North Slope Subsistence Study
Wainwright, 1988 and 1989

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NORTH SLOPE SUBSISTENCE STUDY
WAINWRIGHT, 1988 and 1989

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with

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Alaska OCS Environmental Studies Program

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APPENDIX A

This appendix contains the following reference information:

- the Year One Seasonal Round
- a calendar listing of Year One activities and events
- Year One data tables
- Year One data figures (charts and graphs)
- Year One subsistence harvest site maps

YEAR ONE SEASONAL ROUND

The following section presents a month by month description of Wainwright subsistence activities during the period April 1, 1988 to March 31, 1989. This description highlights the month's major subsistence activities, and points out any significant or unusual environmental social, cultural and/or economic conditions or events that may have affected hunting that month. While the general pattern of activities generally remains much the same from year to year, changes in environmental conditions, local resource availability, as well as social and economic factors affect the actual timing and the relative importance of the different resources harvested from year to year.

APRIL

As in all Alaska spring whaling communities, Wainwright residents busily prepared for whaling during April in anticipation of favorable ice conditions by the end of the month. In addition to whaling, subsistence activities during April included smelt fishing, collecting ice for drinking water, and seal hunting at the open lead. A few smelt were still available at the beginning of the month although residents indicated the majority of the smelt harvests occurred between December and March. Households that had depleted their supply of freshwater ice cut the previous fall were now chipping ice along cracks in

nearby lakes. Some hunters took advantage of favorable marine ice conditions (an open lead close to shore readily accessible by snowmachine) to hunt seals.

The first whaling crews moved out on the ice to their whaling camps on April 19; the last crews went out five days later. An open lead in the pack ice was within one mile from shore in most locations. Some camps were established just south of the village, but most of the 12 whaling camps were located about 18 to 20 miles north of Wainwright on the shorefast ice. Around six o'clock p.m. on Monday, April 25, Wainwright whalers successfully harvested a 26 foot whale and the following morning a second whale measuring 30 feet was landed. In each case the weapons used were a darting gun with line and float attached. Residents commented that these harvests were earlier than usual for Wainwright, citing the favorable weather and ice conditions. After these successful harvests, 25 to 30 knot offshore winds made camping on the ice and boating in the open lead too dangerous and whaling activities were curtailed for a few days. The crews began going back out on the ice on Saturday, April 30th.

MAY

Whaling remained the primary subsistence activity during May. Wainwright whalers successfully harvested a 44 foot bowhead early in the evening of May 6. Although the whale was harpooned and killed about 15 miles north of town, unstable shorefast ice conditions in the harvest vicinity prompted the captain to tow the whale until it was right in front of town. The proximity to the village resulted in very high attendance as people were able to walk from the village to the butchering site. Many families brought their wall tents for cooking and resting while the whale was being butchered. Children of all ages enjoyed climbing on top of the whale and into its mouth. Butchering began around nine o'clock p.m. and continued through the night, the last loads being hauled into town around five o'clock in the morning.

Because the whale harvested May 6 represented Wainwrights' last allocated strike, whaling stopped with all community members hoping for a transfer from one of the whaling villages further south. On May 16 the crews returned to the ice when a strike was transferred and Wainwright's fourth and final bowhead harvest for the year occurred on the 18th of May. The 49'-6" whale was taken

at about 10 o'clock p.m. some distance out in the lead. Crews towed the whale into an ice inlet very near shore and about 45 minutes north of town by snowmachine. As other springtime activities (primarily geese hunting) had already started, and because the harvest site was so far north of the village, fewer people participated in the butchering of this whale than the previous whale. Whaling crews also harvested a few seals and eiders during lulls in the whale migration. One crew took a polar bear that approached their camp on the ice.

In 1988, Wainwright was allocated three bowhead strikes. Whalers landed three bowheads, received additional strikes, and landed a fourth whale. The additional strikes were received on May 16 and May 25 from the Alaska Eskimo Whaling Commission (AEWC). During 1988, no bowheads were struck and lost in Wainwright.

Going inland for geese hunting was also a major activity in May. Waterfowl hunting is an activity that all family members can participate in and provides the first opportunity of the year for families to get out on the land together. Although several families went inland early in the month, the majority of people who went inland did so after high school graduation and the harvest of the fourth whale.

JUNE

Inland geese hunting continued into June. Bad weather during most of the season limited hunting success for many households. It was not uncommon for families to spend two weeks inland but only have two or three days suitable for hunting the entire time. The combination of poor weather and deteriorating travel conditions ended this activity by around June 10.

Wainwright whalers hunted as weather permitted well into June. Because of increasing amounts of water on the shorefast ice by June, many whaling crews actually camped on land and went out to the lead only during periods of active hunting. Although a number of whales were spotted, all were mothers with calves, so no strikes were taken. Whaling crews searching for whales took the first walrus and ugruk of the season. Whaling ended the week of June 13th.

Waterfowl hunting (primarily eiders) from coastal camps was an important activity throughout June. When the lead was closed, the birds often flew above coastal lagoons and ponds that were already open. When the lead was open, bird hunting was conducted from boats out in the lead. Whaling crews, looking to contribute the birds to the upcoming *Nalukataq* (the blanket toss festival held to celebrate the whale harvest), were joined by discouraged inland hunters and other village residents. A few sea mammals were also taken from these coastal camps.

Wainwright's *Nalukataqs* were celebrated on June 23 and 24. Two successful crews hosted each day. Residents from virtually all North Slope villages were present as were a number of people from the NANA region. The many boxes of food distributed to those people attending *Nalukataq* represent an important source of subsistence foods for all households but are particularly important to those households without active hunters.

Although the ice was still present in front of town and on the lagoon, warmer temperatures encouraged seals and ugruk to sun themselves on the deteriorating shorefast ice. Hunters crawling across the stronger sections of ice or pushing small boats in front of them successfully harvested these sunning animals in the immediate vicinity of town.

JULY

Marine mammal hunting was the major subsistence activity in July. During the first few days of the month, hunters towed their boats on trailers to the mouth of Kuk Lagoon where open water provided access to the lead. On July 4, the shore ice in front of town broke free allowing hunters direct boat access to the sea mammal hunting grounds among the floating pack ice. Depending on the wind and currents, the floating pack ice was anywhere from one to 10 miles offshore.

Fourth of July celebrations organized by the City of Wainwright reduced hunting over the long weekend as virtually everyone participated in the schedule of races, games and events. Prize money was donated by the City, the Mother's Club and the local search and rescue group.

Bearded seal was the most common marine mammal species harvested during the first two weeks of July. A few seals and walrus were also harvested. Weather conditions were generally favorable throughout the first two weeks of July but boating activity was concentrated during evenings and weekends. According to villagers, poor weather conditions during the latter part of the month limited boat travel to the lagoon. One family harvested two beluga whales right in front of their cabin on the coast south of Wainwright.

A few caribou were also harvested this month. Harvesting occurred just inland from the community with access provided by both boat and three or four wheeler.

AUGUST

Marine mammal hunting continued in August as weather and hunting conditions permitted. However, as most households had harvested the desired quantity of seal, ugruk and walrus by mid-month, caribou hunting became the dominant subsistence activity for the final two weeks of the month. Caribou harvests were concentrated within the immediate vicinity of the Kuk River and its tributaries as this river system provides boat access to an extensive inland hunting area. Subsistence activities also occurred along the coast both north and south of the community. A blizzard that deposited over two inches of snow August 26 resulted in the first use of snowmachines since early June and several caribou were harvested using this form of transportation. As the snow melted within several days, the widespread use of snowmachines was still a month away.

Some geese harvesting (predominantly brants) also occurred as the birds migrated south along the coast. The most common hunting spot for the migrating waterfowl was Thomas Point at the mouth of Kuk Lagoon. This point juts out into the ocean and provided an excellent location for harvesting waterfowl as they flew just off the coast.

SEPTEMBER

Caribou hunting continued to be a primary subsistence activity during September. The long Labor Day weekend prompted many families to head to inland camps for caribou hunting and fishing. Gill nets were usually set near the

camping location each evening and then pulled and picked the following morning. Everyone participated in checking the nets. Least cisco was the primary species harvested.

During the first two weeks of September, boats were the major form of transportation. Consequently, caribou harvests were concentrated within the immediate vicinity of the Kuk river and its tributaries and along the coast both north and south of the community. During the remainder of the month, freeze-up conditions limited boat travel and increased snowmachine travel. As the ice on the rivers and larger lakes was not thick enough to travel on safely, snowmachine use and caribou hunting were focused in a 150 square mile area south 10 miles to the Kungok River and to the east of the community about 15 miles.

Marine mammal hunting continued in the first few weeks of September as weather and ice conditions permitted. Brant harvesting also continued during the first two weeks of the month.

OCTOBER

As in September, caribou hunting was the primary subsistence activity in October. Caribou were moving in a northerly direction just inland from the coast throughout the month. Day trips from the village were very common as households attempted to fill their larders for winter.

Some residents who did not have children in school spent considerable time at inland camps fishing for grayling and burbot. Unlike Barrow, where setting nets under the ice is common, only a few Wainwright families set nets under the ice; jigging was the more common method of fishing at this time of year. October marked the beginning of furbearer hunting and those residents who spent time inland were always on the lookout for fresh wolf and wolverine tracks.

Although water is delivered to all the houses in town, people prefer fresh water ice cut from one of the "ice ponds" near the town for tea and coffee. The ice was cut into blocks and either stored on site and retrieved throughout the winter or hauled back to the village. October and November were the main months for cutting ice because the ice usually becomes too thick to cut later

in the winter. Some people also use "glacier ice" for drinking. Glacier ice is actually two year old (or older) pack ice out of which the salt has percolated.

Several polar bears were harvested this month and a few people began smelt fishing at the end of the month.

The last part of October was dominated with the news of three trapped gray whales off Barrow. Approximately a dozen Wainwright residents went to Barrow to help with the rescue attempt. Coinciding with the end of the prime caribou harvest season, the opportunity for temporary employment was appreciated.

NOVEMBER

Subsistence activity declined in November. The decline was partially a result of the deteriorating weather; temperatures dropped and the winds were uncharacteristically high, limiting travel. Additionally, although caribou were generally abundant throughout the month, few were harvested both because the caribou were in rut (making their meat less desirable) and because high caribou harvests in September and October had alleviated any immediate need for additional caribou.

In early November, cold weather (temperatures hovering in the -20^{o} Farenheit range, and frequently colder) and strong winds (up to 40 miles per hour) combined to make traveling and hunting both difficult and dangerous. The winds diminished near the end of the month, and some hunters searched for seals at the open lead a few miles from town. Other hunters traveled inland in search of wolf and wolverine sign for future hunting.

Glacier ice was abundant along the coast near Wainwright and was collected regularly when needed. Freshwater ice was also collected at the ice ponds north of town.

Smelt fishing began in earnest this month and continued throughout the winter. Smelt fishing took place near the mouth of Kuk Lagoon on both the ocean and river sides of the inlet. Cracks were located through the snow and holes were

dug usually about five feet deep. For the most part fishing occurred on the weekends but generally anyone who had time off or was not working would go fishing.

In preparation for Thanksgiving, large quantities of stored subsistence foods were taken out of ice cellars and delivered to the whaling captains' and crews' homes to be cooked for the Thanksgiving feast. Dishes prepared from caribou, waterfowl, whale meat, *maktak* (bowhead whale skin and a layer of the attached blubber) and also baked goods were brought to the two churches on Thanksgiving day. In addition to the meal eaten that day, the extra food given to every household provided many families with important subsistence food for the winter months ahead.

DECEMBER

The calm weather in the last part of November carried into the first part of December. These conditions gave some of the more active hunters the chance to go inland to the foothills of the Brooks Range in search of wolf and wolverine. Hunting these two furbearers required considerable time, effort, and expense. Hunters utilized cabins in the interior as well as in the foothills of the Brooks Range, where most of the more elusive furbearers tend to be (e.g., wolf and wolverine). The calm weather and the windblown snow made traveling and tracking easier and a few wolves and wolverines were harvested.

Fox trapping also got under way this month although most trappers waited until after Christmas to set their traps when the animals' coats are heaviest and snowy white. A few foxes found in and near town were killed for fear of rabies and the possibility of a child being bit.

With few subsistence resources available this time of year and the main ones (i.e., furbearers) requiring considerable time and effort, many hunters considered this a good time of year to shift their emphasis to wage employment. Many people had winter jobs and took occasional short hunting trips on weekends. People harvested caribou for fresh meat and for the Christmas feast. Smelt fishing was still popular on the weekends and during

any other time off. Seals were hunted less frequently as the ocean lead virtually disappeared this month.

Christmas day brought a terrible storm to an otherwise calm but cold month. The strong winds and blowing snow reduced visibility to zero and made traveling to the churches for the Christmas feasts very difficult. The storm forced water over the ice, creating deep pools on top of the ice and making travel even more dangerous. One hunter survived a fall through the ice in which he lost his snowmachine.

JANUARY

Many Wainwright residents went to Barrow in the first week of January to take part in the traditional *Kivgiq* or Messenger Feast. *Kivgiq* is a gathering of people from all over the North Slope to exchange gifts and food and to participate in various cultural events. Many people who remained in Barrow after the *Kivgiq* became stranded in Barrow when a severe cold spell and extreme high pressure system settled over the state, grounding most planes. Thus, shipments of food, supplies and equipment virtually were halted during the cold spell. With temperatures dropping to below -40^{0} Farenheit and with sustained winds of 25 mph, the wind chill factor plummeted to -118^{0}. These conditions were the dominant factor affecting subsistence activities this month.

Subsistence in January was limited mostly to smelt fishing. One group of hunters traveled to the south in search of wolverines. The bitter cold temperatures caused the wolverine hunters' snowmachines to break down, stranding them in the backcountry in the middle of the cold spell. Eventually they were rescued by the Wainwright Search and Rescue team.

Foxes were also hunted and trapped. The public safety officer reported that three of the five foxes killed in town were carrying rabies. Thus, it was acknowledged that all foxes in town should be killed for safety reasons.

Wainwright was also hit hard by a flu bug. Many families were affected by this stomach virus and were unable to maintain their normal level of activity.

Thus, the extreme cold, the virus, and the cultural activities in Barrow all contributed to January being the lowest month of the year in terms of usable pounds harvested.

FEBRUARY

The warmer and longer days of February allowed for an increase in subsistence activities over the past month. On sunny days, the lagoon was filled with people out fishing who welcomed the opportunity to be outdoors again.

With the warmer temperatures and the return of the sun, a group of hunters again headed far south in search of wolverines and wolves. Other families took trips deep into the mountains. The traveling for most of the month was very smooth and easy but with few signs of wolves or wolverines.

Quite a few caribou were about but were seldom pursued. Families would bring in a caribou when fresh meat was lacking or supplies from the cellar were low.

The ocean lead was still frozen; therefore, no sea mammals were taken. Polar bears were seen just north of town but none were harvested. At the end of the month, ice conditions changed drastically when a tremendous wind storm swept across the North Slope for three days. Visibility dropped to just a few feet. The wind gusted to over 102 mph and sustained winds of 50 to 70 mph were common. Houses suffered considerable damage, with roofs blown off, walls caved in, and many houses left without heat. The worst factor of this storm was the powerful wind which drove ice crashing onto the shore. When the ice stacked up along the shore to a height of 20 feet, houses near the shore were evacuated. After the storm, these high walls of ice made access to the ocean very difficult.

MARCH

After February's storm, people were busy repairing the damage. Once the destruction was cleared, people began to think of whales and the upcoming whaling season. Whaling crews were assembled and boats and sleds were repaired. The talk in town was about the condition of the ice which was a huge

mass of jumbled chunks. The February storm opened a few leads near Wainwright and although some seals were seen, none were taken. At the end of the month three polar bears were taken, two of them by a Wainwright hunter and the third by a Barrow hunter.

With the ever-improving weather, many hunters again tried to go deep into the hills for wolves and wolverines but to no avail. One hunter estimated that he had traveled over 2,000 miles looking for wolves and wolverines without success. Smelt fishing was the prime activity of the month with people jigging for smelts on the ice at every opportunity.

YEAR ONE CULTURAL AND SUBSISTENCE EVENTS

As a summary to the Seasonal Round, the following list highlights the key community and environmental events that directly or indirectly influenced subsistence activities in Year One.

DATE	ACTIVITY OR EVENT
April 3	Easter Sunday.
April 19	First whaling crews out on the ice.
April 25	Whale harvest, Wainwright's first whale.
April 26	Whale harvest, Wainwright's second whale.
May 6	Whale harvest, Wainwright's third whale.
May 7	Eva Neakok funeral
May (mid)	Geese hunting begins
May 16	AEWC transfers strike to Wainwright
May 17	AEWC transfers strike to Wainwright
May 18	Whale harvest, Wainwright's fourth whale
May 28-30	Memorial Day weekend
June 10	Inland travel by snowmachine stops
June 13	Whaling stops
June 22	Jerry Panik funeral
June 23-24	*Nalukataq*
June (late)	Seal and ugruk harvests on shorefast ice.
July 3-4	Fourth of July games
July 4	Shorefast ice breaks off - full scale boat travel begins
July 9	Ice in lagoon breaks up
July (mid)	First caribou harvests of summer
July 20	Russian scientists in town
July (late)	Eskimo Olympics in Fairbanks - Wainwright Dancers attend

DATE	ACTIVITY OR EVENT
August 7	Annual supply barge arrives
August 12	Wainwright village picnic
August (mid)	Subsistence emphasis turns inland - caribou
August 25	Edith Negovanna funeral
August 26	Two inches of snow
September 3-5	Labor Day weekend
September (mid)	Snowmachine travel becomes common
September (late)	Ice begins stacking up on shore
October 7	Trapped gray whales discovered off Point Barrow.
October 13	North and Northwest Mayor's Conference begins in Barrow.
October (mid)	Caribou begin rutting.
October 17	Gray whale rescue operation begins.
October 19	Alaska Federation of Natives annual meeting in Fairbanks.
October 22	NSB flies Wainwright people to Barrow to help with rescue.
October 28	Gray whales swim free.
October 31	Halloween dance.
November 1	Wainwright community potluck and Eskimo dance for Reverend Simmonds prior to his moving to Barrow.
November 4	Wainwright high school basketball starts.
November 8	High winds, 40+ mph.
November 14	Wainwright city council travels to Fairbanks.
November (early)	Smelt fishing starts.
November 20	Sun sets in Wainwright.
November 24	Thanksgiving
November (late)	Wolf and wolverine hunting begins.
December 6	NSB Assembly meeting in Wainwright.
December 25	Christmas. Major storm, blowing snow and winds to 35 mph.
December 26-31	Christmas games.
January 1-3	Messenger Feast *(Kivgiq)* in Barrow.
January 19	First sunrise of the year in Wainwright.
January	Extremely cold temperatures last three weeks of January.
Februrary 3-6	Bad ice conditions because of high water.
February 12	Snow storm, 6 to 8 inches.
February 16	Wainwright town meeting with NSB Mayor Ahmaogak.
February 17	Warner Asogeak funeral.
February 20	NSB holiday.
February 25	Severe wind storm, gusts to 104 mph at Wainwright.
March 8-11	Alaska Eskimo Whaling Commission annual meeting in Barrow.
March 21	Wainwright general town meeting.
March (mid)	Wainwright ice road built to gravel pit.
March 26	Easter
March (late)	Work begins on sewage lagoon.
March (late)	Lead opens north of Wainwright.
March 31-April 2	Spring Light Inspiration singers from Barrow travel to Wainwright, many by snowmachine.

TABLE A-1: TOTAL HARVEST ESTIMATES BY MAJOR RESOURCE CATEGORY - WAINWRIGHT, YEAR ONE REVISED (1)

RESOURCE	CONVERSION FACTOR (2) (Usable Weight Per Resource in lbs)	COMMUNITY TOTALS (3)		AVERAGE POUNDS HARVESTED (4)		PERCENT OF TOTAL USABLE POUNDS HARVESTED (3)	PERCENT OF WAINWRIGHT HOUSEHOLDS HARVESTING RESOURCE (4)
		NUMBER HARVESTED	USABLE POUNDS HARVESTED	PER HOUSEHOLD	PER CAPITA		
Marine Mammals (5)	n/a	n/a	179,574	1,396.8	340.7	70%	85%
Terrestrial Mammals	n/a	n/a	60,696	532.7	129.9	24%	58%
Fish	n/a	n/a	10,085	96.0	23.4	4%	69%
Birds	n/a	n/a	6,146	53.1	12.9	2%	55%
Total	n/a	n/a	256,500	2,078.5	507.0	100%	92%

(1) Year One: April 1, 1988 - March 31, 1989.

(2) See Table C-3 for sources of conversion factors.

(3) Community totals and percent of total usable pounds harvestad are based on harvest amounts reported by all 124 Wainwright Year One households for all species except bowhead (see note 5).

(4) Per household and per capita means and percent of households harvesting a resource are based only on the 100 core households in the study for the full two years for all species except bowhead (see note 5).

(5) Usable pounds harvested for bowhead whale were derived from a pounds-per-foot-length ratio, which includes all usable portions of the whale (see Appendix C). Average pounds per household and per capita were derived from the total usable whale amount (divided by 100 core households & 411 persons respectively) rather than from the number of shares households reported receiving.

n/a means not applicable

Source: Stephen R. Braund & Associates, 1993

TABLE A-2: MONTHLY HARVESTS BY MAJOR RESOURCE CATEGORY - WAINWRIGHT, YEAR ONE REVISED (1)
(Pounds of Usable Resource Product)

TOTALS
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	1988									1989		
MAJOR RESOURCE CATEGORY	April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.	Feb.	March
Marine Mammals	27,888	81,906	4,481	38,662	22,360	1,116	1,748	420	0	0	0	992
Terrestrial Mammals	685	820	117	2,232	16,419	15,788	16,146	3,042	2,106	734	1,904	702
Fish	262	0	0	5	423	4,680	2,102	353	86	446	753	976
Birds	123	3,517	1,567	135	314	484	2	3	0	1	0	0
Total	28,958	86,244	6,165	41,034	39,516	22,068	19,998	3,818	2,192	1,181	2,657	2,670

PERCENTS
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	1988									1989			
MAJOR RESOURCE CATEGORY	April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.	Feb.	March	
Marine Mammals	16%	46%	2%	22%	12%	1%	1%	0%	0%	0%	0%	1%	= 100%
Terrestrial Mammals	1%	1%	0%	4%	27%	26%	27%	5%	3%	1%	3%	1%	= 100%
Fish	3%	0%	0%	0%	4%	46%	21%	4%	1%	4%	7%	10%	= 100%
Birds	2%	57%	25%	2%	5%	8%	0%	0%	0%	0%	0%	0%	= 100%
All Resources Combined	11%	34%	2%	16%	15%	9%	8%	1%	1%	0%	1%	1%	= 100%

(1) Based on 124 Year One households, including partial year households.

Source: Stephen R. Braund & Associates, 1993

TABLE A-3: HARVEST ESTIMATES FOR MARINE MAMMALS - WAINWRIGHT, YEAR ONE REVISED

RESOURCE	CONVERSION FACTOR (2) Usable Weight Per Resource in pounds	COMMUNITY TOTALS (3) NUMBER HARVESTED	COMMUNITY TOTALS (3) USABLE POUNDS HARVESTED	AVERAGE POUNDS HARVESTED (4) PER HOUSEHOLD	AVERAGE POUNDS HARVESTED (4) PER CAPITA	PERCENT OF TOTAL USABLE POUNDS HARVESTED (3)	PERCENT OF WAINWRIGHT HOUSEHOLDS HARVESTING RESOURCE (4)
Total Marine Mammals	n/a	n/a	179,574	1396.8	340.7	70.0%	85%
Bowhead (5)	27,104	4	108,416	874.3	213.2	42.3%	84%
Walrus	772	58	45,038	302.4	73.8	17.6%	20%
Bearded Seal	176	97	16,991	134.7	32.9	6.6%	35%
Polar Bear	496	7	3,472	34.7	8.5	1.4%	5%
Total Ringed & Spotted Seal	42	68	2,856	22.7	5.5	1.1%	23%
Ringed Seal	42	63	2,646	20.6	5.0	1.0%	22%
Spotted Seal	42	5	210	2.1	0.5	0.1%	6%
Beluga Whale	1,400	2	2,800	28.0	6.8	1.1%	1%

(1) Year One: April 1, 1988 - March 31, 1989.

(2) See Table C-3 for sources of conversion factors.

(3) Community totals and percent of total usable pounds harvested are based on harvest amounts reported by all 124 Wainwright Year One households for all species except bowhead (see note 5).

(4) Per household and per capita means and percent of households harvesting a resource are based only on the 100 core households in the study for the full two years for all species except bowhead (see note 5).

(5) Usable pounds harvested for bowhead whale were derived from a pounds-per-foot-length ratio, which includes all usable portions of the whale (see Appendix C). Average pounds per household and per capita were derived from the total usable whale amount (divided by 100 core households & 411 persons respectively) rather than from the number of shares households reported receiving.

n/a means not applicable

Source: Stephen R. Braund & Associates, 1993

TABLE A-4: MARINE MAMMAL HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR ONE REVISED (1)
(Pounds of Usable Resource Product)

TOTALS
******

SPECIES	1988 April	May	June	July	August	Sept.	October	Nov.	1989 Dec.	Jan.	Feb.	March
Bowhead Whale	27,342	81,074	0	0	0	0	0	0	0	0	0	0
Walrus	0	0	2,007	21,801	20,458	772	0	0	0	0	0	0
Bearded Seal	0	0	1,760	13,515	1,364	176	176	0	0	0	0	0
Polar Bear	0	496	0	0	496	0	1,488	0	0	0	0	992
Total Ring. & Spot. Seal	546	336	714	546	42	168	84	420	0	0	0	0
Ringed Seal	546	336	714	504	42	42	84	378	0	0	0	0
Spotted Seal	0	0	0	42	0	126	0	42	0	0	0	0
Beluga Whale	0	0	0	2800	0	0	0	0	0	0	0	0
All Marine Mammals	27,888	81,906	4,481	38,662	22,360	1,116	1,748	420	0	0	0	992

PERCENTS
****

SPECIES	1988 April	May	June	July	August	Sept.	October	Nov.	1989 Dec.	Jan.	Feb.	March	
Bowhead Whale	25%	75%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Walrus	0%	0%	4%	48%	45%	2%	0%	0%	0%	0%	0%	0%	= 100%
Bearded Seal	0%	0%	10%	80%	8%	1%	1%	0%	0%	0%	0%	0%	= 100%
Polar Bear	0%	14%	0%	0%	14%	0%	43%	0%	0%	0%	0%	29%	= 100%
Total Ring. & Spot. Seal	19%	12%	25%	19%	1%	6%	3%	15%	0%	0%	0%	0%	= 100%
Ringed Seal	21%	13%	27%	19%	2%	2%	3%	14%	0%	0%	0%	0%	= 100%
Spotted Seal	0%	0%	0%	20%	0%	60%	0%	20%	0%	0%	0%	0%	= 100%
Beluga Whale	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
All Marine Mammals	16%	46%	2%	22%	12%	1%	1%	0%	0%	0%	0%	1%	= 100%

(1) Based on 124 Year One households, including partial year households.

Source: Stephen R. Braund & Associates, 1993

TABLE A-5: MARINE MAMMAL HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR ONE REVISED (1)
(Number Harvested)

	1988								1989			
SPECIES	April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.	Feb.	March
Bowhead Whale	2	2	0	0	0	0	0	0	0	0	0	0
Walrus	0	0	3	28	27	1	0	0	0	0	0	0
Bearded Seal	0	0	10	77	8	1	1	0	0	0	0	0
Polar Bear	0	1	0	0	1	0	3	0	0	0	0	2
Total Ring. & Spot. Seal	13	8	17	13	1	4	2	10	0	0	0	0
Ringed Seal	13	8	17	12	1	1	2	9	0	0	0	0
Spotted Seal	0	0	0	1	0	3	0	1	0	0	0	0
Beluga Whale	0	0	0	2	0	0	0	0	0	0	0	0

(1) Based on 124 Year One households, including partial year households.

Source: Stephen R. Braund & Associates, 1993

TABLE A-6: HARVEST ESTIMATES FOR TERRESTRIAL MAMMALS - WAINWRIGHT, YEAR ONE REVISED (1)

RESOURCE	CONVERSION FACTOR (2) Usable Weight Per Resource in pounds	COMMUNITY TOTALS (3) NUMBER HARVESTED	COMMUNITY TOTALS (3) USABLE POUNDS HARVESTED	AVERAGE POUNDS HARVESTED (4) PER HOUSEHOLD	AVERAGE POUNDS HARVESTED (4) PER CAPITA	PERCENT OF TOTAL USABLE POUNDS HARVESTED (3)	PERCENT OF WAINWRIGHT HOUSEHOLDS HARVESTING RESOURCE (4)
Total Terrestrial Mammals	n/a	n/a	60,696	532.7	129.9	23.7%	58%
Caribou	117.0	505	59,094	516.7	126.0	23.0%	57%
Moose	500.0	3	1,500	15.0	3.7	0.6%	3%
Brown Bear	100.0	1	100	1.0	0.2	**	1%
Ground Squirrel	0.4	3	1	*	*	**	0%
Arctic Fox (Blue)	n/a	61	n/a	n/a	n/a	n/a	6%
Red Fox (Cross, Silver)	n/a	26	n/a	n/a	n/a	n/a	7%
Wolverine	n/a	20	n/a	n/a	n/a	n/a	6%
Wolf	n/a	10	n/a	n/a	n/a	n/a	4%
Ermine	n/a	2	n/a	n/a	n/a	n/a	1%

(1) Year One: April 1, 1988 - March 31, 1989.

(2) See Table C-3 for sources of conversion factors.

(3) Community totals and percent of total usable pounds harvested are based on harvest amounts reported by all 124 Wainwright Year One households for all species.

(4) Per household and per capita means and percent of households harvesting a resource are based only on the 100 core households in the study for the full two years for all species.

* represents less than .1 pound
** represents less than .1 percent

n/a means not applicable

Source: Stephen R. Braund & Associates, 1993

TABLE A-7: TERRESTRIAL MAMMAL HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR ONE REVISED (1)
(Pounds of Usable Resource Product)

TOTALS
******

SPECIES	1988 April	May	June	July	August	Sept.	October	Nov.	Dec.	1989 Jan.	Feb.	March
Caribou	585	819	117	2,232	16,419	15,288	16,146	3,042	2,106	234	1,404	702
Moose	0	0	0	0	0	500	0	0	0	500	500	0
Brown Bear	100	0	0	0	0	0	0	0	0	0	0	0
Ground Squirrel	0	1	0	0	0	0	0	0	0	0	0	0
All Terrestrial Mammals (excluding furbearers)	685	820	117	2,232	16,419	15,788	16,146	3,042	2,106	734	1,904	702

PERCENTS
****

SPECIES	1988 April	May	June	July	August	Sept.	October	Nov.	Dec.	1989 Jan.	Feb.	March	
Caribou	1%	1%	0%	4%	28%	26%	27%	5%	4%	0%	2%	1%	= 100%
Moose	0%	0%	0%	0%	0%	33%	0%	0%	0%	33%	33%	0%	= 100%
Brown Bear	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Ground Squirrel	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
All Terrestrial Mammals (excluding furbearers)	1%	1%	0%	4%	27%	26%	27%	5%	3%	1%	3%	1%	= 100%

(1) Based on 124 Year One households, including partial year households.

Source: Stephen R. Braund & Associates, 1993

TABLE A-8: TERRESTRIAL MAMMAL HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR ONE REVISED (1)
(Number Harvested)

	1988			TOTALS ******					1989		
SPECIES	April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.	Feb.	March
Caribou	5	7	1	19	140	131	138	26	18	2	12	6
Moose	0	0	0	0	0	1	0	0	0	1	1	0
Brown Bear	1	0	0	0	0	0	0	0	0	0	0	0
Ground Squirrel	0	3	0	0	0	0	0	0	0	0	0	0
Arctic Fox (Blue)	2	15	0	0	0	0	0	0	17	3	16	8
Red Fox (Cross, Silver)	0	0	0	0	0	0	0	2	1	8	15	0
Wolverine	1	0	0	0	0	0	4	0	3	4	8	0
Wolf	0	4	0	0	0	0	0	2	2	2	0	0
Ermine	0	0	0	0	0	1	1	0	0	0	0	0

(1) Based on 124 Year One households, including partial year households.

Source: Stephen R. Braund & Associates, 1993

TABLE A-9: HARVEST ESTIMATES FOR FISH - WAINWRIGHT, YEAR ONE REVISED (1)

RESOURCE	CONVERSION FACTOR (2) Usable Weight Per Resource in pounds	COMMUNITY TOTALS (3) NUMBER HARVESTED	COMMUNITY TOTALS (3) USABLE POUNDS HARVESTED	AVERAGE POUNDS HARVESTED (4) PER HOUSEHOLD	AVERAGE POUNDS HARVESTED (4) PER CAPITA	PERCENT OF TOTAL USABLE POUNDS HARVESTED (3)	PERCENT OF WAINWRIGHT HOUSEHOLDS HARVESTING RESOURCE (4)
Total Fish	n/a	n/a	10,085	96.0	23.4	3.9%	69%
Total Whitefish		5,037	5,037	50.4	12.3	2.0%	22%
Whitefish (non-specified)	1.0	4	4	0.1	*	**	1%
Round Whitefish	1.0	400	400	4.0	1.0	0.2%	4%
Least cisco	1.0	4,622	4,622	46.2	11.3	1.8%	19%
Bering, Arctic cisco	1.0	11	11	0.1	*	**	1%
Total Other Freshwater Fish		2,901	2,343	23.3	5.7	0.9%	22%
Arctic grayling	0.8	2,894	2,315	23.1	5.6	0.9%	21%
Burbot (Ling cod)	4.0	6	24	0.2	0.1	**	3%
Lake trout	4.0	1	4	0.0	*	**	1%
Total Salmon		11	49	0.5	0.1	**	2%
Salmon (non-specified)	6.1	2	12	0.1	*	**	1%
Chum (Dog) salmon	6.1	3	18	0.2	*	**	2%
Pink (Humpback) salmon	3.1	6	19	0.2	*	**	1%
Total Other Coastal Fish		20,428	2,656	21.8	5.3	1.0%	55%
Rainbow smelt	0.12	20,194	2,423	20.0	4.9	0.9%	54%
Tomcod (Saffron Cod)	1.0	230	230	1.8	0.4	0.1%	2%
Sculpin	0.6	4	2	0.0	*	**	1%

(1) Year One: April 1, 1988 - March 31, 1989.

(2) See Table C-3 for sources of conversion factors.

(3) Community totals and percent of total usable pounds harvested are based on harvest amounts reported by all 124 Wainwright Year One households for all species.

(4) Per household and per capita means and percent of households harvesting a resource are based only on the 100 core households in the study for the full two years for all species.

* represents less than .1 pound

** represents less than .1 percent

n/a means not applicable

Source: Stephen R. Braund & Associates, 1993

TABLE A-10: FISH HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR ONE REVISED (1)
(Pounds of Usable Resource Product)

SPECIES	1988 April	May	June	July	August	Sept.	TOTALS ****** October	Nov.	1989 Dec.	Jan.	Feb.	March
Total Whitefish	0	0	0	0	295	4,412	228	102	0	0	0	0
Whitefish (non-specified)	0	0	0	0	0	0	2	2	0	0	0	0
Round Whitefish	0	0	0	0	0	75	225	100	0	0	0	0
Least cisco	0	0	0	0	295	4,327	0	0	0	0	0	0
Bering, Arctic cisco	0	0	0	0	0	10	1	0	0	0	0	0
Total Other Freshwater Fish	0	0	0	5	85	262	1,830	144	18	0	0	0
Arctic grayling	0	0	0	5	85	254	1,810	144	18	0	0	0
Burbot (Ling cod)	0	0	0	0	0	4	20	0	0	0	0	0
Lake trout	0	0	0	0	0	4	0	0	0	0	0	0
Total Salmon	0	0	0	0	43	6	0	0	0	0	0	0
Salmon (non-specified)	0	0	0	0	12	0	0	0	0	0	0	0
Chum (Dog) salmon	0	0	0	0	12	6	0	0	0	0	0	0
Pink (Humpback) salmon	0	0	0	0	19	0	0	0	0	0	0	0
Total Other Coastal Fish	262	0	0	0	0	0	44	107	68	446	753	976
Rainbow smelt	262	0	0	0	0	0	42	106	18	267	753	976
Tomcod (Saffron Cod)	0	0	0	0	0	0	0	1	50	179	0	0
Sculpin	0	0	0	0	0	0	2	1	0	0	0	0
All Fish Species	262	0	0	5	423	4,680	2,102	353	86	446	753	976

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TABLE A-10, CONTINUED: FISH HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR ONE REVISED (1)
(Pounds of Usable Resource Product)

PERCENTS

SPECIES	1988 April	May	June	July	August	Sept.	October	Nov.	Dec.	1989 Jan.	Feb.	March	
Total Whitefish	0%	0%	0%	0%	6%	88%	5%	2%	0%	0%	0%	0%	= 100%
Whitefish (non-specified)	0%	0%	0%	0%	0%	0%	50%	50%	0%	0%	0%	0%	= 100%
Round Whitefish	0%	0%	0%	0%	0%	19%	56%	25%	0%	0%	0%	0%	= 100%
Least cisco	0%	0%	0%	0%	6%	94%	0%	0%	0%	0%	0%	0%	= 100%
Bering, Arctic cisco	0%	0%	0%	0%	0%	91%	9%	0%	0%	0%	0%	0%	= 100%
Total Other Freshwater Fish	0%	0%	0%	0%	4%	11%	78%	6%	1%	0%	0%	0%	= 100%
Arctic grayling	0%	0%	0%	0%	4%	11%	78%	6%	1%	0%	0%	0%	= 100%
Burbot (Ling cod)	0%	0%	0%	0%	0%	17%	83%	0%	0%	0%	0%	0%	= 100%
Lake trout	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	= 100%
Total Salmon	0%	0%	0%	0%	88%	12%	0%	0%	0%	0%	0%	0%	= 100%
Salmon (non-specified)	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	= 100%
Chum (Dog) salmon	0%	0%	0%	0%	67%	33%	0%	0%	0%	0%	0%	0%	= 100%
Pink (Humpback) salmon	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	= 100%
Total Other Coastal Fish	10%	0%	0%	0%	0%	0%	2%	4%	3%	17%	28%	37%	= 100%
Rainbow smelt	11%	0%	0%	0%	0%	0%	2%	4%	1%	11%	31%	40%	= 100%
Tomcod (Saffron Cod)	0%	0%	0%	0%	0%	0%	0%	0%	22%	78%	0%	0%	= 100%
Sculpin	0%	0%	0%	0%	0%	0%	75%	25%	0%	0%	0%	0%	= 100%
All Fish Species	3%	0%	0%	0%	4%	46%	21%	4%	1%	4%	7%	10%	= 100%

(1) Based on 124 Year One households, including partial year households.

Source: Stephen R. Braund & Associates, 1993

TABLE A-11: FISH HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR ONE REVISED (1)
(Number Harvested)

	1988					1989						
SPECIES	April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.	Feb.	March
Total Whitefish	0	0	0	0	295	4,412	228	102	0	0	0	0
Whitefish (non-specified)	0	0	0	0	0	0	2	2	0	0	0	0
Round Whitefish	0	0	0	0	0	75	225	100	0	0	0	0
Least cisco	0	0	0	0	295	4,327	0	0	0	0	0	0
Bering, Arctic cisco	0	0	0	0	0	10	1	0	0	0	0	0
Total Other Freshwater Fish	0	0	0	6	106	319	2,268	180	23	0	0	0
Arctic grayling	0	0	0	6	106	317	2,263	180	23	0	0	0
Burbot (Ling cod)	0	0	0	0	0	1	5	0	0	0	0	0
Lake trout	0	0	0	0	0	1	0	0	0	0	0	0
Salmon	0	0	0	0	10	1	0	0	0	0	0	0
Salmon (non-specified)	0	0	0	0	2	0	0	0	0	0	0	0
Chum (Dog) salmon	0	0	0	0	2	1	0	0	0	0	0	0
Pink (Humpback) salmon	0	0	0	0	6	0	0	0	0	0	0	0
Total Other Coastal Fish	2,184	0	0	0	0	0	355	884	197	2,404	6,272	8,132
Rainbow smelt	2,184	0	0	0	0	0	352	882	147	2,225	6,272	8,132
Tomcod (Saffron Cod)	0	0	0	0	0	0	0	1	50	179	0	0
Sculpin	0	0	0	0	0	0	3	1	0	0	0	0

(1) Based on 124 Year One households, including partial year households.

Source: Stephen R. Braund & Associates, 1993

TABLE A-12: HARVEST ESTIMATES FOR BIRDS - WAINWRIGHT, YEAR ONE REVISED (1)

RESOURCE	CONVERSION FACTOR (2) Usable Weight Per Resource in pounds	COMMUNITY TOTALS (3) NUMBER HARVESTED	COMMUNITY TOTALS (3) USABLE POUNDS HARVESTED	AVERAGE POUNDS HARVESTED (4) PER HOUSEHOLD	AVERAGE POUNDS HARVESTED (4) PER CAPITA	PERCENT OF TOTAL USABLE POUNDS HARVESTED (3)	PERCENT OF WAINWRIGHT HOUSEHOLDS HARVESTING RESOURCE (4)
Total Birds	n/a	n/a	6,146	53.1	12.9	2.4%	55%
Total Geese		1,337	5,166	47.0	11.5	2.0%	44%
White-fronted goose	4.5	607	2,732	25.5	6.2	1.1%	21%
Brant	3.0	567	1,701	14.7	3.6	0.7%	28%
Goose (non-specified)	4.5	129	581	5.5	1.4	0.2%	11%
Lesser snow goose	4.5	29	131	1.0	0.3	0.1%	7%
Canada goose	4.5	5	23	0.2	0.1	**	1%
Total Eiders		560	839	5.0	1.2	0.3%	31%
Eider (non-specified)	1.5	337	505	3.3	0.8	0.2%	18%
Common eider	1.5	57	86	0.3	0.1	**	4%
King eider	1.5	100	150	1.0	0.2	0.1%	11%
Spectacled eider	1.5	64	96	0.5	0.1	**	7%
Stellar's eider	1.5	2	3	0.0	*	**	0%
Ptarmigan	0.7	135	95	0.7	0.2	**	14%
Total Other Birds		31	47	0.4	0.1	**	7%
Pintail duck	1.5	18	27	0.2	0.1	**	5%
Duck (non-specified)	1.5	12	18	0.2	*	**	3%
Mallard duck	1.5	1	2	0.0	*	**	1%

(1) Year One: April 1, 1988 - March 31, 1989.

(2) See Table C-3 for sources of conversion factors.

(3) Community totals and percent of total usable pounds harvested are based on harvest amounts reported by all 124 Wainwright Year One households for all species.

(4) Per household and per capita means and percent of households harvesting a resource are based only on the 100 core households in the study for the full two years for all species.

