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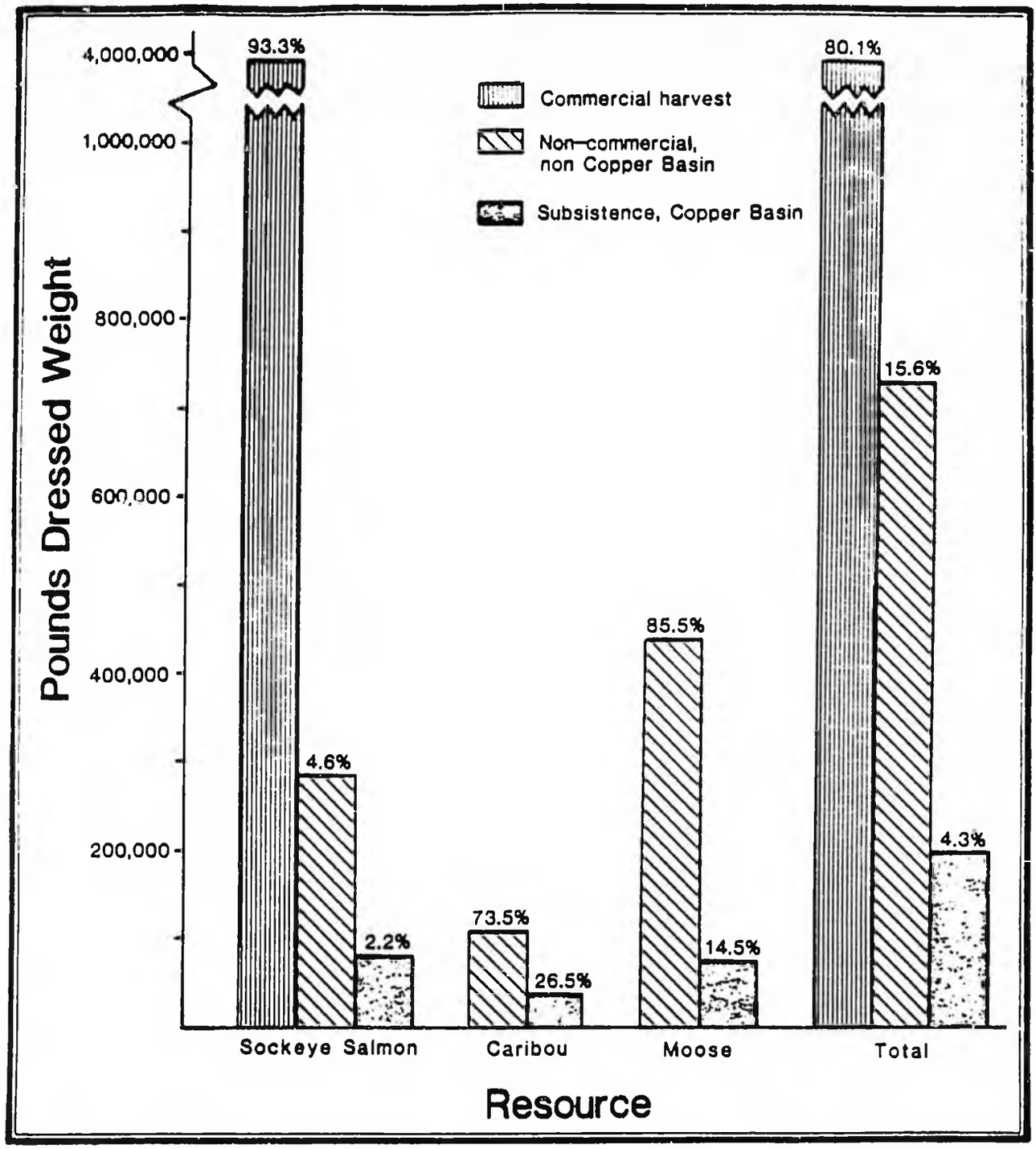

Fig. 13. Harvests of Copper Basin Resources by Commercial and Non-commercial Users, 1984.

the availability of this resource to subsistence fishermen.

Nevertheless, Copper basin residents, especially the Ahtna population, have maintained a distinctive subsistence fishwheel fishery. They use seasonal camps, traditional sites and preservation methods, and a kin-based system of production and distribution. Sockeye salmon continue to play a major economic and sociocultural role in the life of many Copper basin communities.

As demonstrated above, the availability of game resources has been especially impacted by non-basin hunting pressures. High demands for caribou and moose have led to limited hunting opportunities and shortened seasons. In the 1980s, state and federal laws have been used to change regulations to provide more opportunities to Copper basin residents. Consequently, the percentage of caribou and moose taken by local residents has increased slightly since 1981. However, most of this harvest still leaves the basin, and competition remains high.

In conclusion, the case of the Copper basin demonstrates the impacts that regional population growth and the development of transportation systems may exert on hunting and fishing economies in northern North America. The paper has also shown that despite reduced harvests, hunting and fishing remain important, both economically and culturally, to Copper basin communities. This is evidenced by continued use of fish and wildlife by most basin households, and by the efforts by Copper basin residents to use the legal system to change regulations which inhibit their traditional uses of fish and game resources.

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by Congress by the Alaska Native Claims Settlement Act to protect and provide for continued subsistence uses by Alaska Natives and other rural residents, and is based upon the constitutional authority of Congress over Native affairs and its authority under the Property Clause and the Commerce Clause. The committee also has determined that the protection of the subsistence way of life and the fish and wildlife populations upon which that lifestyle depends necessitates the establishment of an administrative structure which enables rural residents with personal knowledge of local conditions and requirements to have a meaningful role in the regulations and management of fish and wildlife and subsistence uses on the public lands.

Section 803: Policy

Based upon the findings in the preceding section, three basic policies have been established which shall guide the activities of the Federal government and the State on the public lands: that the utilization of the public lands is to cause the least adverse impact possible upon rural residents who depend upon subsistence uses for their economic and physical well-being and cultural vitality; the nonwasteful subsistence uses of fish, wildlife and other renewable resources, e.g., berries, timber, grasses, shall be the first priority consumptive use of such resources on the public lands, and when or where it is necessary to restrict the taking of such resources, taking for nonwasteful subsistence uses shall be given preference over other consumptive uses; and that the successful management of subsistence resources and activities requires long term cooperation between adjacent landowners and managers, including appropriate State and Federal agencies, Native corporations, and other nations.

Section 803: Definition

The committee has adopted a definition of "subsistence uses" based on the definition of that term set forth in section 15, ch. 151 SLA 1978 (A.S. 16.05.940) of the Alaska Statutes. In turn, the State definition was modeled on section 703 of the House bill." "Subsistence uses" are defined as the customary and traditional use in Alaska of fish, wildlife and other renewable resources for direct personal or family consumption, for the making and selling of handicraft articles from the nonedible by-products of fish and wildlife taken for direct personal or family consumption, and for customary trade, barter, or sharing for personal or family consumption. The definition of "family" recognizes extended family patterns common to all of Alaska's Native cultures. "Family" includes any person living in a household on a permanent basis as well as those persons living outside the household who are related by blood, marriage or adoption (legal or equitable). "Barter" means the exchange or trade of fish or wildlife, or their parts, for other fish or wildlife, or their parts, or for other food or nonedible items other than money if the exchange is of a limited and noncommercial nature. This definition of "barter" recognizes that in many rural villages the subsistence diet must be supplemented with other foods which may be available from the village store and other sources, and that the limited noncommercial barter of subsistence resources for nonedible items is an essential element of the rural subsistence lifestyle. The definition of "subsistence uses" is intended to include all

Alaska residents who utilize renewable resources for direct personal or family consumption.

However, the phrase "customary and traditional" is intended to place particular emphasis on the protection and continuation of the taking of fish, wildlife, and other renewable resources in areas of, and by persons (both Native and non-Native) resident in, areas of Alaska in which such uses have played a long established and important role in the economy and culture of the community and in which such uses incorporate beliefs and customs which have been handed down by word of mouth or example from generation to generation. The factors of local residency, economic dependence, and availability of alternative resources have been included in section 804 rather than in the definition. Although a truly comprehensive definition of "subsistence uses" must include a mix of those factors, the committee has determined that they should be incorporated through appropriate action by the State rulemaking authority in conjunction with the recommendations of the regional councils established pursuant to section 805 to implement the subsistence preference set forth in section 804. Sections 803–805 are intended to establish a dynamic process for the regulation of subsistence resources and uses which will enable rural people to participate in the decisionmaking process of the State rulemaking authority in the inclusion of the local residency, economic dependence, and availability of alternative resources factors into the definition of "subsistence uses" on a case-by-case basis to meet the needs of a particular management situation in a particular area.

Section 804: Preference for Subsistence Uses

This section requires both the State and the Federal government to accord nonwasteful subsistence uses a preference over the taking of such resources for other purposes on the public lands. Although the committee recognizes that only rarely will the failure to adequately provide for the preference result in the threat of literal starvation, in many instances the failure to obtain fish to dry for winter use or fresh meat to supplement other foods can engender considerable individual, community and cultural trauma and hardship. Consequently, this section envisions that governmental action affecting subsistence resources and uses shall be undertaken in a manner which adequately provides for the preference on an ongoing basis and not only when critical allocation decisions may be necessary because a particular subsistence resource may be threatened with depletion, so long as such action is conducted in a manner which is consistent with the protection of the continued viability of fish and wildlife populations which may be affected by such action. If a particular fish or wildlife population (e.g. salmon, moose or caribou) in a particular area is sufficient to sustain a harvest by all persons engaged in subsistence and other uses, the implementation of restrictions on taking set forth in this section need not be imposed by the State rulemaking authority. However, if the continued viability of a particular population or the ability of rural subsistence-dependent residents to satisfy their subsistence needs would be threatened by a harvest by all such persons, the State rulemaking authority, in conjunction with the recommendations of the regional council representing the affected area, is required by this section

...regulations concerning such subjects as seasons and means of taking must be adopted which have the least adverse impact upon rural residents engaged in subsistence uses of the population.

If the population cannot safely sustain a harvest by all user groups, then the State must adopt regulations establishing subsistence uses as the priority uses of such population. All genuine subsistence uses must be met before the State may permit taking of the population for any type of non-subsistence uses.

For example, if residents of the villages in a particular area normally harvest five hundred moose for subsistence uses, and fly-in hunters from outside the local area normally harvest five hundred moose from the same herd, but the biologists determine that the herd can safely sustain a total harvest of only six hundred moose, the subsistence priority in section 804 requires that only one hundred moose be made available for harvest by persons other than residents of the local area engaged in subsistence uses. This result could be achieved by opening the moose season to the residents of the game management units in which the moose herd is located for hunting without a permit to obtain moose for subsistence uses, and then allocating access to the remaining one hundred moose to non-residents of the area by lottery.

If in the previous example the moose herd is only capable of sustaining a total harvest of four hundred moose, then not only must no hunting of the herd be permitted by persons not resident of the local area, but the State must also establish priorities for access to the herd by the rural residents of the local area as well, based upon the three criteria set forth in the subsistence preference: local residency, availability of alternative resources, and dependence upon the resource. Only at this stage of the regulatory process, when dependence upon the resource as the mainstay of livelihood for the first time becomes a permissible allocation criteria, does the income of individual rural residents become a permissible factor in the allocation process. The availability of alternative resources criteria is intended to focus on alternative subsistence or other food resources, not money. For example, if caribou are reduced are some villages better able to withstand the hardship than others because they have more access to seals or moose?

As long ago as August of 1977 Governor Hammond testified to the importance to resource protection that one management system, and one manager, be in control of fish and wildlife resources throughout their range. This is particularly important with fishery resources. Consequently, it has always been our intent to apply the subsistence preference to all fish stocks in the waters of Alaska. This result enables the State of Alaska to continue its lead in fisheries management without unnecessary disruption. It also should be stressed that if for any reason the State should ever repeal its subsistence statute, this preemptive section would continue the subsistence preference for fish throughout the waters of Alaska. For the purposes of section 804, the reference to "fish populations" is intended to mean any species, sub-species, race, geographical grouping, population, run, or other category of fish characterized by similar morphological, meristic, or life history traits, or which is ...

...a "judicial enforcement" approach to proceedings by the Secretary of the Interior or Secretary of Agriculture, depending upon which lands are involved, to assure the State's implementation of the subsistence preference. In that regard I would point out that it is not my understanding that this section in any way compromises the administrative authorities of the Secretaries, or their legal responsibilities, to protect subsistence uses on the public lands and in the waters of Alaska, otherwise, the section may be unconstitutional.

The judicial enforcement approach was developed by the Senate Energy and Natural Resources Committee during the 95th Congress. Senators Abourezk, Ford, and Durkin were three of the members of that committee who were particularly involved in the development of the Senate subsistence title. Their supplemental views detailing the responsibility and authority of the Secretary to exercise his administrative authority over the public lands and the waters of Alaska to protect subsistence uses in appropriate instances are the basis of my interpretation of the effect of section 806 of the Senate bill. Since section 806 is intended to be the remedy of only the local committees and regional councils, obviously rural residents engaged in subsistence uses and other persons who are directly affected by State implementation of the subsistence preference are entitled to have the Secretary take appropriate action if the State fails to do so, and, consequently, will be entitled to mandamus such action from the appropriate Secretary if he should fail to fulfill his duty to manage the public lands and the waters of Alaska in a manner consistent with the management standards established by the Congress in this legislation.

Lastly, Mr. Speaker, I would like to briefly discuss the manner in which subsistence hunting by local residents is to be managed within new national parks and national park monuments and within the additions to those national parks and national park system monuments which were established prior to December 1, 1978. As you know, hunting of any kind generally is not permitted within national parks in the United States. However, during the development of the Department of the Interior's legislative proposal to the Congress, it became obvious to the Secretary of the Interior and to the National Park Service that much of the acreage within the large parks and monuments desired by the National Park Service included acreage which customarily and traditionally has been used, and is now being used, by Alaska Natives and other rural residents for subsistence hunting. Application of the traditional no hunting policy to these proposed areas would result either in significant disruption of subsistence hunting activities and resultant community hardship, or would require the cutting back of the boundaries of the proposed park units to accommodate subsistence activities.

In recognition of this uniquely Alaskan situation, the Department of the Interior represented to the residents of the affected villages and to Native village and regional corporations representing the same residents, that subsistence hunting within all of the new parks and within the additions to existing parks would be statutorily guaranteed. And it was as a result of this agreement, Mr. Speaker, that most local communities and village and regional corporations have supported, or at least not opposed, the creation of new parks and monuments within their regions.

Mr. Speaker, consistent with their promise ...

...that subsistence hunting by local residents be continued within all parks and monuments established or expanded by this legislation, other than the Kenai Fjords National Park. Consistent with this recommendation, the Antiquities Act proclamations signed by President Carter on December 1, 1979 not only guaranteed the continuation of subsistence hunting by local residents, but specifically recognize subsistence hunting as an important value of each monument, other than the Kenai Fjords.

Consistent with the Secretary's recommendation and the language of the monument proclamations, both the version of H.R. 39 passed by the House in 1978 and the Udall-Anderson bill passed last year establish subsistence uses by local residents, including subsistence hunting, as a purpose of each new park and park monument, other than the Kenai Fjords, and of the additions to parks and monuments established prior to December 1, 1978.

