Population	
Mean	12.52
Minimum	1
Maximum	55
Length of Residency - Household Heads	
Mean	14.5;
Minimum	1
Maximum	55
Sex	
Males	
Number	278.08
Percentage	49.62%
Females	
Number	282.29
Percentage	50.38%
Alaska Native	
Households (Either Head)	
Number	117.97
Percentage	74.67%
Estimated Population	
Number	389.7:
Percentage	69.55%

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Household Survey, 1993.

Figure 3. Population Profile, King Cove, January 1993



SOURCE: Alaska Department of Fish & Game, Division of Subsistence, Household Survey, 1993.

Table 5. Population Profile, King Cove, January 1993

AGE	MALE			FEMALE			TOTAL		
	NUMBER	PERCENT	CUM. PERCENT	NUMBER	PERCENT	CUM. PERCENT	NUMBER	PERCENT	CUM. PERCENT
o-4	19.0	6.8%	6.8%	42.1	14.9%	14.9%	61.1	10.9%	10.9%
5-9	27.4	9.8%	16.7%	40.0	14.2%	29.1%	87.4	12.0%	22.9%
10-14	35.8	12.9%	29.5%	35.8	12.7%	41.8%	71.8	12.8%	35.7%
1519	27.4	9.8%	39.4%	16.9	6.0%	47.8%	44.2	7.9%	43.6%
20-24	12.6	4.5%	43.9%	8.4	3.0%	50.7%	21.1	3.8%	47.4%
25-29	21.1	7.6%	51.5%	27.4	9.7%	60.4%	48.5	8.6%	56.0%
30-34	29.5	10.8%	62.1%	33.7	11.9%	72.4%	63.2	11.3%	67.3%
35-39	19.0	6.8%	68.9%	16.9	6.0%	78.4%	35.8	6.4%	73.7%
40-44	25.3	9.1%	78.0%	23.2	8.2%	86.6%	48.5	8.6%	82.3%
45-49	19.0	6.8%	84.8%	19.0	6.7%	93.3%	37.9	6.8%	89.1%
50-54	16.9	6.1%	90.9%	14.7	5.2%	98.5%	31.6	5.6%	94.7%
55-59	16.9	6.1%	97.0%	2.1	0.7%	99.3%	19.0	3.4%	98.1%
60-64	2.1	0.8%	97.7%	2.1	0.7%	100.0%	4.2	0.8%	98.9%
65-69	2.1	0.8%	98.5%	0.0	0.0%	100.0%	2.1	0.4%	99.2%
70-74	0.0	0.0%	98.5%	0.0	0.0%	100.0%	0.0	0.0%	99.2%
75-79	2.1	0.8%	99.2%	0.0	0.0%	100.0%	2.1	0.4%	99.6%
Missing	2.1	0.8%	100.0%	0.0	0.0%	100.0%	2.1	0.4%	100.0%
TOTAL	278.1	49.6%		282.3	50.4%		560.4	100.0%	

OURCE: Alaska Department of Fish & Game, Division of Subsistence, Household S vey, 1993.

Figure 4. Birthplaces of King Cove Residents

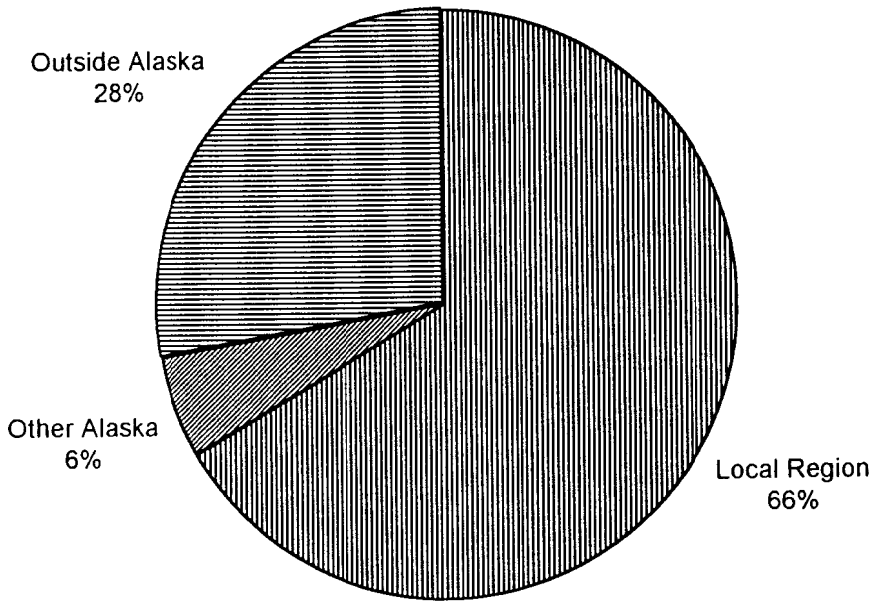


Table 6 Local Region Birthplaces of King Cove Residents

Place	Number of People, Surveyed Households	Percentage of Locally-born Residents	Percentage of Total Residents	Estimated Number of People
Akutan	2	1.1%	0.8%	4
Atka	1	0.6%	0.4%	2
Belkofski	14	7.9%	5.3%	30
False Pass	5	2.8%	1.9%	11
Ikatan	2	1.1%	0.8%	4
King Cove	144	81.4%	54.3%	305
Nelson Lagoon	1	0.6%	0.4%	2
Port Moller	1	0.6%	0.4%	2
Sanak	1	0.6%	0.4%	2
Sand Point	4	2.3%	1.5%	8
Unalaska	2	1.1%	0.8%	4
Total	177	100.0%	66.8%	374

Source: Division of Subsistence, ADF&G, Household Survey 1993.

MONETARY ECONOMY

Table 7 presents findings regarding cash employment characteristics for the sampled King Cove households and population in 1992. Of the estimated 341 adults in the community (age 16 years and older), 84.6 percent held some kind of cash employment in 1992. There was a total of about 571 jobs, including commercial fishing, in the study year. On average, employed adults worked about 8.5 months in 1992; 31.2 percent were employed year-round (12 months). Almost all the households (96.0 percent) contained at least one member who was employed for at least part of the study year.

Figure 5 presents data on the kind of jobs held by King Cove residents in 1992 by industry (see Appendix F for definitions). By far, the most jobs (53 percent) were in commercial fishing, followed by retail trade (11 percent), manufacturing (9 percent; this includes fish processing), education (8 percent), local government excluding education (7 percent), and services (4 percent), and transportation, communications, and utilities (3 percent). It should be recalled that residents of group quarters, most of whom are employed by the Peter Pan seafood processing facility, were not included in the survey.

At least one member of most sampled King Cove households (66.7 percent) was involved in commercial fishing activities in 1992. As summarized in Table 8, 57.3 percent of the sampled households participated in commercial salmon fishing, 40.0 percent took part in the commercial halibut fishery, 26.7 percent fished commercially for Pacific cod, 13.3 percent were involved in the commercial Tanner crab fishery, 12.0 percent fishing commercially for herring, and 4.0 percent fished commercially for pollock.

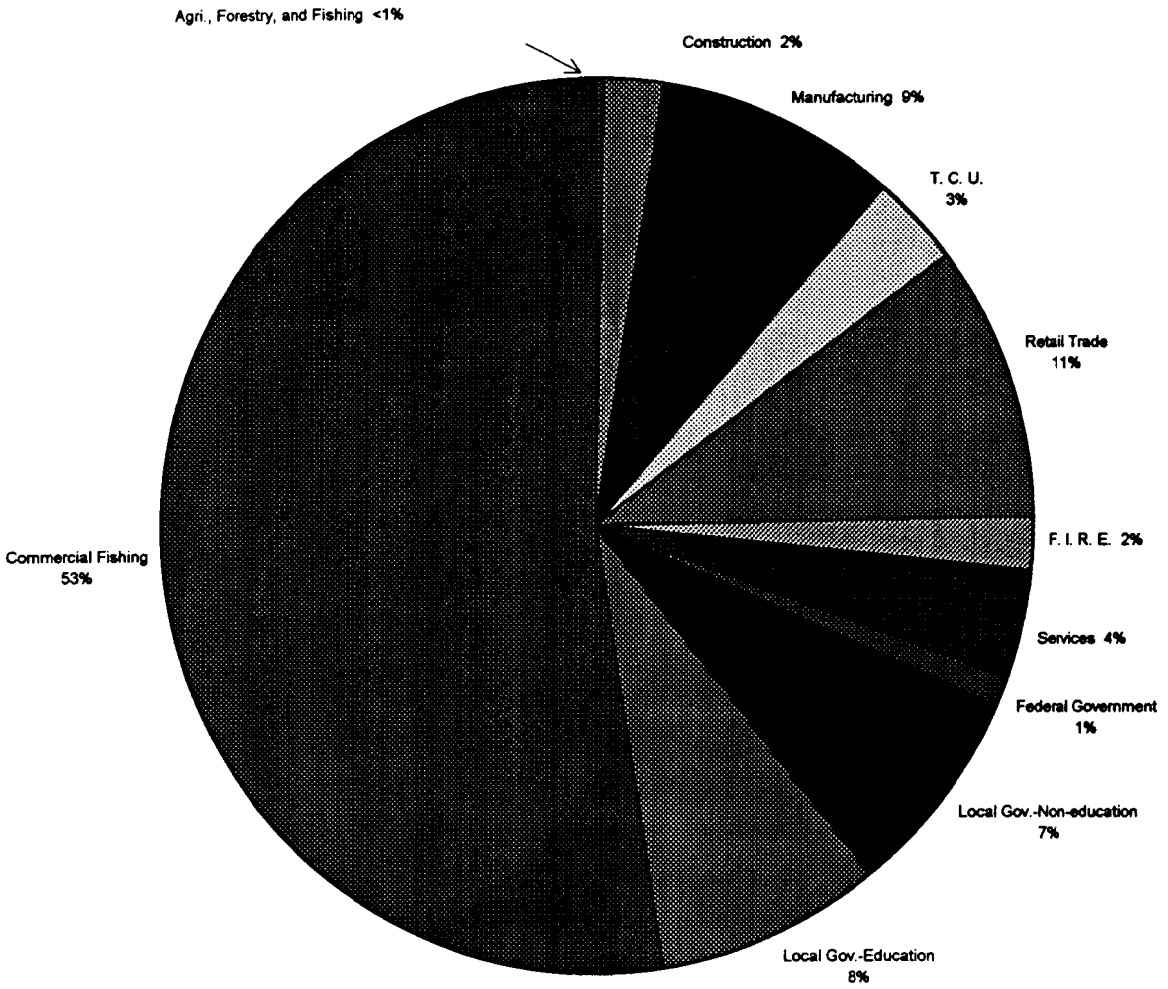
Table 9 presents data on cash income for King Cove in 1992 based upon the household surveys. The average household income in 1992 was $67,848, giving a per capita income of $19,485. This compares with the 1990 U.S. Census estimate of $15,767 per capita in 1989 in King Cove. Income earned from jobs (including commercial fishing) averaged $61,499 per household and $17,340 per capita in 1992. By far, commercial fishing provided the largest portion of the cash income of King Cove households in 1992, representing 47.6 percent of all income and 52.5 percent of earned income. ln second place was income from jobs with federal, state, and local governments ($4,017 per capita), with jobs with the schools

Table 7. Employment Characteristics, King Cove, 1992

Characteristics	
ADULTS	
Total	341.28
Employed	
Number	288.81
Percentage	84.57%
Jobs	
Number	570.91
Mean	1.98
Minimum	1
Maximum	7
Months Employed	
Mean	8.53
Minimum	1
Maximum	12
Year-Round	31.16%
HOUSEHOLDS	
Total	158.00
Employed	
Number	151.68
Percentage	96.00%
Jobs per Employed Household	
Mean	3.76
Minimum	1
Maximum	9
Employed Adults	
Mean	1.90
Minimum	1
Maximum	5

SOURCE Alaska Department of Fish and Game, Division of Subsistence, Household Survey, 1993.

Figure 5. Employment by Industry, King Cove, 1992



n = 570.9 jobs

TABLE 8. HOUSEHOLD INVOLVEMENT IN COMMERCIAL FISHERIES, KING COVE, 1992

Resource	Percentage of Households with a Member Participating
Salmon	57.3%
Pacific Cod	26.7%
Halibut	40.0%
Herring	12.0%
Tanner crab	13.3%
Pollock	4.0%
Any Fishery	66.7%

Source: ADF&G, Division of Subsistence Household Survey 1993.

Table 9. Community, Household, and Per Capita Incomes, All Sources and by Employer Types, King Cove, 1992

INCOME SOURCE	INCOME		
	COMMUNITY TOTAL	AVERAGE HOUSEHOLD	PER CAPITA
All Sources	$17,697,406.72	$67,847.86	$19,484.83
Earned Income	$9,716,834.37	$61,498.95	$17,339.93
Agriculture, Forestry, Fishing	5,100,119.00	32,279.23	9,101.29
Agriculture	0.00	0.00	0.00
Fishing, Hunting, Trapping	5,100,119.00	32,279.23	9,101.29
Aquaculture	0.00	0.00	0.00
Commercial Fishing	5,098,433.67	32,268.57	9,098.28
Hunting/Trapping	1,685.33	10.67	3.01
Mining	0.00	0.00	0.00
Construction	132,720.00	840.00	236.84
Manufacturing	1,119,956.67	7,088.33	1,998.59
Cannery	1,119,956.67	7,088.33	1,998.59
Other Manufacturing	0.00	0.00	0.00
Logging/Timber	0.00	0.00	0.00
Transportation, Communications, and Utilities	208,173.78	1,317.56	371.49
Trade	594,078.14	3,759.99	1,060.15
Wholesale	0.00	0.00	0.00
Retail	594,078.14	3,759.99	1,060.15
Finance, Insurance, and Real Estate	169,656.89	1,073.78	302.76
Services	141,267.05	894.10	252.09
Government	2,250,862.84	14,245.97	4,016.72
Federal	181,700.00	1,150.00	324.25
State	0.00	0.00	0.00
Local	2,069,162.84	13,095.97	3,692.47
Local Government	985,790.36	6,239.18	1,759.17
Local Education	1,083,372.48	6,856.79	1,933.30
Other Income	$7,980,572.35	$6,348.90	$2,144.90

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Household Survey, 1993.

contributing the largest portion of this category. Manufacturing ranked third, with a per capita income of $1,999, 10.3 percent of the total cash income for the sampled households.

On average, King Cove households obtained $6,349 ($2,145 per capita) from non-job sources in 1992 (Table 10). More than half of this total (53.4 percent) was from the Alaska Permanent Fund Dividend program ($775 per capita). The next most significant sources of other income for the community overall were social security payments ($110 per capita) and Native corporation dividends ($105 per capita).

Table 10. Community, Household, and Per Capita Other Income by Source, King Cove, 1992

SOURCE	OTHER INCOME			
	PERCENTAGE REPORTING	COMMUNITY TOTAL	AVERAGE HOUSEHOLD	PER CAPITA
All Sources		$781,402.89	$4.945.59	$1,394.43
Exxon Claims	0.0%	0.00	0.00	0.00
Aid to Families with Dependent Children	2.7%	51.613.33	326.67	92.11
Adult Public Assistance	1.3%	3,539.20	22.40	6.32
Exxon Damages	0.0%	0.00	0.00	0.00
Pension/Retirement	2.7%	37,920.00	240.00	67.67
Longevity Bonus	2.7%	12,640.00	60.00	22.56
Social Security	9.3%	61.849.63	391.45	110.37
Workman's Comp./Insurance	0.0%	0.00	0.00	0.00
Energy Assistance	9.3%	5.56834	35.24	9.94
Supplemental Security Income	0.0%	0.00	0.00	0.00
Food Stamps	2.7%	2.86507	18.13	5.11
Unemployment	2.7%	9901.33	62.67	17.67
Native Corporation Dividend	64.0%	59.043.32	373.69	105.36
Dividend/Interest	4.0%	3,476.00	22.00	6.20
Child Support	2.7%	21,488.00	136.00	38.35
Rental Income	1.3%	5,056.00	32.00	9.02
Veteran Disability	0.0%	0.00	0.00	0.00
Equipment Leasing	0.0%	0.00	0.00	0.00
Rental Assistance	0.0%	0.00	0.00	0.00
Per Diem	4.0%	9,058.67	57.33	16.17
Disability	0.0%	0.00	0.00	0.00
Alaska Permanent Fund Dividend	89.3%	434,184.00	2,748.00	774.81

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Household Survey, 1993.

CHAPTER THREE: NONCOMMERCIAL USE AND HARVEST OF WILD RESOURCES

PARTICIPATION LEVELS AND RANGE OF RESOURCES USED

Household Levels of Participation

As reported in Table 11, every interviewed household in King Cove (100 percent) used at least one kind of wild resource in 1992. On average, King Cove households used 15.6 types of wild resources during the study year, ranging from a low of 2 to a high of 43 kinds of resources. At the category level, 96.0 percent of the households used salmon, 89.3 percent used fish other than salmon, 94.7 percent used marine invertebrates, 89.3 percent used wild plants, 68.0 percent used land mammals, 73.3 percent used wild fowl, and 25.3 percent used marine mammals (Table 12, Fig. 6). Nine resources were used by 50 percent or more of the King Cove households in 1992: berries (used by 88.0 percent of the households), king crab (82.7 percent), sockeye salmon (81.3 percent), octopus (78.7 percent), coho salmon (74.7 percent), halibut (73.3 percent), caribou (64.0 percent), ptarmigan (61.3 percent), and Dolly Varden (54.7 percent). Additionally, 15 other resources were used by at least 25 percent of the sampled King Cove households. These were chitons (also known as bidarkies) (48.0 percent), chinook salmon (46.7 percent), Tanner crab (45.3 percent), Pacific cod (44.0 percent), Canada geese (44.0 percent), brant (42.7 percent), mallard ducks (40.0 percent), chum salmon (37.3 percent), butter clams (34.7 percent), red rockfish (30.7 percent), pink salmon (30.7 percent), wild plants other than berries (26.7 percent), teal (26.7 percent), wild cattle (25.3 percent), and sea urchins (25.3 percent) (Table 13).

The vast majority of King Cove households participated in wild resource harvest activities in 1992. Overall, 97.3 percent of the households attempted to harvest at least one kind of resource and 96.0 percent were successful harvesters. On average, King Cove households attempted to harvest 10.2 kinds of resources in 1992 and successfully harvested 9.9 kinds (Table 11). Most households fished for salmon (84.0 percent) and fish other salmon (68.0 percent), hunted birds (61.3 percent) and searched for wild plants (82.7 percent) and marine invertebrates (57.3 percent). Also, 32.0 percent hunted land mammals and 13.3 percent hunted marine mammals (Table 13, Fig. 6). The majority of King Cove

Table 11. Resource Harvest and Use Characteristics, King Cove, 1992

udy Community	King Cove
ean Number Of Resources Used Per Household	15.6
Minimum	2
Maximum	43
95 % Confidence Limit (+/-)	9.87
Median	15
ean Number Of Resources Attempted To Harvest Per Household	10.17
Minimum	0
Maximum	39
95 % Confidence Limit (+I-)	14.55
Median	7
ean Number Of Resources Harvested Per Household	9.91
Minimum	0
Maximum	39
95 % Confidence Limit (+/-)	14.83
Median	7
lean Number Of Resources Received Per Household	7.31
Minimum	0
Maximum	32
95 % Confidence Limit (+/-)	13.4
Median	6
lean Number Of Resources Given Away Per Household	4.72
Minimum	0
Maximum	31
95 % Confidence Limit (+/-)	23.09
Median	2
lean Household Harvest, Pounds	908.2
Minimum	0
Maximum	4448.89
otal Pounds Harvested	143,495.90
ommunity Per Capita Harvest, Pounds	256.07
ercent Using Any Resource	100
ercent Attempting To Harvest Any Resource	97.33
ercent Harvesting Any Resource	96
Percent Receiving Any Resource	94.67
Percent Giving Away Any Resource	81.33
Number Of Households In Sample	75
Number of Resources Available	124

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Household Survey, 1993.

Table 12. Resources Used for Subsistence Purposes in Sand Point and King Cove, 1992

Resource	Scientific Name	Percentage of Households Using in 1992: Sand Point	King Cove
SALMON		99.0%	96.0%
Chinook Salmon	*Oncorhynchus tshawyscha*	71.2%	46.7%
Chum Salmon	*Oncorhynchus keta*	54.8%	37.3%
Coho Salmon	*Oncorhynchus kisutch*	81.7%	74.7%
Landlocked Salmon*		1.0%	2.7%
Pink Salmon	*Oncorhynchus gorbuscha*	59.6%	30.7%
Sockeye Salmon	*Oncorhynchus nerka*	94.2%	81.3%
NON-SALMON FINFISH		97.1%	89.3%
Burbot **	*Lota lota*	1.0%	0.0%
Black Cod	*Anoplopoma fimbria*	12.5%	8.0%
Ling Cod	*Ophiodon elongatus*	1.9%	0.0%
Pacific Cod	*Gadus macrocephalus*	59.6%	44.0%
Dolly Varden/ Arctic Char *	*Salvelinus malma, Salvenlinus alpinus*	51.0%	54.7%
Eel*		2.9%	0.0%
Flounder*	*Platichthys stellatus*	3.8%	4.0%
Greenling*	*Hexagrammos sp.*	6.7%	5.3%
Halibut	*Hippoglossus stenolepis*	89.4%	73.3%
Herring	*Clupea harengus*	13.5%	22.7%
Herring Spawn on Kelp		1.0%	2.7%
Atka Mackerel	*Plurogrammus monopterysius*	1.0%	0.0%
Pike**	*Esox lucius*	0.0%	1.3%
Rainbow Trout	*Salmo gairdneri*	0.0%	1.3%
Red Rockfish*	*Sebastes sp.*	49.0%	30.7%
Black Rockfish*	*Sebastes sp.*	30.8%	12.0%
Sculpin*	*Hemilepidotus sp.*	3.8%	6.7%
Sea Perch	*Sebastes alutus*	1.9%	1.3%
Sheefish**	*Stenodus leucichthys*	1.0%	0.0%
Skates*	*Raja sp., Bathyraja sp.*	0.0%	1.3%
Smelt (Eulachon)	*Thaleichthys pacificus*	4.8%	1.3%
Sole*		4.8%	4.0%
Steelhead	*Salmo gairdneri*	30.8%	4.0%
Walleye Pollock	*Theragra chalcogramma*	1.9%	2.7%
Whitefish*,**		1.0%	0.0%
MARINE INVERTEBRATES		90.4%	94.7%
Butter Clam	*Saxidomus giganteus*	21.2%	34.7%
Pacific Littleneck Clams	*Protothaca staminea*	3.8%	5.3%
Pinkneck Clams	*Spisula polynyma*	1.0%	1.3%

Table 12. (Continued)

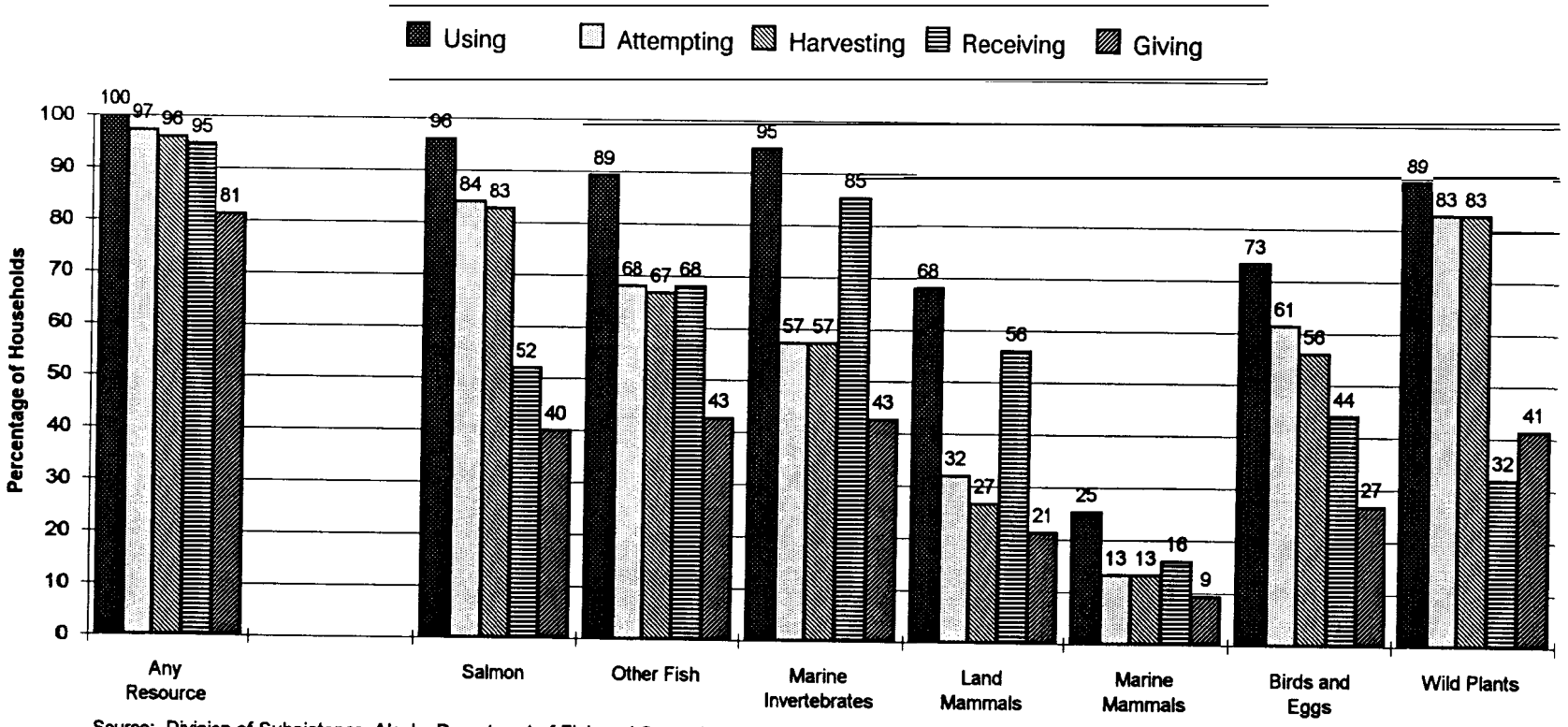
Resource	Scientific Name	Percentage of Households Using in 1992: Sand Point	King Cove
Razor Clam*	*Siliqua sp.*	8.7%	4.0%
Chitons (black)	*Katharina tunicata*	57.7%	48.0%
Cockles*	*Clincardium sp.*	5.8%	1.3%
Dungeness Crab	*Cancer magister*	38.5%	17.3%
Hair Crab	*Erimacrus isenbeckii*	0.0%	6.7%
King Crab*	*Paralithodes camtschatica, P. platypus, Lithodes sp.*	56.7%	82.7%
Tanner Crab*	*Chionoecetes sp.*	53.8%	49.3%
Mussels	*Mytilus edulis*	0.0%	1.3%
octopus	*Octopus dofleini*	72.1%	78.7%
Scallops	*Pecten caurinus*	11.5%	2.7%
Sea Cucumber*	*Bathyplotes sp.*	1.0%	2.7%
Sea Urchin	*Strongylocentrotus droebachiensis*	26.0%	25.3%
Shrimp *	*Pandalus sp.*	2.9%	6.7%
Snails	*Fusitriton oregonensis*	1.9%	8.0%
LAND MAMMALS		76.9%	68.0%
Bison	*Bison bison*	54.8%	4.0%
Brown Bear	*Ursus arctos*	1.0%	1.3%
Caribou	*Rangifer tarandus*	51.0%	64.0%
Deer**	*Odocoileus hemionus sitkensis*	1.0%	16.0%
Arctic Hare	*Lepus othus*	20.2%	5.3%
Snowshoe Hare	*Lepus americanus*	0.0%	1.3%
Land Otter	*Lutra canadensis*	0.0%	4.0%
Mink	*Mustela vison*	0.0%	2.7%
Moose	*Alces alces*	23.1%	8.0%
Porcupine	*Erethizon dorsatum*	0.0%	1.3%
Red Fox	*Vulpes vulpes*	4.8%	4.0%
Wild Cattle	*Bos sp.*	15.4%	25.3%
Wolverine	*Gulo gulo*	0.0%	1.3%
MARINE MAMMALS		25.0%	25.3%
Harbor Seal	*Phoca vitulina*	18.3%	22.7%
Sea Otter	*Enhydra lutris*	0.0%	2.7%
Stellar (Northern) Sea Lion	*Eumetopias jubatus*	1.0%	1.3%
Unknown Whale*		17.3%	1.3%
BIRDS AND EGGS		75.0%	73.3%
Brant	*Branta bernicla*	10.6%	42.7%
Bufflehead	*Bucephala albeola*	8.7%	6.7%

Table 12. (Continued)

Resource	Scientific Name	Percentage of Households Using in 1992: Sand Point	King Cove
Canvasback	*Aythya valisineria*	3.8%	1.3%
Common Snipe	*Gallinago gallinago*	1.0%	0.0%
Eider*	*Somateria sp.*	1.0%	2.7%
Gadwall	*Anas strapera*	0.0%	1.3%
Canada Geese	*Branta canadensis spp.*	32.7%	44.0%
Emperor Geese	*Anser canagicus*	11.5%	4.0%
Snow Geese	*Anser caerulescens*	0.0%	1.3%
Goldeneye	*Bucephala clangula*	3.8%	12.0%
Gulls*	*Larus sp.*	0.0%	1.3%
Harlequin	*Histrionicus histrionicus*	5.8%	2.7%
Mallard	*Anas platyrhynchos*	30.8%	40.0%
Oldsquaw	*Clangula hyemalis*	1.9%	0.0%
Pintail	*Anas acuta*	4.8%	14.7%
Ptarmigan	*Lagopus lagopus*	59.6%	61.3%
Sandhill Crane	*Grus canadensis*	0.0%	1.3%
Scaup	*Aythya affinis*	0.0%	1.3%
Teal	*Anas crecca*	23.1%	26.7%
Gull Eggs*	*Larus sp.*	26.9%	22.7%
Snipe Eggs		1.0%	0.0%
Tern Eggs	*Sterna sp.*	1.0%	0.0%
PLANTS AND BERRIES		87.5%	89.3%
Berries*		84.6%	88.0%
Blueberries	*Vaccinium uliginosum*		
Cranberries	*Vaccinium vitis-idaea*		
Mossberries (Crowberries)	*Empetrum nigrum*		
Salmonberries	*Rubus chamaemorus*		
Wine Berries	*Cornus suecica*		
Plants/Greens/Mushrooms		44.2%	26.7%
Beach Celery	*Heracleum lanatum*		
Petrouski	*Ligusticum hultenii*		
Seaweed/Kelp*		12.5%	2.7%

* Probably includes two or more species.
** Not available locally

Figure 6. Household Participation in Resource Use and Harvest Activities by Resource Category, King Cove, 1992



Source: Division of Subsistence, Alaska Department of Fish and Game, Household Survey 1993.