* represents less than .1 pound

** represents less than .1 percent

n/a means not applicable

Source: Stephen R. Braund & Asaociates, 1993

TABLE A-13: BIRD HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR ONE REVISED (1)
(Pounds of Usable Resource Product)

SPECIES	1988 April	May	June	July	August	Sept.	TOTALS ****** October	Nov.	Dec.	1989 Jan.	Feb.	March
Total Geese	117	3,299	839	129	312	471	0	0	0	0	0	0
White-fronted goose	0	2,147	513	54	18	0	0	0	0	0	0	0
Brant	0	666	240	30	294	471	0	0	0	0	0	0
Goose (non-specified)	117	450	14	0	0	0	0	0	0	0	0	0
Lesser snow goose	0	36	50	45	0	0	0	0	0	0	0	0
Canada goose	0	0	23	0	0	0	0	0	0	0	0	0
Total Eiders	0	120	703	6	0	11	0	0	0	0	0	0
Eider (non-specified)	0	51	451	3	0	0	0	0	0	0	0	0
Common eider	0	14	72	0	0	0	0	0	0	0	0	0
King eider	0	35	102	3	0	11	0	0	0	0	0	0
Spectacled eider	0	21	75	0	0	0	0	0	0	0	0	0
Stellar's eider	0	0	3	0	0	0	0	0	0	0	0	0
Ptarmigan	6	75	3	0	2	2	2	3	0	1	0	0
Total Other Birds	0	24	23	0	0	0	0	0	0	0	0	0
Pintail	0	17	11	0	0	0	0	0	0	0	0	0
Duck (non-specified)	0	6	12	0	0	0	0	0	0	0	0	0
Mallard	0	2	0	0	0	0	0	0	0	0	0	0
All Bird Species	123	3,517	1,567	135	314	484	2	3	0	1	0	0

(continued on next page)

TABLE A-13, CONTINUED: BIRD HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR ONE REVISED (1)
(Pounds of Usable Resource Product)

PERCENTS

SPECIES	1988 April	May	June	July	August	Sept.	October	Nov.	Dec.	1989 Jan.	Feb.	March	
Total Geese	2%	64%	16%	2%	6%	9%	0%	0%	0%	0%	0%	0%	= 100%
White-fronted goose	0%	79%	19%	2%	1%	0%	0%	0%	0%	0%	0%	0%	= 100%
Brant	0%	39%	14%	2%	17%	28%	0%	0%	0%	0%	0%	0%	= 100%
Goose (non-specified)	20%	78%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Lesser snow goose	0%	28%	38%	34%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Canada goose	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Total Eiders	0%	14%	84%	1%	0%	1%	0%	0%	0%	0%	0%	0%	= 100%
Eider (non-specified)	0%	10%	89%	1%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Common eider	0%	16%	84%	0%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
King eider	0%	23%	68%	2%	0%	7%	0%	0%	0%	0%	0%	0%	= 100%
Spectacled eider	0%	22%	78%	0%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Stellar's eider	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Ptarmigan	7%	79%	3%	0%	2%	2%	2%	3%	0%	1%	0%	0%	= 100%
Total Other Birds	0%	52%	48%	0%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Pintail	0%	61%	39%	0%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Duck (non-specified)	0%	33%	67%	0%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Mallard	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
All Bird Species	2%	57%	25%	2%	5%	8%	0%	0%	0%	0%	0%	0%	= 100%

(1) Based on 124 Year One households, including partial year households.
Source: Stephen R. Braund & Associates, 1993

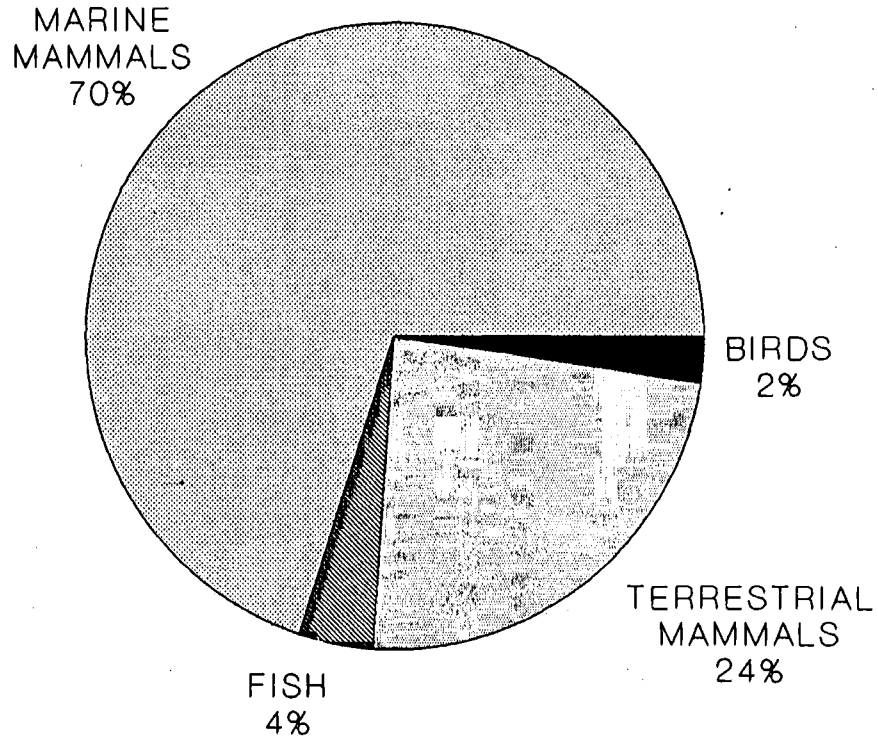
TABLE A-14: BIRD HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR ONE REVISED (1)
(Number Harvested)

	1988									1989		
SPECIES	April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.	Feb.	March
Total Geese	26	807	213	32	102	157	0	0	0	0	0	0
White-fronted goose	0	477	114	12	4	0	0	0	0	0	0	0
Brant	0	222	80	10	98	157	0	0	0	0	0	0
Goose (non-specified)	26	100	3	0	0	0	0	0	0	0	0	0
Lesser snow goose	0	8	11	10	0	0	0	0	0	0	0	0
Canada goose	0	0	5	0	0	0	0	0	0	0	0	0
Total Eiders	0	80	469	4	0	7	0	0	0	0	0	0
Eider (non-specified)	0	34	301	2	0	0	0	0	0	0	0	0
Common eider	0	9	48	0	0	0	0	0	0	0	0	0
King eider	0	23	68	2	0	7	0	0	0	0	0	0
Spectacled eider	0	14	50	0	0	0	0	0	0	0	0	0
Stellar's eider	0	0	2	0	0	0	0	0	0	0	0	0
Ptarmigan	9	107	4	0	3	3	3	4	0	2	0	0
Total Other Birds	0	16	15	0	0	0	0	0	0	0	0	0
Pintail	0	11	7	0	0	0	0	0	0	0	0	0
Duck (non-specified)	0	4	8	0	0	0	0	0	0	0	0	0
Mallard	0	1	0	0	0	0	0	0	0	0	0	0

(1) Based on 124 Year One households, including partial year households.

Source: Stephen R. Braund & Associates, 1993

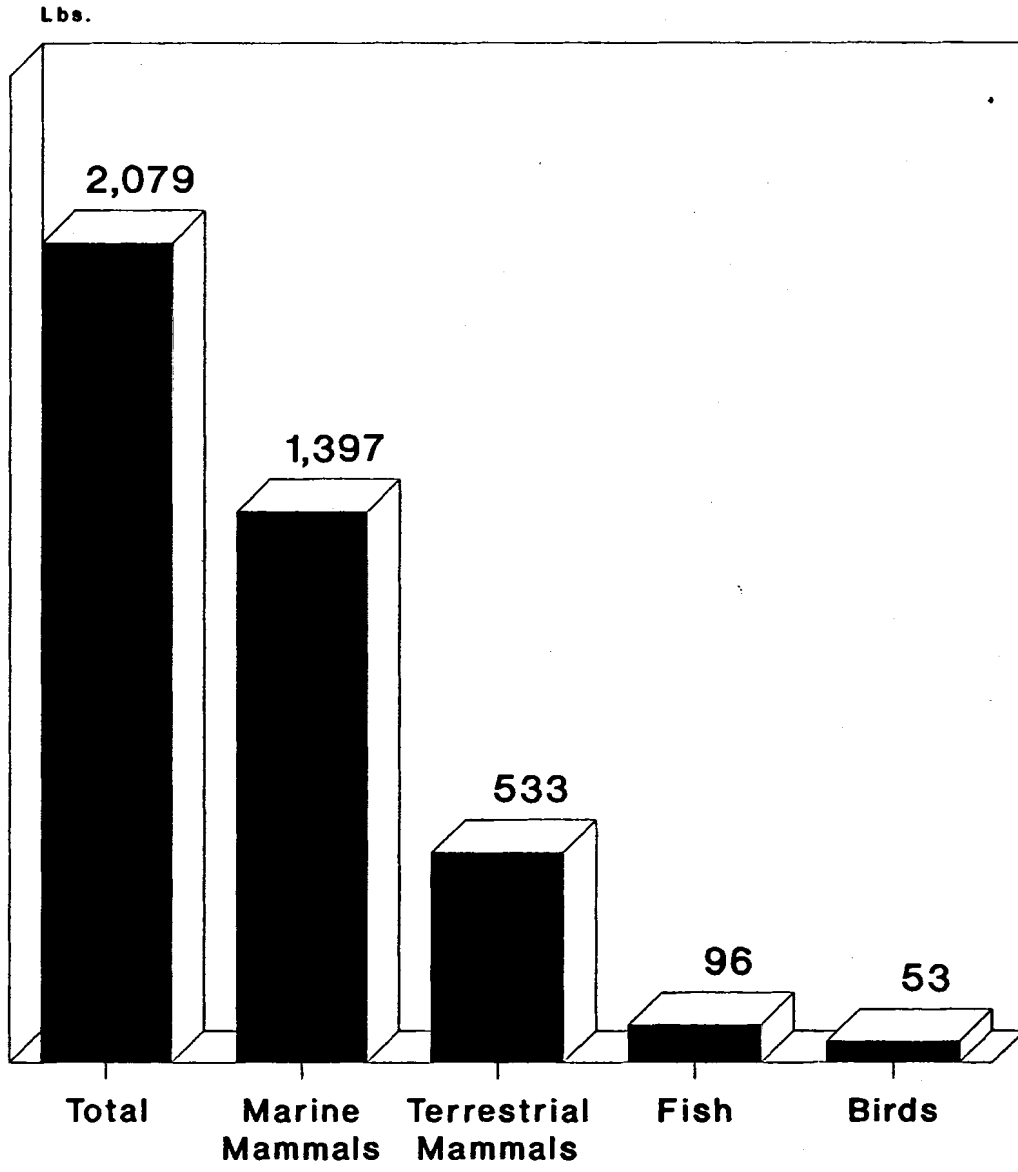
Figure A-1: Harvest Percentages by Major Resource Category
Wainwright Year One, Revised
(Usable Pounds Harvested)



Year One: April 1, 1988 - March 31, 1989
Based on harvests of all 124 households, including partial year households.
Source: Stephen R. Braund & Assoc., 1993

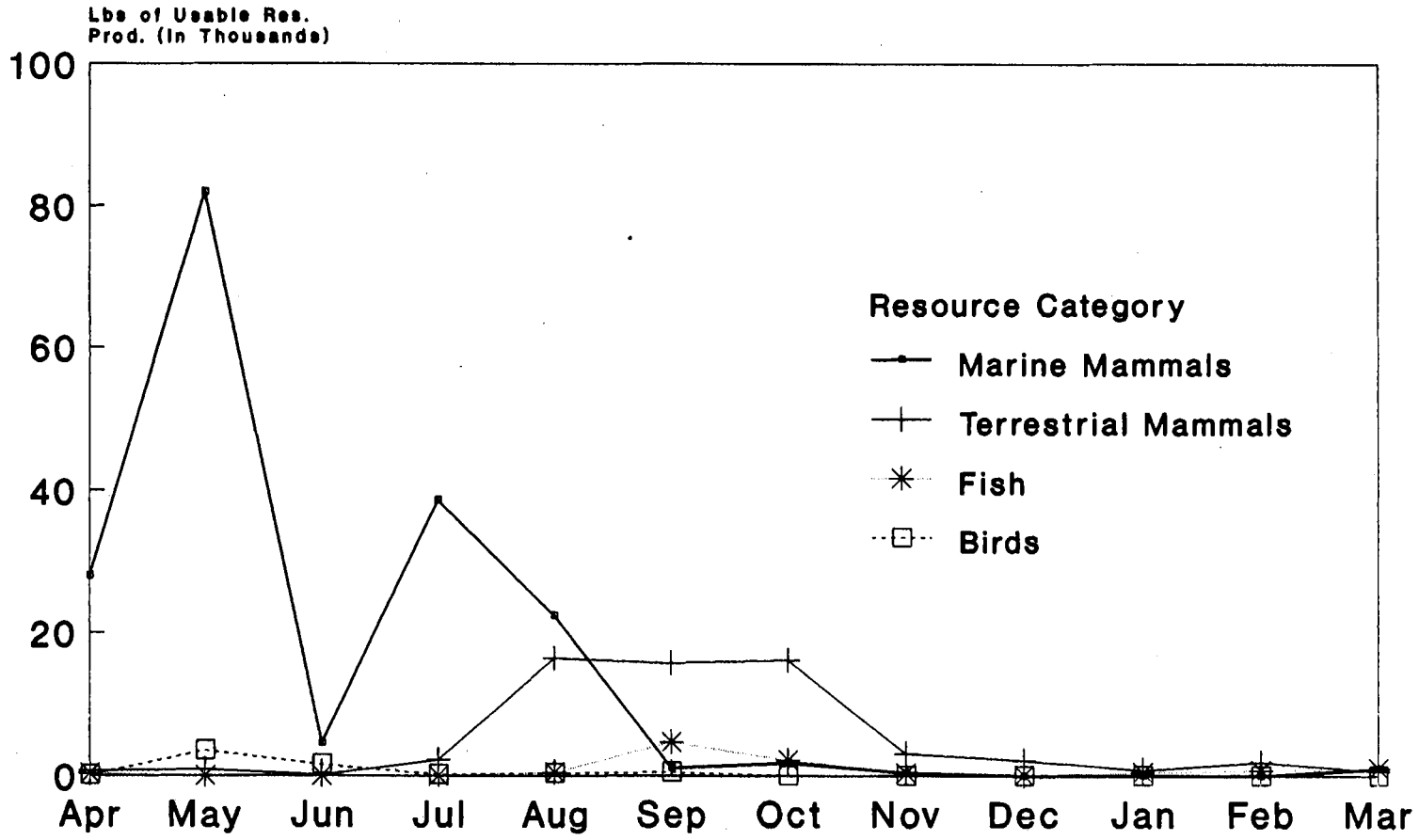
Figure A-2: Harvest Amounts By Major Resource Category Wainwright, Year One Revised

(Mean Usable Pounds Per Household)



Based on 100 core households in the study for both years.
Year One: April 1, 1988 - March 31, 1989
Source: Stephen R. Braund & Assoc., 1993

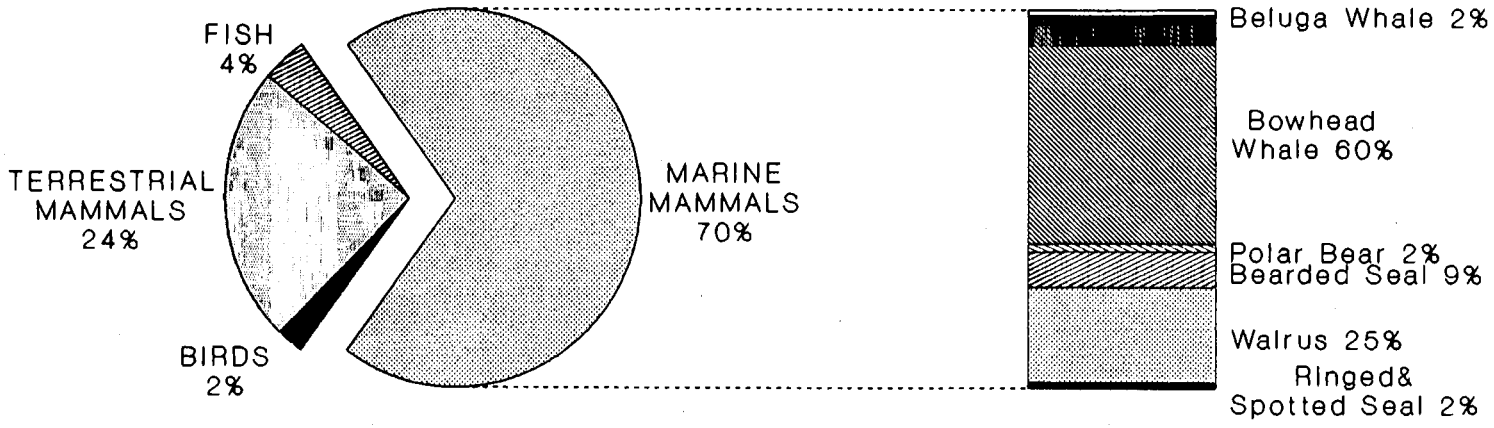
Figure A-3: Monthly Harvest by Major Resource Category
Wainwright, Year One Revised



Based on 124 Year One households, including partial year households.
Year One: April 1, 1988 - March 31, 1989
Source: Stephen R. Braund & Assoc., 1993

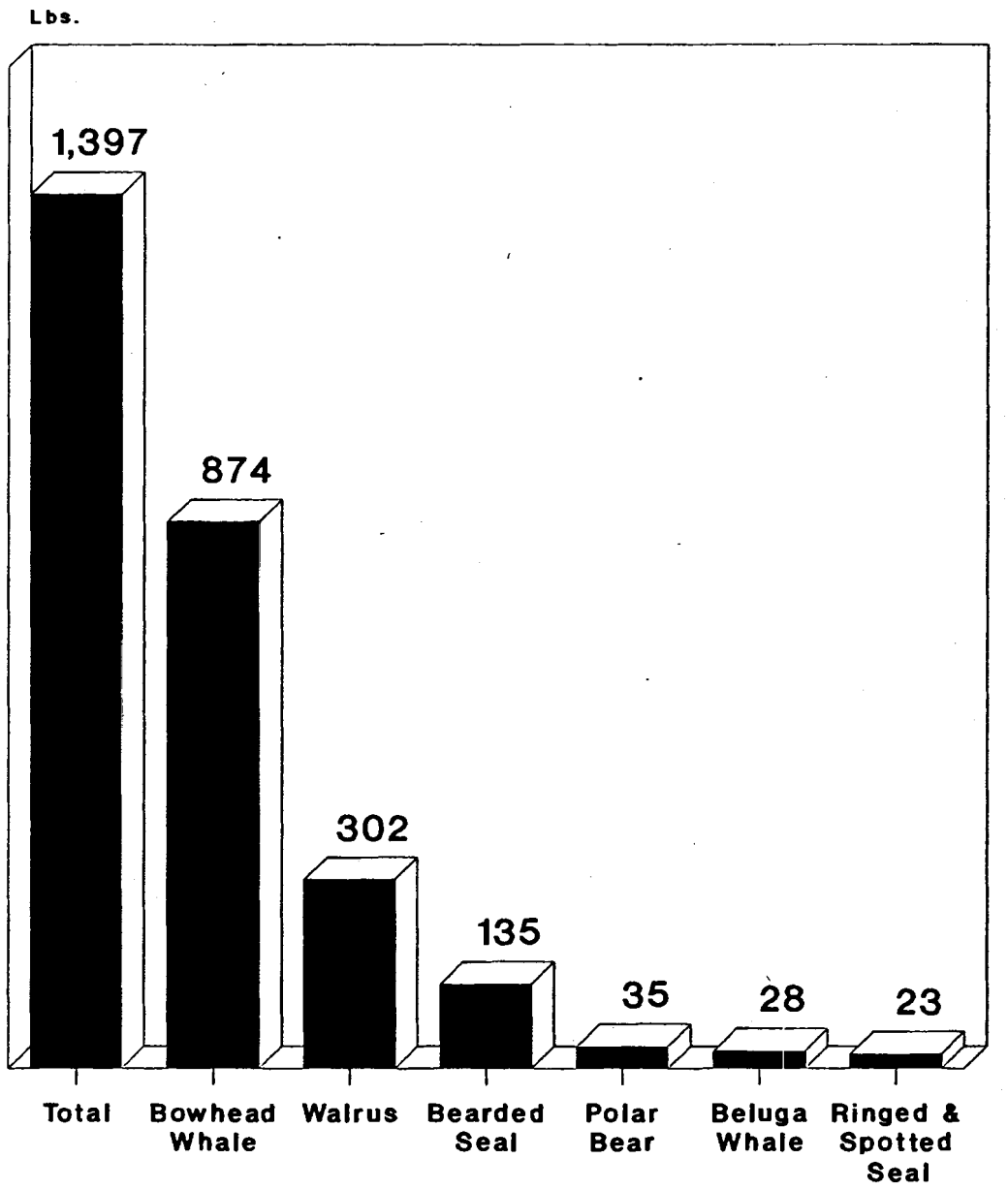
Figure A-4: Harvest Percentages of Marine Mammals, Wainwright Year One

(Usable Pounds Harvested)



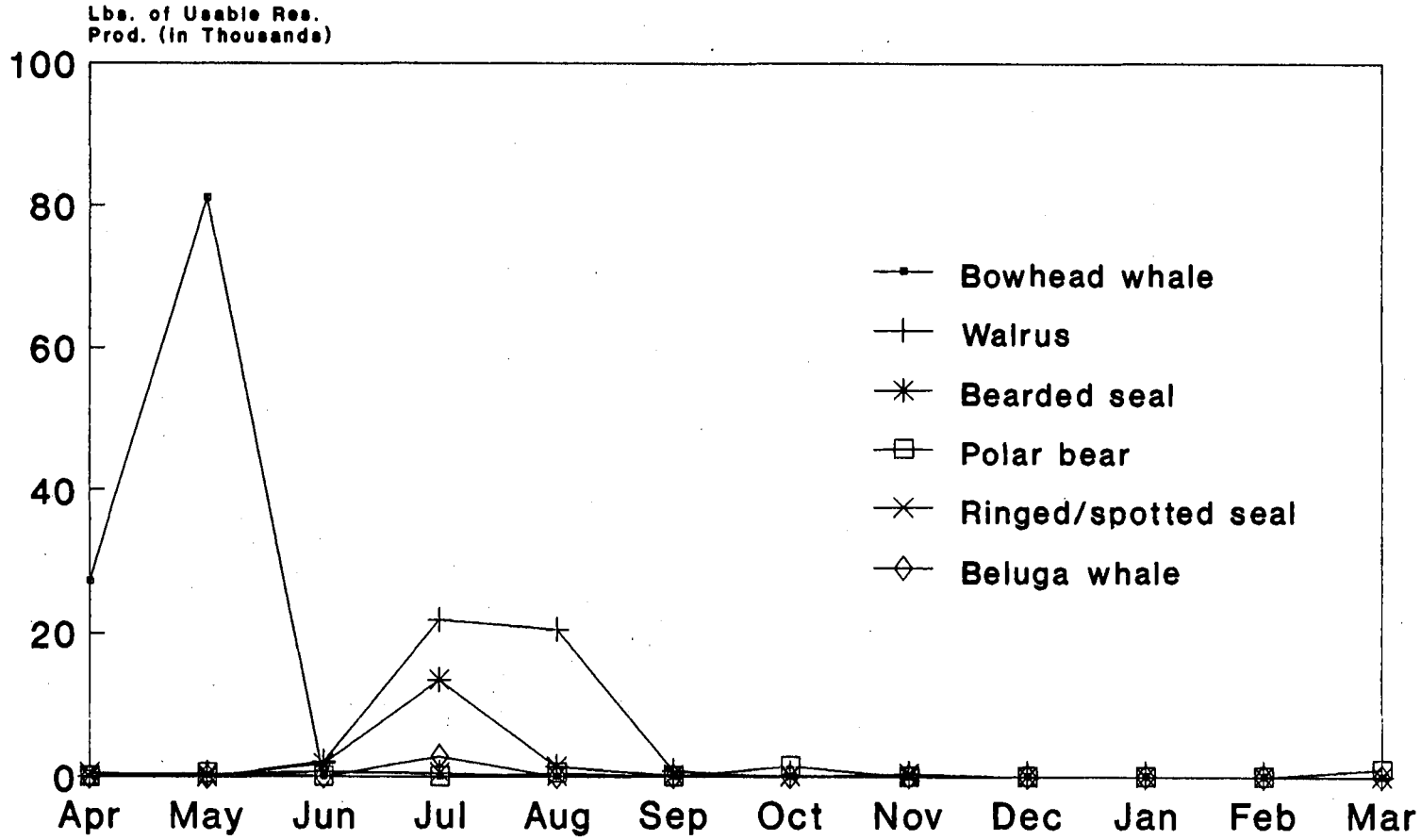
Year One: April 1, 1988 - March 31, 1989
Based on harvests of all 124 households, including partial year households.
Source: Stephen R. Braund & Assoc., 1993

Figure A-5: Harvest of Marine Mammals Wainwright, Year One Revised
(Mean Usable Pounds Per Household)



Based on 100 core households in the study for both years.
Year One: April 1, 1988 - March 31, 1989
Source: Stephen R. Braund & Assoc., 1993

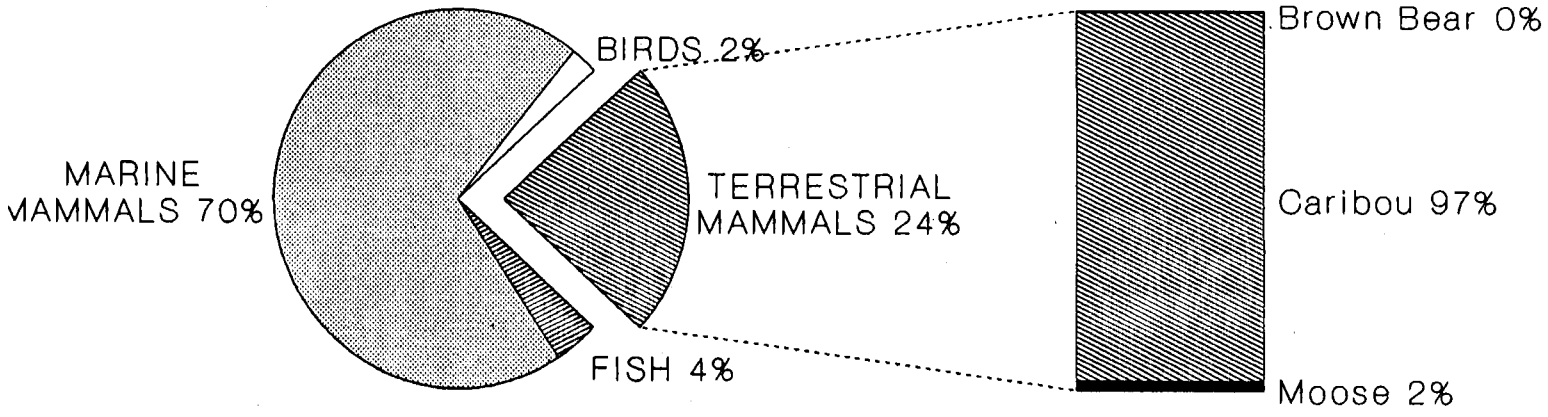
Figure A-6: Monthly Harvest of Marine Mammals
Wainwright, Year One Revised



Based on 124 Year One households, including partial year households.
Year One: April 1, 1988 - March 31, 1989

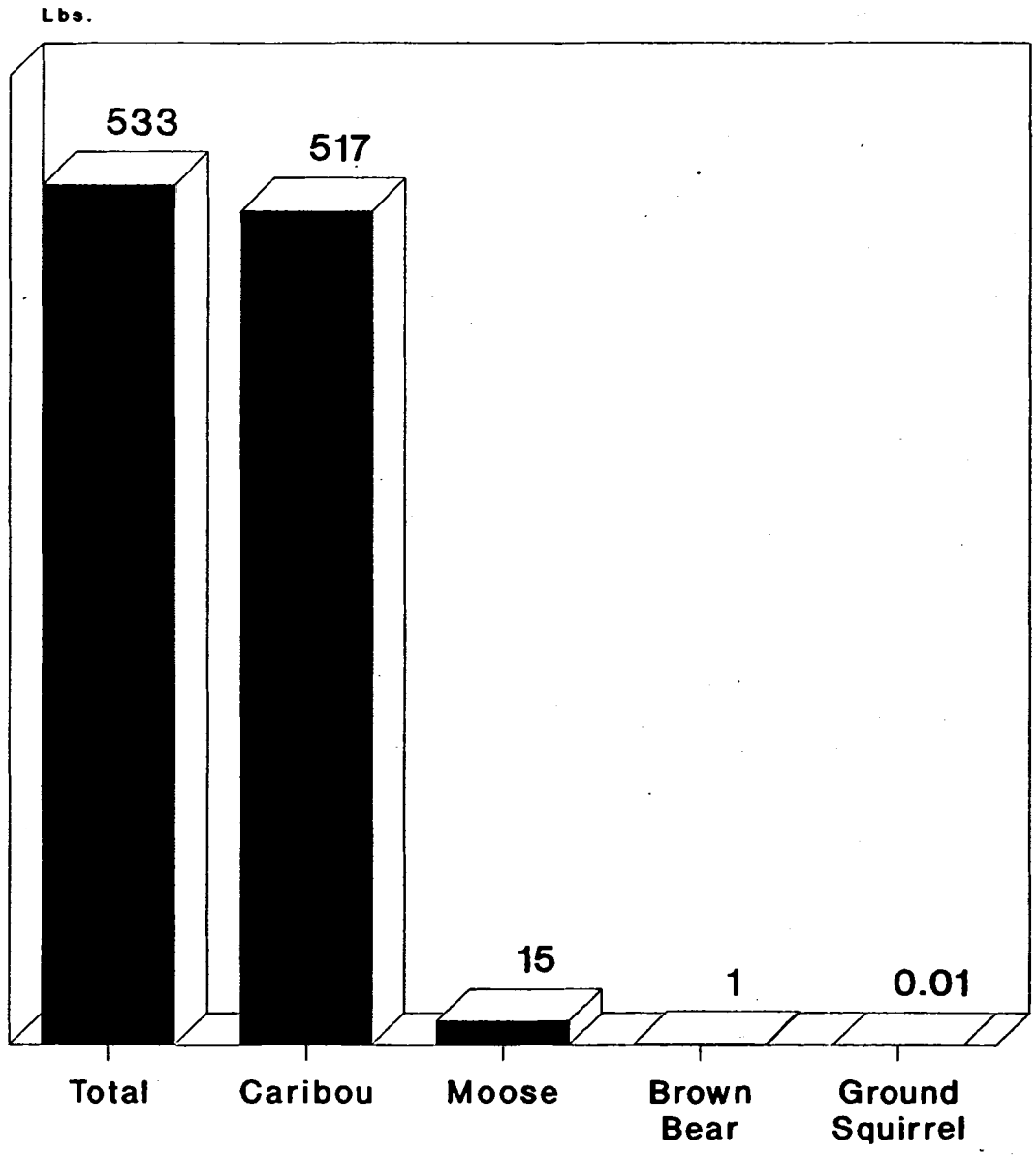
Source: Stephen R. Braund & Assoc., 1993

Figure A-7: Harvest Percentages of Terrestrial Mammals
Wainwright Year One, Revised
(Usable Pounds Harvested)



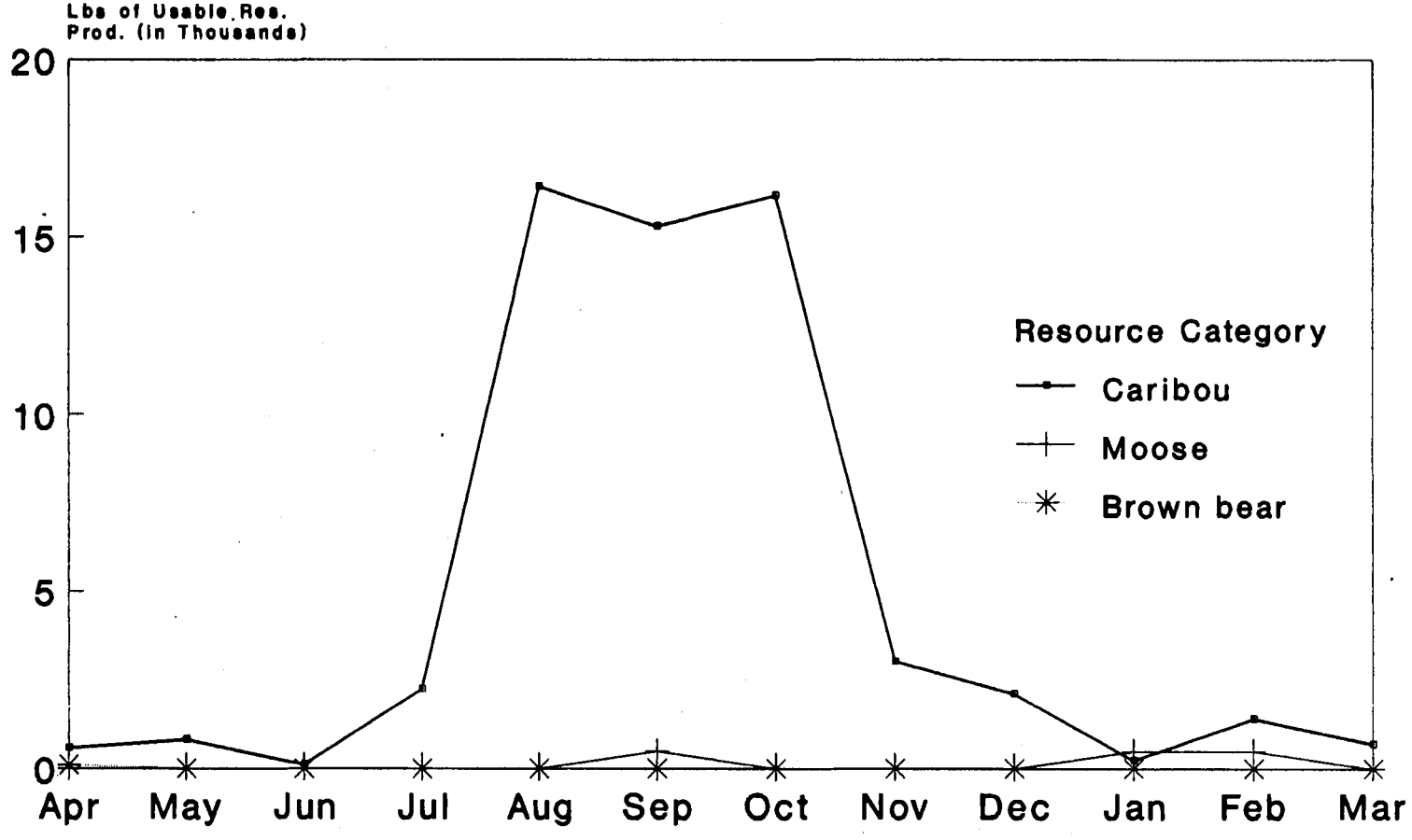
Year One: April 1, 1988 - March 31, 1989
Based on harvests of all 124 households, including partial year households.
Source: Stephen R. Braund & Assoc., 1993

Figure A-8: Terrestrial Mammal Harvests Wainwright, Year One Revised
(Mean Usable Pounds Per Household)



Based on 100 core households in the study for both years.
Year One: April 1, 1988 - March 31, 1989
Source: Stephen R. Braund & Assoc., 1993

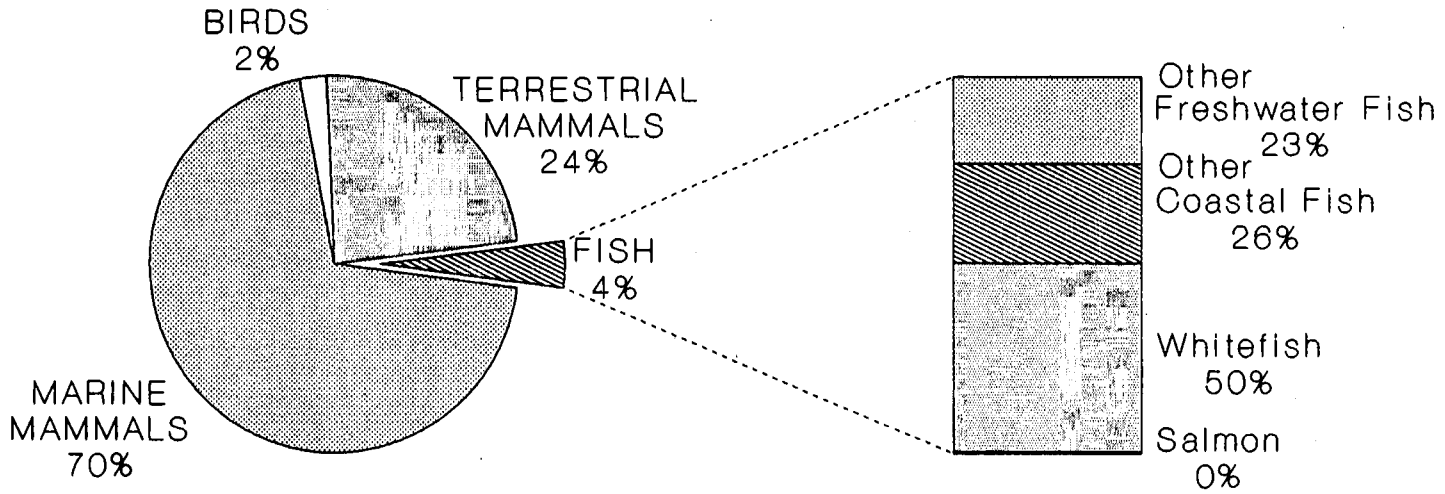
Figure A-9: Monthly Harvest of Terrestrial Mammals
Wainwright, Year One Revised



Based on 124 Year One households, including partial year households.
Year One: April 1, 1988 - March 31, 1989

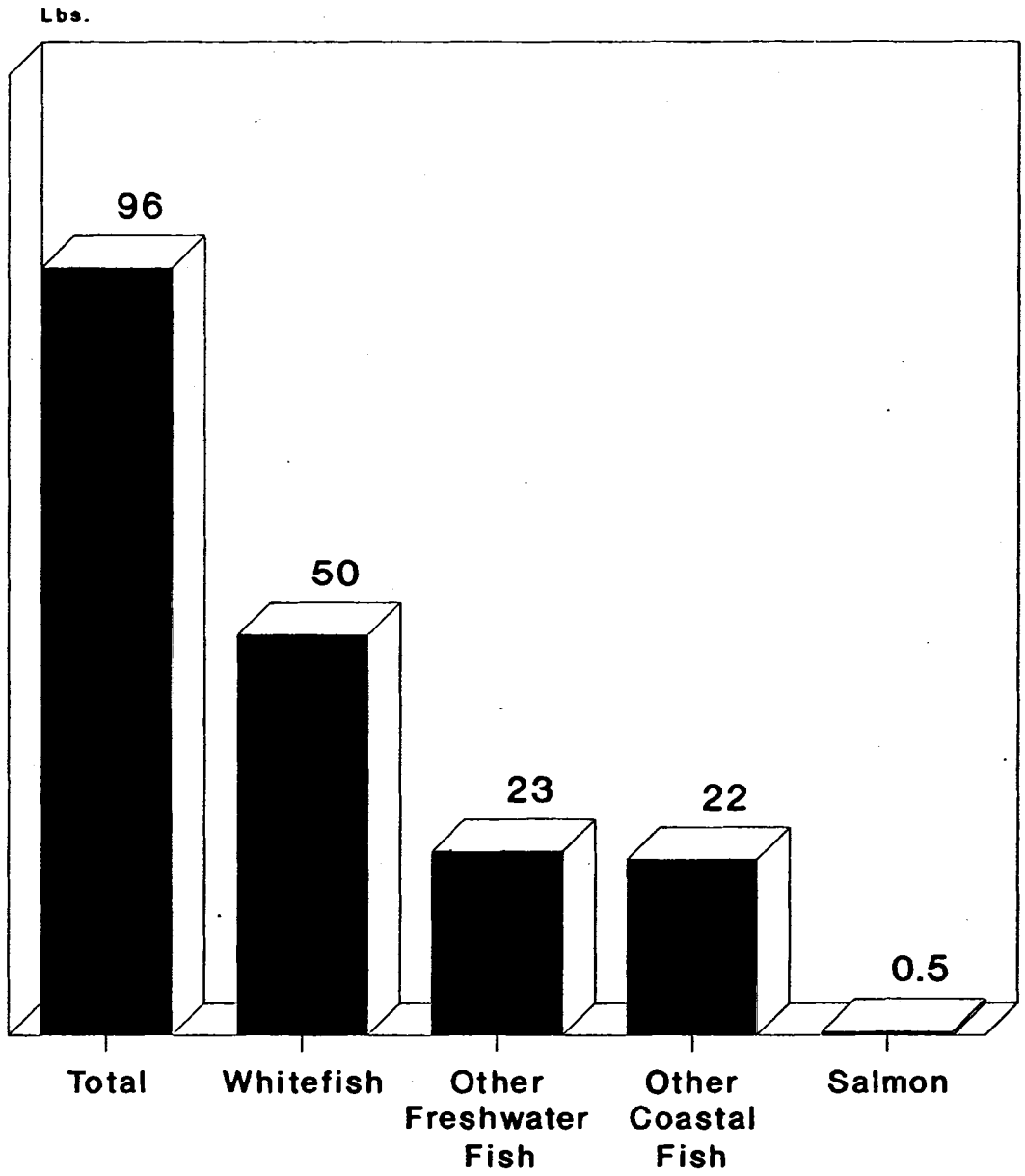
Source: Stephen R. Braund & Assoc., 1993

Figure A-10: Harvest Percentages of Fish
Wainwright Year One, Revised
(Usable Pounds Harvested)



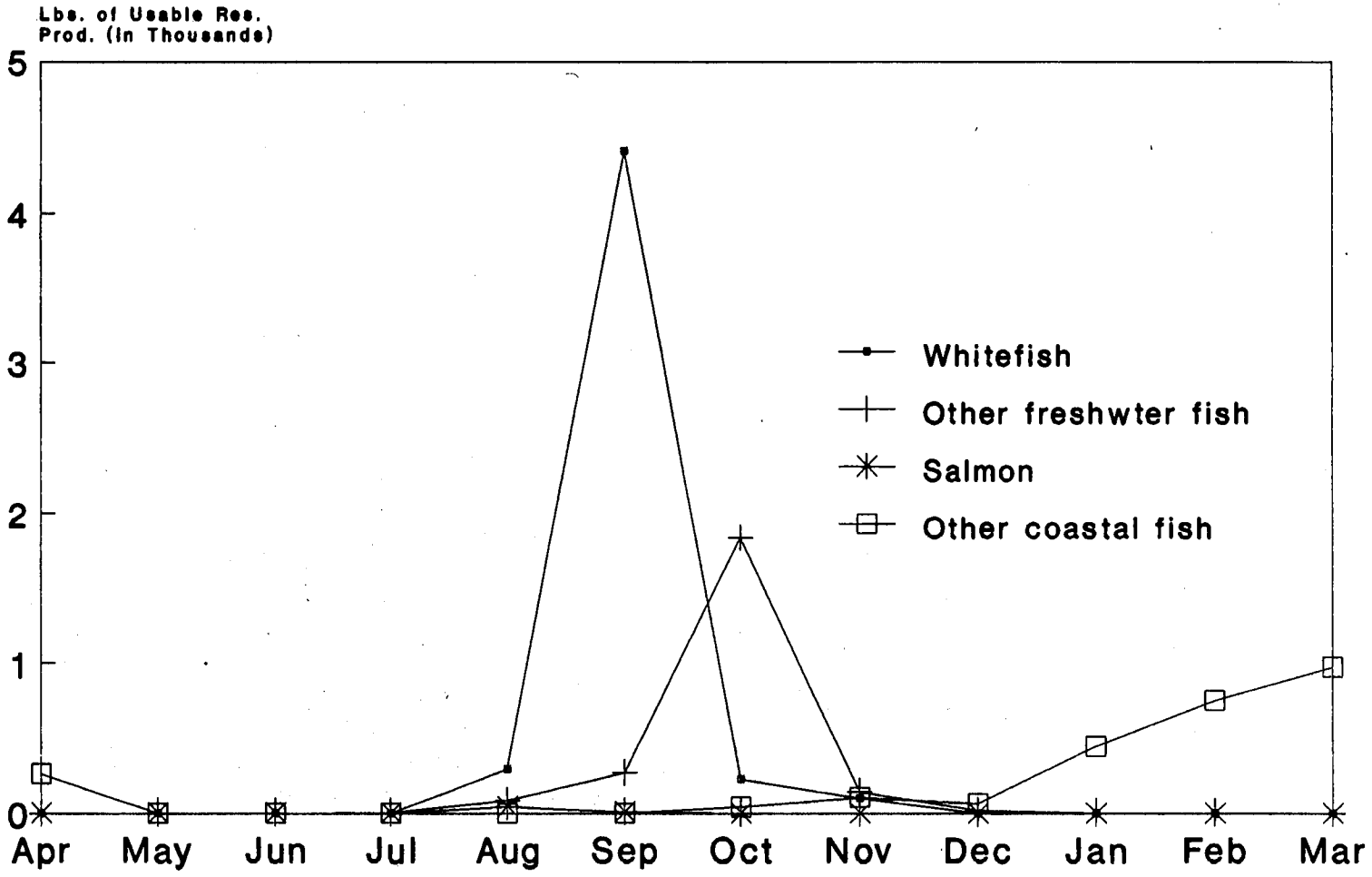
Year One: April 1, 1988 - March 31, 1989
Based on harvests of all 124 households, including partial year households.
Source: Stephen R. Braund & Assoc., 1993

