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Kodiak Island Area Local Fish and Game Resource Guide

by

**Kodiak Area Native Association with assistance from Alaska Department of
Fish and Game**

1983

Alaska Department of Fish and Game

Division of Subsistence



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Weights and measures (metric)		General		Mathematics, statistics	
centimeter	cm	Alaska Administrative Code	AAC	<i>all standard mathematical signs, symbols and abbreviations</i>	
deciliter	dL	all commonly-accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.	alternate hypothesis	H_A
gram	g			base of natural logarithm	e
hectare	ha			catch per unit effort	CPUE
kilogram	kg	all commonly-accepted professional titles	e.g., Dr., Ph.D., R.N., etc.	coefficient of variation	CV
kilometer	km			confidence interval	CI
liter	L	at	@	correlation coefficient (multiple)	R
meter	m	compass directions:		correlation coefficient (simple)	r
milliliter	mL	east	E	covariance	cov
millimeter	mm	north	N	degree (angular)	$^{\circ}$
		south	S	degrees of freedom	df
Weights and measures (English)		west	W	expected value	E
cubic feet per second	ft ³ /s	copyright	©	greater than	>
foot	ft	corporate suffixes:		greater than or equal to	≥
gallon	gal	Company	Co.	harvest per unit effort	HPUE
inch	in	Corporation	Corp.	less than	<
mile	mi	Incorporated	Inc.	less than or equal to	≤
nautical mile	nmi	Limited	Ltd.	logarithm (natural)	ln
ounce	oz	District of Columbia	D.C.	logarithm (base 10)	log
pound	lb	et alii (and others)	et al.	logarithm (specify base)	log ₂ , etc.
quart	qt	et cetera (and so forth)	etc.	minute (angular)	'
yard	yd	exempli gratia (for example)	e.g.	not significant	NS
		Federal Information Code	FIC	null hypothesis	H_0
Time and temperature		id est (that is)	i.e.	percent	%
day	d	latitude or longitude	lat. or long.	probability	P
degrees Celsius	°C	monetary symbols (U.S.)	\$, ¢	probability of a type I error (rejection of the null hypothesis when true)	α
degrees Fahrenheit	°F	months (tables and figures)	first three letters (Jan.,...,Dec)	probability of a type II error (acceptance of the null hypothesis when false)	β
degrees kelvin	K	registered trademark	®	second (angular)	"
hour	h	trademark	™	standard deviation	SD
minute	min	United States (adjective)	U.S.	standard error	SE
second	s	United States of America (noun)	USA	variance	
		U.S.C.	United States Code	population	Var
Physics and chemistry		U.S. state	two-letter abbreviations (e.g., AK, WA)	sample	var
<i>all atomic symbols</i>					
alternating current	AC	Measures (fisheries)			
ampere	A	fork length	FL		
calorie	cal	mideye-to-fork	MEF		
direct current	DC	mideye-to-tail-fork	METF		
hertz	Hz	standard length	SL		
horsepower	hp	total length	TL		
hydrogen ion activity (negative log of)	pH				
parts per million	ppm				
parts per thousand	ppt, ‰				
volts	V				
watts	W				

SPECIAL PUBLICATION NO. SP1983-002

KODIAK ISLAND AREA LOCAL FISH AND GAME RESOURCE GUIDE

by

Kodiak Area Native Association with assistance from Alaska Department of Fish and Game
Alaska Department of Fish and Game, Division of Subsistence, Anchorage

Alaska Department of Fish and Game
Division of Subsistence
333 Raspberry Road, Anchorage, AK 99518-1599

1983

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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



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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.

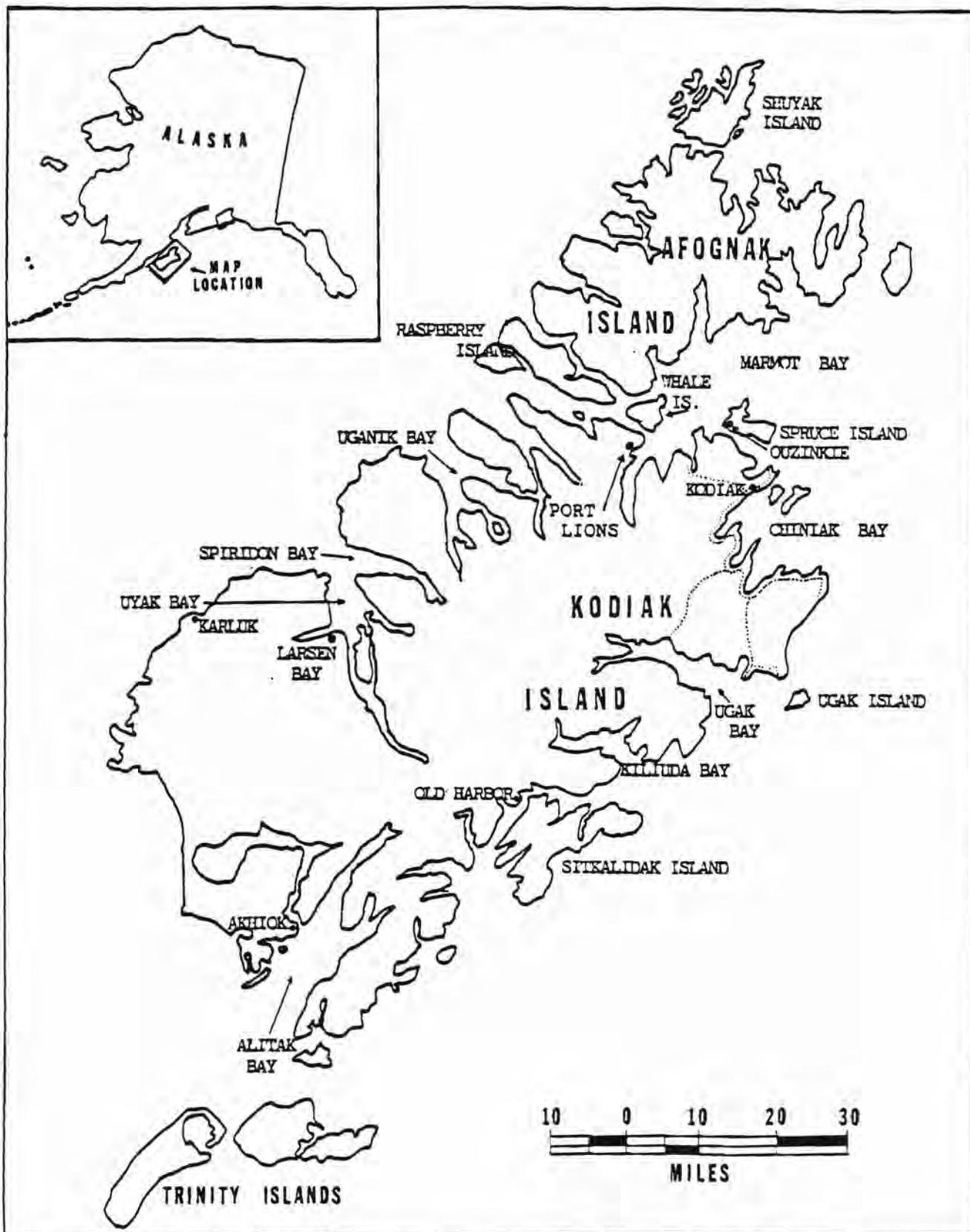


Figure 1. Kodiak Island Region

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 transportation 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 Kodiak 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	<u>3,018</u>
	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.

ACE 8879065

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. Electricity

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 Fahrenheit. 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 two 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 "Karlook". 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.

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 positions.

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.

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.

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.

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.

ACE 8879075

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 incompleting 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.

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 masse 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	31.8	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	Larsen ^e 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 ✓
		7 688.1		583.5	319.6	
All Species	1975.2	3296.3	1665.5 ⁴	1758.3	1196.3	865.9
					= 192	
					per 1	
					7	
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.

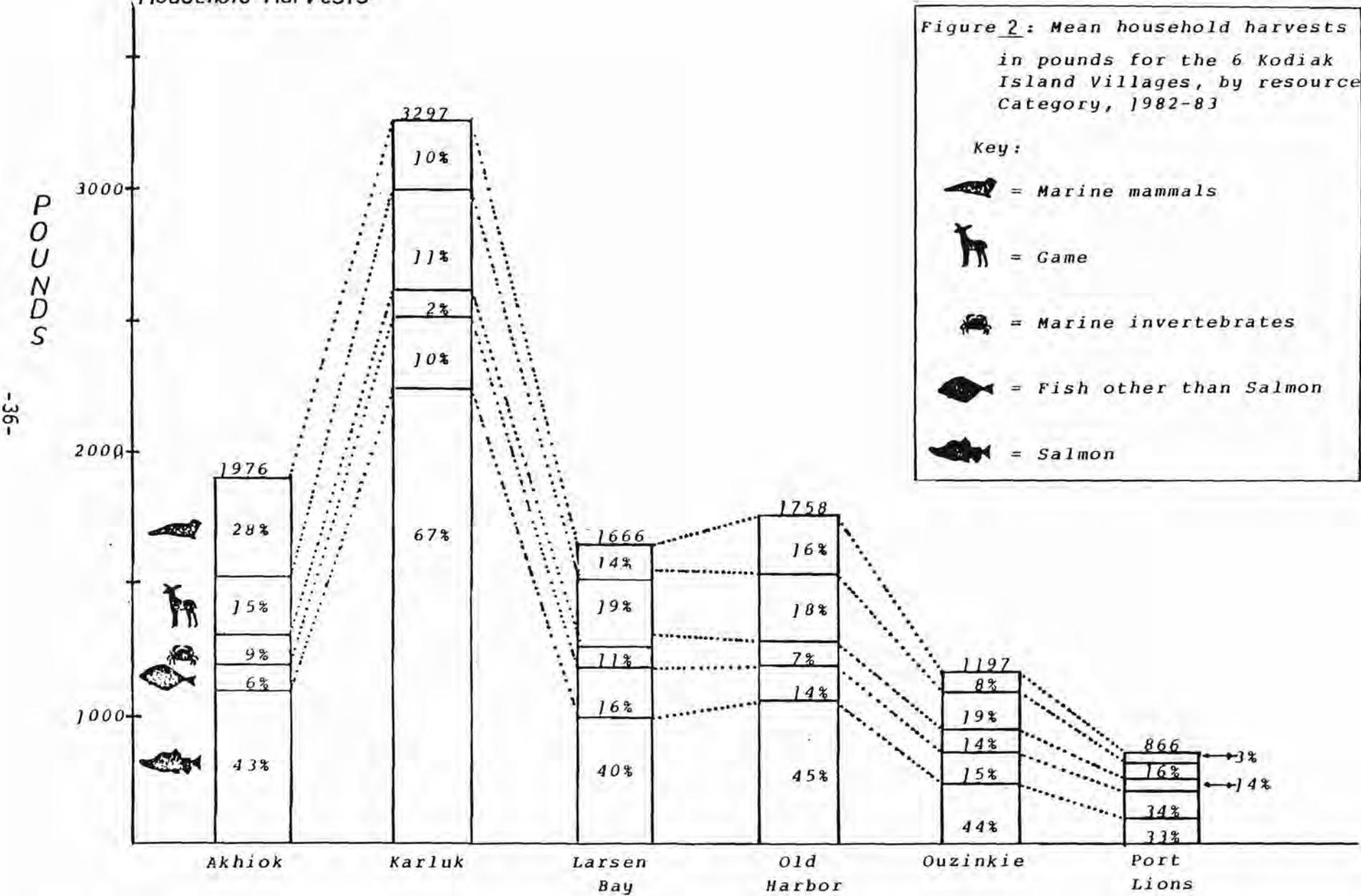
that the category "all fish" includes the category "all salmon"; "all crab" is contained within "all invertebrate"; and "deer", "marine mammals", and "small game" are included within the "all game" category. The mean total household harvest for a community is the sum of "all fish", "all invertebrate", 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