Table 13. Estimated Harvest and Use of Fish, Game, and Plant Resources, King Cove, 1992

Resource Name	Percentage of Households					Pounds Harvested			Amount Harvested		95% Conf Limit (+/-)	
	Use	Att	Harv	Recv	Give	Total	Mean HH	Percapita	Total	Mean HH	Harvest	Percapita
All Resources	100.0	97.3	96.0	94.7	81.3	143,495.90	908.20	256.07			21.90%	20.80%
Fish	97.3	86.7	85.3	74.7	50.7	100,569.35	636.51	179.47			23.90%	22.90%
Salmon	96.0	84.0	82.7	52.0	40.0	76,647.70	485.11	136.78	17,135.63	108.45	25.20%	23.60%
Chum Salmon (general)	37.3	29.3	29.3	10.7	13.3	8,954.85	56.68	15.98	1,805.41	11.43	40.00%	38.50%
Coho Salmon	74.7	60.0	56.0	30.7	26.7	29,638.27	187.58	52.89	6,174.64	39.08	31.70%	31.60%
Chinook Salmon	46.7	29.3	28.0	20.0	14.7	4,722.85	29.89	8.43	415.01	2.63	39.40%	38.30%
Pink Salmon	30.7	28.0	28.0	4.0	9.3	4,650.59	29.43	8.30	1,929.71	12.21	53.40%	50.70%
Sockeye Salmon	81.3	58.7	58.7	36.0	26.7	28,475.10	180.22	50.81	6,747.65	42.71	34.30%	33.60%
Landlocked Salmon	2.7	1.3	1.3	1.3	1.3	31.60	0.20	0.06	21.07	0.13	144.40%	146.00%
Unknown Salmon	4.0	1.3	1.3	2.7	0.0	174.43	1.10	0.31	42.13	0.27	144.40%	145.50%
Non-Salmon Fish	89.3	68.0	66.7	68.0	42.7	23,921.65	151.40	42.69			28.30%	28.20%
Pike	1.3	1.3	1.3	0.0	0.0	17.70	0.11	0.03	6.32	0.04	144.40%	145.50%
Cod	44.0	24.0	24.0	24.0	13.3	3,397.63	21.50	6.06	1,061.76	6.72	47.60%	48.10%
Pacific Cod (Gray)	44.0	24.0	24.0	24.0	13.3	3,397.63	21.50	6.06	1,061.76	6.72	47.60%	48.10%
Burbot	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Unknown Cod	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Sablefish (Black Cod)	8.0	4.0	4.0	4.0	4.0	228.57	1.45	0.41	73.73	0.47	92.60%	93.30%
Greenling	5.3	5.3	5.3	0.0	1.3	77.95	0.49	0.14	77.95	0.49	78.50%	79.40%
Atka Mackerel	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Lingcod	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Unknown Greenling	5.3	5.3	5.3	0.0	1.3	77.95	0.49	0.14	77.95	0.49	78.50%	79.40%
Flounder	4.0	4.0	4.0	0.0	1.3	189.60	1.20	0.34	63.20	0.40	101.70%	103.00%
Starry Flounder	1.3	1.3	1.3	0.0	0.0	126.40	0.80	0.23	42.13	0.27	144.40%	145.50%
Unknown Flounder	2.7	2.7	2.7	0.0	1.3	63.20	0.40	0.11	21.07	0.13	103.50%	104.50%
Sole	4.0	1.3	1.3	2.7	1.3	42.13	0.27	0.08	42.13	0.27	144.40%	145.50%
Yellowfin Sole	1.3	1.3	1.3	0.0	0.0	42.13	0.27	0.08	42.13	0.27	144.40%	145.50%
Sole, Unknown	2.7	0.0	0.0	2.7	1.3	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Halibut	73.3	38.7	36.0	46.7	22.7	7,393.98	46.80	13.19	456.42	2.89	46.00%	46.50%
Herring	22.7	9.3	9.3	13.3	10.7	2,123.52	13.44	3.79	353.92 gal	2.24	89.50%	90.00%
Herring Roe	2.7	0.0	0.0	2.7	0.0	0.00	0.00	0.00	0.00 gal	0.00	0.00%	0.00%
Roe on Kelp	2.7	2.7	2.7	0.0	1.3	147.47	0.93	0.26	21.07 gal	0.13	118.70%	118.80%
Rockfish	36.0	18.7	18.7	21.3	9.3	1,333.52	8.44	2.38	457.15	2.89	46.50%	49.40%
Black Rockfish (black bass)	12.0	10.7	10.7	1.3	2.7	297.04	1.88	0.53	198.03	1.25	67.30%	67.40%
Red Rockfish	30.7	12.0	12.0	21.3	8.0	1,036.48	6.56	1.85	259.12	1.64	60.00%	59.20%
Yellow Eye Rockfish	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Unknown Rockfish	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%

Table 13. Estimated Harvest and Use of Fish, Game, and Plant Resources, King Cove, 1992

Resource Name	Percentage of Households					Pounds Harvested			Amount Harvested		95% Conf Limit (+/-)	
	Use	Att	Harv	Recv	Give	Total	Mean HH	Percapita	Total	Mean HH	Harvest	Percapita
Sea Perch	1.3	0.0	0.0	1.3	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Sculpin	6.7	5.3	5.3	1.3	2.7	121.13	0.77	0.22	242.27	1.53	78.40%	78.50%
Unknown Sculpin	6.7	5.3	5.3	1.3	2.7	121.13	0.77	0.22	242.27	1.53	78.40%	78.50%
Smelt	1.3	0.0	0.0	1.3	1.3	0.00	0.00	0.00	0.00 gal	0.00	0.00%	0.00%
Rainbow Smelt	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00 gal	0.00	0.00%	0.00%
Capelin (Grunion)	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00 gal	0.00	0.00%	0.00%
Eulachon (Hooligan, Candlefish)	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00 gal	0.00	0.00%	0.00%
Unknown Smelt	1.3	0.0	0.0	1.3	1.3	0.00	0.00	0.00	0.00 gal	0.00	0.00%	0.00%
Eel	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Walleye Pollock (Whiting)	2.7	2.7	2.7	0.0	0.0	91.43	0.58	0.16	65.31	0.41	139.80%	141.30%
Skates	1.3	1.3	1.3	0.0	0.0	10.53	0.07	0.02	2.11	0.01	144.40%	144.40%
Sheefish	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Whitefish	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Unknown Whitefish	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Trout and Char	68.0	54.7	53.3	29.3	24.0	8,746.49	55.36	15.61	7,240.63	45.83	46.60%	34.40%
Char (general)	66.7	54.7	53.3	26.7	24.0	8,672.76	54.89	15.48	7,187.97	45.49	46.80%	34.60%
Dolly Varden	54.7	44.0	42.7	21.3	17.3	7,440.36	47.09	13.28	6,307.68	39.92	53.00%	39.70%
Brook Trout	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Unknown Char	18.7	14.7	14.7	8.0	8.0	1,232.40	7.80	2.20	880.29	5.57	73.80%	73.80%
Trout	4.0	1.3	1.3	2.7	1.3	73.73	0.47	0.13	52.67	0.33	144.40%	143.80%
Cutthroat Trout	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Rainbow Trout	1.3	1.3	1.3	0.0	0.0	44.24	0.28	0.08	31.60	0.20	144.40%	143.80%
Steelhead	4.0	1.3	1.3	2.7	1.3	29.49	0.19	0.05	21.07	0.13	144.40%	143.80%
Game	68.0	32.0	26.7	56.0	21.3	22,058.49	139.61	39.36	250.69	1.59	51.00%	36.10%
Big Game	68.0	29.3	25.3	56.0	21.3	21,804.00	138.00	38.91	105.33	0.67	34.50%	36.20%
Bison	4.0	0.0	0.0	4.0	1.3	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Brown Bear	1.3	1.3	1.3	0.0	0.0	0.00	0.00	0.00	2.11	0.01	144.40%	0.00%
Caribou	64.0	29.3	25.3	45.3	18.7	10,744.00	68.00	19.17	71.63	0.45	32.70%	31.90%
Deer	16.0	0.0	0.0	16.0	1.3	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Moose	8.0	0.0	0.0	8.0	2.7	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Wild Cow	25.3	13.3	13.3	14.7	10.7	11,060.00	70.00	19.74	31.60	0.20	51.30%	49.70%
Small Game/Furbearer	9.3	10.7	9.3	4.0	4.0	254.49	1.61	0.45	145.36	0.92	72.50%	76.30%
Fox	4.0	5.3	4.0	0.0	1.3	0.00	0.00	0.00	67.41	0.43	100.60%	0.00%
Arctic Fox	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Red Fox	4.0	5.3	4.0	0.0	1.3	0.00	0.00	0.00	67.41	0.43	100.60%	0.00%
Hare	6.7	6.7	6.7	4.0	2.7	220.78	1.40	0.39	42.13	0.27	69.20%	72.60%

Table 13. Estimated Harvest and Use of Fish, Game, and Plant Resources, King Cove, 1992

Resource Na	Percentage of Households					Pounds Harvested			Amount Harvested		95% Conf Limit (+/-)	
	se	Att	Harv	Recv	Give	Total	Mean HH	Percapita	Total	Mean HH	Harvest	Percapita
Arctic Hare	5.3	5.3	5.3	2.7	1.3	212.35	1.34	0.38	37.92	0.24	75.60%	75.60%
Snowshoe Hare	1.3	1.3	1.3	1.3	1.3	8.43	0.05	0.02	4.21	0.03	144.40%	143.30%
Land Otter	4.0	4.0	4.0	0.0	0.0	0.00	0.00	0.00	8.43	0.05	87.40%	0.00%
Lynx	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Mink	2.7	4.0	2.7	0.0	1.3	0.00	0.00	0.00	18.96	0.12	102.10%	0.00%
Porcupine	1.3	1.3	1.3	0.0	0.0	33.71	0.21	0.06	4.21	0.03	144.40%	144.40%
Weasel	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Wolf	0.0	2.7	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Wolverine	1.3	2.7	1.3	0.0	1.3	0.00	0.00	0.00	4.21	0.03	144.40%	0.00%
Squirrel	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Parka Squirrel (ground)	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Marine Mammals	25.3	13.3	13.3	16.0	9.3	1,179.73	7.47	2.11			55.70%	55.00%
Whale	1.3	0.0	0.0	1.3	1.3	0.00	0.00	0.00			0.00%	0.00%
Unknown Whale	1.3	0.0	0.0	1.3	1.3	0.00	0.00	0.00			0.00%	0.00%
Seal	22.7	10.7	10.7	13.3	9.3	1,179.73	7.47	2.11	23.17	0.15	51.80%	55.00%
Harbor Seal	22.7	10.7	10.7	13.3	9.3	1,179.73	7.47	2.11	23.17	0.15	51.80%	55.00%
Stellar Sea Lion	1.3	0.0	0.0	1.3	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Sea Otter	2.7	2.7	2.7	0.0	0.0	0.00	0.00	0.00	16.85	0.11	104.60%	0.00%
Birds and Eggs	73.3	61.3	56.0	44.0	26.7	5,189.29	32.84	9.26	6,608.61	41.83	28.40%	28.70%
Birds	72.0	57.3	52.0	42.7	26.7	4,904.26	31.04	8.75	5,658.51	35.81	30.20%	29.70%
Upland Game Birds	61.3	50.7	45.3	25.3	21.3	1,890.52	11.97	3.37	2,700.75	17.09	40.10%	40.90%
Ptarmigan	61.3	50.7	45.3	25.3	21.3	1,890.52	11.97	3.37	2,700.75	17.09	40.10%	40.90%
Migratory Birds	64.0	41.3	41.3	30.7	20.0	3,013.73	19.07	5.38	2,957.76	18.72	32.30%	31.90%
Waterfowl	64.0	41.3	41.3	30.7	20.0	2,974.13	18.82	5.31	2,949.33	18.67	32.20%	31.30%
Ducks	48.0	30.7	30.7	20.0	14.7	950.95	6.02	1.70	1,346.16	8.52	38.80%	37.00%
Eider	2.7	2.7	2.7	0.0	0.0	47.19	0.30	0.08	29.49	0.19	125.20%	124.40%
Eider, Unknown	2.7	2.7	2.7	0.0	0.0	47.19	0.30	0.08	29.49	0.19	125.20%	124.40%
Harlequin	2.7	2.7	2.7	0.0	0.0	11.59	0.07	0.02	23.17	0.15	131.80%	129.40%
Goldeneye	12.0	10.7	10.7	1.3	2.7	85.95	0.54	0.15	107.44	0.68	67.60%	66.60%
Bufflehead	6.7	5.3	5.3	1.3	1.3	35.39	0.22	0.06	88.48	0.56	83.40%	81.00%
Merganser	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Scaup	1.3	1.3	1.3	0.0	0.0	18.96	0.12	0.03	21.07	0.13	144.40%	144.40%
Mallard	40.0	28.0	28.0	13.3	2.0	518.24	3.28	0.92	518.24	3.28	37.10%	36.00%
Pintail	14.7	10.7	10.7	4.0	2.7	53.93	0.34	0.10	67.41	0.43	58.20%	57.80%
Teal	26.7	22.7	22.7	5.3	5.3	127.03	0.80	0.23	423.44	2.68	35.10%	33.90%
Gadwall	1.3	1.3	1.3	0.0	0.0	33.71	0.21	0.06	42.13	0.27	144.40%	142.20%

Table 13. Estimated Harvest and Use of Fish, Game, and Plant Resources, King Cove, 1992

Resource Name	Percentage of Households					Pounds Harvested			Amount Harvested		95% Conf Limit (+/-)	
	Use	Att	Harv	Recv	Give	Total	Mean HH	Percapita	Total	Mean HH	Harvest	Percapita
Oldsquaw	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Canvasback	1.3	1.3	1.3	0.0	0.0	4.63	0.03	0.01	4.21	0.03	144.40%	142.20%
Ducks, Unknown	6.7	1.3	1.3	5.3	2.7	14.33	0.09	0.03	21.07	0.13	144.40%	145.50%
Geese	56.0	38.7	38.7	22.7	16.0	2,023.18	12.80	3.61	1,603.17	10.15	32.80%	33.60%
Brant	42.7	32.0	32.0	12.0	13.3	920.19	5.82	1.64	766.83	4.85	40.10%	39.50%
Emperor Geese	4.0	2.7	2.7	1.3	0.0	79.00	0.50	0.14	31.60	0.20	107.10%	108.00%
Snow Geese	1.3	1.3	1.3	0.0	0.0	121.13	0.77	0.22	52.67	0.33	144.40%	144.90%
Canada Geese (general)	44.0	32.0	32.0	14.7	12.0	899.97	5.70	1.61	749.97	4.75	33.40%	32.70%
Canada Geese, Unknown	44.0	32.0	32.0	14.7	12.0	899.97	5.70	1.61	749.97	4.75	33.40%	32.70%
Geese, Unknown	2.7	1.3	1.3	1.3	0.0	2.89	0.02	0.01	2.11	0.01	144.40%	145.50%
Crane	1.3	1.3	1.3	0.0	1.3	35.39	0.22	0.06	4.21	0.03	144.40%	144.40%
Sandhill Crane	1.3	1.3	1.3	0.0	1.3	35.39	0.22	0.06	4.21	0.03	144.40%	144.40%
Shorebirds	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Common Snipe	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Seabirds	1.3	1.3	1.3	0.0	0.0	4.21	0.03	0.01	4.21	0.03	144.40%	143.30%
Puffins	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Gulls	1.3	1.3	1.3	0.0	0.0	4.21	0.03	0.01	4.21	0.03	144.40%	143.30%
Eggs	22.7	14.7	14.7	12.0	5.3	285.03	1.80	0.51	950.11	6.01	51.40%	50.50%
Seabird Eggs	22.7	14.7	14.7	12.0	5.3	285.03	1.80	0.51	950.11	6.01	51.40%	50.50%
Gull Eggs	22.7	14.7	14.7	12.0	5.3	285.03	1.80	0.51	950.11	6.01	51.40%	50.50%
Puffin Eggs	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Tern Eggs	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Shorebird Eggs	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Snipe Eggs	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Waterfowl Eggs	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Duck Eggs	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Duck Eggs, Unknown	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Unknown Eggs	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Marine Invertebrates	94.7	57.3	57.3	85.3	42.7	9,700.06	61.39	17.31			35.00%	36.00%
Clams	34.7	21.3	21.3	20.0	9.3	1,045.96	6.62	1.87	348.65 gal	2.21	39.00%	39.70%
Butter Clams	34.7	21.3	21.3	17.3	6.7	878.48	5.56	1.57	292.83 gal	1.85	38.60%	39.60%
Razor Clams	4.0	2.7	1.3	4.0	1.3	6.32	0.04	0.01	2.11 gal	0.01	144.40%	143.30%
Pacific Littleneck Clams (Steamers)	5.3	5.3	5.3	0.0	2.7	148.52	0.94	0.27	49.51 gal	0.31	73.20%	72.70%
Pinkneck Clams	1.3	1.3	1.3	0.0	0.0	12.64	0.08	0.02	4.21 gal	0.03	144.40%	145.50%
Horse Clams (Gaper)	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00 gal	0.00	0.00%	0.00%
Cockles	1.3	1.3	1.3	0.0	0.0	3.16	0.02	0.01	1.05 gal	0.01	144.40%	143.30%

Table 13. Estimated Harvest and Use of Fish, Game, and Plant Resources, King Cove, 1992

Resource Name	Percentage of Households					Pounds Harvested			Amount Harvested		95% Conf Limit (+/-)	
	Use	Att	Harv	Recv	Give	Total	Mean HH	Percapita	Total	Mean HH	Harvest	Percapita
Scallops	2.7	2.7	2.7	0.0	0.0	16.79	0.11	0.03	268.60	1.70	136.10%	137.10%
Mussels	1.3	1.3	1.3	0.0	0.0	94.80	0.60	0.17	63.20 gal	0.40	144.40%	145.50%
Crabs	85.3	22.7	22.7	74.7	30.7	3,397.00	21.50	6.06	2,083.49	13.19	45.90%	48.80%
Dungeness Crab	17.3	10.7	10.7	8.0	1.3	258.07	1.63	0.46	368.67	2.33	63.20%	64.00%
King Crab	82.7	16.0	16.0	69.3	25.3	1,516.59	9.60	2.71	659.39	4.17	57.30%	57.70%
King Crab, Blue	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Tanner Crab	49.3	12.0	12.0	38.7	20.0	1,570.73	9.94	2.80	981.71	6.21	56.50%	56.10%
Tanner Crab, Bairdi	4.0	4.0	4.0	0.0	2.7	289.88	1.83	0.52	181.17	1.15	85.80%	84.60%
Tanner Crab, Unknown	45.3	8.0	8.0	38.7	17.3	1,280.85	8.11	2.29	800.53	5.07	67.40%	67.40%
Hair Crab	6.7	2.7	2.7	4.0	0.0	51.61	0.33	0.09	73.73	0.47	110.60%	110.00%
Unknown Crabs	1.3	0.0	0.0	1.3	0.0	0.00	0.00	0.00	0.00	0.00	0.00%	0.00%
Chitons (bidarkis)	48.0	44.0	44.0	14.7	17.3	1,359.13	8.60	2.43	339.78 gal	2.15	47.90%	48.00%
Chitons (large)	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00 gal	0.00	0.00%	0.00%
Chitons (small)	48.0	44.0	44.0	14.7	17.3	1,359.13	8.60	2.43	339.78 gal	2.15	47.90%	48.00%
Octopus	78.7	40.0	40.0	52.0	20.0	2,266.77	14.35	4.05	566.69	3.59	28.80%	29.80%
Sea Cucumber	2.7	1.3	1.3	1.3	0.0	42.13	0.27	0.08	21.07 gal	0.13	144.40%	144.90%
Sea Urchin (Neet)	25.3	22.7	22.7	6.7	8.0	160.81	1.02	0.29	321.62 gal	2.04	81.30%	81.40%
Shrimp	6.7	2.7	2.7	5.3	1.3	1,266.11	8.01	2.26	633.05 gal	4.01	144.20%	145.20%
Snails	8.0	2.7	2.7	8.0	1.3	47.40	0.30	0.08	31.60 gal	0.20	107.10%	106.00%
Limpets	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00 gal	0.00	0.00%	0.00%
Plants and Berries	89.3	82.7	82.7	32.0	41.3	4,798.99	30.37	8.56	1,199.75 gal	7.59	24.70%	23.60%
Berries	88.0	81.3	81.3	30.7	37.3	4,015.31	25.41	7.17	1,003.83 gal	6.35	21.50%	21.00%
Plants/Greens/Mushrooms	26.7	24.0	24.0	1.3	4.0	783.68	4.96	1.40	195.92 gal	1.24	65.40%	63.70%
Seaweed/Kelp (Food)	2.7	0.0	0.0	2.7	2.7	0.00	0.00	0.00	0.00 gal	0.00	0.00%	0.00%
Wood	21.3	20.0	20.0	2.7	1.3	0.00	0.00	0.00	38.45	0.24	41.90%	0.00%

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Household Survey, 1993.

households were involved in berry picking (81.3 percent), ptarmigan hunting (SO.7 percent), and fishing for coho salmon (60.0 percent) and sockeye salmon (58.7 percent). At least 25 percent of the households fished for halibut (38.7 percent), chinook salmon (29.3 percent), pink salmon (28.0 percent), Dolly Varden (44.0 percent), and chum salmon (29.3 percent); searched for chitons (44.0 percent) and octopus (40.0 percent); or hunted caribou (29.3 percent), mallard ducks (28.0 percent), brant (32.0 percent), and Canada geese (32.0 percent) (Table 13).

Wild resources were frequently and widely shared among King Cove households in 1992. Almost every household (94.7 percent) received at least one type of wild resource from someone living in another household, and most households (81.3 percent) gave away at least one resource to others. The average household received 7.3 kinds of wild resources and gave away 4.7 kinds (Table 11). The majority of King Cove households received marine invertebrates (85.3 percent), salmon (52.0 percent), land mammals (56.0 percent), and fish other than salmon (68.0 percent).). Additionally, 44.0 percent received birds and/or eggs, 32.0 percent received wild plants and 16.0 percent received marine mammal products (Fig. 6). The most widely received resources included king crab (received by 69.3 percent of the households), octopus (52.0 percent), sockeye salmon (36.0 percent), halibut (46.7 percent), coho salmon (30.7 percent), Tanner crab (38.7 percent), berries (30.7 percent), ptarmigan (25.3 percent), and Pacific cod (24.0 percent) (Table 13). Overall, 40.0 percent of the households gave away salmon, 42.7 percent gave away other fish, 42.7 percent gave away marine invertebrates, 26.7 percent gave away wild fowl, 21.3 percent gave away land mammals, 41.3 percent gave away wild plants, and 9.3 percent gave away marine mammals (Fig. 6). Resources given away by the most households included sockeye salmon (26.7 percent), halibut (22.7 percent), coho salmon (26.7 percent), Tanner crab (20.0 percent), ptarmigan (21.3 percent), king crab (25.3 percent), octopus (20.0 percent), berries (37.3 percent), and caribou (18.7 percent) (Table 13).

Individual Level of Participation in Harvestina and Processing Activities

Table 14 reports the percentage of King Cove residents who were involved in noncommercial wild resource harvesting and processing activities in 1992. Overall, 83.5 percent of the King Cove

Table 14. Participation in the Harvest and Processing of Wild Resources, King Cove, 1992

Total Number of People			560.4
GAME	Hunt	Number	139.0
		Percentage	24.8%
		Missing	0.0
		Missing %	0.0%
	Process	Number	200.1
		Percentage	35.7%
		Missing	0.0
		Missing %	0.0%
FISH	Fish	Number	322.3
		Percentage	57.5%
		Missing	2.1
		Missing %	0.4%
	Process	Number	358.1
		Percentage	63.9%
		Missing	2.1
		Missing %	0.4%
FURBEARER	Hunt or Trap	Number	10.5
		Percentage	1.9%
		Missing	2.1
		Missing %	0.4%
	Process	Number	6.3
		Percentage	1.1%
		Missing	2.1
		Missing %	0.4%
PLANTS	Gather	Number	385.5
		Percentage	68.8%
		Missing	2.1
		Missing %	0.4%
	Process	Number	326.5
		Percentage	58.3%
		Missing	2.1
		Missing %	0.4%
ANY RESOURCE			
	Attempt	Number	467.7
		Percent	83.5%
	Process	Number	423.4
		Percent	75.6%

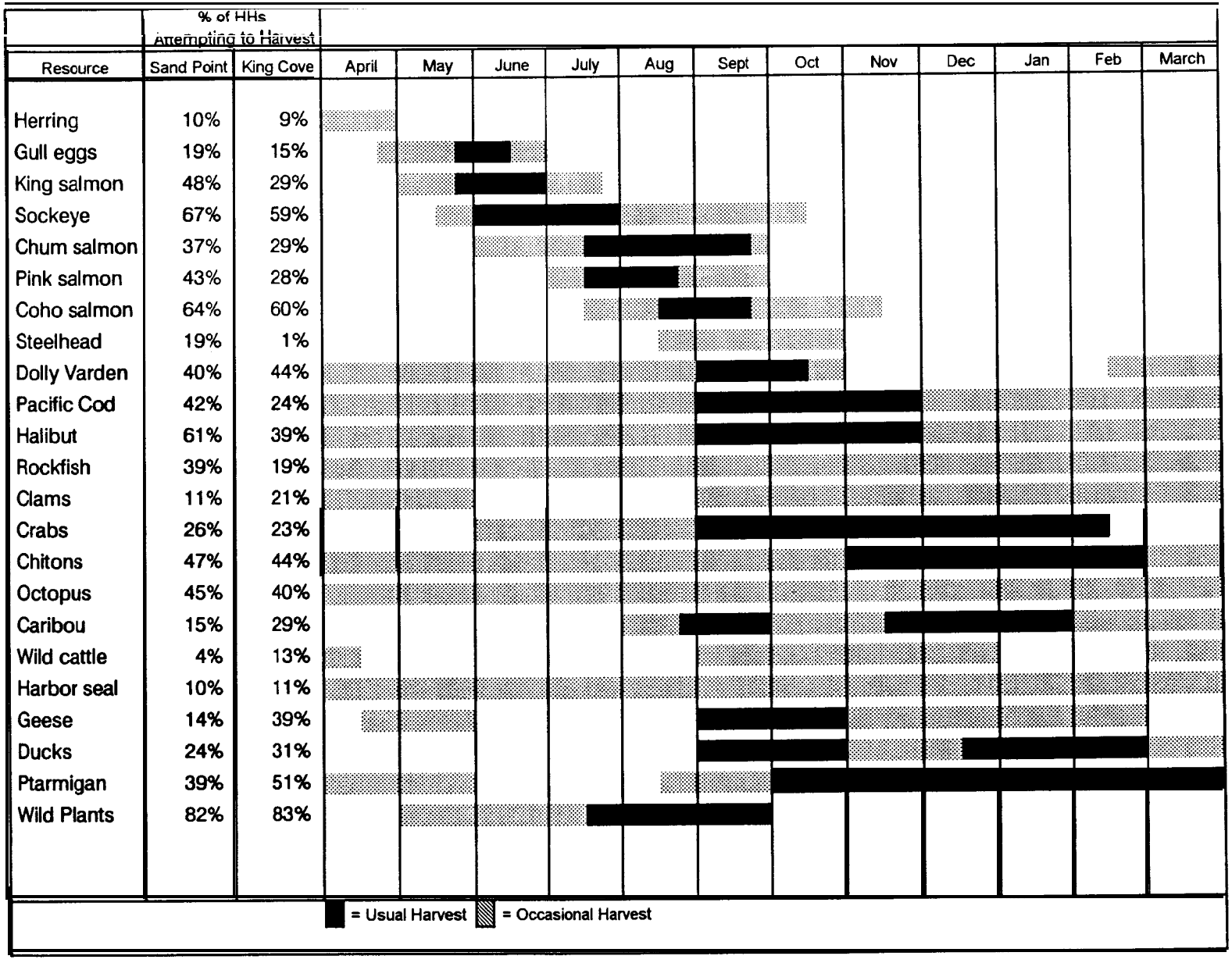
SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Household Survey, 1993.

population engaged in at least one harvesting activity. Additionally, 75.6 percent helped process wild fish, game, or plant resources for home use. About a quarter of the residents of King Cove hunted (24.8 percent) and 35.7 percent helped process harvests of land mammals, marine mammals, or birds. More than half of all King Cove residents (57.5 percent) fished or gathered marine invertebrates, and even more (63.9 percent) helped process these resources. Only a few King Cove residents trapped furbearers (1.9 percent) or processed the fur (1.1 percent). The largest percentage of residents participated in gathering wild plants (68.8 percent); 58.3 percent helped process wild plant harvests.

SEASONAL ROUND OF HARVEST ACTIVITIES

Figure 7 illustrates the current seasonal round of resource harvest activities in King Cove and the nearby community of Sand Point. This is based on the results of key respondent interviews in both communities, as well as written sources (Langdon 1982, Braund et al. 1986, Wright et al. 1985). For King Cove, Braund et al. (1986:7-42) note that with the exception of a few species such as salmon, resources are generally available year-round. Consequently, the seasonal round of subsistence harvests is more dependent on the availability of time and on regulatory restrictions. (Regulatory seasons which pertain to the various resources are discussed in the sections on particular resource categories, below.) Most species of bottomfish (cod, halibut, rockfish), marine invertebrates (clams, chitons, octopus, crabs), birds (waterfowl, ptarmigan), and mammals (harbor seals, caribou) inhabit the local region throughout the year and most are generally taken in small quantities when needed. A period of concentrated **subsistence harvest effort occurs in the** late summer **and early fall (late August and September) after** commercial salmon fishing ends for the year. During this season, most subsistence salmon fishing occurs, and there is concentrated effort directed towards caribou and waterfowl hunting (which opened by regulation in 1992 in August and September, respectively) and bottomfish fishing. Ptarmigan hunting, chiton gathering, and subsistence crabbing tend to occur during the winter months, and periodic caribou hunting traditionally has taken place throughout the winter as well. January and February have also been periods of concentrated harvest for home use as households participate in the Tanner crab and cod

Figure 7. Annual Round of Harvest Activities by Residents of King Cove and Sand Point, 1980s and Early 1990s



SOURCES: ADF&G, Division of Subsistence, Household Interviews 1993; Braund et al. 1986; Wright et al. 1985; Shaul and McCullough 1992; Langdon 1982

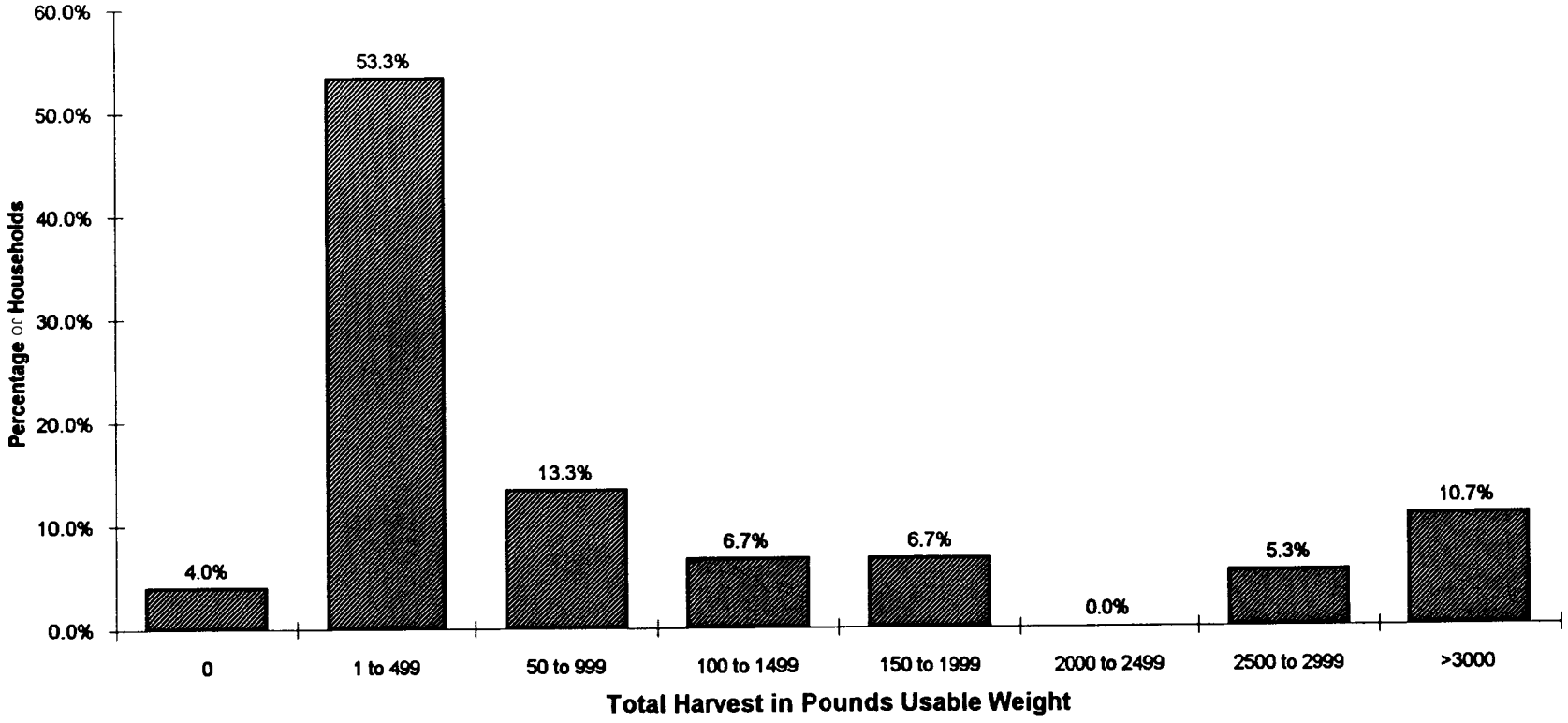
commercial fisheries. At this time, fish are retained from commercial catches for home use and other subsistence activities occur, such as caribou and duck hunting and bottomfish fishing. Other subsistence activities which exhibit seasonality include gathering gull eggs (primarily in May and June) and fishing for the various salmon species. Salmon runs in the area begin with chinook and sockeye in May and June, followed by chum (June into September), pink (July into September), and coho (beginning in July, peaking in August and September, and available into November).

HARVEST LEVELS AND COMPOSITION

Wild resource harvests made a substantial contribution to the food supply of King Cove residents in 1992. On average, King Cove households harvested 908.2 pounds (usable weight) of wild foods, for a per capita harvest of 256.1 pounds (Table 11). There were considerable differences between sampled households' harvests. As depicted in Figure 8, more than half the households (53.3 percent) harvested less than 500 pounds of wild foods in 1992, and 13.3 percent harvested from 500 to 999 pounds. Households which harvested above the community mean included the 13.4 percent that took between 1,000 and 1,999 pounds and the 16.0 percent whose harvests exceeded 2,500 pounds. As noted above, sharing was frequent among King Cove households in the study year; most households used far more kinds of resources than they harvested themselves. This indicates that while a minority of the households were responsible for most subsistence harvesting, there was more uniformity of resource use levels among households because of the distribution of wild foods.

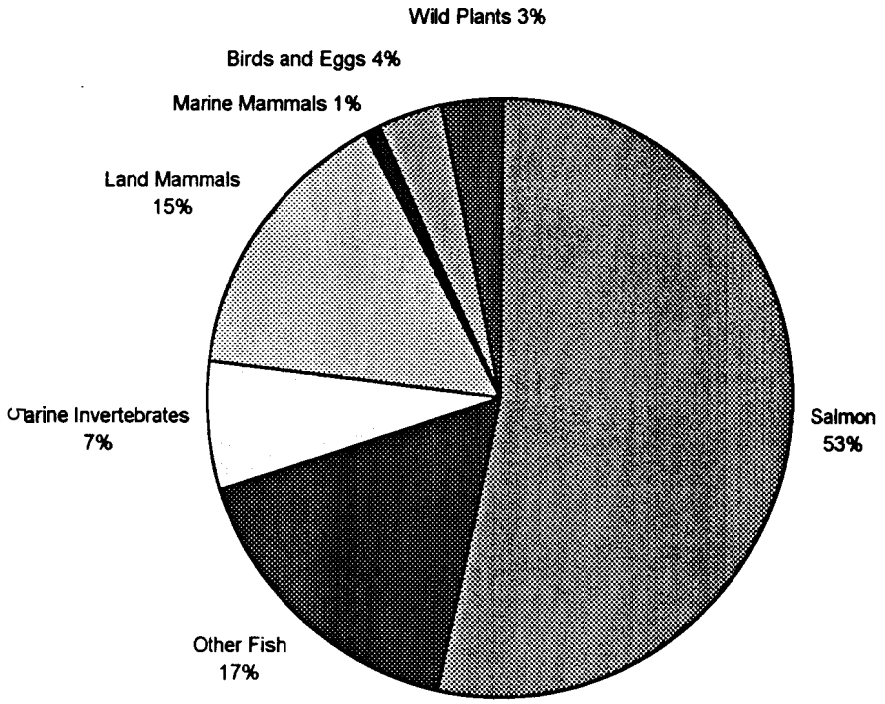
Figure 9 depicts the composition of King Cove's 1992 noncommercial wild resource harvest by resource category. Salmon made the largest contribution, at 136.8 pounds per person, for 53 percent of the total harvest. Fish other than salmon ranked second with a harvest of 42.7 pounds per person for 17 percent of the total. Land mammals were a close third with 39.4 pounds per person (15 percent) and marine invertebrates were fourth with 17.3 pounds per person (7 percent). Additionally, wild plant harvests produced 8.6 pounds per person (3 percent of the total), birds and eggs provided 9.3 pounds per person (4 percent), and marine mammals added 2.1 pounds per person (1 percent).

Figure 8. Household Harvests of Wild Resources, King Cove, 1992



Source: Division of Subsistence, Alaska Department of Fish and Game, Household Survey 1993.

Figure 9. Composition of Wild Resource Harvest, King Cove, 1992



n = 143,496 pounds

Table 13 reports the estimated harvests of wild resources by residents of King Cove in 1992 at the category, subcategory, and species level. Total harvests are reported in numbers of animals or fish (or other appropriate units such as gallons) and in pounds usable weight. As measured in usable pounds per person, coho salmon contributed the most to King Cove's harvest in 1992 with 52.9 pounds per person, followed closely by sockeye salmon with 50.8 pounds per person. Other relatively large contributions were made by wild cattle (19.7 pounds), caribou (19.2 pounds), halibut (13.2 pounds), pink salmon (8.3 pounds), chum salmon (16.0 pounds), chinook salmon (8.4 pounds), Pacific cod (6.1 pounds), Dolly Varden (13.3 pounds), and berries (7.2 pounds).