Figure A-11: Harvest of Fish Wainwright, Year One Revised
(Mean Usable Pounds Per Household)



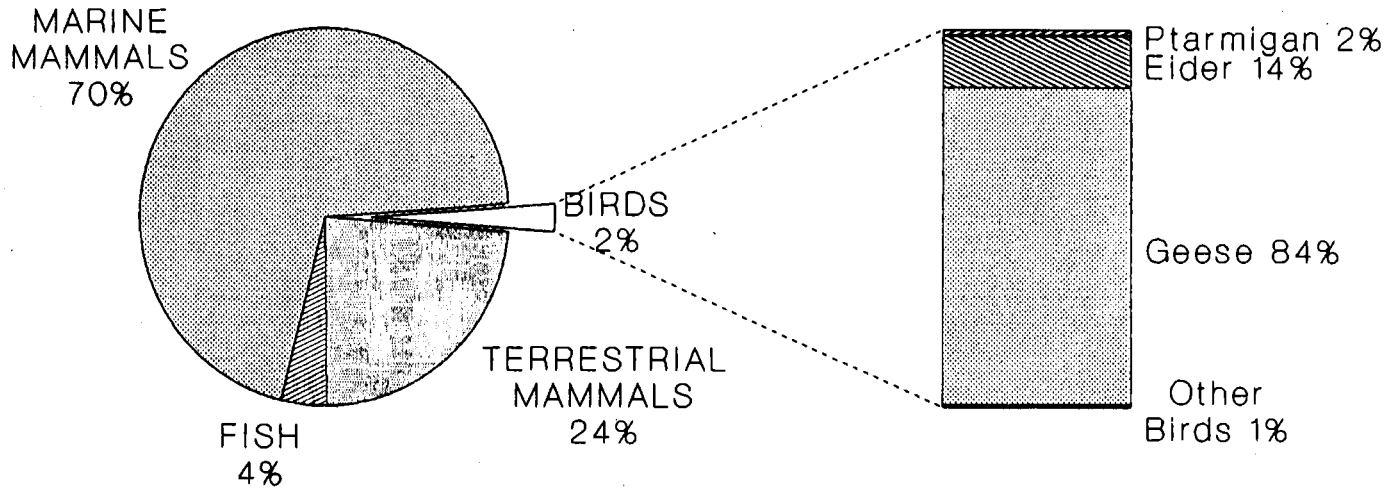
Based on 100 core households in the study for both years.
Year One: April 1, 1988 - March 31, 1989
Source: Stephen R. Braund & Assoc., 1993

Figure A-12: Monthly Harvest of Fish
Wainwright, Year One Revised



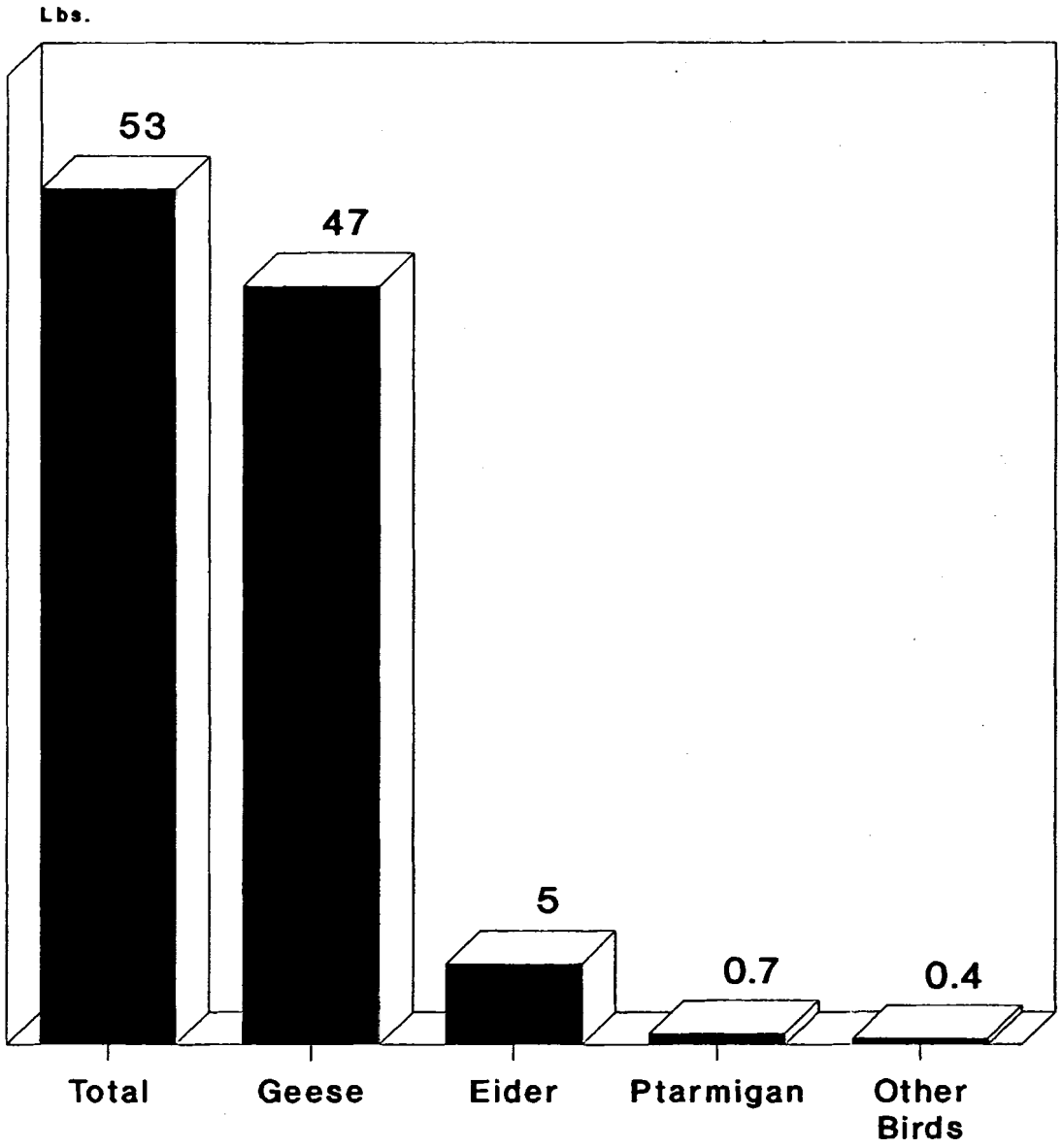
Based on 124 Year One households, including partial year households.
Year One: April 1, 1988 - March 31, 1989
Source: Stephen R. Braund & Assoc., 1993

Figure A-13: Harvest Percentages of Bird Wainwright Year One, Revised
(Usable Pounds Harvested)



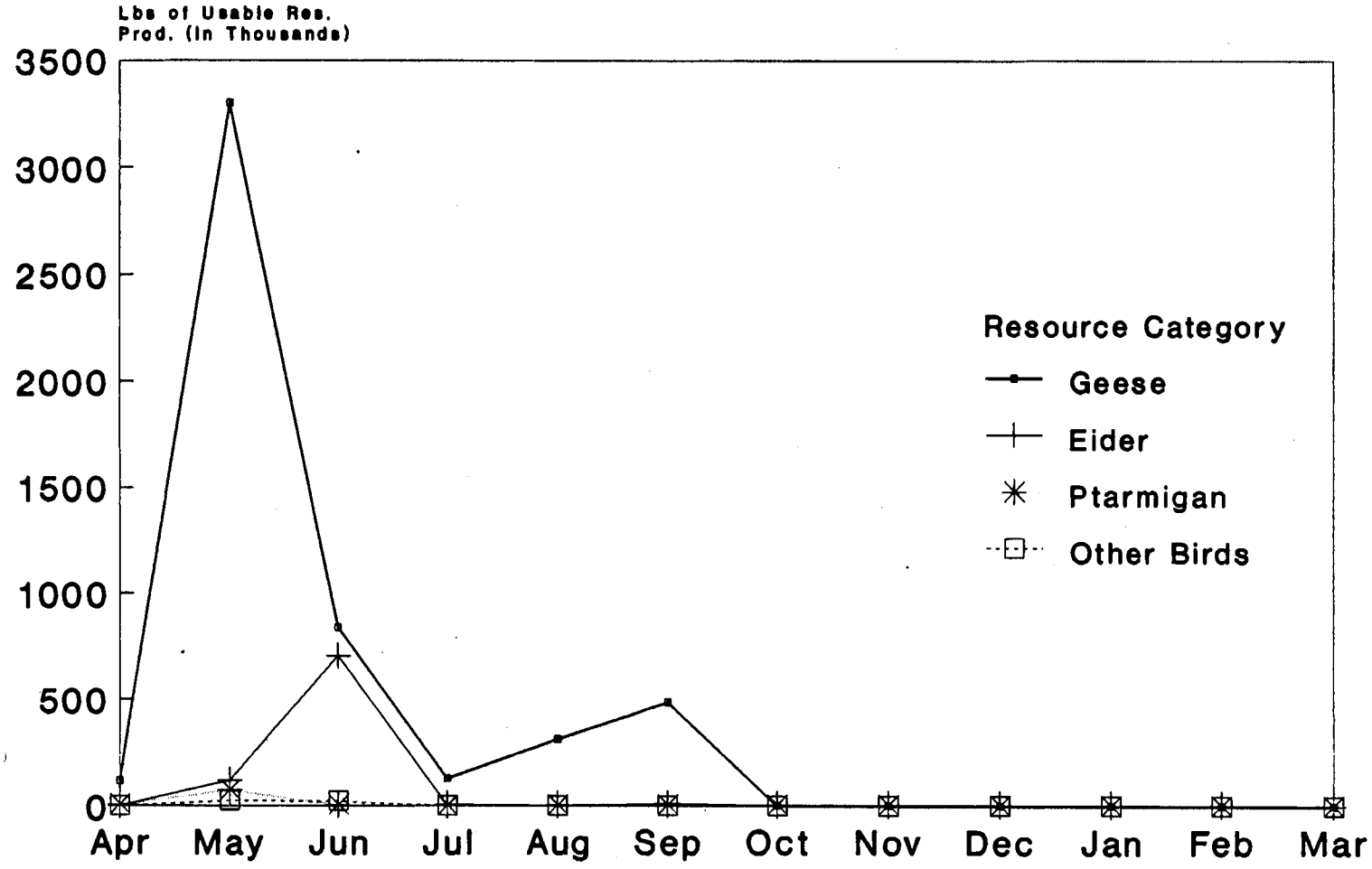
Year One: April 1, 1988 - March 31, 1989
Based on harvests of all 124 households, including partial year households.
Source: Stephen R. Braund & Assoc., 1993

Figure A-14: Harvest of Birds Wainwright, Year One Revised
(Mean Usable Pounds Per Households)



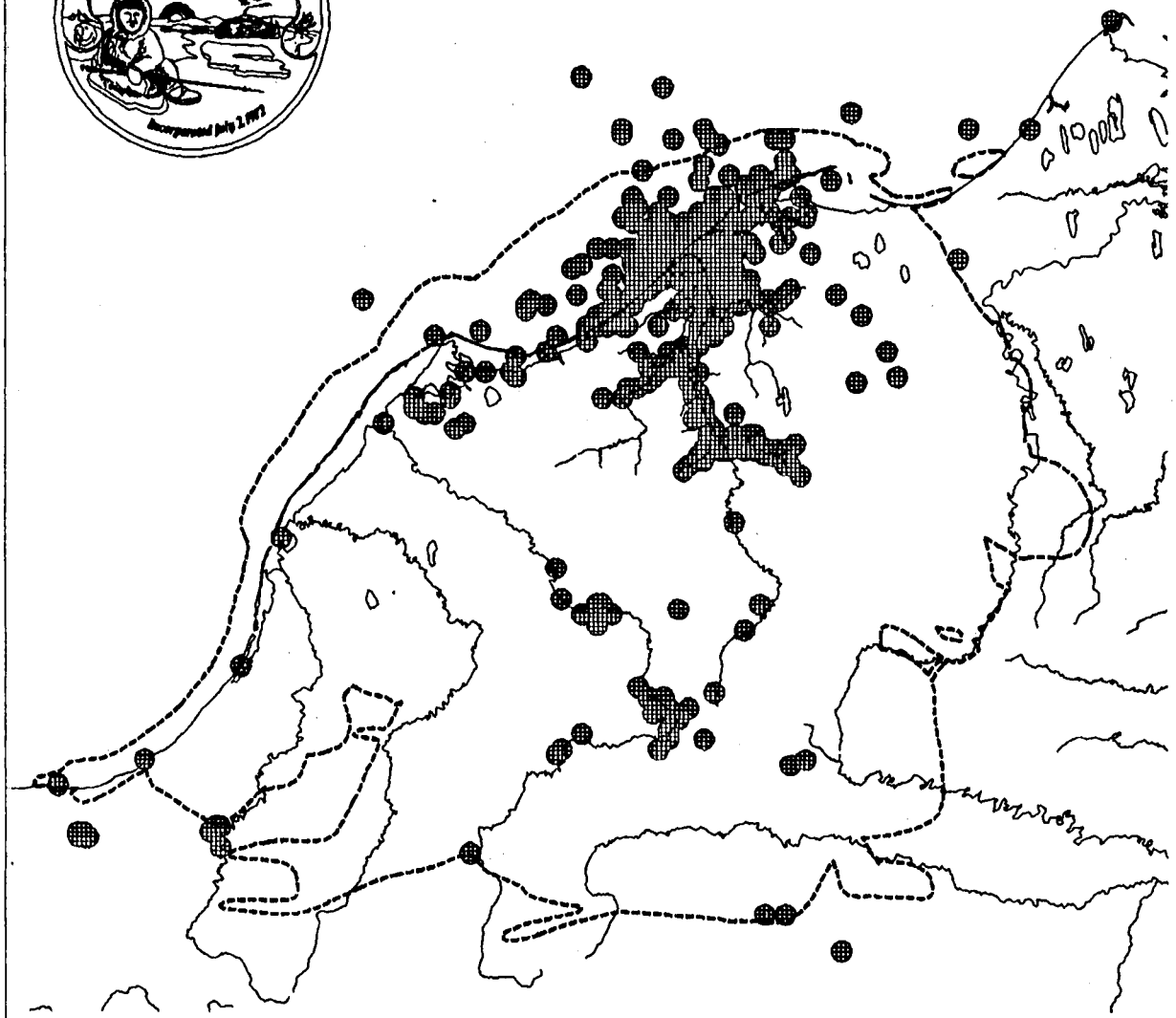
Based on 100 core households in the study for both years.
Year One: April 1, 1988 - March 31, 1989
Source: Stephen R. Braund & Assoc., 1993

Figure A-15: Monthly Harvest of Birds
Wainwright, Year One Revised



Based on 124 Year One households, including partial year households.
Year One: April 1, 1988 - March 31, 1989
Source: Stephen R. Braund & Assoc., 1993

MAP A-1
NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT: YEAR ONE
SUBSISTENCE HARVEST SITES, 1988-1989



This map depicts approximate subsistence harvest sites used by 128 Wainwright households. All harvest sites are depicted with a two mile buffer. The map depicts subsistence use for the time period April 1, 1988 through March 31, 1989: Year One of the Wainwright North Slope Subsistence Study. Lifetime-community harvest areas, collected in the form of map biographies from 14 households (Pederson 1979), are also illustrated.

Source: Contemporary subsistence use information gathered and compiled by Stephen R. Braund and Associates (SRB&A) with the assistance of local research assistants hired through the North Slope Borough Mayor's Job Program. Under contract to the Minerals Management Service, U.S. Department of Interior, SRB&A received assistance in the study from the North Slope Borough Planning and Wildlife Management Departments.

LEGEND INFORMATION

Lifetime community land use (Pedersen 1979).

All Species Harvested

Caribou, Moose
Brown Bear, Wolf
Wolverine, Fox
Ermine, Seals
Walrus, Polar Bear
Bowhead Whale
Beluga Whale
Geese, Eiders
Other Ducks
Ptarmigan
Fish, Cool Water

N

30 0 30 60 90 120

MILES

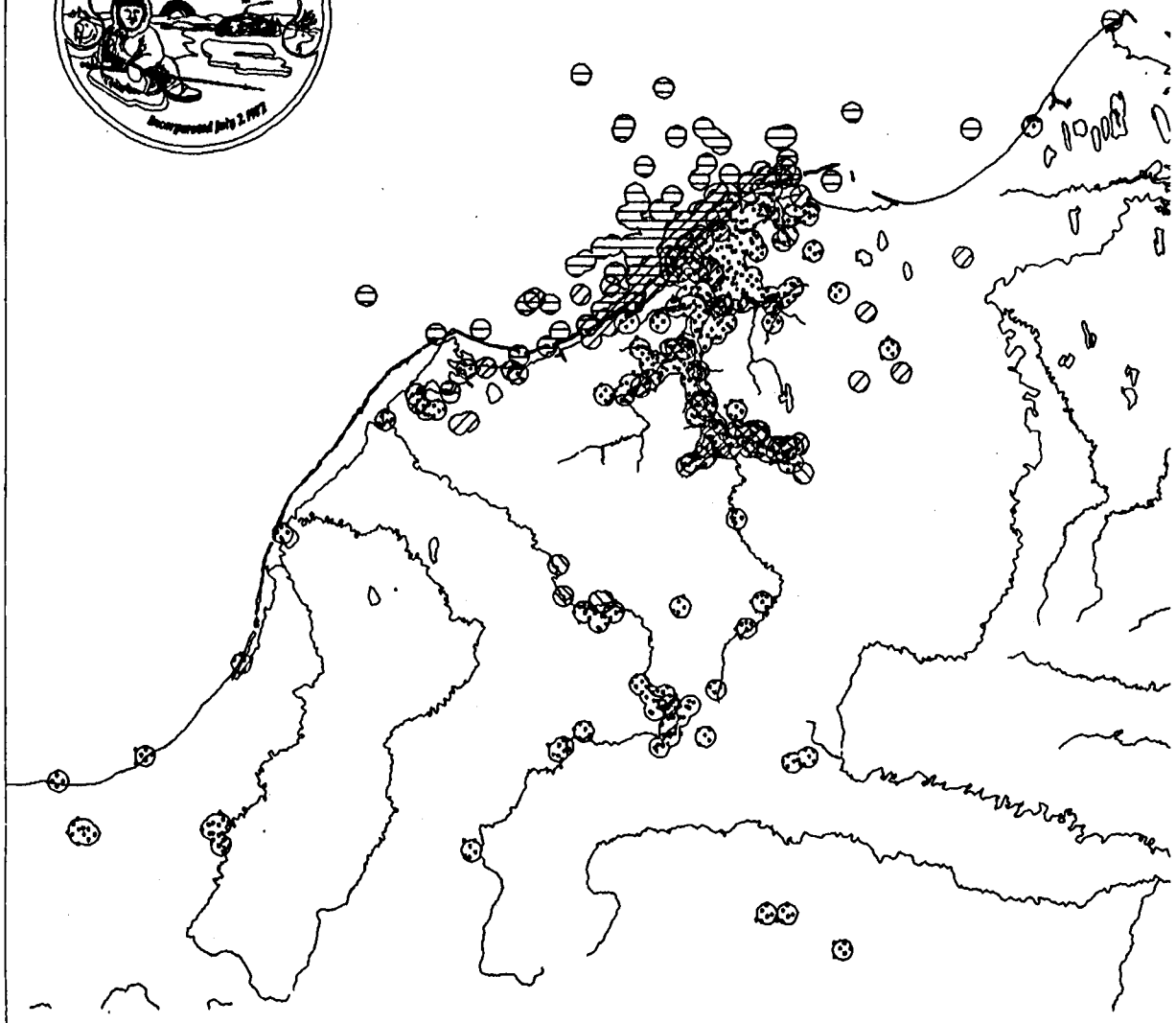
Map Production: North Slope Borough GIS

Date: June 21, 1989

MAP A-2

NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT: YEAR ONE

SUBSISTENCE HARVEST SITES BY MAJOR RESOURCE CATEGORY



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LEGEND INFORMATION

- Marine Mammals (Bowhead whale, beluga, whale, seals, walrus, polar bear)
- Terrestrial Mammals (Caribou, moose, brown bear, fox, wolf, wolverine, ermine)
- Fish (Whitefish, other freshwater fish, salmon, other coastal fish)
- Birds (Eiders, other ducks, geese, ptarmigan)

30 0 30 60 90 120

MILES

N

Map Production: North Slope Borough GIS

Date: June 21, 1989

MAP A-3

NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT: YEAR ONE

MARINE MAMMAL HARVEST SITES - ALL SPECIES

This map depicts approximate subsistence harvest sites used by 128 Wainwright households. All harvest sites are depicted with a two mile buffer. The map depicts subsistence use for the time period April 1, 1988 through March 31, 1989: Year One of the Wainwright North Slope Subsistence Study. Lifetime-community harvest areas, collected in the form of map biographies from 14 households (Pederson 1979), are also illustrated.

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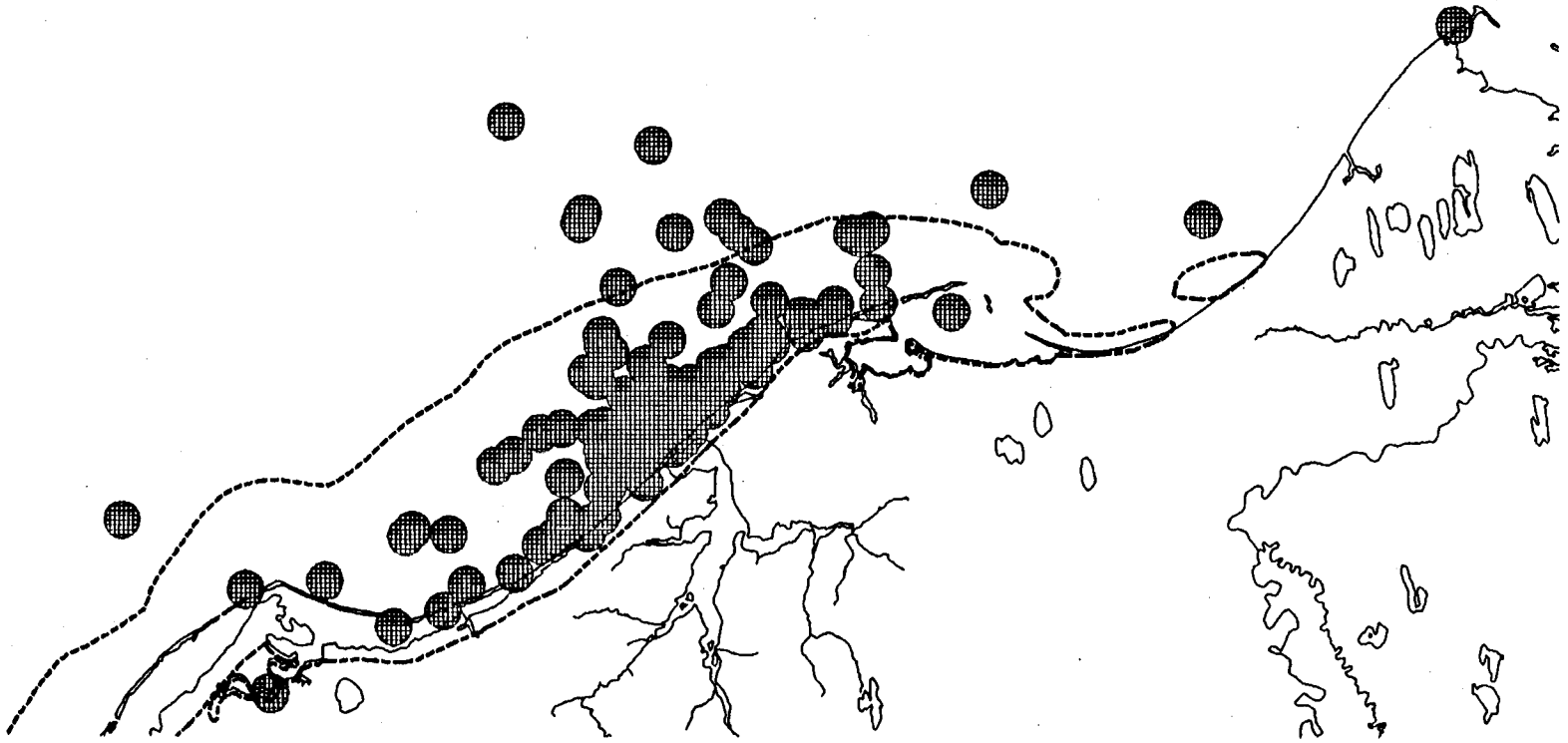


Map Production: North Slope Borough GIS

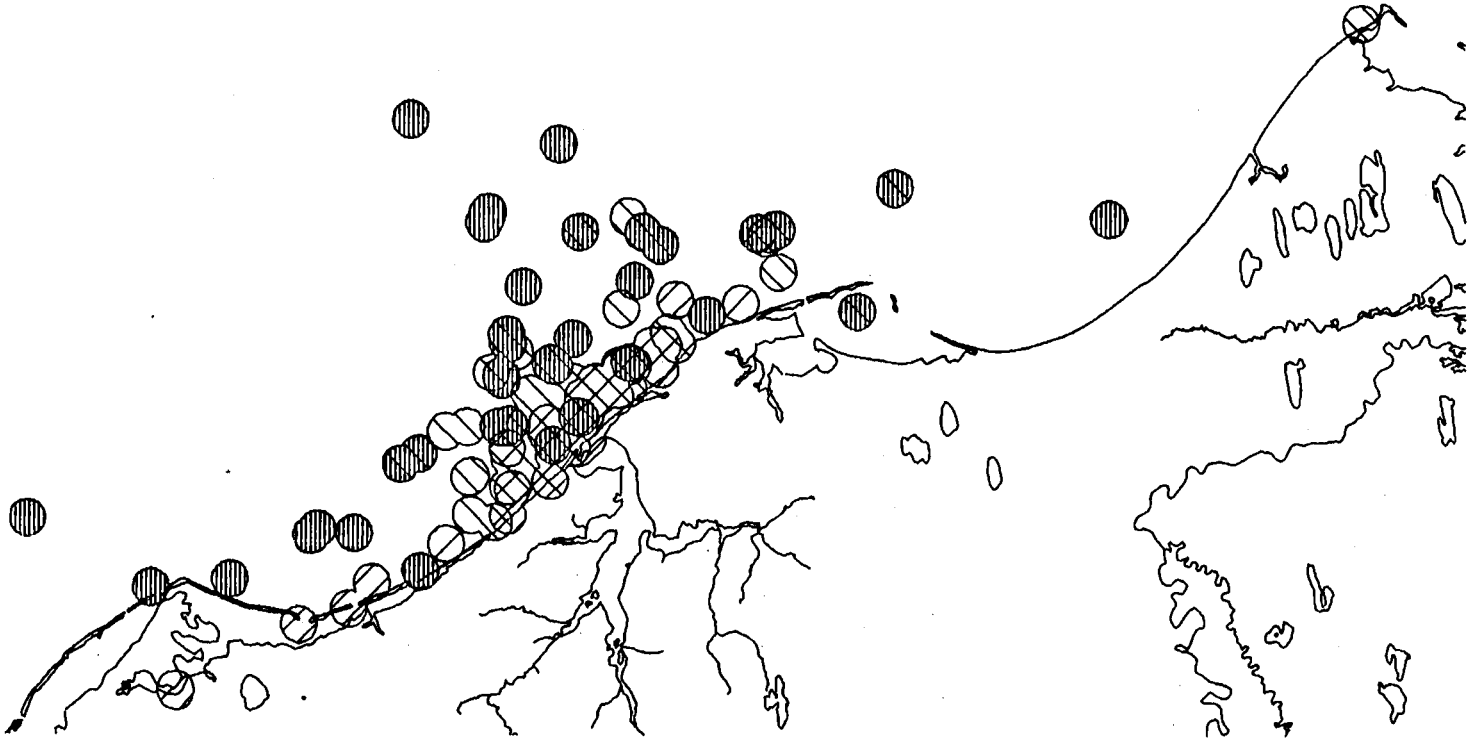
Date: June 21, 1989

MAP A-4

NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT: YEAR ONE
MARINE MAMMAL HARVEST SITES BY SPECIES:
WALRUS AND SEALS

This map depicts approximate subsistence harvest sites used by 128 Wainwright households. All harvest sites are depicted with a two mile buffer. The map depicts subsistence use for the time period April 1, 1988 through March 31, 1989: Year One of the Wainwright North Slope Subsistence Study.

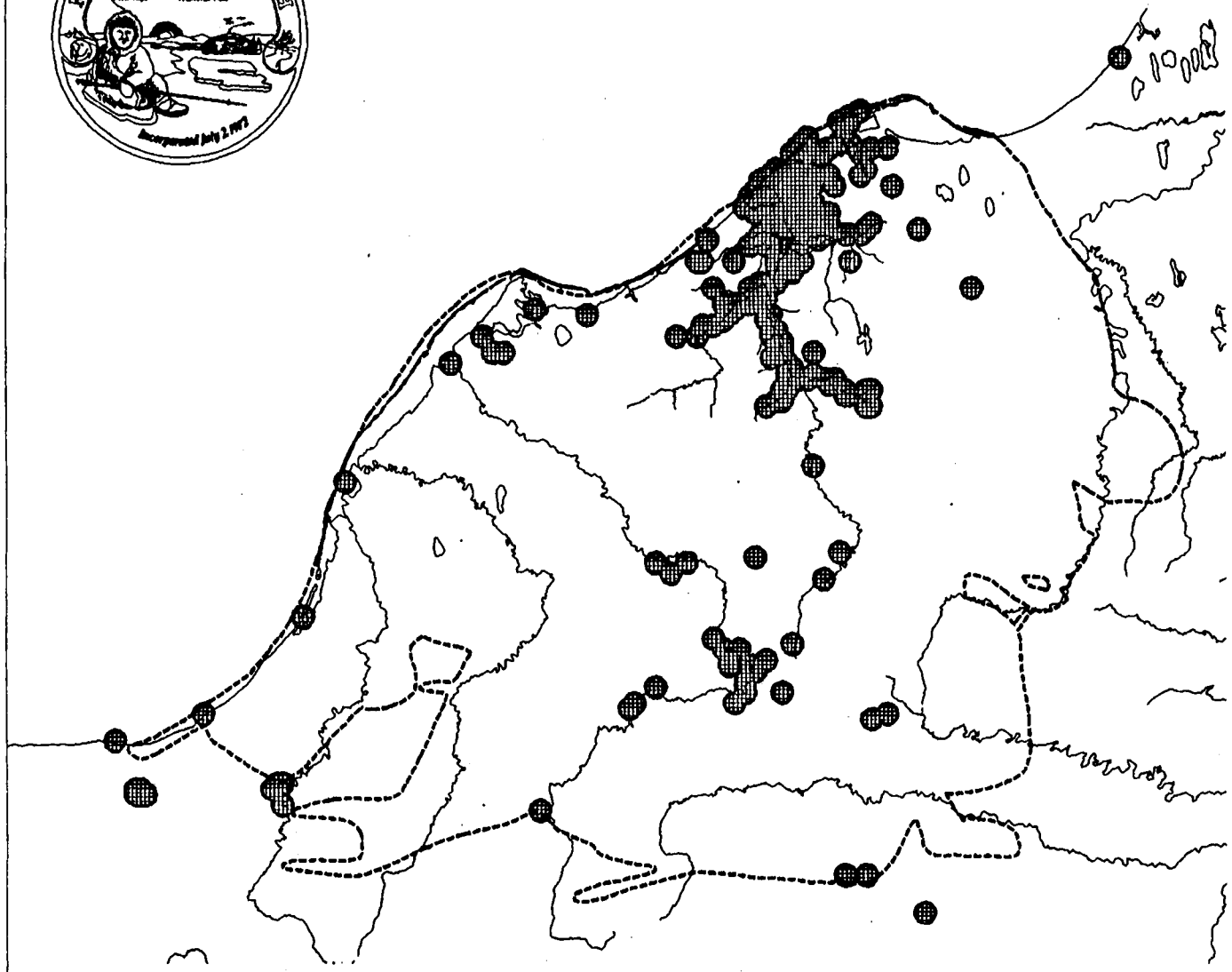
Source: Contemporary subsistence use information gathered and compiled by Stephen R. Braund and Associates (SRB&A) with the assistance of local research assistants hired through the North Slope Borough Mayor's Job Program. Under contract to the Minerals Management Service, U.S. Department of Interior, SRB&A received assistance in the study from the North Slope Borough Planning and Wildlife Management Departments.



Map Production: North Slope Borough GIS

Date: June 21, 1989

MAP A-7
NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT: YEAR ONE
TERRESTRIAL MAMMAL HARVEST SITES - ALL SPECIES



This map depicts approximate subsistence harvest sites used by 128 Wainwright households. All harvest sites are depicted with a two mile buffer. The map depicts subsistence use for the time period April 1, 1988 through March 31, 1989: Year One of the Wainwright North Slope Subsistence Study. Lifetime-community harvest areas, collected in the form of map biographies from 14 households (Pederson 1979), are also illustrated.

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LEGEND INFORMATION

Lifetime community land use (Pedersen 1979).

Terrestrial Mammals
- Caribou
- Moose
- Brown bear
- Fox
- Wolverine
- Wolf
- Ermine

30 0 30 60 90 120

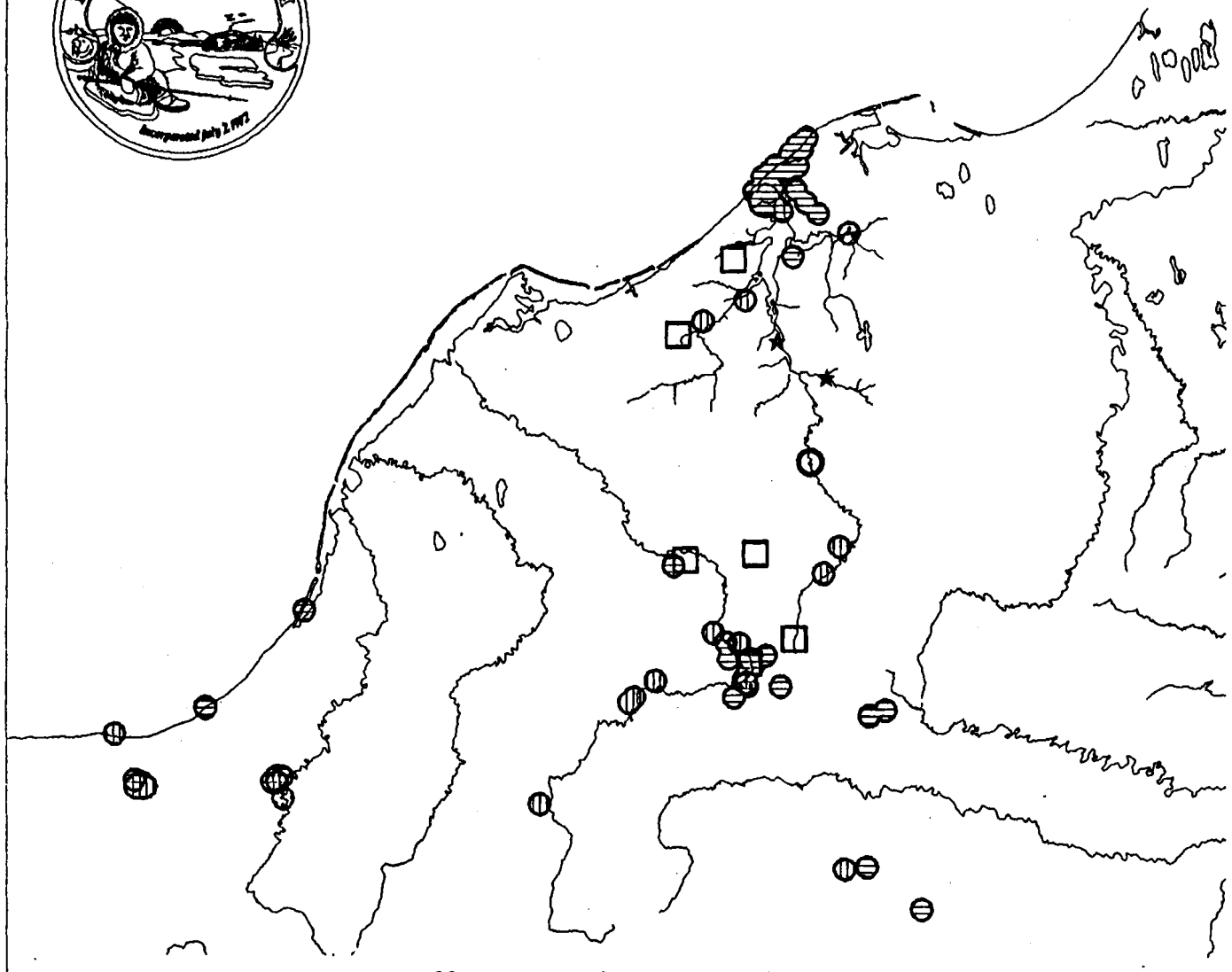
MILES

Map Production: North Slope Borough GIS

Date: June 23, 1989

MAP A-8

NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT: YEAR ONE
TERRESTRIAL MAMMAL HARVEST SITES BY SPECIES (EXCLUDING CARIBOU)



This map depicts approximate subsistence harvest sites used by 128 Wainwright households. All harvest sites are depicted with a two mile buffer. The map depicts subsistence use for the time period April 1, 1988 through March 31, 1989: Year One of the Wainwright North Slope Subsistence Study.

Source: Contemporary subsistence use information gathered and compiled by Stephen R. Braund and Associates (SRB&A) with the assistance of local research assistants hired through the North Slope Borough Mayor's Job Program. Under contract to the Minerals Management Service, U.S. Department of Interior, SRB&A received assistance in the study from the North Slope Borough Planning and Wildlife Management Departments.

LEGEND INFORMATION

- Moose
- Fox
  - Arctic
  - Red
- Wolverine
- Brown bear
- Wolf
- Ermine

30 0 30 60 90 120

MILES

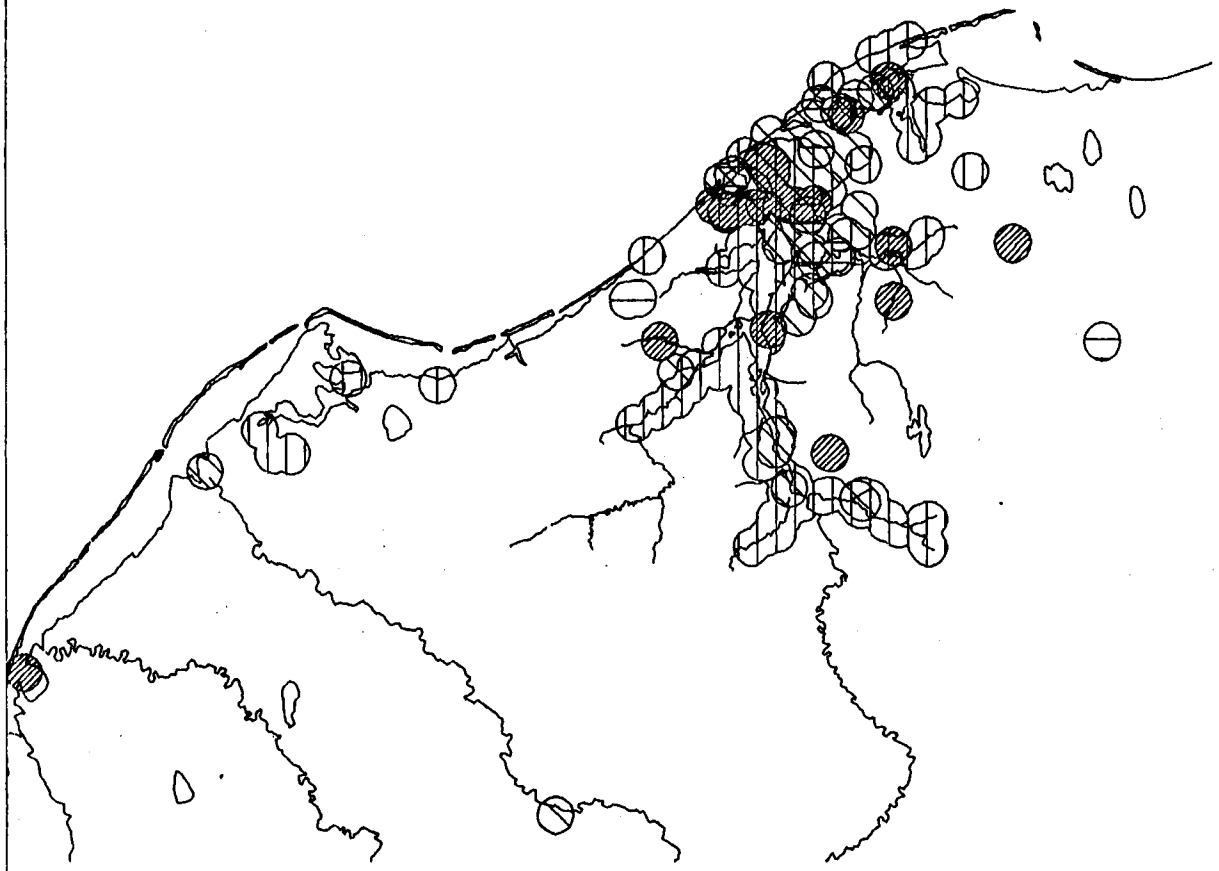
Map Production: North Slope Borough GIS

Date: June 26, 1989

MAP A-9
NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT: YEAR ONE
CARIBOU HARVEST SITES BY SEASON

This map depicts approximate subsistence harvest sites used by 128 Wainwright households. All harvest sites are depicted with a two mile buffer. The map depicts subsistence use for the time period April 1, 1988 through March 31, 1989: Year One of the Wainwright North Slope Subsistence Study.

Source: Contemporary subsistence use information gathered and compiled by Stephen R. Braund and Associates (SRB&A) with the assistance of local research assistants hired through the North Slope Borough Mayor's Job Program. Under contract to the Minerals Management Service, U.S. Department of Interior, SRB&A received assistance in the study from the North Slope Borough Planning and Wildlife Management Departments.