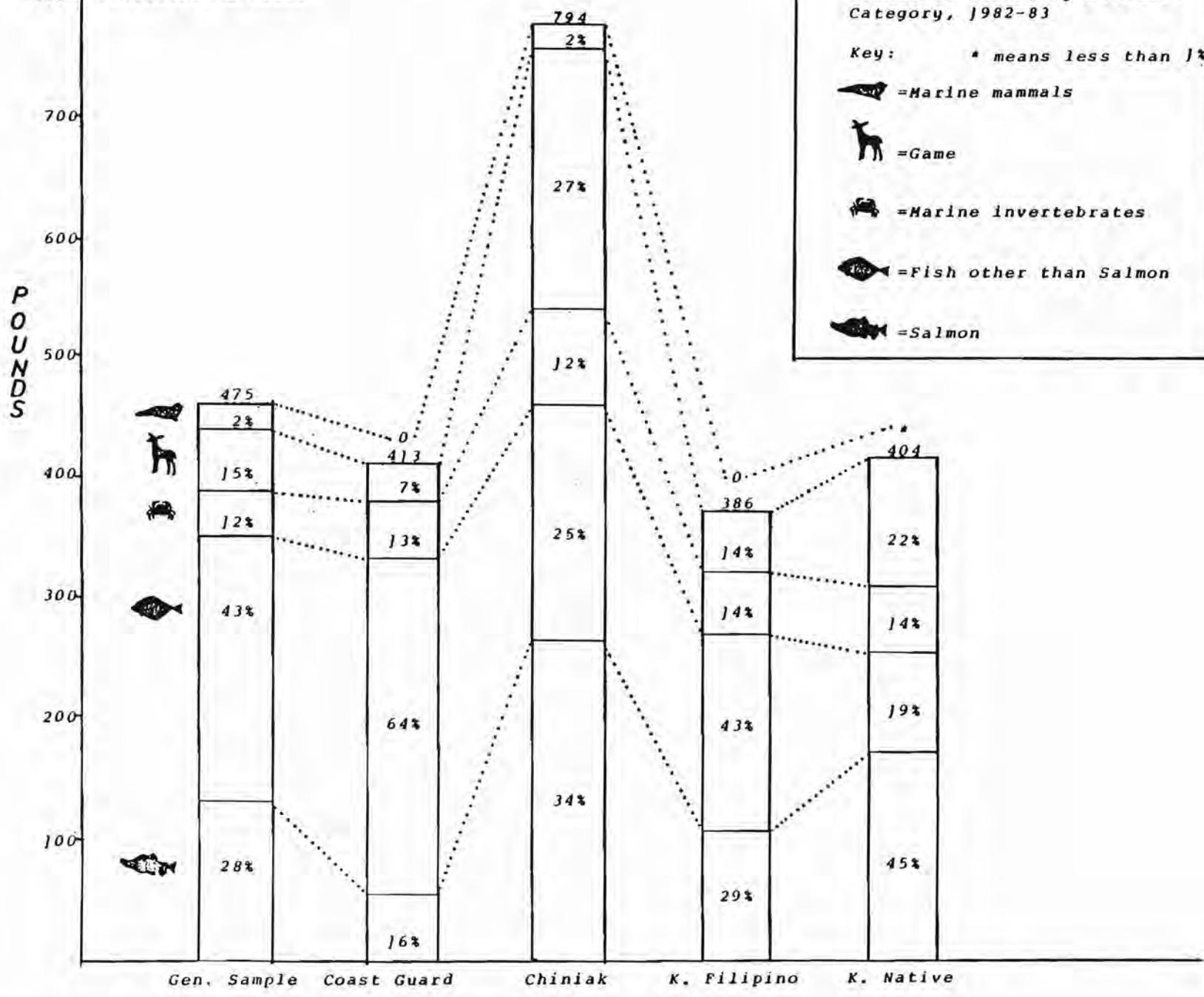


Household Harvests

Figure 3: Mean household harvest in pounds for the Kodiak road connected areas, by resource Category, 1982-83

Key: * means less than 1%

-  = Marine mammals
-  = Game
-  = Marine invertebrates
-  = Fish other than Salmon
-  = Salmon



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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	9.4	25.7	17.3	7.8	21.8	5.2
Varden						
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.

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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}

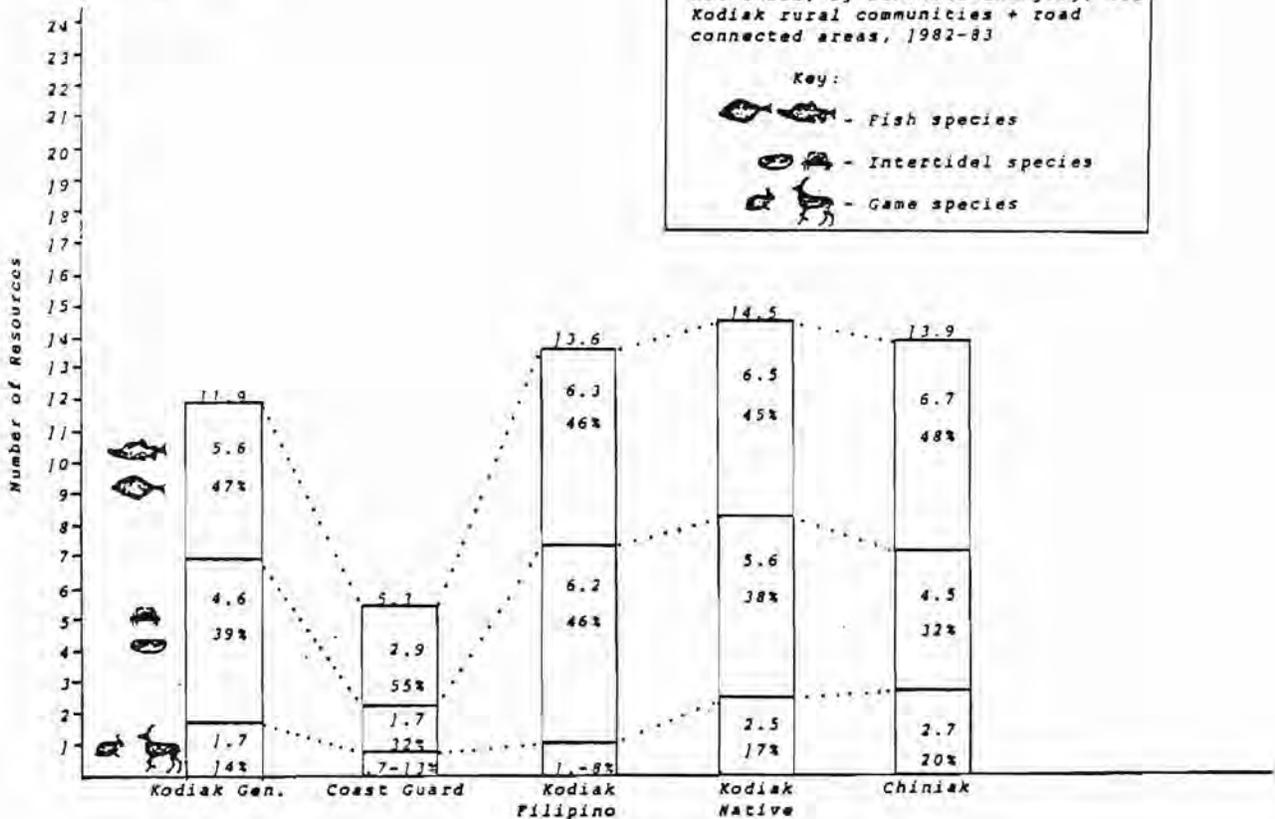
Community/ Sample	Fish Species	Intertidal Species	Game Species	All Animal Species
Akhiok	4.8	6.1	4.6	15.5
Karluk	8.9	5.6	4.6	19.1
Larsen Bay	7.7	5.4	3.3	16.3
Old Harbor	6.1	5.4	3.9	15.4
Ouzinkie	8.2	6.2	3.3	17.7
Port Lions	5.9	5.2	2.4	13.5
ALL RURAL ¹	6.7	5.5	3.5	15.7
.....				
Kodiak City	5.6	4.6	1.7	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.