COMMERCIAL FISHERIES AS A SOURCE OF RESOURCES FOR HOME USE

Removal of resources from commercial harvests was a substantial source of wild food for home use in King Cove in 1992. This includes both commercially targeted species as well as species taken incidentally (by-catch) which are retained for home use. As shown in Table 15, King Cove commercial fishermen removed about 54,086 pounds of wild resources (usable weight) from their harvests for home use in 1992. This is approximately 96.5 pounds of wild foods for every person living in the community, about 37.7 percent of the total wild resource take for home use during the study year. At least 25 different kinds of resources were obtained for home use by commercial removal. Of all resources removed from commercial harvests, 73.0 percent of the total by weight was salmon, 21.0 percent was other fish, and 6.0 percent was marine invertebrates. Resources removed in the largest quantities from commercial harvests included sockeye salmon (20,021 pounds), coho salmon (7,897 pounds), halibut (5,778 pounds), chum salmon (5,089 pounds), chinook salmon (3,884 pounds), Pacific cod (2,980 pounds), pink salmon (2,401 pounds), octopus (1,180 pounds), king crab (1,076 pounds) and red rockfish (1,036 pounds). Commercial removal accounted for 51.5 percent of the total harvest for home use of salmon, 47.4 percent of the other fish, and 33.8 percent of the marine invertebrates. At the individual resource level, commercial removal provided 100 percent of the red rockfish, 52.0 percent of the octopus, 32.1 percent of the herring, 87.7 percent of the Pacific cod, 82.2 percent of the chinook salmon,

Table 15. Estimated Resources Removed From Commercial Harvests, King Cove, 1992

Resource	Removed From Catch		Percent of	
	Amount	Pounds	Species Harvest (lbs)	Community Harvest (lbs)
All Resources		54,085.55	49.05	37.69
Fish		50,811.01	50.52	35.41
Salmon	8,795.33	39,466.40	51.49	27.50
Chum Salmon (general)	1,025.95	5088.70	58.83	3.55
Coho Salmon	1645.31	7,897.47	26.65	5.50
Chinook Salmon	341.28	3883.77	82.23	2.71
Pink Salmon	996.45	2401.45	51.64	1.67
Sockeye Salmon	4,744.21	20,020.58	70.31	13.95
Unknown Salmon	42.13	174.43	100.00	0.12
Non-Salmon Fish		11344.61	47.42	7.91
Cod	931.15	2,979.67	87.70	2.08
Pacific Cod (Gray)	931.15	2,979.67	87.70	2.08
Sablefish (Black Cod)	31.60	97.96	42.66	0.07
Greenling	4.21	4.21	5.41	0.00
Unknown Greenling	4.21	4.21	5.41	0.00
Flounder	12.64	37.92	20.00	0.03
Unknown Flounder	12.64	37.92	80.00	0.03
Halibut	358.68	5,778.17	78.15	4.03
Herring	113.76 gal	662.56	32.14	0.48
Roe on Kelp	21.07 gal	147.47	100.00	0.10
Rockfish	379.20	1,216.60	91.23	0.85
Black Rockfish (black bass)	120.06	186.12	60.64	0.13
Red Rockfish	259.12	1,036.48	100.00	0.72
Sculpin	242.27	121.13	l o o . w	0.08
Unknown Sculpin	242.27	121.13	l w . w	0.06
Walleye Pollock (Whiting)	65.31	91.43	l w . w	0.06
Skates	2.11	10.53	l w . w	0.01
Trout and Char	126.40	176.96	2.02	0.12
Char (general)	126.46	176.96	2.04	0.12
Dolly Varden	126.40	176.96	2.38	0.12
Marine Invertebrates		3,274.54	33.76	2.28
Scallops	15.80	0.99	5.88	0.00
Crabs	1,198.69	2,091.71	61.58	1.46
Dungeness Crab	96.91	67.83	26.29	0.05
King Crab	467.68	1.07566	70.93	0.75
Tanner Crab	560.37	896.60	57.08	0.62
Tanner Crab, Bairdi	181.17	269.88	l w . w	0.20
Tanner Crab, Unknown	379.20	606.72	47.37	0.42
Hair Crab	73.73	51.61	l w . w	0.04
octopus	294.93	1,179.73	52.04	0.62
Shrimp	1.05 gal	2.11	0.17	0.001

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Household Survey, 1993.

26.7 percent of the coho salmon, 51.6 percent of the pink salmon, 100 percent of the Tanner crab, 78.2 percent of the halibut, 70.9 percent of the king crab, 56.8 percent of the chum salmon, and 70.3 percent of the sockeye salmon.

SALMON

Reaulations

During the study year, King Cove residents could harvest salmon for home use under three general sets of fishing regulations. First, those participating in commercial fisheries could retain salmon from their commercial harvests for home use (5 AAC 01.030). Second, salmon could be harvested under subsistence regulations (ADF&G 1991). Subsistence fishermen in the Alaska Peninsula Management Area were required to obtain a subsistence permit and return it to the department with a record of their catch by October 31 of each year. There was an annual limit of 250 salmon per permit. Lawful gear for subsistence fishing for salmon included seines and gill nets. Set gill nets could not exceed 100 fathoms in length. Salmon could be taken at any time except within 24 hours before and within 12 hours following each open weekly commercial salmon fishing period within a 50-mile radius of the areas open to commercial salmon fishing (5 AAC 01.410,420,430). The third method to obtain salmon for home use was with rod and reel under sport fishing regulations (ADF&G 1992a). Sport fishing regulations for the Alaska Peninsula and Aleutian Islands Area limited harvests of chinook salmon to three per day and three in possession, with only two fish over 28 inches. For other salmon, there was a five per day bag limit, a five fish possession limit, and no size limit.

General Pattern of Salmon Use in 1992

As noted above, the estimated harvest of salmon for home use by King Cove residents in 1992 was 136.8 pounds usable weight per person. Salmon made up about 53 percent of the total wild resource harvest in 1992, more than three times the harvest of any other resource category. Virtually every household (96.0 percent) used salmon, 84.0 fished for salmon, 82.7 percent harvested at least one

type, 52.0 percent received salmon from other households, and 40.0 percent gave salmon away to others (Fig. 6).

An estimated 17,136 salmon were harvested for home use by King Cove households in 1992. As measured in numbers of fish, sockeye salmon represented the largest portion of this harvest, about 40 percent (6,748 fish) (Table 16, Table 17, Fig. 10). Coho salmon were harvested in the next largest quantities (6,175 fish; 36 percent), followed by pink (1,930 fish; 11 percent), chum (1,805 fish; 11 percent), chinook (415 fish; 2 percent), and landlocked and unspecified salmon (63 fish; less than 1 percent). As measured in usable pounds, coho salmon ranked first (38.7 percent), followed by sockeye (37.2 percent), chum (11.7 percent), chinook (6.2 percent), pink (6.1 percent), and landlocked and unspecified salmon (0.3 percent) (Table 16).

The largest percentage of households, 81.3 percent, used sockeye salmon. This was a larger percentage than any other resource except king crab and berries. Also, large percentages of the households used coho (74.7 percent), chinook (46.7 percent), pink (30.7 percent), and chum salmon (37.3 percent) (Table 13).

Although freezing is widely used, King Cove residents mentioned using a number of other methods for preserving salmon harvests. These include salting, smoking, and drying (pinks). Dried pink salmon are called “yukola.” Pickling of salted salmon, canning, and jarring also occur. According to a study completed in the mid 1980s:

> Typical storage methods [for salmon in King Cove] include: drying, smoking, salting in barrels, and more recently, freezing. Freezer space, while considered ample by most residents, is usually not sufficient to freeze all salmon harvested. Most residents freeze a few king and sockeye salmon and store the remainder of their catch by either smoking, salting, or canning (Braund et al. 1986:7-21).

Table 16. Estimated Percentages of Salmon Harvest By Resource, Gear Type, and Salmon Total Harvest, King Cove, 1992

Resource	Percent Base	Subsistence Methods: Seine: Beach No.	Seine: Beach Lbs.	Seine: Power No.	Seine: Power Lbs.	Net No.	Net Lbs.	Other No.	Other Lbs.	Subsistence Gear Any Method No.	Subsistence Gear Any Method Lbs.	Removed from Commercial Catch No.	Removed from Commercial Catch Lbs.	Rod and Reel No.	Rod and Reel Lbs.	Any Method No.	Any Method Lbs.
	total	5.35	5.27	2.47	2.30	33.24	34.43	0.00	0.00	41.06	41.99	51.33	51.49	7.61	6.51		
Chum Salmon	geartype	2.30	2.59	0.00	0.00	10.54	11.28	0.00	0.00	8.83	9.58	11.66	12.89	12.12	15.7		
	resource	1.17	1.17	0.00	0.00	33.26	33.26	0.00	0.00	34.42	34.42	56.83	56.83	8.75	8.75		
	total	0.12	0.14	0.00	0.00	3.50	3.89	0.00	0.00	3.63	4.02	5.99	6.64	0.92	1.02	10.54	11.68
Coho Salmon	geartype	28.74	31.32	52.24	60.24	61.69	63.91	0.00	0.00	56.83	59.63	18.71	20.01	40.71	51.03		
	resource	4.26	4.26	3.58	3.58	56.91	56.91	0.00	0.00	64.76	64.76	26.65	26.65	8.6	8.6		
	total	1.54	1.65	1.29	1.39	20.51	22.01	0.00	0.00	23.33	25.04	9.60	10.30	3.1	3.32	36.03	38.67
Chinook Salmon	geartype	0.00	0.00	0.00	0.00	1.22	3.00	0.00	0.00	0.99	2.46	3.88	9.84	0.32	0.96		
	resource	0.00	0.00	0.00	0.00	16.75	16.75	0.00	0.00	16.75	16.75	82.23	82.23	1.02	1.02		
	total	0.00	0.00	0.00	0.00	0.41	1.03	0.00	0.00	0.41	1.03	1.99	5.07	0.02	0.06	2.42	6.16
Pink Salmon	geartype	0.00	0.00	19.90	11.52	6.10	3.17	0.00	0.00	6.14	3.23	11.33	6.08	38.45	24.2		
	resource	0.00	0.00	4.37	4.37	18.01	18.01	0.00	0.00	22.38	22.38	51.64	51.64	25.98	25.98		
	total	0.00	0.00	0.49	0.26	2.03	1.09	0.00	0.00	2.52	1.36	5.82	3.13	2.93	1.58	11.26	6.07
Sockeye Salmon	geartype	68.97	66.09	27.86	28.24	20.45	18.63	0.00	0.00	27.22	25.11	53.94	50.73	6.79	7.48		
	resource	9.37	9.37	1.75	1.75	17.27	17.27	0.00	0.00	28.38	28.38	70.31	70.31	1.31	1.31		
	total	3.69	3.48	0.69	0.65	6.80	6.41	0.00	0.00	11.18	10.54	27.69	26.12	0.52	0.49	39.38	37.15
Landlocked Salmon	geartype	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.62	0.63		
	resource	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100	100		
	total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.04	0.12	0.04
Unknown Salmon	geartype	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.48	0.44	0	0		
	resource	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	0	0		
	total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.23	0	0		.23

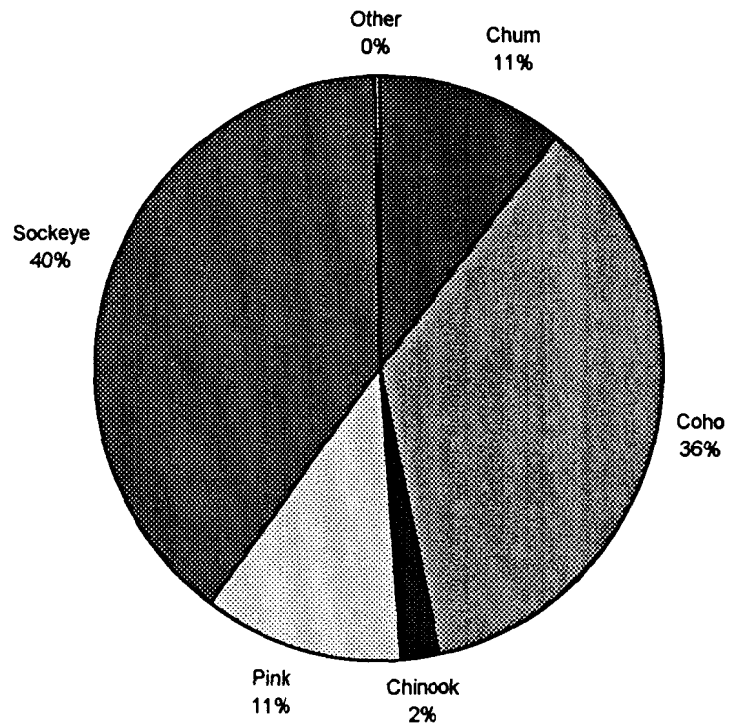
SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Household Survey, 1993.

Table 17. Estimated Salmon Harvest by Gear Type, King Cove, 1992

		Subsistence Methods										Removed from Commercial Catch		Rod and Reel		Any Method	
		Beach Seine		Power Seine		Net		Other		Subsistence Gear Any Method							
	Harvest Units	Total	HH Mean	Total	HH Mean	Total	HH Mean	Total	HH Mean	Total	HH Mean	Total	HH Mean	Total	HH Mean	Total	HH Mean
Salmon	numbers	916.40	5.80	423.44	2.68	5,696.43	36.05	0.00	0.00	7,036.27	44.53	8,795.33	55.67	1304.03	8.25	17135.63	108.45
	pounds	4,035.53	25.54	1,762.69	11.16	26,389.90	167.02	0.00	0.00	32,188.12	203.72	39,466.40	249.79	4993.18	31.6	76647.7	485.11
Chum Sal	numbers	21.07	0.13	0.00	0.00	600.40	3.80	0.00	0.00	621.47	3.93	1,025.95	6.49	158	1	1805.41	11.43
	pounds	104.49	0.66	0.00	0.00	2,977.98	18.85	0.00	0.00	3,082.47	19.51	5,088.70	32.21	783.68	4.96	8954.85	56.68
Coho Sal	numbers	263.33	1.67	221.20	1.40	3,513.92	22.24	0.00	0.00	3,998.45	25.31	1,645.31	10.41	530.88	3.36	6174.64	39.08
	pounds	1,264.00	8.00	1,061.76	6.72	16,866.82	106.75	0.00	0.00	19,192.58	121.47	7,897.47	49.98	2548.22	16.13	29638.27	187.58
Chinook S	numbers	0.00	0.00	0.00	0.00	69.52	0.44	0.00	0.00	69.52	0.44	341.28	2.16	4.21	0.03	415.01	2.63
	pounds	0.00	0.00	0.00	0.00	791.14	5.01	0.00	0.00	791.14	5.01	3,883.77	24.58	47.95	0.3	4722.85	29.89
Pink Salm	numbers	0.00	0.00	84.27	0.53	347.60	2.20	0.00	0.00	431.87	2.73	996.45	6.31	501.39	3.17	1929.71	12.21
	pounds	0.00	0.00	203.08	1.29	837.72	5.30	0.00	0.00	1,040.80	6.59	2,401.45	15.20	1208.34	7.65	4650.59	29.43
Sockeye	numbers	632.00	4.00	117.97	0.75	1,164.99	7.37	0.00	0.00	1,914.96	12.12	4,744.21	30.03	88.48	0.56	6747.65	42.71
	pounds	2,667.04	16.88	497.85	3.15	4,916.24	31.12	0.00	0.00	8,081.13	51.15	20,020.58	126.71	373.39	2.36	28475.1	180.22
Landlocke	numbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.07	0.13	21.07	0.13
	pounds	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	31.6	0.2	31.6	0.2
Unknown	numbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.13	0.27	0	0	42.13	0.27
	pounds	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	174.43	1.10	0	0	174.43	1.1

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Household Survey, 1993.

Figure 10. Noncommercial Salmon Harvest by Species, King Cove, 1992



n= 17,136 salmon

Salmon Harvests by Gear Type

As measured in numbers of fish, about half of the salmon harvested for home use by King Cove residents in 1992 were retained from commercial harvests. These fish made up about 51.3 percent of the total salmon harvest for home use by King Cove residents in 1992 (Fig. 11, Table 16). An estimated 8,795 salmon were retained from commercial harvests (Table 17), by 50.7 percent of the households in the community (Table 18). Commercial retention accounted for the majority of the harvest for home use of chinook salmon (82.2 percent), chum salmon (56.8 percent), pink salmon (51.6 percent), and sockeye salmon (70.3 percent), plus 26.7 percent of the coho salmon (Table 16).

Subsistence methods accounted for 41 percent of the salmon catch, as measured in numbers of fish, taken for home use by King Cove residents in 1992 (Fig. 11). Subsistence methods included beach seining, power seining, and gill netting. An estimated 7,036 salmon were harvested by these methods (Table 17). Subsistence methods accounted for the majority of the harvest of coho salmon (64.8 percent), plus 34.4 percent of the chum salmon, 22.4 percent of the pink salmon, 16.8 percent of the chinook salmon, and 28.4 percent of the sockeye salmon (Table 16). As reported in Table 18, 34.7 percent of the King Cove households (about 55 households) harvested salmon using subsistence methods in 1992. Gill netting was the most commonly used method (30.7 percent of all households, about 88 percent of those using subsistence methods).

Finally, the smallest percentage of the salmon harvest was taken using rod and reel gear under sport fishing regulations. An estimated 1,304 salmon were harvested by King Cove residents using this method, for about eight percent of the harvest total (Table 17, Fig. 11). Most of these were coho (531) and pink (501) salmon. Rod and reel harvests accounted for 26 percent of the pink take (Table 16). About 33.3 percent of the King Cove households harvested salmon using rod and reel in 1992 (Table 18).

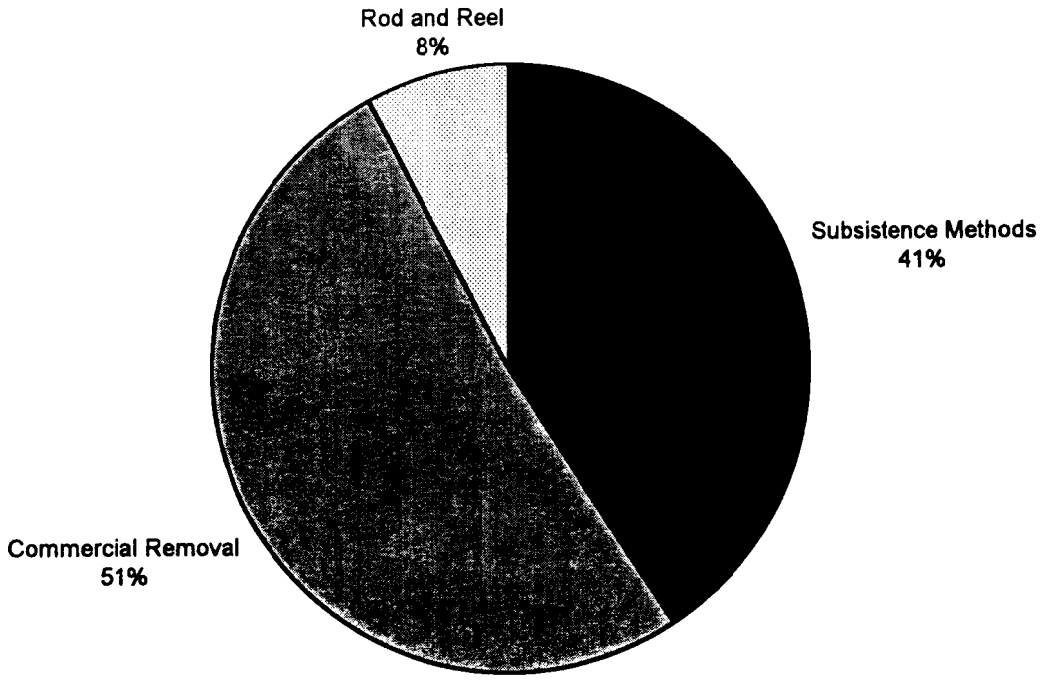
Figure 12 shows the number of households in King Cove that used various combinations of fishing methods to obtain salmon for home use in 1992. As noted above, an estimated 55 households used subsistence methods to harvest salmon. Of these, 13 used no other harvest method, 4 used rod and reel in addition to subsistence gear, 30 removed salmon from commercial catches and used

Table 18. Percentage of Households Harvesting Salmon By Gear Type And Species, King Cove, 1992

Resource	Subsistence							Removed from Commercial Catch	Rod and Reel	Any Method
	Seine						Any			
	Beach	Power	Net	Handline	Skate	Other	Subsistence Gear			
Salmon	4.00	4.00	30.67	0.00	0.00	0.00	34.67	50.67	33.33	82.67
Chum Salmon (general)	1.33	0.00	8.00	0.00	0.00	0.00	9.33	14.67	10.67	29.33
Coho Salmon	2.67	2.67	26.67	0.00	0.00	0.00	29.33	28.00	21.33	56.00
Chinook Salmon	0.00	0.00	5.33	0.00	0.00	0.00	5.33	22.67	1.33	28.00
Pink Salmon	0.00	2.67	6.67	0.00	0.00	0.00	8.00	12.00	14.67	28.00
Sockeye Salmon	2.67	2.67	18.67	0.00	0.00	0.00	22.67	45.33	8.00	58.67
Landlocked Salmon	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.33	1.33
Unknown Salmon	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.33	0.00	1.33

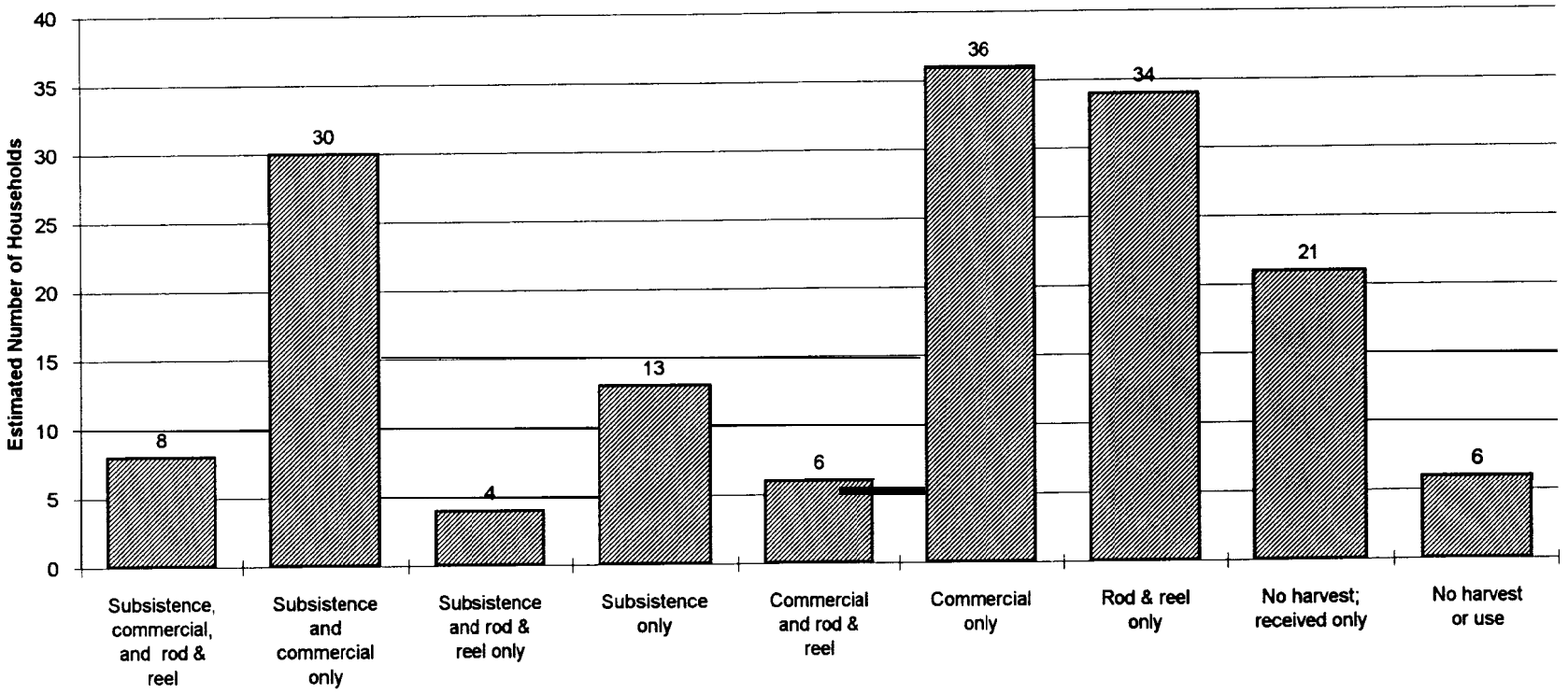
SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Household Survey, 1993.

Figure 11. Salmon Harvest by Gear Type, King Cove, 1992



N 17,136 salmon

Figure 12. Combinations of Methods Used to Harvest Salmon for Home Use King Cove, 1992



Source: Division of Subsistence, Alaska Department of Fish and Game, Household Survey 1993.

subsistence methods, and 8 used all three methods (subsistence, commercial retention, and rod and reel). For 36 households, commercial retention was their only source of salmon for home use, and 6 other households obtained salmon from commercial removal and rod and reel harvests. Also, there were 34 households which just used rod and reel to harvest salmon. In addition, 21 households harvested no salmon but received fish from others. There were six King Cove households which used no salmon in 1992.

Salmon Harvests with Subsistence Gear

Table 19 summarizes study findings pertaining to salmon harvests by King Cove residents using subsistence methods (noncommercial nets and seines) in 1992. An estimated 55 households (34.7 percent) used these methods to harvest salmon. The average catch for these households was 128.4 salmon, with a range from 2 to 360 salmon. As shown in Figure 13, 38.5 percent of the surveyed households which used subsistence methods caught between 1 and 50 salmon; 7.7 percent harvested 51 to 100 salmon; 19.2 percent harvested 101 to 150; 7.7 percent took 151 to 200; 11.5 per cent caught 201 to 250; and 15.4 percent harvested over 250 salmon. The composition of the salmon harvest with subsistence gear was as follows: coho, 59.6 percent; sockeye, 25.1 percent; chum, 9.6 percent; pink, 3.2 percent; and chinook, 2.5 percent (Table 16).

These findings can be compared with subsistence harvest estimates from returned subsistence permits. Table 20 summarizes subsistence harvest data for King Cove for 1985 through 1992 based on permit returns. The estimated subsistence harvest of 5,856 salmon for 1992 based upon permit returns is slightly lower than the estimate of 7,036 (+/- 1,773) salmon based upon the household surveys. The average catches per successful harvester for each database were very similar, however: 128.4 salmon for the surveyed group and 134.3 salmon based upon permit returns. Both estimates for 1992 were substantially higher than the eight-year average for King Cove of 4,547 salmon.

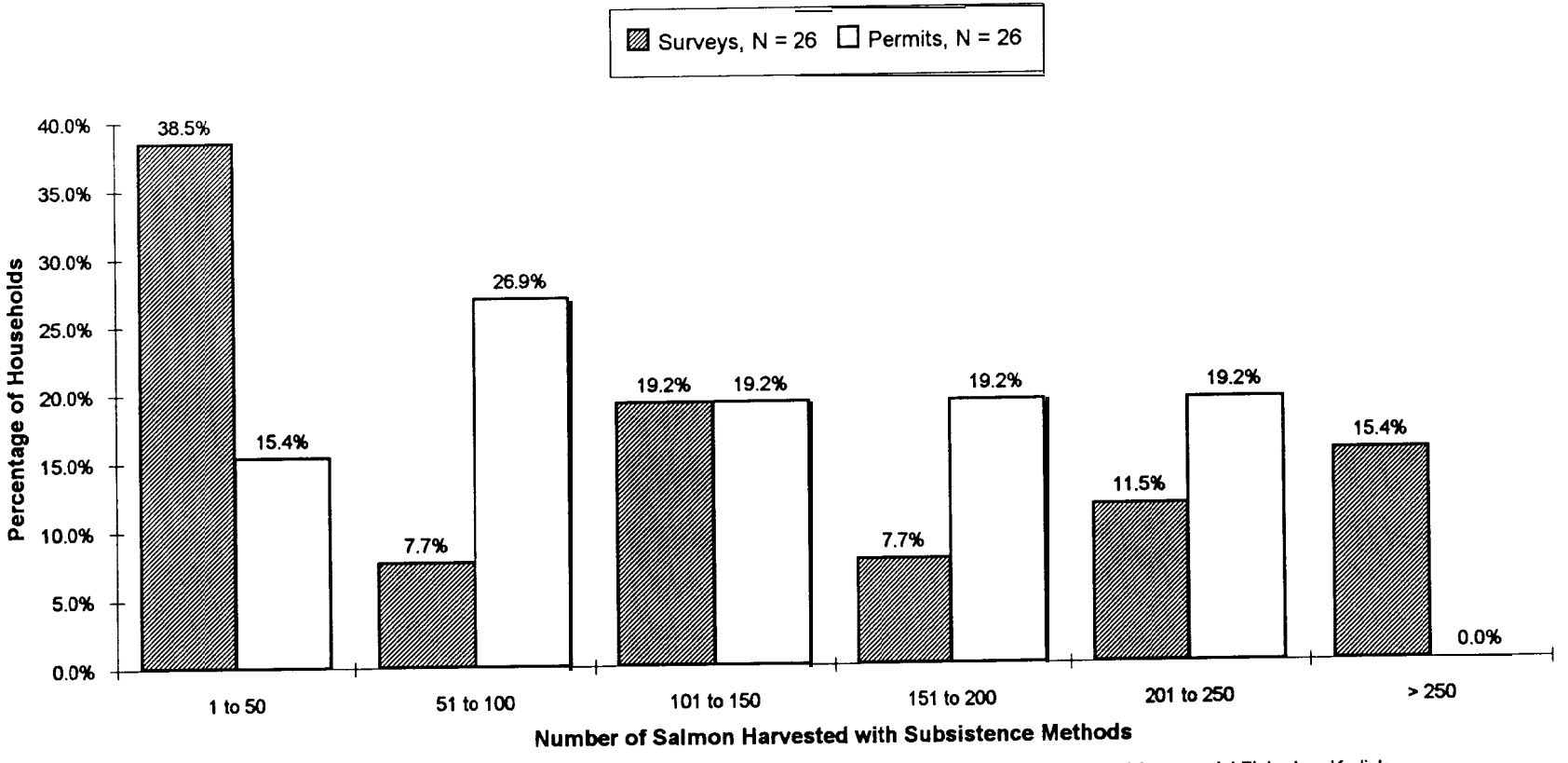
A reason for the difference between the two subsistence salmon harvest estimates for 1992 is that not all King Cove residents that used subsistence methods to harvest salmon obtained permits. Of

Table 19. Characteristics of Salmon Harvests by Subsistence Methods, King Cove, 1992

	Number of Households Harvesting	Harvest Range, Number of Salmon	Total Harvest, Number of Salmon	Average Catch, All Households	Average Catch, Fishing Households
Salmon	55	2 to 360	7,036	44.53	128.44
Chum	15	10 to 60	621	3.93	42.13
Coho	46	5 to 250	3,998	25.31	86.27
Chinook	8	3 to 15	70	0.44	8.31
Pink	13	5 to 50	432	2.73	34.18
Sockeye	36	6 to 100	1,915	12.12	53.46
Landlocked	0		0	0	

Source: ADF&G, Division of Subsistence Household Survey

Figure 13. Household Subsistence Salmon Harvests, King Cove, 1992



Sources: Division of Subsistence, Alaska Department of Fish and Game, Household Surveys 1993; and Files, Division of Commercial Fisheries, Kodiak.

TABLE 20. ESTIMATED SALMON HARVESTS BY SUBSISTENCE PERMIT HOLDERS, KING COVE, 1985 - 1992

Year	Permits Issued	Estimated harvest						Average Catch per Successful Permit
		Chinook	Sockeye	Coho	Pink	Chum	Total	
1985	39	0	784	3,292	105	20	4,201	
1986	24	2	1,834	919	14	120	2,889	
1987	39	3	2,320	1,662	206	334	4,525	156
1988	28	3	555	2,855	265	43	3,721	149
1989	39	3	1,982	1,973	294	690	4,942	155
1990	43	24	1,054	2,832	265	367	4,542	134
1991	60	0	1,477	3,611	225	386	5,699	124
1992	61	9	1,452	2,891	327	1,177	5,856	134
Average	42	6	1,432	2,504	213	392	4,547	142

Source: Shaul et al. 1993:259,267.

26 interviewed households which reported harvesting salmon with subsistence methods in 1992, 8 (30.8 percent) could not be accounted for on the list of subsistence permit holders.' Correspondingly, for the late 1970s and early 1980s, Langdon (1982:175) noted the "incomplete reporting" of King Cove's subsistence salmon harvests through the permit system.

As shown in Figure 14, the composition of the subsistence salmon harvest at King Cove for 1992 based upon the two estimates was broadly similar, with coho ranking first, sockeye second, chum third, pink fourth, and chinook fifth. This ranking was identical to that of the eight-year average. However, the permit estimate for 1992 had a much higher proportion of chum salmon (20.1 percent) than either the survey estimate for the same year (8.8 percent) or the eight year average harvest (8.6 percent). Correspondingly, the permit estimate for coho salmon for 1992 (49.4 percent) was lower than either the survey estimate (56.8 percent) or the eight year average (55.1 percent).

About 42 percent of the permit returns reported subsistence salmon harvests at 100 fish or less, compared to about 46 percent of the surveyed households (Fig. 13). A larger portion of the returned permits reported salmon harvests in the 101 to 200 fish range (about 38 percent) than did surveyed households (about 27 percent). On the other hand, 19.2 percent of the returned permits had harvests above 200 salmon, compared to about 27 percent of the survey responses.