The Alaska Lands bill passed by the Senate (and which we today concur in) statutorily guarantees that subsistence hunting by local residents will be permitted within all of the same areas as are open to such uses in the Udall-Anderson bill, but regrettably does not designate subsistence uses as a purpose of each new area and addition. However, Mr. Speaker, I would note that sections 201 and 202 indicate that the purposes of each new park and addition set forth in the legislation are not intended to be all inclusive. I would strongly suggest that in establishing regulations for the management of each of these areas, the Secretary of the Interior designate subsistence uses by local residents as a specific purpose of each park and park preserve. To do any less would be inconsistent with the understanding representations which the Secretary, the National Park Service, and the House Interior Committee, have made to the Alaska Native residents of areas within or adjacent to these new areas.

It also should be noted Mr. Speaker, that with respect to several of the new parks, the Senate bill intends to permit subsistence hunting only within certain subsistence zones within the park. I have reservations about this concept because I am uncertain if data presently exists which is definitive enough to enable the National Park Service to say with any degree of confidence that subsistence hunting has or has not traditionally taken place within a certain area. Consequently, if the subsistence zone concept is to be applied to any park areas, fundamental fairness seems to require that the designation and boundaries of those zones be made by the subsistence resource commissions established by section 808, rather than by park planners and researchers, and that if there is any doubt as to whether subsistence hunting should be permitted within a particular area, that the decision be made on the basis that subsistence hunting should be permitted rather than restricted. Finally with respect to this issue Mr. Speaker I would like to assure the Alaska Native people that the House Interior Committee intends to closely follow the implementation of the subsistence hunting program in the parks over the years ahead to make sure that our representations to the Alaska Native people on this critical issue do not take their place in the litany of other forgotten or broken promises made by the Federal government to Indian people when convenient to accomplish the goals of those with a different agenda.

Mr. Speaker, this discussion has touched upon only a few of the many important concepts embodied in the subsistence management system established by the Senate bill.

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KODIAK ISLAND AREA LOCAL FISH AND GAME RESOURCE GUIDE

PREPARED BY:

THE KODIAK AREA NATIVE ASSOCIATION

WITH ASSISTANCE FROM THE DEPARTMENT OF FISH AND GAME DIVISION OF SUBSISTENCE

DECEMBER 1983

ACKNOWLEDGEMENTS

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We also thank all the residents of Kodiak Island communities who generously gave of their time and knowledge while participating in the research upon which the Guide is based.

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I. INTRODUCTION

The purpose of this Guide is to provide an overview of contemporary patterns of non-commercial harvest and use of fish and game resources by the inhabitants of the Kodiak Island area. In addition, the Guide presents certain issues and concerns of the residents of Kodiak rural and urban communities about the management of wildlife for future use.

The data contained in this Guide are the product of a six (6) month research project involving the most comprehensive resource use survey ever conducted in the Kodiak Island area. Harvest and use information on wild fish, game, and plant resources was collected in house to house surveys, conducted in all six (6) rural communities, the City of Kodiak and road-connected residential areas, and the U.S. Coast Guard Base.

KANA sincerely hopes that the Guide will be used as a tool by those involved with the management of wildlife resources and development of policies concerning their use. It is important to note that the Guide does not present interpretation or extensive analysis of the research data. The purpose of the report is simply to present some of the results of the survey and other background data. The degree or level of interpretation is left to each reader's discretion.

All of the information contained in this Guide will be incorporated into the Southwest Alaska Regional Habitat Guide currently being prepared by the Alaska Department of Fish and Game. Further information about wildlife harvests and uses for the area will be found in that document, which will be completed in 1984.

II. PHYSIOGRAPHY AND CLIMATE

The physiographic areas included in the region are: Kodiak Island, Afognak Island, the Barren Islands, and the Trinity Islands (Figure 1). The Kodiak Island group, the Barren Islands, and the Trinity Islands are formed by the Kodiak Mountains, which are the structural continuation of the Kenai-Chugach Mountains. The Kodiak Mountains retain some glaciers. Summit altitudes are between 2,000 and 4,000 feet. Kodiak Island has a rugged northeast-trending divide, having horns and aretes from which broadsmooth ridges extend northeasterly grain-normal to the drainage.

The coastline is extremely irregular, having many fjords and islands. The northern part of Afognak Island is a hilly lowland, and the western part of Kodiak Island has many broad valleys. The islands of the Kodiak group are drained mostly by swift, clear streams that are less than ten miles long. Two rivers, each about twenty-five miles long, drain much of southwestern Kodiak Island.

There are several lakes more than a mile long in the southwestern part of Kodiak Island and on Afognak Island. Small ponds are scattered over the glacially sculptured topography. The glaciated valleys heading in the small divide have chains of lakes.

Two natural catastrophies have hit this region during historic times: the eruption of Mt. Katmai in 1912 and the great earthquake of 1964. The Katmai eruption deposited volcanic ash eighteen inches deep over the region, and its effects on the people, flora, and fauna were not overcome for several years. The 1964 earthquake generated tsunami waves that caused great devastation to the fishing fleet, shore facilities, and communities throughout the region. Recovery is now essentially complete.

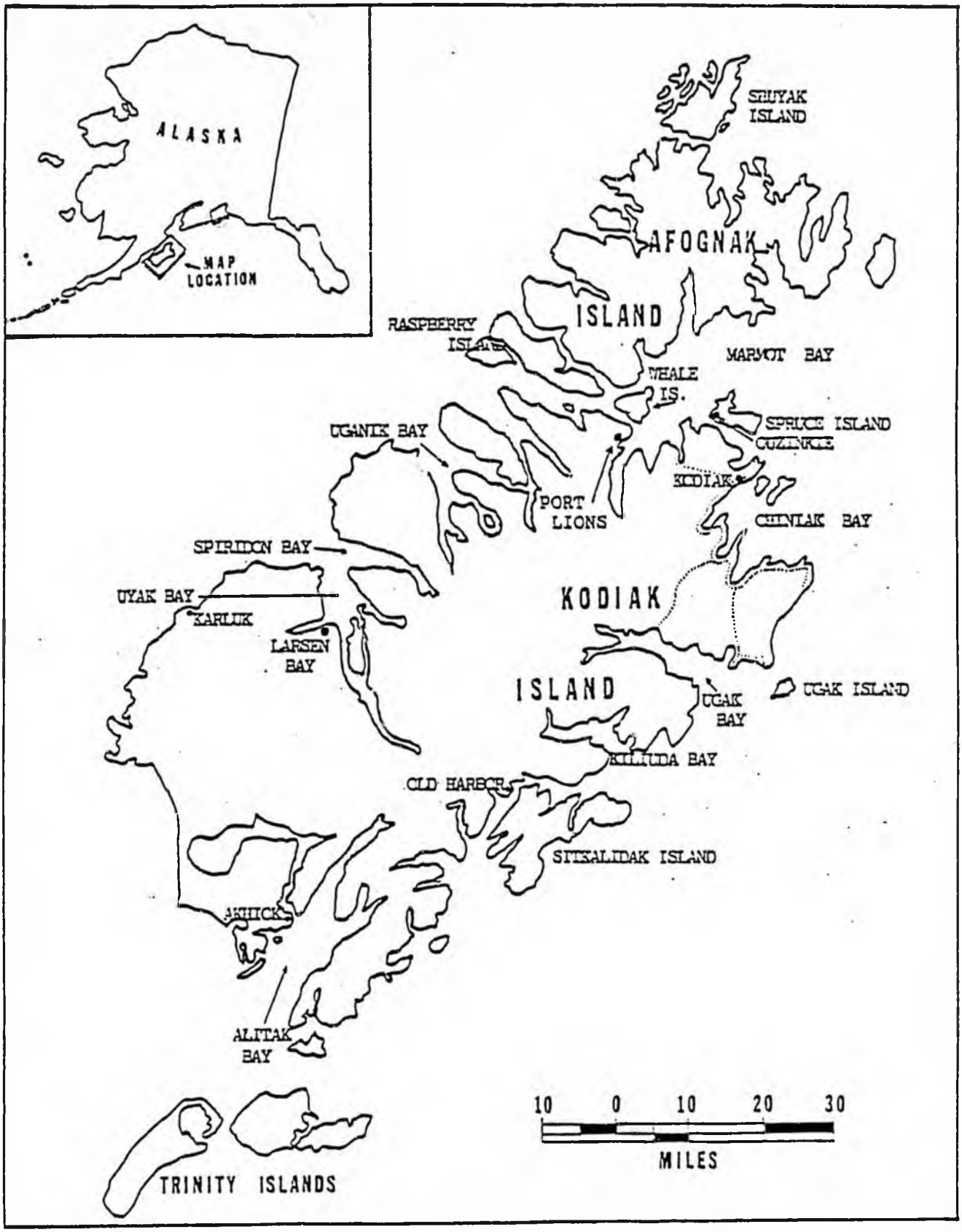

Figure 1. Kodiak Island Region

The northern part of Kodiak Island, as well as Afognak Island, Shuyak Island, and Spruce Island support spruce forests, but most other islands are treeless. Willow and alder are common species in those parts of the region that support woody vegetation. Grass and herbaceous plants dominate most of the region lying below the alpine zone.

The Kodiak region has a maritime climate which is usually considered favorable for agriculture. Annual precipitation averages fifty to sixty inches. Temperature records at Kodiak show that the months of December through March average 31° F and August averages 54.8° F. The highest recorded temperature is 86° F, and -12° F is the record low.

III. REGIONAL HISTORY

The term "Koniag" has been applied to the indigenous inhabitants of the Kodiak Archipelago since the earliest times known to Europeans. The Koniags were, and are, a distinct ethnic group, speaking a language related to the Central Yup'ik language of Bristol Bay and the Yukon-Kuskokwim Delta.

The Russians began operating in the Aleutians in 1741 and by 1784 had reached Kodiak Island under Gregorii Shelikov. The Koniags numbered over 8,000 when the Russian occupation began, but the Russians brought war, epidemic disease, and conquest. In addition, in the last ten years of the eighteenth century, a series of earthquakes and tidal waves decimated many of the Native villages.

The Russians quickly turned Kodiak Island into the center of trade and commerce in Alaska. The Russian American Company established a monopoly over the whole area, and by 1802 had harvested over 18,000 sea otter pelts. The American whaling fleet began operating in the area in 1835 and remained active until 1869. In the late 1850s the Russian adventure in the New World had become unprofitable and politically impractical, and in 1867 Alaska was purchased by the United States.

Kodiak prospered from 1799 until the end of the nineteenth century, but whaling declined after the 1860s and the sea otter became practically extinct around 1890. In 1900, the Island turned to commercial salmon fishing, with several canneries being established in Karluk Lagoon. In 1906, the U.S. Government established a cattle herd on the Island, but in 1912 the eruption of Mt. Katmai destroyed this industry along with the salmon spawning streams. Finally, in the 1920s, salmon and halibut fisheries

again regained importance. The U.S. Government initiated a massive military buildup in the area during World War II. The population of the Island increased tremendously during this period.

In 1949, the king crab industry was started and has been an important element of the economic base of the region to the present time.

During the period of recorded history, the number of settlements on Kodiak has fluctuated widely, being variously reported as forty-five (45) and fifty-seven (57) at different times. At present, there are seven (7) occupied, legally designated communities on the Island, including the City of Kodiak.

IV. CONTEMPORARY SOCIOECONOMIC SETTING

KODIAK ISLAND

Kodiak Island is the largest island in Alaska, being about one hundred and ten miles long and sixty miles across. It has a land area of 4500 square miles, or about the size of Connecticut.

The Island is in the western Gulf of Alaska, south of Lower Cook Inlet. There is a tremendous continental shelf area surrounding Kodiak Island, which not only produces rich fishing harvests, but also has potential for oil and gas exploration. The Federal Government leased thirteen offshore oil and gas tracts to Chevron U.S.A. in the lower Cook Inlet/Shelikof Strait region (Lease Sale #60) in September 1981. Another Lease Sale is scheduled to occur in the same area (Lease Sale #88)in October 1984.

Most of Kodiak Island Borough's approximately twelve thousand (12,000) inhabitants live on Kodiak Island, giving it a population density of 2.2 persons per square mile.

Kodiak is isolated from the mainland of Alaska, and transporation is limited to airplanes and watercraft. The Island itself has over 100 miles of road; most of which is in and around the City of Kodiak and does not connect with any of the villages on the Island.

The Kodiak Island has a Coast Guard base that serves the entire Northern Pacific Rim. The base has 1,370 military personnel and 2,500 dependents. There are extensive facilities on the base, including a fifteen bed hospital, a theater, restaurant, bowling alley, post exchange, and a commissary.

The Kodiak Island Borough owns a medium sized hospital. In addition, there is a Public Health Nurse Clinic, a Kodiak Aleutian Mental Health Center, and three alcoholism treatment facilities operated by the Kodiak Council on Alcoholism. Ambulance service is provided by the City Fire Department.

The Kodiak Island Borough School District has established primary and secondary grade schools in the six villages in the Kodiak area. The village schools provide State required curriculum and, from time to time, instructional programs concerning employment opportunities.

Regional Facilities

Transportation

Kodiak, the transportation center of the Koniag Region, is served externally by only two modes of transportation: air and marine. Emergency evacuation services are provided by the various Kodiak air services plus the U.S. Coast Guard based at Kodiak.

Communications

The City of Kodiak and the villages are geographically isolated from the mainland by the Gulf of Alaska. No roads connect the seven communities, so they are likewise isolated from each other. The rugged terrain of Kodiak Island, extremely wet and cloudy weather conditions, and distance separate the seven communities, making communication difficult. Kodiak has modern telephone services, as do the villages.

All communication systems, either radio or telephone, between the six villages and Kodiak are dependent upon the availability of electricity in

the village to run them. Currently, the villages of Karluk and Larsen Bay have no central community owned or operated electrical system, thereby significantly limiting the dependability of communications.

Kodiak Area Population

The 1982 total Island population was assessed by the Kodiak Island Borough Census at 12,714.

City of Akhiok	103
City of Kodiak	5,873
City of Larsen Bay	180
City of Old Harbor	355
City of Ouzinkie	233
City of Port Lions	291
Borough Service Area #1	1,853
(Place of) Chiniak	185
(Place of) Karluk	102
(Place of) Women's Bay/ Bells Flats	521
Remainder of Borough	3,018
	12,714

CITY OF KODIAK

The City of Kodiak, the largest on Kodiak Island, is located on the northeast coast. It has an excellent harbor with substantial potential for growth. The harbor is the base for the largest commercial fishing fleet in Alaska.

Kodiak's elevation is from sea level to 800 feet. The climate is maritime with an average annual precipitation of 54.3 inches, and average temperature of between 26° Farenheit and 59° Farenheit. Winds are predominately northwesterly. The local topography is rugged and scenic, with wooded mountains surrounding the harbor. Soils are largely volcanic in origin.

History

The town of Kodiak was founded in 1792 by Alexander Baranov, manager of the Shelikov-Golikov (later the Russian American) Company from 1792 to 1818. He moved the Shelikov-Golikov Company settlement from Three Saints Harbor to the present site because the ground was higher, drier, and surrounded by timber. He called the new settlement "Pavlovsk' or "Paul's Harbor". In 1869, after the U.S. bought Alaska, a post office was established under the name "Kodiak" for the Island; it was discontinued in 1875 and reestablished in 1888.