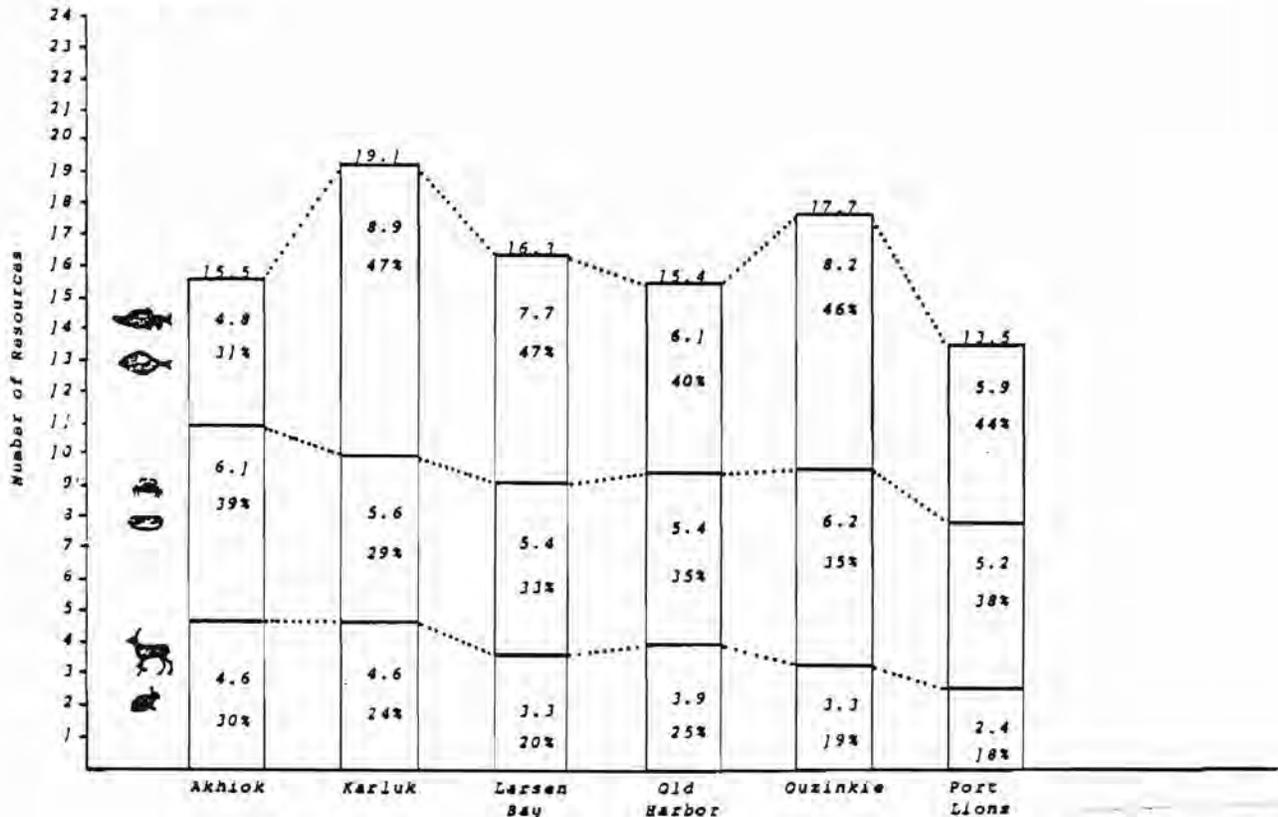
Source: Data from KANA survey; table prepared by Subsistence Division, Alaska Department of Fish and Game.

Diet Breadth

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



Diet Breadth



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	151.3	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

No. Households Surveyed	Kodiak City	Coast Guard	Chiniak	Filipino	Native
	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.

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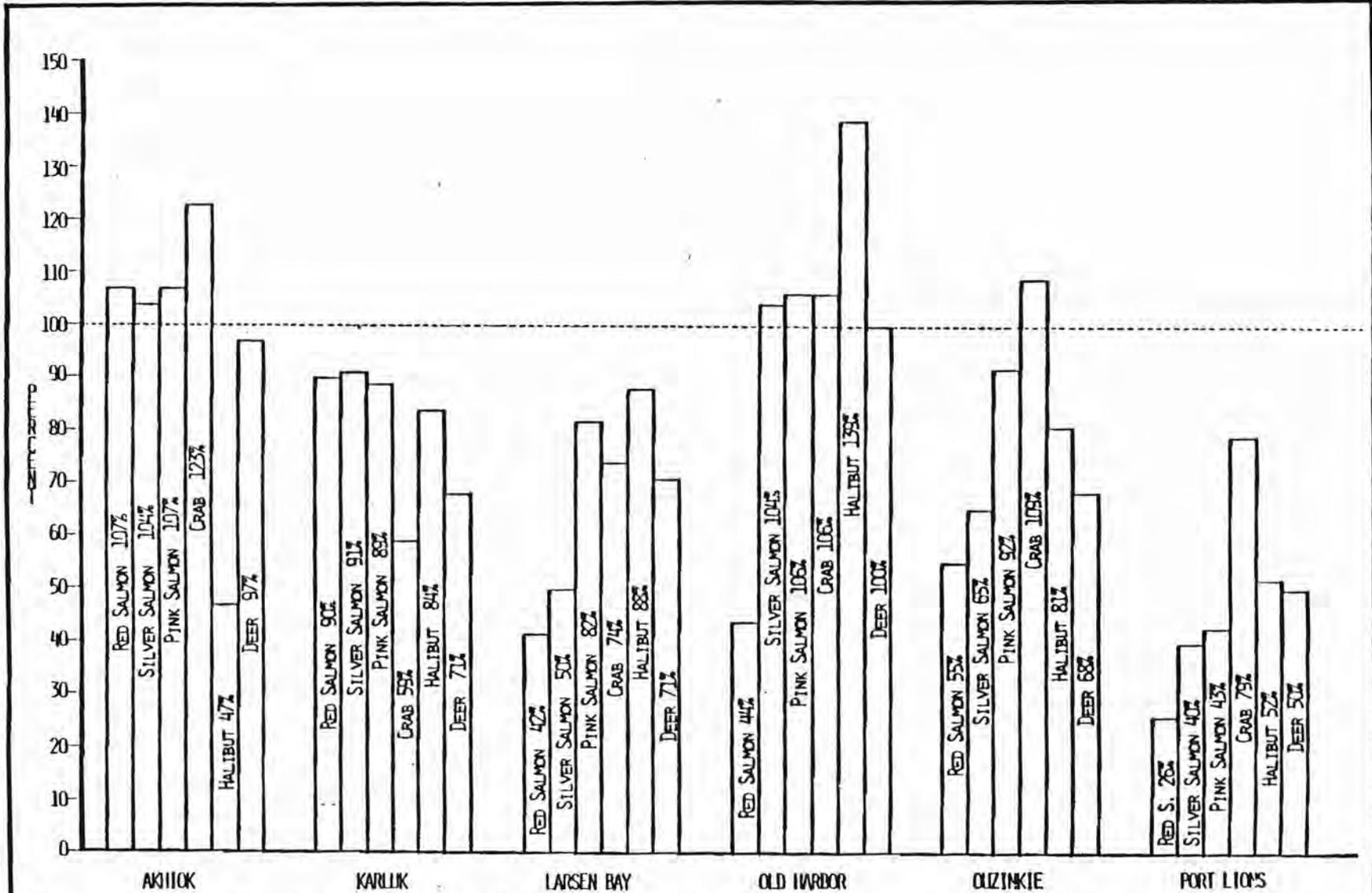


Figure 5. Mean Household Use of Six Wild Resources In 1982-83 Expressed As a Percentage of Mean Desired Use, Kodiak Rural Communities.

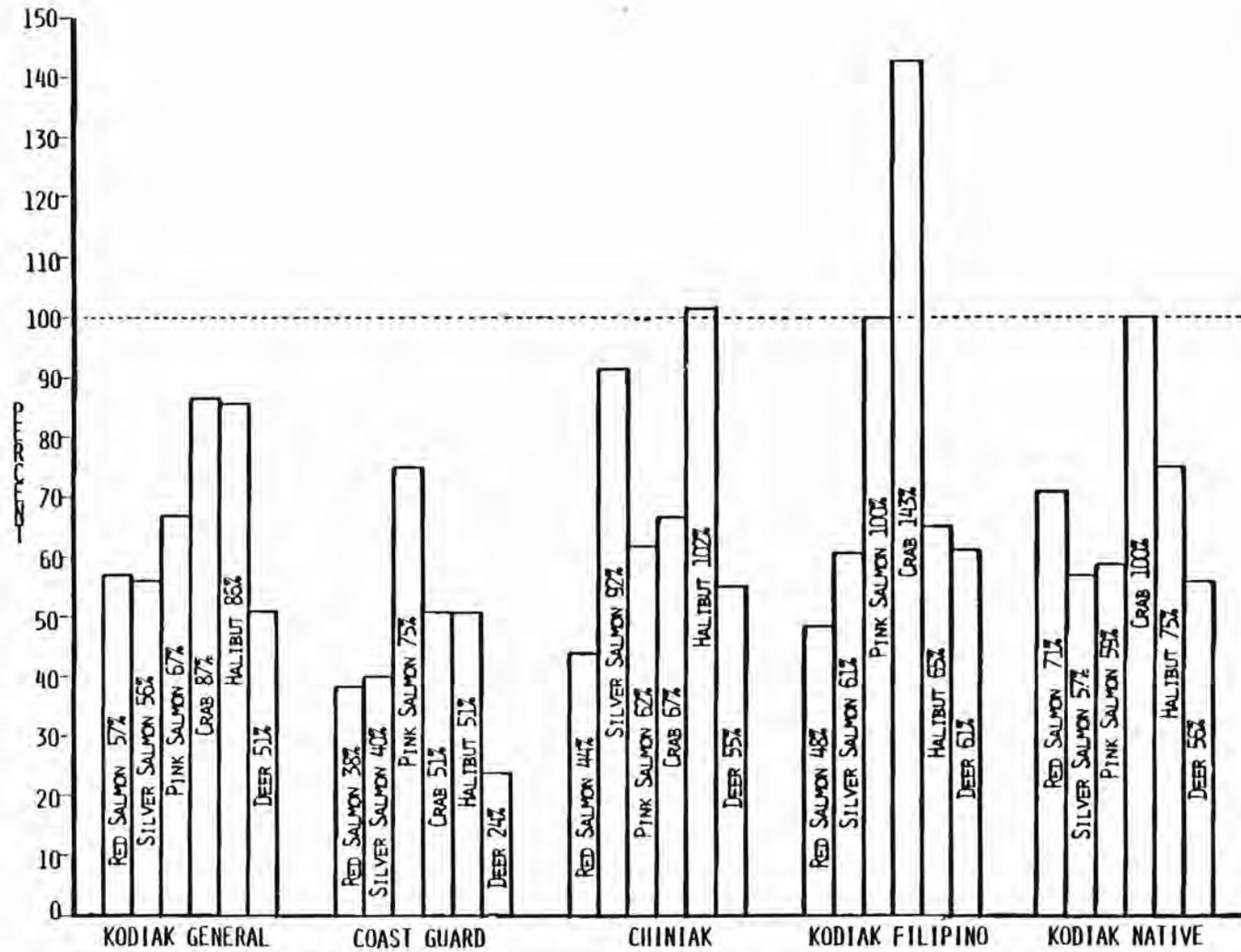


Figure 6. Mean Household Use of Six Wild Resources in 1982-83 Expressed As a Percentage of Mean Desired Use, Kodiak Road-Connected Areas.

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.