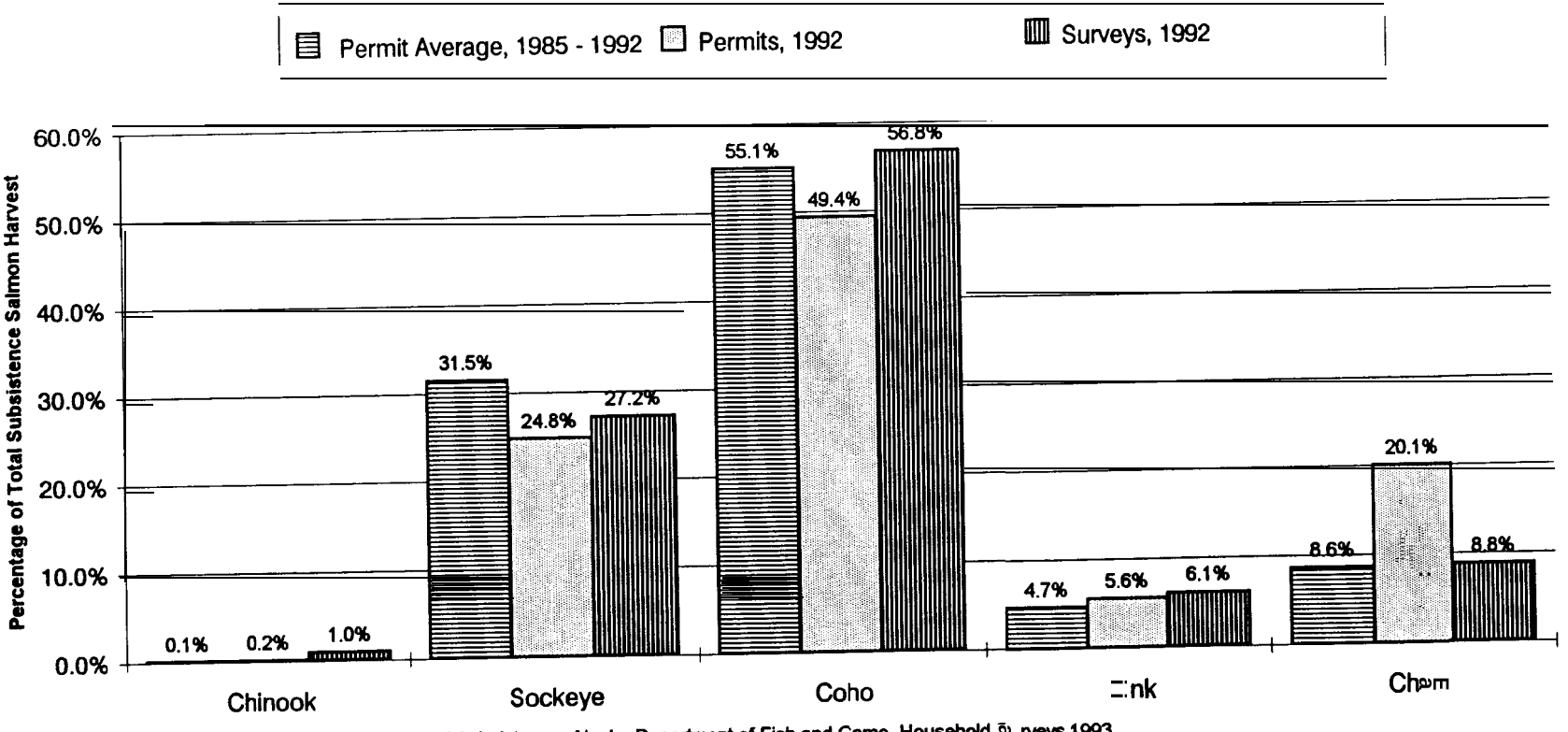
FISH OTHER THAN SALMON

Reaulations

As with salmon, in 1992 residents of King Cove could obtain other fish for home use through subsistence methods, rod and reel (sport) fishing, or removal of fish from commercial harvests. With the exception of halibut, fish other than salmon could be taken in the Alaska Peninsula Management Area by a variety of gear listed in 5 AAC 39.105, including gill nets, seines, dip nets, longlines, and troll gear (ADF&G 1991:12-14). Halibut could be taken for subsistence purposes only by a single hand-held line

1 Twenty-six of the sampled households obtained a total of 27 subsistence salmon fishing permits in 1992. Of these 26 households, 18 households with 19 permits fished. These 18, plus 8 others which fished but did not have permits gives a total of 26 interviewed households which caught salmon with subsistence gear.

Figure 14. Composition of Subsistence Salmon Harvests, King Cove, by Data Source



Sources: Shaul et al. 1993; Division of Subsistence, Alaska Department of Fish and Game, Household Surveys 1993

with no more than two hooks attached (5 AAC 01.420[d]). A subsistence permit was required for trout and char, but not for other species (5 AAC 01.430[a]). The daily bag limit for halibut was two with a possession limit of four; regulations prohibited the possession of sport-taken (that is, rod and reel caught) and subsistence-taken halibut on the same day (5 AAC 01.440). Sport fishing regulations set bag and possession limits for rainbow/steelhead trout (2 per day, 2 in possession, only 1 over 20 inches), grayling (5 per day, 5 in possession), Arctic char/Dolly Varden (10 per day, 10 in possession), and halibut (2 per day, 4 in possession). There was a February 1 through December 31 season for halibut (ADF&G 1992a).

General Pattern of Use of Fish Other Than Salmon in 1992

With an estimated total community harvest of 23,922 pounds (usable weight), fish other than salmon ranked second as a resource category afler salmon in its contribution to King Cove's home use harvest in 1992. The mean household harvest was 151.4 pounds of other fish, with a per capita harvest of 42.7 pounds (Table 13). This represents about 17 percent of King Cove's home use harvest in 1992 (Fig. 9). A very large majority of the households (89.3 percent) used fish other than salmon during the study year. Also, 68.0 percent fished for these resources, 66.7 percent were successful harvesters, 68.0 percent received fish other than salmon, and 42.7 percent gave these fish away (Fig. 6). As listed in Table 12, at least 18 kinds of fish other than salmon were used for subsistence in King Cove in 1992. Fish used by the most households included halibut (73.3 percent of households using), Pacific cod (44.0 percent), Dolly Varden (54.7 percent), red rockfish (30.7 percent), and herring (22.7 percent).

Nonsalmon Fish Harvests bv Gear Type

As measured in pounds usable weight, 47.4 percent of the harvest of fish other than salmon by King Cove residents was removed from commercial harvests (either the targeted species or by-catch) (Table 21). Commercial removal provided 71.8 pounds of other fish per household (Table 22). As reported in Table 23, 34.7 percent of the King Cove households retained fish other than salmon from commercial catches for home use. Commercial removal accounted for 100 percent of the red rockfish, 87.7 percent of the Pacific cod, and 78.2 percent of the halibut (Table 21).

Table 21. Estimated Percentages of Pounds of Fish Other Than Salmon Harvested By Gear Type, Mng Cove, 1992

Resource	Subsistence Gear	Removed from Commercial Catch	Rod and Real	Ice Fishing
Jon-Salmon Fish	15.60	47.42	20.85	16.12
Burbot	0.00	0.00	0	0
Pike	0.00	0.00	loo	0
Sheefish	0.00	0.00	0	0
Whitefish	0.00	0.00	0	0
Unknown Whitefish	0.00	0.00	0	0
Capelin (Grunion)	0.00	0.00	0	0
Lingcod	0.00	0.00	0	0
Pacific Cod (Gray)	3.37	87.70	8.93	0
Sablefish (Black Cod)	0.00	42.88	57.14	0
Unknown Cod	0.00	0.00	0	0
Starry Flounder	0.00	0.00	100	0
Unknown Flounder	0.00	60.00	40	0
Sole	0.00	0.00	0	0
Yellowfin Sole	0.00	0.00	100	0
Sole, Unknown	0.00	0.00	0	0
Halibut	17.24	78.15	4.62	0
Herring	67.86	32.14	0	0
Herring Roe	0.00	0.00	0	0
Roe on Kelp	0.00	l w . w	0	0
Black Rockfish (black bass)	2.13	60.64	37.23	0
Red Rockfish	0.00	l w . w	0	0
Sea Perch	0.00	0.00	0	0
Yellow Eye Rockfish	0.00	0.00	0	0
Unknown Rockfish	0.00	0.00	0	0
Unknown Sculpin	0.00	l w . w	0	0
Eulachon	0.00	0.00	0	0
Rainbow Smelt	0.00	0.00	0	0
Unknown Smelt	0.00	0.00	0	0
Atka Mackerel	0.00	0.00	0	0
Unknown Greenling	0.00	5.41	94.59	0
Eel	0.00	0.00	0	0
Walleye Pollock (Whiting)	0.00	l w . w	0	0
Skates	0.00	l w . w	0	0
Dolly Varden	12.03	2.38	39.41	46.18
Brook Trout	0.00	0.00	0	0
Unknown Char	0.00	0.00	69.4	30.6
Cutthroat Trout	0.00	0.00	0	0
Rainbow Trout	0.00	0.00	0	100
Steelhead	0.00	0.00	100	0

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Household Survey, 1993.

Table 22. Estimated Harvest in Pounds of Fish Other Than Salmon By Gear Type, King Cove, 1992

	Subsistence Gear		Removed From Commercial Catch		Rod and Reel		Ice Fishing		Any Method	
	Total	HH Mean	Total	HH Mean	Total	HH Mean	Total	HH Mean	Total	HH Mear
Non-Salmon Fish	3,731.75	23.62	11,344.61	71.80	4987.98	31.57	3857.31	24.41	23.92165	151.40
Burbot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pike	0.00	0.00	0.00	0.00	17.70	0.11	0.00	0.00	17.70	0.11
Sheefish	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Whitetish	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown Whitefish	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Capelin (Grunion)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lingcod	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pacific Cod (Gray)	114.60	0.73	2,979.67	18.88	303.36	1.92	0.00	0.00	3,397.63	21.50
Sablefish (Black Cod)	0.00	0.00	97.96	0.62	130.61	0.83	0.00	0.00	228.57	1.45
Unknown Cod	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
StarryFlounder	0.00	0.00	0.00	0.00	126.40	0.80	0.00	0.00	126.40	0.80
Unknown Flounder	0.00	0.00	37.92	0.24	25.28	0.16	0.00	0.00	63.20	0.40
Sole	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yellowfin Sole	0.00	0.00	0.00	0.00	42.13	0.27	0.00	0.00	42.13	0.27
Sole,Unknown	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halibut	1,274.53	8.07	5,778.17	36.57	341.28	2.16	0.00	0.00	7,393.98	46.80
Herring	1,440.96	9.12	882.56	4.32	0.00	0.00	0.00	0.00	2.123.52	13.44
Herring Roe	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Roe on Kelp	0.00	0.00	147.47	0.93	0.00	0.00	0.00	0.00	147.47	0.93
Black Rockfish	6.32	0.04	180.12	1.14	110.60	0.70	0.00	0.00	297.04	1.88
Red Rockfish	0.00	0.00	1,036.48	6.56	0.00	0.00	0.00	0.00	1,036.48	6.56
Sea Perch	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yellow Eye Rockfish	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown Rockfish	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown Sculpin	0.00	0.00	121.13	0.77	0.00	0.00	0.00	0.00	121.13	0.77
Eulachon	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rainbow Smelt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown Smelt	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Atka Mackerel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown Greenling	0.00	0.00	4.21	0.03	73.73	0.47	0.00	0.00	77.95	0.49
Eel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Walleye Pollock (Whiting	0.00	0.00	91.43	0.58	0.00	0.00	0.00	0.00	91.43	0.58
Skates	0.00	0.00	10.53	0.07	0.00	0.00	0.00	0.00	10.53	0.07
DollyVarden	895.33	5.67	176.96	1.12	2,932.09	18.56	3.435.97	21.75	7,440.36	47.09
Brook Trout	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unknown Char	0.00	0.00	0.00	0.00	855.31	5.41	377.09	2.39	1,232.40	7.80
Cutthroat Trout	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rainbow Trout	0.00	0.00	0.00	0.00	0.00	0.00	44.24	0.28	44.24	0.28
Steelhead	0.00	0.00	0.00	0.00	29.49	0.19	0.00	0.00	29.49	0.19

SOURCE: Alaska Department of Fish and Game. Division of Subsistence, Household Survey, 1993.

Table 23. Percentage of Households Harvesting Fish Other Than Salmon by Gear Type and Species, King Cove, 1992

Resource	Subsistence Gear	Removed from Commercial Catch	Rod and Reel	Ice Fishing	Any Method
Jon-Salmon Fish	20.00	34.67	46.67	21.33	66.67
Burbot	0.00	0.00	0.00	0.00	0.00
Pike	0.00	0.00	1.33	0.00	1.33
Sheefish	0.00	0.00	0.00	0.00	0.00
Whitefish	0.00	0.00	0.00	0.00	0.00
Unknown Whitefish	0.00	0.00	0.00	0.00	0.00
Capelin (Grunion)	0.00	0.00	0.00	0.00	0.00
Lingcod	0.00	0.00	0.00	0.00	0.00
Pacific Cod (Gray)	2.67	17.33	5.33	0.00	24.00
Sablefish (Black Cod)	0.00	2.67	1.33	0.00	4.00
Unknown Cod	0.00	0.00	0.00	0.00	0.00
Starry Flounder	0.00	0.00	1.33	0.00	1.33
Unknown Flounder	0.00	1.33	1.33	0.00	2.67
Sole	0.00	0.00	0.00	0.00	0.00
Yellowfin Sole	0.00	0.00	1.33	0.00	1.33
Sole, Unknown	0.00	0.00	0.00	0.00	0.00
Halibut	8.00	29.33	2.67	0.00	36.00
Herring	4.00	5.33	0.00	0.00	9.33
Herring Roe	0.00	0.00	0.00	0.00	0.00
Roe on Kelp	0.00	2.67	0.00	0.00	2.67
Black Rockfish (black bass)	1.33	9.33	1.33	0.00	10.67
Red Rockfish	0.00	12.00	0.00	0.00	12.00
Sea Perch	0.00	0.00	0.00	0.00	0.00
Yellow Eye Rockfish	0.00	0.00	0.00	0.00	0.00
Unknown Rockfish	0.00	0.00	0.00	0.00	0.00
Unknown Sculpin	0.00	5.33	0.00	0.00	5.33
Eulachon (Hooligan, Candlefish)	0.00	0.00	0.00	0.00	0.00
Rainbow Smelt	0.00	0.00	0.00	0.00	0.00
Unknown Smelt	0.00	0.00	0.00	0.00	0.00
Atka Mackerel	0.00	0.00	0.00	0.00	0.00
Unknown Greenling	0.00	1.33	4.00	0.00	5.33
Eel	0.00	0.00	0.00	0.00	0.00
Walleye Pollock (Whiting)	0.00	2.67	0.00	0.00	2.67
Skates	0.00	1.33	0.00	0.00	1.33
Dolly Varden	6.67	1.33	37.33	17.33	42.67
Brook Trout	0.00	0.00	0.00	0.00	0.00
Unknown Char	0.00	0.00	12.00	4.00	14.67
Cutthroat Trout	0.00	0.00	0.00	0.00	0.00
Rainbow Trout	0.00	0.00	0.00	1.33	1.33
Steelhead	0.00	0.00	1.33	0.00	1.33

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Household Survey, 1993.

In 1992, subsistence methods provided 15.6 percent of the total harvest of nonsalmon fish by King cove households, including 67.9 percent of the herring, 17.2 percent of the halibut, and 12.0 percent of the Dolly Varden (Table 21). Overall, 20.0 percent of the King Cove households used subsistence methods to harvest these fish in 1992 (Table 23). Additionally, 21.3 percent of the sampled households fished through the ice with hook and line gear, accounting for 16.1 percent of the total harvest of nonsalmon fish in 1992.[2] Most of this ice fishing harvest was Dolly Varden and unidentified char (Table 22).

Finally, rod and reel (fished in open water) accounted for 20.9 percent of the total harvest of nonsalmon fish by King Cove residents in 1992, including 39.4 percent of the Dolly Varden, 69.4 percent of the unknown char, 8.9 percent of the Pacific cod, and 4.6 percent of the halibut (Table 21). About 46.7 percent of the households used rod and reel to harvest fish other than salmon in 1992 (Table 23).

During the study year, most fish other than salmon were eaten fresh or frozen for later use. However, Pacific cod and herring were salted by some households. Cod livers were particularly prized by some families. Fish other than salmon are often consumed on board fishing vessels during commercial seasons.

MARINE INVERTEBRATES

Reaulations

In 1992, subsistence fishing regulations for shellfish in the Alaska Peninsula - Aleutian Islands Area required that the harvester obtain a permit from the Department of Fish and Game (5 AAC 02.510; ADF&G 1991). The Alaska Board of Fisheries repealed this permit requirement in early 1993, primarily because the data were not essential for management purposes, few subsistence fishermen in the area were aware of the permit requirement, and no local system was available to distribute permits (except

[2] Jigging gear "which consists of a line or lines with lures or bailed hooks that are operated during periods of ice cover from holes cut in the ice . . and which are drawn through the water by hand" is considered a subsistence fishing method in the Alaska Peninsula Area for the taking of fish other than salmon (5 AAC 01.010[a][2]). Statewide regulations prohibit subsistence fishing by the use of a line attached to a rod or pole unless specifically provided for in regulations for particular areas (5 AAC 01.010[g]). Although regulations for some management areas, such as Bristol Bay (5 AAC 01.320[l]), allow subsistence fishing through the ice with rods, such regulations have not been adopted for the Alaska Peninsula Area.

the few communities with Department of Fish and Game offices). Other subsistence regulations governing shellfish in this area in 1992 included size, bag, and possession limits for Dungeness, Tanner, and king crab. The subsistence king crab season was June 1 through January 31 (5 AAC 02.520[3]). There was also a permit requirement for operators of commercially licensed shrimp fishing vessels who wished to use the vessels for subsistence shrimp fishing (5 AAC 02.510).

General Pattern of Use of Marine Invertebrates in 1992

King Cove residents harvested an estimated total of 9,700 pounds of marine invertebrates (usable weight) for home use in 1992. This is a harvest of 61.4 pounds per household and 17.3 pounds per person (Table 13). Marine invertebrates accounted for about seven percent of the total resource harvest in King Cove during the study year, ranking fourth after salmon, other fish, and land mammals (Fig. 9). The vast majority of King Cove households (94.7 percent) used marine invertebrates in 1992, while 57.3 percent or the households harvested them. Notably, 85.3 percent of the households received marine invertebrates from others, illustrating that marine invertebrates were widely shared in King Cove. In 1992, 42.7 percent of the households gave away marine invertebrates to others (Fig. 6).

A minimum of 17 kinds of marine invertebrates were used by King Cove households in 1992 (Table 12). Marine invertebrates used by the most households included crabs (85.3 percent using), such as king crab (82.7 percent using, more than any other single resource), Tanner crab (49.3 percent using), and Dungeness crab (17.3 percent using); octopus (78.7 percent using); chitons (48.0 percent using); sea urchins (25.3 percent using); and butter clams (34.7 percent using). Shellfish harvested in the largest quantities included octopus (4.1 pounds per person), Tanner crab (2.8 pounds per person), king crab (2.7 pounds), chitons (2.4 pounds per person), and butter clams (1.6 pounds person) (Table 13). Harvest and use of clams in King Cove in 1992 were almost certainly lower than prior to 1990. In that year, a Sand Point man died of paralytic shellfish poisoning (PSP) after eating some butter clams harvested near his community. Many respondents interviewed during this research in both Sand Point and King Cove reported that their families had not used clams since this incident. Each year, the Alaska Department of Environmental Conservation (DEC) issues a warning advising people not to use clams from uncertified

beaches because of the risk of PSP. Generally, only beaches that are used for commercial clamming are tested for certification; there are no such beaches near King Cove, but DEC did some local testing of subsistence clamming beaches in January 1993 (see Chapter Four).

King Cove residents harvested marine invertebrates using noncommercial pots for crab and assorted other implements such as shovels and rakes (for digging clams) and knives (for prying chitons off rocks). Such subsistence methods accounted for about two-thirds (66.2 percent) of the total marine invertebrate harvest in 1992. Also, marine invertebrates were removed from commercial harvests for home use. Overall, 33.8 percent of the marine invertebrate harvest, as measured in usable pounds, was obtained through commercial removal. Incidental takes of octopus in commercial nets and pots was the primary source of this popular resource, accounting for 52.0 percent of the total harvest. Commercial removal was also the primary source of the various species of crabs, providing 61.6 percent of the harvest for home use (Table 15).

LAND MAMMALS

Huntina Reaulations

Residents of King Cove hunt primarily in Game Management Unit 9D. For the 1992/93 regulatory year, the state's general and subsistence resident caribou season was August 10 to September 30 and December 1 to March 31 with a bag limit of one bull. Moose hunting was closed in GMU 9D because of a lack of a harvestable surplus. There was no closed season and no bag limit for hare (ADF&G 1992).

During the study period, the Federal Subsistence Board was responsible for adopting subsistence hunting regulations for federal lands in Alaska, including GMU 9D. For caribou, moose, and hare in GMU 9D, these federal regulations for 1992/93 were the same as those adopted by the state (U.S. Fish and Wildlife Service 1992:36-37).

General Pattern of Use of Land Mammals in 1992

An estimated total of 22,058 pounds (usable weight) of land mammals was used by King Cove residents in 1992. This is a harvest of 139.6 pounds per household and 39.4 pounds per person (Table 13). Land mammals represented about 15 percent of the total resource harvest during the study year, ranking third after salmon and other fish (Fig. 9). Overall, 68.0 percent of the King Cove households used at least one kind of land mammal in 1992, 32.0 percent had at least one member who hunted land mammals, and 26.7 percent were successful harvesters. About a quarter of King Cove's population (24.8 percent) hunted in 1992 (Table 14). Fifty-six percent of the households received land mammal products from other households; thus, many more households which used land mammals received them from others than harvested the resource themselves. Overall, 21.3 percent of the households shared game with others; this represents about 80 percent of the successful harvesters (Fig. 6, Table 13).

Eight kinds of land mammals were used for food in King Cove in 1992. These were bison (4.0 percent used) (bison are not available locally, but bison meat is obtained from Sand Point residents who hunt the Popof Island herd), caribou (64.0 percent used), moose (8.0 percent used) (moose are generally unavailable in GMU 9D), Arctic hare (5.3 percent used), snowshoe hare (1.3 percent), wild cattle (25.3 percent used), deer (16.0 percent) (deer are not locally available; the nearest source is Kodiak and adjacent islands), and porcupine (1.3 percent). Land mammals harvested in the largest quantities were wild cattle (19.7 pounds per person) and caribou (19.2 pounds per person) (Table 13).

Caribou

Game Management Unit 9D is inhabited by the Southern Alaska Peninsula (SAP) caribou herd. This herd is also found on Unimak Island in GMU 10. The SAP herd underwent a serious population decline during the 1980s, dropping from a high of about 10,200 caribou in late 1983 to about 4,000 animals in 1989. Causes of the decline included hunter harvests, predation, and low calf production possibly linked to poor range conditions (ADF&G 1989; Fall et al. 1990:1-2). The SAP herd's population dropped further in the 1990s, reaching a nadir of 1,500 animals in June 1993, well below the ADF&G population objective of 5,000 to 6,000 caribou (ADF&G 1993).

Subsistence caribou hunting regulations in GMU 9D have become increasingly restrictive as the SAP herd has declined. The bag limit was four caribou per hunter from 1981/82 until 1987188, when the limit was reduced to two caribou. The bag was further reduced to one bull caribou in 1992. Correspondingly, the hunting season was reduced from August 10 - March 31 to September 1 to March 31 in 1988/89. For the 1993194 season, the Alaska Board of Game adopted a August 10 - September 30 and December 1 to March 31 season with a one bull bag limit. The ADF&G closed the season by emergency order prior to its opening because the estimated herd size was below population objectives (ADF&G 1993). The Federal Subsistence Board followed suit by closing subsistence hunting of caribou on federal lands in GMU 9D and GMU 10 (Unimak Island) for the 1993/94 hunting season.

Regarding caribou harvest and use quantities for King Cove for the late 1970s and early 1980s (at peak herd size), Langdon (1982:173) wrote that, "Four caribou was the median response of eight King Cove fishermen whom were asked how many caribou they needed to get through the winter. In total pounds, caribou is probably the major subsistence item in the diet." Based upon research conducted in 1984 and 1985, Braund et al. (1986:7-38) concluded that, "In terms of total pounds harvested for local consumption, caribou is second only to salmon [at King Cove]. Four caribou per household is the average yearly harvest for King Cove residents, which matches the regulation harvest limits."[3]

However, evidence suggests that caribou harvests by King Cove residents have dropped since Langdon's and Braund's research, most likely because of the declining herd size. The results of a mail-out questionnaire by ADF&G provided a harvest estimate of 155 (+/- 116) caribou by King Cove residents during the 1985/86 hunting season, and a harvest of 78 (+/- 56) caribou during the following year (1986/87) (Fall et al. 1990:24). For the 1992 study year (which includes the second half of the 1991/92 regulatory year and the first half of the 1992/93 year), the estimated caribou harvest was 72 (+/- 23) animals, based upon household interviews from this current study. About 29 percent of the households hunted caribou (29.3 percent, an estimated 46 households), and 25.3 percent (40 households) were successful (a success rate of 87 percent for caribou hunting households) (Table 13).

[3] Four was the average number of animals harvested in the early 1980s for those interviewed King Cove households which hunted caribou. It was not the average number per household for the community overall (Stephen Braund, personal communication, 9/93).

The number of caribou harvested by hunting households was as follows: no harvest, 6 households; one caribou, 17 households; two caribou, 17 households; three caribou, 4 households: and four caribou, two households.

Although harvests have declined since the early 1980s, caribou meat was still widely shared among King Cove households in 1992; 45.3 percent of the households received caribou. Consequently, almost two-thirds of the households (64.0 percent) used caribou (Table 13). As shown by these findings, caribou continues to be an important wild resource in King Cove, and the Southern Alaska Peninsula Herd's decline and subsequent regulatory closure is of concern to the community (see Chapter Four).

Wild Cattle

Feral cattle inhabit several islands in the vicinity of King Cove. The presence of these animals resulted from failed ranching ventures. Presently, King Cove residents hunt cattle on Cherni Island, Dolgoi Island, and the Sanak Island group (Braund et al. 1986:7-40). Most of the harvest comes from Sanak Island itself, from land owned by the Sand Point-based Sanak Corporation. Wild cattle populations on several other islands in the Alaska Maritime National Wildlife Refuge, such as Caton Island (in the Sanak Island group) and Simeonof Island (near Sand Point) were destroyed by the U.S. Fish and Wildlife Service in the 1980s as a means to protect the indigenous plant and animal populations. Local residents have not been supportive of these actions, seeing this as an unnecessary waste of a subsistence resource (Braund et al. 1986:7-40; Fall et al. 1993).

As measured in pounds usable weight, with a per capita harvest of 19.7 pounds per person, wild cattle were the largest component of the land mammal harvest in King Cove in 1992, just slightly higher than caribou (19.2 pounds per person). On the other hand, caribou were far more widely used than wild cattle; about 25.3 percent of the households used cattle compared to the 64.0 percent who used caribou, reflecting the relative value placed by King Cove residents on the quality of the two resources (Table 13). Braund et al. (1986:7-40) noted that while some residents found the meat of wild cattle to be "tough and stringy," others valued the "younger, more tender animals" as a subsistence resource. In the absence of a viable caribou population near King Cove, the importance of wild cattle may increase in the future.

Trapping

Furbearer trapping by King Cove residents was very low in 1992. Only 11 individuals attempted to trap furbearers (Table 14). The furbearers that were harvested were red fox (an estimate of 67 animals by 4.0 percent of the households), land otter (8 animals by 4.0 percent), mink (19 animals by 2.7 percent), and wolverine (4 animals by 1.3 percent) (Table 13).

MARINE MAMMALS

Reaulations

Under the terms of the federal Marine Mammal Protection Act, coastal Alaska Natives may take marine mammals for food and other purposes, such as the production of handicraft items, as long as the taking is not done in a wasteful manner. Restrictions on the hunting of marine mammals by Alaska Natives may occur when a population becomes depleted, as has happened for bowhead whale. In 1992, there were no federal regulations restricting seasons, harvest levels, areas, or methods for marine mammals in the King Cove area, other than the provisions against wasteful taking.

General Pattern of Use of Marine Mammals in 1992

In 1992, 25.3 percent of the sampled King Cove households used marine mammal products. The total harvest was an estimated 1,180 pounds, an average of 2.1 pounds per person. This was about one percent of the total wild resource harvest during the study year, the lowest of any resource category (Table 13, Fig. 9).

King Cove residents used four kinds of marine mammals in 1992 -- harbor seal, Steller sea lion, sea otter, and whale. Most widely used were harbor seals, which were used by 22.7 percent of the households, hunted and harvested by 10.7 percent, received by 13.3 percent, and given away by 9.3 percent. An estimated 23 harbor seals were harvested, for a per capita harvest of 2.1 pounds per person. Also, 1.3 percent of the Sand Point households used and received sea lion in 1992, although none of the sampled households hunted or harvested sea lion in the study year. One sampled household

(1.3 percent) received blubber from a whale of an unidentified species. Although whales are not hunted by residents of King Cove, blubber is occasionally salvaged from beached whales (cf. Braund et al. 1986:7-30). Whale fat is preserved by salting and is used as a condiment with dry fish. No sampled households salvaged whale blubber in 1992. Finally, about 17 sea otters were harvested by 2.7 percent of the households (Table 13). Sea otters are not used for food; the hides are tanned and used principally as throws on furniture in people's homes.

Braund et al. (1986:7-29; cf. Langdon 1982:174) concluded that most hunting of marine mammals at King Cove was undertaken by former residents of Belkofski. Most marine mammal hunting was considered to be "opportunistic," taking place during commercial fishing, caribou hunting, and waterfowl hunting. They also reported that most marine mammal hunting occurred in the fall and winter, "when the seal is more likely to float after it has been shot."

Based upon interviews with key respondents in 1992, tt appeared that the Belkofski people used to hunt sea lions, especially in the month of April, but have not been active in hunting them since moving to King Cove. King Cove residents hunt harbor seals but have not been very active in hunting sea lions recently. Respondents repotted that some people in King Cove like to take harbor seals during the spring when they go out to pick seagull eggs. At this time of year the animals are fat, and the males are easy to get. Then again in the fall, seals are plentiful on the reefs, and their meat is good. The flippers, ribs, liver, heart, and the intestines are highly valued, and the animals are widely shared throughout the community. However, in recent years most hunters in the community believed that both seal and sea lion hunting was illegal and have been afraid to hunt these animals for fear of being arrested by enforcement officers.

BIRDS AND EGGS

Reaulations

Residents of King Cove hunt birds in Game Management Unit 9D. For the 1992/93 hunting season, state regulations provided an August 10 to April 30 season for ptarmigan with bag limits of 20 per day and 40 in possession. Regulations for migratory game birds, summarized in Table 24, provided

TABLE 24. HUNTING REGULATIONS FOR MIGRATORY BIRDS, GAME MANAGEMENT UNIT 9, 1992/93

Resource	Season	Baa Limits
Brant	September 1 - December 16	Two a day, four in possession
Cackling Canada Geese	No open season	
Canada Geese	September 1 - December 16	Four a day, eight in possession[a]
Emperor Geese	No open season	
Snow geese	September 1 - December 16	Six a day, twelve in possession[a]
White-fronted Geese	September 1 - December 16	Two a day, four in possession[a]
Tundra swans	No open season	
Cranes	September 1 - December 16	Two a day, four in possession
Ducks [except sea ducks, mergansers, and harlequin ducks]	September 1 - December 16	Five a day, fifteen in possession; No more than two per day or six in possession may be pintail ducks; No more than one per day and three in possession may be canvasbacks
Harlequin Duck	September 1 - December 16	Fifteen a day, thirty in possession
Sea Ducks and Mergansers [includes king and common eider, scoter, oldsquaw, and mergansers]	September 1 - December 16	Fifteen a day, thirty in possession
Spectacled and Steller's Eider	No open season	
Snipe	September 1 - December 16	Eight a day, sixteen in possession

a No more than four a day or eight in possession may be any combination of Canada or white-fronted geese. The combined bag limit for snow, Canada, and white-fronted geese is six a day, twelve in possession. In Unit 9, no more than two per day, four in possession may be white fronted geese.

Source: ADF&G 1992b

hunts starting September 1 and ending December 16 for a number of types of ducks, geese, crane, eider, and snipe, with daily possession limits which varied by type of bird. Hunting was closed for cackling Canada geese, emperor geese, tundra swan, and spectacled and Steller's eiders. Collecting eggs was not allowed by regulation. The federal regulatory framework for subsistence takes of birds and eggs was under review in 1992 by the U.S. Fish and Wildlife Service.

General Pattern of Use of Birds and Eaas in 1992

The estimated total harvest of birds and eggs by King Cove residents in 1992 was 5,189 pounds, usable weight. This is a harvest of 32.8 pounds per household and 9.3 pounds per person, representing about four percent of the total wild food harvest in King Cove during the study year (Table 13, Fig. 9). About three quarters of the households (73.3 percent) used at least one kind of wild bird or egg in 1992, well over half (61.3 percent) attempted to harvest these resources, 56.0 percent were successful harvesters, 44.0 percent received gifts of birds or eggs, and 26.7 percent gave away these resources to others (Fig. 6).

A minimum of 18 kinds of wild birds and eggs were used for subsistence purposes by King Cove residents in 1992 (Table 12). These fall into three broad categories: upland game birds, migratory birds, and eggs. Ptarmigan was the only upland game bird locally available to King Cove hunters. An estimated 50.7 percent of the households hunted ptarmigan; 45.3 percent were successful, harvesting an estimated 2,701 birds. Overall, 61.3 percent of the households used ptarmigan, 25.3 percent received ptarmigan, and 21.3 percent gave away this resource. The per capita harvest of 3.4 pounds was the highest of any single bird type (Table 13).

During the 1992 study year, 41.3 percent of the King Cove households hunted migratory birds, and almost two-thirds the households (64.0 percent) used these resources. Almost half (48.0 percent) of the households used ducks. Although ten kinds of ducks were used, most of the harvest was mallards (40.0 percent using; 518 birds harvested) and teals (26.7 percent using; 423 birds harvested) (Table 13).

Geese were used by 56.0 percent of the King Cove households, with 38.7 percent of the households harvesting geese and 22.7 percent receiving geese from successful hunters outside their

own household (Table 13). Brant were taken in the largest numbers (767 birds) and used by 42.7 percent of the households. Harvests of Canada geese were also significant, with about 750 birds taken. This resource was used by 44.0 percent of the households. Small harvests of emperor geese (32 birds) and snow geese (53 birds) were also reported (Table 13).

More than a fifth of the King Cove households used wild fowl eggs (22.7 percent), with all of this use being gull eggs. Overall, 14.7 percent of the households attempted a harvest of eggs and all of these were successful. Additionally, 12.0 percent of the households received eggs from others and 5.3 percent gave them away. The estimated harvest was 950 gull eggs, for 0.5 pounds per person (Table 13).

WILD PLANTS

Wild plants used by King Cove residents included several kinds of berries, "putchkies" (wild celery or cow parsnip; *Heracleum lanatum*), "petruskies" (wild parsley or beach lovage; *Ligusticum scoticum*), and kelp. As reported in Table 13, an estimated 4,799 pounds (usable weight) of wild plants were harvested by King Cove residents in 1992. This is a household mean of 30.4 pounds and a per capita harvest of 8.6 pounds. Wild plants provided about three percent of the total resource harvest (Fig. 9). As reported in Table 6, 89.3 percent of the households used wild plants and 82.7 percent harvested them. Berries made up most of the wild plant harvest, with a per capita harvest of 7.2 pounds. Most frequently, respondents reported harvesting salmonberries, blueberries, and mossberries. Fewer reported harvests of "blackberries" (probably mossberries) and wineberries (perhaps nagoonberries). Braund et al (1986:7-2) also list cranbenies. A few households reported that 1992 was a very poor berry year, but this assessment was not offered as frequently as in Sand Point (Fall et al. 1993:82). Also, 26.7 percent of the households used plants other than berries. "Putchkies" were mentioned by several households as a popular resource which is dipped in seal oil. In addition to wild plant harvests for food, 21.3 percent of the household used wood in 1992. Cottonwood is frequently harvested and is used for smoking salmon.