The Russian American Company was engaged in fur trade, mainly that of sea otter. So many sea otter were slaughtered between 1783 and 1867 that the species was nearly wiped out, along with those who depended on them. Now, both the sea otter and Koniag Natives are recovering from the fur boom, warfare, and epidemics of the 19th century.

Facilities

Kodiak has a post office, library, five public schools, a Catholic school, a community college, a hospital, 13 churches, a daily newspaper, five banks, and three hotels. There is a National Marine Fisheries Service office (U.S. Department of Commerce), the Refuge Headquarters Office for the Kodiak Wildlife Refuge (Department of Interior, U.S. Fish and Wildlife Service), a U.S. Coast Guard Support Center, a Bureau of Customs office (U.S. Department of Treasury), and a U.S. Forest Service Office.

Kodiak is on the Alaska Marine Highway System with access to Homer, Seldovia, and Seward. The City maintains two docks and port facilities for permanent and transient boats, both commercial and private.

Sealand, American President Lines and Foss Tug Lines are Kodiak's major shipping firms.

Kodiak has a 7,500 foot long paved and lighted runway, with jet and small plane fueling facilities. A new runway is under construction. Wein Air Alaska and Alaska Airlines have scheduled flights daily to and from Anchorage, and direct flights to and from Seattle in the summer season. Alaska Aeronautical Industries provides twice weekly flights between Kodiak, Homer, Kenai, and Anchorage. However, they are frequently interrupted by inclement weather. Island Air, Flirite, Uyak Air Service, SeaAir Motive and Alaska Transportation Services provide air services between Kodiak, six villages, and other communities on the Island.

Kodiak has land and marine radio service. The U.S. Coast Guard continuously monitors 2182 kHz and 4136.3. There are Coast Guard official weather forecasts. Water and sewer is supplied by the City of Kodiak. Electrictiy

is distributed by the Kodiak Electric Association, and Glacier State Telephone supplies telephone services.

Kodiak is a home rule city with a Council-Manager form of government. Kodiak Island Borough is a second class Borough with an Assembly-Manager-Mayor form of government. There is a borough-wide Comprehensive Plan and a Coastal Zone Management Plan. Recreation facilities in Kodiak include two theaters (one military), and a small boat harbor and expansion. Opportunities for sport hunting and fishing abound.

Economy

The economy of Kodiak relies heavily on the seasonal commercial fishing industry. There are at least 14 canneries in Kodiak, not counting those in outlying areas. In 1968, Kodiak became the largest fishing port in dollar volume in the United States. Only recently (1980) did Kodiak fall into second place behind Dutch Harbor.

Guiding service for hunters, sport fishermen, and photographers is a growing occupation. Tourism is another burgeoning industry. The Kodiak National Wildlife Refuge, on the southwestern two-thirds of the Island, supports trophy Kodiak brown bear and has excellent salmon fishing streams.

AKHIOK

Akhiok is located on Alitak Bay on the southern tip of Kodiak Island, 59 air miles southwest of Kodiak. The land is treeless rolling tundra, with occasional rock outcroppings. Akhiok is 12 feet above sea level, with hills inland reaching an altitude of 1,800 feet. The annual temperature range is from 25 to 54 degrees Farenheit. The annual precipitation is

35.3 inches, and the weather is often cloudy and foggy.

History

Originally an Koniag community, this village was occupied by the Russians in the early nineteenth century and was named "Akhiok" or "Akhiak" by them. During World War I, one U.S. Post Office changed the name to "Alitak" to avoid confusion with Akiak, another Native village. Akhiok is now the preferred name.

Population

The 1982 Kodiak Island Borough Census reports a population of 103 persons, 96% of whom are Alaskan Natives.

Village Facilities

Akhiok is traditional village, with a village President, Vice President, Secretary-Treasurer, and three councilmen. Akhiok is recognized by the State of Alaska as a Second Class City. Incorporation of municipality status occurred in 1974, forming a six member City Council from which a mayor and other officers are selected.

There are 28 houses, a post office, a newly constructed post and secondary grade school, Russian Orthodox Church, Community Hall, and Village Corporation owned store. Fifteen new houses were placed in the village in 1978.

There is an airstrip for small aircraft. Planes can also make sea landings to serve the community. The harbor is very poor, being dry at low-tide

and exposing boats to damage during bad weather. In winter, the area is subject to high winds. However, a floating mooring facility was constructed in 1983 to insure safety of moored vessels and small boats.

The community water system, built by PHS in 1969, consists of two 10,000 gallon storage tanks, an impoundment dam, and gravity feed pressure. Homes are equipped with flush toilets and indoor plumbing. Waste disposal is accomplished through individual leaching pits. Garbage is generally disposed of in an open garbage pit near the village. Electricity is powered by a 55 KW generator with a centralized distribution system. The generator will be replaced by [illegible] new units by late 1983.

Economy

Commercial and subsistence fishing is the main economic activity; there is also subsistence sea mammal and other hunting for meat. Many years ago a reindeer herding operation was created under the Sheldon Jackson Reindeer Program, but the herd has been wild for some years and of no commercial value. Some jobs are provided by the Kodiak Area Native Association, i.e., Community Health Aides, Community Health Representative, and teacher's aides. Columbia Wards Fisheries provides some employment at their Alitak Fish Processing facility. These jobs are seasonal. The school employs two full-time positions and six part-time positions.

KARLUK

Karluk is on the west coast of Kodiak Island, at the mouth of the Karluk River and 90 air miles from Kodiak. Karluk Lake is 25 miles inland, the source of the Karluk River. Vegetation in the area is limited to willow,

alders, and grasses. The annual temperature range is 30° Farenheit to 54° Farenheit. The climate is maritime and humidity is high. Erosion has been a problem since the 1964 earthquake.

History

This village was first reported by Captain Lisianski, of the Imperial Russian Navy, in 1805, as "Carlock" and as "Karloock". There is an old antiquity site (Old Karluk) and new Karluk is across the bay.

The Karluk River was once known as the greatest salmon stream in the world. In the late 1800s, the largest salmon cannery in the world was located there. Now the people are commercial and subsistence fishermen. A post office was established in 1892.

Population

The population of Karluk has been as follows:

1928.....99	1960.....129
1929.....192	1970.....98
1939.....189	1980.....96
	1982.....102

Of the 1982 population, 100 are Alaska Natives.

Village Facilities

Karluk is an unincorporated municipality. The Native population is governed by a seven member tribal government established under the 1936 Indian Reorganization Amended Act. The village of Karluk was relocated inland on the south shore in 1978, after a severe storm breached the Karluk spit. Presently, Karluk has a post office and a PHS water treatment

facility. Domestic water is stored in a 35,000 gallon tank. Karluk has a new school (grades K-11) constructed in 1982, a bulk fuel storage tank farm, and a health clinic and tribal facility building. Twenty-three housing units were placed at the new village site and two older houses at the original village are in use. Electricity is supplied by individual 4.5 KW generators, diesel fired. By the fall of 1983, electricity will be supplied by two 55 KW generators connected to a centralized distribution system.

Economy

Karluk's economy rests primarily on commercial and subsistence fishing. Sixteen percent of Karluk's labor force is employed year-round and sixty-four percent seasonally. A privately owned recreational lodge rests on the north shore of Karluk's lagoon and operates during the summer months, but is strictly marginal to the village economy.

LARSEN BAY

History

Larsen Bay is on the northwest coast of Kodiak Island, on the west shore of Uyak Bay. The people have adapted to a cash economy and are now largely commercial fishermen. Kodiak Island Seafood, Inc. was located here; they had purchased the old APA Cannery, but in the past year have discontinued operation due to the combination of obsolescence of machinery and management practices.

Larsen Bay is called "Uyak" in the Native language, although it is distinct from the former village of Uyak.

Population

The population of Larsen Bay has been as follows:

1890.....less than 20	1967.....74
1939.....38	1970.....109
1950.....53	1974.....98
1960.....72	1980.....168
	1982.....180

The 1982 Census data indicated that 68 percent of the population is Alaska Native.

Village Facilities

Larsen Bay is a second class city incorporated in 1974. It has a seven member city council from which the mayor and other officers are selected. The Native population is represented by a seven-member I.R.A. council recognized by the BIA. Larsen Bay has a post office, community hall, with an attached building housing a clinic, a Russian Orthodox Church, school (grades K-11) and a store located at the closed cannery.

There are 48 housing units in Larsen Bay; thirteen new units will be available in 1984. A 100,000 gallon capacity tank provides the community with water. Electricity is supplied by individual generators, oil fired.

The State of Alaska has indicated the possibility to develop a mini-hydroelectric plant to connect to the immediate development of centralized community electrification.

There is a 10,000 X 1000 foot seaplane landing area and a 2,400 foot long airstrip. The cannery facility has a usable dock and a ramp-type dry dock. The village of Larsen Bay has a PHS radio phone, PHS direct satellite phone, RCA telephone system, and a satellite television system.

A small plane charter service named Uyak Air is located in Larsen Bay providing immediate air travel to the village residents.

Economy

Larsen Bay residents rely heavily on commercial and subsistence fishing. Almost every local fisherman delivers fish to the local cannery, which employs about ten villagers.

KANA, the city, the school, and the Tribal Government employ approximately ten full and part-time postions.

OLD HARBOR

Old Harbor is on the west shore of Sitkalidak Strait, on Kodiak Island. It is 56 air miles southwest of Kodiak. The climate is maritime, with approximately 60 inches of precipitation per year. Temperatures range from 24° F to 60° F. The village was nearly destroyed by the 1964 earthquake tidal wave, but has since been rebuilt. A tsunami warning system is now in effect.

History

Old Harbor (Three Saints Bay) was the first Russian settlement in Alaska. It was established in 1787 by Shelikov of the Russian Fur Company, and was the Russian headquarters until Alexander Baranov moved to St. Paul's (Kodiak) in 1792. Three Saints Bay was actually between the present site of Old Harbor and the former village of Kaguyak. The Russian settlement was destroyed three times by tsunamis before it was moved to Kodiak.

Old Harbor was reported in the 1890 census as "....Old Harbor, named "Sraruigavan" by the Russians...This site containing now less than 100 people" (in Baker 1906). A post office was established in 1931.

Population

The population of Old Harbor has been as follows:

1920.....54	1967.....231
1929.....84	1970.....290
1939.....109	1974.....304
1950.....121	1980.....340
	1982.....355

1982 Census data reports determined that 92% of the population is Alaskan Native.

Village Facilities

Old Harbor has a post office, village school (K-10), a community hall, library, theater, pool hall, two stores, and a Russian Orthodox Church. There are 49 homes, 42 of which were built by BIA, and six by individuals after the earthquake of 1964. The Housing and Urban Development Program has completed 45 new homes in 1979, and scheduled fifteen to be completed in 1985.

In 1968 AVEC, installed a diesel generator which supplies power to the village. As part of the housing project, a new water and sewer system was installed.

There is a 2,000 foot gravel runway. The village has a commercial use dock. Transportation to Kodiak is limited to air and water traffic. A satellite television system, PHS direct radio phone and individual telephone service is currently operable in the village.

Old Harbor is a second class city. The Native population is represented by a seven member traditional tribal council.

Economy

Old Harbor depends on the salmon fishing industry. The stores hire locally and other income is obtained by working in the seafood processing plants in Kodiak, Alitak, and floating processors that moor to the fuel dock from time to time.

OUZINKIE

Ouzinkie is on the southwest coast of Spruce Island, northeast of Kodiak Island and ten miles north of Kodiak. Spruce Island is a small island separated from Kodiak Island by Narrow Strait, and covered with a spruce forest. The climate is temperate, windy, rainy, cloudy, and foggy. Erosion is a serious problem.

History

In 1889, the Royal Packing Company built a cannery here, and the Russian American Packing Company shortly afterwards did the same. In 1890, a Russian Orthodox Church was built. The name is a transliteration by Baker (1906 p. 657) of "Uzenkiy," from "uzkiy," meaning "very narrow," derived from the Russian name given to Narrow Strait. Petroff, in the 1880 census, reported "Oozinkie, where they are fifteen Creoles" [i.e. people of mixed Russian/Native ancestry]. In 1849, the Russian American Company published the name "Sele (iye) Rus (Kiy) i Kreolovy" meaning "village of Russians and Creoles." A post office was established in 1927.

Population

The population of Ouzinkie has been as follows:

1920.....96	1960.....214
1929....168	1967.....231
1939....233	1970.....180
1950....170	1980.....173
	1982.....204

Of the 1982 total, 82 percent are Natives.

Village Facilities

Ouzinkie has a post office, a primary and secondary grade school, a bulk fuel storage facility, a community center, a Baptist Mission, a Russian Orthodox Church, gift shop, a store, and a Ouzinkie Native Corporation Office, which is the fuel distributor.

There are 69 dwellings in Ouzinkie. A new water and sewer system was installed in conjunction with the recently completed housing project in 1982. The City of Ouzinkie provides power to the community.

There is a landing area for sea planes and an airstrip for small aircraft. There are scheduled daily flights. The City owns the vessel dock and there is individual telephone service in the village.

Ouzinkie is an incorporated municipality established in 1967. It has a seven-member council from which the mayor and other officers are selected. A seven-member, federally recognized traditional tribal council represents the Native population.

Economy

The economic base of Ouzinkie is commercial and subsistence fishing.

However, there have been no fish processing facilities in Ouzinkie since the Glacier Bay Cannery burned down in 1976. Commercial fishermen deliver to Kodiak plants. The store (Mark-It Foods) employs two people and the KANA, city, and schools employ thirteen people.

PORT LIONS

Port Lions is on Settlers Cove, near the mouth of the Kizhuyak River, eighteen miles northwest of Kodiak. It is on the north coast of Kodiak Island. Port Lions shares climate conditions similar to other villages on Kodiak Island, namely a mild maritime environment featuring 60 inches of precipitation, temperatures from 20° F to 60° F, and frequent cloudy or foggy days.

History

This village was built in 1964 (construction completed by 1965) by the Lions International and the BIA for the displaced inhabitants of Afognak. The village of Afognak was virtually destroyed by the tsunami during the Good Friday earthquake of March 27, 1964.

Population

The population of the Afognak village was 99 in 1960, and after relocation in 1970, it was 227. In 1974, the population was 243, and the 1982 census total is 291. Of the total population, 68 percent are Native.

Village Facilities

Port Lions has 102 dwelling units, a post office, school (K-8), community

center, library, a lodge, two restaurants, general store, fuel distributor, and a local community clinic staffed by KANA employees and a local contracted physician.

Kodiak Electric Association brings electricity to the dwellings via generators.

There are local roads around the village. In 1972, the State Department of Highways began 4.5 miles of reconstruction on Port Lions streets. Roads were recently constructed to facilitate new housing. There is a gravel airstrip, 2,600 feet long with flights ten times a week in the summer. The village has an Alaska Marine Highway dock and ferry service twice a week during the summer months and once a week during the winter.

A modern telephone system serviced by Interior Telephone Company was established in the community in the late 1960s.

Economy

There are 14-16 locally-owned commercial fishing boats. The rich fisheries around Kodiak Island provide seasonal income for most families. Subsistence fishing also supplements Port Lions' economy.

The Wakefield processing plant provided employment for Port Lions labor force until its destruction by fire in 1974. Since then, local fishermen have delivered their catch to floating processors and to Kodiak processing plants. Of the total labor force in 1979, 31.3 percent were employed for the summer, 53 percent for a nine month period and 15.7 percent were employed year-round.