LEGEND INFORMATION

- April, May, June 1988
- July, August, September 1988
- October, November 1988
- December 1988, January, February, March 1989

Map Production: North Slope Borough GIS

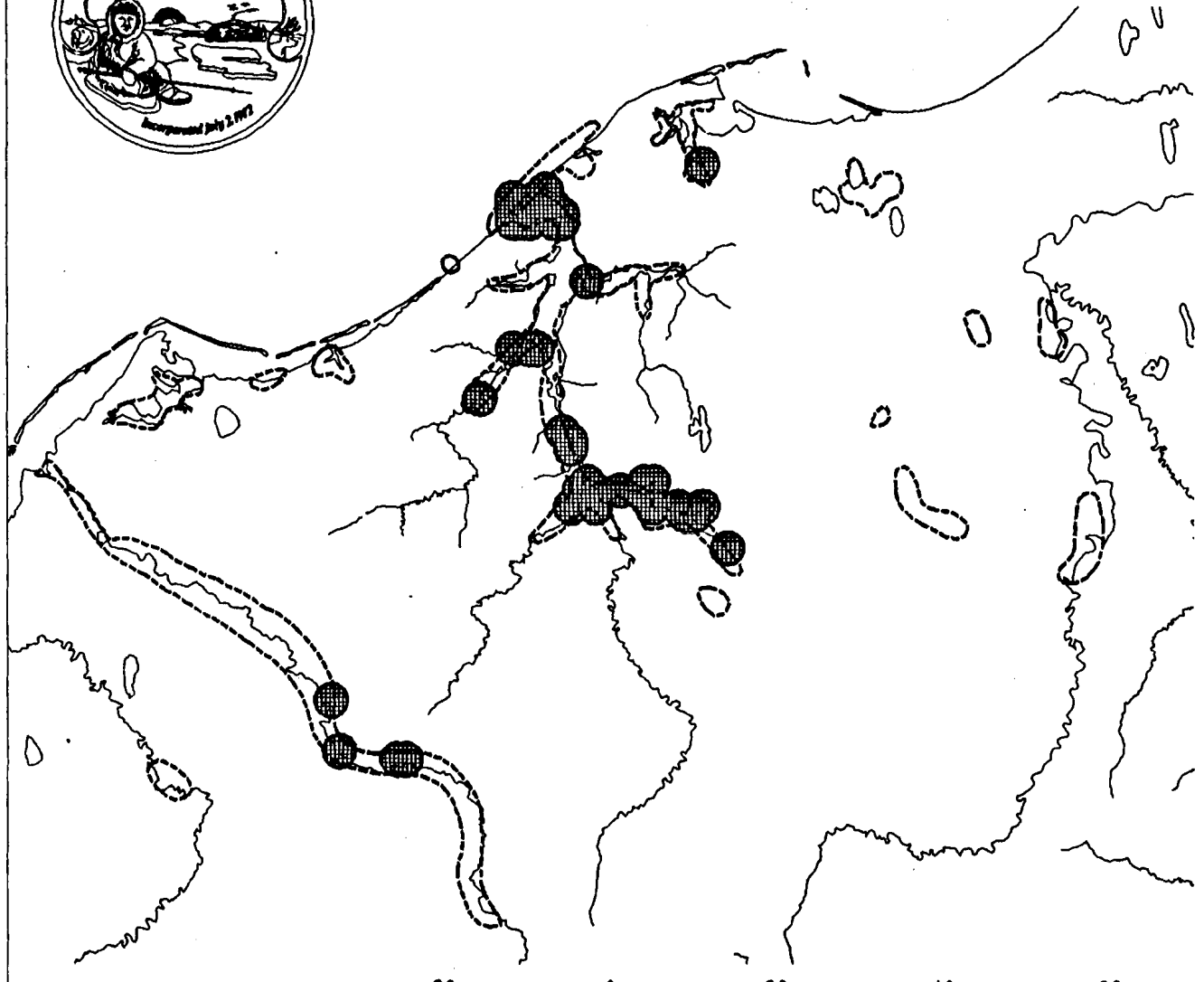
Date: June 26, 1989

20 0 20 40 60 80

MILES

N

MAP A-10
NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT: YEAR ONE
FISH HARVEST SITES - ALL SPECIES



This map depicts approximate subsistence harvest sites used by 128 Wainwright households. All harvest sites are depicted with a two mile buffer. The map depicts subsistence use for the time period April 1, 1988 through March 31, 1989: Year One of the Wainwright North Slope Subsistence Study. Lifetime-community harvest areas, collected in the form of map biographies from 14 households (Pederson 1979), are also illustrated.

Source: Contemporary subsistence use information gathered and compiled by Stephen R. Braund and Associates (SRB&A) with the assistance of local research assistants hired through the North Slope Borough Mayor's Job Program. Under contract to the Minerals Management Service, U.S. Department of Interior, SRB&A received assistance in the study from the North Slope Borough Planning and Wildlife Management Departments.

LEGEND INFORMATION

Lifetime community land use (Pederson 1979).

All Fish Species
- Whitefish
  Round whitefish, least cisco, arctic cisco
- Other Freshwater Fish
  Grayling, burbot, lake trout
- Salmon
  Chum, pink
- Other Coastal Fish
  Rainbow smelt, tomcod, arctic cod, sculpin

N

Map Production: North Slope Borough GIS

Date: June 26, 1989

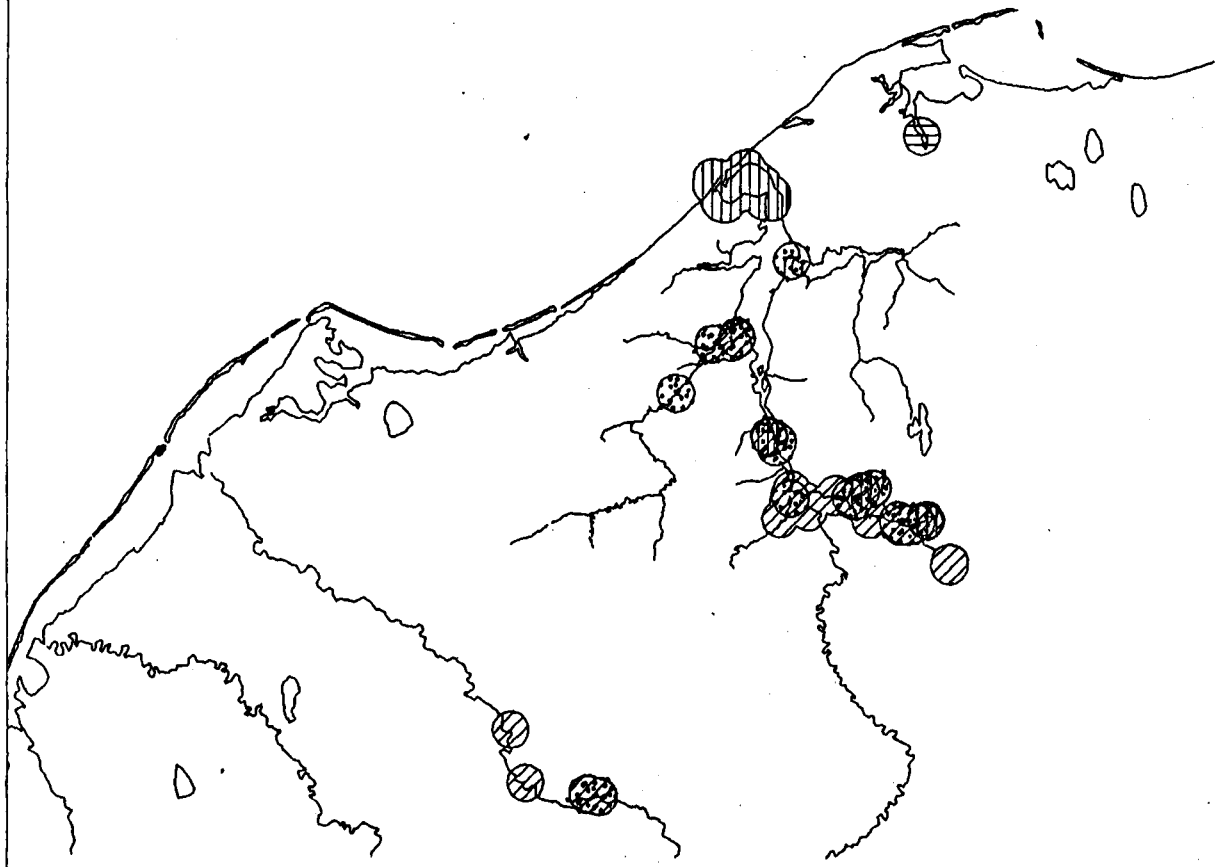
20 0 20 40 60 80

MILES

MAP A-11
NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT: YEAR ONE
FISH HARVEST SITES BY SPECIES GROUPS

This map depicts approximate subsistence harvest sites used by 128 Wainwright households. All harvest sites are depicted with a two mile buffer. The map depicts subsistence use for the time period April 1, 1988 through March 31, 1989: Year One of the Wainwright North Slope Subsistence Study.

Source: Contemporary subsistence use information gathered and compiled by Stephen R. Braund and Associates (SRB&A) with the assistance of local research assistants hired through the North Slope Borough Mayor's Job Program. Under control to the Minerals Management Service, U.S. Department of Interior, SRB&A received assistance in the study from the North Slope Borough Planning and Wildlife Management Departments.



LEGEND INFORMATION

- Whitefish: Round whitefish, least cisco, arctic cisco
- Other Freshwater Fish: Grayling, burbot, lake trout
- Salmon: Chum, pink
- Other Coastal Fish: Rainbow smelt, tomcod, arctic cod, sculpin

N

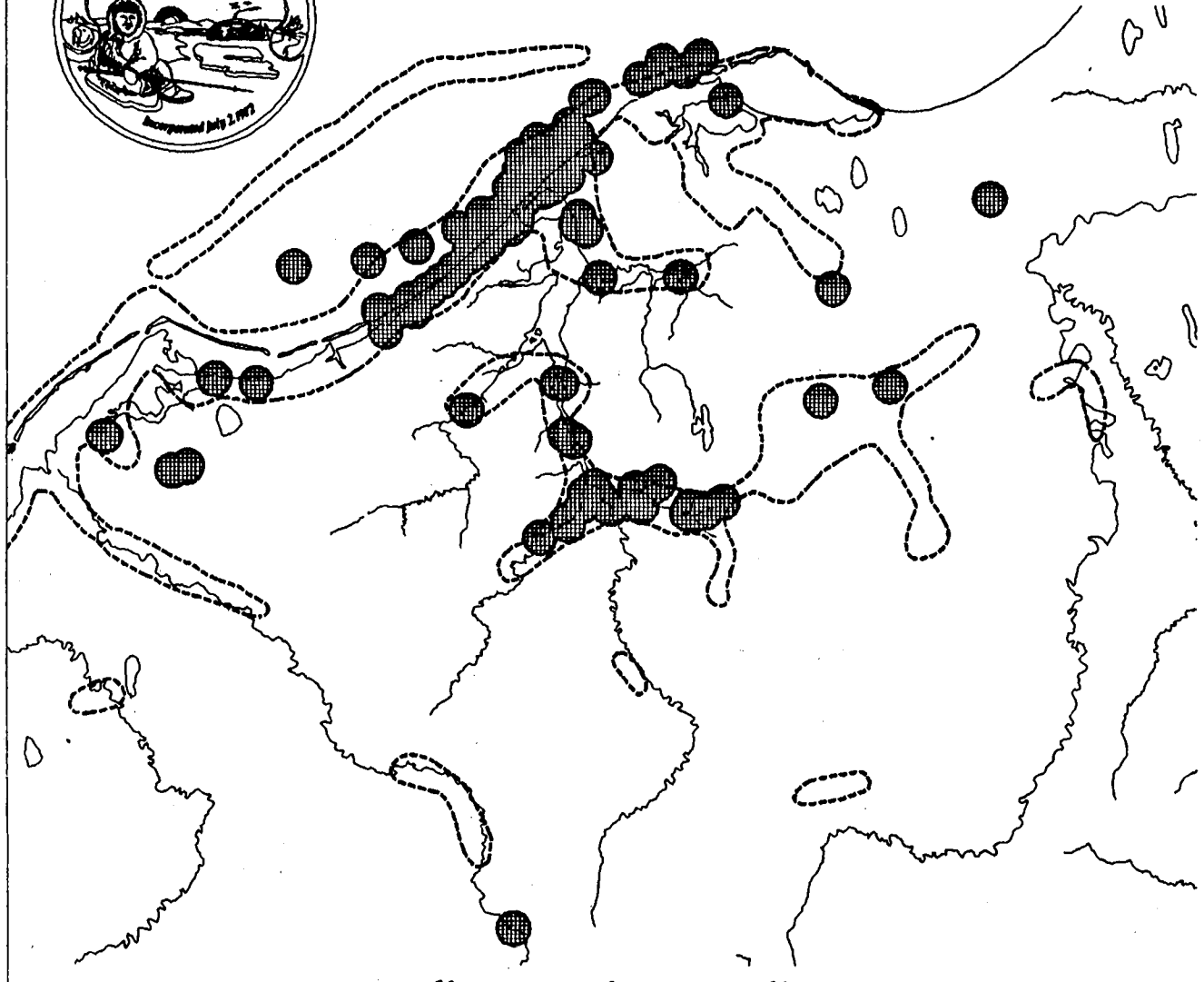
20 0 20 40 60 80

MILES

Map Production: North Slope Borough GIS

Date: June 23, 1989

MAP A-12
NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT: YEAR ONE
BIRD HARVEST SITES - ALL SPECIES



This map depicts approximate subsistence harvest sites used by 128 Wainwright households. All harvest sites are depicted with a two mile buffer. The map depicts subsistence use for the time period April 1, 1988 through March 31, 1989: Year One of the Wainwright North Slope Subsistence Study. Lifetime-community harvest areas, collected in the form of map biographies from 14 households (Pederson 1979), are also illustrated.

Source: Contemporary subsistence use information gathered and compiled by Stephen R. Braund and Associates (SRB&A) with the assistance of local research assistants hired through the North Slope Borough Mayor's Job Program. Under contract to the Minerals Management Service, U.S. Department of Interior, SRB&A received assistance in the study from the North Slope Borough Planning and Wildlife Management Departments.

LEGEND INFORMATION

Lifetime community land use (Pedersen 1979).

Birds

- Eiders
  Common, King, Spectacled, Steller's
- Other Ducks
- Geese
  White-fronted goose, lesser snow goose, Canada goose, brant
- Ptarmigan

Map Production: North Slope Borough GIS

Date: June 26, 1989

20 0 20 40 60 80

MILES

N

MAP A-13

NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT: YEAR ONE

BIRD HARVEST SITES BY SPECIES GROUPS

This map depicts approximate subsistence harvest sites used by 128 Wainwright households. All harvest sites are depicted with a two mile buffer. The map depicts subsistence use for the time period April 1, 1988 through March 31, 1989: Year One of the Wainwright North Slope Subsistence Study.

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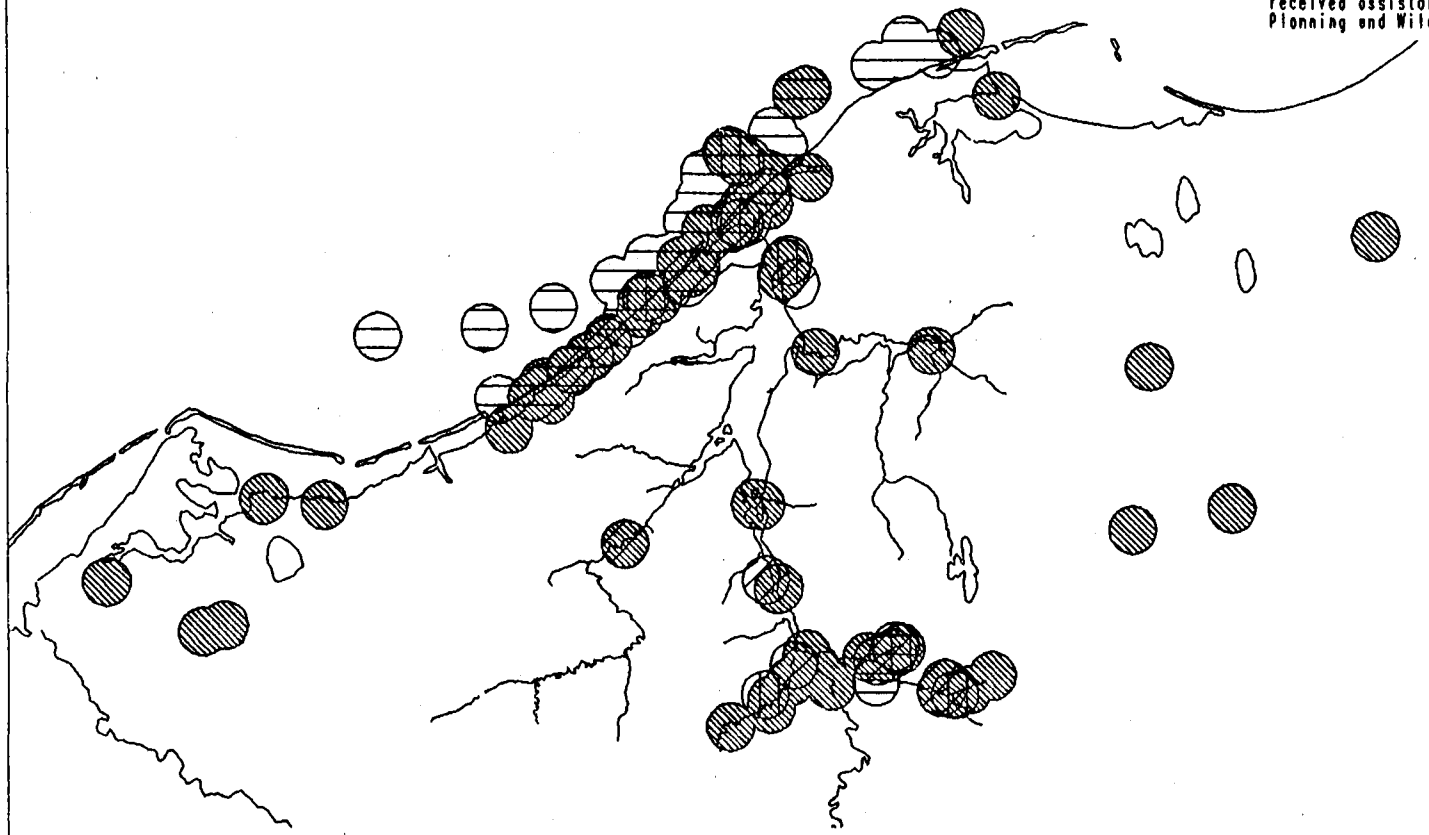

LEGEND INFORMATION

- Eiders
- Other Ducks
- Geese
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N

20 0 20 40 60

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APPENDIX B

This appendix contains the following reference information:

- o the Year Two Seasonal Round
- o a calendar listing of Year Two activities and events
- o Year Two data tables
- o Year Two data figures (charts and graphs)
- o Year Two subsistence harvest site maps

YEAR TWO SEASONAL ROUND

The following section presents a month by month description of Wainwright subsistence activities during the period April 1, 1989 to March 31, 1990. This general description highlights the month's major subsistence activities, and points out any significant or unusual environmental social, cultural and/or economic conditions or events that may have affected hunting that month.

APRIL 1989

April on the North Slope was when Wainwright and other whaling communities began their serious preparations for the upcoming whaling season. Whaling crews were organized, new snow machines arrived and the old ones were repaired, the ice cellars were cleared of all the old food and cleaned. The food in the cellar such as seals, caribou, whale, fish, ducks and geese, was given away. Residents scraped away and removed the ice and dirt that formed on the ice cellar walls over the year; lastly, they scraped the frost ice off the ceiling leaving a fresh bed of white ice on the floor of the cellar. Meanwhile, new sleds were built to replace the old sleds damaged during last year's whaling season. Boats were dug out and cleared of snow and ice. When dried, they were painted with a fresh coat of white paint. Motors were overhauled, tents were hung up to air out, harpoon ropes were stretched, food and supplies were bought, and gas was purchased. The town of Wainwright was buzzing with activity. This was the time that everyone had been waiting for all winter long.

With the approach of the migrating bowhead whales, whaling crews headed out on the ice to begin the arduous task of cutting a trail through the ice to the open lead of water. Early in the morning of the first weekend of April, the whaling crews headed out to the ice armed with picks and axes to clear a path to the open water. This would be the first of many trails which began about 18 miles north of the town.

A severe southern storm in late February had piled ice high and thick against the shore making this landfast ice very jumbled and extremely difficult to cut a trail through. However by the end of the day, the crews had cut a trail out to the moving young ice, a feat that took over eight hours. The next afternoon the church held a special service and prayer for the whaling captains and their crews.

In mid-April some whaling crews went out on the ice. The crews were forced home early the next day when strong winds blew in the ice and closed the lead. These conditions continued on and off for the whole month as a particularly bad stretch of weather and wind kept the whalers home. Many crews stayed out on the ice waiting for the winds to change and for open water. Late in the month news came over the radio that Barrow had gotten its first whale of the season. Wainwright whaling crews waited patiently for the water to open up, but instead the weather turned again for the worse and blew new ice in the open lead making life on the ice potentially dangerous for the whaling crews. Many of the crews packed up and came home while others waited and watched the shifting winds and strong currents, hoping the ice would move out.

The ice moved out that evening and, in the glow of the morning's pink sun, some bowhead whales were spotted. The hunters launched their boats, but the whales escaped through the young ice. At this time the wind shifted again and sent the ice piling up by the camps making a landing impossible. The whaling crews got stranded by the moving and shifting ice and had to be rescued by the NSB Search and Rescue helicopters which plucked the boats and the crews right out of the ice and water. This near disaster sent the whaling crews home as the ice closed the open lead. While waiting for the ice to shift, the whaling crews rested and cut new trails.

Not everyone was involved in whaling this month. Other subsistence activities that occurred included seal hunting and ptarmigan hunting. People were still out on the lagoon for the last few weeks of smelt fishing. A few caribou also were harvested this month.

MAY

The month of May was marred by the death of a Wainwright whaling captain and cherished member of the Wainwright community. The first week in May was spent with the whaling crews and other members of the community excavating a grave in the frozen earth. The wives kept the workers supplied with soup and coffee. The funeral, a few days later, was well attended by people from across the North Slope.

The first few weeks in May were the prime time for whaling as this was when the majority of the bowhead whales migrated past Wainwright. These whales tended to be small, between 20 and 40 feet in length. Wainwright people prefer these smaller whales for their tender and oily *maktak* and the relative ease of hauling the whales out of the water and butchering. A 30 foot whale can take five to 10 minutes to haul out while a 50 footer can take over a day to haul out of the water. However, a mixture of shifting winds, moving ice and strong currents kept the Wainwright hunters from pursuing this part of the bowhead migration. The weather refused to cooperate this year leaving all the hunters no choice but to sit and wait.

Finally on May 15, Wainwright harvested its first bowhead whale of the season. The successful captain landed a 52.9 foot male bowhead. It took over eight hours to haul this huge animal out of the water and onto the shorefast ice. With all of the whaling crews and most of the village of Wainwright pulling and with the help of two block and tackles, the mammoth whale slowly edged its way on the ice. Just when the whale was almost landed some of the large ropes snapped and the whale slid back into the water. The whole process had to be repeated. The whale was finally securely landed on the ice after many hours of pulling. After a short break for coffee and food, crews began butchering the whale. Ten to 12 hours later, the whale had been divided into two piles, one for the successful captain and the other for the whaling crews and the village.

The next week the weather was again uncooperative and the whales that were spotted were either too large or were mothers with offspring. A couple of times whaling crews pursued whales only to have a baby surface, causing the crew to withdraw.

Around May 20, the geese began to fly near town. Many families and hunters headed upriver and into the country to hunt the migrating geese. Since the weather was uncooperative this year for whaling, many of the whaling crew members took this opportunity to go geese hunting until the ocean leads opened. Younger hunters still in school hiked out behind town to the lagoon to hunt geese. Those families that headed upriver averaged around 40 geese per family, many of which were eaten at their camp or cabins, while others were stored in the cellar for the upcoming winter and for next month's *Nalukataq*. Near May 25, the inland rivers began to breakup and flood. Hunters and families were forced to return to Wainwright. This breakup was earlier than normal, and consequently the goose hunting was cut short this year.

May 27 was a busy day for the Wainwright whalers. In the early hours, while out hunting ducks, one of the whaling boats came across a large pod of whales. Unfortunately, most of these whales were grey whales. The arrival of grey whales usually marks the end of bowhead whaling season as grey whales typically run after the bowhead migration is completed. Since the year had been so poor for whaling, the crews kept on searching for bowheads nevertheless. One of the whaling boats spotted a bowhead swimming in the middle of this large group of grey whales. The crew pursued it alone for over an hour before some of the other boats came to help. By 3 a.m., two other boats had joined in the hunt and, an hour later, the whale was harpooned. The whale was strong and for two hours the whaling crews chased the struck whale to keep it away from the ice, where it would be inclined to dive for protection. The boats positioned themselves between the whale and the ice, pounding on the metal boat with the oars to scare the whale back to open water. The whale finally died; however it drowned and sank in very deep water with a strong current. Whales do not often sink, but this one laid at the bottom after filling its lungs with water. With the first harpoon still attached to the whale, the crews tried to attach a second harpoon. The current proved to strong, however. The whaling crews

tried to pull the whale slowly up to the surface but the harpoon tore out of the whale. Helicopters with grappling hooks were summoned from Barrow. Hours passed, and the whaling crews waited. Ice was moving in fast, and all attempts to keep the ice away from the marker float failed. The line had to be hauled up, and the whale was lost. All that the crews could hope for now was that the whale would surface later so they could salvage the *maktak*.

After their disappointing loss, the whaling crews headed back out to continue their search. One very large bowhead swam past a whaling camp and was quickly harpooned and shot. Wainwright had its second whale of the year, which also turned out to be their last for the year. This female whale measured over 56'9" and again took over eight hours to land and over 24 hours to butcher. The successful captain was Wainwright's youngest whaling captain. He was also the son of the whaling captain who had died earlier this month.

Rapid snow melt in the last week of May left Wainwright bare of snow, and the rapidly deteriorating conditions for snowmachine travel kept most of the town at home. Thus, instead of the usual large turnout to help with landing and butchering, these arduous tasks were performed by relatively few people who were already exhausted from the 24 hours of unsuccessfully chasing the previous whale. Consequently, the hauling and butchering took many hours.

After the last whale, many of the whaling crews packed up for the season and returned to Wainwright, turning their attention to duck, brant and geese hunting. Those crews that went back out whaling had to come home at the end of the month when ice conditions deteriorated, breaking up around their camps.

Some polar bears were harvested when they wandered into whaling camps attracted to the smell of dead whale. Seals, both ringed and bearded, were also taken.

JUNE

The start of June had many hunters heading south for the spring migration of ducks and geese. These hunters headed along the shore with snowmachines before the ice became completely unsafe, camping out for a week or so. One polar bear was killed during this time when it walked into a hunters tent. The ducks

taken in early June were primarily brants and eiders, although many white-fronted geese were harvested along with a few snow geese.

The last remaining whaling crews came home during the second week of June as all snowmachine travel came to an end. The successful whaling crews celebrated *Kakruuk*, which translates roughly as "when the whaling boat reaches the land." With this community-wide feast of *uunalik, mikigaq, maktak,* duck and caribou soup, whaling finally came to an end with two of the five strikes allocated to Wainwright remaining unused. Some of the whaling captains discussed possibly trying some fall whaling in October when the whales migrate back to their winter habitat.

Travelling from Wainwright for subsistence this month was at best unpredictable. The ocean ice was soft and wet, and large cracks opened which were difficult to circumnavigate. Some of these cracks were large enough for hunters to launch boats and motor about the open water within. On land, too little snow remained for snowmachine travel, yet the ground was still too wet and muddy for ATV (all terrain vehicles) travel. However, people managed to use both modes of transportation throughout the month to hunt ducks and geese. Although some snowmachines fell through the ice, no injuries were sustained. By the second week of June, most people traveled by ATV until a week later when the lagoon broke open. At that point, boats were used to ferry ATVs across the open water so hunters could travel south for the last part of duck hunting.

With the ice breaking up under the 24 hour long warm days of spring, the seals began to sun themselves on the ice. Consequently, some of them were harvested.

One of the most important and anticipated environmental events of the subsistence year occurred during the last week of June when a combination of wind and strong currents broke up the ocean ice south of town to allow travel to the open sea. The town became very active as hunters prepared their boats and traveled to the ice edge to hunt walrus, bearded seals and ducks. In the first two to three days of open water, an estimated 18 walrus, six to seven bearded seals and 10 ringed seals were taken. The ducks taken during this time were primarily eiders, but oldsquaws and brants were harvested as well. By this time, most white-fronted geese were nesting inland, but a few stragglers

were spotted around the coast. A small number of eggs were taken, but for the most part, they were left alone.

Caribou hunting was limited this month because travel to the interior was difficult. Furthermore in June, the caribou were inland having their young. Hunters attempted to travel inland on ATVs for caribou, but none were seen.

June represented the last chance for quite some time to collect ocean ice for water. Ice was collected in the early part of the month. By the end of June, however, people had to collect snow at the snow fences for fresh water.

June was also the month for *Nalukataq*. This event was one that everyone looked forward to, not only in Wainwright, but throughout the whole North Slope and Bering Straits region. Wainwright was one of the few lucky communities that successfully harvested a whale in the North Slope during the spring of 1989, making the year's *Nalukataq* that much more important. *Nalukataq* was held on June 23 and 24. For four days prior to the celebration, plane loads of visitors arrived and Inupiat from all over Alaska poured into Wainwright. Native people came from as far away as California but most of them came from Barrow, Atqasuk, Nuiqsut, Kaktovik, Kotzebue, Noatak, Kiana, Pt. Hope, Pt. Lay, Kivalina and Anchorage. After the feast, one family left with over 150 pounds of *maktak* in addition to boxes of meat and *mikigaq*. (This was a one-time observation. Although distribution to people who did not reside in Wainwright was common, the study team did not collect data on bowhead distribution.) The feast began early in the morning with the successful whaling crew providing *maktak* and meat from their cellars. Soup was served by noon, and it was after 7 p.m. when the last of the food was distributed. A blanket toss followed the feast, after which Eskimo dancing began and continued into the early morning. These festivities started all over again on the next day.

JULY

The ocean ice which started breaking in late June finally broke lose and drifted away in July, leaving the coastline free for boat travel. The inland lagoon broke up early in the month, opening travel inland along the rivers.

Strong winds blew during the Fourth of July, and everyone awoke to an ocean free of ice for the first time since early October. Coincidentally, the ice went out on the same day last year. For the rest of the month, the ice came and went with the various wind and current conditions, yet without hampering travel.

Although rainy, the weather tended to be calm during the first half of the month. This calm weather allowed hunters to travel in all directions in search of game. On July 8, a very large herd of over 1,000 walrus drifted past the town on the ice. The noise and the smell of these animals could be detected a few miles before reaching them. They were mostly females with young males and babies. The majority of the year's walrus harvest occurred on this day.

Hunting walrus is always a dangerous activity. The walrus is an immense and extremely powerful animal which can and will overturn boats. Wounded walruses on the ice are often carried away by other walruses, and mothers attack the boats at will to protect their young; at least one metal boat suffered a gash in the side. The walrus struck with such an impact that part of it's tusk remained in the boat.

This period of drifting ice was also particularly good for bearded seal hunting. As with all the marine animals, their body fat was less at this time of the year giving them less buoyancy. Hence, they usually sank once they were killed. Hunters tried to harpoon many of these animals before they were lost. By the end of July, bearded seal, ringed seal and walrus hunting tapered off. The majority of the bearded seal, ringed seal and walrus harvests occurred during the last week of June and very early in July. By the end of July, most hunters had shifted their focus to caribou and fish.

Most of the year's spotted seals were harvested in July in the mouth of the Avak River.

The drifting ice and marine animals left the Wainwright area by July 19, moving far to the north. Hunters turned their attention toward caribou which began to move south along the coast around July 5. Most of the caribou were ragged and skinny at this time of year; therefore, hunters tended to select only those

that were relatively fat. Caribou were hunted along the coast in the middle part of the month, and were followed upriver by the hunters as the animals gradually moved back inland.

After the Fourth of July games, many people in town were eager for the beluga whales to migrate past Wainwright. In the first week of July, people from Point Lay called to say they had just harvested several belugas and that the animals were heading north and were expected to pass Wainwright in a few days. Many eyes kept a sharp lookout, but the whales slipped past the town under the cover of bad weather. A few days later, several airplane pilots spotted the belugas well to the north. Consequently, no belugas were harvested this year.

As a whole, the month of July was a very busy time for the marine hunters. It marked one of the only times that hunters could get bearded seal and walrus. Thus, hunters took time off from their jobs to avail themselves of the few short weeks of good ocean hunting.

Ducks were still being harvested in early July. Brants and eiders were abundant on the coast while white-fronted geese were found inland. As duck hunting at this point was largely incidental to marine mammal hunting, duck harvests came to a halt sometime around the third week of July when the ice left and marine mammal hunting also ended.

A variety of fish were also harvested this month. The majority of these fish were netted along the ocean side of Wainwright and in the mouth of the lagoon. People also used fishing rods from the shore but the stormy weather raised water levels and made the fish hard to catch. Some whitefish were caught upriver at the end of the month when many families went caribou hunting and fishing.

AUGUST

Subsistence activities focused around the interior this month. The ocean ice moved north and the stormy weather during August kept most of the hunters inland along the waterways. August was wet with an unofficial record, kept by the field coordinator, of only five days without rain. One advantage of all

this rain was that the swollen rivers allowed boat travel deeper into the interior than people normally can travel, to the foothills of the Brooks Range.

Families spent as much time as possible upriver at their inland cabins in August. Those families with jobs in town or whose children started school mid-August went to their inland camps on weekends. Heading upriver was a very popular activity. The weekends around town were very quiet. Usually families and hunters left Friday afternoon for their cabin or camping spot. As many as 40 people often camped at one popular location about 50 miles upriver, hunting caribou, picking berries and fishing over the weekend. On Sunday afternoon, the families reluctantly made their way back to Wainwright in their boats. The next weekend, families congregated upriver once again.

Families gathered salmonberries which were far more abundant this year than usual, possibly related to the prolonged periods of rain this summer. Many families from Wainwright collected gallons of these succulent berries. While picking berries, people also kept a sharp eye out for caribou which were beginning to grow fat off the lush green tundra.

Caribou was the main animal sought in August. From their cabins or camping locations, hunters went on day excursions exploring the country and looking for caribou along the banks of the river or in the nearby hills. Once the caribou was spotted and killed, it was cut in half, gutted and carried back to the boat to be taken to camp and then to Wainwright. Very little of the animal was left behind; even some of the inner organs were taken back to camp to eat.

When no caribou were seen, hunters spent their time fishing for grayling which swam in the turbid waters. Fishing by rod and reel for grayling in the deep pools was best at the confluence of two rivers or streams. People had their favorite fishing spots along all of the rivers, but people fished anywhere at anytime. Evenings back at the tent and Sundays were also good times to fish.

By late fall, the tundra began to turn colors. The willows along the banks of the river turned bright yellow, the tundra a vibrant red. The berries, which a few weeks ago kept everyone on their hands and knees in the arduous yet rewarding task of gathering them, were now wilted and rotten. The air grew

crisp and cold and night began to creep back into the sky. With the approach of winter came the flocks of brants which began their southern flight back to the warmer climes. Hunters went out to Thomas Point which juts into the ocean by Wainwright providing a prime hunting location to intercept the migrating geese. Other hunters went south to the Icy Cape area, a more traditional area for hunting migrating geese. The abundant green seaweed that floated about the shores of Icy Cape attracted large numbers of brant to rest and eat there. Consequently, Icy Cape was a prime location for hunting brants. However, the windy weather and the rough seas kept most hunters from making the trip. One hunter who went to Icy Cape got over 125 brants in one day. By the end of August, brants were still migrating south past Wainwright. Some white-fronted geese were also harvested upriver, but numbered very few.

Other animals that were harvested this month included a brown bear, some seals, and especially spotted seals down at Icy Cape where there is a local population. All hunting was done by boat or ATV throughout the month. By the end of August, no ocean ice had appeared and the velvet still clung to the caribou's antlers.

SEPTEMBER

September began with little difference from August. The rain continued to fall, caribou were still hunted along the banks of the inland rivers, brants were shot at Thomas Point, fish were caught on rods and in nets, and families continued to go upriver to their cabins. Boats and ATVs were the only sources of transportation.

Labor day weekend marked the first weekend in September and was one of the last opportunities for the whole family to go to their cabin before the rivers froze and school started. Hence, most of Wainwright was upriver during this long weekend for some final fall caribou hunting before the long winter. At one location, 50 people camped on the shores in tents and cabins. The caribou started to move about in large numbers and were very plentiful. They seemed to be moving along the rivers away from the cooler coast into the warmer interior.

Around mid-September, the weather turned colder and the rain was replaced with occasional snowfall. Brants stopped flying past town, and the previously plentiful caribou disappeared. Rivers began to freeze, and fish nets were set in hopes of catching some of the fat fish running upstream full of eggs. People caught many sacks of fish throughout the month both before and after freeze-up. As the rivers slowly froze, most of the hunters and their families headed back to Wainwright. However, two families remained behind after freeze-up to continue fishing. With the winter weather settling in, these families were likely to be stranded until the tundra and the rivers became navigable for snowmachines.

Although usually not a fall whaling community, Wainwright still had two remaining strikes from the spring, and the whaling captains decided to try for fall whales. Their effort was mainly a reconnaissance trip to see where and how far out the whales might be. Since Wainwright is located inside a shallow bay, the whales tend to migrate well offshore in a more or less straight line from offshore of Point Franklin to offshore of Icy Cape, about 10 to 20 miles straight out from Wainwright. No whales were spotted on these weekend efforts.

For the most part, September was a quiet month of changing weather. Rain turned to snow. Snow fell for much of the month, but changed back to rain during the last week. The rivers, which were frozen, re-opened.

OCTOBER

October is usually the month in which snowfall accumulates and covers the tundra, lakes and rivers freeze solid, and the ocean begins to solidify. However, in the first part of the month, the weather warmed and the river ice melted allowing hunters to head back into the interior for one last attempt to get fresh caribou meat. The thaw also gave families who had stayed upriver a chance to return to Wainwright for fresh supplies.

October generally is the time when hunters get fat bull caribou by snowmachine before rutting season starts in mid-October. However, Wainwright residents found out that a member of the community was missing. A full-scale search and rescue operation was launched, involving most of the able-bodied men and

women. Consequently, hunting was greatly curtailed for many weeks. Search and rescue activities continued throughout the whole month with no success.

By October 12, the lagoon behind Wainwright had frozen, and five days later snowmachine travel was underway. Some people took time to go out behind the Dew Line site to hunt caribou, while others began to cut and stack ice blocks at the fresh water lake a few miles from town. Fifty to 100 blocks of ice were cut at a time and stored along the shore to be picked up later in the winter when supplies of fresh water ice ran out. People also collected coal this month and gathered it into sacks for home consumption. and for upriver cabins. October storms deposited the coal along the high water mark in great quantities and was easily collected.

Snow settled on the tundra this month despite the very strong north winds which on three different occasions blew 20 to 30 miles per hour and were accompanied by even stronger gusts. With the wind chill, the temperature plummeted to a brisk -50 degrees. All three of these storms occurred over the weekend and hampered any hunting efforts. Even with all these drawbacks, Wainwright hunters still managed to harvest some of the fat caribou that lingered behind the Dew Line site. Most of the successful caribou harvests occurred around the third week of the month when enough snow had fallen, and the temperature had dropped sufficiently to freeze most ponds and rivers, facilitating access by snowmachine.

October is usually a good month for fishing and it proved productive for some Wainwright families who managed to catch numerous fish. One fisherman travelled over 80 miles via snowmachine to fish in the Utukok River and came home the next day with a few sacks of fish. Smelt fishing started up this month when the edge of the lagoon ice became safe enough to walk on and to chip holes through to get smelt. However, few people took the chance of walking across the thin ice for smelt.

Wainwright whaling captains took to the sea again this month in hopes of landing a fall bowhead whale. The crews went out primarily during the weekend because most of the crew members were employed and could not take time out during the week. Unfortunately most weekends were either stormy or foggy, and

the crews were often unable to launch the boat or risk harpooning a whale in the thick fog.

Near the end of the month a whaling crew came close to striking a whale but in the end decided not to strike as the evening fog descended upon them. The ocean had begun to freeze over a couple of times this month but had failed to do so as of the end of the month. Consequently, whaling crews looked forward to the possibility of fresh *maktak* in November. This anticipation was increased when Barrow successfully landed seven whales and sent bags of fresh *maktak* to some of the Wainwright elders.

In addition to fish and caribou, some other major species were harvested this month. A grizzly bear was harvested upriver and some bearded seals were shot as well. Several ptarmigan were shot. Wolves and wolverines were seen upriver, although none were harvested. Full scale wolf and wolverine hunting would begin in November.

NOVEMBER

Like October, November was also a month of transition. Traveling conditions along the ocean proved hazardous with the landfast ice forming and then blowing away. Strong east winds kept many hunters home and wrought havoc with the ocean ice. November was usually a good month for resting and adjusting to the dwindling daylight. People took hunting trips to upriver cabins to look for wolf and wolverine, in addition to short forays from town for fresh caribou. Ice was still collected from the freshwater ponds and, to a small extent, smelt fishing occurred in the lagoon. Even this activity was limited due to the changing environmental conditions, however. Polar bears were pursued but escaped over the new landfast ice. On the whole, people were content to linger around town and wait for the big Thanksgiving feast.

The Thanksgiving feast is an important occasion to most members of the community. Those households with no hunters or providers were especially eager for this feast as well as the Christmas feast, as it provided their families with enough subsistence food for many months. Supplying whale meat, *maktak*, caribou and fish to this feast is the responsibility of that year's

successful whaling captains and crews. The successful crews also cook and prepare a variety of soups including caribou, duck and whale. Eskimo donuts, rolls, cakes and cooked fruits were also prepared for the feast. After completing the feast and distribution of food to residents for the winter, everyone went to the community center for some Inupiat dancing.

After Thanksgiving, a big easterly storm blew and took all the ocean ice out to sea. With the open water, a polar bear wandered past town and was shot. For the rest of the month the ice was nowhere to be seen.

November was also a month for a lot of high school basketball activity which was one of the town's highlights during the winter. This year Point Hope students came to Wainwright to play. When they left Wainwright, they were presented with many sacks of *maktak* to take to the community of Point Hope. Point Hope was unable to land a whale this year, and this gift of *maktak* was an honored present.

DECEMBER

Usually by December the ocean in front of Wainwright would be solid with ice. However, a combination of unusual weather, wind and currents kept Wainwright ice-free until the Christmas feast. The ice went in and out during the whole month and, with it, a few polar bears wandered near town. Those polar bears that wandered into town were shot as they roamed Wainwright streets. Other bears gave the town a wide berth and were not harvested, merely observed.

Caribou hunting was minimal this month. Although a few were harvested, people seemed content with the supply they had from fall hunting. Some caribou lingered near town but not in great numbers. Smelt fishing was again limited due to bad ice conditions.

December marked the beginning of good wolf and wolverine hunting. This activity required hunters to travel deep into the interior to their inland cabins. Many hunters traveled into the foothills of the Brooks Range while others traveled into the mountains.

During the last part of December, hunters headed inland but found the conditions almost impossible for tracking. The tundra was bare of snow because it was blown away as soon as it fell. Driving a snowmachine across the frozen tundra was similar to rodeo riding. The legs, body and machine were in constant motion, but in different directions. The hard frozen tundra was not only difficult to travel on, but it left no signs as to the whereabouts of furbearing animals. Yet even with these difficulties, two hunters were able to bring home wolverines as well as some red foxes.

After the festive Christmas feast, the ocean ice stayed, and by the last week of December, seals were harvested along the open lead of water outside of Thomas Point.

JANUARY 1990

January began with the week long celebration of the Christmas games coming to an end, after which preparation for the celebration of the traditional *Kivgiq* or messenger feast in Barrow began. The Wainwright dancers spent many long hours practicing, people collected *maktak* from their cellars and caught many sacks of succulent Wainwright smelts for eager relatives and friends in Barrow.

The *Kivgiq* Feast lasted over three days in early January, leaving Wainwright quiet and alone. Much of the community was away at Barrow dancing, visiting and participating in the festivities. People returned to Wainwright with wide smiles and seemed to have had an enjoyable time; however, they also brought back a flu bug which swept through town for the next couple of months. The North Slope was under a massive flu alert in January, and the classrooms in the Wainwright schools were more than half empty. Most of the Wainwright high school basketball team remained healthy as they traveled to Anchorage to take part in the state championship in which they finished sixth.

The people who stayed behind in Wainwright during *Kivgiq* hunted seals in the open lead a few miles south of town. Evidence of this lead could be seen from town where a thick fog rose out of the comparatively warm water and hit the frigid air. Hiding in the foggy mist were hunters waiting for seals to

poke their heads out of the water. Many seals were taken, but a lot were lost when the hunters hooks could not quite reach the dead floating seal. Those hunters with little skiffs fared much better in landing their kills; as soon as they killed a seal they launched their skiff and retrieved the dead animal. By mid-January, the open lead had frozen over and put an end to seal hunting until March.

January was a month of smelt fishing. Fishermen thought the smelt were running in larger numbers than usual this year. With more people unemployed this month, many people were out on the ice braving January's cold and darkness, and generally were rewarded with large harvests. Harvests of over 200 smelt a day were not uncommon.

The sun greeted Wainwright for the first time in 1990 on January 20 at 1:19 p.m. Many Wainwright residents were out on the ice smelt fishing for this momentous occasion while others were pursuing ptarmigan behind town. Ptarmigan were abundant behind town this month, and many of them found their way into a stew pot.