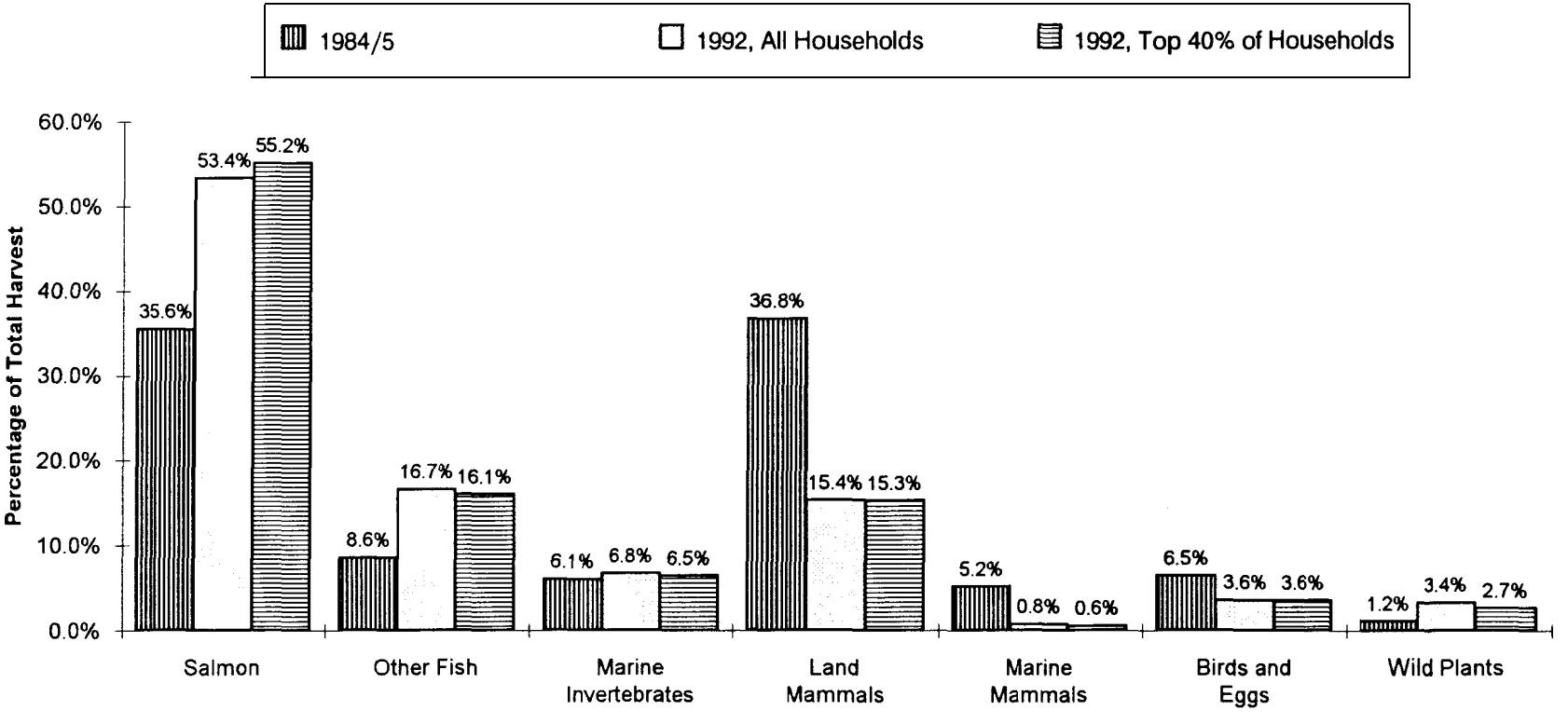
CHAPTER FOUR: DISCUSSION AND CONCLUSIONS

COMPARISON WITH 1984185 DATA

As noted in Chapter One, in 1984 and 1985 Stephen Braund and Associates conducted extensive fieldwork in King Cove. The report summarizing that research contains, among other things, substantial information about noncommercial resource uses in the community (Braund et al. 1986: Chapter 7). The Braund and Associates study team interviewed 53 households about subsistence uses, about 41 percent of the 129 households in King Cove at the time. This sample was not randomly selected; the researchers deliberately sought out active harvesters. Consequently, the harvest and use information summarized in Table 7-4 of the Braund and Associates report is not representative of the community overall and cannot be directly compared with the harvest data collected as part of the Division of Subsistence study for 1992. The Braund and Associates sample probably represents the segment of the King Cove community which provided the majority of the wild foods to the community. Exactly how this harvest compared with the remainder of the community is not known, other than that it was most likely higher than overall community averages (Stephen Braund, personal communication, 9/93).

Although direct comparisons between the two samples in terms of per capita and average household harvests cannot be made, the composition of harvest reported by the Braund and Associates sample in 1984/85 can be compared with that reported by the King Cove households interviewed in 1993. Such a comparison is valid if the 1984/85 sampled households' harvest composition is taken to be representative of the overall community harvest. In Figure 15, the composition of the 1992 harvest of the top 40 percent of the households sampled in 1993 (30 households) is compared with the composition of the full 1993 sample's harvest and with the composition of the harvest of the 1984/85 sample. The composition of the harvests of the sample and subsample for 1992 were virtually identical; this is not surprising, given that these 30 households accounted for almost 90 percent of the total sample's harvest.

Figure 15. Composition of Noncommercial Wild Resource Harvests, King Cove, 1984/5 and 1992



Sources: Braund et al. 1986; Division of Subsistence, ADF&G, Household Surveys 1993

This suggests that, for 1984/85, the interviewed households' harvest composition was representative of the overall community pattern, and can be compared with that of 1992.

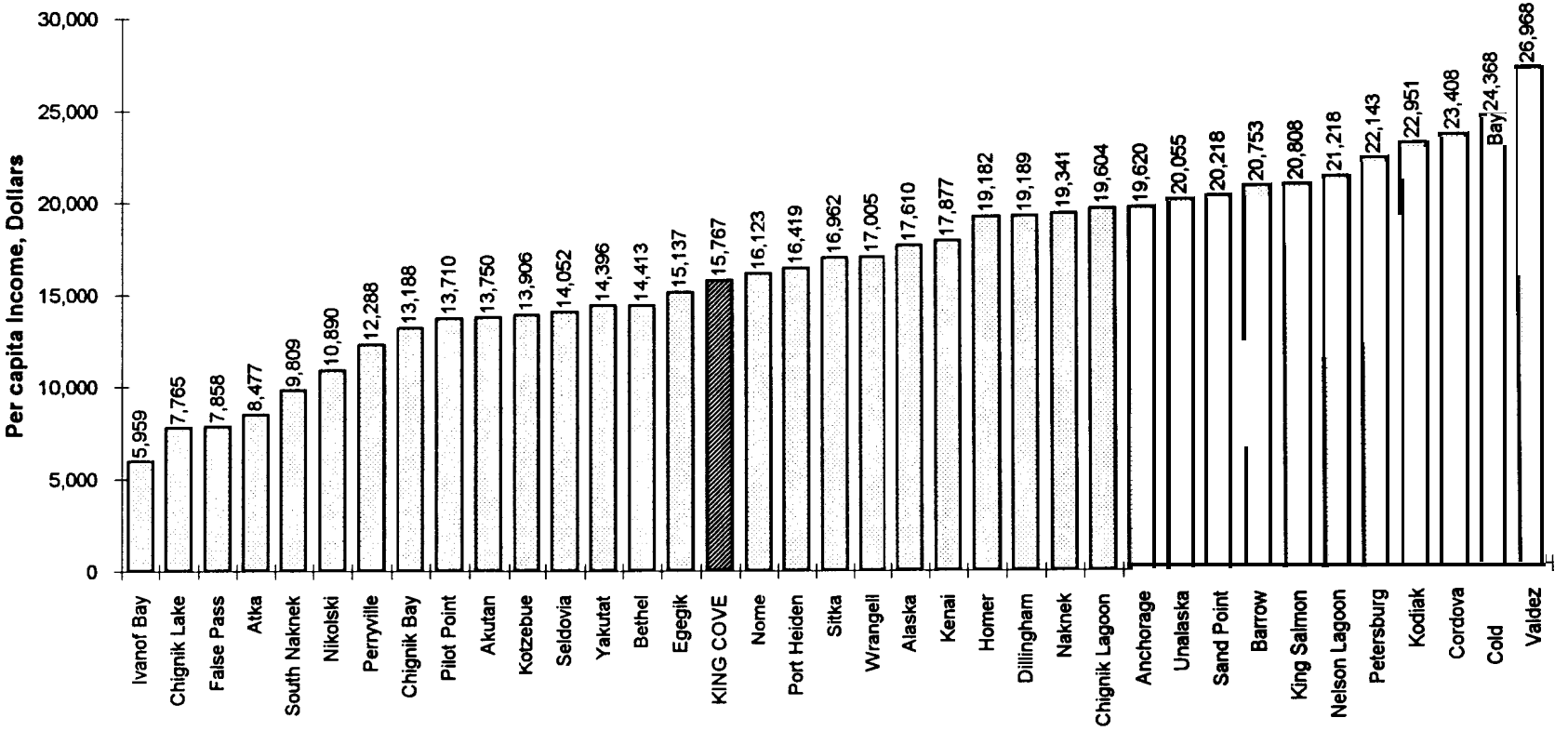
As also shown in Figure 15, comparison of the 1992 and 1984/85 data shows that a substantial change in harvest composition occurred. On the one hand, the contribution of land mammals (mostly caribou) to the harvest decreased from 36.8 percent in 1984/85 (the top category) to 15.4 percent in 1992, marine mammals decreased from 5.2 percent to 0.8 percent, and birds and eggs declined from 6.5 percent to 3.6 percent. The decrease in the relative harvest of land mammals is not surprising given the decline in the availability of caribou as discussed in Chapter 3. Correspondingly, the contribution of salmon to King Cove's noncommerical harvest increased from 35.6 percent in 1984185 to 53.4 percent in 1992, and other fish increased from 8.6 percent of the harvest in 1984/85 to 16.7 percent in 1992. Thus, over the past decade, King Cove residents' use of fish has increased, while use of land mammals, birds, and marine mammals has decreased. These changes apparently are related to the availability of wild resources in King Cove's harvest area.

COMPARISONS WITH OTHER ALASKA COMMUNITIES

Monetary Sector of the Economy

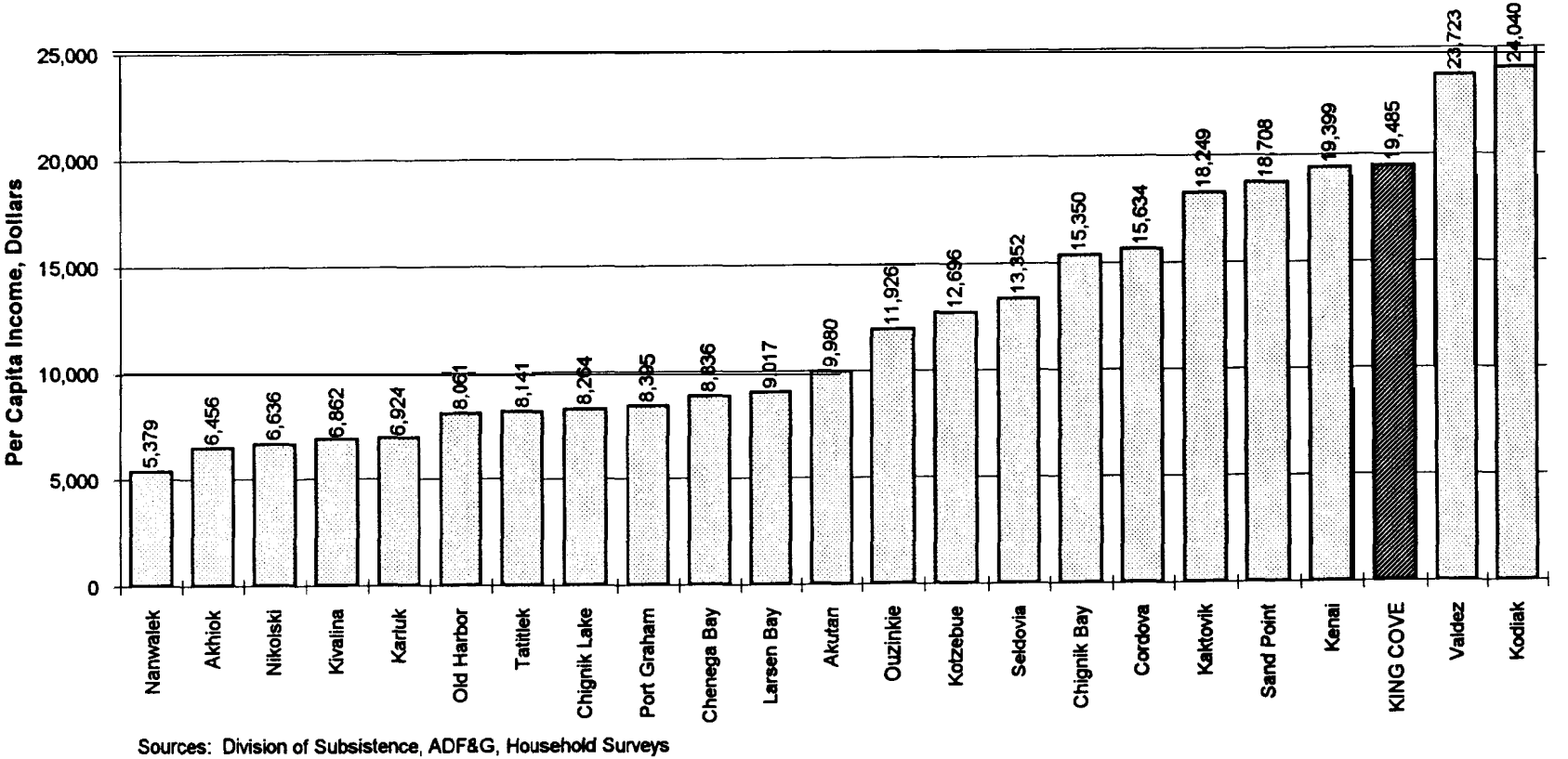
The role of wild resources in the mixed, subsistence-cash economy of King Cove can be compared with other Alaska communities where similar information is available. Figures 16 and 17 compare cash incomes in King Cove with those of other Alaska communities. The data in Figure 16 derive from the 1990 U.S. Census and pertain to 1989. Included in Figure 16 are all communities of the Alaska Peninsula and Aleutian Islands (except military communities) (Ivanof Bay, Chignik Lake, False Pass, Atka, South Naknek, Nikolski, Perryville, Chignik Bay, Pilot Point, Akutan, Egegik, King Cove, Port Heiden, Naknek, Chignik Lagoon, Unalaska, Sand Point, King Salmon, Nelson Lagoon, and Cold Bay), regional centers (Kotzebue, Bethel, Nome, Dillingham, and Barrow), selected coastal communities of Southeast and Southcentral Alaska with substantial commercial fishing sectors in their economies (Seldovia, Yakutat, Sitka, Wrangell, Kenai, Homer, Petersburg, Kodiak, Cordova, and Valdez), Anchorage, and Alaska itself.

Figure 16. Per Capita Cash Incomes, Selected Alaska Communities, 1989



Source: U.S. Department of Commerce 1992

Figure 17. Per Capita Cash Incomes, Selected Alaska Communities, 1991 or 1992



Sources: Division of Subsistence, ADF&G, Household Surveys

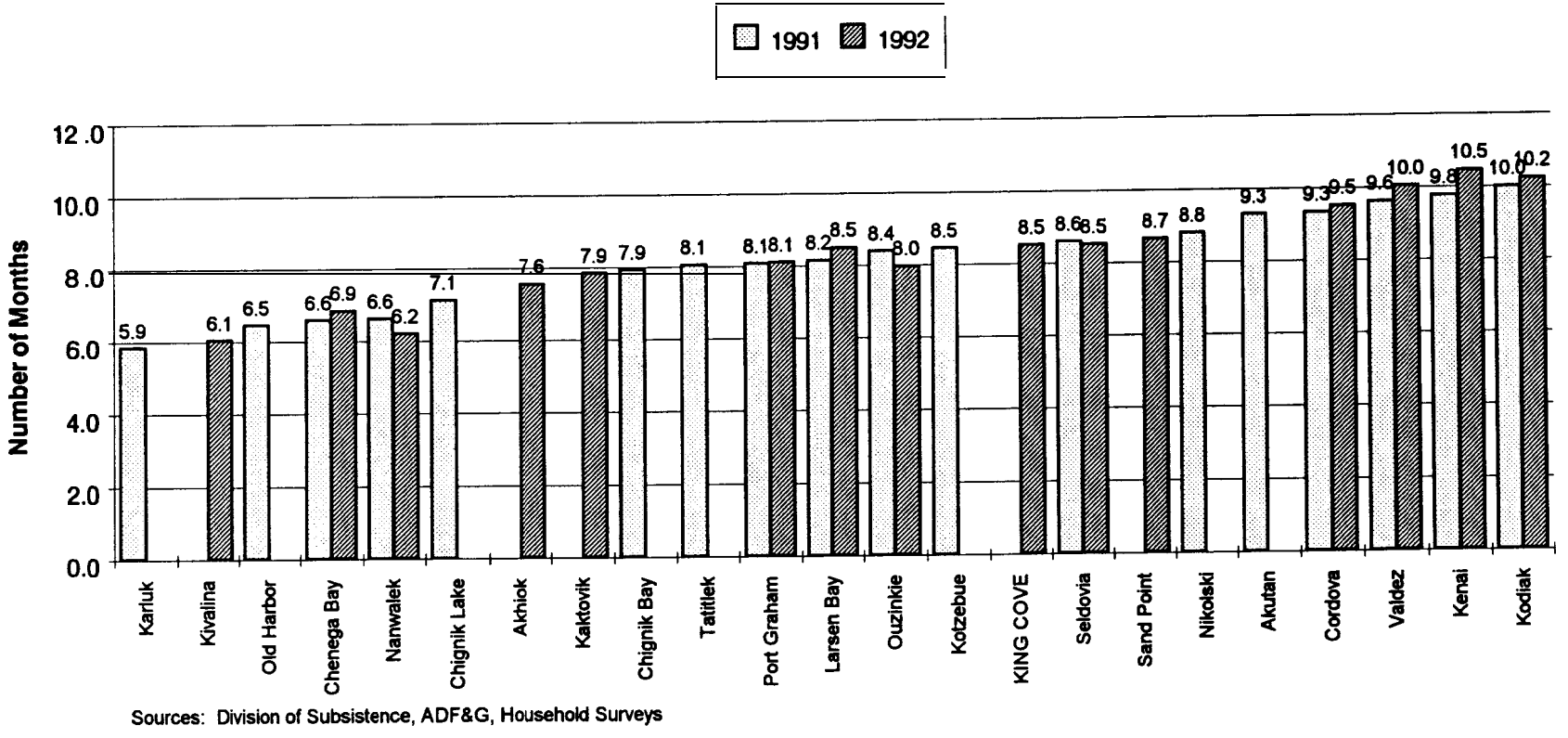
According to these data, King Cove's 1989 per capita cash income of $15,767 was about 11.7 percent below the state's average of $17,610. Estimated cash incomes in 1989 in King Cove were higher than that of most small communities of the Alaska Peninsula and Aleutian Islands, but lower than those of Port Heiden, Naknek, Chignik Lagoon, Unalaska, Sand Point, King Salmon, Nelson Lagoon, and Cold Bay.

Figure 17 summarizes cash income data for the 23 communities in the state in which the Division of Subsistence conducted systematic household interviews pertaining to either 1991 (Akutan, Nikolski, Chignik Lake, Chignik Bay, Tatitlek, Old Harbor, Karluk, and Kotzebue) or 1992 (Seldovia, King Cove, Kenai, Sand Point, Kodiak, Cordova, Valdez, Chenega Bay, Port Graham, Nanwalek [English Bay], Ouzinkie, Larsen Bay, Akhiok, Kivalina, and Kaktovik). The estimated per capita cash income of $19,485 for King Cove is higher than those of all the other surveyed communities with the exception of Valdez ($23,723) and Kodiak ($24,040). King Cove's per capita cash income in 1992 was close to that of the neighboring community of Sand Point ($18,708). As in 1989, it was substantially higher than most of the small communities of the region, such as Nikolski ($6,636), Chignik Lake ($8,264), and Akutan ($9,980).

The monetary sector of the economy at King Cove tended to be more seasonal and less diverse than that of other Alaska communities. Figure 18 reports the average length of monetary employment for employed adults in communities in which the Division of Subsistence conducted research in either 1991 or 1992. With an average of 8.5 months employed in 1992, King Cove exhibits a more seasonal employment pattern than Cordova (9.5 months in 1992). Valdez (10.0 months in 1992), Kodiak (10.2 months in 1992), and Kenai (10.5 months in 1992). The King Cove average was very similar to that of Sand Point (8.7 months of employment on average) and Seldovia (8.5 months). King Cove generally had more available employment than some other communities of coastal southern Alaska such as Karluk (5.9 months employed on average), Old Harbor (6.5 months), and Chenega Bay (6.6 months).

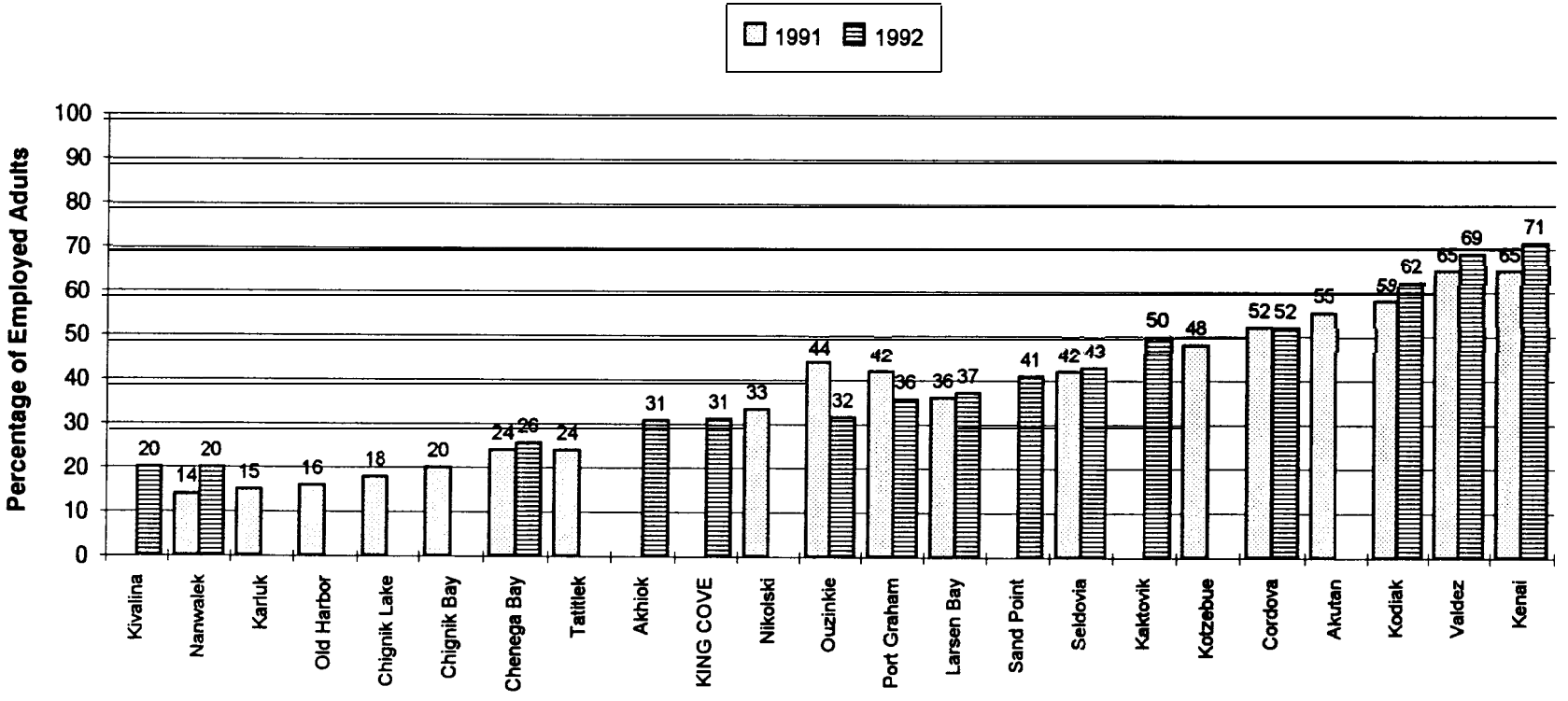
The generally seasonal nature of employment in King Cove is further illustrated in Figure 19. On average, just 31 percent of King Cove's employed adults worked year-round in 1992. King Cove was in the mid range of the communities in Figure 19. being similar to, but lower than Seldovia (43 percent employed year-round in 1992) and Sand Point (41 percent in 1992), slightly higher than some other communities with fewer cash earning opportunities, such as Nanwalek (20 percent employed year-round in 1992), Karluk (15

Figure 18. Average Number of Months Employed, Employed Adults, Selected Alaska Communities, 1991 and 1992



Sources: Division of Subsistence, ADF&G, Household Surveys

Figure 19. Percentage of Employed Adults Employed Year-round, Selected Alaska Communities, 1991 and 1992



Sources: Division of Subsistence, ADF&G, Household Surveys

percent in 1991), and Old Harbor (16 percent in 1991), and lower than Cordova (52 percent in 1992), Kodiak (62 percent in 1992), Valdez (69 percent in 1992), and Kenai (71 percent in 1992).

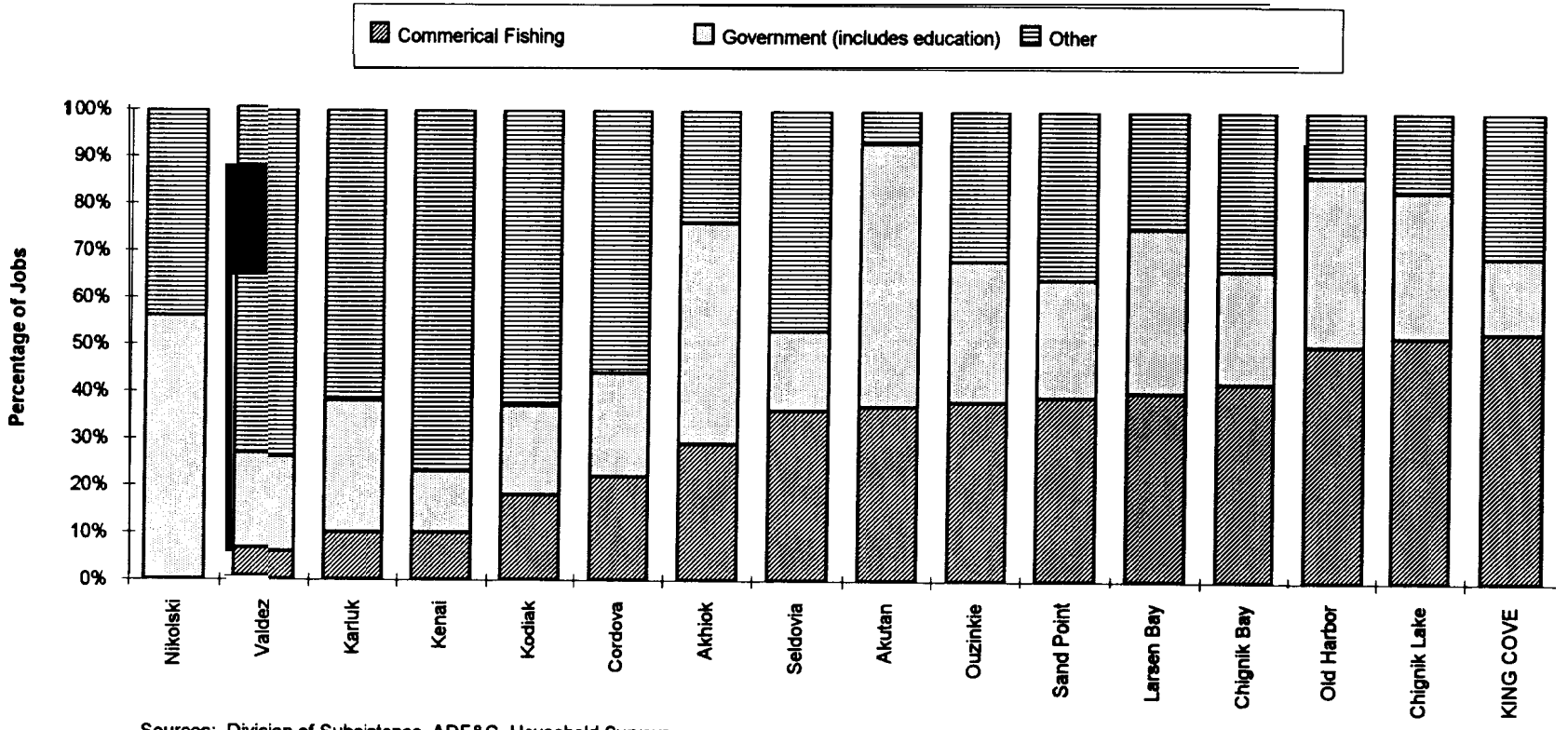
As discussed in Chapter Two, the monetary sector of King Cove's economy is dominated by commercial fishing. This is further illustrated in Figure 20, which reports the percentage of jobs in surveyed communities in either 1991 or 1992 by employer category. Three categories are used in this figure: commercial fishing, government (local, state, and federal, including education), and other (including services, retail trade, and manufacturing [including fish processing] [see Appendix F]). King Cove is one of seven communities in Figure 20 in which jobs in commercial fishing outnumbered those in either of the other two categories, and it had a higher percentage of commercial fishing jobs than any other community in the sample. In the relatively large communities of Valdez, Kenai, Kodiak, and Cordova, a more diverse pattern is indicated by the predominance of jobs in the categories other than commercial fishing and government.

Figure 21 provides further evidence of the importance of commercial fishing in the cash sector of the cash economy in King Cove. The figure illustrates the percentage of total household income in communities surveyed in either 1991 or 1992 that derived from commercial fishing, government, other jobs, and from sources other than jobs. About 47 percent of the household income in King Cove in 1992 derived from commercial fishing, more than twice that of any other category. In this respect, King Cove was most like neighboring Sand Point, where commercial fishing accounted for 49.0 percent of the total household income. In contrast, in Valdez and Kenai, income from jobs other than commercial fishing and government predominated, with 76.8 percent and 71.9 percent of the income, respectively. At Kodiak, commercial fishing accounted for 16.7 percent of the household income compared to 24.0 percent from government employment and 48.4 percent from other jobs. Similarly, in Cordova, commercial fishing provided 17.4 percent of the income, government employment 26.0 percent, and other jobs 44.0 percent.

Noncommercial Resource Uses and Harvests

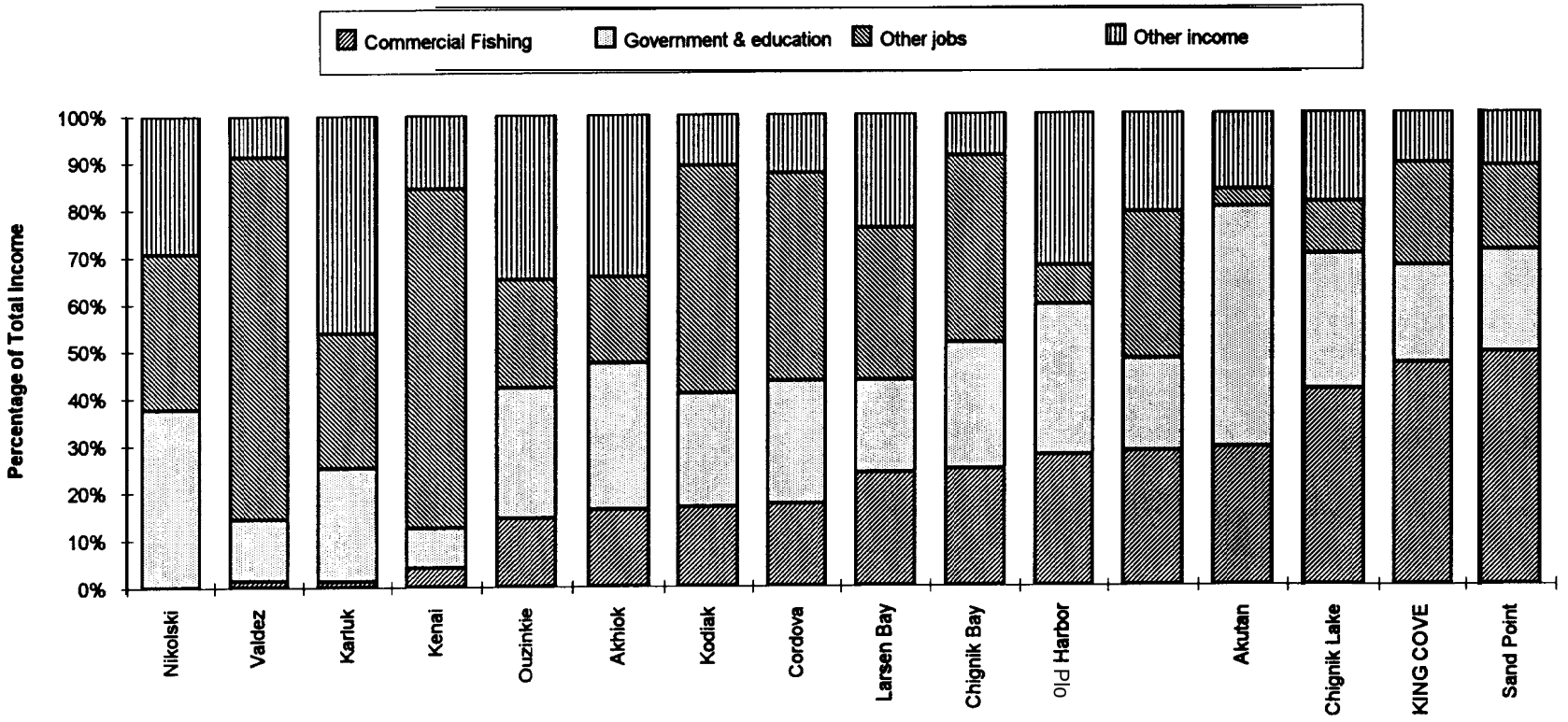
The subsistence sector of King Cove's local economy can also be compared with similar data from other Alaska communities. Comparisons are made with other communities of the Alaska Peninsula

Figure 20. Percentage of Jobs by Employer Type, Selected Alaska Communities, 1991 or 1992



Sources: Division of Subsistence, ADF&G, Household Surveys

Figure 21. Percentage of Household Cash Income by Source, Selected Alaska Communities, 1991 or 1992



Sources: Division of Subsistence, ADF&G, Household Surveys

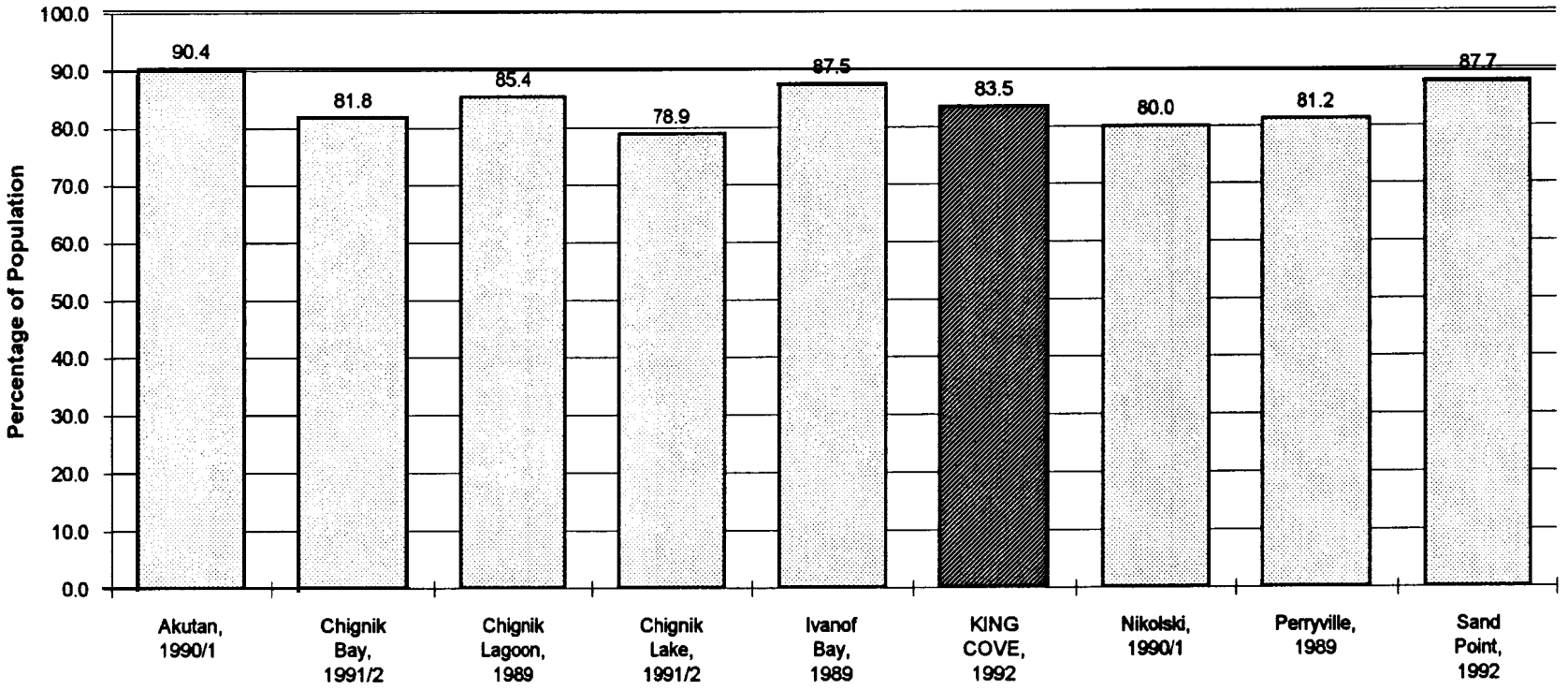
and Aleutian Islands, and with other coastal communities of Southwest, Southcentral, and Southeast Alaska in which the Division of Subsistence has conducted systematic household harvest surveys.