The village has been incorporated as a municipality since 1966. A seven-member council governs the City from which a mayor and other officers are

selected. The Native population is represented by a five-member traditional Tribal Council recognized under Federal law.

V. METHODOLOGY

The following section summarizes the steps that were taken and the procedures that were followed in the design, implementation, and data analysis phases of KANA's resource use project.

1. The Kodiak Area Native Association (KANA) submitted the proposal, Subsistence Activity and Use Patterns Documentation Project, to Bureau of Indian Affairs on February 25, 1983. This proposal called for gathering baseline data on non-commercial use of fish and game in the Kodiak Archipelago. Under the terms of the proposal the Subsistence Division, Alaska Department of Fish and Game, agreed to provide technical assistance for survey development, sample selection, training of interviewers, and processing of data.

2. Following a meeting with KANA staff on March 24, 1983, the Subsistence Division prepared a draft questionnaire for use in the survey portion of the proposed research. The questionnaire reflected the specific data needs of KANA and the widespread experience of the Subsistence Division in designing research instruments.

3. KANA's Overall Economic Development Committee (OEDP) reviewed the draft questionnaire in Kodiak on April 28, 1983, and suggested numerous changes. A formal pretest then took place and a final questionnaire form was duplicated on April 29, 1983. OEDP members received training in interviewing in preparation for administering the questionnaire in their home communities.

4. Interviewing in the six rural communities on Kodiak Island began in early May 1983, and was completed in five of the communities by the end of June 1983. Interviewing in Akhiok was completed in August 1983.

5. In rural areas the survey goal was to interview members of each household in each community. Table 1 presents survey target and achievement data. In these communities survey attainment varied from 74 percent in Ouzinkie to 100 percent in Karluk. Refusal rate was less than 9 percent in all communities. The most common reason for incompleted surveys was that residents could not be contacted during the survey period.

6. The survey procedure in the Kodiak road-connected area used a sampling methodology suitable to its large, complex population. In addition to the sample of the general population of the area, special sampling frames were set up to provide information about particular user groups. The following samples were selected:

a. Kodiak General Sample. This sample was drawn from the total population of Kodiak City, Service Area One, Women's Bay, Bells Flats, and Monashka Bay excluding the Coast Guard base. City and Borough census figures and enumeration maps were used to draw a random sample of this population. Survey achievement was 78 percent, and refusal rate was 7 percent. No contact was made at 16 percent of the households after multiple attempts at different times of the day. (Because of rounding, percentages do not add up to 100.)

b. Kodiak Coast Guard. Contacts were made with the three base commanders who agreed to send personnel to the base theater to complete survey forms. A random sample was drawn from command duty rosters. Because of duty obligations, however, some individuals selected in the sample were not able to complete surveys. The final Coast Guard sample was not strictly random.

CORRECTION

THIS DOCUMENT
HAS BEEN REPHOTOGRAPHED
TO ASSURE LEGIBILITY

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Table 1: SAMPLE CHARACTERISTICS KODIAK ISLAND
K.A.N.A./A.D.F.&G. SURVEY OF FISH AND GAME HARVEST AND USE, 1983[1,2]

Community/ Sample	Survey Target[3,4,5]	Survey Attainment	Refusals[6]	Unable to Contact[7]
Akhiok[8]	28	21 (75%)	0 (0%)	8 (25%)
Karluk	20	20 (100%)	0 (0%)	0 (0%)
Larsen Bay	41	32 (78%)	0 (0%)	9 (22%)
Old Harbor	93	77 (83%)	3 (3%)	13 (14%)
Ouzinkie	43	32 (74%)	3 (7%)	8 (19%)
Port Lions	66	55 (83%)	5 (8%)	6 (9%)
Kodiak General	200	155 (78%)	14 (7%)	31 (16%)
Kodiak Native	35	35 (100%)	0 (0%)	0 (0%)
Kodiak Filipino	35	34 (97%)	0 (0%)	1 (3%)
Kodiak Chiniak	27	17 (63%)	1 (4%)	9 (33%)
Kodiak Coast Guard	75	76 (100%)	0 (0%)	0 (0%)

1. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
2. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.
3. Survey target for rural communities was to interview all households occupied during May-June, 1983.
4. Survey sample for Kodiak General and Kodiak Chiniak was based on a random draw of households; see text for details.
5. Survey sample for Kodiak Native, Kodiak Filipino, and Kodiak Coast Guard was not strictly random; see text for details.
6. "Refusals" means household did not wish to participate in survey.
7. "Unable to Contact" means that interviewer was unable to talk with a household member after repeated tries; see text for details.
8. For Akhiok only "Unable to Contact" may include "Refusals".

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

c. Kodiak Native. This sample was drawn from KANA lists of Natives residing in the Kodiak road-connected area. This was a representative sample of Kodiak Natives, but it was not a strictly random sample.

d. Kodiak Filipino. This sample was drawn from lists of Filipino households prepared by the Filipino Community Association. The sampling was representative but not strictly random.

e. Kodiak Chiniak. This sample was based on a random draw from the resident population of the Chiniak area. Although refusal rate was low (less than 4 percent), interviewers were unable to contact about one third of the target households.

7. Except for the Coast Guard interviews which were done en mass and a small number of interviews done in Old Harbor and Ouzinkie, all interviews were performed in person by interviewers trained in survey techniques. Interviewers reviewed all completed questionnaires before turning them in.

8. Survey work in the Kodiak road-connected area was completed in June and July 1983.

9. Coding and entry of survey data were done by the Subsistence Division's data management team in consultation with Subsistence Division researcher Bob Schroeder. Coding and entry of data were completed in September 1983.

10. Statistical analysis of survey data was done by Bob Schroeder in consultation with James Fall of the Subsistence Division and Tom Peterson of KANA. Computer analysis was done on the University of Alaska computer system using the Statistical Package for Social Sciences. This work was completed in November 1983.

11. Preliminary survey results were presented for review to the OEDP and to rural city and traditional councils in late September and early October 1983.

12. Final tables, graphs and maps were prepared by KANA and the Subsistence Division in November and December 1983. The final report was drafted by KANA with Subsistence Division assistance.

13. Mapping of areas used for subsistence harvest of fish and game was done in conjunction with the survey work. Composite subsistence use area maps presented as part of this report were drawn from more detailed use area maps on file.

14. Tom Peterson at KANA or Bob Schroeder and Jim Fall at the Subsistence Division may be contacted for further information about survey and mapping methodologies or for more detailed survey analysis or mapped information.

VI. Survey Results

Some of the results of the KANA Resource Use Survey are presented in the series of tables and figures which follow. We have selected data from the survey which we believe will be of most interest to the users of this Guide on Kodiak Island. Additional results will be published in the Southwest Regional Fish and Game Habitat Management Guide, now being prepared by the Alaska Department of Fish and Game. ADF&G's Regional Guide will be completed in mid 1984. Furthermore, results of the survey will appear in future Division of Subsistence technical reports.

As an aid to the reader, a short explanatory paragraph accompanies each table, figure, or set of tables and figures. These are arranged by topic.

Mean Household Harvests of Fish and Game Resources

Tables 2 and 3 report the mean household harvests in numbers of selected fish and game resources for each rural community and road-connected sample for the 12 month study period. Harvests of salmon and other fish and marine invertebrates for commercial sale are excluded from these totals. For example, Table 2 reveals that, on average, each household in Akhiok harvested 81.4 red salmon for home use during the study period, 214.5 salmon of all species, 4.5 buckets of butter clams, 3.6 deer, and so on.

In Tables 4 and 5, mean food weight of fish and game harvests per household, these same household harvests are expressed in pounds dressed weight. (See Appendix A, for an explanation of how these calculations were performed.) All harvested species have been organized into a number of resource categories. The reader should note

Table 2: MEAN HOUSEHOLD HARVEST OF SELECTED SPECIES IN NUMBERS, KODIAK RURAL COMMUNITIES, 1982-1983[1,2,3]

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions
Number Households Surveyed	21	20	32	76	32	55
Salmon:						
Red	81.4	315.0	84.1	7.5	45.0	25.3
King	0.0	18.6	2.6	1.2	.9	.4
Silver	31.7	73.4	24.6	56.3	31.4	25.0
Pink	85.2	84.9	41.1	74.7	19.1	8.7
Chum	16.2	1.4	4.2	40.6	16.2	1.6
TOTAL SALMON	214.5	493.4	156.6	180.3	112.6	61.0
Halibut	2.6	4.9	5.3	5.9	3.1	7.7
Dolly Varden	13.8	41.5	24.7	6.6	25.4	7.4
Steelhead	.1	11.6	8.5	1.4	4.5	.3
Butter Clams#	4.5	2.5	9.3	4.2	4.2	3.7
Crab:						
King	18.5	1.3	6.7	9.2	26.0	20.3
Tanner	2.7	1.2	3.7	3.0	3.2	6.3
Dungeness	.5	2.0	7.6	4.9	7.1	11.1
Deer	3.6	5.4	5.8	5.5	2.6	2.6
Rabbit	.5	2.6	1.8	1.6	3.4	2.5
Ptarmigan	5.5	8.9	2.2	1.5	0.0	.3
Ducks	31.3	46.4	21.7	20.8	37.1	10.0
Geese	9.4	.1	.1	2.1	3.2	0.0
Harbor Seal	3.3	2.5	1.3	1.7	1.4	.1
Sea Lion	2.0	1.0	.8	1.0	.2	.1

1. Harvest in numbers except clams which are in 5 gal. buckets.
2. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details
3. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

Table 3: MEAN HOUSEHOLD HARVEST OF SELECTED SPECIES IN NUMBERS, KODIAK ROAD-CONNECTED AREA, 1982-1983[1,2,3]

KODIAK ROAD-CONNECTED AREA

	General Sample[4]	Coast Guard	Chiniak	Filipino	Native
No. Households Surveyed	155	76	17	34	35
Salmon:					
Red	11.7	3.1	13.9	10.4	16.6
King	.3	.2	1.9	.0	.4
Silver	9.4	4.3	23.4	10.4	13.3
Pink	7.1	7.4	8.9	2.8	9.0
Chum	1.2	.9	4.3	.4	1.2
TOTAL SALMON	29.7	15.9	52.4	24.0	40.5
Halibut	4.9	6.8	4.4	2.6	1.6
Dolly Varden	8.5	14.4	5.1	23.0	4.3
Steelhead	.6	2.8	1.4	2.3	2.3
Butter Clams	1.6	1.0	4.2	3.6	3.5
Crab:					
King	7.2	10.6	17.3	.8	4.2
Tanner	4.4	4.7	4.1	1.6	.8
Dungeness	3.2	3.2	4.5	1.4	2.2
Deer	1.3	.6	4.4	1.0	1.5
Rabbit	1.2	1.6	3.4	1.2	1.4
Ptarmigan	.7	.6	.4	1.0	.8
Ducks	.8	.2	3.6	1.1	2.7
Geese	.0	.1	.2	0.0	1.5
Harbor Seal	.1	0.0	.1	0.0	0.0
Sea Lion	.0	0.0	.1	0.0	0.0

1. Harvest in numbers except clams which are in 5 gal. buckets.
2. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details
3. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the total expected from the addition of constituent numbers.
4. General Sample data are from a random sample of all road connected areas including, Kodiak City, Service Area One, Bells Flats, Women's Bay, and Monashka Bay, but excluding Chiniak and Pasagshak.

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

Table 4: MEAN FOOD WEIGHT OF FISH AND GAME HARVEST PER HOUSEHOLD, PER CAPITA FOOD WEIGHT, KODIAK RURAL COMMUNITIES, 1982-1983[1,2,3]

	Akhiok	Karluk	Larsøn Bay	Old Harbor	Ouzinkie	Port Lions
No. Households Surveyed	21	20	32	76	32	55
Species Group						
All Salmon	845.0	2223.2	663.2	795.9	522.5	287.1
All Fish	954.5	2532.2	936.9	1034.5	707.2	580.9
All Crab	47.2	6.5	26.6	29.6	69.9	64.6
All Invertebrate	185.3	62.1	190.0	121.0	163.6	118.6
Deer	156.3	235.4	251.1	235.9	110.7	113.1
Marine Mammals	547.9	324.7	227.8	281.0	93.0	24.7
Small Game	131.2	128.0	59.7	66.6	115.9	30.3
All Game	835.4	702.0	538.6[4]	606.6	325.6	168.1
All Species	1975.2	3296.3	1665.5[4]	1758.3	1196.3	865.9
Mean Household Size (persons)	3.81	3.95	4.16	3.79	3.34	3.30
Per Capita Food Weight of Harvest	518.4	834.5	400.4	463.9	358.2	262.4

1. Food weight given in pounds, converted from harvest number using standard conversion factors, see Table 21.
2. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
3. Because of rounding and the computer technique used to deal with missing data, the column, row, and category totals may not always equal 100% or the total expected from the addition of constituent numbers.
4. Adjusted total for Larsen Bay, does not include bear.

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

Table 5: MEAN FOOD WEIGHT OF FISH AND GAME HARVEST PER HOUSEHOLD, PER CAPITA FOOD WEIGHT, KODIAK ROAD-CONNECTED AREA, 1982-1983[1,2,3]

KODIAK ROAD-CONNECTED AREA

	General Sample	Coast Guard	Chiniak	Filipino	Native
No. Households Surveyed	155	76	17	34	35
All Salmon	132.0	64.5	264.7	113.1	181.5
All Fish	331.6	326.4	465.1	280.0	258.3
All Crab	26.0	34.0	49.4	5.3	12.5
All Invertebrate	54.7	54.2	96.7	52.2	55.0
Deer	57.7	24.3	190.6	41.9	65.4
Marine Mammals	9.7	0.0	17.1	0.0	1.3
Small Game	5.1	4.4	17.1	5.8	17.6
All Game	82.8	29.6	232.1	54.3	90.8
All Species	475.2	412.7	793.9	386.6	404.2
Mean Household Size (persons)	3.32	2.41	3.94	4.18	3.49
Per Capita Food Weight of Harvest	143.1	172.0	203.6	92.0	115.5

1. Food weight given in pounds, converted from harvest number using standard conversion factors, see Table 21.
2. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
3. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.