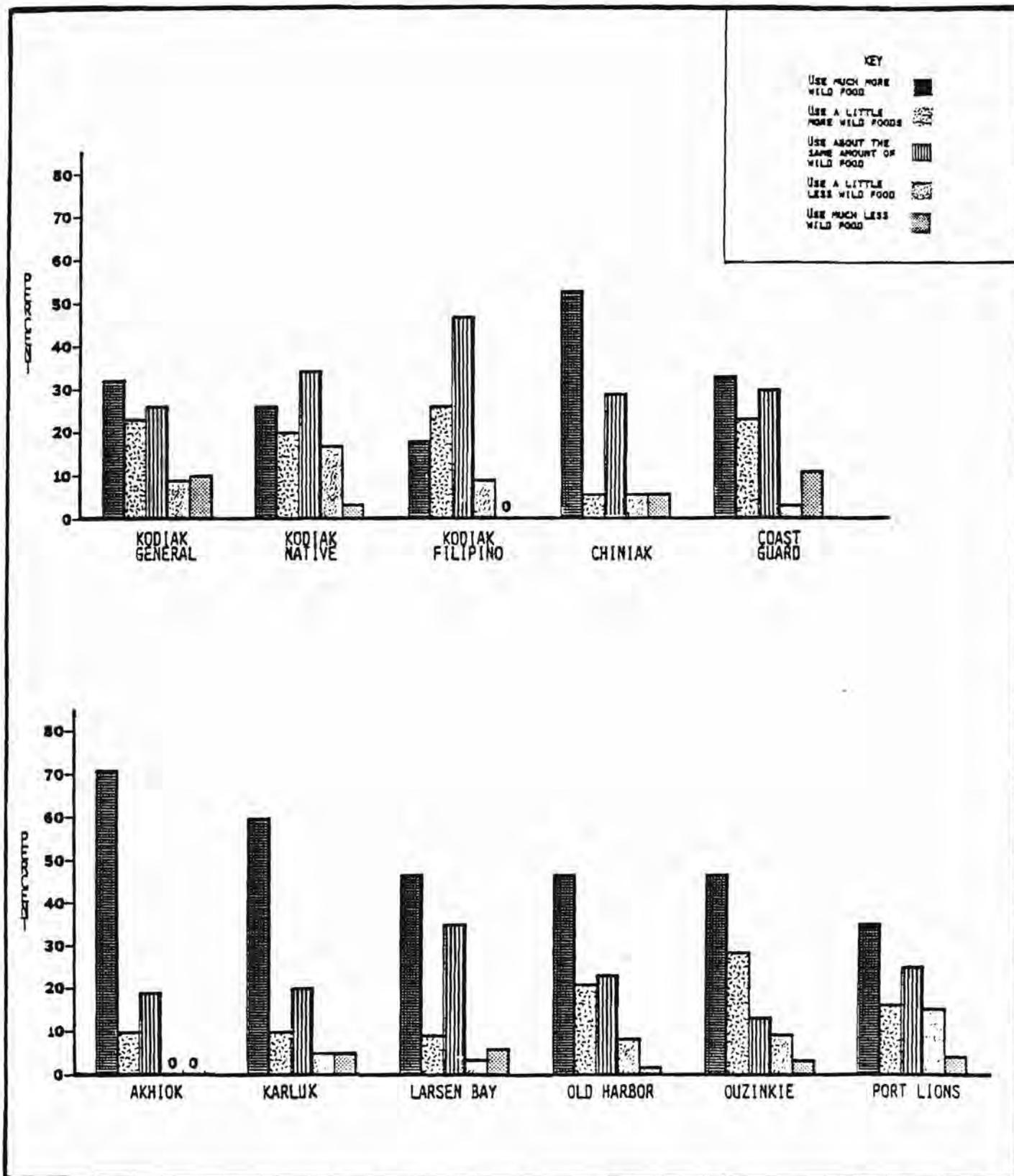


Figure 7. Reported Change in Amount of Wild Resources Used, Kodiak Rural Communities and Road-Connected Areas, 1982-83.

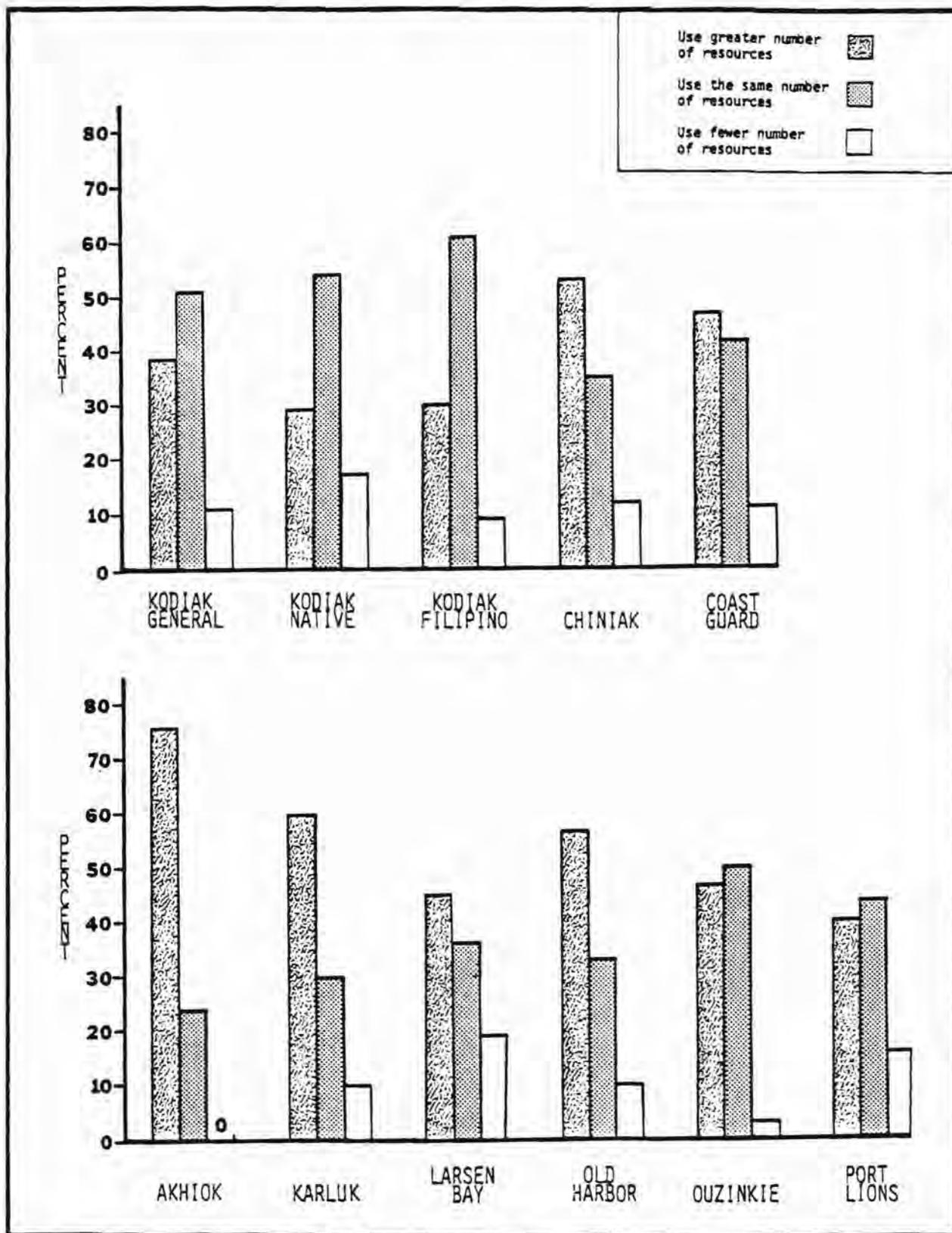


Figure 8. Reported change in number of wild resources used, Kodiak Rural Communities and Road-Connected areas, 1982-1983.

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	58,988	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.

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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/Shellfish	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 addition of constituent numbers.

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

Table 19i: DISTRIBUTION OF HARVESTED FOODS TO EACH OUZINKIE HOUSEHOLD
BY FOOD CATEGORY, 1982-1983^{1,2,3,4}

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Kodiak	Elsewhere
Game	0	0	0	0	2.5 84%	.1 10%	.2 10%	.1 10%
Fish/Shellfish	0	* 3%	0	0	4.8 88%	.2 9%	.2 13%	.1 6%
Ducks/Birds	0	0	0	0	3.5 84%	.1 6%	.2 6%	.1 3%
Plants/Berries	0	0	0	0	1.3 69%	0	.1 6%	.1 6%

1. Numbers indicate the mean number of households in each place giving harvested foods to each Ouzinkie household. Symbol "*" is used when mean is less than .05.
2. Percentages indicate the percent of Ouzinkie 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 19j: DISTRIBUTION OF HARVESTED FOODS FROM EACH OUZINKIE HOUSEHOLD
BY FOOD CATEGORY, 1982-1983^{1,2,3,4}

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Kodiak	Elsewhere
Game	0	0	0	0	1.6 52%	.1 6%	.2 19%	.2 16%
Fish/Shellfish	0	0	0	0	4.1 78%	* 3%	.6 28%	.4 25%
Ducks/Birds	0	0	0	0	1.7 56%	0	.2 16%	.2 13%
Plants/Berries	0	0	0	0	.5 41%	.1 6%	* 6%	.1 6%

1. Numbers indicate the mean number of households in each place receiving harvested foods from each Ouzinkie household. Symbol "*" is used when mean is less than .05.
2. Percentages indicate the percent of Ouzinkie 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 19k: DISTRIBUTION OF HARVESTED FOODS TO EACH PORT LIONS HOUSEHOLD
BY FOOD CATEGORY, 1982-1983^{1,2,3,4}

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Kodiak	Elsewhere
Game	0	0	0	.1 6%	.1 6%	.8 38%	.2 10%	.1 8%
Fish/Shellfish	0	.1 6%	* 4%	.1 8%	.2 8%	2.6 83%	.4 17%	.1 8%
Ducks/Birds	0	0	0	0	.1 8%	.8 48%	* 2%	0
Plants/Berries	0	0	* 2%	* 2%	* 2%	.5 29%	* 2%	* 4%

1. Numbers indicate the mean number of households in each place giving harvested foods to each Port Lions household. Symbol "*" is used when mean is less than .05.
2. Percentages indicate the percent of Port Lions 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 191: DISTRIBUTION OF HARVESTED FOODS FROM EACH PORT LIONS HOUSEHOLD BY FOOD CATEGORY, 1982-1983^{1,2,3,4}

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Kodiak	Elsewhere
Game	0	0	0	* 4%	.2 6%	1.1 43%	.4 NA	.1 NA
Fish/Shellfish	0	0	* 2%	* 2%	.4 19%	3.0 70%	1.4 NA	.6 NA
Ducks/Birds	0	0	0	0	.2 6%	.6 30%	.2 NA	.1 NA
Plants/Berries	0	0	0	* 2%	0	.4 19%	.2 NA	.2 NA