January was an unusually bad month for pursuing furbearing animals upriver. The frozen tundra still lacked snow cover, making traveling difficult and tracking impossible. Hunters hoped for a good snowfall. Even with these bad conditions, some hunters traveled great distances only to get a few red foxes.

Caribou were plentiful in large numbers behind the Wainwright Dew Line site throughout January and hunters took this opportunity to get fresh caribou after work or on the weekend. When that supply was gone, they went out again the next week.

One of Wainwright's elders died in Kotzebue this month after a prolonged illness. He was buried in Wainwright on January 20 under the first rays of sunlight in 1990.

FEBRUARY

With the growing amount of daylight illuminating the North Slope, subsistence activities generally increased. Caribou hunting continued to be the main focus with a large herd of caribou remaining close to town for the whole month. The proximity of these caribou made it very convenient for hunters to get a few and be back home within an hour. Consequently many caribou were harvested in February, and most families had fresh meat.

With the new sunlight (though not necessarily warmer temperatures), some hunters went deep into the interior searching for the elusive furbearers. However, the temperatures inland were bitterly cold, averaging around -40 degrees. Much of the interior still lay bare of snow. Frozen hummocks, sand bars, cold temperatures and lack of snow continued to make traveling difficult. Nonetheless, hunters traveled over 1,500 miles through the mountains, but without snow to preserve the tracks, no furbearers were harvested.

Smelt fishing occurred throughout the month as usual for this time of the year. Ice was collected when supplies were low, ptarmigan were shot near town to add variety to meals, and some arctic and red fox were trapped.

Like last year at this time, a strong southwest storm blew. Fortunately this year the storm was less powerful then last year. However, this storm piled the ice up and made ocean travel very difficult, causing problems for the whaling crews when they needed to get to the open lead.

On February 27, Wainwright mourned the loss of another respected elder. He was buried on March 7.

MARCH

The return of March brings with it the fever of whaling. The thought of whales are on the minds of most people. Whaling captains and some crew members headed to Barrow for the annual Alaska Eskimo Whaling Commission meetings. Wainwright was allotted five strikes for the 1990 season, and when the captains returned, preparation for the whaling season got under way. Sleds were built, snow

machines tuned up, ice cellars emptied and cleaned, whaling boats dug out of the snow for fixing and painting, harpoon ropes stretched, motors fixed and camp supplies repaired or purchased. It was a busy time for all involved. Whaling captains spend over an estimated $10,000 every spring for whaling.

Whaling crews were also busy during the weekends cutting a trail through the massive jumbled ice to the open lead. These trails extended from major landmarks which the people of Wainwright have traditionally used. Many able-bodied people used picks and axes to break down the piled up ice so snowmachines and heavily loaded sleds could easily pass. Some seals were observed when the open lead was reached, and one was killed.

Although many people were involved in the preparation of whaling, most hunters still found time for other subsistence activities. Caribou were still behind the Dew Line site and many were taken. However, in the middle of the month, the caribou formed large herds and moved steadily toward the interior, possibly to their calving grounds. By the end of the month, most of the caribou were gone from the Wainwright vicinity. Wolves were also seen near town by mail planes; some hunters speculated that wolves scared the caribou inland.

Many hunters took advantage of the fresh snowfall to head inland to the mountains. Some hunters spent many weeks in the mountains searching for wolverine and wolf. With the snowstorms of March, tracking these animals was possible, and by the end of March, two wolves and four wolverines had been harvested. Some red foxes were also harvested in the mountains, and two polar bears were shot along the northern coastline.

Smelt fishing began to wind down this month, and ice was collected exclusively in ponds. Unlike last year, very little "glacier ice" was available, so most of the freshwater ice came from the ponds behind Wainwright.

Soviet Eskimos visited Wainwright in March from their village of New Chaplino. Known as the Rising Sun Dancers, this group performed their traditional dances to a very excited Wainwright community before continuing to Barrow.

YEAR TWO CULTURAL AND SUBSISTENCE EVENTS

As a summary to the Seasonal Round, the following list highlights the key community and environmental events that directly or indirectly influenced subsistence activities in Year Two.

DATE	ACTIVITY OR EVENT
April 2	Wainwright Whaling Captains meeting
April 3	Seal hunting on newly open lead north of town three miles from land (lead remained open for about two weeks)
April 8	Whaling crews begin breaking trail through the ice
April 8	Community dance
April 9	Special church service for whaling captains and crew
April 15	First whaling crews move out onto ice
April 16	Strong winds drive whaling crews back to town
April 17	Native Youth Olympics in Barrow
April 21	Whaling crews move back onto ice
April 23	Smelt fishing ends
April 25	Bad weather forces the whaling crews back home
May 1	Ray Ahmaogak dies, all whaling crews back to town
May 2-3	Whaling crews dig grave
May 4	Ray Ahmaogak's funeral
May 5	Whaling crews back on the ice
May 5	Ptarmigan hunting starts
May 10	Whaling crews home - no open water
May 12	Geese arrive
May 13	Whaling crews break new trails nearer town
May 15	Iceberg 14 (Ben Ahmaogak Sr. crew) harvests first bowhead whale
May 18	Hunters head upriver for geese hunting
May 25	Rivers in the interior break up forcing hunters to return home
May 27	Wainwright loses a struck bowhead whale
May 27	Iceberg 7 (Jim Allen Aveoganna crew) harvests second bowhead whale
May 28	Snowmachine travel becomes arduous, restricted mostly to coast
June 1	Hunters head south to hunt brants
June 5	Most whaling crews return home
June 7	No snow in the interior or town
June 7	Polar bears near town
June 9	Last whaling crews return to Wainwright
June 9	*Qaksruq* feast (Iceberg 14)
June 11	Snowstorm drops over three inches
June 12	*Qaksruq* feast (Iceberg 7)
June 12-26	Bad traveling conditions

DATE	ACTIVITY OR EVENT
June 13	ATV travel starts.
June 22-24	Arco Jessie Owen Games in Barrow.
June 23	*Nalukataq.*
June 24	*Nalukataq.*
June 27	Ocean ice breaks up near the inlet; boat travel for seal and walrus hunting begins; first walrus killed.
July 4-6	July 4th games and events.
July 5	Ocean ice in front of town is gone, strong SW winds, marine mammal hunting declines.
July 6	Lagoon free of ice, rivers are open, fishing begins in front of Wainwright, salmon taken.
July 7	Ocean pack ice moves in front of town, marine hunting increases, large herds of caribou seen up north.
July 8	Thousands of walrus drift past town on floating pack ice, major walrus harvest takes place.
July 7-9	Arco Jessie Owen Games in Fairbanks.
July 19	Snowstorm.
July 20	Ocean ice non-existent near town, marine hunting declines.
July 21-23	Arctic Slope Regional Corporation meets in Barrow; Native Youth Olympics in Fairbanks, where Wainwright Eskimo Dancers finish second to Barrow.
July 23-26	Strong southerly winds; boat travel is marginal.
July 24-25	Beluga whales migrate past town, high winds prevent harvest.
July (late)	Subsistence emphasis turns inland for caribou; Wainwright runs out of regular gas.
July 29	English sailboat stops in Wainwright after completing a successful voyage through the Northwest Passage.
August 10	Dew Line barge arrives.
August 11	Another barge arrives to deliver gas to the town.
August 11-13	Berry picking underway upriver.
August 13-14	Strong wind storm from the SW, winds gust over 40 m.p.h.
August 14	Hunters picked up by NSB Search and Rescue due to high winds; supply barge arrives.
August 17	The new Wainwright school is completed; school begins; Arctic Slope Regional Corporation meets in Wainwright.
August 18	Brants migrate south past Wainwright.
August 22	The new Wainwright School grand opening.
August 24	The new gym opens for community use.
August 31	The tundra fall foliage begins.
September 2	Fishing starts upriver for least cisco.
September 3	First frost.
September 4	Labor Day; barge arrives from the north heading back to California.
September 6	Caribou begin to lose their velvet.
September 12	Wainwright School dedication ceremony.
September 13	First winter snow.
September 16	Wainwright whaling crew out hunting bowheads for the day.

DATE	ACTIVITY OR EVENT
September 18	Ponds and lakes frozen.
September 23	Inland rivers begin to freeze, travel restricted closer to town.
September 29	Inland rivers melt allowing access to waterways.
October 1	Whaling crews out for the day.
October 4	Full scale search for missing Wainwright individual underway.
October 7-9	Strong winds and blowing snow.
October 12	Lagoon frozen.
October 17	Snowmachine travel underway; caribou begin rutting; Search and Rescue still looking for missing individual.
October 17-22	Wainwright Dancers, ASRC members, and interested individuals go to Anchorage for AFN meetings.
October 21	People begin to cut and stack fresh water ice for the winter.
October 23	First caribou are harvested near town by snowmachine.
October 25	Smelt fishing underway on the lagoon; polar bear travels past town.
October 27-28	Wainwright whaling crews out searching for bowheads daily.
October 27	Snowmachine travel upriver.
October 31	Halloween.
November 1	Wainwright elects new city mayor; whalers search for bowheads.
November 2	Search and Rescue ends search for Arnold Kayutak; memorial service for Arnold Kayutak; ocean freezes over.
November 3	High school basketball starts.
November 21	Final sunset of 1980s.
November 23	Thanksgiving feast.
November 23	Wainwright provides *maktak* to Point Hope and other unsuccessful whaling towns.
November 24	Wainwright's Invitational Thanksgiving City Basketball Tournament.
November 25	Strong easterly storm blows ice away.
December 12	Ocean still open after storm; no snow inland.
December 24	Polar bears wander through town due to lack of ocean ice, one harvested; first wolverine of the year taken.
December 25	Christmas.
December 26	Christmas games begin.
January 5	Lead opens, seal hunting occurs for next three weeks.
January 10	People head to Barrow for *Kivgiq*.
January 11-13	*Kivgiq*, in Barrow.
January 14-	Flu epidemic hits North Slope.
January 15-26	Extensive smelt harvesting on the lagoon.
January 19-21	Wainwright Singspiration, many families from Barrow and Atqasuk arrive.
January 20	Samuel Agnasagga funeral.
January 20	First sunrise of the new decade in Wainwright.

DATE	ACTIVITY OR EVENT
February 1	Ocean lead closes; numerous ptarmigan near town.
February 12	Many job programs restart.
February 21	Texaco representatives meet with the community to discuss offshore exploratory drilling operations.
February 27-28	Alaskan Eskimo Whaling Commission meeting in Barrow.
February 28	Elder Oliver-James Angashuk dies.
March 3	Snow falls in the interior.
March 7	Funeral service for Oliver-James Angashuk.
March (early)	Cat train arrives from Atqasuk.
March 15	Siberian Eskimo dance group (The Rising Sun Dancers) visit Wainwright.
March (mid)	Caribou begin to move inland.
March 17	Snow buntings arrive.
March (mid)	Wainwright ice road built to gravel pit.
March 24	Whalers break trail to open lead.
March 31	Community dance to raise money for the whaling captains.
March 23	Wainwright students in Anchorage competing in mock trial competition.

TABLE B-1: TOTAL HARVEST ESTIMATES BY MAJOR RESOURCE CATEGORY - WAINWRIGHT, YEAR TWO (1)

RESOURCE	CONVERSION FACTOR (2) (Usable Weight Per Resource in lbs)	COMMUNITY TOTALS (3) NUMBER HARVESTED	COMMUNITY TOTALS (3) USABLE POUNDS HARVESTED	AVERAGE POUNDS HARVESTED (4) PER HOUSEHOLD	AVERAGE POUNDS HARVESTED (4) PER CAPITA	PERCENT OF TOTAL USABLE POUNDS HARVESTED (3)	PERCENT OF WAINWRIGHT HOUSEHOLDS HARVESTING RESOURCE (4)
Marine Mammals (5)	n/a	n/a	243,595	2,192.7	537.8	69.3%	78%
Terrestrial Mammals	n/a	n/a	83,390	762.5	185.0	23.7%	66%
Fish	n/a	n/a	17,385	145.2	36.1	4.9%	62%
Birds	n/a	n/a	7,214	68.5	17.1	2.1%	57%
Total	n/a	n/a	351,584	3,168.9	775.9	100.0%	84%

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(1) Year Two: April 1, 1989 - March 31, 1990.

(2) See Table C-3 for sources of conversion factors.

(3) Community totals and percent of total usable pounds harvested are based on harvest amounts reported by all 119 Wainwright Year Two households for all species except bowhead (see note 5).

(4) Per household and per capita means and percent of households harvesting a resource are based only on the 100 core households in the study for the full two years for all species except bowhead (see note 5).

(5) Usable pounds harvested for bowhead whale were derivad from a pounds-per-foot-length ratio, which includes all usable portions of the whale (see Appendix C). Average pounds per household and per capita were derived from the total usable whale amount (divided by 100 core households & 411 persons respectively) rather than from the number of shares households reported receiving.

n/a means not applicable

Source: Stephen R. Braund & Associates, 1993

TABLE B-2: MONTHLY HARVESTS BY MAJOR RESOURCE CATEGORY - WAINWRIGHT, YEAR TWO (1)
(Pounds of Usable Resource Product)

TOTALS

MAJOR RESOURCE CATEGORY	1989 April	May	June	July	August	Sept.	October	Nov.	Dec.	1990 Jan.	Feb.	March
Marine Mammals	0	106,106	42,358	90,739	856	42	830	0	992	638	0	1,034
Terrestrial Mammals	351	1	234	14,859	16,716	19,756	6,318	2,223	1,287	3,861	8,892	8,892
Fish	77	0	0	556	2,434	5,224	2,172	244	9	4,098	2,167	405
Birds	14	3,208	1,993	522	1,099	336	7	0	4	10	4	18
Total	442	109,316	44,585	106,675	21,104	25,358	9,327	2,467	2,292	8,606	11,063	10,349

PERCENTS

MAJOR RESOURCE CATEGORY	1989 April	May	June	July	August	Sept.	October	Nov.	Dec.	1990 Jan.	Feb.	March	
Marine Mammals	0%	44%	17%	37%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Terrestrial Mammals	0%	0%	0%	18%	20%	24%	8%	3%	2%	5%	11%	11%	= 100%
Fish	0%	0%	0%	3%	14%	30%	12%	1%	0%	24%	12%	2%	= 100%
Birds	0%	44%	28%	7%	15%	5%	0%	0%	0%	0%	0%	0%	= 100%
All Resources Combined	0%	31%	13%	30%	6%	7%	3%	1%	1%	2%	3%	3%	= 100%

(1) Based on 119 Year Two households, including partial year households.

Source: Stephen R. Braund & Associates, 1993

TABLE B-3: HARVEST ESTIMATES FOR MARINE MAMMALS - WAINWRIGHT, YEAR TWO (1)

RESOURCE	CONVERSION FACTOR (2) Usable Weight Per Resource in pounds	COMMUNITY TOTALS (3) NUMBER HARVESTED	COMMUNITY TOTALS (3) USABLE POUNDS HARVESTED	AVERAGE POUNDS HARVESTED (4) PER HOUSEHOLD	AVERAGE POUNDS HARVESTED (4) PER CAPITA	PERCENT OF TOTAL USABLE POUNDS HARVESTED (3)	PERCENT OF WAINWRIGHT HOUSEHOLDS HARVESTING RESOURCE (4)
Total Marine Mammals	n/a	n/a	243,595	2,192.7	537.8	69.3%	78%
Bowhead (5)	51,066.0	2	102,132	858.3	209.3	29.0%	66%
Walrus	772.0	153	118,371	1,122.0	276.7	33.7%	37%
Bearded Seal	176.0	74	13,024	120.6	29.3	3.7%	34%
Polar Bear	496.0	12	5,952	54.6	13.3	1.7%	8%
Total Ringed & Spotted Seal	42.0	98	4,116	37.4	9.1	1.2%	29%
Ringed Seal	42.0	86	3,612	32.8	8.0	1.0%	28%
Spotted Seal	42.0	12	504	4.6	1.1	0.1%	6%

(1) Year Two: April 1, 1989 - March 31, 1990.

(2) See Table C-3 for sources of conversion factors.

(3) Community totals and percent of total usable pounds harvested are based on harvest amounts reported by all 119 Wainwright Year Two households for all species except bowhead (see note 5).

(4) Per household and per capita means and percent of households harvesting a resource are based only on the 100 core households in the study for the full two years for all species except bowhead (see note 5).

(5) Usable pounds harvested for bowhead whale were derived from a pounds-per-foot-length ratio, which includes all usable portions of the whale (see Appendix C). Average pounds per household and per capita were derived from the total usable whale amount (divided by 100 core households & 411 persons respectively) rather than from the number of shares households reported receiving.

n/a means not applicable

Source: Stephen R. Braund & Associates, 1993

TABLE B-4: MARINE MAMMAL HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR TWO (1)
(Pounds of Usable Resource Product)

TOTALS
******

SPECIES	1989 April	May	June	July	August	Sept.	October	Nov.	Dec.	1990 Jan.	Feb.	March
Bowhead Whale	0	102,132	0	0	0	0	0	0	0	0	0	0
Walrus	0	0	37,056	80,543	772	0	0	0	0	0	0	0
Bearded Seal	0	704	3,344	8,096	0	0	704	0	0	176	0	0
Polar Bear	0	2,976	992	0	0	0	0	0	992	0	0	992
Total Ring. & Spot. Seal	0	294	966	2,100	84	42	126	0	0	462	0	42
Ringed Seal	0	294	966	1,722	0	0	126	0	0	462	0	42
Spotted Seal	0	0	0	378	84	42	0	0	0	0	0	0
All Marine Mammals	0	106,106	42,358	90,739	856	42	830	0	992	638	0	1,034

PERCENTS
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SPECIES	1989 April	May	June	July	August	Sept.	October	Nov.	Dec.	1990 Jan.	Feb.	March	
Bowhead Whale	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Walrus	0%	0%	31%	68%	1%	0%	0%	0%	0%	0%	0%	0%	= 100%
Bearded Seal	0%	5%	26%	62%	0%	0%	5%	0%	0%	1%	0%	0%	= 100%
Polar Bear	0%	50%	17%	0%	0%	0%	0%	0%	17%	0%	0%	17%	= 100%
Total Ring. & Spot. Seal	0%	7%	23%	51%	2%	1%	3%	0%	0%	11%	0%	1%	= 100%
Ringed Seal	0%	8%	27%	48%	0%	0%	3%	0%	0%	13%	0%	1%	= 100%
Spotted Seal	0%	0%	0%	75%	17%	8%	0%	0%	0%	0%	0%	0%	= 100%
All Marine Mammals	0%	44%	17%	37%	0.4%	0.0%	0.3%	0%	0.4%	0.3%	0%	0.4%	= 100%

(1) Based on 119 Year Two households, including partial year households.

Source: Stephen R. Braund & Associates, 1993

TABLE B-5: MARINE MAMMAL HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR TWO (1)
(Number Harvested)

	1989								1990			
SPECIES	April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.	Feb.	March
Bowhead Whale	0	2	0	0	0	0	0	0	0	0	0	0
Walrus	0	0	48	104	1	0	0	0	0	0	0	0
Bearded Seal	0	4	19	46	0	0	4	0	0	1	0	0
Polar Bear	0	6	2	0	0	0	0	0	2	0	0	2
Total Ring. & Spot. Seal	0	7	23	50	2	1	3	0	0	11	0	1
Ringed Seal	0	7	23	41	0	0	3	0	0	11	0	1
Spotted Seal	0	0	0	9	2	1	0	0	0	0	0	0

(1) Based on 119 Year Two households, including partial year households.

Source: Stephen R. Braund & Associates, 1993

TABLE B-6: HARVEST ESTIMATES FOR TERRESTRIAL MAMMALS - WAINWRIGHT, YEAR TWO (1)

RESOURCE	CONVERSION FACTOR (2) Usable Weight Per Resource in pounds	COMMUNITY TOTALS (3) NUMBER HARVESTED	COMMUNITY TOTALS (3) USABLE POUNDS HARVESTED	AVERAGE POUNDS HARVESTED (4) PER HOUSEHOLD	AVERAGE POUNDS HARVESTED (4) PER CAPITA	PERCENT OF TOTAL USABLE POUNDS HARVESTED (3)	PERCENT OF WAINWRIGHT HOUSEHOLDS HARVESTING RESOURCE (4)
Total Terrestrial Mammals	n/a	n/a	83,390	762.5	185.0	23.7%	66%
Caribou	117.0	711	83,187	760.5	184.5	23.7%	66%
Brown Bear	100.0	2	200	2.0	0.5	0.1%	2%
Ground Squirrel	0.4	7	3	*	*	**	1%
Arctic Fox (Blue)	n/a	8	n/a	n/a	n/a	n/a	3%
Red Fox (Cross, Silver)	n/a	22	n/a	n/a	n/a	n/a	6%
Wolverine	n/a	7	n/a	n/a	n/a	n/a	2%
Wolf	n/a	2	n/a	n/a	n/a	n/a	2%
Ermine	n/a	9	n/a	n/a	n/a	n/a	4%
River otter	n/a	1	n/a	n/a	n/a	n/a	1%

(1) Year Two: April 1, 1989 - March 31, 1990.

(2) See Table C-3 for sources of conversion factors.

(3) Community totals and percent of total usable pounds harvested are based on harvest amounts reported by all 119 Wainwright Year Two households for all species.

(4) Per household and per capita means and percent of households harvesting a resource are based only on the 100 core households in the study for the full two years.

* represents less than .1 pound

** represents less than .1 percent

n/a means not applicable

Source: Stephen R. Braund & Associates, 1993

TABLE B-7: TERRESTRIAL MAMMAL HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR TWO (1)
(Pounds of Usable Resource Product)

TOTALS
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SPECIES	1989 April	May	June	July	August	Sept.	October	Nov.	Dec.	1990 Jan.	Feb.	March
Caribou	351	0	234	14,859	16,614	19,656	6,318	2,223	1,287	3,861	8,892	8,892
Brown Bear	0	0	0	0	100	100	0	0	0	0	0	0
Ground Squirrel	0	1	0	0	2	0	0	0	0	0	0	0
All Terrestrial Mammals (excluding furbearers)	351	1	234	14,859	16,716	19,756	6,318	2,223	1,287	3,861	8,892	8,892

PERCENTS
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SPECIES	1989 April	May	June	July	August	Sept.	October	Nov.	Dec.	1990 Jan.	Feb.	March	
Caribou	0%	0%	0%	18%	20%	24%	8%	3%	2%	5%	11%	11%	= 100%
Brown Bear	0%	0%	0%	0%	50%	50%	0%	0%	0%	0%	0%	0%	= 100%
Ground Squirrel	0%	43%	0%	0%	57%	0%	0%	0%	0%	0%	0%	0%	= 100%
All Terrestrial Mammals (excluding furbearers)	0%	0%	0%	18%	20%	24%	8%	3%	2%	5%	11%	11%	= 100%

(1) Based on 119 Year Two households, including partial year households.

Source: Stephen R. Braund & Associates, 1993

TABLE B-8: TERRESTRIAL MAMMAL HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR TWO (1)
(Number Harvested)

	1989			TOTALS ******					1990		
SPECIES	April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.	Feb.	March
Caribou	3	0	2	127	142	168	54	19	11	33	76	76
Brown Bear	0	0	0	0	1	1	0	0	0	0	0	0
Ground Squirrel	0	3	0	0	4	0	0	0	0	0	0	0
Arctic Fox (Blue)	0	0	0	0	0	0	0	0	0	0	0	8
Red Fox (Cross, Silver)	0	0	0	0	0	0	0	0	2	7	5	8
Wolverine	0	0	0	0	0	0	0	0	2	1	0	4
Wolf	0	0	0	0	0	0	0	0	0	0	0	2
Ermine	0	0	2	0	0	0	0	0	0	0	3	4
River Otter	0	0	0	0	0	0	1	0	0	0	0	0

(1) Based on 119 Year Two households, including partial year households.

Source: Stephen R. Braund & Associates, 1993

TABLE B-9: HARVEST ESTIMATES FOR FISH - WAINWRIGHT, YEAR TWO (1)

RESOURCE	CONVERSION FACTOR (2) Usable Weight Per Resource in pounds	COMMUNITY TOTALS (3) NUMBER HARVESTED	COMMUNITY TOTALS (3) USABLE POUNDS HARVESTED	AVERAGE POUNDS HARVESTED (4) PER HOUSEHOLD	AVERAGE POUNDS HARVESTED (4) PER CAPITA	PERCENT OF TOTAL USABLE POUNDS HARVESTED (3)	PERCENT OF WAINWRIGHT HOUSEHOLDS HARVESTING RESOURCE (4)
Total Fish	n/a	n/a	17,385	145.2	36.1	4.9%	62%
Total Whitefish		7,102	7,102	66.7	16.0	2.0%	23%
Least cisco	1.0	6,676	6,676	66.4	15.9	1.9%	22%
Bering, Arctic cisco	1.0	426	426	0.3	0.1	0.1%	3%
Total Other Freshwater Fish		3,057	2,609	25.2	6.1	0.7%	32%
Arctic grayling	0.8	3,006	2,405	23.6	5.7	0.7%	28%
Burbot (Ling cod)	4.0	51	204	1.6	0.4	0.1%	10%
Total Salmon		180	1,044	10.1	2.5	0.3%	7%
Silver salmon	6.0	51	306	3.1	0.7	0.1%	5%
King salmon	18.0	9	162	1.6	0.4	**	4%
Chum (Dog) salmon	6.1	68	415	4.2	1.0	0.1%	4%
Pink (Humpback) salmon	3.1	52	161	1.3	0.3	**	4%
Total Other Coastal Fish		54,228	6,630	43.2	11.5	1.9%	53%
Rainbow smelt	0.1	54,083	6,490	41.9	10.2	1.8%	53%
Tomcod (Saffron Cod)	1.0	134	134	1.3	1.3	**	1%
Arctic flounder	0.5	4	2	0.0	*	**	3%
Sculpin	0.6	7	4	*	*	**	2%

(1) Year Two: April 1, 1989 - March 31, 1990.

(2) See Table C-3 for sources of conversion factors.

(3) Community totals and percent of total usable pounds harvested are based on harvest amounts reported by all 119 Wainwright Year Two households for all species.

(4) Per household and per capita means and percent of households harvesting a resource are based only on the 100 core households in the study for the full two years.

* represents less than .1 pound

** represents less than .1 percent

n/a means not applicable

Source: Stephen R. Braund & Associates, 1993

TABLE B-10: FISH HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR TWO (1)
(Pounds of Usable Resource Product)

SPECIES	1989 April	May	June	July	August	Sept.	October	Nov.	Dec.	1990 Jan.	Feb.	March
Total Whitefish	0	0	0	44	1,412	4,306	1,240	100	0	0	0	0
Least cisco	0	0	0	31	1,399	4,306	840	100	0	0	0	0
Bering, Arctic cisco	0	0	0	13	13	0	400	0	0	0	0	0
Total Other Freshwater Fish	0	0	0	94	406	870	931	144	0	72	92	0
Arctic grayling	0	0	0	94	406	870	891	144	0	0	0	0
Burbot (Ling cod)	0	0	0	0	0	0	40	0	0	72	92	0
Total Salmon	0	0	0	413	582	48	0	0	0	0	0	0
Silver salmon	0	0	0	114	168	24	0	0	0	0	0	0
King salmon	0	0	0	36	126	0	0	0	0	0	0	0
Chum (Dog) salmon	0	0	0	201	189	24	0	0	0	0	0	0
Pink (Humpback) salmon	0	0	0	62	99	0	0	0	0	0	0	0
Total Other Coastal Fish	77	0	0	5	33	0	1	0	9	4,026	2,075	405
Rainbow smelt	77	0	0	0	31	0	1	0	9	4,026	1,948	398
Tomcod (Saffron Cod)	0	0	0	0	0	0	0	0	0	0	127	7
Arctic flounder	0	0	0	1	1	0	0	0	0	0	0	0
Sculpin	0	0	0	4	1	0	0	0	0	0	0	0
All Fish Species	77	0	0	556	2,434	5,224	2,172	244	9	4,098	2,167	405

TOTALS ******

(Continued on next page)

TABLE B-10, CONTINUED: FISH HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR TWO (1)
(Pounds of Usable Resource Product)

SPECIES	PERCENTS ******** 1989 April	May	June	July	August	Sept.	October	Nov.	Dec.	1990 Jan.	Feb.	March	
Total Whitefish	0%	0%	0%	1%	20%	61%	17%	1%	0%	0%	0%	0%	= 100%
Least cisco	0%	0%	0%	0%	21%	64%	13%	1%	0%	0%	0%	0%	= 100%
Bering, Arctic cisco	0%	0%	0%	3%	3%	0%	94%	0%	0%	0%	0%	0%	= 100%
Total Other Freshwater Fish	0%	0%	0%	4%	16%	33%	36%	6%	0%	3%	4%	0%	= 100%
Arctic grayling	0%	0%	0%	4%	17%	36%	37%	6%	0%	0%	0%	0%	= 100%
Burbot (Ling cod)	0%	0%	0%	0%	0%	0%	20%	0%	0%	35%	45%	0%	= 100%
Total Salmon	0%	0%	0%	40%	56%	5%	0%	0%	0%	0%	0%	0%	= 100%
Silver salmon	0%	0%	0%	37%	55%	8%	0%	0%	0%	0%	0%	0%	= 100%
King salmon	0%	0%	0%	22%	78%	0%	0%	0%	0%	0%	0%	0%	= 100%
Chum (Dog) salmon	0%	0%	0%	49%	46%	6%	0%	0%	0%	0%	0%	0%	= 100%
Pink (Humpback) salmon	0%	0%	0%	38%	62%	0%	0%	0%	0%	0%	0%	0%	= 100%
Total Other Coastal Fish	1%	0%	0%	0%	0%	0%	0%	0%	0%	61%	31%	6%	= 100%
Rainbow smelt	1%	0%	0%	0%	0%	0%	0%	0%	0%	62%	30%	6%	= 100%
Tomcod (Saffron Cod)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	95%	5%	= 100%
Arctic flounder	0%	0%	0%	50%	50%	0%	0%	0%	0%	0%	0%	0%	= 100%
Sculpin	0%	0%	0%	86%	14%	0%	0%	0%	0%	0%	0%	0%	= 100%
All Fish Species	0%	0%	0%	3%	14%	30%	12%	1%	0%	24%	12%	2%	= 100%

(1) Based on 119 Year Two households, including partial year households.

Source: Stephen R. Braund & Associates, 1993

TABLE B-11: FISH HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR TWO (1)
(Number Harvested)

	1989									1990		
SPECIES	April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.	Feb.	March
Total Whitefish	0	0	0	44	1,412	4,306	1,240	100	0	0	0	0
Least cisco	0	0	0	31	1,399	4,306	840	100	0	0	0	0
Bering, Arctic cisco	0	0	0	13	13	0	400	0	0	0	0	0
Total Other Freshwater Fish	0	0	0	117	508	1,087	1,124	180	0	18	23	0
Arctic grayling	0	0	0	117	508	1,087	1,114	180	0	0	0	0
Burbot (Ling cod)	0	0	0	0	0	0	10	0	0	18	23	0
Salmon	0	0	0	74	98	8	0	0	0	0	0	0
Silver salmon	0	0	0	19	28	4	0	0	0	0	0	0
King salmon	0	0	0	2	7	0	0	0	0	0	0	0
Chum (Dog) salmon	0	0	0	33	31	4	0	0	0	0	0	0
Pink (Humpback) salmon	0	0	0	20	32	0	0	0	0	0	0	0
Total Other Coastal Fish	645	0	0	8	263	0	5	0	78	33,547	16,358	3,324
Rainbow smelt	645	0	0	0	260	0	5	0	78	33,547	16,231	3,317
Tomcod (Saffron Cod)	0	0	0	0	0	0	0	0	0	0	127	7
Arctic flounder	0	0	0	2	2	0	0	0	0	0	0	0
Sculpin	0	0	0	6	1	0	0	0	0	0	0	0

(1) Based on 119 Year Two households, including partial year households.

Source: Stephen R. Braund & Associates, 1993

TABLE B-12: HARVEST ESTIMATES FOR BIRDS - WAINWRIGHT, YEAR TWO (1)

RESOURCE	CONVERSION FACTOR (2) Usable Weight Per Resource in pounds	COMMUNITY TOTALS (3) NUMBER HARVESTED	COMMUNITY TOTALS (3) USABLE POUNDS HARVESTED	AVERAGE POUNDS HARVESTED (4) PER HOUSEHOLD	AVERAGE POUNDS HARVESTED (4) PER CAPITA	PERCENT OF TOTAL USABLE POUNDS HARVESTED (3)	PERCENT OF WAINWRIGHT HOUSEHOLDS HARVESTING RESOURCE (4)
Total Birds	n/a	n/a	7,214	68.5	17.1	2.1%	57%
Total Geese		1,439	5,426	50.9	12.9	1.5%	45%
White-fronted goose	4.5	730	3,285	30.5	8.8	0.9%	29%
Brant	3.0	700	2,100	20.1	4.0	0.6%	36%
Lesser snow goose	4.5	7	32	0.3	0.1	**	4%
Canada goose	4.5	2	9	0.1	*	**	1%
Total Eiders	1.5	1,097	1,646	16.3	4.0	**	48%
Eider (non-specified)	1.5	3	5	0.1	*	**	1%
Common eider	1.5	29	44	0.4	0.1	**	7%
King eider	1.5	816	1,224	12.2	3.0	0.3%	36%
Spectacled eider	1.5	246	369	3.6	0.9	0.1%	26%
Steller's eider	1.5	3	5	0.1	*	**	3%
Ptarmigan	0.7	196	137	1.2	0.3	**	15%
Total Other Birds		3	6	0.1	*	**	2%
Oldsquaw	1.5	2	3	0.0	*	**	1%
Arctic loon	3.0	1	3	0.0	*	**	1%

(1) Year Two: April 1, 1989 - March 31, 1990.

(2) See Table C-3 for sources of conversion factors.

(3) Community totals and percent of total usable pounds harvested are based on harvest amounts reported by all 119 Wainwright Year Two households for all species.

(4) Per household and per capita means and percent of households harvesting a resource are based only on the 100 core households in the study for the full two years.

* represents less than .1 pound

** represents less than .1 percent

n/a means not applicable

Source: Stephen R. Braund & Associates, 1993

TABLE B-13: BIRD HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR TWO (1)
(Pounds of Usable Resource Product)

SPECIES	1989 April	May	June	July	August	TOTALS ****** Sept.	October	1990 Nov.	Dec.	Jan.	Feb.	March
Total Geese	0	2,567	1,274	165	1,085	336	0	0	0	0	0	0
White-fronted goose	0	2,502	545	72	167	0	0	0	0	0	0	0
Brent	0	60	693	93	918	336	0	0	0	0	0	0
Lesser snow goose	0	5	27	0	0	0	0	0	0	0	0	0
Canada goose	0	0	9	0	0	0	0	0	0	0	0	0
Total Eiders	0	578	714	354	0	0	0	0	0	0	0	0
Eider (non-specified)	0	0	5	0	0	0	0	0	0	0	0	0
Common eider	0	8	35	2	0	0	0	0	0	0	0	0
King eider	0	570	353	302	0	0	0	0	0	0	0	0
Spectacled eider	0	0	320	50	0	0	0	0	0	0	0	0
Stellar's eider	0	0	3	2	0	0	0	0	0	0	0	0
Ptarmigan	14	64	3	0	14	0	7	0	4	10	4	18
Total Other Birds	0	0	3	3	0	0	0	0	0	0	0	0
Oldsquaw	0	0	0	3	0	0	0	0	0	0	0	0
Arctic Loon	0	0	3	0	0	0	0	0	0	0	0	0
All Bird Species	14	3,208	1,993	522	1,099	336	7	0	4	10	4	18

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TABLE B-13, CONTINUED: BIRD HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR TWO (1)
(Pounds of Usable Resource Product)

PERCENTS

SPECIES	1989 April	May	June	July	August	Sept.	October	Nov.	Dec.	1990 Jan.	Feb.	March	
Total Geese	0%	47%	23%	3%	20%	6%	0%	0%	0%	0%	0%	0%	= 100%
White-fronted goose	0%	76%	17%	2%	5%	0%	0%	0%	0%	0%	0%	0%	= 100%
Brant	0%	3%	33%	4%	44%	16%	0%	0%	0%	0%	0%	0%	= 100%
Lesser snow goose	0%	14%	86%	0%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Canada goose	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Total Eiders	0%	35%	43%	22%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Eider (non-specified)	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Common eider	0%	17%	79%	3%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
King eider	0%	47%	29%	25%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Spectacled eider	0%	0%	87%	13%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Stellar's eider	0%	0%	67%	33%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Ptarmigan	10%	47%	2%	0%	10%	0%	5%	0%	3%	7%	3%	13%	= 100%
Total Other Birds	0%	0%	50%	50%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Oldsquaw	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
Arctic Loon	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	= 100%
All Bird Species	0%	44%	28%	7%	15%	5%	0%	0%	0%	0%	0%	0%	= 100%

(1) Based on 119 Year Two households, including partial year households.
Source: Stephen R. Braund & Associates, 1993

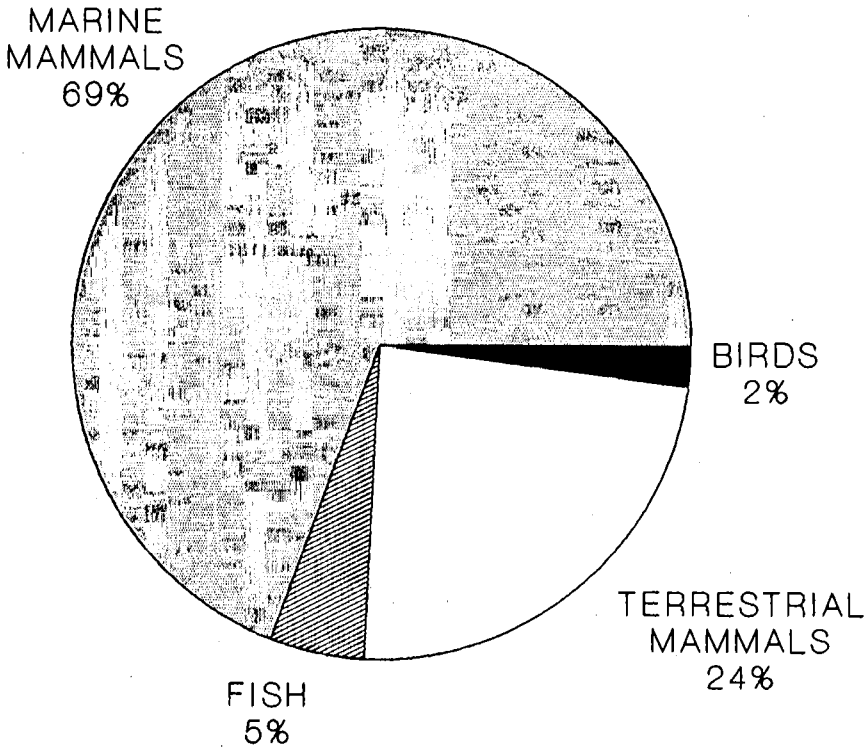
TABLE B-14: BIRD HARVEST BY SPECIES AND MONTH - WAINWRIGHT, YEAR TWO (1)
(Number Harvested)

	1989									1990		
SPECIES	April	May	June	July	August	Sept.	October	Nov.	Dec.	Jan.	Feb.	March
Total Geese	0	577	360	47	343	112	0	0	0	0	0	0
White-fronted goose	0	556	121	16	37	0	0	0	0	0	0	0
Brant	0	20	231	31	306	112	0	0	0	0	0	0
Lesser snow goose	0	1	6	0	0	0	0	0	0	0	0	0
Canada goose	0	0	2	0	0	0	0	0	0	0	0	0
Total Eiders	0	385	497	215	0	0	0	0	0	0	0	0
Eider (non-specified)	0	0	3	0	0	0	0	0	0	0	0	0
Common eider	0	5	23	1	0	0	0	0	0	0	0	0
King eider	0	380	235	201	0	0	0	0	0	0	0	0
Spectacled eider	0	0	213	33	0	0	0	0	0	0	0	0
Steller's eider	0	0	2	1	0	0	0	0	0	0	0	0
Ptarmigan	20	92	4	0	20	0	10	0	5	14	6	25
Total Other Birds	0	0	1	2	0	0	0	0	0	0	0	0
Oldsquaw	0	0	0	2	0	0	0	0	0	0	0	0
Arctic Loon	0	0	1	0	0	0	0	0	0	0	0	0

(1) Based on 119 Year Two households, including partial year households.