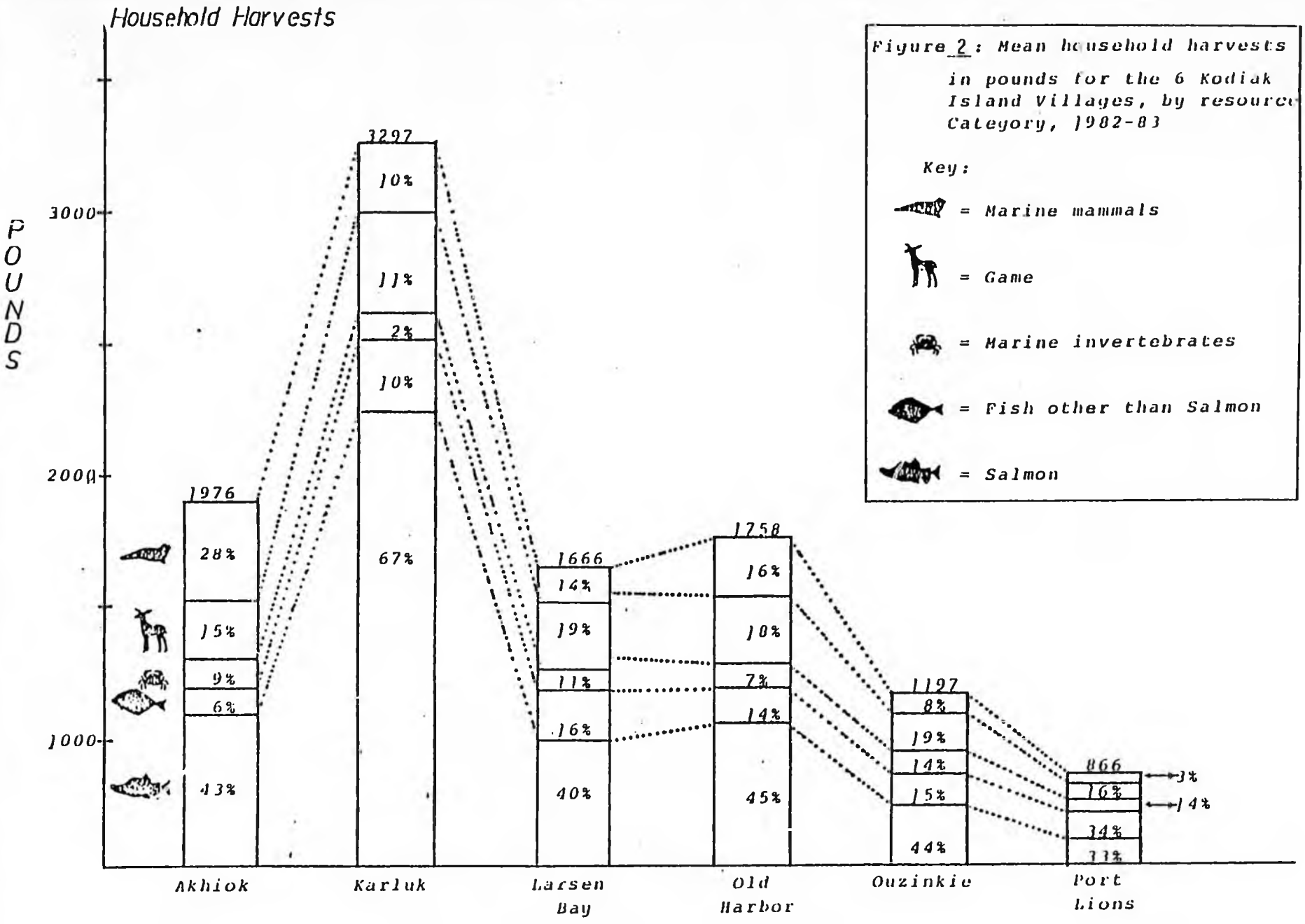
Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

that the category "all fish" includes the category "all salmon"; "all crab" is contained within "all invertebrate"; and "deer", "marine mammals", and "small game" are included within the "all game" category. The mean total household harvest for a community is the sum of "all fish", "all invertebrate", and "all game". By inspecting these tables, the reader will learn that in Old Harbor, the food weight of the mean household harvest of salmon was 795.9 pounds during the study period. The mean household harvest weight of all resources taken in Old Harbor was 1758.3 pounds. Since the sample households in Old Harbor had an average of 3.79 members, the per capita food weight of Old Harbor's resource harvests during the study period was 463.9 pounds.

Figures 2 and 3 show the composition of the mean household fish and game harvests (in pounds) by five resource categories. Each category is represented by its own animal symbol. For example, Figure 2 reveals that about ten percent of Karluk's mean household harvest of 3297 pounds was composed of marine mammals, and two percent was marine invertebrates.

Mean Numbers and Food Weight of Fish and Game Used

Tables 6 and 7 report the mean reported amount of selected fish and game resources used per household, in numbers, and Tables 8 and 9 present mean household uses in pounds for each community and sample. This total includes all resources harvested by a household and kept for its own use during the study period, plus any resources the household received from the harvests of other households. Resources given away, or not used during the study period, were not included in this total. The resource categories in these tables are the same as in Tables 4 and 5.


Household Harvests
POUNDS
3000
2000
1000
Akhiok
1976
28%
15%
9%
6%
43%
Karluk
3297
10%
11%
2%
10%
67%
Larsen Bay
1666
14%
19%
11%
16%
40%
Old Harbor
1758
16%
10%
7%
14%
45%
Ouzinkie
1197
8%
19%
14%
15%
44%
Port Lions
866
3%
16%
14%
34%
33%
Figure 2: Mean household harvests in pounds for the 6 Kodiak Island Villages, by resource Category, 1982-83
Key:
= Marine mammals
= Game
= Marine invertebrates
= Fish other than Salmon
= Salmon

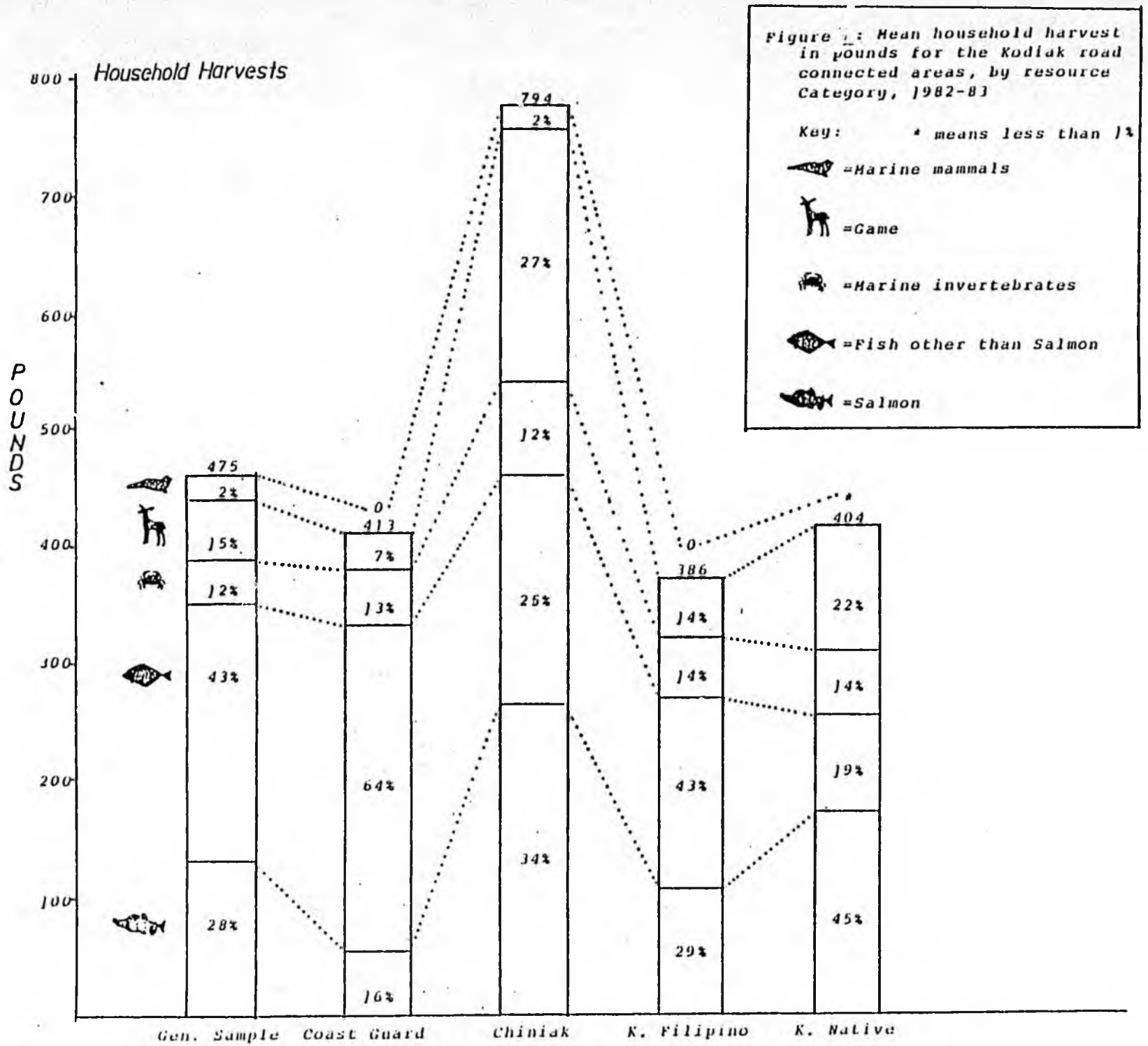


Figure _: Mean household harvest in pounds for the Kodiak road connected areas, by resource Category, 1982-83

Table 6: MEAN HOUSEHOLD USE OF SELECTED RESOURCES IN NUMBERS, KODIAK RURAL COMMUNITIES, 1982-1983[1,2,3]

Species	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions
Salmon:						
Red	62.1	250.3	66.1	7.9	38.8	19.3
King	0.0	14.1	3.1	1.3	1.0	.7
Silver	23.6	42.4	22.6	56.0	26.2	16.1
Pink	60.2	39.6	44.6	75.4	22.0	6.1
Chum	11.2	1.6	4.8	39.3	15.7	1.2
TOTAL SALMON	157.1	348.0	141.2	179.9	103.7	43.4
Halibut	1.6	4.9	8.7	6.4	3.4	7.5
Dolly Varden	9.4	25.7	17.3	7.8	21.8	5.2
Steelhead	0.0	9.4	11.5	1.1	6.3	.9
Butter Clams[1]	3.8	2.7	7.7	4.5	4.2	3.1
Crab:						
King	17.5	7.5	12.6	9.0	12.1	19.2
Tanner	2.7	4.9	7.0	4.0	5.0	7.4
Dungeness	1.0	5.6	9.8	4.9	7.4	7.7
Deer	3.2	4.2	5.5	4.7	3.2	2.4
Rabbit	.5	1.6	1.8	1.6	4.8	2.7
Ptarmigan	5.5	8.6	1.8	1.2	.2	.2
Ducks	30.7	37.9	18.8	19.1	37.8	12.0
Geese	9.2	.4	.1	1.9	4.5	0.0
Harbor Seal[1]	74.2	67.3	36.3	54.5	29.8	4.1
Sea Lion[1]	67.4	20.3	108.0	102.4	8.4	0.0

1. Harvest in numbers except clams which are in 5 gal. buckets, and seal and sea lion which are in pounds
2. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
3. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

Table 7: MEAN HOUSEHOLD USE OF SELECTED RESOURCES IN NUMBERS, KODIAK ROAD-CONNECTED AREA, 1982-1983[1,2,3,4]

KODIAK ROAD-CONNECTED AREA

	General Sample	Coast Guard	Chiniak	Filipino	Native
No. Households Surveyed	155	76	17	34	35
Salmon:					
Red	13.1	3.2	14.0	12.9	21.9
King	.8	.2	1.9	.5	.9
Silver	9.1	4.1	21.9	10.5	12.4
Pink	4.3	5.8	7.7	3.0	10.4
Chum	1.0	.8	4.4	.7	1.4
TOTAL SALMON	28.3	14.1	49.9	27.6	47.0
Halibut	6.3	4.8	4.9	3.5	8.6
Dolly Varden	7.7	13.7	5.1	20.0	6.2
Steelhead	.8	2.6	1.4	2.3	3.3
Butter Clams[1]	1.6	1.0	4.1	3.1	3.9
Crab:					
King	12.0	9.8	18.9	9.3	12.1
Tanner	7.0	4.8	4.9	12.4	3.7
Dungeness	6.5	3.2	5.4	23.4	6.1
Deer	1.8		2.8	1.1	1.9
Rabbit	1.7	1.5	4.0	1.2	5.7
Ptarmigan	.7	.6	.5	1.1	2.0
Ducks	.9	.2	6.0	1.4	4.0
Geese	0.0	.1	.3	0.0	2.1
Harbor Seal[1]	6.8	0.0	2.7	0.0	0.0
Sea Lion[1]	9.8	0.0	0.0	0.0	0.0

1. Harvest in numbers except clams which are in 5 gal. buckets and seal and sea lion which are in pounds.
2. Kodiak City data is from a sample of all road connected areas excluding Chiniak and Pasagshak.
3. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
4. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

Table 8: MEAN FOOD WEIGHT OF FISH AND GAME USED BY RESOURCE CATEGORY, KODIAK RURAL COMMUNITIES, 1982-1983[1,2,3]

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions
No. Households Surveyed	21	20	32	76	32	55
All Salmon	621.9	1592.9	594.7	791.9	472.3	205.1
All Fish	690.3	1864.2	990.1	1045.3	668.0	485.4
All Crab	45.3	28.9	47.0	30.4	41.1	61.4
All Invertebrate	168.4	90.6	176.5	126.1	146.5	114.7
Deer	137.8	181.5	239.6	201.4	136.3	104.1
Marine Mammals	141.6	67.3	144.7	156.8	38.3	4.1
Small Game	127.5	106.0	52.4	61.5	126.5	35.7
All Game	407.0	389.0	442.7	427.6	322.7	153.0
All Species	1265.6	2343.8	1523.7	1598.2	1137.2	753.6
Mean Household Size (persons)	3.81	3.95	4.16	3.79	3.34	3.30
Per Capita Food Weight Used	360.5	593.4	371.1	421.7	340.5	228.4

1. Food weight given in pounds, converted from use number using standard conversion factors, see Table 21.
2. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
3. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.

Source: Data from KANA 1983 survey, table prepared by Subsistence Division, Alaska Department of Fish and Game.

Table 9: MEAN FOOD WEIGHT OF FISH AND GAME USED BY RESOURCE CATEGORY, KODIAK ROAD-CONNECTED AREA, 1982-1983[1,2,3]

KODIAK ROAD-CONNECTED AREA

	General Sample[4]	Coast Guard	Chiniak	Filipino	Native
No. Households Surveyed	155	76	17	34	35
All Salmon	134.4	59.3	254.5	132.0	210.5
All Fish	386.9	250.8	471.3	337.8	541.2
All Crab	43.3	32.3	55.0	57.5	38.1
All Invertebrates	88.2	50.8	107.7	128.0	107.2
Deer	79.1	25.6	122.5	47.1	81.2
Marine Mammals	16.5	0.0	2.7	0.0	1.0
Small Game	6.3	4.2	24.8	6.7	33.1
All Game	114.9	31.7	155.4	61.1	128.3
All Species	588.7	334.8	734.4	526.9	776.7
Mean Household Size (perons)	3.32	2.41	3.94	4.18	3.49
Per Capita Food Weight Used	177.4	138.9	186.4	126.1	222.6

1. Food weight given in pounds, converted from use numbers using standard conversion factors, see Table 21.
4. General Sample data are from a random sample of all road connected areas including Kodiak City, Service Area One, Bells Flats, Women's Bay, and Monashka Bay, but excluding Chiniak and Pasagshak.
2. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
3. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

Household participation in Harvest and Use of Fish and Game Resources

By inspecting Tables 10 and 11, the reader can learn what percentage of the households in each community or sample participated in the harvest or use of categories of fish and game resources. The same categories are used as in Table 4. For example, 82 percent of households in Port Lions reported harvesting some salmon for household use, but 100 percent of the households reported using salmon during the study period. About 96 percent of Port Lions' households harvested at least one species of wild fish and game, and 100 percent used at least one species.