1. Numbers indicate the mean number of households in each place receiving harvested foods from each Port Lions household. Symbol "*" is used when mean is less than .05.
2. Percentages indicate the percent of Port Lions households giving any harvested food to each community. "NA" means not available.
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 19m: DISTRIBUTION OF HARVESTED FOODS TO EACH KODIAK HOUSEHOLD
BY FOOD CATEGORY, 1982-1983^{1,2,3,4}

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Kodiak	Elsewhere
Game	* 1%	* 1%	.1 3%	* 3%	* 2%	* 3%	.9 47%	.1 5%
Fish/Shellfish	* 2%	.1 7%	.1 4%	.1 3%	.1 6%	* 3%	2.7 80%	* 5%
Ducks/Birds	* 1%	* 1%	* 1%	* 1%	* 1%	* 1%	.1 6%	* 1%
Plants/Berries	* 1%	* 1%	* 1%	* 1%	* 1%	* 1%	.2 12%	* 2%

1. Numbers indicate the mean number of households in each place giving harvested foods to each Kodiak household. Symbol "*" is used when mean is less than .05.
2. Percentages indicate the percent of Kodiak 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 19n: DISTRIBUTION OF HARVESTED FOODS FROM EACH KODIAK HOUSEHOLD
BY FOOD CATEGORY, 1982-1983^{1,2,3,4}

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Kodiak	Elsewhere
Game	0	0	0	* 1%	* 1%	* 1%	.6 29%	.1 3%
Fish/Shellfish	0	0	0	* 1%	* 1%	* 2%	2.2 62%	.5 22%
Ducks/Birds	0	0	.1 1%	0	0	* 1%	* 1%	.1 1%
Plants/Berries	0	0	.1 1%	0	0	* 1%	.4 16%	.1 6%

1. Numbers indicate the mean number of households in each place receiving harvested foods from each Kodiak household. Symbol "*" is used when mean is less than .05.
2. Percentages indicate the percent of Kodiak 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 KODIAK CITY NATIVE HOUSEHOLD BY FOOD CATEGORY, 1982-1983^{1,2,3,4}

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Kodiak	Elsewhere
Game	* 3%	.1 9%	0	* 3%	.1 6%	.2 9%	1.9 57%	.1 6%
Fish/Shellfish	* 3%	.1 14%	* 3%	* 3%	.1 9%	.3 9%	2.8 80%	* 3%
Ducks/Birds	.1 6%	* 3%	0	0	* 3%	.2 6%	.4 23%	* 3%
Plants/Berries	0	0	0	0	0	0	.3 20%	0

1. Numbers indicate the mean number of households in each place giving harvested foods to each Kodiak City Native household. Symbol "*" is used when mean is less than .05.
2. Percentages indicate the percent of Kodiak City Native households receiving any harvested food from each community.
3. Data are from 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.

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Table 19p: DISTRIBUTION OF HARVESTED FOODS FROM EACH KODIAK CITY NATIVE HOUSEHOLD BY FOOD CATEGORY, 1982-1983^{1,2,3,4}

	Akhiok	Karluk	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Kodiak	Elsewhere
Game	0	0	0	0	0	.2 6%	.9 40%	.1 9%
Fish/Shellfish	0	0	0	0	0	.2 6%	1.8 51%	.3 14%
Ducks/Birds	0	0	0	0	0	.1 3%	.6 17%	0
Plants/Berries	0	0	0	0	0	0	.5 11%	.2 9%

1. Numbers indicate the mean number of households in each place receiving harvested foods from each Kodiak City Native household.
2. Percentages indicate the percent of Kodiak City Native households giving any harvest 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.

on average, gave game to 1.3 Larsen Bay households, .1 Ouzinkie households, 1.4 Kodiak City households, and .7 households outside the study communities. About 45 percent of Karluk's households gave game to households in Larsen Bay, 5 percent to Ouzinkie households, 60 percent to Kodiak households, and 20 percent to households in locations other than the study communities.

Resource Use Areas

Areas used for non-commercial harvest of fish and game by the six rural communities on Kodiak Island were mapped by the Subsistence Division and Habitat Division of ADF&G with the cooperation of the Kodiak Area Native Association (KANA) in 1983. Figures 9 and 10 depict the overall contemporary resource use areas of these communities. Information on areas used by residents of the road connected area was provided by the KANA survey conducted in 1983 (Table 20, Figure 11). The following preliminary accounts of areas used by communities are taken from these data sources. Final maps and more detailed information on use areas will be available from the Habitat Guide Project, Alaska Department of Fish and Game, in 1984. Previous subsistence use area mapping was done by the Kodiak Island City and Borough as part of the Coastal Zone Management program; these maps should also be consulted.

Akhiok

Akhiok residents use the coastal and adjacent inland areas from Kiavik Bay to Cape Trinity, all of the coastline of Alitak Bay, Portage Bay, Deadman Bay, and Olga Bay, and the coastal and inland areas from Cape Alitak to Cape Grant for the harvest of fish and game

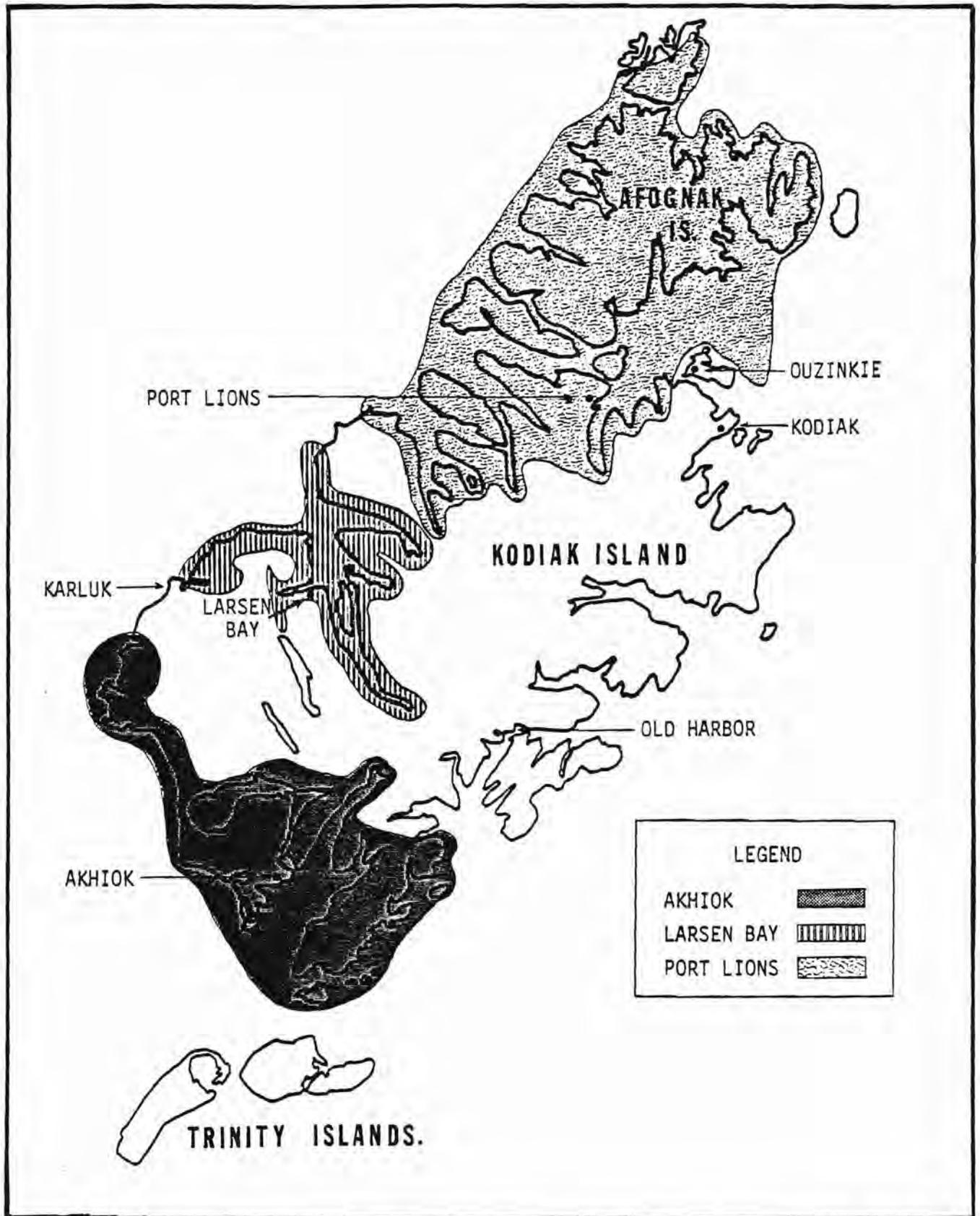


Figure 9. Resource Use Areas: Akhiok, Larsen Bay, Port Lions, 1982-1983.