As discussed in Chapter Three, a large majority of King Cove residents, 83.5 percent in 1992, participated in subsistence harvest activities. As shown in Figure 22, the percentage of residents of Alaska Peninsula and Aleutian Islands study communities who hunted, fished, or gathered wild resources in particular study years ranges from 78.9 percent (Chignik Lake in 1991192) to 90.4 percent (Akutan in 1990191). Individual levels of participation in harvest activities in King Cove are high, and are comparable to those of other communities in the region. As noted in Chapter Three, all the sampled King Cove households used wild resources in 1992 and almost all (96.0 percent) harvested them. This is also a similar pattern to that found in other Southwest Alaska communities.

On average, households in King Cove used 15.6 kinds of wild resources in 1992. This pattern is most similar to that of the nearby community of Sand Point (average of 17.3 kinds of wild foods used per household in 1992), Chignik Bay (15.8 kinds used in 1989, 16.4 kinds used in 1991/2), and Chignik Lagoon (15.3 kinds used in 1989) (Fig. 23). The breadth of resource use in King Cove in 1992 was lower than that of most of the smaller, predominately Alaska Native communities of the area, such as False Pass (22.6 kinds used on average in 1987/88), Perryville (21.7 kinds used in 1989), or lvanof Bay (29.7 kinds used in 1989) (Fig. 23). A similar pattern holds for average number of resources attempted to harvest per household (Fig. 24), average number harvested (Fig. 25), average number received (Fig. 26), and average number given away (Fig. 27).

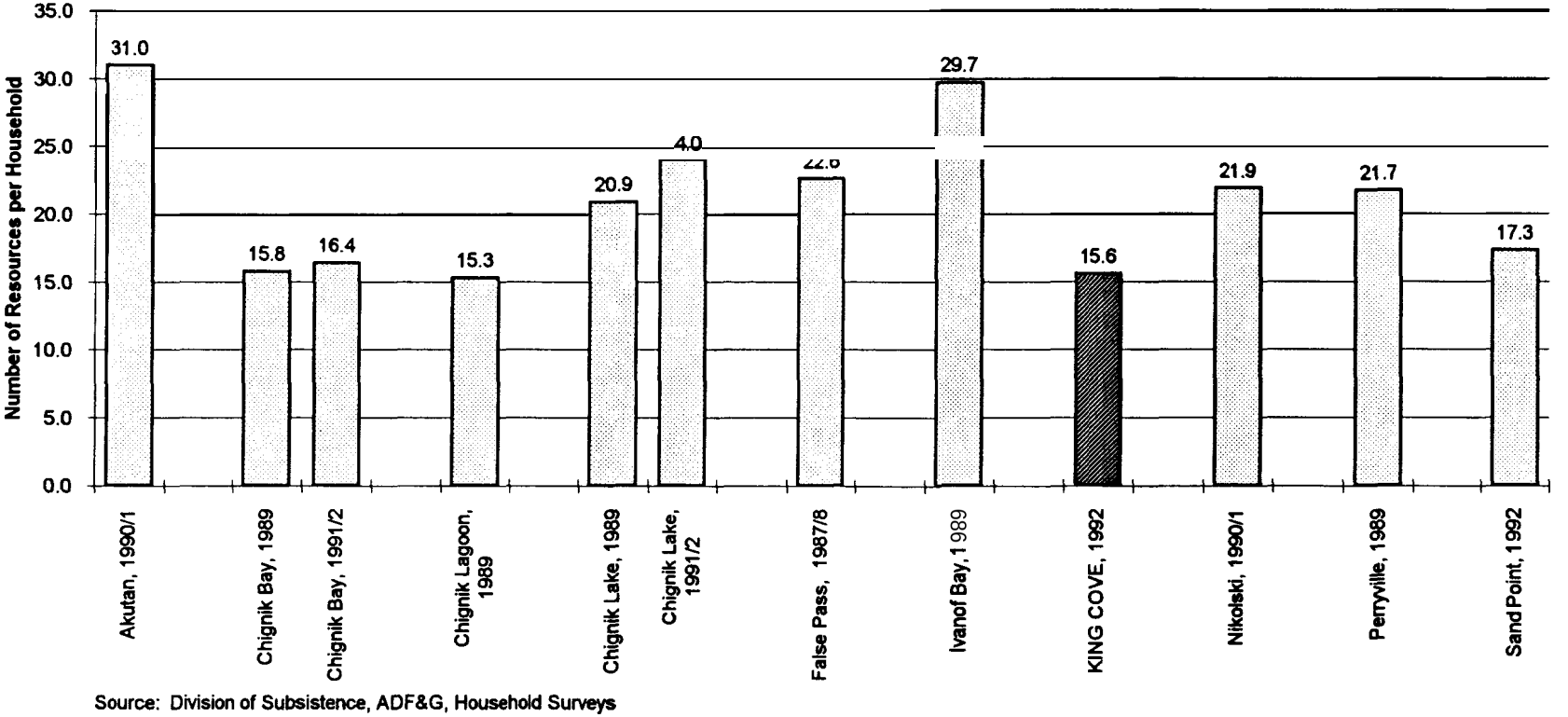
Regarding harvest quantities, King Cove's 1992 average of 256.1 pounds per person was virtually identical to that of Sand Point (255.7 pounds), estimated in the same year. This level of harvest is also similar to that of Nelson Lagoon (258 in 1986/87), Chignik Bay (188 pounds in 1984, 209 in 1989, 353 in 1991/2), and Chignik Lagoon (220 pounds in 1984, 211 pounds in 1989). As with the range of resources used, King Cove's level of subsistence harvest in 1992 was substantially lower than that of the smaller communities of the region, which generally ranged in recent years from 400 to 550 pound per person (Fig. 28). As shown in Figure 29, the King Cove noncommercial wild resource harvest in 1992 was higher than that of most larger coastal communities of Southcentral and Southeast Alaska, such as

Figure 22. Percentage of Population Engaging in Subsistence Harvest Activities



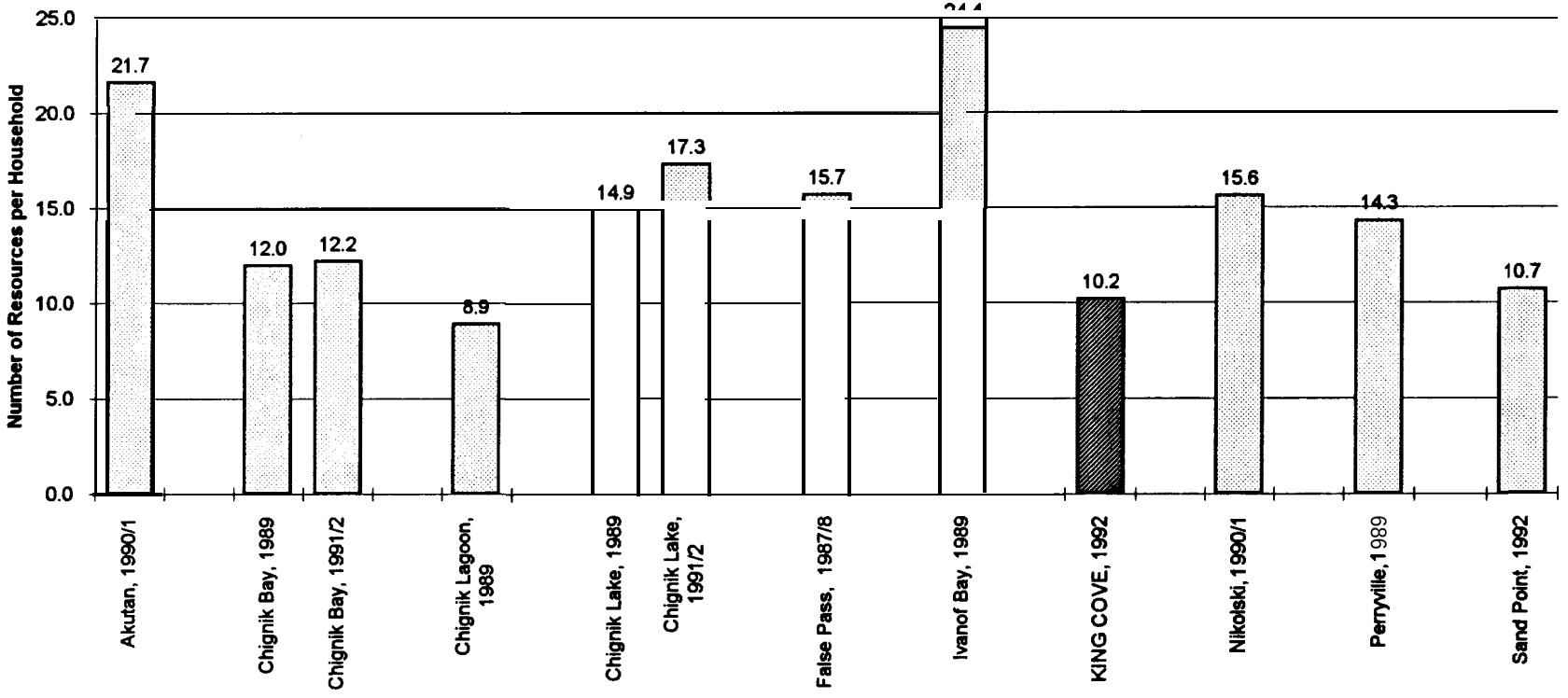
Source: Division of Subsistence, ADF&G, Household Surveys

Figure 23. Average Number of Resources Used per Household, Southern Alaska Peninsula and Aleutian Islands Communities



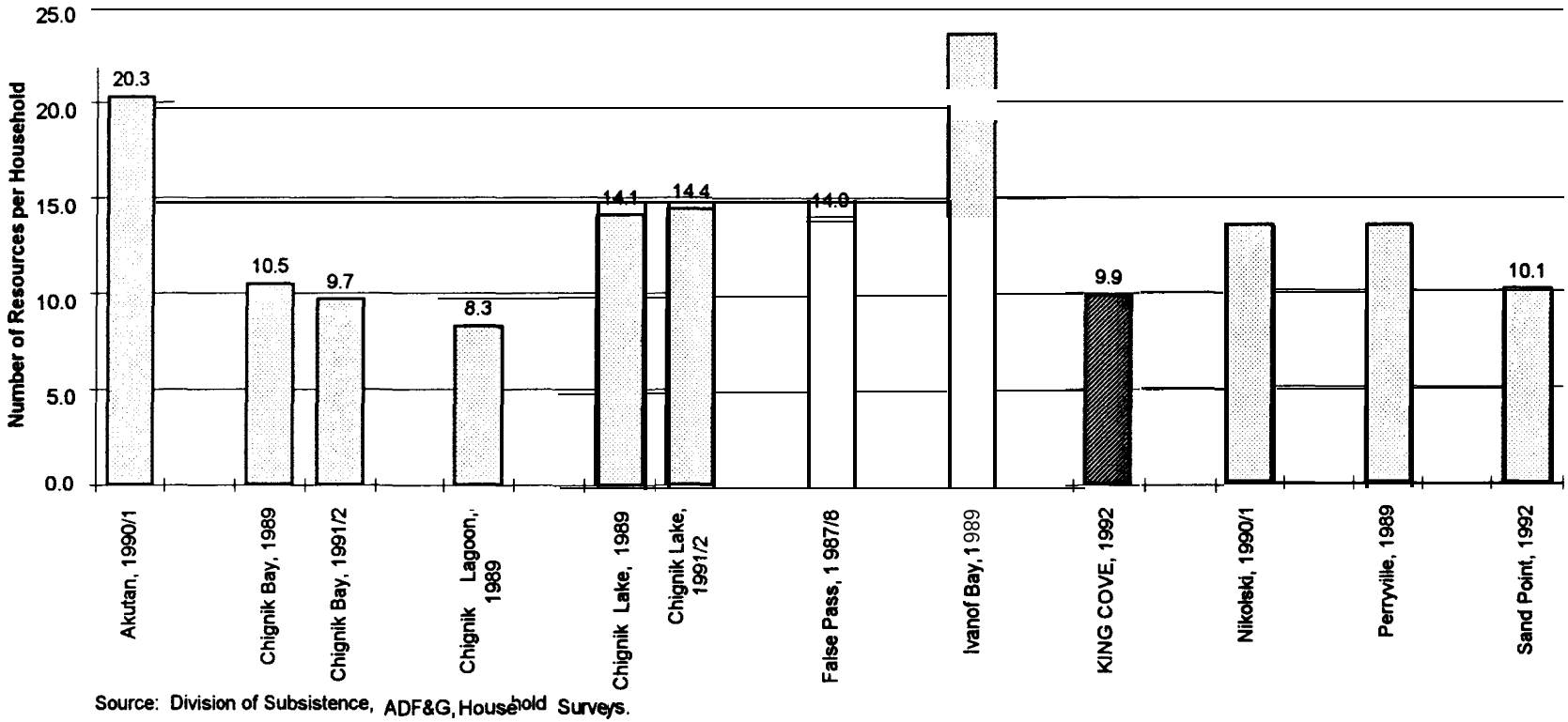
Source: Division of Subsistence, ADF&G, Household Surveys

Figure 24. Average Number of Resources Attempted to Harvest per Household, Southern Alaska Peninsula and Aleutian Islands Communities



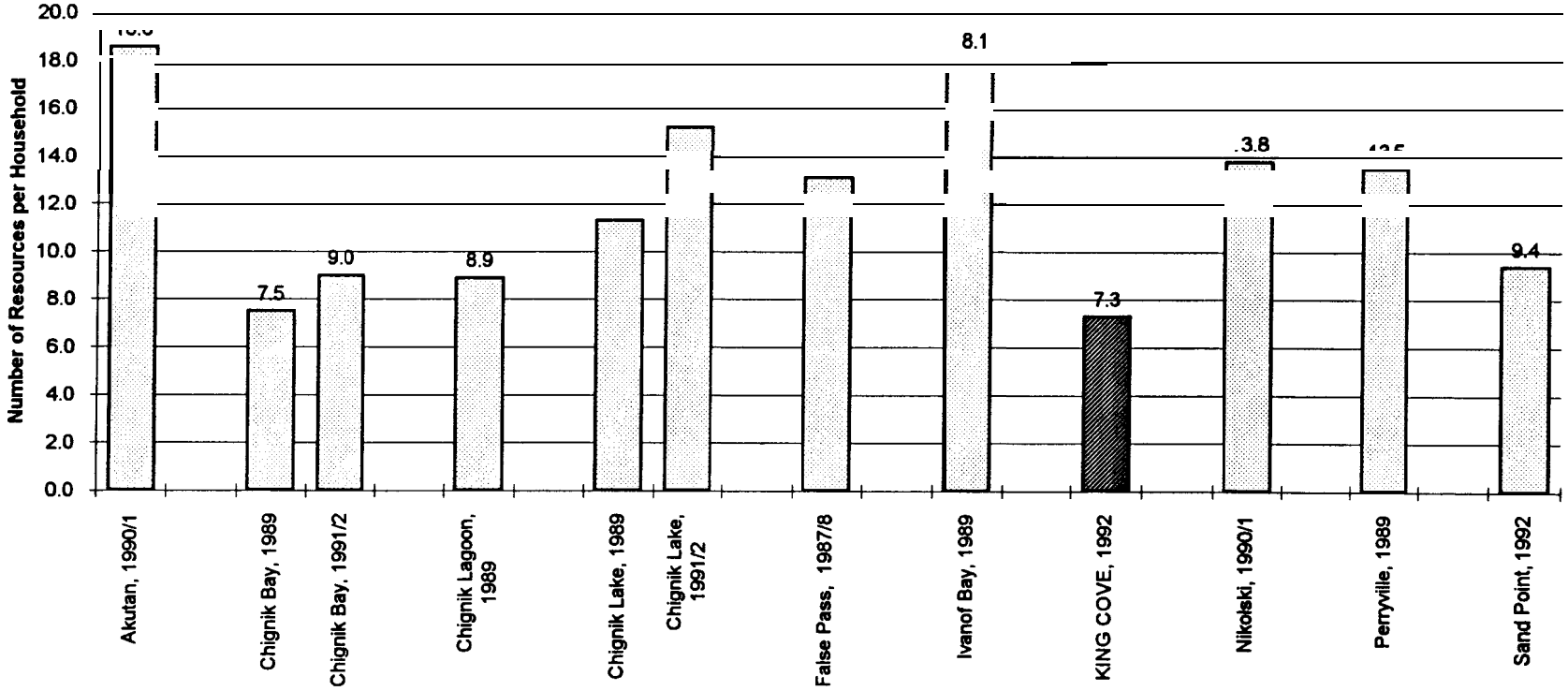
Source: Division of Subsistence, ADF&G, Household Surveys

Figure 25. Average Number of Resources Harvested per Household, Southern Alaska Peninsula and Aleutian Islands Communities



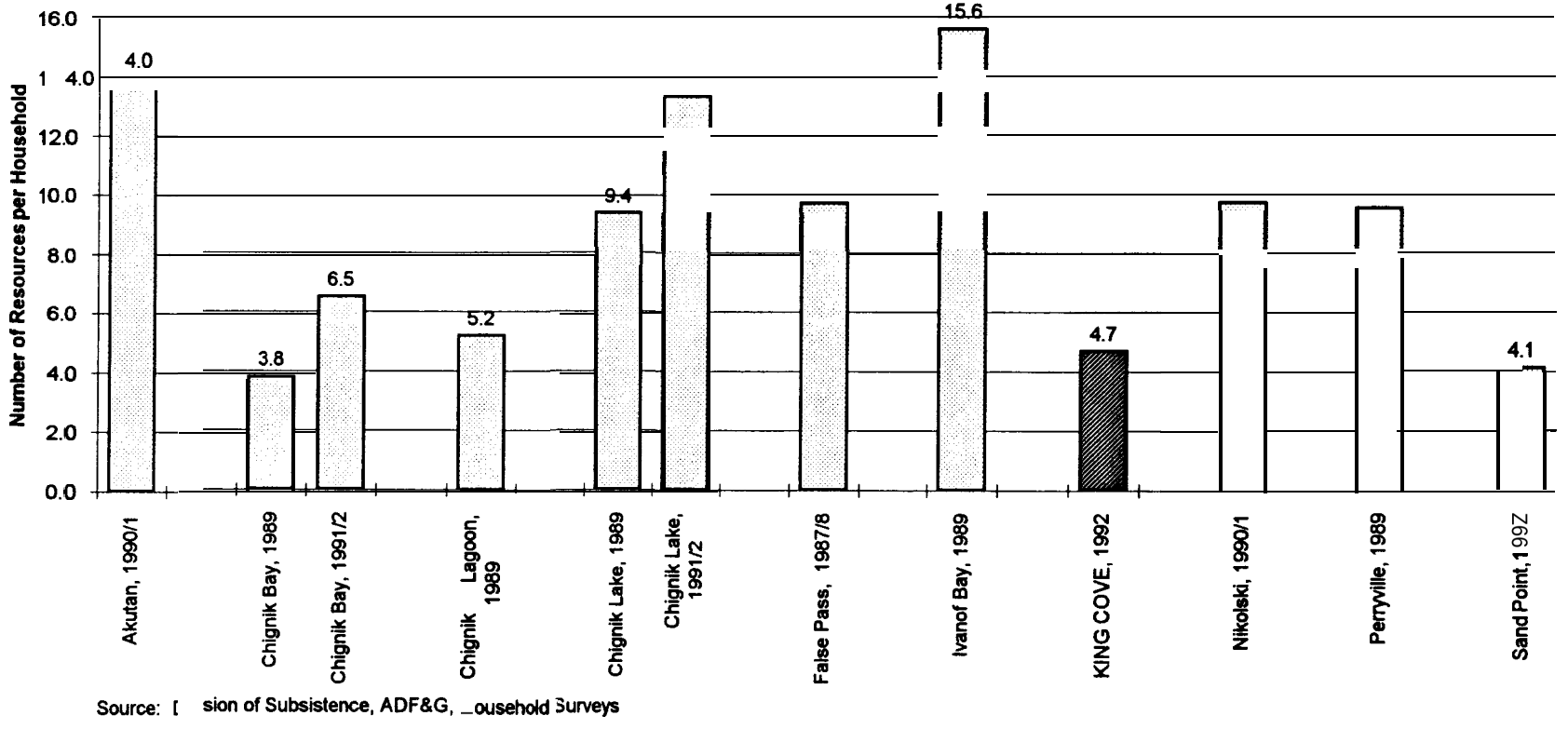
Source: Division of Subsistence, ADF&G, Household Surveys.

Figure 26. Average Number of Resources Received per Household, Southern Alaska Peninsula and Aleutian Islands Communities



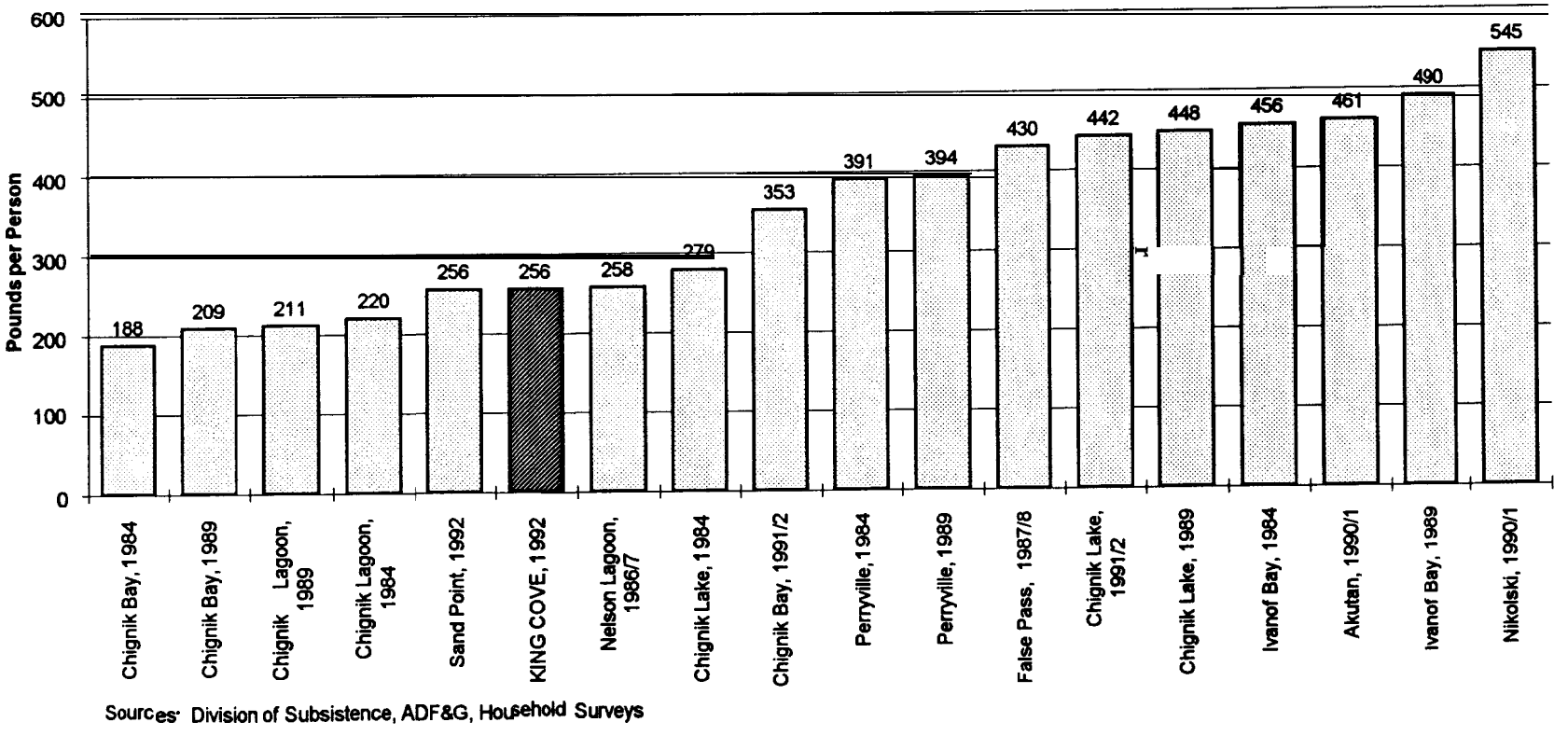
Source: Division of Subsistence, ADF&G, Household Surveys

Figure 27. Average Number of Resources Given Away per Household, Southern Alaska Peninsula and Aleutian Islands Communities



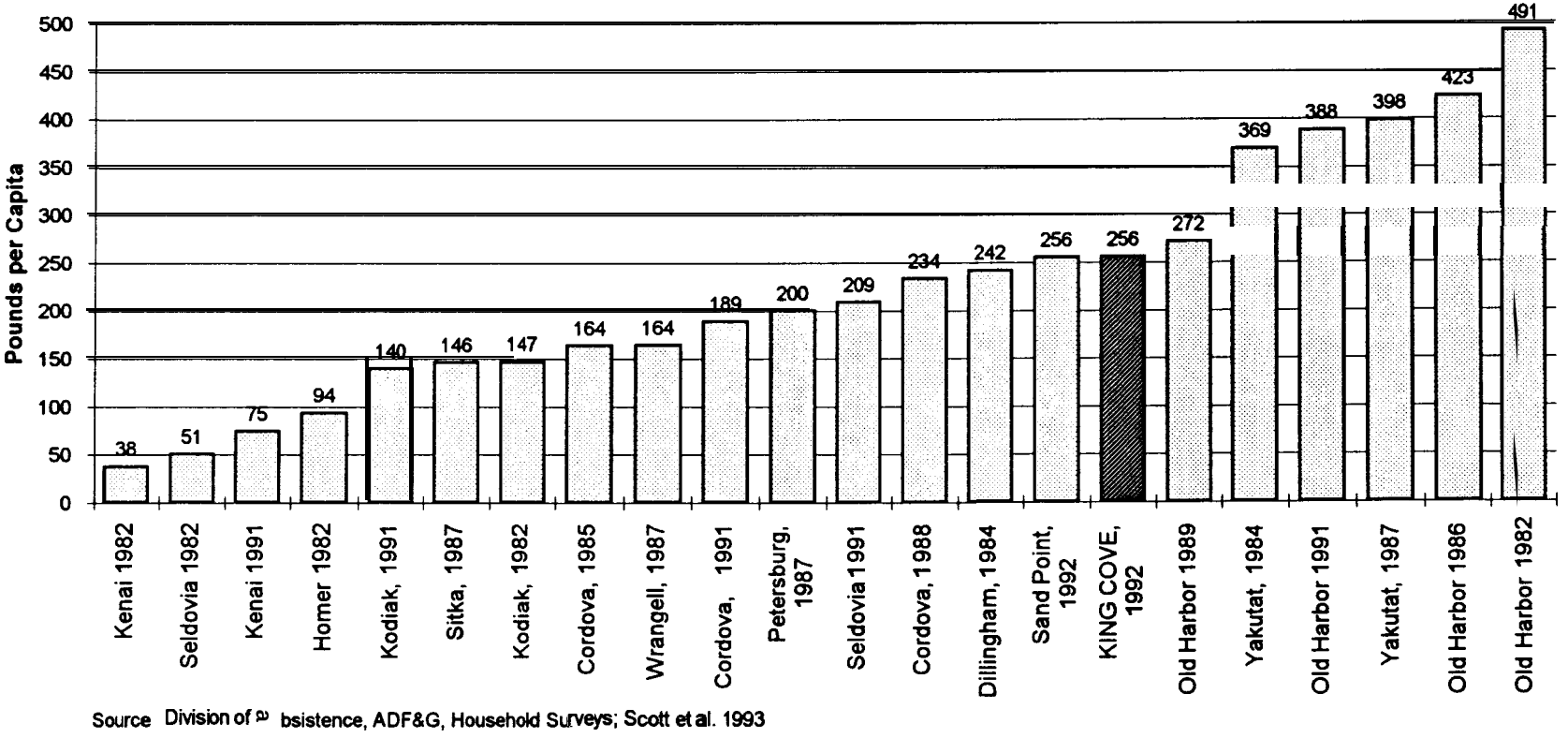
Source: [sion of Subsistence, ADF&G, _ousehold Surveys

Figure 28. Noncommercial Wild Resource Harvests, Southern Alaska Peninsula and Aleutian Islands Communities



Sources: Division of Subsistence, ADF&G, Household Surveys

Figure 29. Noncommercial Wild Resource Harvests, Selected Communities of Southeast, Southcentral, and Southwest Alaska



Source Division of Subsistence, ADF&G, Household Surveys; Scott et al. 1993

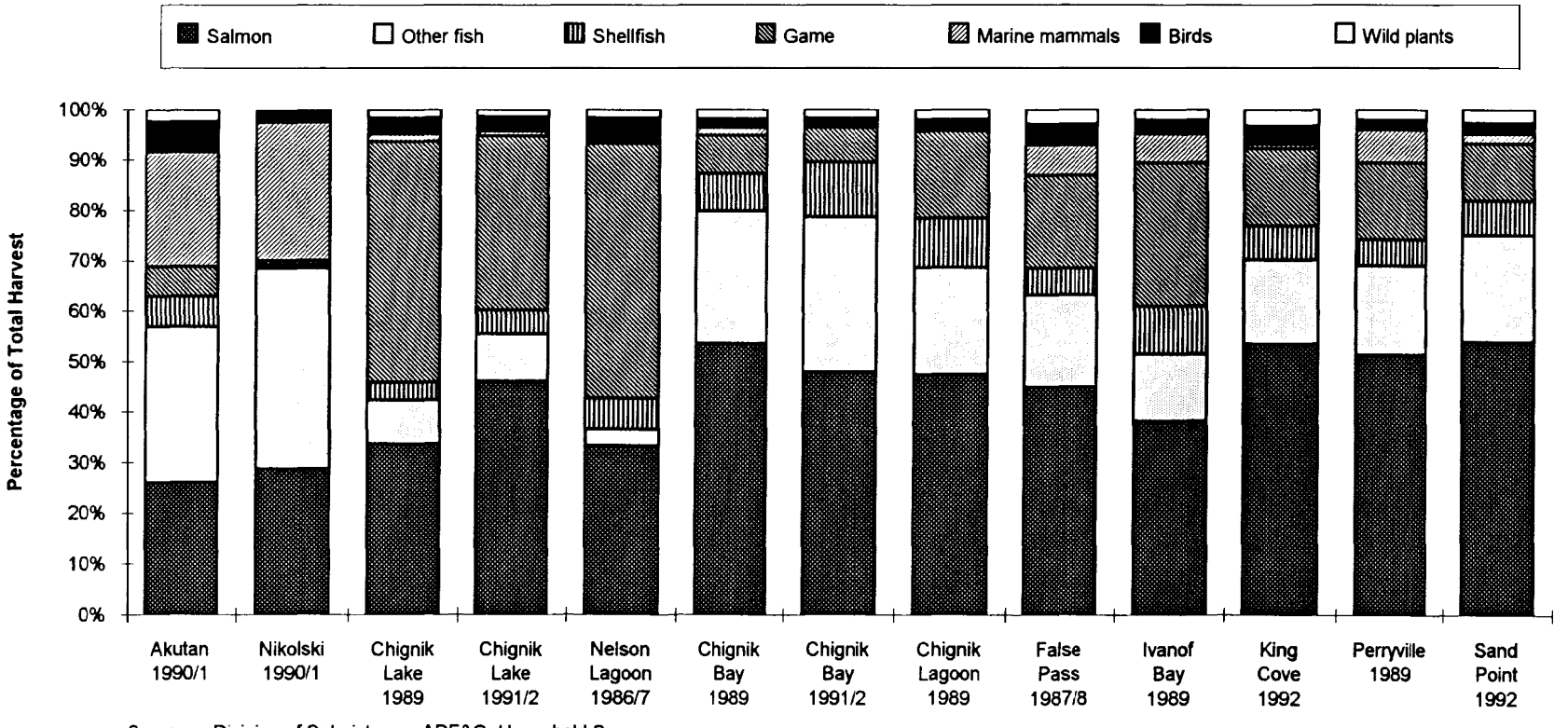
Kenai (36 pounds per person in 1982, 75 pounds per person in 1991), Homer (94 pounds in 1982), Kodiak (140 pounds in 1991, 147 pounds in 1982), Sitka (146 pounds per person in 1987), Cordova (164 pounds in 1985, 189 pounds in 1991, 234 pounds in 1988), Wrangell (164 pounds in 1987), and Petersburg (200 pounds in 1987). It was similar to the 242 pounds per person estimated for Dillingham, the regional center of the Bristol Bay region, in 1984. As within the Alaska Peninsula and Aleutian Islands region, smaller, predominately Alaska Native communities of Southcentral and Southeast Alaska often have relatively larger harvests, in the 300 - 400 pounds range. Old Harbor is given as an example in Figure 29.