Diet Breadth

Diet breadth is defined here as the total number of fish and game resources harvested or used by a household during the study period. The mean number of resources harvested or used per household for each community and sample is reported in Table 12. Species were arranged in three categories: fish, marine invertebrates, and game. For example, the mean number of species harvested or used per household in Ouzinkie is 17.7. Of these, about 8.2 are fish, 6.2 are marine invertebrates, and 3.3. are game (including marine mammals). Figure 4 depicts this same information in graphic form. Each bar shows the percentage of the average household diet breadth for each community comprised by each resource category.

Desired Use Levels

Each household in the survey was asked to estimate how much of a given resource would be "enough" for an average year. The reader should keep in mind that probably no year is "average"; that total resource

Table 10: HOUSEHOLD PARTICIPATION IN HARVEST AND USE OF FISH AND GAME, KODIAK RURAL COMMUNITIES, 1982-1983[1,2]

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions
No. Households Surveyed	21	20	32	76	32	55
	Percent Households Harvesting (Percent Households Using)					
Any Salmon Species	100% (100%)	90% (100%)	72% (97%)	95% (99%)	81% (97%)	82% (100%)
Any Fish Species	100% (100%)	90% (100%)	77% (97%)	96% (99%)	84% (97%)	89% (100%)
Any Crab Species	90% (95%)	25% (85%)	34% (86%)	64% (77%)	53% (94%)	65% (100%)
Any Invertebrate	100% (100%)	75% (100%)	93% (97%)	99% (99%)	94% (100%)	94% (100%)
Deer	91% (95%)	80% (95%)	62% (94%)	87% (97%)	59% (91%)	64% (76%)
Marine Mammal Species	95% (100%)	65% (75%)	28% (50%)	57% (71%)	31% (53%)	9% (9%)
Small Game Species	95% (100%)	75% (85%)	50% (72%)	82% (91%)	72% (91%)	69% (80%)
Any Game Species	95% (100%)	85% (100%)	65% (94%)	93% (99%)	78% (94%)	80% (94%)
Any Species	100% (100%)	90% (100%)	96% (100%)	100% (100%)	97% (100%)	96% (100%)

1. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
2. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

Table 11: HOUSEHOLD PARTICIPATION IN HARVEST AND USE OF FISH AND GAME, KODIAK ROAD-CONNECTED AREA, 1982-1983[1,2]

KODIAK ROAD-CONNECTED AREA

	General Sample[3]	Coast Guard	Chiniak	Filipino	Native
No. Households Surveyed	155	76	17	34	35
	Percent Households Harvesting (Percent Households Using)				
Any Salmon Species	80% (98%)	65% (62%)	94% (100%)	82% (100%)	71% (100%)
Any Fish Species	83% (99%)	70% (67%)	100% (100%)	82% (100%)	77% (100%)
Any Crab Species	34% (92%)	49% (47%)	74% (94%)	9% (100%)	29% (89%)
Any Invertebrate	71% (96%)	54% (54%)	100% (100%)	85% (100%)	66% (91%)
Deer	40% (82%)	20% (24%)	59% (88%)	29% (62%)	40% (89%)
Marine Mammal Species	1% (2%)	0.0% (0.0%)	18% (6%)	0.0% (0.0%)	3% (9%)
Small Game Species	26% (34%)	28% (27%)	29% (47%)	12% (15%)	29% (63%)
Any Game Species	47% (86%)	34% (34%)	65% (88%)	32% (62%)	46% (91%)
Any Species	91% (100%)	74% (74%)	100% (100%)	91% (100%)	86% (100%)

1. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
2. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.
3. General Sample data are from a random sample of all road-connected areas including Kodiak City, Service Area One, Bells Flats, Women's Bay and Monashka Bay, but excluding Chiniak and Pasagshak.

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

Table 12: DIET BREADTH: MEAN NUMBER OF RESOURCES HARVESTED OR USED PER HOUSEHOLD KODIAK ROAD-CONNECTED AND RURAL AREAS, 1982-1983[1,2,3]

Community/ Sample	Fish Species	Intertidal Species	Game Species	All Animal Species
Akhiok	4.8	6.1	4.6	15.5
Karluk	8.9	5.6	4.6	19.1
Larsen Bay	7.7	5.4	3.3	16.3
Old Harbor	6.1	5.4	3.9	15.4
Ouzinkie	8.2	6.2	3.3	17.7
Port Lions	5.9	5.2	2.4	13.5
ALL RURAL[1]	6.7	5.5	3.5	15.7
Kodiak City	5.6	4.6	1.7	11.9
Kodiak Coast Guard	2.9	1.7	.7	5.3
Kodiak Filipino	6.3	6.2	1.0	13.6
Kodiak Native	6.5	5.6	2.5	14.5
Kodiak Chiniak	6.7	4.5	2.7	13.9
Highest Recorded	14	12	12	35

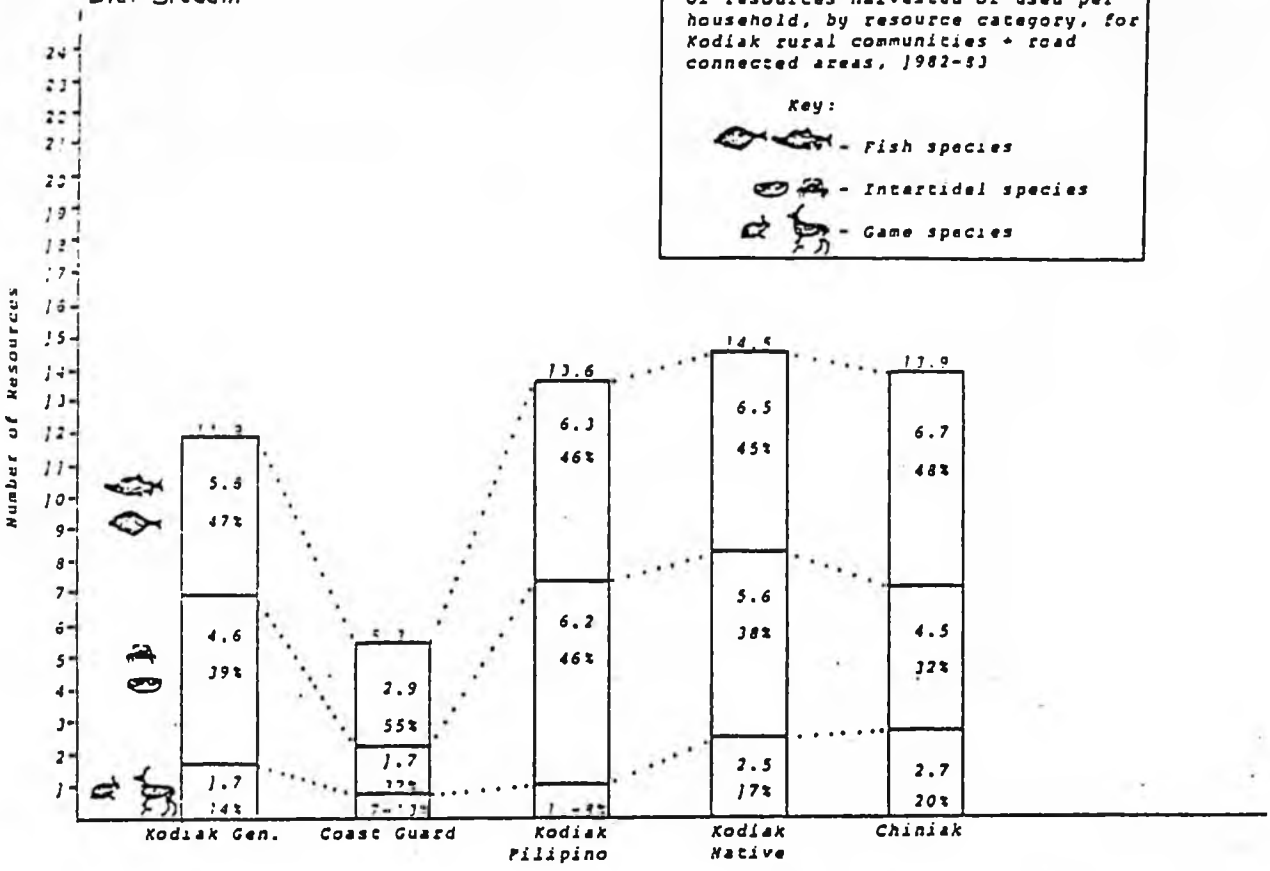
1. Data are from six rural communities surveyed.
2. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
3. Because of rounding and the computer techniques used to deal with missing data column, row, and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.

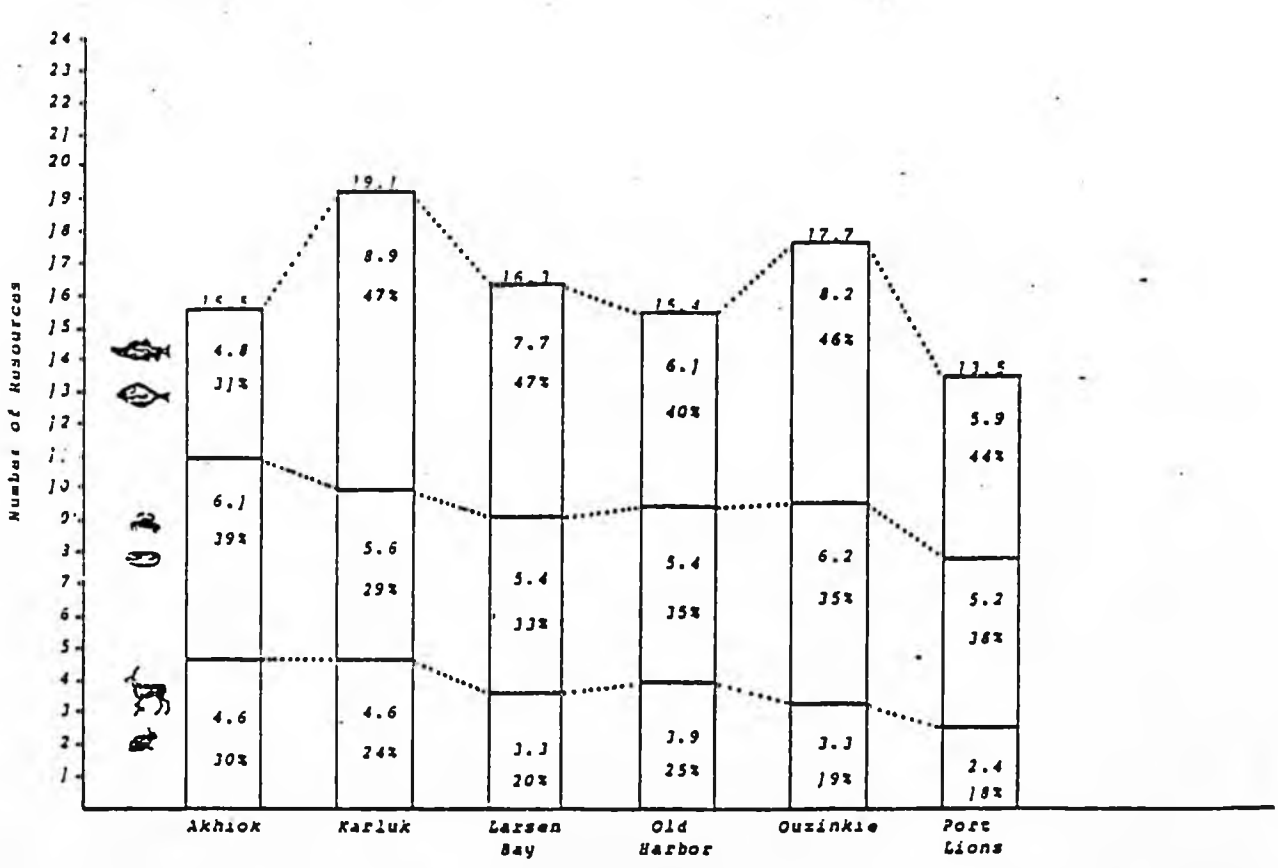
Source: Data from KANA survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

Figure 4 : Diet Breadth: mean number of resources harvested or used per household, by resource category, for Kodiak rural communities + road connected areas, 1982-83

Key:

- Fish species
- Intertidal species
- Game species





harvests vary because of a variety of factors; and that the amount of any one resource that will be "enough" usually depends in part on the household's success or failure in harvesting other resources. Nevertheless, the results of the survey give a rough estimate of Kodiak Island residents' ideas about what constitutes a good annual harvest of certain resources, especially for those that have been harvested regularly year after year.

Tables 13 and 14 report the results of this portion of the survey for six resources: red salmon, silver salmon, pink salmon, crab (all species), halibut, and deer. All results are expressed in mean number of animals per household. For convenience, the tables also give the mean amount of each resource reported to have been used per household during the study period. Thus, the reader may compare the estimated desired amounts and reported use amounts for each species for each community and sample.

In Figures 5 and 6, the reported mean household use of each resource during the study period (in numbers of animals) is expressed as a percentage of the estimated amount of that resource that would be "enough" for an average year. In other words, the amount used was divided by the amount "desired" and multiplied by 100. If the value for a particular species in a community is 100 percent or greater, this means that, on average, households were able to achieve their desired use levels for that species during the study period. If the value is less than 100, this means that the average household failed to harvest or receive the amount of that resource that they thought would be "enough".

Changes in Wild Resource Use

Surveyed households were asked to describe the change in amount of

Table 13: MEAN DESIRED USE OF SELECTED SPECIES PER HOUSEHOLD PER YEAR, KODIAK RURAL COMMUNITIES, 1982-1983[1,2,3,4,5]

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions
No. Households Surveyed	21	20	32	76	32	55
Salmon:						
Red	58.3	279.0	159.3	17.9	70.7	72.4
King	.3	8.7	10.4	2.1	1.6	6.9
Silver	22.6	45.9	45.7	54.1	39.5	40.2
Pink	56.1	44.7	54.8	70.8	23.9	14.3
Chum	10.7	4.4	7.2	40.5	16.2	2.8
Total Salmon	148.0	382.7	277.4	185.4	151.9	136.6
Halibut	3.4	5.8	9.9	4.6	4.2	14.3
All Crab	17.3	26.6	39.1	16.6	22.7	43.0
Clams[2]	6.6	3.1	10.8	21.3	5.4	7.2
Deer	3.3	6.2	7.8	5.2	4.7	4.8
Waterfowl	20.8	41.0	28.8	24.3	43.6	21.3
Seal	2.5	2.7	2.4	2.8	1.5	1.2
Sea Lion[3]	32.7	16.6	80.1	101.4	9.7	.4

1. Desired use is in numbers for all species unless otherwise indicated.
2. Desired use of clams is presented in 5 gallon buckets.
3. Desired use of sea lion is in pounds.
4. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
5. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not equal 100% or the totals expected from the addition of constituent numbers.

Source: Data from KANA 1983 survey, table prepared by Subsistence Division, Alaska Department of Fish and Game.