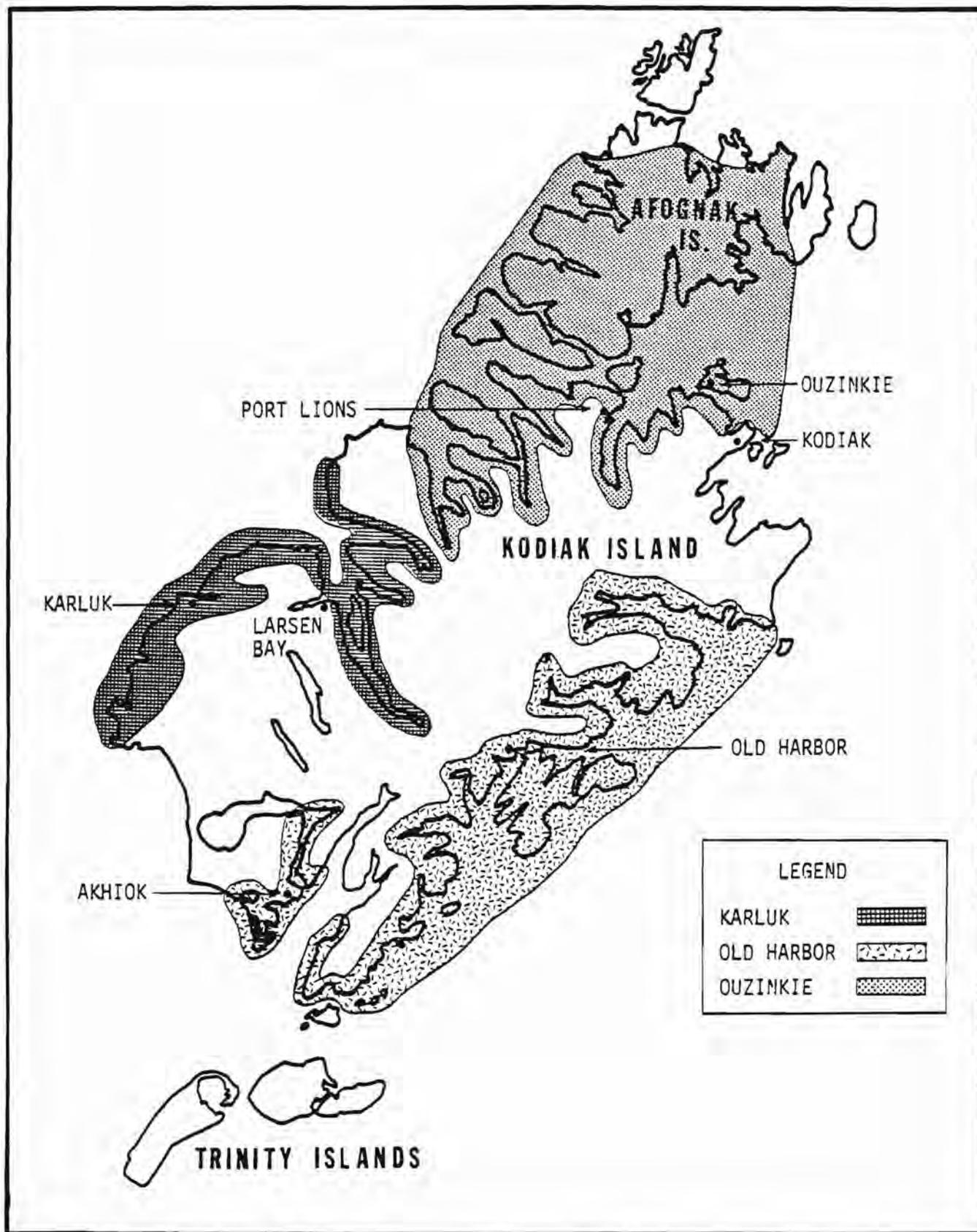


Figure 10. Resource Use Areas: Karluk, Old Harbor, Ouzinkie, 1982-1983.

Table 20: USE INTENSITY FOR HUNTING AND FISHING AREAS BY TYPE OF HARVEST BY HOUSEHOLD, KODIAK ROAD-CONNECTED POPULATION, 1982-1983^{1,2,3,4}

	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Alaska Pen.	Kenai Pen.	Other
Percent of households using each area (Mean number of trips for each household in each area)								
Salmon Fishing	74% (11.1)	2% (.2)	5% (.2)	6% (.2)	15% (.6)	2% (.4)	1% (-)	2% (.1)
Halibut Fishing	48% (4.0)	1% (-)	3% (-)	2% (.1)	5% (.1)	- (-)	- (-)	1% (-)
Freshwater Fishing	37% (4.8)	1% (-)	1% (.1)	5% (.4)	3% (.1)	- (-)	- (-)	1% (-)
Clam Harvesting	56% (2.5)	1% (-)	2% (-)	3% (.1)	3% (.1)	5% (.1)	- (-)	1% (-)
Crab Harvesting	30% (3.3)	5% (.3)	3% (.1)	1% (-)	2% (.1)	1% (-)	- (-)	1% (-)
Deer Hunting	34% (2.1)	1% (-)	3% (.2)	6% (.3)	12% (.5)	- (-)	- (-)	1% (-)
Br. Bear Hunting	2% (.2)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
Waterfowl Hunting	8% (.4)	- (-)	- (-)	- (-)	3% (-)	- (-)	- (-)	- (-)
Marine Mammal Hunting	1% (.1)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	1% (-)
ANY HARVEST ACTIVITY ⁵	90%	8%	7%	12%	24%	7%	1%	4%

1. Data are from general sample of the road-connected area, including Kodiak City, Bells Flats, Women's Bay, Monashka Bay, and Service Area One.

2. Data are rounded to nearest percent and nearest decimal point. The symbol "-" indicates that percent use is less than .5% or mean number of trips is less than .05.

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.

5. Trip data are not available for this category.

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

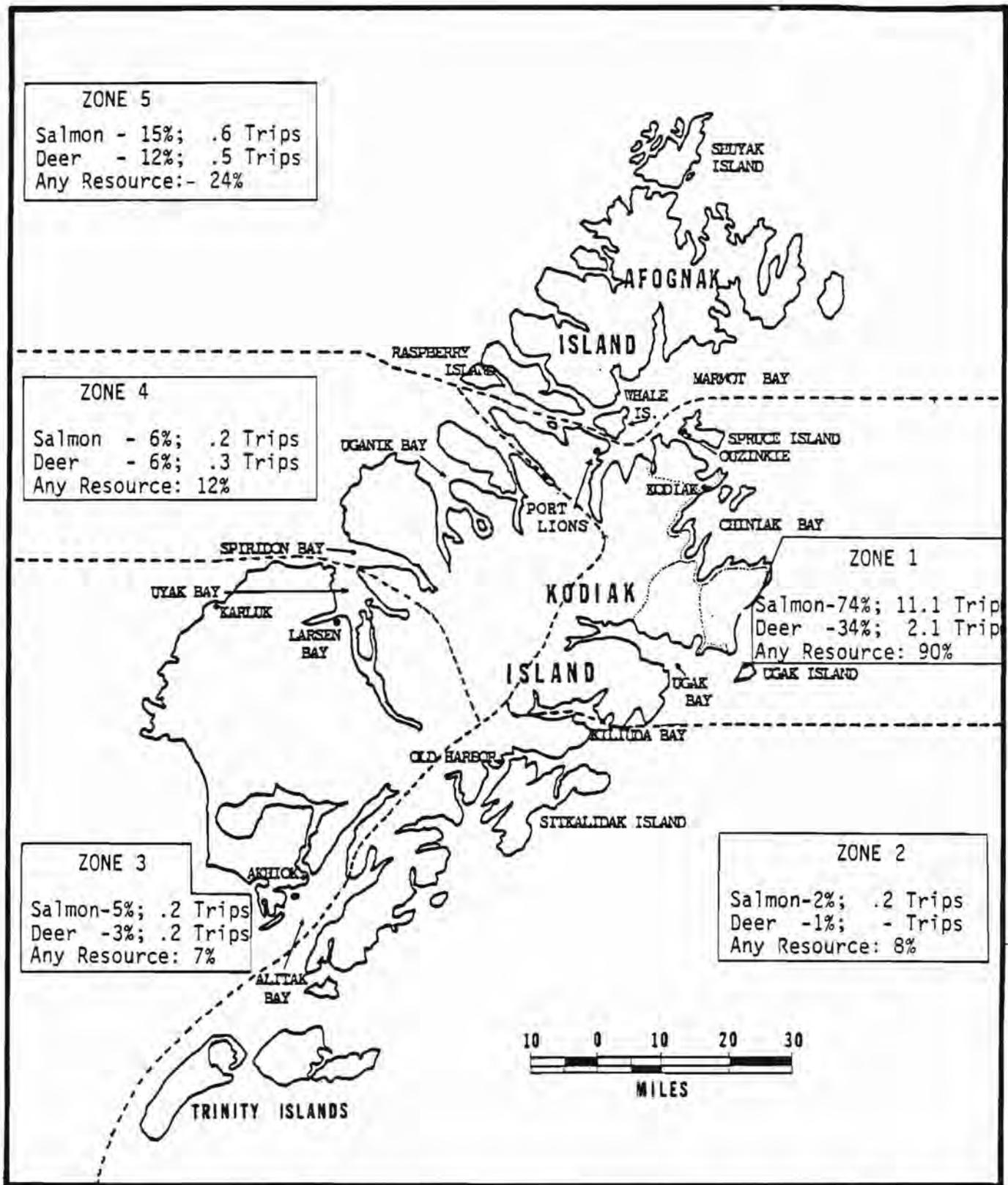


Figure 11. Use Intensity for Hunting and Fishing Areas by Type of Harvest, Kodiak Road-Connected Areas, 1982-1983.

resources for local consumption. Twoheaded Island, Geese Islands and the Aiatalik Island group are also important for resource harvest. Tugidak and Sitkinak Islands were used for resource harvesting in historic times, but little resource harvesting has taken place in recent years. Additional coastal areas may be used incidentally for resource harvesting when Akhiok residents are travelling by boat to other communities or commercial fishing.

Coastal habitats are of particular importance for the harvest of seal and sea lion which are hunted along rocky shores and of clams, crabs and other marine invertebrates, many of which are harvested from the intertidal zone. Deer and waterfowl are hunted in beach areas as well as inland. Anadromous fish species and marine fish are harvested in coastal areas.

The area bounded by a line crossing Alitak Bay from Cape Alitak and to Humpy Cove to the south and a line drawn north from Stockholm Point at the entrance to Olga Bay encompasses the resource harvesting area intensively used by Akhiok residents. Most salmon, halibut and other marine fish, clams and other invertebrates, and deer are harvested in this area. The other coastal areas listed are also regularly used particularly for the harvest of seal and sea lion and for salmon harvesting when fishing in areas closer to the village site is poor.

Karluk

Karluk residents use the coastal and adjacent inland areas from Inner Seal Rock near Gurney Bay to the mouth of the Karluk River, from the Karluk River mouth to Harvester Island, and all of the coastal area of Uyak and Spiridon Bays extending to Cape Kuliuk. Additional coastal

areas south of Gurney Bay may have been utilized at previous times.

Coastal hunting for seal, sea lion, waterfowl and deer provides a substantial amount of food for community residents. The coastal areas facing Shelikof Strait are frequently stormy and have few good moorages. Karluk residents frequently hunt and fish in the less exposed areas of Uyak and Spiridon Bays. Very close relationships exist between the two communities of Karluk and Larsen Bay.

Larsen Bay

Larsen Bay residents use the coastal and adjacent inland areas from the mouth of the Karluk River to Harvester Island, as well as that of Uyak Bay, Larsen Bay, and Spiridon Bay extending to Cape Kuliuk to the north.

These coastal areas of Uyak and Spiridon Bay are used intensively for hunting of seal, sea lion, deer, and waterfowl and for fishing for virtually all species taken by community residents. The coastal area between Harvester Island and Karluk River is used during frequent trips made by Larsen Bay residents to Karluk.

Old Harbor

Old Harbor residents use the coastal and adjacent inland areas from Narrow Cape in the northeast to Geese Channel in the southwest. Included are the coastlines and waters of Uyak Bay, Kiliuda Bay, Sitkalidak Strait, Kaiugnak Bay and Kaguyak Bay. Sitkalidak Island, Towheaded Island, and Geese Islands are also utilized.