Source: Stephen R. Braund & Associates, 1993

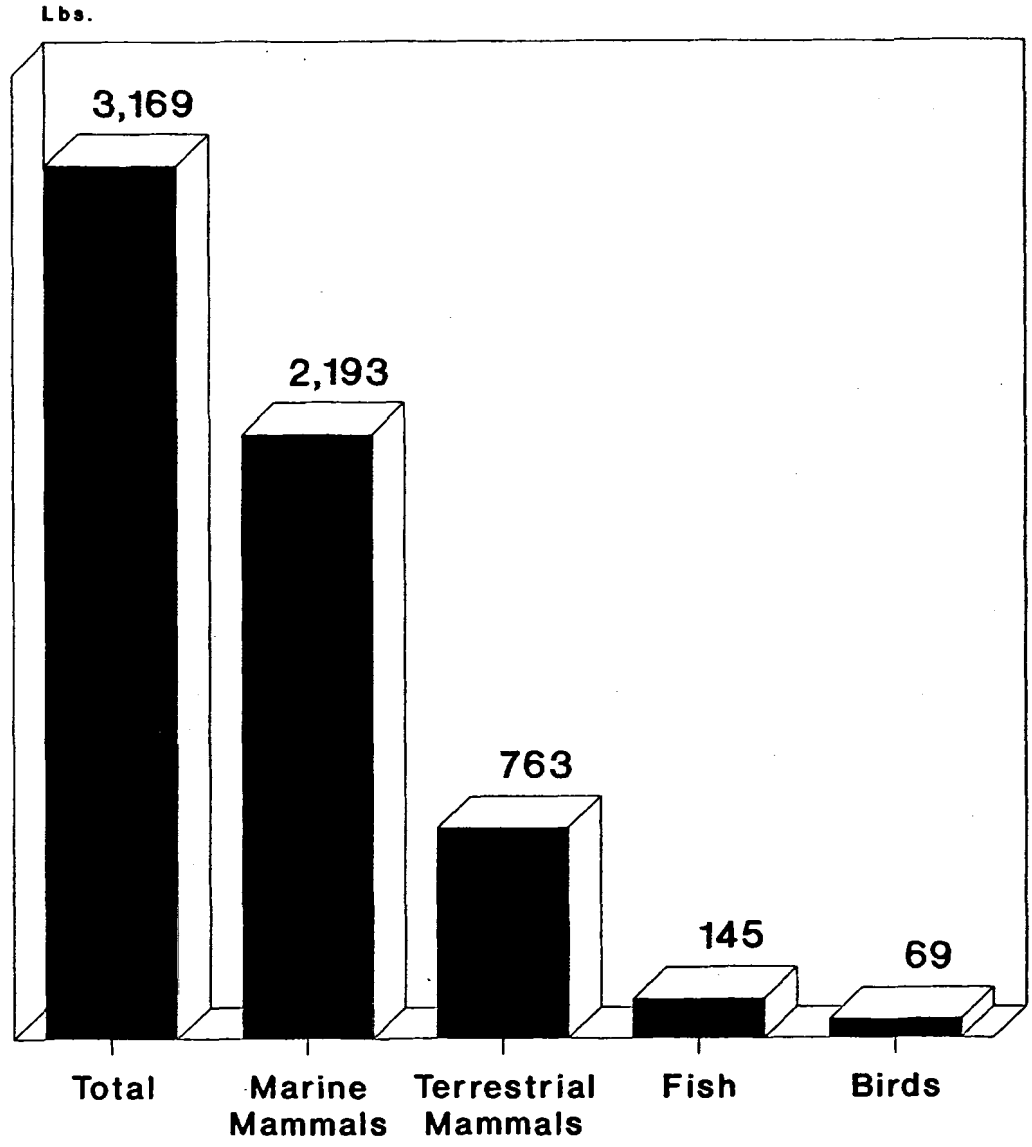
Figure B-1: Harvest Percentages by Major Resource Category
Wainwright Year Two
(Usable Pounds Harvested)



Based on harvests of all 119 households, including partial year households.
Year Two: April 1, 1989 - March 31, 1990
Source: Stephen R. Braund & Assoc., 1993

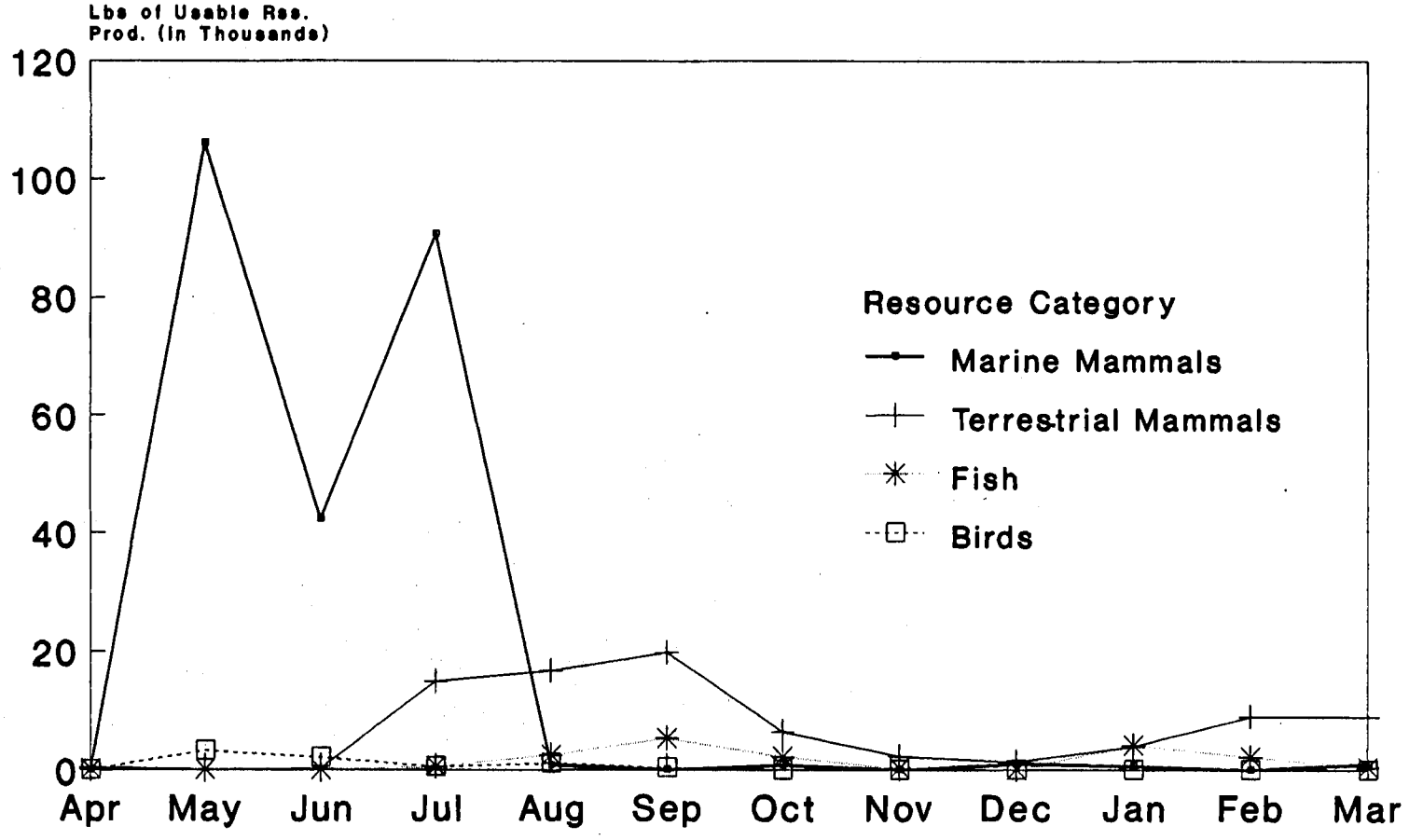
Figure B-2: Harvest Amounts By Major Resource Category Wainwright, Year Two

(Mean Usable Pounds Per Household)



Based on 100 core households in the study for both years.
Year Two: April 1, 1989 - March 31, 1990
Source: Stephen R. Braund & Assoc., 1993

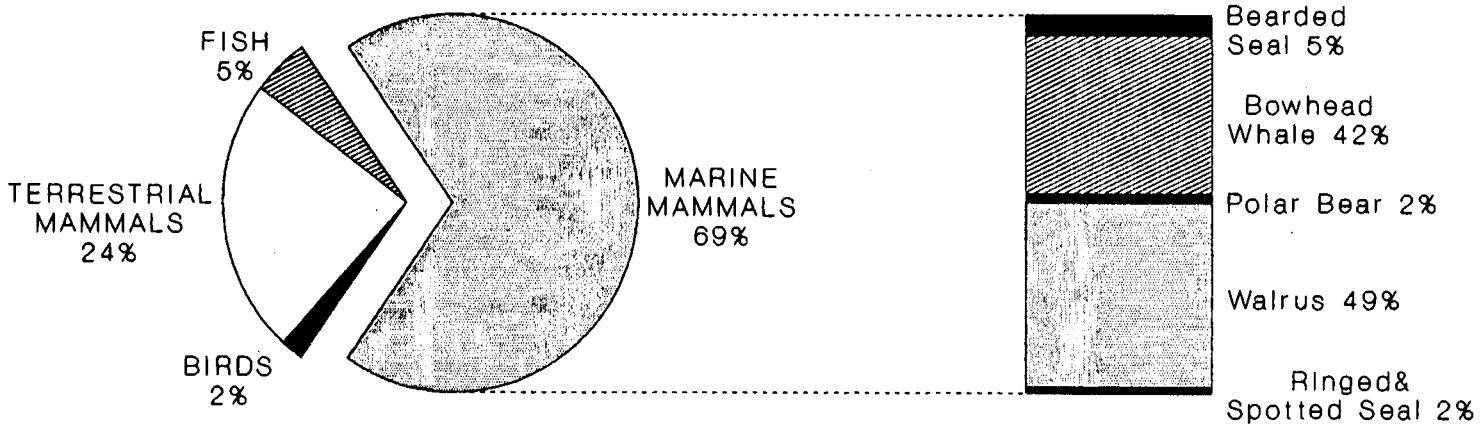
Figure B-3: Monthly Harvest by Major Resource Category
Wainwright, Year Two



Based on 119 Year Two households, including partial year households.
Year Two: April 1, 1989 - March 31, 1990
Source: Stephen R. Braund & Assoc., 1993

Figure B-4: Harvest Percentages of Marine Mammals, Wainwright Year Two

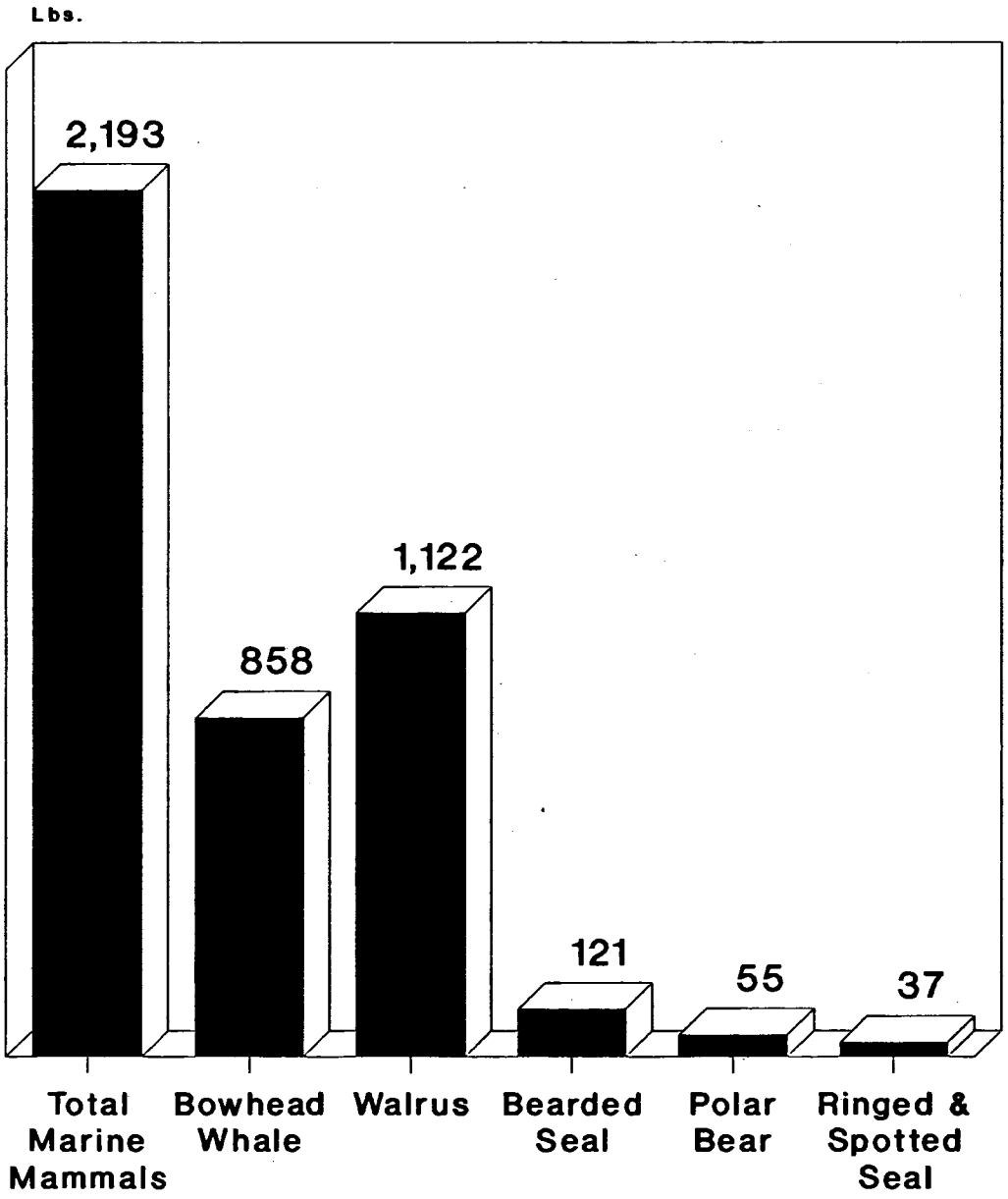
(Usable Pounds Harvested)



Based on harvests of 119 households, including partial year households.
Year Two: April 1, 1989 - March 31, 1990

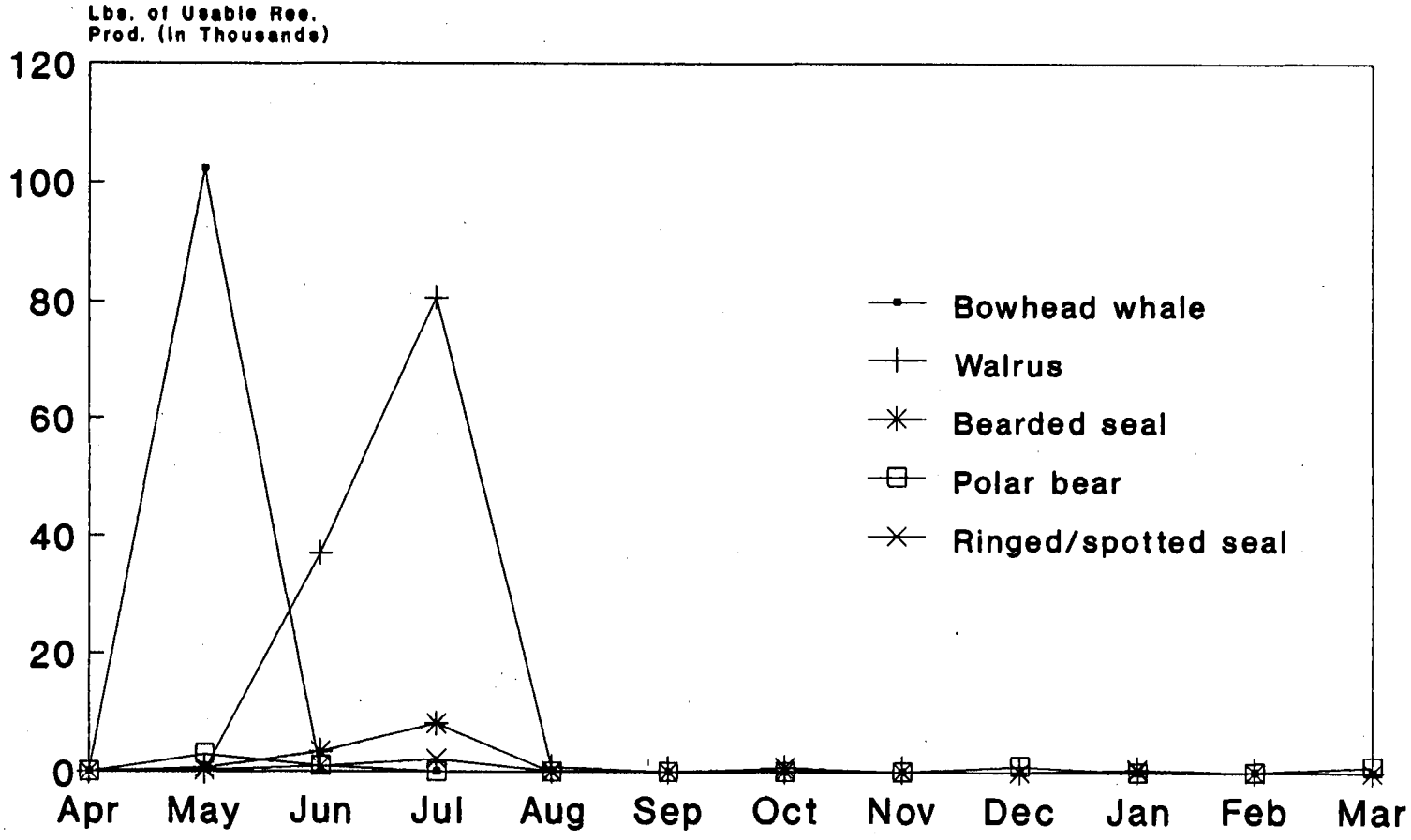
Source: Stephen R. Braund & Assoc., 1993

Figure B-5: Harvest of Marine Mammals Wainwright, Year Two
(Mean Usable Pounds Per Household)



Based on 100 core households in the study for both years.
Year Two: April 1, 1989 - March 31, 1990
Source: Stephen R. Braund & Assoc., 1993

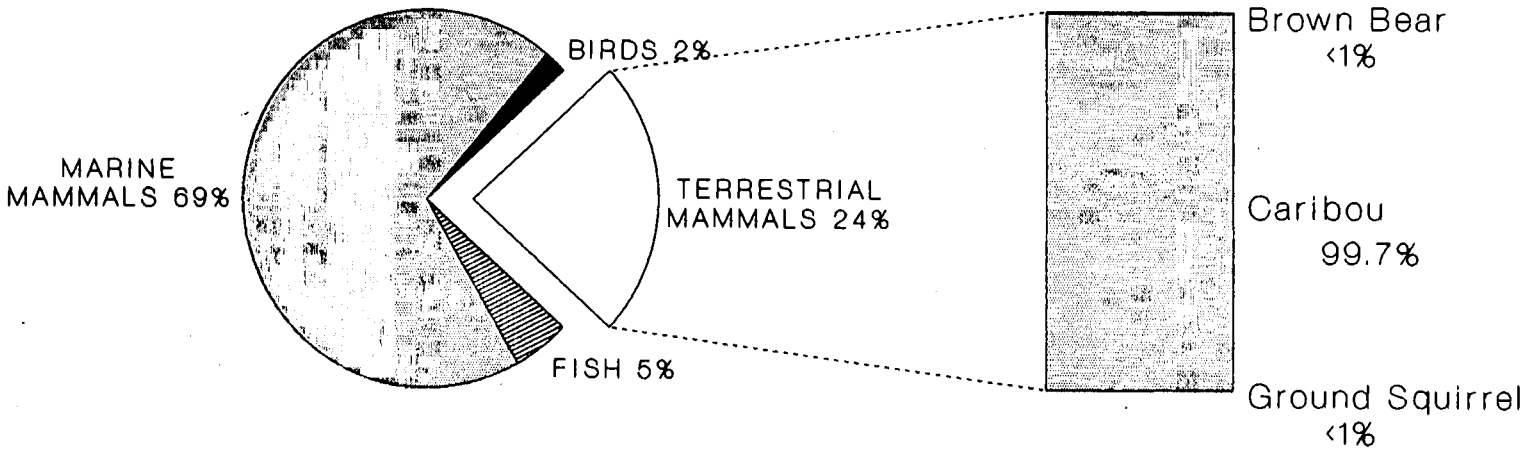
Figure B-6: Monthly Harvest of Marine Mammals
Wainwright, Year Two



Based on 119 Year Two households, including partial year households.
Year Two: April 1, 1989 - March 31, 1990

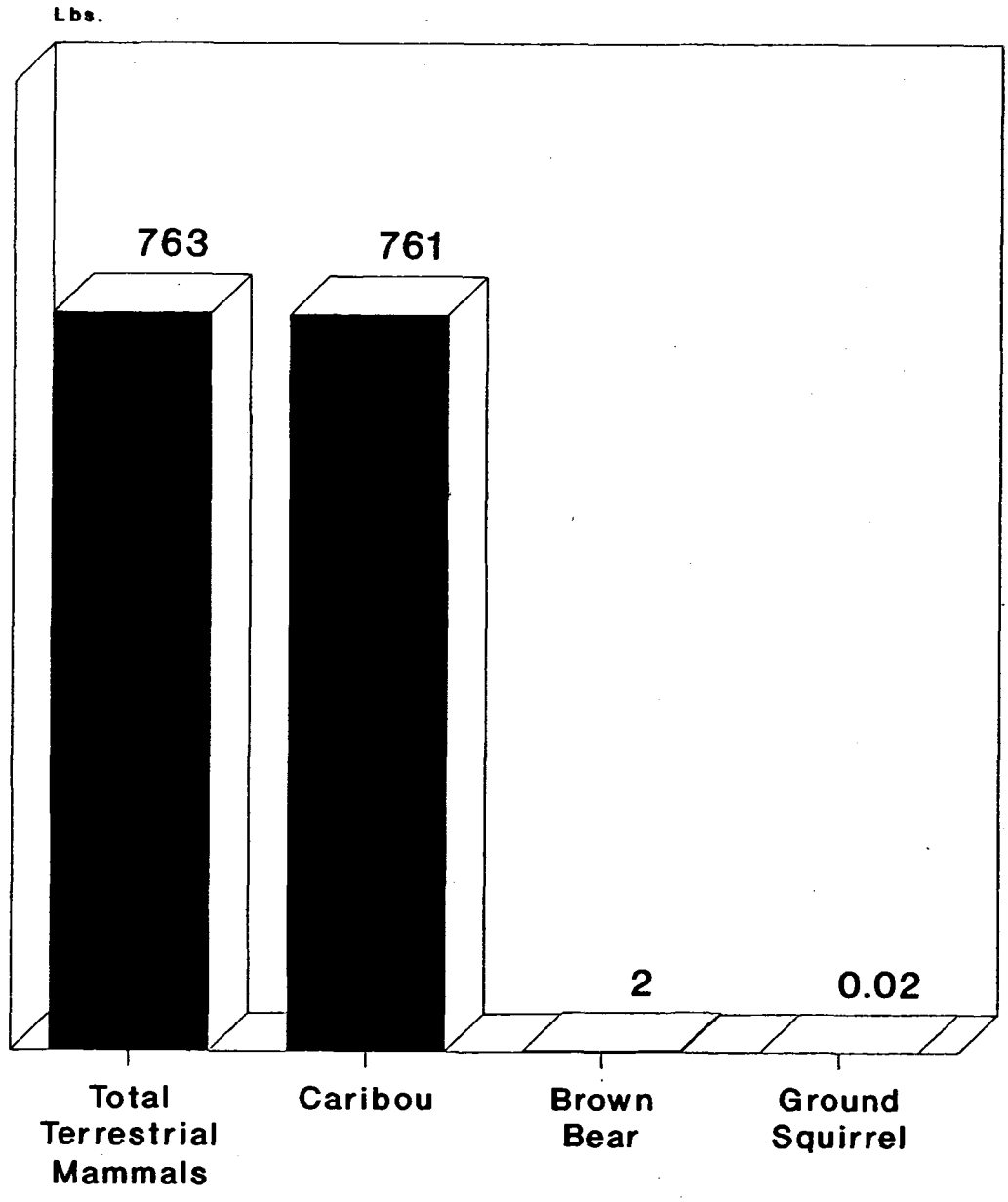
Source: Stephen R. Braund & Assoc., 1993

Figure B-7: Harvest Percentages of Terrestrial Mammals
Wainwright Year Two
(Usable Pounds Harvested)



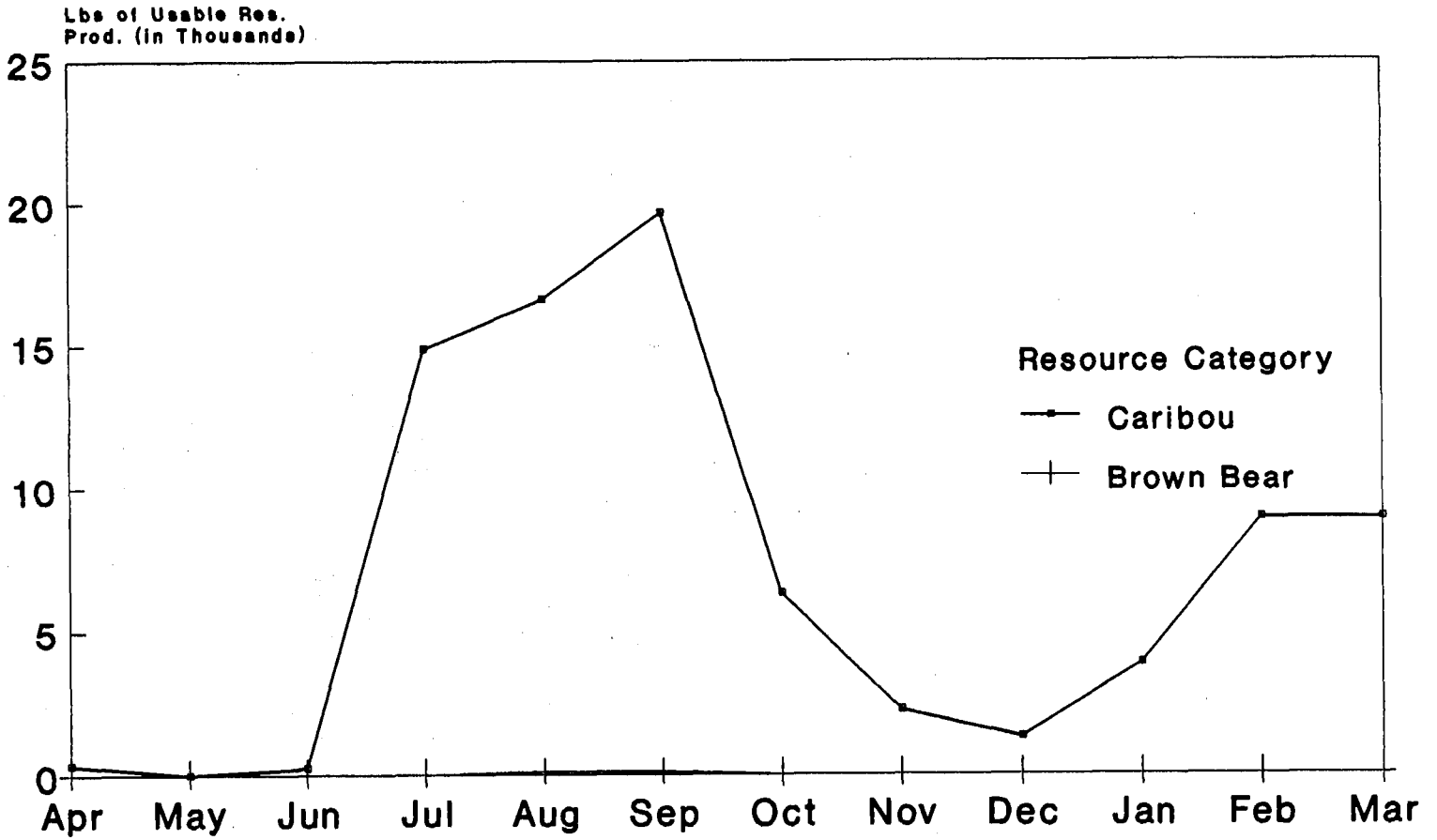
Based on harvests of all 119 households, including partial year households.
Year Two: April 1, 1989 - March 31, 1990
Source: Stephen R. Braund & Assoc., 1993

Figure B-8: Harvest of Terrestrial Mammals - Wainwright, Year Two
(Mean Usable Pounds Per Household)



Based on 100 core households in the study for both years.
Year Two: April 1, 1989 - March 31, 1990
Source: Stephen R. Braund & Assoc., 1993

Figure B-9: Monthly Harvest of Terrestrial Mammals
Wainwright, Year Two

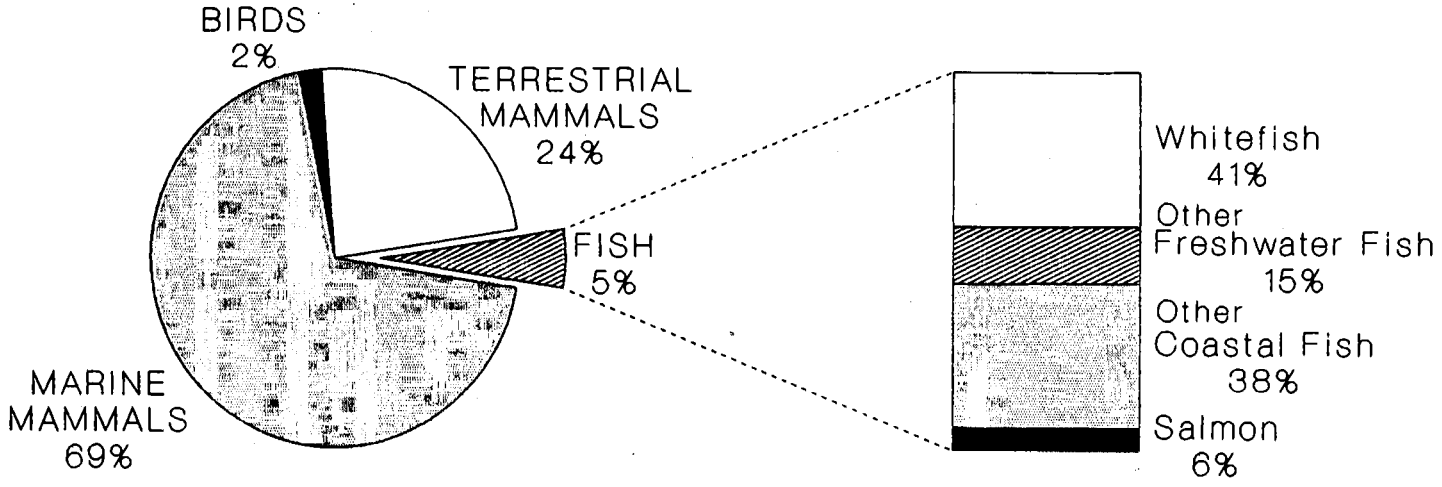


Note: Three edible pounds of ground squirrel harvested are not shown on this graph due to scale.

Based on 119 Year Two households, including partial year households.
Year Two: April 1, 1989 - March 31, 1990

Source: Stephen R. Braund & Assoc., 1993

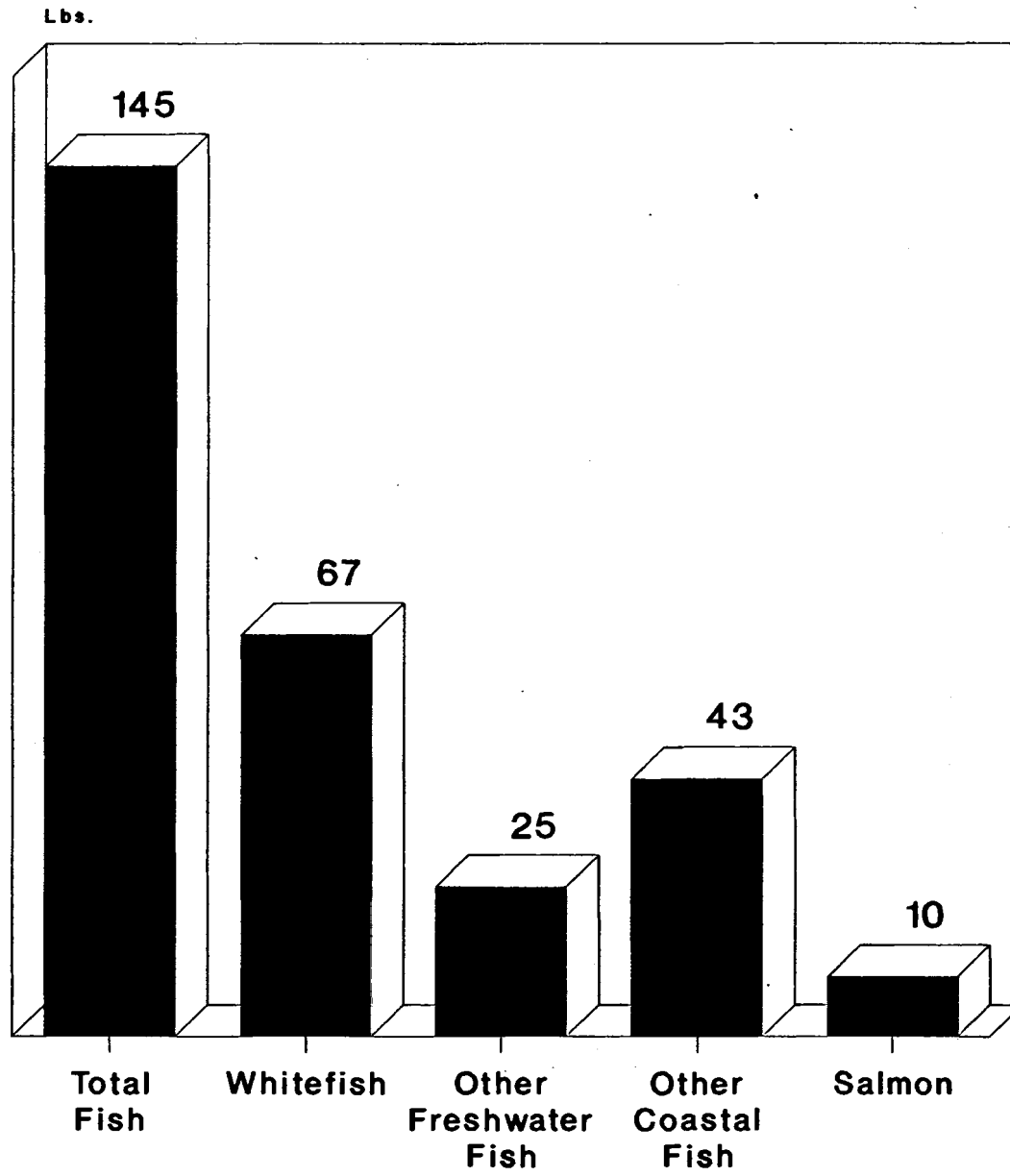
Figure B-10: Harvest Percentages of Fish
Wainwright Year Two
(Usable Pounds Harvested)



Based on harvests of all 119 households, including partial year households.
Year Two: April 1, 1989 - March 31, 1990

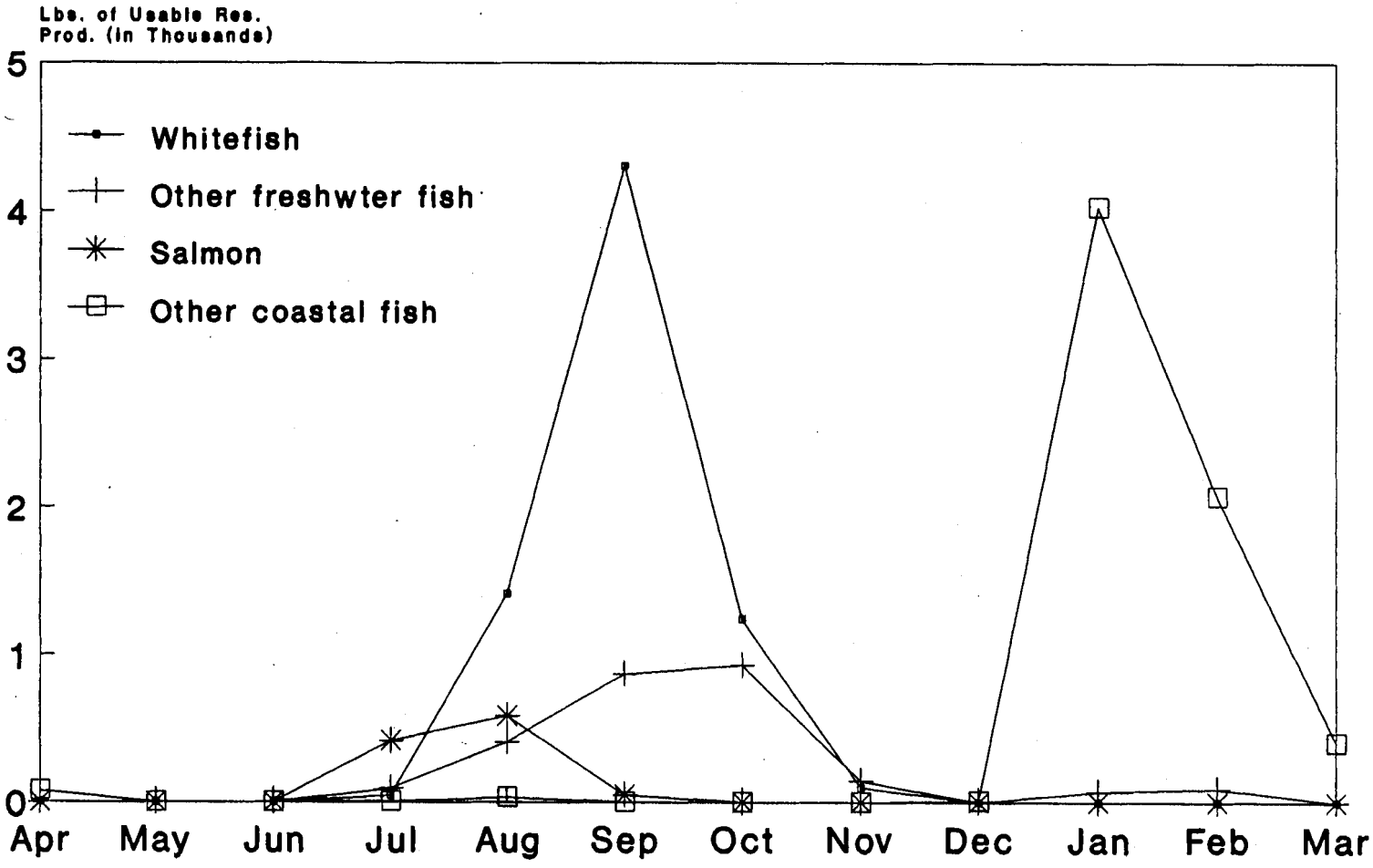
Source: Stephen R. Braund & Assoc., 1993

Figure B-11: Harvest of Fish Wainwright, Year Two
(Mean Usable Pounds Per Household)



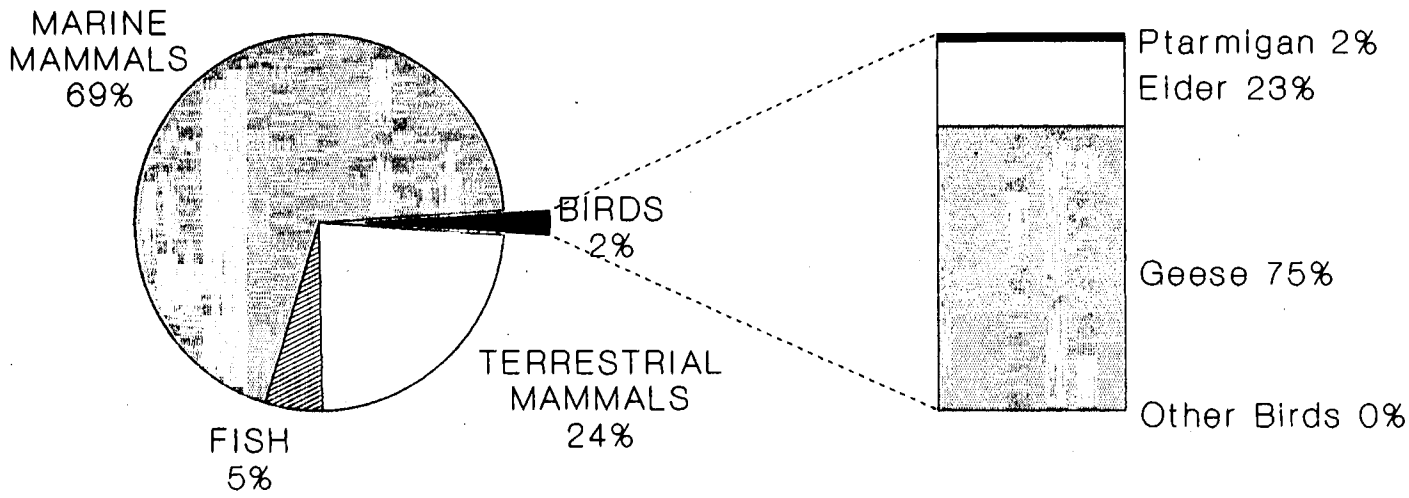
Based on 100 core households in the study for both years.
Year Two: April 1, 1989 - March 31, 1990
Source: Stephen R. Braund & Assoc., 1993

Figure B-12: Monthly Harvest of Fish
Wainwright, Year Two



Based on 119 Year Two households, including partial year households.
Year Two: April 1, 1989 - March 31, 1990
Source: Stephen R. Braund & Assoc., 1993

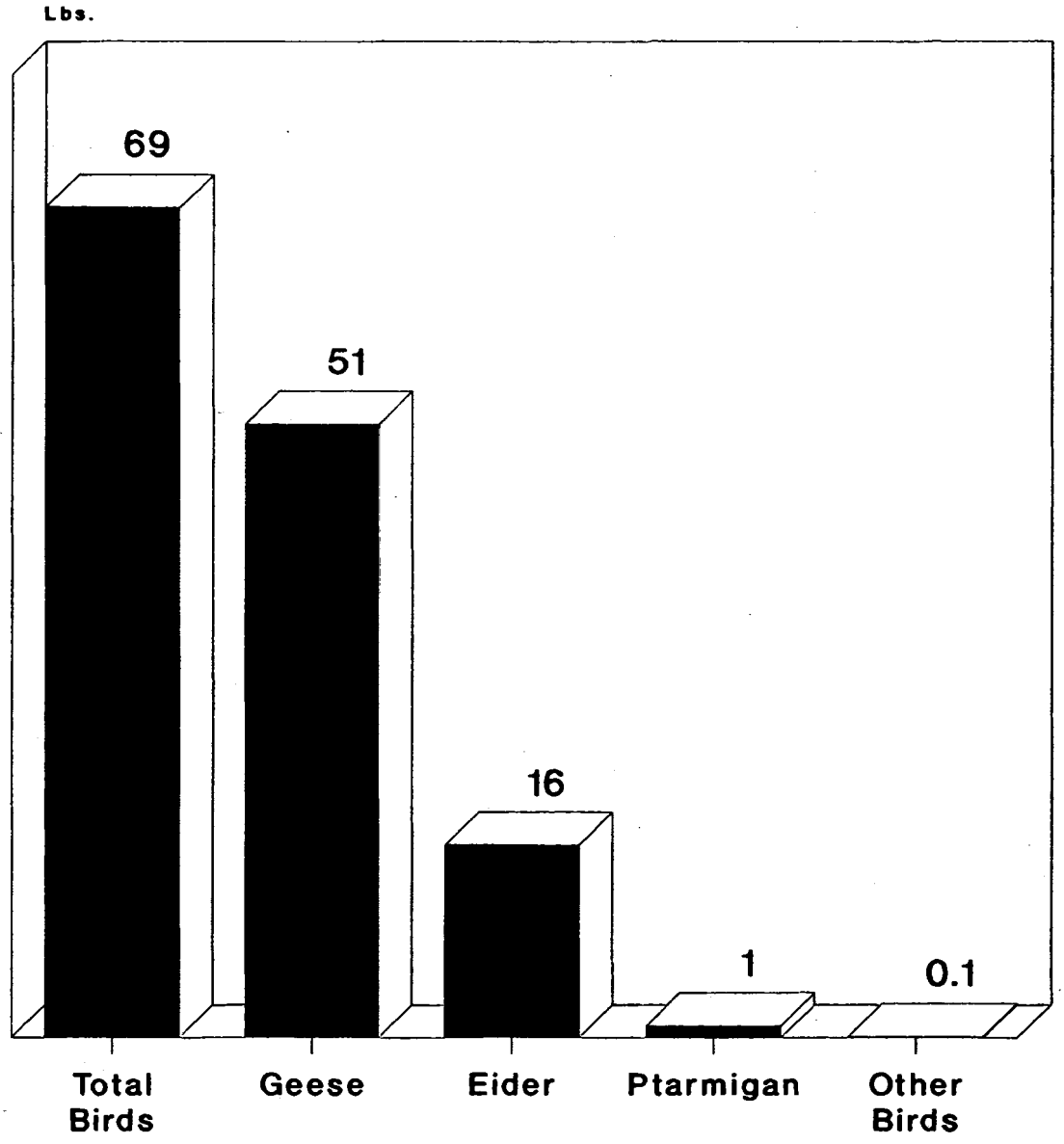
Figure B-13: Harvest Percentage of Birds
Wainwright Year Two
(Usable Pounds Harvested)



Based on harvests of all 119 households, including partial year households.
Year Two: April 1, 1989 - March 31, 1990

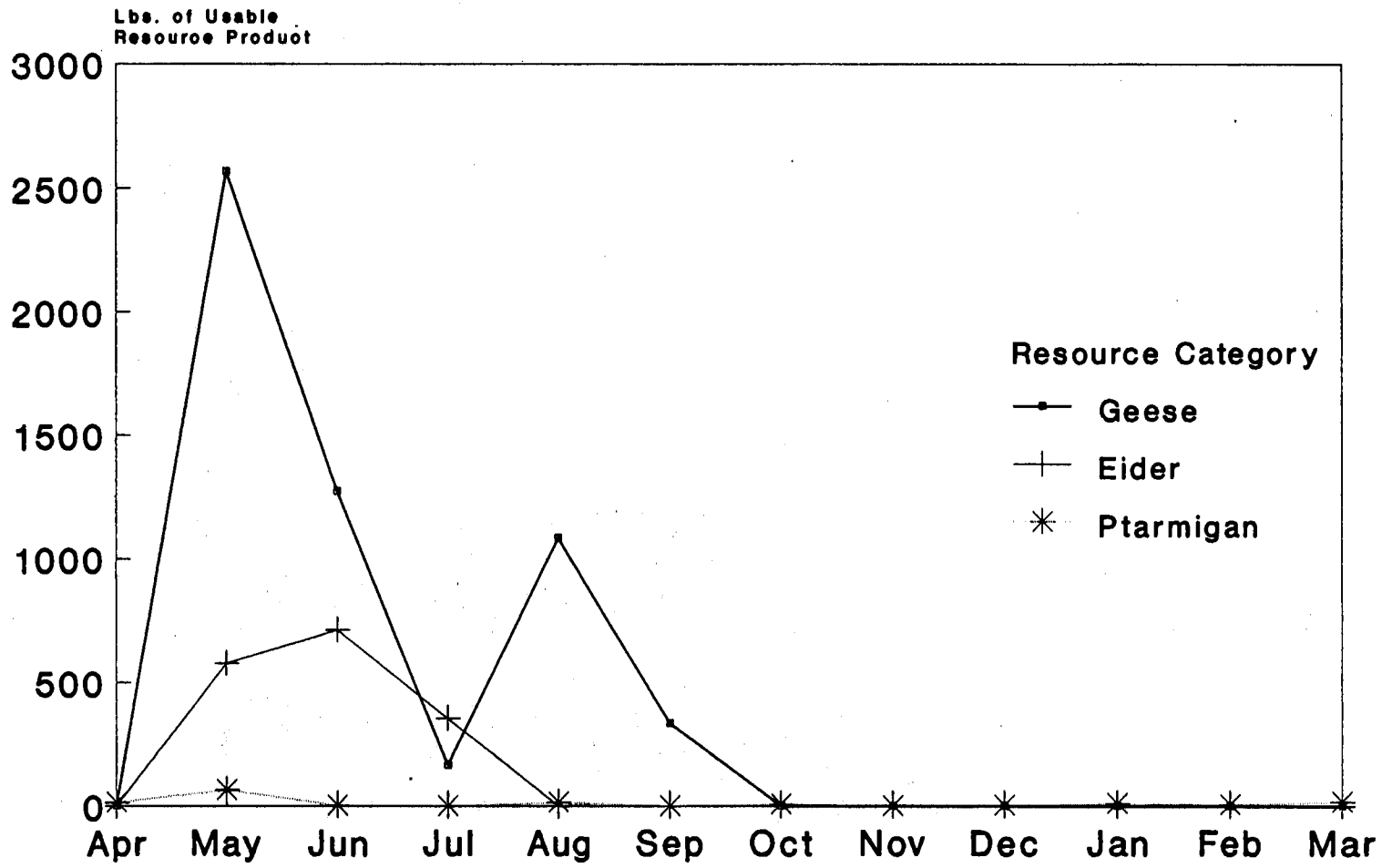
Source: Stephen R. Braund & Assoc., 1993

Figure B-14: Harvest of Birds Wainwright, Year Two
(Mean Usable Pounds Per Households)



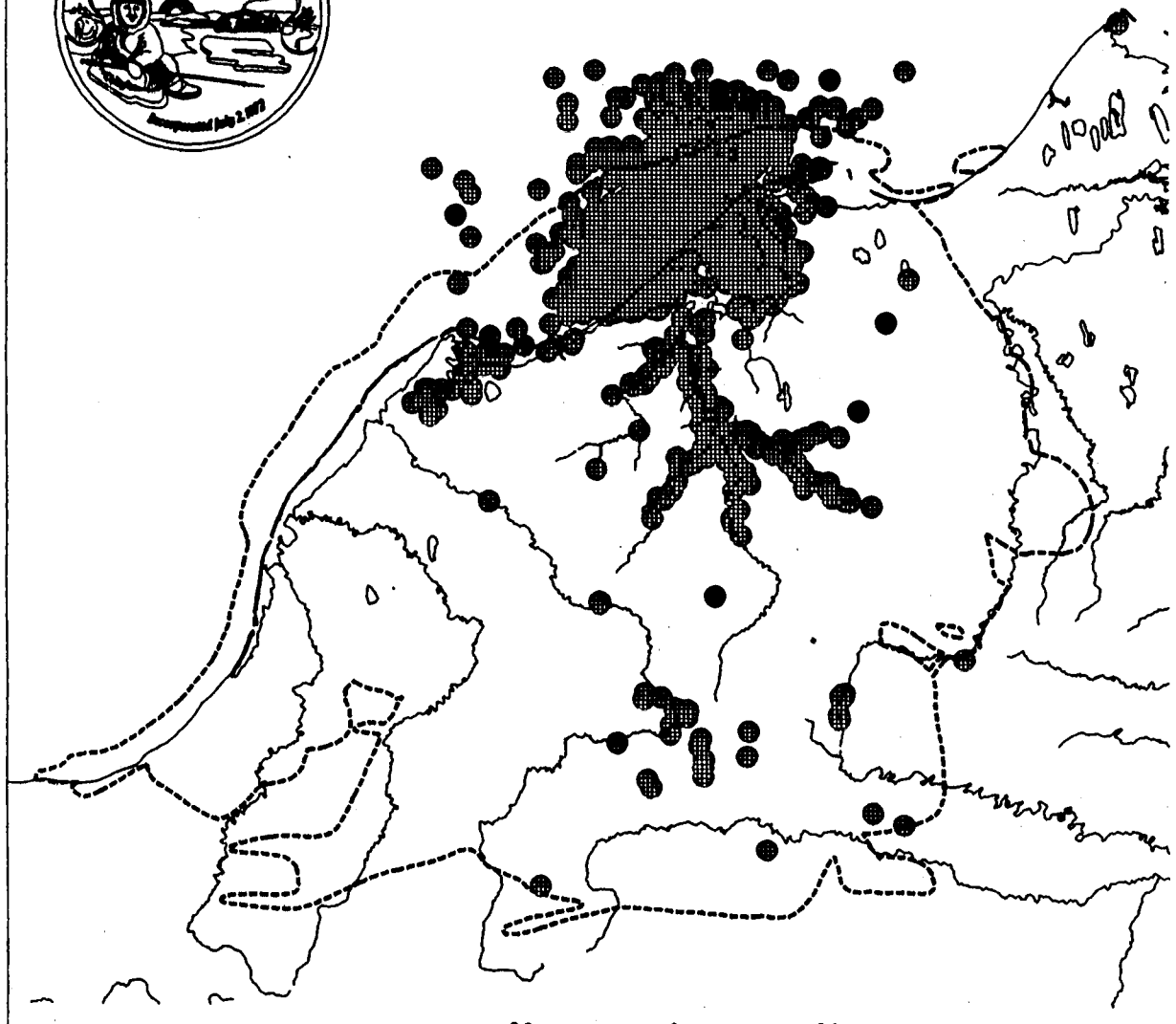
Based on 100 core households in the study for both years.
Year Two: April 1, 1989 - March 31, 1990
Source: Stephen R. Braund & Assoc., 1993

Figure B-15: Monthly Harvest of Birds
Wainwright, Year Two



Based on 119 Year Two households, including partial year households.
Year Two: April 1, 1989 - March 31, 1990
Source: Stephen R. Braund & Assoc., 1993

MAP B-1
NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT
SUBSISTENCE HARVEST SITES, YEAR TWO



This map depicts approximate subsistence harvest sites for the time period April 1, 1989 through March 31, 1990: Year Two of the Wainwright North Slope Subsistence Study. Harvest sites shown were used by approximately 119 Wainwright households. All harvest sites are depicted with a 2 mile buffer. Additional areas were used by Wainwright residents not included in the study. Lifetime-community harvest areas, collected in the form of map biographies from 14 households (Pedersen 1979), are also illustrated.