Table 14: MEAN DESIRED USE OF SELECTED SPECIES PER HOUSEHOLD PER YEAR, KODIAK ROAD-CONNECTED AREA, 1982-1983[1,2,3,4,5]

KODIAK ROAD-CONNECTED AREA

	Kodiak City	Coast Guard	Chiniak	Filipino	Native
No. Households Surveyed	155	76	17	34	35
Salmon:					
Red	22.6	8.4	32.1	27.4	30.6
King	4.3	3.9	1.3	2.8	2.8
Silver	15.6	10.0	23.9	18.4	20.9
Pink	5.8	7.6	12.5	2.5	17.3
Chum	2.1	1.2	4.8	3.1	2.7
Total Salmon	50.5	31.1	74.6	54.2	74.3
Halibut	7.3	9.4	4.8	5.4	11.4
All Crab	30.4	34.7	42.5	32.3	21.9
Clams[2]	3.3	1.8	7.6	3.9	5.1
Deer	3.5	2.5	5.1	1.8	3.4
Waterfowl	3.9	2.2	6.1	3.6	10.6
Seal	.2	0.0	.1	0.0	.1
Sea Lion[3]	0.0	0.0	0.0	0.0	1.5

1. Desired harvest/use is in numbers for all species unless otherwise indicated
2. Desired harvest/use of clams is presented in 5 gallon buckets.
3. Desired harvest/use of sea lion is in pounds.
4. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
5. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

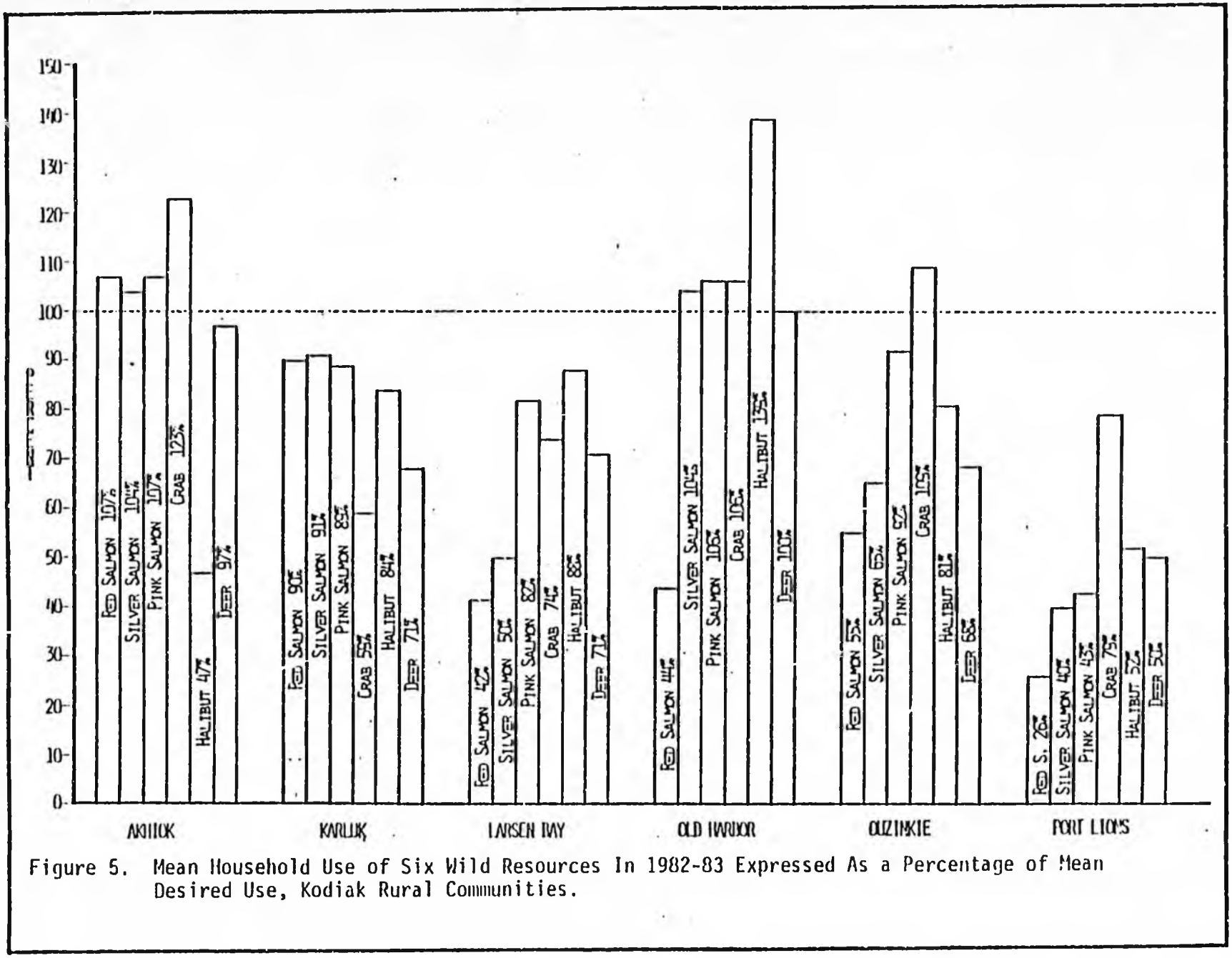


Figure 5. Mean Household Use of Six Wild Resources In 1982-83 Expressed As a Percentage of Mean Desired Use, Kodiak Rural Communities.

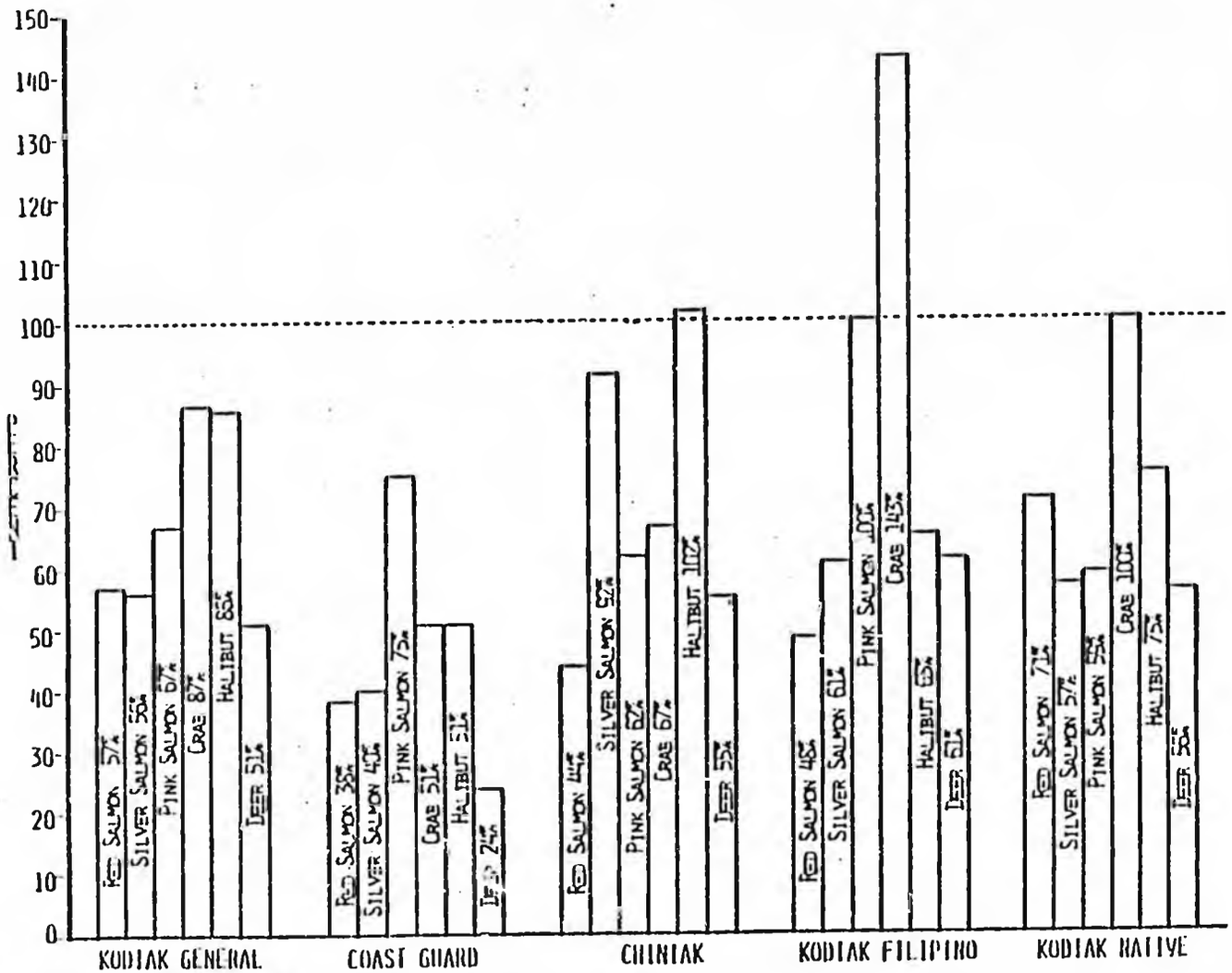


Figure 6. Mean Household Use of Six Wild Resources in 1982-83 Expressed As a Percentage of Mean Desired Use, Kodiak Road-Connected Areas.

their use of wild foods over the last five years. The results are given in Figure 7. For example, it can be seen that 47 percent of Larsen Bay's households reported using a much greater amount of wild foods during the study period than five years ago, 35 percent used the same amount, and 6 percent said they used much less.

The same households were also asked to estimate the change in the number of kinds of wild resources used over the last five years. Figure 8 shows the results. The reader will note, for example, that 29 percent of the households in the Native sample from Kodiak city said they used more kinds of wild resources during the study period than they did five years ago. Fifty four percent said they used about the same number of types, and 17 percent said they used less.

Estimated Total Harvest and Total Harvest Weight

Table 15 presents the estimated total harvest of selected fish and game species by Kodiak Island residents. Table 16 presents the estimated food weight of that harvest. Harvest data and food weight data from the survey were extrapolated to the total population of Kodiak as reported in the most recent census. Please see Appendix B for the extrapolation methodology. Extrapolations provide a good estimate of harvest level and importance, but they should not be thought of as exact measurements. According to these data Kodiak residents harvested approximately 182,000 salmon; 21,000 halibut; 36,500 king crab; 6,600 deer; and 14,900 ducks for non-commercial use in the 12 months covered by the survey. A total of almost 2.5 million pounds of food from fish and game resources was utilized, with fish accounting for about 1.7 million pounds, marine invertebrates for about 260,000 pounds, and game accounting for 500,000 pounds.

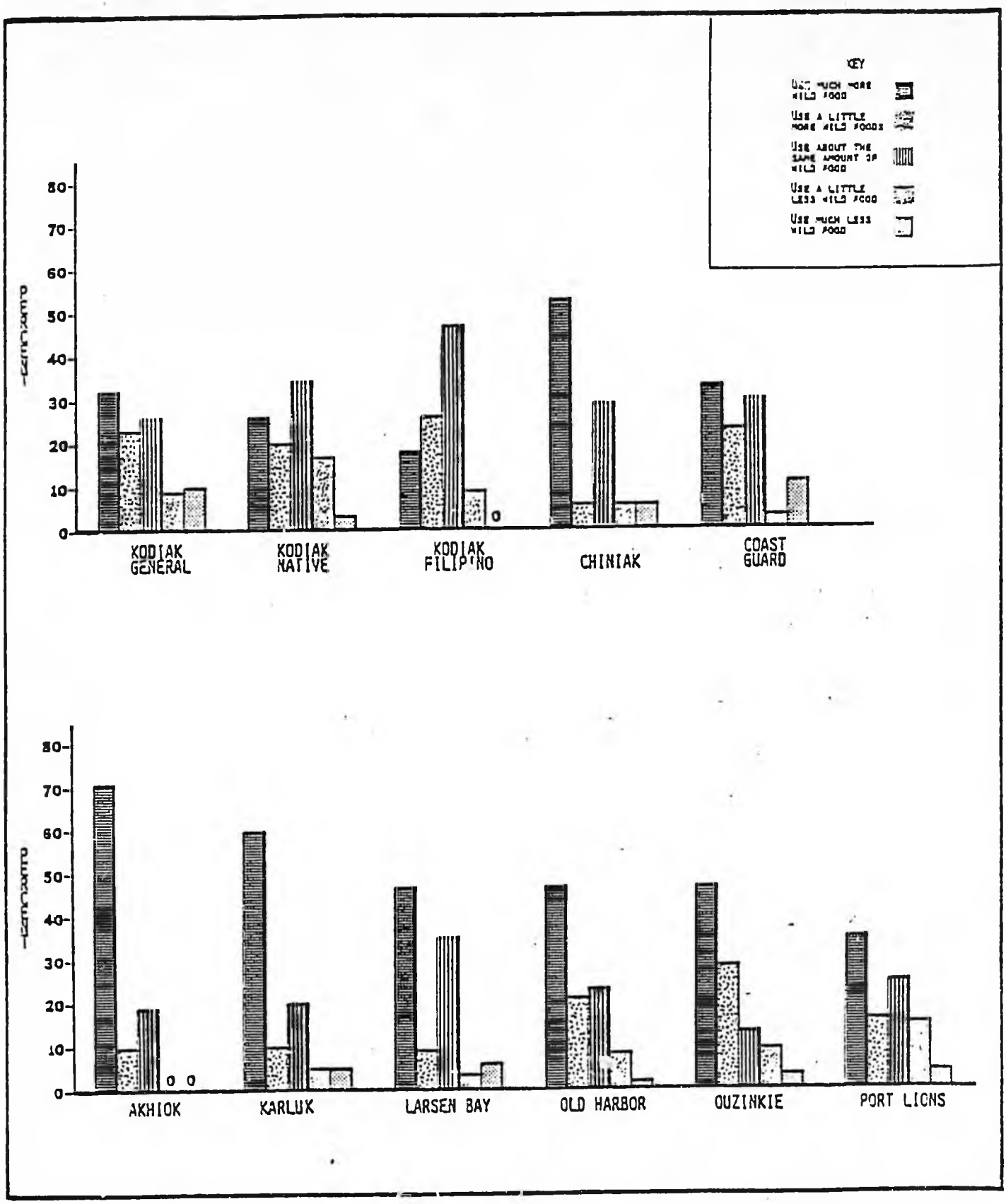


Figure 7. Reported Change in Amount of Wild Resources Used, Kodiak Rural Communities and Road-Connected Areas, 1982-83.