Silver, pink, and chum salmon, halibut, crab, deer, waterfowl, seal and sea lion are the species that account for the greatest part of fish

and game harvest by Old Harbor residents in these areas.

Ouzinkie and Port Lions

Residents of Ouzinkie and Port Lions fish and hunt the coastlines, bays and adjacent inland areas of a large portion of north and northwest Kodiak Island and of the southern half of Afognak Island. Areas bounded by Ban Island in the northwest, Miners Point in the west, Spruce Cape in the east, and Tolstoi Point in the northeast, are used by Ouzinkie residents. Included are the coastal areas and waters of Tonki Bay, Marmot Strait, Izhut Bay, Marmot Bay, Kizhuyak Bay, Kupreanof Strait, Viekoda Bay, Uganik Passage, Uganik Bay, Raspberry Strait, Malina Bay, and Panamarof Bay. Coastal areas, waters, and inland portions of Spruce Island, Whale Island, Raspberry Island, and Uganik Island are also used. Areas close to communities are used more intensively, particularly for harvesting salmon.

Kodiak Road Connected Area

The areas most intensively used by Kodiak residents are those reachable by road or open skiff. These include Ugak Bay, Chiniak Bay, Monashka Bay, and into Narrow Strait, Kupreanof Bay, and Marmot Bay. Areas further from town are regularly used by hunters and fishermen on longer trips. Because of the large population of the road connected area, the great number of boats owned by local residents, and the high interest in fishing and hunting, almost the whole coastline of the Kodiak archipelago receives some use from Kodiak residents. This is demonstrated in Table 20 and by Figure 11. For example, 74 percent of the Kodiak General sample reported some salmon fishing activity in Zone 1, that area generally accessible by

road or a short trip by boat from Kodiak. The mean number of salmon fishing trips taken within this zone was 11.1 per household. However, portions of this sample also reported fishing for salmon in other parts of the Kodiak Island region, the Alaska Peninsula, and the Kenai Peninsula.

Seasonal Rounds of Wild Resource Use

Figures 12 through 17 present the seasonal round of wild resource use for each of the six non-road connected communities in the Kodiak Island area. Each figure depicts the time of year, in units of quarter months, when some harvesting of a particular resource occurs. The figures do not indicate when most of the harvest of a resource takes place, but only presence or absence of harvest during a particular quarter month. For example, residents of Akhiok typically harvest red salmon from May through February. Harvesting of silver salmon begins in mid July and ends in late October. Halibut are taken year round.

Figure 12.

SEASONAL ROUND OF RESOURCE HARVESTS: AKHIOK 1982-1983^{1,2,3,4,5}

SPECIES	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<u>FISH</u>												
Red Salmon	xxxx	xxxx			xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
King Salmon						xxxx	xxxx	xxxx	xxxx			
Silver Salmon							xx	xxxx	xxxx	xxxx		
Pink Salmon							xxx	xxxx	xxx			
Chum Salmon						xx	xxxx	xxxx	xxxx	x		
.....												
Halibut	xxxx	xxxx	xxxx	xxxx								
Dolly Varden	xxxx	xxxx	xxxx	xxxx								
Steelhead (Rainbow)	xxxx	xxxx	xxxx	xxxx								
Butter Clams	xxxx	xxxx	xxxx	xxxx								
Crab:												
King Crab	xxxx	xxxx	xxxx	xxxx								
Tanner Crab	xxxx	xxxx	xxxx	xxxx								
Dungeness Crab	xxxx	xxxx	xxxx	xxxx								
<u>GAME</u>												
Deer	xxxx	xxxx	xxxx	xxxx								
Hare	xxxx	xxxx	xxxx	xxxx								
Ptarmigan	xxxx	xxxx	xxxx	xxxx					xxxx	xxxx	xxxx	xxxx
Ducks	xxxx	xxxx	xxxx	xxxx					xxxx	xxxx	xxxx	xxxx
Geese	xxxx	xxxx	xxxx	xxxx	xxxx						xxxx	xxxx
Harbor Seal	xxxx	xxxx	xxxx	xxxx								
Sea Lion	xxxx	xxxx	xxxx	xxxx								
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.

1. Each "x" represents one quarter of a month.
2. An "x" means that named species are typically harvested during indicated time period.
3. The symbol "?" means that harvest during indicated time period has not been documented but may occur.
4. Refer to Tables 2 to 5 for magnitude of harvest and use.
5. Seasonal round data for other species is on file with the Subsistence Division, ADF&G.

Source: 1983 Field Interviews, Subsistence Division, Alaska Department of Fish and Game.

Figure 13.

SEASONAL ROUND OF RESOURCE HARVESTS: KARLUK 1982-1983^{1,2,3,4,5}

SPECIES	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<u>FISH</u>												
Red Salmon					xxx	xxxx	xxxx	xxxx	x			
King Salmon					xxx	xxxx	x					
Silver Salmon							xx	xxxx	xxxx	xxx		
Pink Salmon							xx	xxx				
Chum Salmon							xx	xxx				
.....												
Halibut						xxxx	xxxx	xxxx	xxxx			
Dolly Varden	xx	xxxx	xxxx	xxxx	xxxx							
Steelhead (Rainbow)					xxxx				xx	xxxx	xxxx	xx
Butter Clams	xxxx	xxxx	xxxx	xxxx								
Crab:												
King Crab	xxxx	xxxx	xxxx	xxxx								
Tanner Crab	xxxx	xxxx	xxxx	xxxx								
Dungeness Crab	xxxx	xxxx	xxxx	xxxx								
<u>GAME</u>												
Deer	x???	????	????	????	????	????	????	xxxx	xxxx	xxxx	xxxx	xxxx
Hare	xxxx	xxxx									xxxx	xxxx
Ptarmigan	xxxx	xxxx	xxxx								xxxx	xxxx
Ducks	xxxx	xxxx	xxxx	xx						xx	xxxx	xxxx
Geese				xxxx								
Harbor Seal	xxxx	xxxx	xxxx	xxxx								
Sea Lion	xxxx	xxxx	xxxx	xxxx								
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.

1. Each "x" represents one quarter of a month.
2. An "x" means that named species are typically harvested during indicated time period.
3. The symbol "?" means that harvest during indicated time period has not been documented but may occur.
4. Refer to Tables 2 to 5 for magnitude of harvest and use.
5. Seasonal round data for other species is on file with the Subsistence Division, ADF&G.

Source: 1983 Field Interviews, Subsistence Division, Alaska Department of Fish and Game.

Figure 14.

SEASONAL ROUND OF RESOURCE HARVESTS: LARSEN BAY 1982-1983^{1,2,3,4,5}

SPECIES	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<u>FISH</u>												
Red Salmon						XXXX	XXXX	XXXX	XXXX	XXX		
King Salmon					XXXX	XXXX	XXX					
Silver Salmon							XXXX	XXXX	XXXX	XXXX	XXXX	XXX
Pink Salmon						XXXX	XXXX	XXXX	XXXX	XXX		
Chum Salmon						XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	X
.....												
Halibut	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
Dolly Varden		X	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX			
Steelhead (Rainbow)	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
Butter Clams	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
Crab:												
King Crab	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
Tanner Crab	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
Dungeness Crab	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
<u>GAME</u>												
Deer	XXXX	????	????	????	????	????	????	XXXX	XXXX	XXXX	XXXX	XXXX
Hare	XXXX	XXXX	XXX						XXXX	XXXX	XXXX	XXXX
Ptarmigan	XXXX	XXXX	XXXX	XXXX					XXXX	XXXX	XXXX	XXXX
Ducks	(in season only, Oct. 8 to Jan. 22)											
Geese	(rarely present locally)								XXXX	XXXX	XXXX	XXXX
Harbor Seal	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
Sea Lion	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.

1. Each "x" represents one quarter of a month.
2. An "x" means that named species are typically harvested during indicated time period.
3. The symbol "?" means that harvest during indicated time period has not been documented but may occur.
4. Refer to Tables 2 to 5 for magnitude of harvest and use.
5. Seasonal round data for other species is on file with the Subsistence Division, ADF&G.

Source: 1983 Field Interviews, Subsistence Division, Alaska Department of Fish and Game.

Figure 15.

SEASONAL ROUND OF RESOURCE HARVEST: OLD HARBOR 1982-1983^{1,2,3,4,5}

SPECIES	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<u>FISH</u>												
Red Salmon	xxxx	x			xx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
King Salmon							xxxx	xxxx				
Silver Salmon								xx	xxxx	xxxx	xxxx	xx
Pink Salmon						x	xxxx	xxxx	x			
Chum Salmon								xx	xxxx	xx		
.....												
Halibut					xxxx	xxxx	xxxx	xxxx	xxxx			
Dolly Varden	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Steelhead (Rainbow)		(rarely found)										
Butter Clams	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Crab:												
King Crab	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Tanner Crab	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Dungeness Crab	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
<u>GAME</u>												
Deer	xxxx	????	????	????	????	????	????	xxxx	xxxx	xxxx	xxxx	xxxx
Hare	xxxx	xxxx	xxxx								xxxx	xxxx
Ptarmigan	xxxx	xxxx	xxxx								xxxx	xxxx
Ducks	xxxx	xxxx	xxxx							xxxx	xxxx	xxxx
Geese	xxxx	xxxx	xxxx							xxxx	xxxx	xxxx
Harbor Seal	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Sea Lion	xxxx	xxxx	xxxx								xxxx	xxxx
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.

1. Each "x" represents one quarter of a month.
2. An "x" means that named species are typically harvested during indicated time period.
3. The symbol "?" means that harvest during indicated time period has not been documented but may occur.
4. Refer to Tables 2 to 5 for magnitude of harvest and use.
5. Seasonal round data for other species is on file with the Subsistence Division, ADF&G.

Source: 1983 Field Interviews, Subsistence Division, Alaska Department of Fish and Game.

Figure 16.

SEASONAL ROUND OF RESOURCE HARVEST: OUZINKIE 1982-1983^{1,2,3,4,5}

SPECIES	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<u>FISH</u>												
Red Salmon					xx	xxxx						
King Salmon	(not usually present)											
Silver Salmon								xx	xxxx	xxxx	xxxx	
Pink Salmon							xxxx	xxxx	xxxx	xxxx		
Chum Salmon							xxxx	xxxx	xxxx	xxxx		
.....												
Halibut	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Dolly Varden				xxxx	xxxx	xxxx	xxxx	xxxx				
Steelhead (Rainbow)				xxxx	xxx				xxxx	xxxx		
Butter Clams	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Crab:												
King Crab	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Tanner Crab	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Dungeness Crab	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
<u>GAME</u>												
Deer	x???	????	????	????	????	????	????	xxxx	xxxx	xxxx	xxxx	xxxx
Hare	xxxx	xxxx	xxxx							xxxx	xxxx	xxxx
Ptarmigan	xxxx	xxxx	xxxx							xxxx	xxxx	xxxx
Ducks	xxxx	xxxx	xxxx	xxxx	xxxx				xxxx	xxxx	xxxx	xxxx
Geese				xxxx	xxxx			xx	xxxx	xx		
Harbor Seal	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Sea Lion	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.