In Figure 30, the relative contributions of seven wild resource categories to the overall noncommercial harvest of wild foods in communities of the Alaska Peninsula and Aleutian Islands region are compared. This information is also presented in Tables 25 and 26. The pattern in King Cove most closely resembles that of Sand Point. This is further illustrated in Figure 31. In these two communities, salmon and other fish predominate, with moderate harvests of land mammals and marine invertebrates, and relatively low harvests of birds and marine mammals. This is most like the composition of wild resource harvests in Chignik Bay, Chignik Lagoon, False Pass, Ivanof Bay, and Perryville. In contrast, Akutan and Nikolski have a relatively large marine mammal component, while Chignik Lake and Nelson Lagoon have a large land mammal component.

As discussed in Chapter Three, removal of resources from commercial harvests is a significant source of resources for home use in King Cove, accounting for about 38 percent by weight of all resources harvested. As shown in Figure 32, the percentage of the total harvest for home use (as measured in pounds edible weight) which is removed from commercial catches in King Cove is the highest of all the surveyed communities, but very similar to that of Sand Point. Relatively high percentages have also been recorded for Chignik Lagoon, False Pass, Chignik Bay, and Cordova.

As noted above, a relatively small percentage of households in King Cove harvests a relatively large portion of the total resources for home use in the community. Involvement in commercial fishing (Fig. 33) and ethnicity (Fig. 34) are related to this high level of harvest. As shown in Table 27, households with at least one member who participated in commercial fishing in 1992 had a per capita

Figure 30. Composition of Wild Resource Harvests by Resource Category, South Alaska Peninsula and Aleutian Islands Communities



Sources: Division of Subsistence, ADF&G, Household Surveys

Table 25. Wild Resource Harvests, Pounds per Person by Category, Alaska Peninsula and Aleutian Islands Communities

Community and Year	Salmon	Other Fish	Shellfish	Land Mammals	Marine Mammals	Birds	Plants	Total
Akutan 1990/1	119.9	141.7	27.9	27.4	104.6	28.0	11.1	460.6
Nikolski 1990/1 *	156.4	216.2	4.1	4.3	149.4	11.8	2.8	545.0
Chignik Lake 1989	150.9	38.5	15.6	213.8	6.4	15.1	7.3	447.6
Chignik Lake 1991/2	203.7	41.6	20.8	152.6	4.1	13.2	6.4	442.3
Nelson Lagoon 1986/7	85.8	8.2	16.0	130.0	1.2	12.0	4.5	257.6
Chignik Bay 1989	111.6	54.8	15.6	15.8	3.1	3.7	4.0	208.6
Chignik Bay 1991/2	169.1	108.6	38.4	24.1	2.6	4.3	6.3	353.4
Chignik Lagoon 1989	100.2	44.5	20.8	36.5	0.0	5.2	4.2	211.4
False Pass 1987/8	193.2	78.2	23.2	79.4	25.3	18.3	12.8	430.3
Ivanof Bay 1989	186.6	65.2	46.4	139.5	27.4	14.2	10.4	489.8
King Cove 1992	136.8	42.7	17.3	39.4	2.1	9.3	8.6	256.1
Perryville 1989	202.2	69.5	20.4	60.0	25.6	8.2	8.4	394.3
Sand Point 1992	137.5	54.0	17.8	28.9	4.7	5.9	7.0	255.7

* Excludes feral cattle and sheep.

Sources: Division of Subsistence, ADF&G, Household Surveys; Scott et al. 1993

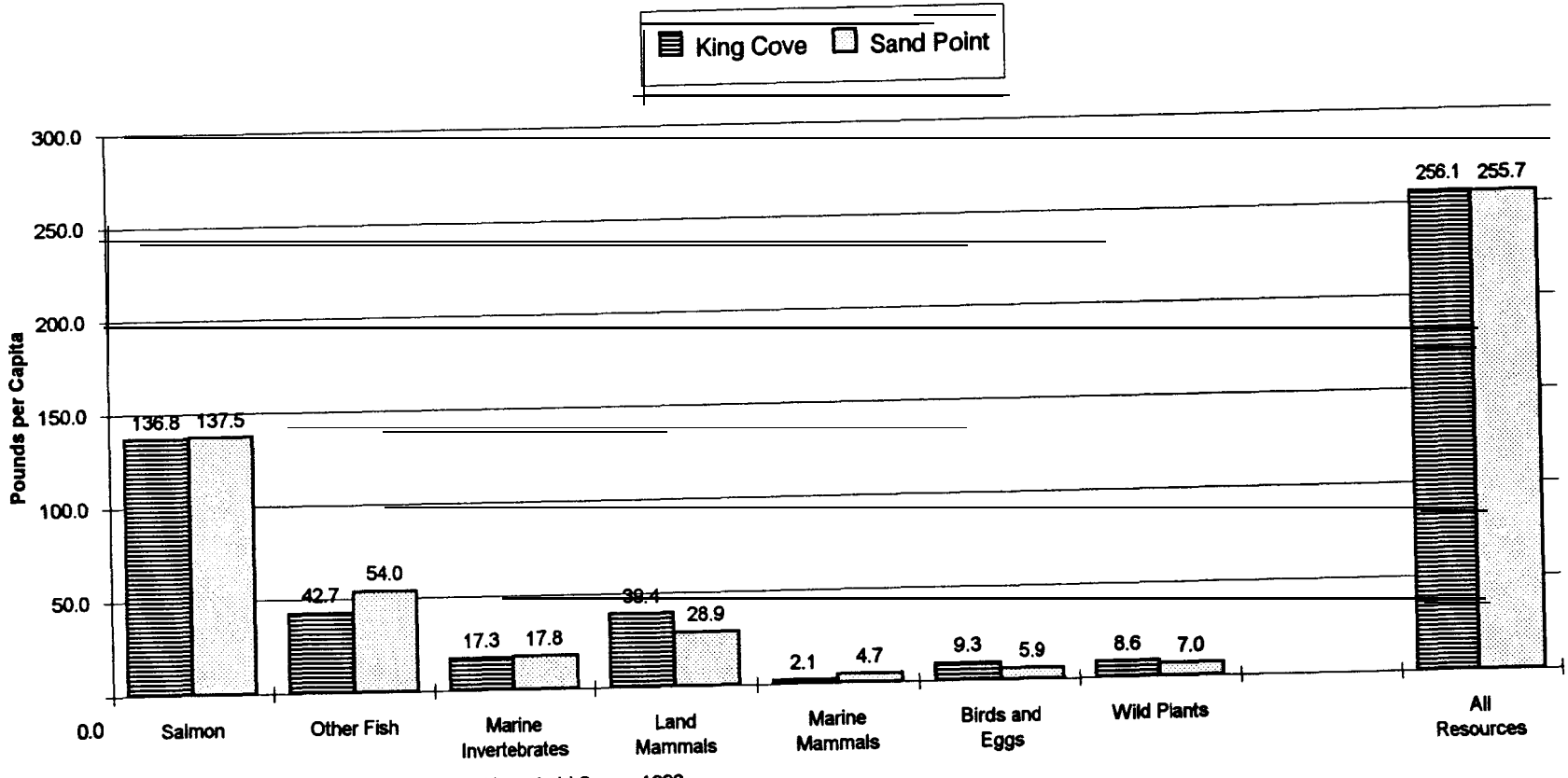
Table 26. Percentage of Wild Resource Harvests by Category, Alaska Peninsula and Aleutian Islands Communities

Community and Year	Percentage of Total Harvest Composed Of: Salmon	Other Fish	Shellfish	Land Mammals	Marine Mammals	Birds	Plants	Total
Akutan 1990/1	26.0	30.8	6.1	5.9	22.7	6.1	2.4	100
Nikolski 1990/1 *	28.7	39.7	0.8	0.8	27.4	2.2	0.5	100
Chignik Lake 1989	33.7	8.6	3.5	47.8	1.4	3.4	1.6	100
Chignik Lake 1991/2	46.1	9.4	4.7	34.5	0.9	3.0	1.4	100
Nelson Lagoon 1986/7	33.3	3.2	6.2	50.5	0.5	4.7	1.7	100
Chignik Bay 1989	53.5	26.3	7.5	7.6	1.5	1.8	1.9	100
Chignik Bay 1991/2	47.9	30.7	10.9	6.8	0.7	1.2	1.8	100
Chignik Lagoon 1989	47.4	21.1	9.8	17.3	0.0	2.5	2.0	100
False Pass 1987/8	44.9	18.2	5.4	18.4	5.9	4.2	3.0	100
Ivanof Bay 1989	38.1	13.3	9.5	28.5	5.6	2.9	2.1	100
King Cove 1992	53.4	16.7	6.8	15.4	0.8	3.6	3.4	100
Perryville 1989	51.3	17.6	5.2	15.2	6.5	2.1	2.1	100
Sand Point 1992	53.8	21.1	7.0	11.3	1.8	2.3	2.7	100

* Excludes feral cattle and sheep

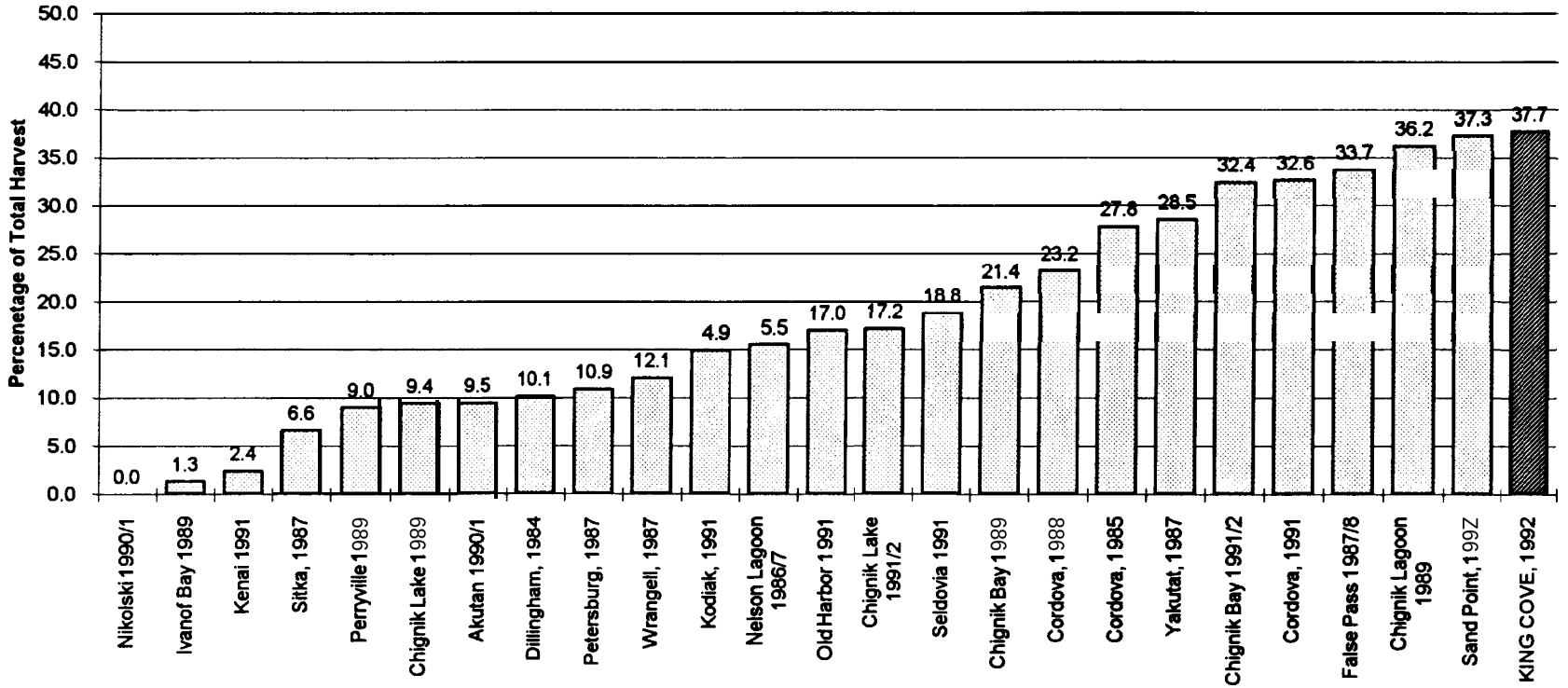
Sources: Division of Subsistence, ADF&G, Household Surveys; Scott et al. 1993

Figure 31. Harvests by Resource Category, King Cove and Sand Point, 1992



Source: Division of Subsistence, ADF&G, Household Survey 1993

Figure 32. Percentage of Total Wild Resource Harvest for Home Use Removed from Commercial Catches, Selected Alaska Communities



Sources Division of Subsistence, ADF&G, Household Surveys; Scott et al. 1993

Figure 33. Household Harvests by Participation in Commercial Fishing, King Cove, 1992

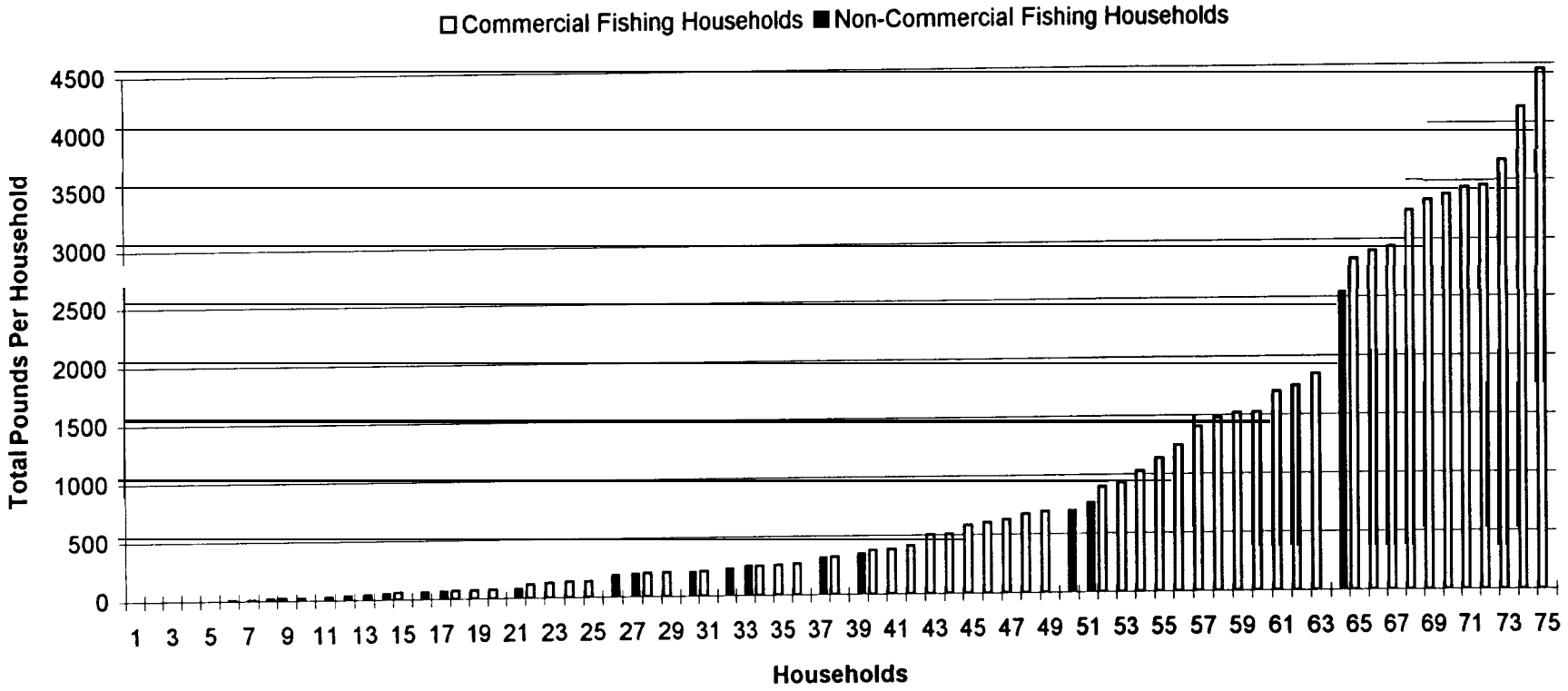


Figure 34. Household Harvests by Ethnicity, King Cove, 1992

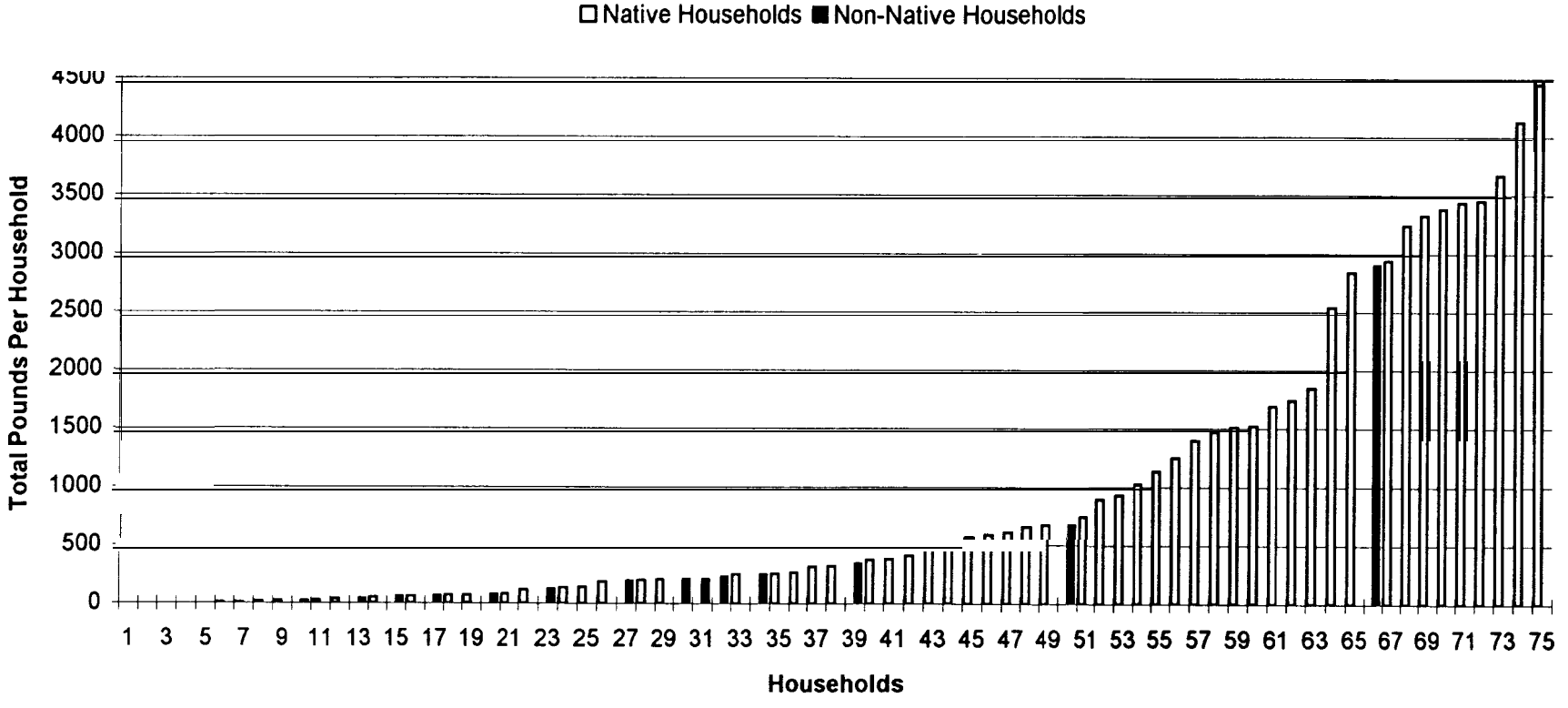


Table 27. Household Harvest Characteristics by Ethnicity and Commercial Fishing Involvement, King Cove, 1992

	Ethnicity		Commercial Fishing	
	AK Native (56)	Non-AK Native (19)	Yes (50)	No (25)
Household Harvests (Pounds)				
mean	1119.80	284.55	1240.49	243.63
median	589.02	72.87	645.71	61.72
sum	62708.62	5406.52	62024.39	6090.76
Per Capita (Pounds)				
mean	324.97	93.55	360.63	77.76
median	166.70	32.30	191.78	17.52
sum	18198.04	177738	18031.53	1943.89
Resources Used (Number)				
mean	17.73	9.32	16.98	12.84
median	17.00	7.00	16.00	11.00
Resources Attempted (Number)				
mean	11.61	5.95	12.78	4.96
median	11.00	3.00	11.00	3.00
Resources Harvested (Number)				
mean	11.32	5.74	12.48	4.76
median	10.50	3.00	11.00	2.00
Resources Received (Number)				
mean	8.32	4.32	6.34	9.24
median	7.00	4.00	5.00	8.00
Resources Given Away (Number)				
mean	5.79	1.58	5.22	3.72
median	3.00	1.00	2.00	1.00

SOURCE: Alaska Department of Fish and Game, Division of Subsistence, Household Survey, 1993.

harvest of 360.6 pounds (N = 50 households), while those with no commercial fishing involvement harvested just 77.8 pounds per person (N = 25 households). Commercial fishing households had a slightly higher range of resource use than the other group, 17.0 kinds used per household and 12.8 kinds, respectively. On the other hand, non-commercial fishing households on average received more different kinds of resources (9.2 per household) than did those with commercial fishing involvement (6.3 per household), providing further evidence of resource sharing networks in the community.

A strong relationship also was noted between ethnicity and resource use in King Cove. Households with Alaska Native members harvested 325 pounds per person and used an average of 17.7 kinds of wild foods in 1992, compared to a harvest of 93.6 pounds per person and a use average of 9.3 kinds of resources for other households (Table 27, Fig. 34).

SUMMARY OF RESOURCE ISSUES

The following section provides a brief overview of issues regarding subsistence uses of wild resources which King Cove respondents brought up during interviews. Comments about commercial fisheries (except as they might apply to subsistence uses) are not included. The relative frequency of mentioning of these issues or comments is given, but respondents were not systematically polled about them. The issues are not discussed in any particular order related to relative importance.

Reduction in caribou baa limits. This issue was probably mentioned more frequently than any other. As discussed in Chapter Three, because of the declining population of the Southern Alaska Peninsula caribou herd, bag limits have been reduced from four caribou to one bull. Hunters in King Cove reported that such low limits make it difficult for them to hunt caribou economically, to provide their families with caribou, and to share with other households. Similar problems were brought up frequently in Sand Point (Andersen et al. 1993). In King Cove, competition with nonlocal caribou hunters was also cited as a continuing problem. The 1993/94 caribou season in GMU 9D was closed entirely due to continuing declines in the caribou population.

Seasons for waterfowl. Currently, the season for hunting most waterfowl ends in mid December. However, sea ducks and other species are available in the King Cove area from December into March and have been traditionally hunted at that time of year.

Low waterfowl baa limits. Waterfowl hunters commented that current bag limits for many waterfowl species are too low (see Table 24). Given the expense involved in traveling to good hunting areas, this makes it difficult to hunt waterfowl economically. This issue was brought up frequently in Sand Point as well (Fall et al. 1993).

Emperor aoose huntina prohibition. Emperor geese ("beach geese") are a highly valued subsistence resource. Presently, no hunting of this species is allowed in Alaska because of depressed populations. Some hunters in King Cove, along with their neighbors in Sand Point, believe that emperor populations have increased and that some limited subsistence hunting should be allowed.

Use of commercial fisheries by-catch for subsistence. Presently, federal regulations require that by-catches be discarded. Local fishermen in both King Cove and Sand Point view this as a wasteful practice and believe that it should be legal to retain these incidental harvests for subsistence use.

Marine mammal huntina bv Alaska Natives. Several active or formerly active marine mammal hunters in the community said that they were not aware that Alaska Natives could legally hunt marine mammals for subsistence use. This mistaken view appeared to apply more often to sea lions than to harbor seals. Misperceptions apparently are related to public communications concerning the incidental and direct takes of marine mammals in commercial fisheries.

Paralytic shellfish poisoning. As noted in Chapter Three, use of clams has declined greatly in King Cove since a resident of the neighboring community of Sand Point died of paralytic shellfish poisoning (PSP) in 1990 after eating some butter clams. Subsistence beaches are generally not monitored by the Alaska Department of Environmental Conservation **(DEC)** for the presence of **PSP.** Some households believed that waste from the local fish processor was either contaminating local shellfish populations or eliminating them entirely from Dushkin's Lagoon, an important subsistence clamming area. In January 1993 (outside the study period for the harvest survey), **DEC tested clams**

from Dushkin's Lagoon for the presence of the PSP toxin. The clams were found to be safe to eat, and a strong harvest effort was underway there while interviewing for this study was taking place.

Subsistence access. Many households commented on the continued importance of access to subsistence resources to King Cove. Subsistence foods were considered an important part of the economy, culture, and way of life in King Cove. These respondents stressed that, in their view, the future of commercial fishing was becoming more and more uncertain and that, therefore, dependence on subsistence harvests was likely to increase in the future. Also, some households stressed the variability of commercial fishing incomes from year to year as an additional reason why subsistence opportunities need to be preserved. Respondents were aware of the perception that cash incomes in King Cove are relatively high compared with some other rural communities. Some commented that incomes vary widely within the community. Other said that while some household incomes might appear high, this could change quickly. The high cost of living in King Cove was an additional reason cited for the continued importance of subsistence in the community.

The Use of the Findinas of this Studv. Additionally, a number of households expressed concern that the study findings would be used to justify restrictions on the subsistence activities of King Cove's residents. "Don't take away subsistence," was the comment of one such household. This concern was voiced repeatedly in Sand Point as well. In Sand Point, several respondents questioned whether data from a single year's survey would accurately reflect subsistence patterns in their community. They also wondered whether a randomly selected sample might miss many actively harvesting households and thereby underestimate the importance of noncommercial harvests. These well-taken points apply to the King Cove research as well.

CONCLUSIONS

Based upon research conducted in 1984 and 1985, Stephen Braund and Associates (Braund et al. 1986:7-l) concluded that "subsistence activities remain important to the contemporary economic, political, social, and ideological makeup of [King Cove]." Their report documented high levels of

participation in harvest activities, a diverse range of species used, relatively high levels of harvest, systematic sharing of wild foods, and a patterned seasonal round of resource harvests.

The findings of the present study pertaining to subsistence uses of wild resources in King Cove in 1992 corroborate the earlier findings by Braund and Associates. King Cove had a mixed, subsistence-cash economy in 1992. As described in Chapter Two, because of their seasonal employment in productive commercial fisheries, on average, King Cove's residents had relatively higher cash incomes in comparison with those of most small, rural Alaska communities. The cash sector of King Cove's economy in 1992 was relatively less diversified and more seasonal in comparison with larger coastal communities such as Kenai, Kodiak, Cordova, and Valdez. This study also has shown that wild resource harvests for home use remains an important part of the local economy in King Cove in 1992. Participation in wild resource harvesting for home use was virtually universal. A relatively wide array of wild foods was used and harvest levels were relatively high, compared with those of most moderately-sized coastal communities of Southcentral, Southwest, and Southeast Alaska, although lower than harvests in some other rural communities. The per capita harvest of about 256 pounds per person in 1992 in King Cove is substantial, slightly larger than the mean annual consumption of store-bought meat, fish, and poultry in the continental United States (about 222 pounds per year [U.S. Department of Agriculture 19831). Use of a wide range of subsistence resources and a relatively large harvest of wild foods in King Cove were associated with Alaska Native ethnicity as well as involvement in commercial fishing activities. Frequent sharing brought wild foods to every household in the community. All of these factors are evidence of the continued importance of noncommercial wild resource harvesting to the local economy and way of life in King Cove. These characteristics also illustrate similarities between King Cove and other Southwest Alaska communities such as Sand Point, Chignik Bay, and Chignik Lagoon.

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APPENDIX A

STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPARTMENT OF FISH AND GAME

333 RASPBERRY ROAD
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DIVISION OF SUBSISTENCE

September 14, 1992

STUDY OF SUBSISTENCE USES IN SAND POINT AND KING COVE

For more information, please contact: James Fall, 267-2359
Lisa Scarbrough, 267-2396

Background

This is a brief overview of a research project to be undertaken by the Division of Subsistence of the Alaska Department of Fish and Game. The division is the state agency that is responsible for collecting information about subsistence uses of fish and wildlife resources in Alaska. It has produced about 200 reports and gathered information on over 176 communities. In 1992 - 1993, the division proposes to conduct a project in the southwest Alaska communities of Sand Point (population 878) and King Cove (population 451). Only very limited information is available on noncommercial harvesting activities in Sand Point. Although more information is available for King Cove, the division has not conducted a comprehensive study there, and basic data are lacking. The results of the study should be useful for the communities in land and resource use planning and for regulation review. Some of the funding for this project is being provided by the U.S. Fish and Wildlife Service.

Purpose and Objectives

The purpose of the project is to understand the role of subsistence hunting, fishing, and gathering in the economy and way of life of the communities of King Cove and Sand Point. Information will be collected on the kinds of resources used, harvest quantities, harvest methods, timing of harvests, and harvest areas. Information will also be gathered on characteristics of the population of the communities and their cash economies, in order to understand subsistence uses in a wider social and economic perspective.

Community Approvals and Informed Consent

Before the research begins, approval for the project will be sought from the appropriate community groups, including the community governments and the Aleutians East Borough Assembly. Participation in the project is voluntary; after the project is explained to them, all individuals who are asked to be interviewed may decide for themselves if they wish to participate. This is called "informed consent" and is a standard division procedure. All information provided by individuals will be confidential. Also, this information will be compiled and reported at the community level only.

Methods

We will use standard data gathering methods in the project. Particularly knowledgeable individuals ("key respondents"), such as elders and active harvesters, will be interviewed on such topics as kinds of resources used, harvest methods, timing of harvests, preservation and preparation methods, and historical background of resource uses. Most quantified information will be collected through a household survey using a standard division form. These interviews will, for the most part, take place in person in

people's homes or other convenient locations. Because of the relatively large size of these communities, we will choose a random sample of about 75 - 100 households to interview. The survey interview will take approximately one hour or less to complete. It will cover the following topics: characteristics of household members (age, sex, birthplace, involvement in fishing and hunting); use and harvest of wild resources by household members in 1992, including resources in the following categories: salmon, other fish, marine invertebrates, land mammals, marine mammals, birds and eggs, and wild plants; and information on jobs held by household members in 1992.

Also, a smaller set of hunters and fishermen in Sand Point will be asked to draw maps showing areas they have used for subsistence hunting, fishing, and gathering while they have lived in the community. Such maps have already been prepared for King Cove, based on interviews conducted in 1982. The information from each individual map will be combined to depict community harvest areas for such resources as salmon, other fish, marine invertebrates, caribou, marine mammals, birds, and wild plants.

Products

The findings of the study will be summarized in a report that will become part of the division's Technical Paper Series. A draft of this report will be available for community review. The survey data will also become part of the division's Community Profile Database. Copies of the maps depicting community harvest areas will be part of the report, and separate copies will also be provided to each community.

Schedule

September - November 1992	Project design, community approval
November - December 1992	Begin key respondent interviewing
January - February 1993	Household survey, mapping, continue key respondent interviews
March - May 1993	Data analysis
June 1993	Draft report
July - August 1993	Revise draft report
September 30, 1993	Final report complete

Staffing

Subsistence Resource Specialists from the Division of Subsistence, Alaska Department of Fish and Game, will be responsible for designing and conducting the study. They will seek to hire one or more residents of each community to assist with the project. These local assistants will be trained in administering the household survey and coding the data for computer entry.

ALEUTIANS EAST BOROUGH

SERVING THE COMMUNITIES OF
KING COVE ■ SAND POINT ■ AKUTAN ■ COLD BAY ■ FALSE PASS ■ NELSON LAGOON

RESOLUTION 93-14

A RESOLUTION OF THE ALEUTIANS EAST BOROUGH SUPPORTING SUBSISTENCE STUDIES BY THE ALASKA DEPARTMENT OF FISH AND GAME OF SUBSISTENCE ACTIVITIES IN KING COVE AND SAND POINT, ALASKA.

WHEREAS, subsistence plays an important part in the lifestyle of the residents of King Cove and Sand Point; and

WHEREAS, there is presently no documentation as to the extent of subsistence activities of residents of those communities; and

WHEREAS, the Subsistence Division of the Alaska Department of Fish and Game is willing to perform a subsistence survey of these communities; and

WHEREAS, the results of such survey can be important information relating to future management of fish and wildlife resources in the area;

NOW, THEREFORE, BE IT RESOLVED that the Mayor and Assembly of the Aleutians East Borough support and encourage the activities of the Subsistence Division's efforts to conduct the first comprehensive subsistence survey of these communities.

ADOPTED this 10 day of December 1992.

MAYOR

ATTEST:

CLERK

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STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPARTMENT OF FISH AND GAME

DIVISION OF SUBSISTENCE

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June 1, 1993

STUDY OF SUBSISTENCE USES IN SAND POINT AND KING COVE:

PROJECT UPDATE

For more information, please contact: James Fall, 907-267-2359

Background

The Division of Subsistence of the Alaska Department of Fish and Game received funding from the U.S. Fish and Wildlife Service to conduct a study of subsistence hunting, fishing, and gathering in the southwest Alaska communities of Sand Point and King Cove. An earlier letter (September 14, 1992) provided an overview of the proposed project. This letter provides an update on the status of the study. We also interviewed marine mammal hunters as part of a project funded by the National Marine Fisheries Service. The findings of those interviews are summarized in another letter which is being reviewed by community governments.

Community Approvals

The Aleutians East Borough Assembly passed a formal resolution and approved the project on December 10, 1992. In King Cove, the Agdaagux Tribal Council approved it on December 23, 1992 and the King Cove City Council approved the study informally at a meeting held on December 2, 1992. In Sand Point, we held an informal community meeting of city and tribal council members on December 5, 1992 and received approval.

Key Respondent Interviews

Two division researchers, Craig Mishler and Vicki Vanek, traveled to King Cove and Sand Point on December 1 - 7, 1992 to introduce the project to the communities and begin interviewing. They spoke with about eight households. Craig and Vicki collected information about the many kinds of resources used, the timing of harvests, marine mammal hunting, salmon fishing methods, and the history of resource uses in both communities. This provided important information for the next phase of the study.