Source: Contemporary subsistence use information gathered and compiled by Stephen R. Braund and Associates (SRB&A). SRB&A is under contract to the Minerals Management Service, U.S. Department of Interior, and received assistance in the study from the North Slope Borough Planning and Wildlife Management Departments, Barrow, Alaska.

LEGEND INFORMATION

Lifetime community land use (Pedersen 1979).

All Species Harvested

Seals, bowhead whale, polar bear, walrus, caribou, brown bear, fox, wolf, wolverine, ermine, river otter, ground squirrel, fish, eiders, other ducks, geese, loons, ptarmigan, berries, water

N

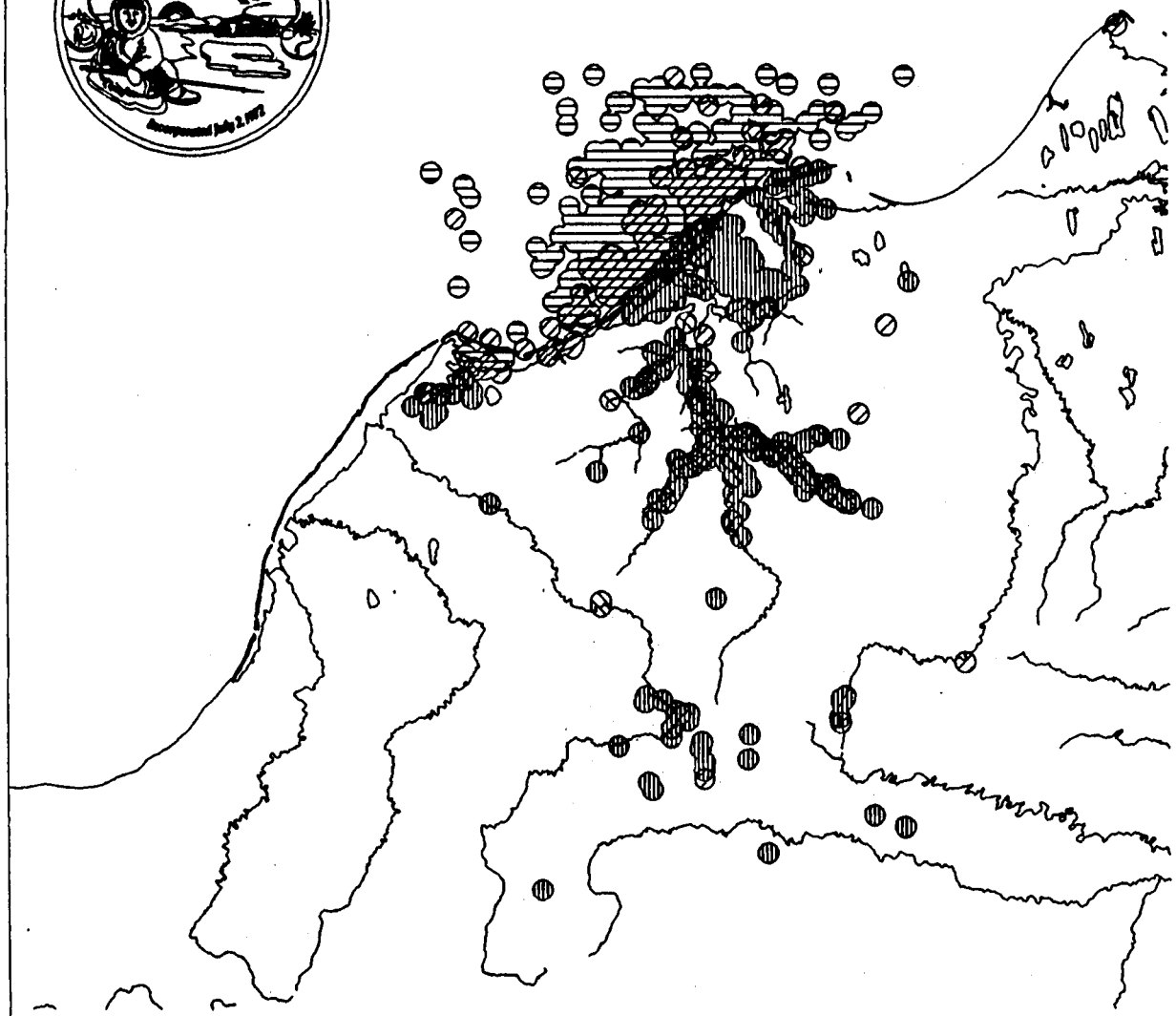
30 0 30 60 90 120

MILES

Map Production: North Slope Borough GIS

Date: April 11, 1991

MAP B-2
NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT
SUBSISTENCE HARVEST SITES BY MAJOR RESOURCE CATEGORY, YEAR TWO



This map depicts approximate subsistence harvest sites for the time period April 1, 1989 through March 31, 1990: Year Two of the Wainwright North Slope Subsistence Study. Harvest sites shown were used by approximately 119 Wainwright households. All harvest sites are depicted with a 2 mile buffer. Additional areas were used by Wainwright residents not included in the study.

Source: Contemporary subsistence use information gathered and compiled by Stephen R. Braund and Associates (SRB&A). SRB&A is under contract to the Minerals Management Service, U.S. Department of Interior, and received assistance in the study from the North Slope Borough Planning and Wildlife Management Departments, Barrow, Alaska.

LEGEND INFORMATION

- Marine Mammals: Bowhead whale, seals, walrus, polar bear
- Terrestrial Mammals: Caribou, brown bear, fox, wolf, wolverine, ermine, river otter, ground squirrel
- Fish: Whitefish, other freshwater fish, salmon, other coastal fish
- Birds: Eiders, other ducks, geese, ptarmigan, loons

N

30 0 30 60 90 120

MILES

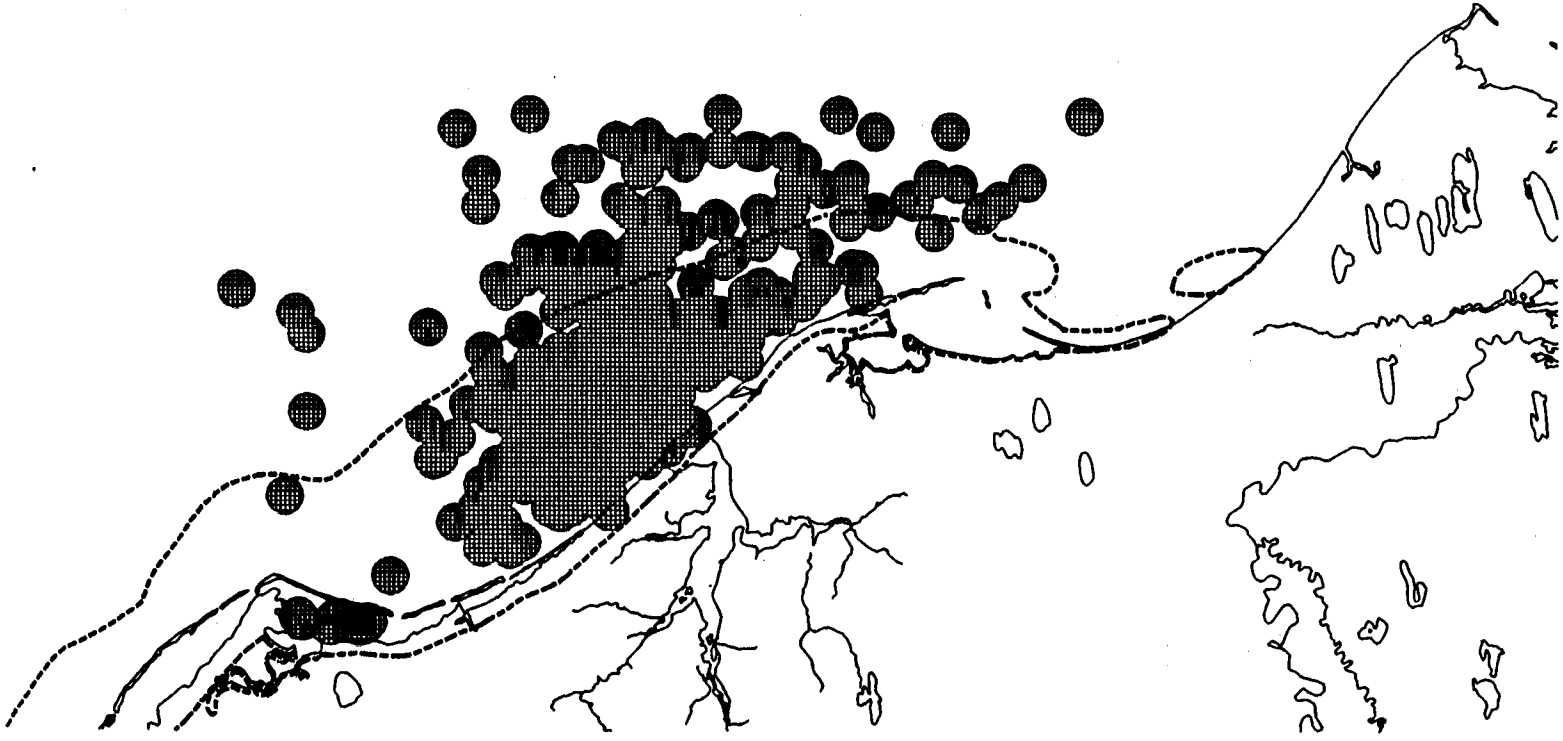
Map Production: North Slope Borough GIS.

Date: April 15, 1991

MAP B-3
NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT
MARINE MAMMAL HARVEST SITES - ALL SPECIES, YEAR TWO

This map depicts approximate subsistence harvest sites for the time period April 1, 1989 through March 31, 1990: Year Two of the Wainwright North Slope Subsistence Study. Harvest sites shown were used by approximately 119 Wainwright households. All harvest sites are depicted with a 2 mile buffer. Additional areas were used by Wainwright residents not included in the study. Lifetime-community harvest areas, collected in the form of map biographies from 14 households (Pedersen 1979), are also illustrated.

Source: Contemporary subsistence use information gathered and compiled by Stephen R. Braund and Associates (SRB&A). SRB&A is under contract to the Minerals Management Service, U.S. Department of Interior, and received assistance in the study from the North Slope Borough Planning and Wildlife Management Departments, Barrow, Alaska.



LEGEND INFORMATION

- Lifetime community land use (Pedersen 1979).
- Marine Mammals
  - Bearded seal
  - Ringed seal
  - Spotted seal
  - Bowhead whale
  - Walrus
  - Polar bear

20 0 20 40 60 80

MILES

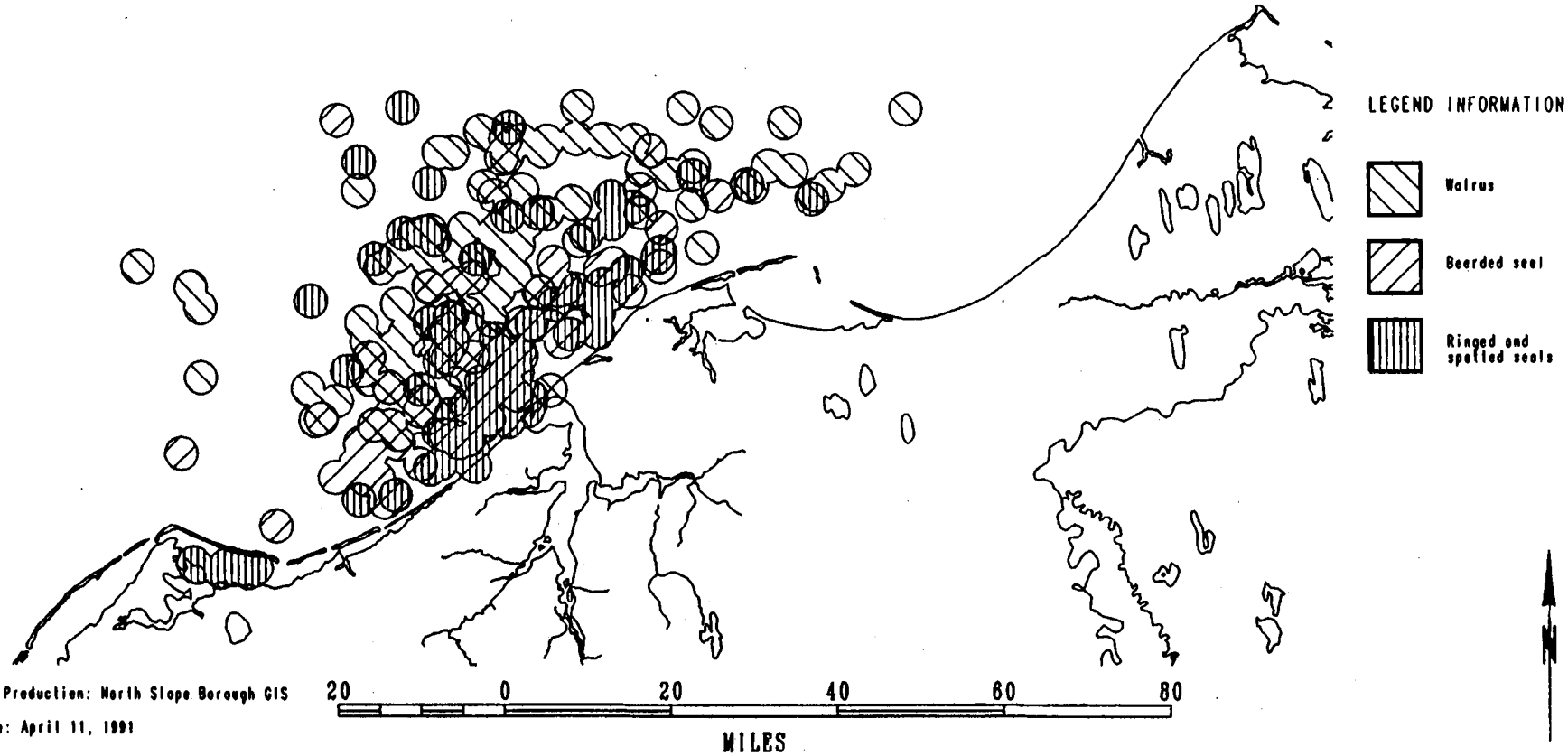
Map Production: North Slope Borough GIS

Date: April 11, 1991

MAP B-4
NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT
MARINE MAMMAL HARVEST SITES BY SPECIES, YEAR TWO: WALRUS AND SEALS

This map depicts approximate subsistence harvest sites for the time period April 1, 1989 through March 31, 1990: Year Two of the Wainwright North Slope Subsistence Study. Harvest sites shown were used by approximately 119 Wainwright households. All harvest sites are depicted with a 2 mile buffer. Additional areas were used by Wainwright residents not included in the study.

Source: Contemporary subsistence use information gathered and compiled by Stephen R. Braund and Associates (SRB&A). SRB&A is under contract to the Minerals Management Service, U.S. Department of Interior, and received assistance in the study from the North Slope Borough Planning and Wildlife Management Departments, Barrow, Alaska.



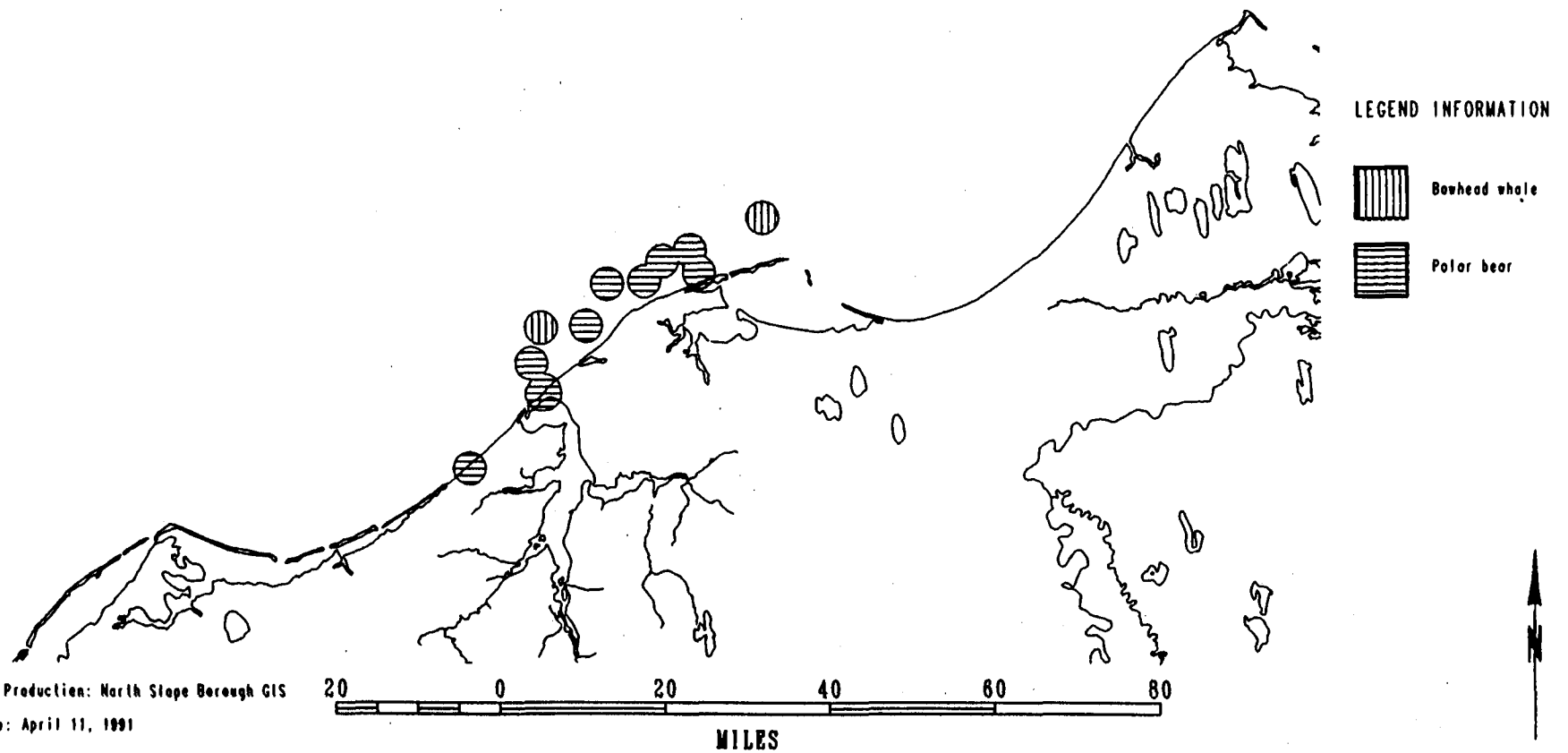
Map Production: North Slope Borough GIS

Date: April 11, 1991

MAP B-5
NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT
MARINE MAMMAL HARVEST SITES BY SPECIES, YEAR TWO: WHALE AND POLAR BEAR

This map depicts approximate subsistence harvest sites for the time period April 1, 1989 through March 31, 1990: Year Two of the Wainwright North Slope Subsistence Study. Harvest sites shown were used by approximately 119 Wainwright households. All harvest sites are depicted with a 2 mile buffer. Additional areas were used by Wainwright residents not included in the study.

Source: Contemporary subsistence use information gathered and compiled by Stephen R. Braund and Associates (SRB&A). SRB&A is under contract to the Minerals Management Service, U.S. Department of Interior, and received assistance in the study from the North Slope Borough Planning and Wildlife Management Departments, Barrow, Alaska.



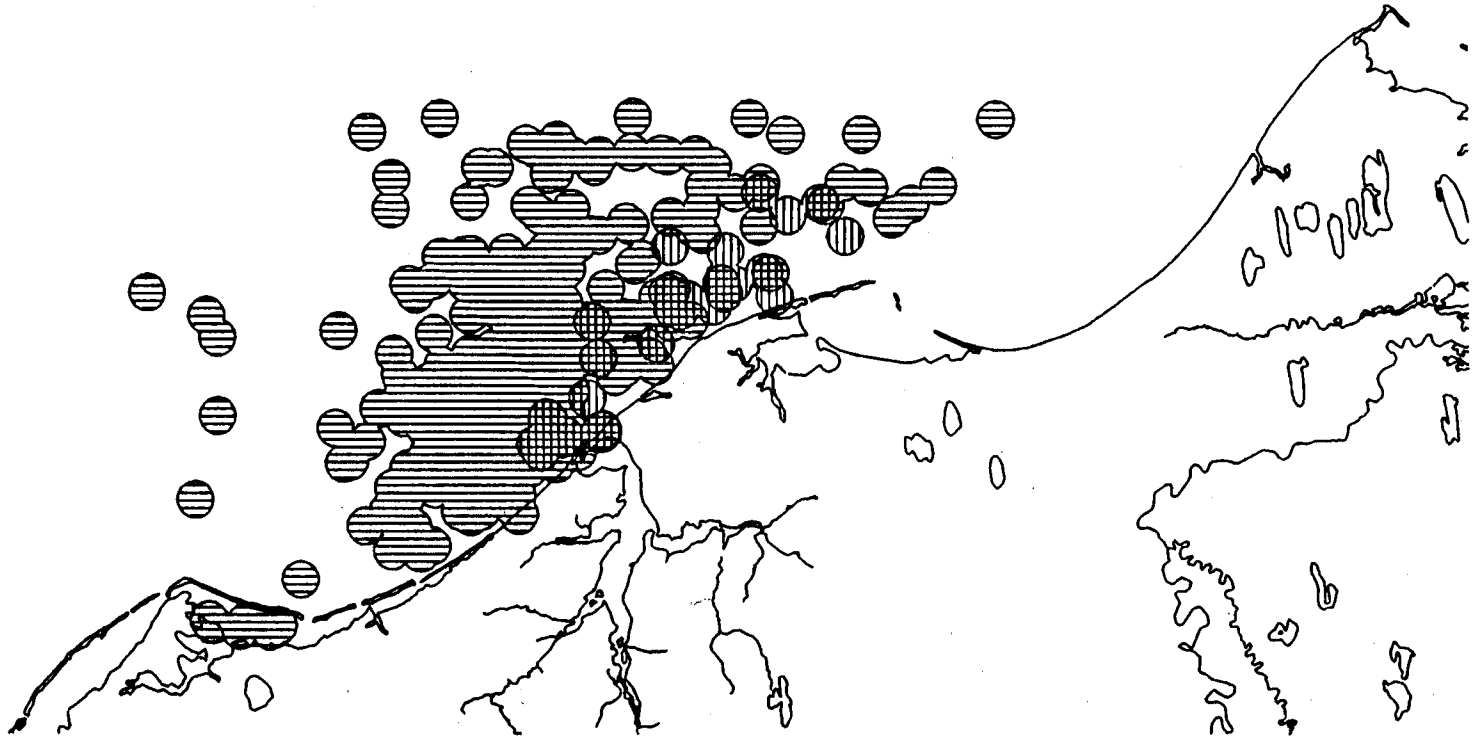
Map Production: North Slope Borough GIS

Date: April 11, 1991

MAP B-6
NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT
MARINE MAMMAL HARVEST SITES BY SEASON, YEAR TWO

This map depicts approximate subsistence harvest sites for the time period April 1, 1989 through March 31, 1990: Year Two of the Wainwright North Slope Subsistence Study. Harvest sites shown were used by approximately 119 Wainwright households. All harvest sites are depicted with a 2 mile buffer. Additional areas were used by Wainwright residents not included in the study.

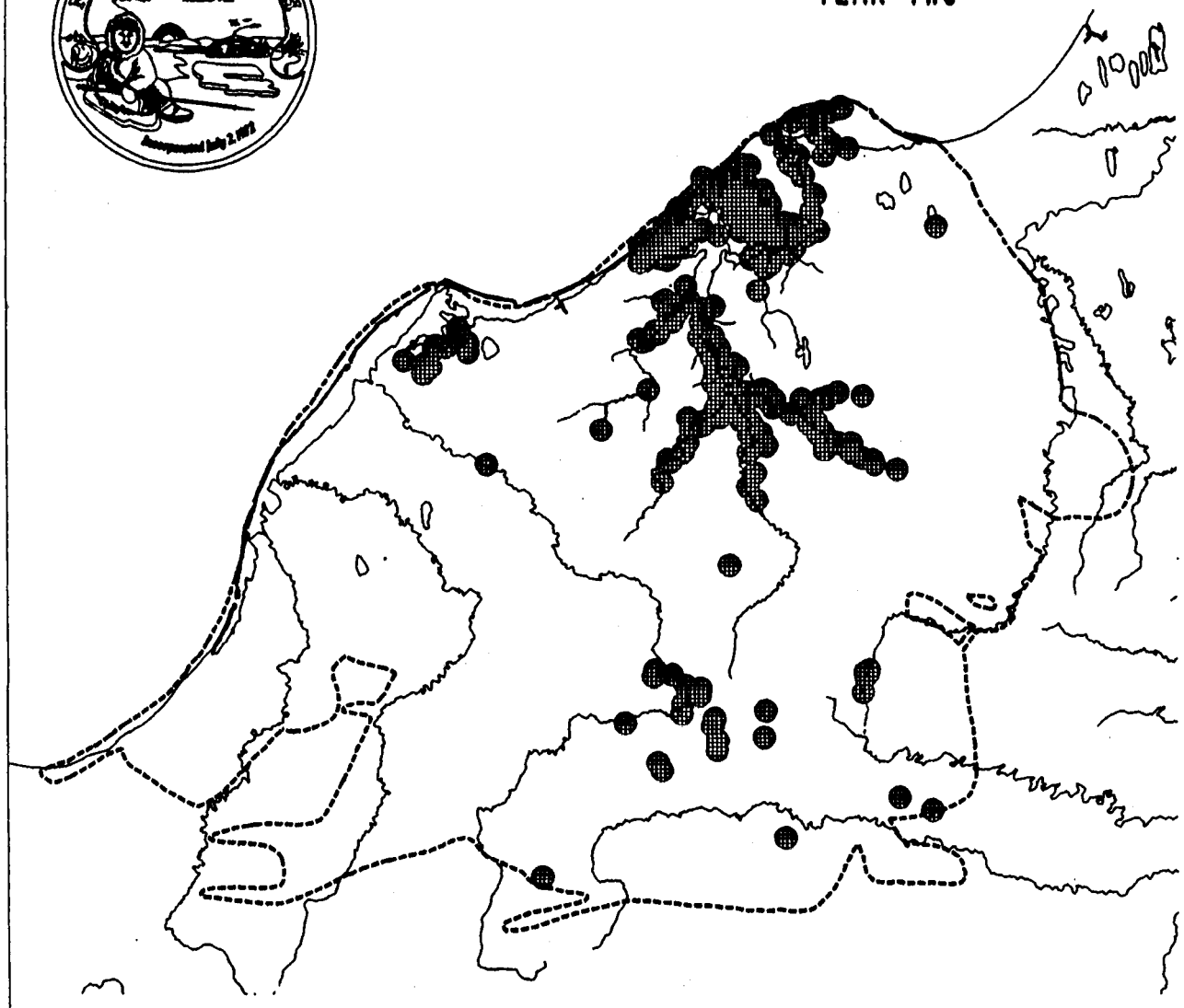
Source: Contemporary subsistence use information gathered and compiled by Stephen R. Braund and Associates (SRB&A). SRB&A is under contract to the Minerals Management Service, U.S. Department of Interior, and received assistance in the study from the North Slope Borough Planning and Wildlife Management Departments, Barrow, Alaska.



Map Production: North Slope Borough GIS

Date: April 11, 1991

MAP B-7
NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT
TERRESTRIAL MAMMAL HARVEST SITES - ALL SPECIES
YEAR TWO



This map depicts approximate subsistence harvest sites for the time period April 1, 1989 through March 31, 1990: Year Two of the Wainwright North Slope Subsistence Study. Harvest sites shown were used by approximately 119 Wainwright households. All harvest sites are depicted with a 2 mile buffer. Additional areas were used by Wainwright residents not included in the study. Lifetime-community harvest areas, collected in the form of map biographies from 14 households (Pedersen 1979), are also illustrated.

Source: Contemporary subsistence use information gathered and compiled by Stephen R. Braund and Associates (SRB&A). SRB&A is under contract to the Minerals Management Service, U.S. Department of Interior, and received assistance in the study from the North Slope Borough Planning and Wildlife Management Departments, Barrow, Alaska.

LEGEND INFORMATION

Lifetime community land use (Pedersen 1979).

Terrestrial Mammals
- Caribou
- Brown bear
- Fox
- Wolf
- Wolverine
- Ermine
- River otter
- Ground squirrel

N

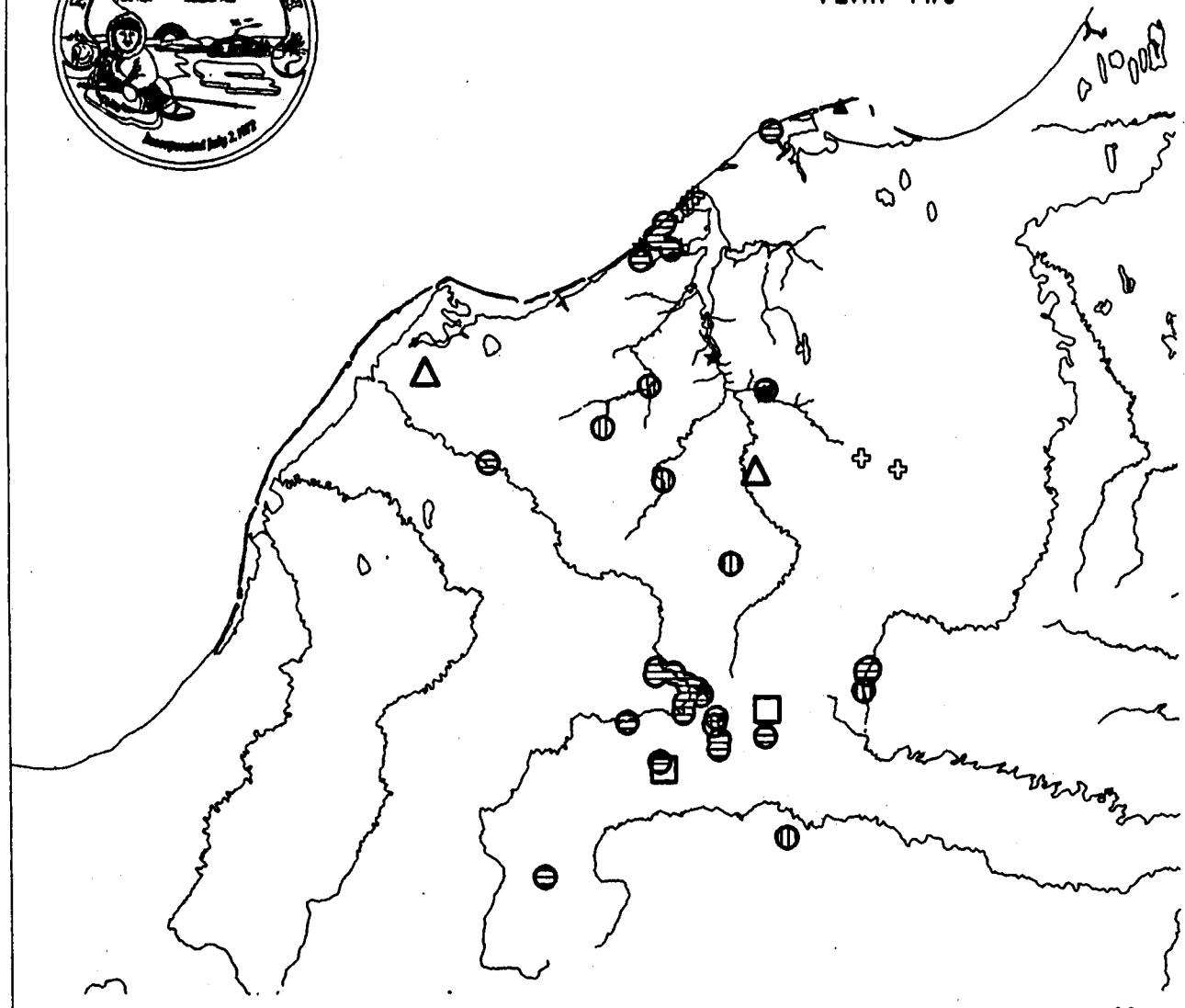
30 0 30 60 90 120

MILES

Map Production: North Slope Borough GIS

Date: April 11, 1991

MAP B-8
NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT
TERRESTRIAL MAMMAL HARVEST SITES BY SPECIES (EXCLUDING CARIBOU), YEAR TWO



This map depicts approximate subsistence harvest sites for the time period April 1, 1989 through March 31, 1990: Year Two of the Wainwright North Slope Subsistence Study. Harvest sites shown were used by approximately 119 Wainwright households. All harvest sites are depicted with a 2 mile buffer. Additional areas were used by Wainwright residents not included in the study.

Source: Contemporary subsistence use information gathered and compiled by Stephen R. Braund and Associates (SRB&A). SRB&A is under contract to the Minerals Management Service, U.S. Department of Interior, and received assistance in the study from the North Slope Borough Planning and Wildlife Management Departments, Barrow, Alaska.

LEGEND INFORMATION

- Fox
  - Arctic
  - Red
- Wolverine
- Brown bear
- Wolf
- Ermine
- River otter
- Ground squirrel

30 0 30 60 90 120

MILES

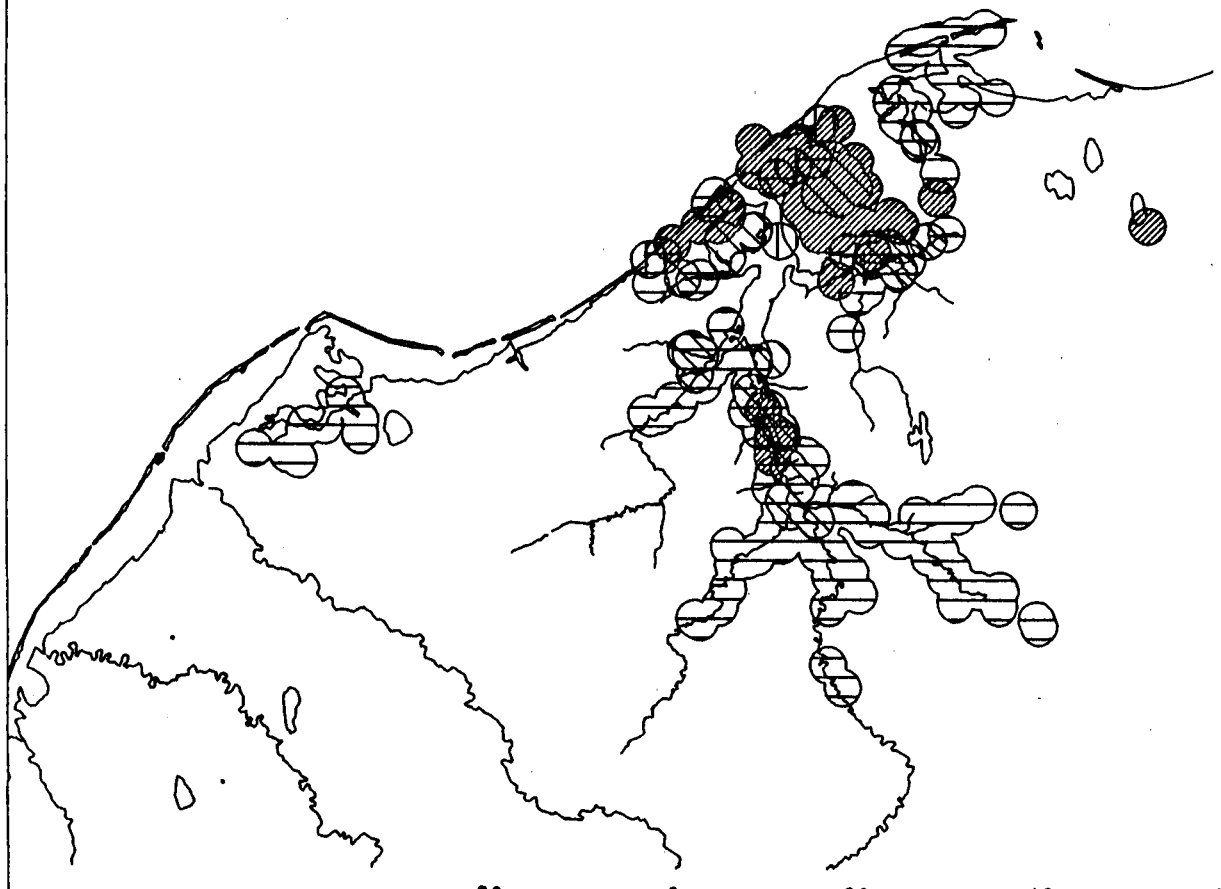
Map Production: North Slope Borough GIS

Date: April 11, 1991

MAP B-9
NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT
CARIBOU HARVEST SITES BY SEASON, YEAR TWO

This map depicts approximate subsistence harvest sites for the time period April 1, 1989 through March 31, 1990: Year Two of the Wainwright North Slope Subsistence Study. Harvest sites shown were used by approximately 119 Wainwright households. All harvest sites are depicted with a 2 mile buffer. Additional areas were used by Wainwright residents not included in the study.

Source: Contemporary subsistence use information gathered and compiled by Stephen R. Braund and Associates (SRB&A). SRB&A is under contract to the Minerals Management Service, U.S. Department of Interior, and received assistance in the study from the North Slope Borough Planning and Wildlife Management Departments, Barrow, Alaska.