1. Each "x" represents one quarter of a month.
2. An "x" means that named species are typically harvested during indicated time period.
3. The symbol "?" means that harvest during indicated time period has not been documented but may occur.
4. Refer to Tables 2 to 5 for magnitude of harvest and use.
5. Seasonal round data for other species is on file with the Subsistence Division, ADF&G.

Source: 1983 Field Interviews, Subsistence Division, Alaska Department of Fish and Game.

Figure 17.

SEASONAL ROUND OF RESOURCE HARVESTS: PORT LIONS 1982-1983^{1,2,3,4,5}

SPECIES	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<u>FISH</u>												
Red Salmon					XXXX	XXXX	XXXX	XXXX	XX			
King Salmon				XX	XXXX	XXXX	XXXX	XXXX	XX			
Silver Salmon								XXX	XXXX	XXXX	XXXX	
Pink Salmon						XX	XXXX	XXXX				
Chum Salmon						XX	XXXX	XXXX	XX			
.....												
Halibut	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
Dolly Varden				XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XX	
Steelhead (Rainbow)						XX	XXXX	XXXX	XX			
Butter Clams	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
Crab:												
King Crab	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
Tanner Crab	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
Dungeness Crab	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
<u>GAME</u>												
Deer	XXXX							XXXX	XXXX	XXXX	XXXX	XXXX
Hare	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
Ptarmigan	XXXX	XXXX									XXXX	XXXX
Ducks	XXXX	XXXX	XXXX							XXXX	XXXX	XXXX
Geese				XXXX	XXXX				XXXX	XXXX		
Harbor Seal	XXXX	XXXX	XXXX	XXXX				XXXX	XXXX	XXXX	XXXX	XXXX
Sea Lion	XXXX	XXXX	XXXX	XXXX				XXXX	XXXX	XXXX	XXXX	XXXX
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.

1. Each "x" represents one quarter of a month.
2. An "x" means that named species are typically harvested during indicated time period.
3. The symbol "?" means that harvest during indicated time period has not been documented but may occur.
4. Refer to Tables 2 to 5 for magnitude of harvest and use.
5. Seasonal round data for other species is on file with the Subsistence Division, ADF&G.

Source: 1983 Field Interviews, Subsistence Division, Alaska Department of Fish and Game.

VII. ISSUES AND CONCERNS

During the course of the research for this Guide, the following issues and concerns were expressed by residents of the Kodiak Island region. These are listed below, in no special order, and are included here in order to stimulate further thought and discussion.

- 1) The current permitting system for regulating subsistence fishing has caused problems for resource users and managers. Returns of permits to the Department of Fish and Game for all areas of Kodiak Island have been poor and therefore harvest and effort data derived from the permits is probably not reliable.
- 2) Hunting and fishing licenses and permits must be made more readily available to residents of rural areas.
- 3) Brown bear. Communities on the southern part of the island have experienced difficulties with nuisance bears. Also, residents of these communities report that there is little possibility for subsistence hunting of bears under current regulations.
- 4) Waterfowl. Non-migratory birds have traditionally been taken throughout the year, but current regulations prohibit this harvest.
- 5) Deer: seasons. Rural residents report that the current seasons for hunting deer are too restrictive, because they depend on this resource as a major food source for most of the year.
- 6) Deer: bag limits. Current limits do not permit traditional hunting in which a proficient hunter may supply a number of families with meat.
- 7) Crab. Crab has been an important food item for Kodiak residents who have either caught their own crab or gotten crab from commercial catches. The recent closure of commercial king crab

fishing and the restriction of subsistence crabbing to waters of 25 fathoms or less will tend to eliminate crab as a food source while these regulations are in effect.

8) Marine mammals. Significant use of marine mammals continues to occur in rural communities, with seal and sea lion taken year round. The availability of these resources could be affected by changes to the Marine Mammals Act, imposition of bag and or season limits on harvests, or the introduction of new user groups. Development of the bottom fishing industry may result in increased incidental kills of marine mammals, and a subsequent decrease in the population of these species.

9) User conflicts exist in a number of areas, including:

a) On the Karluk River, Karluk residents report conflicts with sportsfishing over the salmon resource. The Karluk River offers world class sport fishing, but Karluk residents gain little from the industry and feel that their access to subsistence resources is threatened.

b) Hunting and fishing pressure may diminish resource availability for rural residents in areas easily reached by land or boat from the Kodiak road-connected area. Old Harbor's traditional use of Ugak Bay; Ouzinkie's traditional use of Monashka Bay, Narrow Strait, Kizhuyak Bay, and much of Marmot Bay; and Port Lions' traditional use of Kizhuyak Bay, the Kupreanof and Raspberry Strait areas, Afognak Bay, and Kazakof Bay are affected by the hunting and fishing of the large population of the road-connected area.

c) Potential conflicts exist between subsistence fishing and sport fishing on road accessible areas near the City of Kodiak. Buskin

River and Russian Creek will most likely be the first drainages for which regulatory change will be considered.

- 10) Examination of Tables 13 and 14 and Figures 5 and 6 will reveal that during the study period, the mean household use quantities of red, silver, and pink salmon, halibut, crab, and deer fell below the "desired" use levels in some communities. These discrepancies may indicate other topics which may become regulatory concerns in the future.

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APPENDIX A

Table 21: FACTORS USED TO CONVERT FROM NUMBERS OF ANIMALS TO FOOD WEIGHT, KODIAK ISLAND SURVEY, 1982-1983

<u>Species</u>		
<u>Fish</u>	<u>Usable Weight</u>	<u>Source</u>
Red Salmon	4.21 lbs.	Conversion factors were derived by taking average round weights for fish caught commercially on Kodiak (ADF&G, 1982) and multiplying these weights by standard factors used to determine food weight from round weight for salmon species (from Mike Dean, ADF&G, personal communication). Factors used were:
King Salmon	12.92 lbs.	
Silver Salmon	5.70 lbs.	
Pink Salmon	2.72 lbs.	
Dog Salmon	5.55 lbs.	
		Red .78
		King .73
		Silver .75
		Pink .85
		Dog .73
Herring	.50 lbs.	Researcher estimate.
Halibut	25.00 lbs.	
Cod	1.00 lbs.	
Flounder	1.00 lbs.	
Bass	1.00 lbs.	
Snapper	2.00 lbs.	
Dolly Varden	1.40 lbs.	Reported value (Behnke, 1982).
Steelhead	1.40 lbs.	
Pollock	1.00 lbs.	Researcher estimate.
Rockfish	2.00 lbs.	
Irish Lords	1.00 lbs.	
<u>Game</u>		
Deer	43.20 lbs.	Estimates supplied by Roger Smith, (ADF&G) Kodiak area game biologist (personal communication)
Reindeer	62.50 lbs.	
Elk	225.00 lbs.	
Goat	61.50 lbs.	
Brown Bear	300.00	Researcher estimate based on hunter reports.
Moose	540.00	Reported value (Behnke, 1982).
Harbor Seal	45.00 lbs.	Researcher estimate based on hunter reports. Also see reported live weights (Pitcher and Calkins, 1979; Calkins and Pitcher, 1982)
Sea Lion	200.00 lbs.	
Hare	2.00 lbs.	Reported values (Behnke, 1982).
Ptarmigan	.70 lbs.	

<u>Species</u>	<u>Usable Weight</u>	<u>Source</u>
Ducks	2.50 lbs.	Reported value (Thomas, 1982).
Geese	5.00 lbs.	Reported value (Wolfe, 1979).
Bird Eggs	.05 lbs.	Researcher estimate.
<u>Invertebrates</u>		
King Crab	2.30 lbs.	Personal communication, Lee Stratton, ADF&G, and Jim Major, Eastpoint Processors, Kodiak. Also see reported commercial harvest weight (Nippes et al, 1983).
Tanner Crab	1.60 lbs.	
Dungeness Crab	.70 lbs.	
All Clams, Cockles, Geoducks, Mussels, Gumboots, Sea Urchins	5.00 lbs./ 5 gal. bucket	Researcher estimate, also personal communication, Ron Stanek, ADF&G, for razor clams.
Octopus	4.00 lbs.	Researcher estimate.

These conversion factors were used to convert number of animals harvested to weight of usable meat or fish in pounds. Conversion factors are based on published reports of species average live weight or average harvest weight when these exist. In other cases the best estimates of field biologists, researchers, and community informants have been used. For fish species, conversion is based on headed, gutted weight of carcass. For game species, conversion is based on weight of meat and bones usually used by hunters after dressing, skinning, and trimming takes place.

Conversion factors are very conservative. In some communities use may be made of additional parts of fish and game species for human consumption, consumption by dogs and domestic animals, and for garden fertilizer.

APPENDIX B

Table 22: EXTRAPOLATION OF SURVEY DATA FOR ALL OF KODIAK

The extrapolation of harvest figures and weights from sample data to the total census population of Kodiak required the following assumptions and calculatons:

1. It was assumed that households that were not surveyed had the same family size and harvest characteristics as households that were surveyed in each community or sample.
2. It was assumed that the rural population living away from surveyed communities had the same family size and harvest characteristics as the population living in rural communities who were surveyed.
3. Number of households in each category was determined by dividing the census population by the average household size of the surveyed population for each community or sample:

Community/ Sample	Household Size ⁴	Population ⁵	Estimated Number of Households
Akhiok	3.81	103	27.0
Karluk	3.95	102	25.8
Larsen Bay	4.16	180	43.3
Old Harbor	3.79	355	93.7
Ouzinkie	3.34	233	69.8
Port Lions	3.30	291	88.2
Kodiak City ¹	3.32	8,247	2,484.0
Chiniak/ Pasagshak ²	3.91	611	156.3
Coast Guard	2.41	1,995	827.8
Rural No Community ³	3.63	597	164.5
TOTAL	3.19	12,714	3,980.4

1. This area includes Kodiak city, Service Area 1, Women's Bay, Bells Flats, and Monashka Bay.
2. Note that this projection is based on a very limited sample.
3. Note that no surveys were administered to this group.
4. Household size is based on survey data.
5. Population figures are from Kodiak City and Borough Census, 1983.

4. Harvest totals and harvest food weight in Tables 15 and 16 were calculated by multiplying household harvest and harvest food weight figures from Tables 2 through 5 by derived numbers of households.