Systematic Household Surveys

An important goal of the study was to interview a randomly selected sample of 75 households in King Cove and 100 households in Sand Point about their non-commercial resource harvests and uses in 1992, using a standard data-gathering instrument. These interviews took place from January 21 to February 1, 1993 in King Cove and from January 20 to February 5 in Sand Point. Two research teams conducted the surveys. In King Cove, the team consisted of Rachel Mason, Vicki Vanek, and Terry Haynes. They were assisted by Connie Newton and Simeon Kuzakin. In Sand Point, the researchers were Dave Andersen, Mike Coffing, and Amy Paige. Residents of Sand Point who helped with the study were Peggy Osterback and Christine Mack. In both communities, the study teams used lists of residents and maps provided by the communities and the Aleutians East Borough to randomly select households for interviewing. They then

(continued)

contacted each household by phone or in person to explain the project. Every household had the option of not participating in the study. If the household agreed to be interviewed, a convenient time was set up to conduct the survey. It is important to remember that the identity of surveyed households is strictly confidential. As can be seen by the following table, the interview goals were met in both communities.

	King Cove	Sand Point
Estimated number of households:	158	204
Number of households interviewed:	75	104
Percentage of total households:	47.5%	51.0%
Declined to participate:	10	4
No contact:	10	21

Mapping Interviews

Another goal of the project was to conduct mapping interviews with knowledgeable hunters and fishermen in Sand Point. Maps for King Cove are available from a previous division study. In Sand Point, 10 households drew maps of areas they have used for various subsistence activities, including salmon and other fishing, marine invertebrate gathering, bird hunting, caribou hunting, marine mammal hunting, and plant gathering. If funding becomes available, the information on the individual maps will be entered into a computerized database for the production of maps which show community harvest areas.

Data Analysis and Final Report

The information from the household surveys was coded for computer entry and analysis. At present, we are checking the accuracy of the coding and data entry. In July, a preliminary series of standard tables will be produced. Using these tables and the information from key respondent interviews, we will write a draft report which summarizes the study findings. The report will be available for community review in August. We will also prepare another project update letter with some of the major findings of the study which will be provided to all households in both communities. We plan to revise the report in September, with September 30, 1993 as the target date for completion of the project. The report will then become part of the division's Technical Paper Series and the harvest and use information will be entered into the division's Community Profile Database.

APPENDIX D

SAND POINT/KING COVE 1992

HH ID: _____ | START TIME: _____ | INTERVIEWER: _____

OMMUNITY: KING COVE 188 | STOP TIME: _____ | DATE: _____

CODER: _____

ID # OF PERSON RESPONDING TO SURVEY: ____ | FIELD SUPERVISOR: _____

HOUSEHOLD INFORMATION. WHO WERE MEMBERS OF THIS HOUSEHOLD BETWEEN JANUARY 1, 1992, AND DECEMBER 31, 1992?

									IN THE STUDY YEAR, DID YOU HUNT/PROCESS:							
					YEAR MOVED				GAME*		FISH**		FURBEARERS		PLANTS	
ID#	M/F	RELATION TO HH HEAD	BIRTHDATE MM/DD/YY	RESIDENCE OF PARENT WHEN BORN	TO AK	TO COMM.	MOVED FROM COMM.	ETHNICITY	HUNT? Y/N	PROCESS? Y/N	FISH? Y/N	PROCESS? Y/N	HUNT/TRAP? Y/N	PROCESS? Y/N	GATHER Y/N	PROCESS? Y/N
1 HEAD																
2 HEAD																
3																
4																
5																
6																
7																
8																
9																
10																

* Game - should include harvesting/attempting to harvest large and small game, birds, and marine mammals.

** Fish - should include harvesting/attempting to harvest marine invertebrates, eg., clam digging, etc.

KING COVE (188) HH:____ DEMOGRAPHY (0,1)

COMMERCIAL FISHING - SALMON.

DID MEMBERS OF YOUR HOUSEHOLD PARTICIPATE IN COMMERCIAL SALMON FISHING BETWEEN JAN. 1992 AND DEC. 1992? YES: _____ NO: _____

IF YES: PLEASE COMPLETE THE FOLLOWING TABLE (UNITS SHOULD INDICATE INDIVIDUALS, IF POUNDS THEN EDIBLE WEIGHT):

IF NO: DID YOU INCIDENTALLY HARVEST SALMON WHILE COMMERCIAL FISHING OTHER SPECIES?

SPECIES	COMMERCIAL FISHED? Y/N	COMMERCIAL FISHED? INCIDENTAL*	REMOVED FOR OWN USE NUMBER	GAVE AWAY TO CREW NUMBER	GAVE AWAY TO OTHERS NUMBER	UNITS (IF NOT INDIVIDUALS)	ID #'S OF FISHERS PERMIT HOLDER	ID #'S OF FISHERS CREW
CHUM SALMON (DOG) 110101						IND 1		
COHO SALMON (SILVER) 110201						IND 1		
CHINOOK SALMON (KING) 110301						IND 1		
PINK SALMON (HUMPY) 110401						IND 1		
SOCKEYE SALMON (RED) 110501						IND 1		
UNKNOWN SALMON 119901						IND 1		

* Incidental harvest - use only if household was not engaged in any commercial salmon fishing.

NOTES

KING COVE (188) HH:____

COMMERCIAL FISHING - NON-SALMON FISH

DID MEMBERS OF YOUR HOUSEHOLD PARTICIPATE IN COMMERCIAL FISHING (OTHER THAN SALMON) BETWEEN JAN. 1992 AND DEC. 1992 YES: _____ NO: _____

IF YES: PLEASE COMPLETE THE FOLLOWING TABLE (POUNDS SHOULD INDICATE EDIBLE WEIGHT):

IF NO: DID YOU INCIDENTALLY HARVEST OTHER FISH WHILE COMMERCIAL FISHING FOR SALMON?

SPECIES	COMMERCIAL FISHED? Y/N	COMMERCIAL FISHED? INCIDENTAL	REMOVED FOR OWN USE NUMBER	GAVE AWAY TO CREW NUMBER	GAVE AWAY TO OTHERS NUMBER	UNITS (IF NOT INDIVIDUALS)	ID #S OF FISHERS PERMIT HOLDER	ID #S OF FISHERS CREW
SABLEFISH (BLACK COD) 121181						IND 1		
PACIFIC (GRAY) COD (CODFISH) 121151						IND 1		
UNKNOWN FLOUNDER 121291						IND 1		
HALIBUT 121401						LBS 2		
HERRING 121501						GAL 4		
SPAWN ON KELP 121701						GAL 4		
BLACK ROCKFISH (BLACK BASS) 121911						IND 1		
RED ROCKFISH (RED SNAPPER) 121921						IND 1		
UNKNOWN SCULPIN (BULLHEAD) 122091						IND 1		
ATKA MACKEREL 122231						IND 1		
UNKNOWN GREENLING (POGIE) 122291						IND 1		
WALLEYE POLLOCK (WHITING) 122601						IND 1		
DOLLY VARDEN 124121						IND 1		
						IND 1		
						IND 1		

COMMERCIAL FISHING - MARINE INVERTEBRATES

DID MEMBERS OF YOUR HOUSEHOLD PARTICIPATE IN COMM. FISHING FOR MARINE INVERTEBRATES BETWEEN JAN. 1992 AND DEC. 1992? YES: _____ NO: _____

IF YES: PLEASE COMPLETE THE FOLLOWING TABLE (POUNDS SHOULD BE EDIBLE WEIGHT):

IF NO: DID YOU INCIDENTALLY HARVEST MARINE INVERTEBRATES WHILE COMMERCIAL FISHING FOR OTHER SPECIES?

SPECIES	COMMERCIAL FISHED? Y/N	COMMERCIAL FISHED? INCIDENTAL	REMOVED FOR OWN USE NUMBER	GAVE AWAY TO CREW NUMBER	GAVE AWAY TO OTHERS NUMBER	UNITS (IF NOT INDIVIDUALS)	ID #S OF FISHERS PERMIT HOLDER	ID #S OF FISHERS CREW
DUNGENESS CRAB 500311						IND 1		
KING CRAB 500321						IND 1		
OCTOPUS 500901						IND 1		
SHRIMP 501201						LBS 2		
TANNER CRAB (OPILIO & BAIRDI) 502091						IND 1		

NOTES:

NON-COMMERCIAL FISHING: SALMON.

DID MEMBERS OF YOUR HOUSEHOLD TRY TO HARVEST OR USE SALMON BETWEEN JAN. 1992 AND DEC. 1992? YES:_____ NO:_____
IF YES, PLEASE COMPLETE THE FOLLOWING TABLE (UNITS SHOULD INDICATE INDIVIDUALS UNLESS NOTED OTHERWISE. POUNDS SHOULD BE EDIBLE WEIGHT):

SPECIES	USED? Y/N	TRIED TO HARVEST Y/N	NUMBER HARVESTED BY: HAND SEINE #	POWER PURSE SEINE #	SUBSIST. GILL NET #	HAND LINE #	SKATE #	ICE FISH #	ROD AND REEL #	OTHER TYPE	OTHER #	UNITS	RECEIVED Y/N	GAVE AWAY Y/N
CHUM SALMON 110102												IND 1		
COHO SALMON 110202												IND 1		
CHINOOK SALMON 110302												IND 1		
PINK SALMON 110402												IND 1		
SOCKEYE SALMON 110502												IND 1		
LANDLOCKED SALMON (COHO) 110702												IND 1		
UNKNOWN SALMON 119902												IND 1		

* 'ROD & REEL' INCLUDES TROLLING IN OPEN WATER

NOTES:

NON-COMMERCIAL FISHING: NON-SALMON FINFISH.

DID MEMBERS OF YOUR HOUSEHOLD TRY TO HARVEST OR USE FISH OTHER THAN SALMON BETWEEN JAN. 1992 AND DEC. 1992? YES:_____ NO:_____
IF YES, PLEASE COMPLETE THE FOLLOWING TABLE (UNITS SHOULD INDICATE INDIVIDUALS UNLESS NOTED OTHERWISE. POUNDS SHOULD BE EDIBLE WEIGHT):

SPECIES	USED? Y/N	TRIED TO HARVEST Y/N	NUMBER HARVESTED BY: HAND SEINE #	POWER PURSE SEINE #	SUB. GILL NET #	HAND LINE OPEN H2O #	SKATE #	ICE FISH #	ROD & REEL #	OTHER TYPE	#	UNITS	RECEIVED Y/N	GAVE AWAY Y/N
SABLEFISH (BLACK COD) 121182												IND 1		
PACIFIC COD (GRAY)* 121152												IND 1		
LINGCOD 121132												IND 1		
UNKNOWN FLOUNDER 121292												IND 1		
HALIBUT 121402												LBS 2		
HERRING 121502												GAL 4		
SPAWN ON KELP 121702												GAL 4		
BLACK ROCKFISH (BLACK BASS) 121912												IND 1		
RED ROCKFISH (RED SNAPPER) 121922												IND 1		
UNKNOWN SCULPIN (BULLHEAD) 122092												IND 1		
RAINBOW SMELT (RIB SMELT) 122132												GAL 4		
UNKNOWN SMELT 122192												GAL 4		
ATKA MACKEREL 122232												IND 1		
UNKNOWN GREENLING (POGIE) 122292												IND 1		
WALLEYE POLLOCK (WHITING) 122602												IND 1		

* - INCLUDES CODFISH ROE

KING COVE (188) HH:_____

SPECIES	USED? Y/N	TRIED TO HARVEST Y/N	NUMBER HARVESTED BY: HAND SEINE #	POWER PURSE SEINE #	SUB. GILL NET #	HAND LINE OPEN H2O #	SKATE #	ICE FISH #	ROD & REEL #	OTHER TYPE	#	UNITS	RECEIVED Y/N	GAVE AWAY Y/N
DOLLY VARDEN 124122												IND 1		
RAINBOW TROUT 124242												IND 1		
BROOK TROUT												IND 1		
STEELHEAD 124242												IND 1		
EELS 122402												IND 1		
SKATES 122702												IND 1		
SOLE 121392												IND 1		
CUTTHROAT TROUT 124212												IND 1		
ARCTIC CHAR 124110														

NOTES: _____

KING COVE (188) HH:____

NON-COMMERCIAL FISHING: SHELLFISH.

DID MEMBERS OF YOUR HOUSEHOLD TRY TO HARVEST OR USE SHELLFISH BETWEEN JAN. 1992 AND DEC. 1992? YES:_____ NO:_____

IF YES, PLEASE COMPLETE THE FOLLOWING TABLE (UNITS SHOULD INDICATE INDIVIDUALS UNLESS NOTED OTHERWISE. POUNDS SHOULD BE EDIBLE WEIGHT):

SPECIES	USED? Y/N	TRIED TO HARVEST Y/N	HARVESTED NUMBER #	HARVESTED UNITS	RECEIVED Y/N	GAVE AWAY Y/N	NOTES
BUTTER CLAMS 500212				GAL 4			
RAZOR CLAMS 500522				GAL 4			
LITTLENECK CLAMS (STEAMERS) 500242				GAL 4			
PINKNECK CLAMS 500262				GAL 4			
HORSE CLAMS 500270				GAL 4			
DUNGENESS CRAB 500312				IND 1			
KING CRAB 500322				IND 1			
TANNER CRAB 502092				IND 1			
HAIR CRAB 500352				IND 1			
SCALLOPS 500602				GAL 4			
COCKLES 500402				GAL 4			
MUSSELS 500702				GAL 4			
CHITONS (RED) 500812				GAL 4			
CHITONS (BLACK) 500822				GAL 4			

NON-COMMERCIAL FISHING: SHELLFISH.

SPECIES	USED? Y/N	TRIED TO HARVEST Y/N	HARVESTED NUMBER #	HARVESTED UNITS	RECEIVED Y/N	GAVE AWAY Y/N	NOTES
OCTOPUS [illegible]				IND 1			
SEA CUCUMBER 501002				GAL 4			
SEA URCHIN (OODIK) 501102				GAL 4			
SHRIMP 501202				LBS 2			
SNAILS 501302				GAL 4			
LIMPETS (CHINA CAPS) 501402				GAL 4			

NOTES:

GAME.

DID MEMBERS OF YOUR HOUSEHOLD TRY TO HARVEST OR USE GAME BETWEEN JAN. 1992 AND DEC. 1992 YES: _____ NO: _____

IF YES, PLEASE COMPLETE THE FOLLOWING TABLE (UNITS SHOULD BE INDIVIDUALS):

SPECIES	USED? Y/N	TRIED TO HARVEST Y/N	HARVESTED FOR FOOD Number	HARVESTED FUR ONLY Number	HARVESTED TOTAL Number	UNITS	RECEIVED Y/N	GAVE AWAY Y/N	NOTES:
BROWN BEAR* 210300						IND 1			
CARIBOU 210400						IND 1			
WILD CATTLE 211200						IND 1			
BISON 210100						IND 1			
MOOSE 210800						IND 1			
ARCTIC HARE 220410						IND 1			
PORCUPINE 221100						IND 1			

* - INCLUDES FAT

NOTES: _____

KING COVE (188) HH:____

MARINE MAMMALS.

DID MEMBERS OF YOUR HOUSEHOLD TRY TO HARVEST OR USE MARINE MAMMALS BETWEEN JAN. 1992 AND DEC. 1992? YES: ___ NO: ___

IF YES, PLEASE COMPLETE THE FOLLOWING TABLE (UNITS ARE INDIVIDUALS. POUNDS SHOULD BE EDIBLE WEIGHT.):

SPECIES	USED*? Y/N	TRIED TO HARVEST? Y/N	SALVAGE? Y/N	NUMBER HARVESTED FOR FOOD #	NUMBER HARVESTED FOR HIDE ONLY #	NUMBER HARVESTED TOTAL	UNITS	RECEIVED Y/N	GAVE AWAY Y/N	HIDES NUMBER SOLD	HIDES AVERAGE PRICE
WHALE							IND				
300190							1				
HARBOR SEAL							IND				
SEE ATTACHED NMFS SURVEY							1				
300230							IND				
STELLER SEA LION							1				
SEE ATTACHED NMFS SURVEY							IND				
300600							1				
SEA OTTER											
300700											

* Use includes meat and/or oil, and/or fur.

NOTES:

FURBEARERS.

DID MEMBERS OF YOUR HOUSEHOLD TRY TO HARVEST OR USE FURBEARERS BETWEEN JAN. 1992 AND DEC. 1992? YES:_____ NO:_____

IF YES, PLEASE COMPLETE THE FOLLOWING TABLE (UNITS SHOULD INDICATE INDIVIDUALS).

SPECIES	USED? Y/N	TRIED TO HARVEST Y/N	NUMBER HARVESTED: FOOD NUMBER	NUMBER HARVESTED: FUR ONLY NUMBER	NUMBER HARVESTED: TOTAL NUMBER	UNITS	RECEIVED Y/N	GAVE AWAY Y/N	NUMBER SOLD	AVERAGE PRICE	NOTES
RED FOX 220120						IND 1					
ARCTIC FOX 220110						IND 1					
LAND OTTER 220500						IND 1					
MINK 220900						IND 1					
WEASEL/ERMINE 221200						IND 1					
WOLF 221300						IND 1					
WOLVERINE 221400						IND 1					
GROUND SQUIRREL 221520						IND 1					
						IND 1					

NOTES:

BIRDS.

DID MEMBERS OF YOUR HOUSEHOLD TRY TO HARVEST OR USE BIRDS BETWEEN JAN. 1992 AND DEC. 1992? _____ NO: _____

IF YES, PLEASE COMPLETE THE FOLLOWING TABLE (UNITS SHOULD BE INDIVIDUALS).

SPECIES	USED? Y/N	TRIED TO HARVEST Y/N	HARVESTED NUMBER	HARVESTED UNIT	RECEIVED Y/N	GAVE AWAY Y/N	NOTES
PTARMIGAN 420200				IND 1			
HARLEQUIN 441030				IND 1			
GOLDENEYE 441040				IND 1			
BUFFLEHEAD 441050				IND 1			
MERGANSER 441060				IND 1			
SCAUP 441070				IND 1			
MALLARD 441080				IND 1			
PINTAIL 441090				IND 1			
TEAL 441110				IND 1			
OLDSQUAW 441130				IND 1			
CANVASBACK 441150				IND 1			
EIDER 441180				IND 1			
SCOTER 441290				IND 1			
DUCKS, UNKNOWN 441990				IND 1			
BRANT 442010				IND 1			

BIRDS.

	USED? Y/N	TRIED TO HARVEST Y/N	HARVESTED NUMBER	HARVESTED UNIT	RECEIVED Y/N	GAVE AWAY Y/N	NOTES
EMPEROR GEESE (BEACH GEESE)				IND			
442020				1			
SNOW GEESE				IND			
442030				1			
CANADA GEESE				IND			
442110				1			
UNKNOWN GEESE				IND			
442990				1			
COMMON SNIPE				IND			
445010				1			
GULLS				IND			
446040				1			
SANDHILL CRANES				IND			
444010				1			
PUFFINS				IND			
446030				1			
SEA GULL EGGS				IND			
451020				1			
HERRING GULL EGGS				IND			
				1			
DUCK EGGS, UNKNOWN				IND			
454050				1			
PUFFIN EGGS				IND			
451040				1			
OTHER EGGS				IND			
459990				1			

NOTES

KING COVE (188) HH:____

WILD PLANTS.

DID MEMBERS OF YOUR HOUSEHOLD TRY TO HARVEST OR USE WILD PLANTS (INCLUDING FIREWOOD) BETWEEN JAN. 1992 AND DEC. 1992? YES:___ NO:___

IF YES, PLEASE COMPLETE THE FOLLOWING TABLE (POUNDS SHOULD INDICATE EDIBLE WEIGHT).

SPECIES	USED? Y/N	TRIED TO HARVEST Y/N	AMOUNT HARVESTED NUMBER	AMOUNT HARVESTED UNIT	RECEIVED Y/N	GAVE AWAY Y/N	NOTES
BERRIES 610000				GAL 4			
PLANTS/GREENS/MUSHROOMS 620000				GAL 4			
SEAWEED/KELP (FOOD) 630000				GAL 4			
WOOD 640000				CORDS 6			

NOTES

EMPLOYMENT.

PLEASE INDICATE THE FOLLOWING INFORMATION FOR ALL JOBS HELD BY THE EMPLOYED PERMANENT HOUSEHOLD MEMBERS 16 OR OLDER LISTED ON PAGE 1 BETWEEN JAN. 1992 AND DEC. 1992.
FOR THOSE NOT EMPLOYED, PLEASE SPECIFY RETIRED, UNEMPLOYED, DISABLED, STUDENT, OR HOMEMAKER.

ID#	JOB #	JOB TITLE	SOC	EMPLOYER CATEGORY	SIC	TYPE*	LOCATION	WHICH MONTHS WORKED IN 1992	HRS/DAY	DAYS/ WEEK	WORK ** SCHEDULE	PERSONAL GROSS INCOME***
								J F MA M J J A S O N D				
								J F MA M J J A S O N D				
								J F MA M J J A S O N D				
								J F MA M J J A S O N D				
								J F MA M J J A S O N D				
								J F MA M J J A S O N D				
								J F MA M J J A S O N D				
								J F MA M J J A S O N D				
								J F MA M J J A S O N D				
								J F MA M J J A S O N D				

* TYPE: (1) NATIVE PROFIT or (2) NATIVE NON-PROFIT; OTHERWISE LEAVE BLANK.
** WORK SCHEDULE = (1) FULLTIME (35+ HOURS/WK) (2) PARTTIME (<35 HOURS/WEEK) (3) SHIFT (2 WEEKS ON/2 OFF, 1 WEEK ON/1 OFF, ETC.) (4) COMMERCIAL FISHING (5) SHIFT - PART TIME
*** COMMERCIAL FISHING AND BUSINESS OWNERS - ADJUSTED GROSS AFTER EXPENSES..

OTHER INCOME.

ANSWER ALL THAT APPLY. INDICATE ANNUAL AMOUNT FOR THE PERIOD FROM JAN. 1992 THROUGH DEC. 1992.
OKAY TO LEAVE BLANK IF NOT APPLICABLE.

AK PERMANENT FUND: NUMBER:
* ($916 EA) (32) $
SOCIAL SECURITY (07) $
SUPP. SECURITY INCOME (10) $
NATIVE CORP. DIVIDEND (13) $

AID TO FAMILIES WITH
DEPENDENT CHILDREN (02) $
PENSION/RETIREMENT (05) $
WORK COMP/INSURANCE (08) $
FOOD STAMPS (11) $

DIVIDENDS/INTEREST (14) $
ADULT PUBLIC ASSISTANCE (03) $
LONGEVITY BONUS (06) $
($250/MONTH)
ENERGY ASSISTANCE (09) $
UNEMPLOYMENT (12) $
OTHER: _____ (____) $

[AK PERMANENT FUND 1992: 1 - $916 2 - $1,832 3 - $2,748 4 - $3,664 5 - $4,580 6 - $5,496 7 - $6,412 8 - $7,328 9 - $8,244 10 - $9,160]

NOTES:

DO YOU HAVE ANY OTHER QU IO , COMMENTS,

BE SURE TO FILL IN THE STOP TIME ON THE FIRST PAGE!!!!

INTERVIEW SUMMARY:

ARE ANY MEMBERS OF YOUR HOUSEHOLD ALASKA NATIVES?

YES: _____ NO: _____ THANK YOU FOR YOUR COOPERATION.

This survey is only relevant to Native households.

How many people lived in your household in 1992? _____

Were you living in the community six months or more in 1992? Yes: _____ If no, where did you live? _____

HARBOR SEAL

DID MEMBERS OF YOUR HOUSEHOLD TRY TO HARVEST OR USE HARBOR SEALS IN 1992?

_____ **YES, PLEASE COMPLETE THE FOLLOWING QUESTIONS:**

_____ **NO, TURN OVER AND COMPLETE SEA LION SURVEY.**

During 1992, did your household:

	Yes	No
1. Use harbor seals (meat, hides, or oil)?		
2. Attempt to harvest harbor seals?		
3. Harvest (kill) harbor seals?		
4. Receive harbor seals from other households or communities?		
5. Give away harbor seals to other households or communities?		

IF YES TO QUESTION 2 OR 3 ABOVE, GO TO QUESTION 6. IF NO, TURN OVER AND COMPLETE SEA LION SURVEY.

6. How many harbor seals did your household kill? [Enter in total box.] ↓

7. In which months did you kill them? How many in (January, etc.)? [Enter the numbers by month.]

~~HARBOR SEAL~~	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	TOTAL
TOTAL														

8. Of the harbor seal you killed in (January, etc.), how many were male or female, and how many were pups, juveniles (young, pre-adults), or adults? [Enter the numbers by month.]

HARBOR SEAL (Detail)		JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	TOTAL
ADULT	MALE														
	FEMALE														
	UNKNOWN														
JUVENILE	MALE														
	FEMALE														
	UNKNOWN														
PUP	MALE														
	FEMALE														
	UNKNOWN														
UNKNOWN AGE	MALE														
	FEMALE														
	UNKNOWN														

During the 1992,

9. How many harbor seal were struck and lost by your household? [Enter number in total box.] ↓

10. In which months were they struck and lost? [Enter numbers by month.]

~~HARBOR SEAL~~ ~~STRUCK AND LOST~~	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	TOTAL

Community: _____ (_____) HH: _____ H R MARINE MAMMAL SURVEY 1992

CONTINUE TO BACK SIDE

INTERVIEWER: _____ DATE: _____

SEA LIONS.

DID MEMBERS OF YOUR HOUSEHOLD TRY TO HARVEST OR USE SEA LIONS IN 1992?

_____ **IF YES, PLEASE COMPLETE THE FOLLOWING QUESTIONS:** _____ **IF NO, Thank you for your cooperation.**

During 1992, did your household:

	Yes	No
1. Use sea lions (meat, hides, or oil)?		
2. Attempt to harvest sea lions?		
3. Harvest (kill) sea lions?		
4. Receive sea lions from other households or communities?		
5. Give away sea lions to other households or communities?		

IF YES TO QUESTION 2 OR 3 ABOVE, GO TO QUESTION 6. IF NO, THIS COMPLETES THE SURVEY. THANK YOU FOR YOUR COOPERATION.

6. How many sea lions did your household kill? [Enter in total box.] _____

7. In which months did you kill them? How many in (January, etc.)? [Enter the numbers by month.]

SEA LIONS	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	TOTAL
TOTAL														

8. Of the sea lions you killed in (January, etc.), how many were male or female, and how many were pups, juveniles (young, pre-adults), or adults? [Enter the numbers by month.]

SEA LIONS (Detail)		JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	TOTAL
ADULT	MALE														
	FEMALE														
	UNKNOWN														
JUVENILE	MALE														
	FEMALE														
	UNKNOWN														
PUP	MALE														
	FEMALE														
	UNKNOWN														
UNKNOWN AGE	MALE														
	FEMALE														
	UNKNOWN														

During the 1992,

9. How many sea lions were struck and lost by your household? [Enter number in total box.] _____

10. In which months were they struck and lost? [Enter numbers by month.]

SEA LIONS	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	UNKNOWN	TOTAL
STRUCK AND LOST														

THANK YOU FOR YOUR COOPERATION.

Alaska Department of Fish Gam Division of Subsistence, 333 Raspberry Rd., Anchorage, AK 99518-1599 (907) 267-2353

Appendix E. Conversion Factors for the Communities of King Cove and Sand Point, 1992

Resource	Units	ConversionFactor (usable pounds)	Notes
Chum Salmon	numbers	4.96	Round weight (6.7) x 0.74
Coho Salmon	numbers	4.8	Round weight (6.4) x 0.75
Chinook Salmon	numbers	11.36	Round weight (15.6) x 0.72
Pink Salmon	numbers	2.41	Round weight (3.3) x 0.73
Sockeye Salmon	numbers	4.22	Round weight (5.7) x 0.74
Landlocked Salmon	numbers	1.5	
Unknown Salmon	numbers	4.14	Average of known salmon
Pike	numbers	2.8	
Pacific Cod (Gray)	numbers	3.2	
Burbot	numbers	1	
Sablefish (Black Cod)	numbers	3.1	
Atka Mackerel	numbers	0.5	
Lingcod	numbers	4	
Unknown Greenling	numbers	1	
Starry Flounder	numbers	3	
Unknown Flounder	numbers	3	
Sole	numbers	1	
Yellowfin Sole	numbers	1	
Sole, Unknown	numbers	1	
Halibut	numbers	16.2	
Herring	gallons	6	
Spawn on Kelp	gallons	7	
Black Rockfish (black bass)	numbers	1.5	
Red Rockfish	numbers	4	
Yellow Eye Rockfish	numbers	4	
Unknown Rockfish	numbers	2.83	Average of known rockfish
Sea Perch	numbers	1	
Unknown Sculpin	numbers	0.5	
Capelin (Grunion)	gallons	6	
Eel	numbers	0.5	
Walleye Pollock	numbers	1.4	
Skates	numbers	5	
Sheefish	numbers	5.5	
Whitefish	numbers	1.75	
Unknown Whitefish	numbers	1.75	
Dolly Varden	numbers	1.4	For rod and reel caught; if seined, 0.3 / fish
Brook Trout	numbers	1.4	
Unknown Char	numbers	1.4	For rod and reel caught; if seined, 0.3 / fish
Cutthroat Trout	numbers	1.4	
Rainbow Trout	numbers	1.4	
Steelhead	numbers	1.4	
Bison	numbers	450	
Caribou	numbers	150	
Moose	numbers	540	
Wild Cow	numbers	350	
Arctic Hare	numbers	5.6	
Snowshoe Hare	numbers	2	
Porcupine	numbers	a	
Unknown Whale	pounds	1	
Harbor Seal	numbers	56	
Sea Otter	numbers	19.5	
Ptarmigan	numbers	0.7	
(Eider, Unknown	numbers	1.6	

Appendix E. Conversion Factors for the Communities of Ring Cove and Sand Point, 1992

Resource	Units	Conversion Factor (usable pounds)	Notes
Harlequin	numbers	0.5	
Goldeneye	numbers	0.8	
Bufflehead	numbers	0.4	
Merganser	numbers	0.6	
Scaup	numbers	0.9	
Mallard	numbers	1	
Pintail	numbers	0.8	
Teal	numbers	0.3	
Gadwall	numbers	0.8	
Oldsquaw	numbers	0.8	
Canvasback	numbers	1.1	
Ducks, Unknown	numbers	0.68	Average of known ducks
Brant	numbers	1.2	
Emperor Geese	numbers	2.5	
Snow Geese	numbers	2.3	
Canada Geese, Unknown	numbers	1.2	
Geese, Unknown	numbers	1.37	Average of known geese
Sandhill Crane	numbers	a.4	
Common Snipe	numbers	0.1	
Gulls	numbers	1	
Gull Eggs	numbers	0.3	
Tern Eggs	numbers	0.05	
Snipe Eggs	numbers	0.05	
Duck Eggs, Unknown	numbers	0.15	
Unknown Eggs	numbers	0.29	Average of known eggs
Butter Clams	gallons	3	
Razor Clams	gallons	3	
Pacific Littleneck Clams (Steamers)	gallons	3	
Pinkneck Clams	gallons	3	
Cockles	gallons	3	
Scallops	numbers	0.06	
Mussels	gallons	1.5	
Dungeness Crab	numbers	0.7	
King Crab	numbers	2.3	
Tanner Crab	numbers	1.6	
Hair Crab	numbers	0.7	
Chitons (large)	gallons	3	
Chitons (small)	gallons	4	
octopus	numbers	4	
Sea Cucumber	gallons	2	
Sea Urchin	gallons	0.5	
Shrimp	gallons	2	
Snails	gallons	1.5	
Limpets	gallons	1.5	
Berries	gallons	4	
Plants/Greens/Mushrooms	gallons	4	
Seaweed/Kelp	aallons	4	

Source: Files, Divsion of Subsistence, ADFLG, Anchorage, unless otherwise noted. Salmon round weights are averages from the 1992 commercial fishery of the South Peninsula area (J. McCullough, ADFLG,. Division of Commercial Fisheries, Sand Point, personal communication, 8/93). Factors for converting fish round weights to usable weights (usually dressed, head off) are from Crapo et al. 1988.

Appendix F
Standard Industrial Codes (Employer Type)

SIC	Sector Industry
	AGRICULTURE, FORESTRY & FISHING
1	Agricultural Production - Crops
2	Agricultural Production - Livestock
7	Agricultural Services
8	Forestry
9	Fishing, Hunting & Trapping
	MINING
10	Metal Mining
12	Coal Mining
13	Oil 8 Gas Extraction
14	Nonmetallic Minerals exc. Fuels
	CONSTRUCTION
1s	General Building Contactors
16	Heavy Construction Contractors, exc. Buildings
17	Special Trade Contractors
	MANUFACTURING
20	Food & Kindred Products
22	Textile Mill Products
23	Apparel 8 Other Textile Products
24	Lumber & Wood Products
2s	Furniture & Fixtures
26	Paper & Allied Products
27	Printing & Publishing
28	Chemicals & Allied Products
29	Petroleum & Coal Products
30	Rubber & Misc. Plastics Products
31	Leather 8 Leather Products
32	Stone, Clay & Glass Products
33	Primary Metal Industries
34	Fabricated Metal Products
3s	Industrial Machinery & Equipment
36	Electronic & Other Electric Equipment
37	Transportation Equipment
38	Instruments & Related Products
39	Miscellaneous Manufacturing Industries
	TRANSPORATION, COMMUNICATION & UTILITIES
40	Railroad Transportation
41	Local & Interurban Passenger Transit
42	Trucking & Warehousing
44	Water Transportation
4s	Transportation by Air
46	Pipelines, exc. Natural Gas
47	Transportation Services
48	Communication

Appendix F
Standard Industrial Codes (Employer Type)

49	Electric, Gas & Sanitary Services
	WHOLESALE TRADE
50	Wholesale Trade - Durable Goods
51	Wholesale Trade - Nondurable Goods
	RETAIL TRADE
52	Building Materials & Garden Supplies
53	General Merchandise Stores
54	Food Stores
55	Automotive Dealers & Service Stations
56	Apparel & Accessory Stores
57	Furniture & Homefurnishings Stores
56	Eating & Drinking Places
59	Miscellaneous Retail
	FINANCE, INSURANCE & REAL ESTATE
60	Depository Institutions
61	Nondepositor-y Institutions
62	Security 8 Commodity Brokers
63	Insurance Carriers
64	Insurance Agents, Brokers & Service
65	Real Estate
67	Holding & Other Investment Offices
	SERVICES
70	Hotels & Other Lodging
72	Personal Services
73	Business Services
75	Auto Repair, Services & Parking
76	Miscellaneous Repair Services
78	Motion Pictures
79	Amusement & Recreation Services
80	Health Services
81	Legal Services
82	Education Services
83	Social Services
84	Museums, Botanical, Zoological Gardens
86	Membership Organizations
87	Engineering & Management Services
88	Private Households
89	Miscellaneous Services
300	FEDERAL GOVERNMENT
400	STATE GOVERNMENT
	LOCAL GOVERNMENT
500	Administration
550	Education