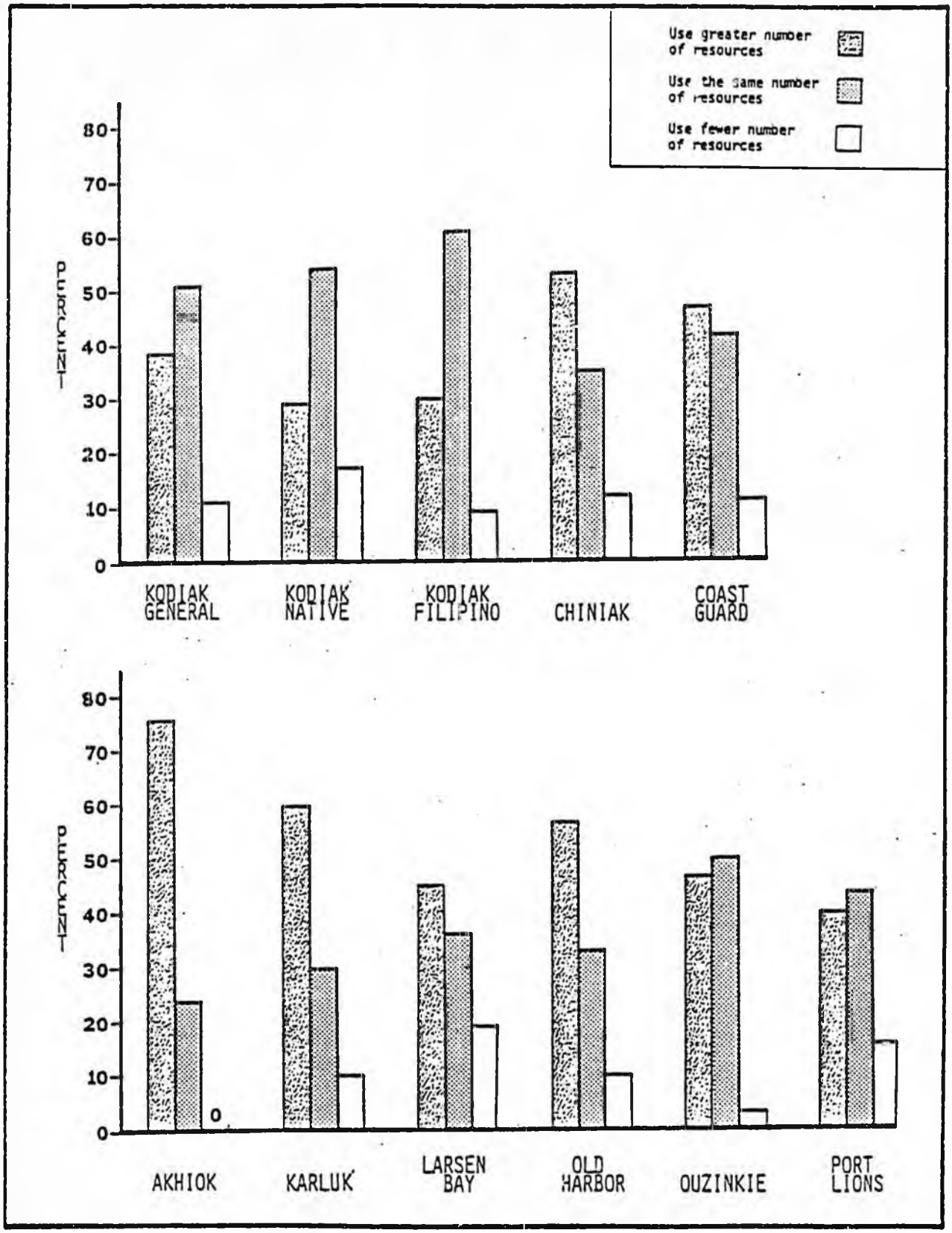


Figure 8. Reported change in number of wild resources used, Kodiak Rural Communities and Road-Connected areas, 1982-1983.

Table 15: ESTIMATED TOTAL HARVEST OF SELECTED SPECIES, KODIAK ROAD-CONNECTED AND RURAL AREAS, 1982-1983[1,2,3,4,5]

	KODIAK ROAD-CONNECTED AREA			RURAL		TOTAL
	City Area	Coast Guard	Chiniak Pasagshak	Rural No. Community[6]	Six Rural Communities	
Population[7]	8,247	1,995	611	597	1,264	12,714
Salmon:						
Red	29,063	2,566	2,173	9,821	20,764	64,387
King	745	166	297	411	870	2,489
Silver	23,350	3,560	3,657	6,679	14,121	51,367
Pink	17,636	6,126	1,391	8,061	17,042	50,256
Chum	2,981	745	672	2,928	6,191	13,517
TOTAL SALMON	73,775	13,162	8,190	27,900	38,988	182,016
Halibut	12,172	5,629	688	905	1,913	21,307
Dolly Varden	21,114	11,920	797	2,533	5,356	41,720
Steelhead	1,490	2,318	219	543	1,148	5,718
Butter Clams	3,974	828	656	823	1,739	8,020
Crab:						
King	17,885	8,775	2,704	2,303	4,869	36,536
Tanner	10,930	3,891	641	609	1,287	17,358
Dungeness	7,949	2,649	703	1,036	2,191	14,528
Deer	3,229	497	688	707	1,496	6,617
Rabbit	2,981	1,324	531	345	730	5,931
Ptarmigan	1,739	497	63	345	730	3,374
Ducks	1,987	166	563	3,915	8,278	14,909
Geese	0	83	31	329	696	1,139
Harbor Seal	248	0	16	230	487	981
Sea Lion	0	0	16	132	278	426

1. Harvest in numbers except clams which are in 5 gal. buckets.
2. Kodiak Road-Connected data are from a sample of all road connected areas.
3. Rural community data combine data from 6 rural communities, total population was surveyed.
4. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details
5. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.
6. Persons living rurally outside communities were not surveyed. In this computation the assumptions are made that family size and fish and game harvest for this population are the same as for rural community residents.
7. Population data are from Kodiak City and Borough census, 1982, supplied by Linda Fried.

Source: Data from KANA 1983 survey, table prepared by Subsistence Division, Alaska Department of Fish and Game.

Table 16: ESTIMATED FOOD WEIGHT OF TOTAL FISH AND GAME HARVEST, KODIAK ROAD-CONNECTED AND RURAL AREAS, 1982-1983[1,2,3,4,5]

	KODIAK ROAD-CONNECTED AREA			RURAL		TOTAL
	City Area	Coast Guard	Chiniak Pasagshak	Rural No Community[6]	Six Rural Communities	
Population[7]	8,247	1,995	611	597	1,264	12,714
All Salmon	327,893	53,393	41,373	122,980	260,015	805,654
All Fish	823,706	270,194	72,695	163,052	344,739	1,674,386
All Crab	64,585	28,145	7,721	6,991	14,782	122,224
All Invertebrates	135,877	44,867	15,114	22,323	47,196	265,377
Deer	143,329	20,116	29,790	30,465	64,413	288,113
Marine Mammals	24,095	0	2,672	35,548	75,160	137,475
Small Game	12,669	3,642	2,672	12,321	26,050	57,354
All Game	205,678	24,503	36,277	77,512	163,883	507,853
All Species	1,180,414	341,633	124,086	259,482	548,620	2,454,235

1. Food weight given in pounds, converted from harvest number using standard conversion factors, see Table 9.
2. Kodiak Road-Connected data are from samples of all road connected areas.
3. Rural community data combine data from 6 rural communities, total population was surveyed.
4. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
5. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.
6. Persons living rurally outside communities were not surveyed. In this computation the assumptions are made that family size and fish and game harvest for this population are the same as for rural community residents.
7. Population data are from Kodiak City and Borough census, 1982, supplied by Linda Fried.

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

Domestic Use of Commercial Catches

Surveyed households were asked if they took any salmon, halibut, or crab from their own commercial catches of these resources for domestic use during the study period. Tables 17 and 18 report the results, in percentages of total households in each sample. For example, 36 percent of the households in Port Lions said they took some salmon for household use from their commercial catches. This does NOT mean that the commercial catch was the only source of salmon for these households, however, since household members may have also set subsistence nets or pots, or fished with hook and line.

Distribution and Exchange of Wild Resources

Tables 19a through 19p provide information on the sharing of wild resources within and between communities in the Kodiak Island region during the study period. For each community or sample, a pair of tables is presented. The first reports information on the receiving of resources by households in a particular community. For example, according to Table 19c, on average each household in Karluk received game from 3.3 other Karluk households during the study period, and 90 percent of Karluk's households received game from other households in the community. In addition, Karluk households received game from about 1.6 households from Larsen Bay. About 65 percent of Karluk's households received game from Larsen Bay.

The second table in each community pair reports information on the giving of resources from households in that community. For example, Table 19d reports, on average, each household in Karluk gave game to 3.7 other Karluk households, and 85 percent of Karluk's households gave game to other households in their community. In addition, Karluk households,

Table 17: DOMESTIC USE OF COMMERCIAL CATCH, BY FISHERY, KODIAK RURAL COMMUNITIES, 1982-1983[1,2]

	Akhiok	Karluk	Larson Bay	Old Harbor	Ouzinkie	Port Lions
No. Households Surveyed	21	20	32	76	32	35
Use Salmon from Commercial Harvest	81%	15%	41%	83%	63%	36%
Use Halibut from Commercial Harvest	19%	5%	25%	74%	31%	45%
Use Crab from Commercial Harvest	10%	0%	6%	47%	28%	47%

Table 18: DOMESTIC USE OF COMMERCIAL CATCH, BY FISHERY, KODIAK ROAD-CONNECTED COMMUNITIES, 1982-1983[1,2]

KODIAK ROAD-CONNECTED AREA

	General Sample	Coast Guard	Chiniak	Filipino	Native
No. Households Surveyed	155	76	17	34	35
Use Salmon from Commercial Harvest	18%	3%	41%	3%	34%
Use Halibut from Commercial Harvest	13%	3%	41%	6%	14%
Use Crab from Commercial Harvest	19%	4%	35%	12%	23%

1. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
2. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

Table 19a: DISTRIBUTION OF HARVESTED FOODS TO EACH AKHIOK HOUSEHOLD BY FOOD CATEGORY, 1982-1983[1,2,3,4]

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Kodiak	Elsewhere
Game	2.3 85%	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fish/Snellfish	1.6 75%	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ducks/Birds	2.0 80%	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Plants/Berries	.9 35%	0.0	0.0	0.0	0.0	0.0	0.0	0.0

1. Numbers indicate the mean number of households from each place giving harvested food to each Akhiok household.
2. Percentages indicate the percent of Akhiok households receiving any harvested food from each community.
3. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
4. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

Table 19b: DISTRIBUTION OF HARVESTED FOODS FROM EACH AKHIOK HOUSEHOLD BY FOOD CATEGORY, 1982-1983[1,2,3,4]

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Kodiak	Elsewhere
Game	2.0 65%	0	0	0	0	0	.2 15%	.1 5%
Fish/Shellfish	2.1 60%	0	0	0	0	0	.2 15%	0
Ducks/Birds	1.6 60%	0	0	0	0	0	.3 20%	0
Plants/Berries	.5 20%	0	0	0	0	0	.1 5%	0

1. Numbers indicate the mean number of households in each place receiving harvested foods from each Akhiok household.
2. Percentages indicate the percent of Akhiok households giving any harvested food to each community.
3. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
4. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

Table 19c: DISTRIBUTION OF HARVESTED FOODS TO EACH KARLUK HOUSEHOLD BY FOOD CATEGORY, 1982-1983[1,2,3,4]

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Kodiak	Elsewhere
Game	0	3.3 90%	1.6 65%	0	0	0	.4 10%	.3 15%
Fish/Shellfish	0	3.2 95%	2.2 85%	0	0	0	.2 20%	.1 5%
Ducks/Birds	0	2.4 60%	.2 5%	0	0	0	0	0
Plants/Berries	0	.9 35%	.6 50%	0	0	0	.3 20%	0

1. Numbers indicate the mean number of households in each place giving harvested foods to each Karluk household.
2. Percentages indicate the percent of Karluk households receiving any harvested food from each community.
3. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
4. Because of rounding and the computer techniques used to deal with missing data, the column, row and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

Table 19d: DISTRIBUTION OF HARVESTED FOODS FROM EACH KARLUK HOUSEHOLD BY FOOD CATEGORY, 1982-1983[1,2,3,4]

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Kodiak	Elsewhere
Game	0	3.7 85%	1.3 45%	0	.1 5%	0	1.4 60%	.7 20%
Fish/Shellfish	0	5.7 85%	3.1 70%	0	.2 10%	0	3.7 85%	1.4 35%
Ducks/Birds	0	3.3 65%	.8 30%	0	0	0	1.4 40%	.5 15%
Plants/Berries	0	.6 25%	.3 20%	0	0	0	.2 5%	.5 10%

1. Numbers indicate the mean number of households in each place receiving harvested foods from each Karluk household.
2. Percentages indicate the percent of Karluk households giving any harvested food to each community.
3. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
4. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

Table 19e: DISTRIBUTION OF HARVESTED FOODS TO EACH LARSEN BAY HOUSEHOLD BY FOOD CATEGORY, 1982-1983[1,2,3,4]

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Kodiak	Elsewhere
Game	0	.2 6%	2.0 66%	0	0	0	0	.1 6%
Fish/Shellfish	0	1.1 63%	3.4 97%	* 3%	0	0	* 3%	.2 6%
Ducks/Birds	0	.1 3%	.8 38%	0	0	0	* 3%	0
Plants/Berries	* 3%	.3 13%	.5 25%	* 3%	0	0	.3 16%	* 3%

1. Numbers indicate the mean number of households in each place giving harvested foods to each Larsen Bay household. Symbol "*" is used when mean is less than .05.
2. Percentages indicate the percent of Larsen Bay households receiving any harvested food from each community.
3. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology for details.
4. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

Table 19f: DISTRIBUTION OF HARVESTED FOODS FROM EACH LARSEN BAY HOUSEHOLD BY FOOD CATEGORY, 1982-1983[1,2,3,4]

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Kodiak	Elsewhere
Game	0	.5 22%	1.9 53%	0	0	0	NA 41%	NA 22%
Fish/Shellfish	0	.7 22%	3.9 66%	0	0	0	NA 41%	NA 28%
Ducks/Birds	0	.1 3%	.8 31%	0	0	0	NA 13%	NA 6%
Plants/Berries	0	.4 16%	.8 25%	.2 3%	0	0	NA 9%	NA 6%

1. Numbers indicate the mean number of households in each place receiving harvested foods from each Larsen Bay household. Symbol "NA" means data are not available.
2. Percentages indicate the percent of Larsen Bay households giving any harvested food to each community.
3. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
4. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always be equal 100% or the totals expected from the addition of constituent numbers.

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

Table 19g: DISTRIBUTION OF HARVESTED FOODS TO EACH OLD HARBOR HOUSEHOLD BY FOOD CATEGORY, 1982-1983[1,2,3,4]

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Kodiak	Elsewhere
Game	.1 3%	0	0	1.4 64%	0	0	.1 3%	.1 5%
Fish/Shellfish	.1 1%	.1 4%	0	1.9 67%	0	* 1%	* 1%	.1 5%
Ducks/Birds	* 1%	0	0	1.1 53%	* 1%	0	* 1%	.1 4%
Plants/Berries	.1 5%	0	0	.2 14%	0	0	* 1%	.1 8%

1. Numbers indicate the mean number of households in each place giving harvested foods to each Old Harbor household. Symbol "*" is used when mean is less than .05.
2. Percentages indicate the percent of Old Harbor households receiving any harvested food from each community.
3. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
4. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the totals expected from the addition of constituent numbers.

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

Table 19h: DISTRIBUTION OF HARVESTED FOODS FROM EACH OLD HARBOR HOUSEHOLD BY FOOD CATEGORY, 1982-1983[1,2,3,4]

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Kodiak	Elsewhere
Game	0	0	* 1%	1.8 62%	0	0	.1 5%	.1 5%
Fish/Shellfish	* 1%	* 1%	0	2.1 70%	0	0	.1 8%	.2 11%
Ducks/Birds	0	0	0	1.3 49%	0	0	.1 7%	* 3%
Plants/Berries	* 1%	0	0	.1 5%	0	0	0	* 4%

1. Numbers indicate the mean number of households in each place receiving harvested foods from each Old Harbor household. Symbol "*" is used when mean is less than .05.
2. Percentages indicate the percent of Old Harbor households giving any harvested food to each community.
3. Data are for a 12 month period, most often from June 1982 through May 1983. See methodology section for details.
4. Because of rounding and the computer techniques used to deal with missing data, the column, row, and category totals may not always equal 100% or the totals expected from the additon of constituent numbers.

Source: Data from KANA 1983 survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.