LEGEND INFORMATION

- April, May, June 1989
- July, August, September 1989
- October, November 1989
- December 1989, January, February, March 1990

N

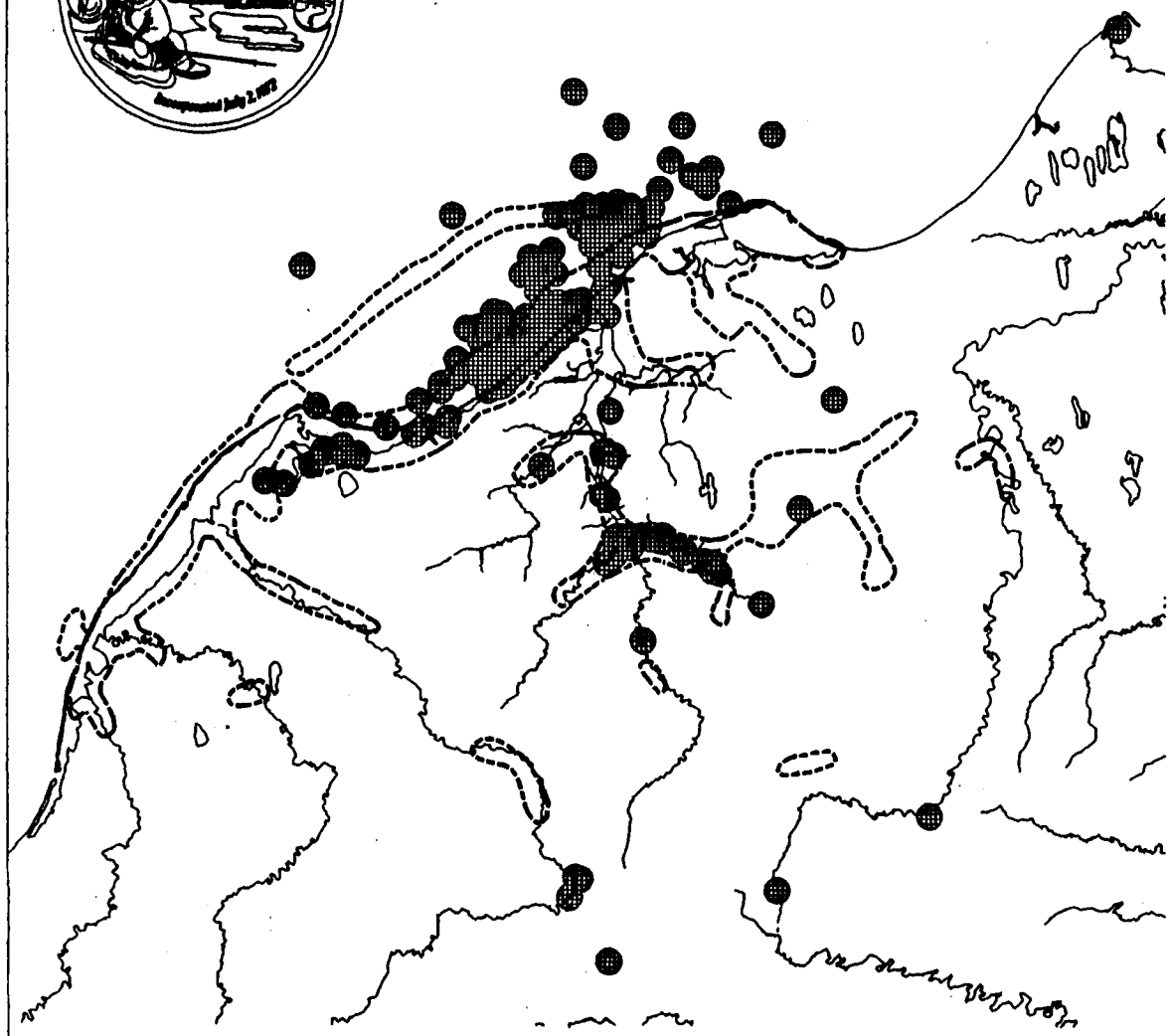
20 0 20 40 60 80

MILES

Map Production: North Slope Borough GIS

Date: April 11, 1991

MAP B-12
NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT
BIRD HARVEST SITES - ALL SPECIES, YEAR TWO



This map depicts approximate subsistence harvest sites for the time period April 1, 1989 through March 31, 1990: Year Two of the Wainwright North Slope Subsistence Study. Harvest sites shown were used by approximately 119 Wainwright households. All harvest sites are depicted with a 2 mile buffer. Additional areas were used by Wainwright residents not included in the study. Lifetime-community harvest areas, collected in the form of map biographies from 14 households (Pedersen 1979), are also illustrated.

Source: Contemporary subsistence use information gathered and compiled by Stephen R. Braund and Associates (SRB&A). SRB&A is under contract to the Minerals Management Service, U.S. Department of Interior, and received assistance in the study from the North Slope Borough Planning and Wildlife Management Departments, Barrow, Alaska.

LEGEND INFORMATION

Lifetime community land use (Pedersen 1979).

Birds
- Eiders
  Common, king, spectacled, Steller's
- Other ducks
  Oldsquaw
- Geese
  White-fronted goose, black brant, lesser snow goose, Canada goose
- Ptarmigan
  Rock, willow
- Arctic loon

N

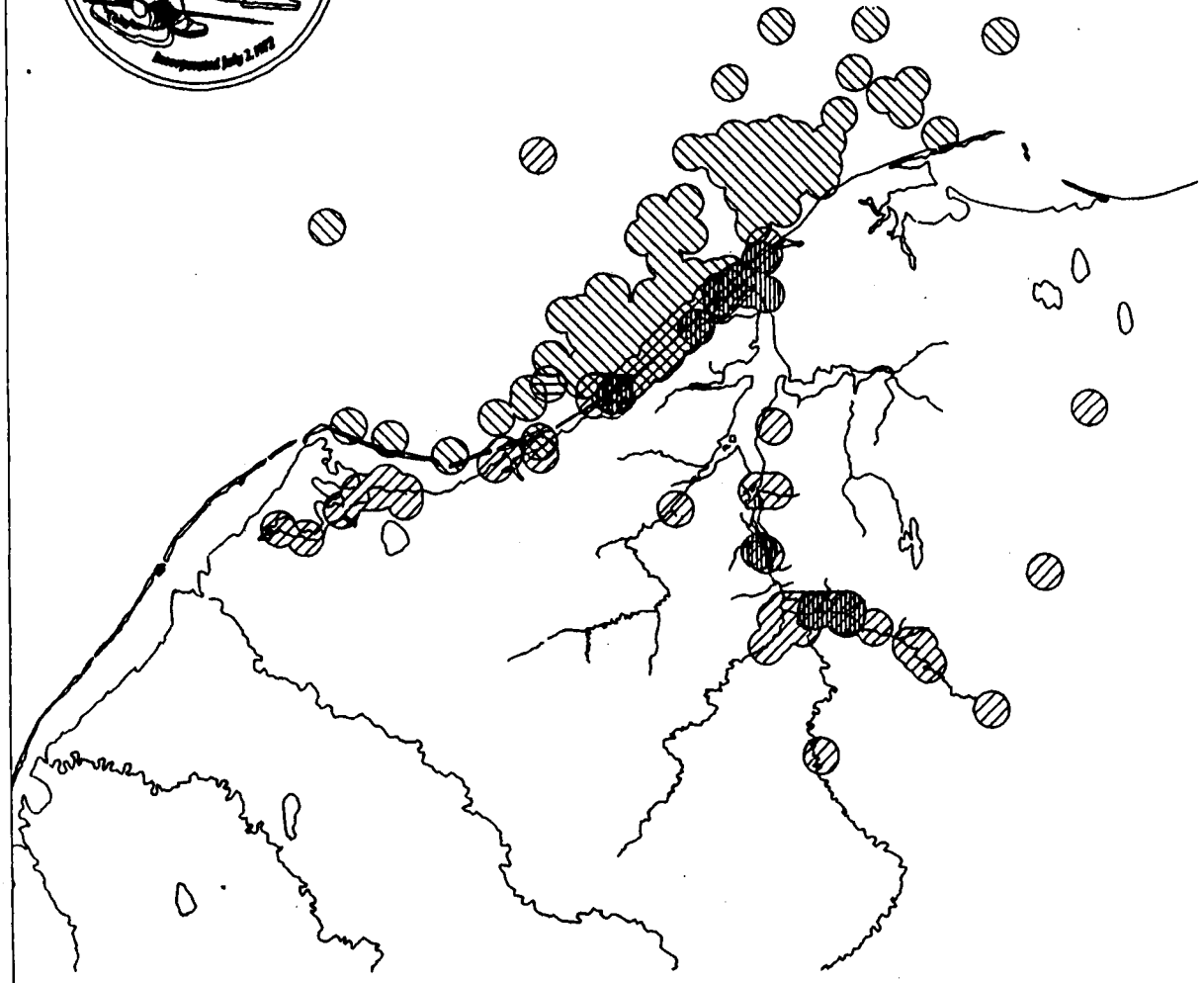
30 0 30 60 90

MILES

Map Production: North Slope Borough GIS

Data: April 11, 1991

MAP B-13
NORTH SLOPE SUBSISTENCE STUDY - WAINWRIGHT
BIRD HARVEST SITES BY SPECIES, YEAR TWO



This map depicts approximate subsistence harvest sites for the time period April 1, 1989 through March 31, 1990: Year Two of the Wainwright North Slope Subsistence Study. Harvest sites shown were used by approximately 119 Wainwright households. All harvest sites are depicted with a 2 mile buffer. Additional areas were used by Wainwright residents not included in the study.

Source: Contemporary subsistence use information gathered and compiled by Stephen R. Braund and Associates (SRB&A). SRB&A is under contract to the Minerals Management Service, U.S. Department of Interior, and received assistance in the study from the North Slope Borough Planning and Wildlife Management Departments, Barrow, Alaska.

LEGEND INFORMATION

- Arctic loon
- Eiders
  Common, spectacled, king, Steller's
- Other ducks
  Oldsquaw
- Geese
  White-fronted goose, black brant, lesser snow goose, Canada goose
- Ptarmigan
  Rock, willow

N

20 0 20 40 60 80

MILES

Map Production: North Slope Borough GIS

Date: April 11, 1991

APPENDIX C:
METHODOLOGY

SRB&A first implemented the basic methodology for the North Slope Subsistence Study in Barrow in 1987, a year before the Wainwright data collection began (SRB&A and ISER 1988). This appendix details the methodology used in Wainwright to collect comprehensive community harvest data by species and location as well as a small set of household characteristics. Although the Wainwright methodology was largely the same as that used in Barrow, certain adjustments were necessary. Three factors influenced the adaptation of the Barrow field methodology for implementation in Wainwright: first, the insights and lessons learned from conducting a year of fieldwork in Barrow; second, Wainwright's much smaller population size; and third, the impact that changing certain elements of the data collection design, already implemented in Barrow, would have on comparative analyses between the study communities.

This methodology is presented in two main sections. The first section describes the basic design elements of the field methodology, including some of the problems encountered and adjustments made in the course of implementing this design. As well, some of the study statistics are reported in this section, such as the number of households in the study and the number of harvest discussions conducted each year. The second section describes the data coding and processing procedures. References for this appendix are found in the References Cited section at the end of the main part of the report (immediately preceding Appendix A).

DATA COLLECTION DESIGN AND IMPLEMENTATION

The research design for this study developed from the answers to five fundamental questions:

1. What data are to be collected?
2. From whom will the data be collected?
3. How will the data be collected?
4. How often must the data be collected?
5. How will the data be analyzed?

This section presents the study design decisions made by the study team in consultation with the MMS and describes the implementation of the study design with respect to the first four questions listed above. The fifth design element concerning analysis of the data is addressed in the second half of this appendix under Data Coding and Processing.

Data Variables

As described previously in this report, the primary information sought in this study were numeric and mapped data about Wainwright residents' subsistence harvests, including details about the species harvested, quantity harvested, date of harvest, and number of participants in each harvest. Secondarily, the study team sought to obtain a few descriptive variables about Wainwright households, such as household size, ethnicity, income, and person-months of employment. The study team developed forms for recording the data to facilitate coding and processing. A more detailed explanation of the data variables is presented below in Data Coding and Processing.

Data Source

This aspect of the research design has two components: definition of the sampling unit (i.e., from whom did we opt to get our data?), and the number of sampling units to be contacted in data collection. Discussions of both of these aspects follow.

The Sampling Unit

As in Barrow, the study team selected the household as the most logical sampling unit (see SRB&A and ISER 1988, Appendix). A number of different sampling units were considered, including the individual harvester, the nuclear family, the household, and several different concepts of productive economic units revolving around the extended family. The advantages and disadvantages of each of these possible sampling units were assessed in terms of both time and cost efficiency and the overall goals of the project. After careful consideration, the study team settled on the household as the sampling unit.

The household is a convenient, easily defined entity that has been used in past censuses and other studies. Hence, data on the household level would allow easy comparison with previously collected data. The use of households as the sampling element, however, involved compromises. Inupiat communities place greater importance on the extended family as the primary social and economic unit than on the household or nuclear family. Consequently, contemporary Inupiat households create somewhat artificial boundaries within the extended family that do not necessarily reflect functional or productive economic units. In fact, field observations suggest that hunters generally functioned in groups that changed in size and composition depending on the species sought, time available, and traditional aspects of hunting party formation. These hunting parties generally divided the harvest among themselves such that, in some cases, the individual hunter had difficulty reporting a discrete number of animals as his household's share. This complicating factor of individuals hunting in dynamic functional groups necessitated careful cross-checking between harvest reports to insure that all members of the hunting party were included in the data base. Thus, although records were kept by household, participant observation and key informant discussions allowed the study team to verify subsistence data based on field knowledge of the economic unit in question. Understanding who hunted with whom aided in filling in data gaps and in the verification of sometimes difficult to remember harvest dates and amounts.

Despite the disadvantages, the benefits of ease of implementation (i.e., more easily defined than economic units), efficiency (i.e., fewer sampling units than if individuals were used), and comparability (i.e., ability to compare results with other studies based on households) convinced the study team that the household was the best sampling unit.

Changes in Household Composition

Over the course of a study year, the actual number and the composition of some households fluctuated. However, because each Wainwright household was self-representing (discussed below in A Census vs. A Sample), movement of individuals between households did not affect the community harvest estimates. Even though the production levels of some households changed during the course

of the year (the result of several active hunters passing away, other hunters moving from one household to another, and still others moving out of the community), aggregate harvest estimates for the community accommodated these changes. Because the household was the sampling element, community members who formed a new household became a new reporting unit. New households were assigned identification numbers and their harvest activities were tracked in the same manner as households that were in existence at the beginning of the study. In some cases, adult children moved into an old family house for the summer and then back into their parents' house in the fall when heating costs became prohibitive. In these instances, harvest activities conducted in the summer by these individuals were incorporated with their parents' household data.

The in-migration of Natives who formed new households also occurred during both years of data collection. As the study goal was to perform a complete census of harvest activities in Wainwright, these new households were included in the sample if it was determined either that they were active hunters or planned to make Wainwright their permanent home. For example, Native non-local construction workers associated with the building of the new high school were contacted initially but not included in the study if they reported that their only purpose in town was that of a transient worker.

A Census vs. A Sample

The single most important difference between the study approaches used in Wainwright and Barrow resulted from Wainwright's smaller size. The large population of Barrow necessitated that data be collected from only a small, representative percentage (sample) of Barrow households. Additionally, stratifying the households based on level of harvest activity was essential to designing a cost efficient sampling strategy that would produce statistically valid results (SRB&A and ISER 1988). In Wainwright, however, such a detailed sampling strategy was not necessary and the study team set out to include all households in the community.

Conducting a census in a study of this nature has several advantages over a random sample. First, if all productive households could be encouraged to

participate, one would eliminate the risk of missing a household that, through specialization, harvested a significant proportion of a given resource in the community (e.g., a successful whaling captain's household). Second, the harvest areas indicated by a census would accurately represent the harvest areas for the entire community. Third, even if some members of the community did not participate in the study, those activities they undertook with participating households would be included. Finally, although some refusals would be inevitable, there was no reason to believe the response rate would be better in a random sample of households.

Wainwright's population of 514 (roughly one-sixth the size of Barrow) in 1988 lived in 131 households, according to the NSB 1988 census (NSB Department of Planning & Community Services 1989) which was conducted in Year One of the Wainwright study. At the time of the census, ongoing construction of a new high school resulted in a large number of non-Natives living in the community. This transient population, housed at the hotel, several rented houses as well as in temporary housing, were not included in this study as they were a non-local work force and, for the purposes of this study, not linked with the community. Most non-Native schoolteachers also were not included in this study as they were generally non-harvesters who lived in Wainwright only part of the year.

Leaving out these populations that were included in the NSB census, as well as four households that refused to participate in this study, the Year One study households numbered 124 including both part-year households (i.e., those present throughout only a portion of the study year) and full-year households. Based on nearly complete household size data (i.e., data for 113 or 91 percent Year One households), the population of the 124 Year One households is estimated to have been 505 residents. Because people left Wainwright, passed away, or refused at some point in Year One (but were included in Year One as part-year households), data were collected in Year Two from fewer households: 119 (both full- and part-year). The population of these households is estimated to have been 468 residents.

As stated in Basis of Harvest Estimates (in the body of the report), the study team identified 100 households who participated in the study throughout the full two years of data collection. These households averaged 4.1 persons per

household for a total of 411 individuals. These households are referred to in this report as the "core study households."

Data Collection Method

The study team initially decided that the best way to collect the desired data (both harvest data and household characteristics) would be through periodic visits with the study households throughout the two study years ("key informant discussions"). These discussions originally were designed to be conducted by local research assistants (RAs) under the supervision of the Barrow field coordinator. Their objective would be to contact each household periodically and ask the key informant in that household about all their successful harvests.

Data collection in Barrow the year before the study began in Wainwright indicated that a full-time field coordinator would be necessary in Wainwright, in addition to a local RA staff. Indeed, the presence of a full-time field coordinator in the community proved essential to the success of this project. David Burnham resided in Wainwright as a full-time field coordinator from March through October of Year One. Eric Loring moved to Wainwright in October, was trained by Burnham, and assumed the position of field coordinator for the remainder of Year One and all of Year Two. Burnham and Loring hired several RAs to help with the harvest data collection; however, the field coordinators ultimately conducted the major portion of the data collection. With RAs, the field coordinators' presence was necessary to supervise the RAs and keep their data collection work on track; the field coordinators also were actively involved in collecting data even with RAs on staff. Without RAs, the field coordinators needed to be in the community to collect all the data themselves.

Recruiting qualified RAs committed to staying with the project was the most serious problem faced in the data collection phase of the project. During Year One, only five of 13 RAs hired worked for more than a week and during several lengthy periods of time no local assistants could be found. Other jobs lured several RAs away and the difficult nature of the work frustrated some RAs. Of the five RAs who worked for more than a week, only three demonstrated the initiative necessary for successful data collection. The participation of each of the RAs who worked on the project was valuable and appreciated; however, the

availability of trained research assistants was essential if a high rate of contact frequency was to be maintained. Contact frequency was best during periods when the RA staff was stable as they acquired the expertise and confidence to conduct harvest discussions efficiently. Their steady work also allowed the field coordinator to spend the time necessary to edit, code, and process data instead of searching for, hiring, and training RAs. The field coordinators found that contacting, conducting, coding, and processing more than 80 interviews in a single month, even when working 10 and 12 hour days, was not possible without assistance.

In Year Two, all data were collected by the field coordinator. No research assistants were hired due primarily to cutbacks in the NSB Mayor's Job Program which had subsidized the RAs' salaries and due also to the lack of available RAs in Wainwright.

Key Informant Discussions

The first harvest discussion covered harvests during the time period from April 1, 1988 to the day of the researcher's first visit to the household. (The word "visit," in this context, refers to a visit for the purpose of data collection.) The next harvest discussion covered the time period from the last visit to the current visit, and so on. The last visit covered the time period from the prior visit to this household to March 31, 1990. Field researchers attempted to discuss each household's harvest activity with the most active hunter in the household during the periodic data collection visits. If he (or she) was unavailable, they contacted another household member who was present during the harvest. Occasionally a household member who was not present during the harvest would provide information about the recent harvest activities of the household members. In these cases, field staff later contacted the participating harvesters to verify the data and/or to obtain any missing information.

During each visit, the key informant for that household reported the harvest activities of all household members. Primary data items reported by species were harvest site and number killed. Key informants also reported (if available): the sex of the species harvested, which household members participated in the harvest activity, total number of household members present

during the harvest trip, and the total number of non-household members participating in the harvest activity. Finally, researchers also recorded any anecdotal information regarding weather, comparisons with previous harvests, observations on animal health or populations, or similar topics.

The researchers usually recorded the harvest activity data directly on the data coding forms (harvest activity sheets - Figure C-1 on page C-16) or occasionally in field notebooks. The household's harvest locations were marked directly onto blueline copies of United States Geological Survey (USGS) 1:250,000 scale maps by the researcher or by the harvesters themselves. Each map was marked at the time of the interview with both the appropriate household number and harvest period. The same identification variables appeared on harvest activity sheets (discussed in detail below).

The researchers also tried to determine who else participated (i.e., from other households) in every harvest event and recorded this information on the harvest activity sheet. Thus, if a harvester did not know exactly where the harvest took place, the researcher could identify the harvest location through interviews with other members of the hunting party. In order to produce the most accurate and reliable information possible, the study team cross-checked the harvest activity sheets of different members of a hunting party against one another. In instances where data conflicted (most commonly the date of the harvest) the respondent interviewed closest to the time of the harvest event was considered the most reliable source for the date unless another member of the same hunting party kept a calendar of his or her harvest events.

Participant Observation

One important and positive outcome of the placement of a full-time field coordinator in Wainwright was to provide a second form of data collection: participant observation. While the key informant discussions provided the desired hard data, participant observation provided the knowledge necessary to understand and better describe the hard data. This first-hand knowledge proved invaluable. The full-time presence of a field coordinator in the community provided ample opportunity for participant observation at various subsistence related activities. The most important participant observations occurred:

- o during preparation for spring whaling and at whaling camps on the ice;
- o at whale harvest locations;
- o while whaling crew shares were distributed at captains' homes;
- o during the *Nalukataq* celebrations;
- o on various day and overnight hunting trips;
- o during visits to spring and fall camps.

Participant observation improved the accuracy of the data collection in a number of ways. Most importantly, it provided the opportunity to continually field check the data collection rules and methods. Researchers directly observed, for example: how harvests were divided among hunters; how harvests were counted and weighed; and how hunters approached the task of locating harvest resources. The experience gained in these situations early in the study was applied to a modification of data coding and entry rules.

In short, the study team employed two main methods of collecting the data for this project: informal key informant discussions and participant observation. The key informant discussions formed the backbone of this data collection effort with participant observation primarily used to cross-check and verify hunting party composition and harvest data.

Contact Frequency

In Wainwright, the actual frequency with which households were contacted depended primarily on the presence of SRB&A field staff and the availability of local research assistants. Under the proposed schedule of contacts, the study team hoped to contact the most active households three to four times a month, the somewhat active households bi-monthly, the less active households once a month and the inactive households quarterly. Due to the high attrition rate of qualified research assistants, this schedule proved unattainable. However, the study team was able to minimize recall and other problems associated with less frequent contacts by careful analysis of each household's level of activity during the various seasons and throughout the year, and by taking into consideration other circumstances in scheduling contacts. All aspects of the contact methodology are discussed below.

Adjusting the Frequency of Contacts

As mentioned above, the ideal contact schedule proved unrealistic in the field requiring that the study team reassess the planned rate of contacts. As the study team became familiar with each household's harvest activities, they were able to adjust the contact schedule for each household so that it corresponded to their active periods of harvesting. Many households hunted caribou and fished in the fall, while others did not. Some households resided at camp for part of the summer, constituting their subsistence activities for the entire year. While full-time work did not prevent most hunters from hunting in the evenings and on weekends, others hunted only during vacations and leave time taken in the spring and fall. Once the general household pattern was determined, the frequency of visits was adapted to fit the level and timing of the household's harvest activities. For example, the sampling interval for one household varied from as little as one week between contacts during an especially active harvest period to as long as nine weeks when household members were doing little or no harvesting.

The study team enlisted other methods to minimize hunters' memory attrition and ensure that harvest reports were accurate. Some active households recorded their harvests and harvest locations on their own (e.g., on a calendar or sheet of paper and a map). The monitoring of external variables, such as environmental conditions or cultural events, was also considered by the study team in the scheduling of contacts. For example, if blowing snow and high winds resulted in "white out" conditions that prevented travel outside the immediate vicinity of the community for several days or weeks, the contact schedule was modified to accommodate this known lull in harvest activity. In addition, many of the respondents quickly memorized the short set of questions repeatedly asked about their harvest activities. Flexibility proved essential in obtaining accurate harvest data within the limits of the staff available.

Contact Data

Of the 124 households monitored continuously in Year One, the average number of successful harvest discussions per household was 5.9, with the number of contacts ranging from three to 10. The total number of Year One harvest

discussions per month for the entire sample of 124 households ranged from zero in January to 101 in July, and the total number of successful harvest discussions for the year was 734. An average of 61 contacts were made per month. These figures do not include the numerous attempts that often were involved in locating and contacting the respondent before completing a successful harvest discussion, but do include one Year Two visit (i.e., a visit that occurred after March 31, 1989) per household during which harvests through the end of Year One (March 31, 1989) were recorded. One successful "contact" or "harvest discussion" often involved more than one visit, but the unsuccessful attempts were not counted.

During Year Two and the subsequent month of April 1990 (when many final Year Two harvest discussions were completed), the field coordinator conducted approximately 647 successful, complete harvest interviews with the 119 households present for all or part of the year. Each full-year household was interviewed an average of 5.4 times during the year, with a high of 10 successful contacts per year for some households and as few as two for others. On average, approximately 54 households were contacted each month. The number of harvest discussions completed each month ranged from zero to over 100. The number of successful harvest discussions per month varied due to the harvester's availability, their cooperation, their level of activity, and the field coordinator's presence. The above information is summarized in the following table.

TABLE C-1: SUMMARY STATISTICS ON HOUSEHOLD HARVEST DISCUSSION CONTACTS

	Year One	Year Two
Number of Households Monitored	124	119
Total Number of Contacts	734	647
Average Number of Contacts per Household	5.9	5.4
Average Number of Contacts per Month	61	54

Source: Stephen R. Braund & Associates, 1993

The lowest number of successful harvest discussions per month occurred in November and December when the field coordinator was away. As these months were usually slow in terms of harvesting, data collection likely was not compromised by his absence. The high months for successful harvest discussions occurred when Year One and Year Two were coming to an end, anytime the field coordinator returned after an absence from the community, and during peak periods of harvest activity (e.g., July). The key informants' availability also varied from month to month with hunting, community activities, weather, and work as the determining factors. Cooperation was generally excellent overall, but some households preferred infrequent contacts, particularly those who were not active in hunting or fishing.

Contacts were made at the most convenient time for the community members. Some interviews were conducted at two or three in the morning, others at work during break, or at the post office, out at camp, or while waiting for ducks. There was not a specific schedule for interviewing. Instead of the community accommodating the field coordinator, the field coordinator adapted his work schedule around the people of Wainwright. The key for collecting harvest data was complete flexibility. In many cases throughout the year the field coordinator was lucky enough to travel out to the hunting camps, or to be right out on the ice with the walrus hunters and whalers. His frequent presence at these hunting camps enabled him to record the exact number of animals harvested. This was particularly true at whaling camp where for a month he was able to observe the bird and seal harvests that might have been forgotten in a later harvest discussion back in town.

The above numbers describing household contacts represent only successful, complete harvest discussions and, as such, present the very minimum picture of the level of effort involved in data collection. A successful contact was counted when all the harvest activity for that household was completed. However, many households had two, three and sometimes four members who actively hunted and fished, often requiring that the field coordinator track down these individuals to complete that household harvest report.

The main reason for the drop in successful harvest discussions from Year One (734) to Year Two (647) is the lack in Year Two of local RAs. The last RA and

her family left Wainwright before the start of Year Two data collection. The North Slope Borough Mayor's Job Program cutbacks prevented the project from hiring additional RAs. The RAs bridged any gaps that might have existed, helped with translation, explained local ways, kept the field coordinator informed on events throughout the town, and were instrumental in introducing the field coordinator to all of Wainwright. By the time the last RA left, the field coordinator had become very comfortable in town and was able to conduct all the interviews himself. However, the RAs were unquestionably an important asset to the project.

Although the number of successful harvest discussions dropped from 734 in Year One to 647 in Year Two, the number of harvest events reported increased. In Year One, over 1,100 different harvest events were recorded; during Year Two nearly 1,600 harvests were recorded. (Neither of these figures included individually recorded crew member shares from the whale harvests, gifts, or food received at community feasts). As discussed in main portion of this report, Year Two was a better year for caribou, birds, most fish species, and walrus for a number of environmental reasons. (It was not a better year for bowheads from the hunters' point of view, but the two whales they did obtain were very large and yielded more usable pounds than the four Year One whales.) In short, the higher number of harvests reported per contact in Year Two likely reflect the fact that Year Two was "a better year" for subsistence than Year One.

DATA CODING, PROCESSING AND PRESENTATION

As mentioned previously, the household was the sampling unit in this study. From Wainwright households, the study team collected two kinds of data and recorded the data on two kinds of forms, one for each type of data: harvest data on harvest activity sheets, and household data on household record forms. The majority of the data collected were harvest data. Along with harvest data, harvest locations were recorded on maps and attached to the harvest activity sheet. Each harvest event resulted in one harvest record (wherein a record is a set of variables that describes something - in this case, a harvest event). In the case of a harvest event, the descriptive variables consisted of the household identification number, a unique harvest entry identification number,

harvest date (month, day, year - three variables), the species harvested, the number of that species harvested, the sex of the animal(s) if known, the household members participating in the harvest (potentially five variables), the number of non-household members participating, plus a few other administrative variables (e.g., researcher identification number, date, and similar items). Thus, a harvest record consisted of 32 variables. Collection of these data was an ongoing process throughout the two study years, and resulted in thousands of harvest records. The harvest locations recorded on maps constitute an extension of the harvest records; those sites were digitized in the GIS system as geographic data, and a subset of the harvest record variables were linked to each entry.

The household record, on the other hand, is several variables that describe the household, principally: household identification number; household size (two variables, one for each study year); ethnicity (again, two variables); income (two variables); and person-months worked by month (24 variables) and subtotaled for each study year (two more variables). The household record consisted of a total of 38 variables. These data were collected only once (near the end of Year Two) and resulted in one record per household. Thus the harvest and household records formed the organizational basis for gathering, storing, and analyzing the quantitative data collected through key informant interviews.

This section describes the study team's methodology for coding and processing the quantitative data and ultimately producing aggregate output descriptive of Wainwright subsistence. The first section describes the harvest record variables and the household record variables and how they were defined and coded. The second section deals with the computer processing of the data, including the calculation of pounds harvested from the number of animals harvested. Finally, the presentation of the data in its various forms is described.

Coding

Coding is the process of editing the raw data to prepare it for entry into the computer data base. Numeric codes were developed for non-numeric data (e.g.,

the species of the animal harvested), and identification codes were developed to link harvest data to mapped points, to identify households, household members, and so forth. Rules were developed to ensure that the codes were applied consistently by all researchers.

The Harvest Record

The definition of a single resource harvest event for recording purposes is a species-specific harvest at a particular location during no more than a two week period by one or more members of a sample household. The event must be species-specific but can include the harvest of two or more of the same species. Hunting, fishing or gathering activities which did not result in a harvest were not recorded.

The above definition of a single resource harvest event produces the following results:

(1) The harvest of two species at the same location on the same date generated two harvest records.

(2) The harvest of two or more of the same species at the same location on the same date generated one record (with the number of animals harvested entered as part of the record).

(3) The harvest of the same species at two locations on the same day generated two records.

(4) The harvest of the same animal at a single location by two members of a household generated one record (with household members participating entered as part of the record).

(5) The harvest of the same animal by single members of two different households generated two records. The amount recorded in this instance, or in the case of any shared harvest, is a value proportionate to the individual's share of the harvest.

Figure C-1 displays the harvest activity sheet, where harvest events were recorded by the field coordinator or RA during or immediately following a harvest discussion with a study household. The harvest activity sheet was used to record several different harvest events (records) by a specific household. Following is a description of each variable and the guidelines used for coding the harvest data.

FIGURE C-1

HARVEST ACTIVITY SHEET

RESEARCHER ID _____ BEGIN DATE _____

HOUSEHOLD ID _____ END DATE _____

HH CONTACT ID _____ TODAY'S DATE _____

ENTRY ID	MAP ID	DATE	SPECIES/ RESOURCE HARVESTED	AMOUNT/NUMBER HARVESTED			ESTIMATED SIZE OR # OF SACKS	TIME IN FIELD		HH HARVESTERS INDIVIUAL ID #s					NO. OF HHOLD PARTIC.	NO. OF NON-HH PARTIC.	COMMENTS:
				TOTAL	M	F		HRS	DAYS								

Researcher ID: A unique two digit numeric code. With more than one interviewer present, the ID number of the senior interviewer was coded.

Household ID: A three digit numeric code for each household. This was a unique number assigned to each household so that resource harvest activity records could be aggregated by household and linked to household characteristics.

HH Contact ID: (HH stands for household.) A two digit numeric code identifying the individual household member who reported the data during this harvest discussion. If more than one household member answered questions, the household member responsible for the greater amount of actual harvesting was coded.

Begin Date: A set of three two digit numeric codes representing the beginning month, day and year covered by the harvest activity sheet. The begin date should be continuous with, but not overlapping, the last contact date or two week period.

End Date: A set of three two digit numeric codes representing the last month, day and year of the reporting period.

Today's Date: A set of three two digit numeric codes representing the month, day and year of the interview. This date corresponds with the end date in most cases.

Entry ID: A unique five digit numeric code identifying each successful harvest record and harvest site. These values were assigned sequentially at the time of coding and were used in four places: 1) On the harvest activity sheet next to the successful harvest record; 2) on the original map adjacent to the corresponding Map ID (described below); 3) on the aggregated map of community harvest sites delivered to the NSB GIS; and 4) in the GIS system as an identifier for the corresponding harvest site.

Map ID: A two digit numeric code corresponding to mapped harvest locations. The Map ID is any number (usually 1, 2, 3, etc.) that the researcher can use during the harvest discussion to mark the map and the harvest activity sheet so as to link the harvest location to the harvest record. Two different harvest records may share the same Map ID if the harvests occurred in the same location. For example, two species of fish caught in the same net on the same date would be different harvest records with the same Map ID. This code was, in effect, an interim code; later, when the harvest was assigned a unique Entry ID, the Map ID became obsolete.

The map ID variable was used with some non-harvests (which did not need to be mapped) as a convenient way to identify the kind of non-harvest being reported. If someone was given a gift, for example, of caribou, the species and amount were coded in the appropriate place and the map ID variable was coded 60, the code for a gift. Food received at *Nalukataq* and Thanksgiving were coded 50 and 53 (respectively), shares received for helping the harvester butcher the

animal were coded 30, and shares received for equipment loaned to the harvesters were coded 35.

Date: A set of three two digit numeric codes representing the month, day and year covered by the particular harvest record or case. While recording the actual date of harvest was desired, in some cases this goal was not possible. When a respondent was vague about a date, the interviewer showed him or her a calendar to prompt a more specific response. In some cases, this tool effectively elicited a specific date, while in other cases it served to simply narrow the harvest date down to a particular week. Camp-based harvest activities were treated slightly differently since asking informants to recall their opportunistic hunting and fishing activities on a daily basis while at camp proved impractical. Therefore, for camp-based harvests occurring more or less continuously (e.g., fish nets under the ice), respondents were asked to report their overall harvest of a specific species in a two week period rather than asking them to recall their catch on a daily basis. The implication of the two week time limit on a single resource harvest activity is that the maximum error in reporting a harvest date is two weeks. In most cases, however, the record date matches the actual harvest date.

If a harvester reported harvests for a two week period, the first day of that time period was the date entered. If the harvester could identify the week in which the harvest occurred but not the day, the day variable was coded 81 for the first week of the month, 82 for the second week of the month, 83 for the third week, or 84 for the fourth week of the month.

Species/Resource Harvested: A unique three digit numeric code identifying each species or resource used by Wainwright residents. Table C-2 is a species and resource list that includes all the resources Wainwright residents are known to have harvested in the past as well as the number used to code each species. The species are divided into resource categories. The first code under each category is inclusive of all species in that group and was used when the particular species was not known. The numbering system was not sequential so as to allow for the addition of other species in the different categories if they were encountered later in the study.

Amount/Number Harvested:

Total: A one to three digit, one decimal numeric code representing the total amount of a given resource harvested. In all cases but water, ice, snow and coal, this value represents the number of animals harvested. For any form of water, this number represents the number of gallons harvested; for berries, it represents the number of quarts; and for coal, it represents the number of sacks.

Male: This variable indicates, of the total number of animals harvested, the number that were male. No effort was made to sex waterfowl or fish. This variable was not always completed for marine or terrestrial mammals as the respondent did not always remember the sex of the animals harvested.

Female: Same as above except only females were counted.

TABLE C-2: WAINWRIGHT SPECIES CODING LIST

Species	Inupiaq Name	Scientific Name	Code
Big Game			001
Caribou	*Tuttu*	Rangifer tarandus	002
Moose	*Tuttuvak*	Alces alces	003
Brown bear	*Aklaq*	Ursus arctos	004
Musk Oxen	*Uminmaq*	Ovibos moschatus	005
Dall sheep	*Imnaiq*	Ovis dalli	006
Marine Mammals			010
Seal			011
Bearded seal	*Ugruk*	Erignathus barbatus	012
Ringed seal	*Natchiq*	Phoca hispida	013
Spotted seal	*Qasigiaq*	Phoca largha	014
Ribbon seal	*Qaigulik*	Phoca fasciata	015
Whale			020
Beluga whale	*Qilalugaq*	Delphinapterus leucas	021
Bowhead whale	*Agviq*	Balaena mysticetus	022
Polar bear	*Nanuq*	Ursus maritimus	025
Walrus	*Aiviq*	Odobenus rosmarus	026
Furbearers, Small Game			030
Fox			031
Arctic (Blue) fox	*Tigiganniaq*	Alopex lagopus	032
Red fox	*Kayuqtuq(Qiangaq)*	Vulpes fulva	033
Cross fox	*Qiangaq*	Vulpes fulva	033
Silver fox	*Qiugniqtaq*	Vulpes fulva	033
Snowshoe hare	*Ukalliq*	Lepus americana	036
Arctic Hare	*Ukalliq*	Lepus arcticus	037
Lynx	*Niutuiyiq*	Felis lynx	038
Hoary marmot	*Siksrikpak*	Marmota caligata	039
Porcupine	*Qinagluk*	Erethizon dorsatum	040
Ground squirrel	*Siksrik*	Spermophilus parryii	041
Wolf	*Amaguq*	Canis lupus	042
Wolverine	*Qavvik*	Gulo gulo	043
Ermine (Weasel)	*Itigiaq*	Mustela erminea	044
River otter			045
Wildfowl			050
Duck	*Qaugak*		051
Oldsquaw	*Aaqhaaliq*	Clangula hyemalis	052
Pintail	*Ivugaq*	Anas acuta	053
Mallard	*Kurugaktak*	Anas platyrhynchos	054
Red-breasted merganser	*Aqpaqsruayuuq*	Mergus serrator	055
Surf scoter	*Aviluktuq*	Melanitta perspicillata	056
Greater scaup	*Qaqluktuuq*	Aythya marila	057

TABLE C-2 (cont.): WAINWRIGHT SPECIES CODING LIST

Species	Inupiaq Name	Scientific Name	Code
Eider			060
Common eider	*Amauligruaq*	Somateria mollissima	061
King eider	*Qinalik*	Somateria spectabilis	062
Spectacled eider	*Tuutalluk*	Somateria fischeri	063
Stellar's eider	*Igniqauqtuq*	Polysticta stelleri	064
Goose	*Nigliq*		066
Brant	*Niglingaq*	Branta bernicla n.	067
White-fronted goose	*Niglivialuk*	Anser albifrons	068
Lesser snow goose	*Kanuq*	Chen caerulescens	069
Canada goose	*Iqsragutilik*	Branta canadensis	070
Emperor goose	*Mitilugruak*	Chen canagica	071
Murre			075
Common murre	*Atpak (Atpa)*	Uria aalge	076
Thickbilled murre	*Atpatuuq*	Uria lomvia	077
Loon			080
Arctic loon	*Qaqsrauq*	Gavia arctica	081
Common loon	*Malgi*	Gavia immer	082
Red Throated loon	*Qaqsraupiagruk*	Gavia stellata	083
Yellow billed loon (King bird)	*Tuullik*	Gavia adamsii	084
Ptarmigan	*Aqargiq*		085
Rock ptarmigan	*Niksaaktuniq*	Lagopus mutus	086
Willow ptarmigan	*Nasaullik*	Lagopus lagopus	087
Snowy owl	*Ukpik*	Nyctea scandiaca	090
Sandhill crane	*Tatirqaq*	Grus canadensis	091
Tundra (Whistling) swan	*Qugruk*	Cygnus columbianus	092
Gull	*Nauyak*	Larus sp.	093
Black guillemot	*Inagiq*	Cepphus grylle	094
Fish			110
Salmon			111
Chum salmon	*Iqalugruaq*	Oncorhynchus keta	112
Pink (humpback) salmon	*Amaqtuuq*	Oncorhynchus gorbuscha	113
Silver (coho) salmon	*Iqalugruaq*	Oncorhynchus kisutch	114
King (chinook) salmon		Oncorhynchus tshawytscha	115
Whitefish			120
Round whitefish	*Aanaakliq*	Prosopium cylindraceum	121
Broad whitefish (river)	*Aanaakliq*	Coregonus nasus	122
Broad whitefish (lake)	*Aanaakliq*	Coregonus nasus	124
Humpback whitefish	*Piquktuuq*	Coregonus clupeaformis	125
Least cisco	*Iqalusaaq*	Coregonus sardinella	126
Arctic, Bering cisco	*Qaaktaq*	Coregonus autumnalis	123

TABLE C-2 (cont.): WAINWRIGHT SPECIES CODING LIST

Species	Inupiaq Name	Scientific Name	Code
Capelin	*Pagmaksraq*	Mallotus villosus	130
Arctic grayling	*Sulukpaugaq*	Thymallus arcticus	131
Arctic char	*Iqalukpik*	Salvelinus alpinus	132
Arctic cod	*Iqalugaq*	Boreogadus saida	133
Burbot (ling cod)	*Tittaaliq*	Lota lota	134
Tomcod (saffron cod)	*Uugaq*	Eleginus gracilis	135
Arctic flounder	*Nataagnaq*	Liopsetta glacialis	136
Northern pike	*Siulik*	Esox lucius	137
Sculpin	*Kanayuq*	Cottus cognatus	138
Rainbow smelt	*Ilhuagniq*	Osmerus mordax	139
Lake trout	*Iqaluaqpaq*	Salvelinus namaycush	140
Blackfish	*Iluuqiniq*	Dallia pectoralis	141
Invertebrates			150
Clams	*Kiirauraq(iviluq)*	Macoma calcerea	151
Crab	*Puyyugiaq*	Chionoecetes opilio & Paralithodes platypus	152
Shrimp	*Igligaq*	Pandalidae sp. & Cragonidae sp.	153
Berries			160
Blueberry	*Asiaq*	Vaccinium uliginosum	161
Cloudberry	*Aqpik*	Rubus chamaemorus	162
Cranberry	*Kimminnaq*	Vaccinium vitis-idaea	163
Crowberry	*Paungaq*	Empetrum nigrum	164
Salmonberry	*Aqpik*	Rubus spectabilis	165
Bird Eggs	*Mannik*		170
Tern eggs			171
Gull eggs			172
Geese eggs			173
Eider eggs			174
Forest/Vegetation			190
Alder bark	*Nunaniak*		191
Birch tree	*Urgiiliq*		192
Willowbrush	*Uqpik*		193
Driftwood	*Qiruk*		194
Sod	*Ivruq*		195
Aspen	*Nunaniak*		196
Greens/Roots			200
Grass roots	*Qalgaq*		201
Hudson's Bay tea	*Tilaaqiq*	Ledum decum	202
Sourdock		Rumex archius	203
Swamp grass	*Nakaat*		204
Wild celery	*Ikunsuq*	Angelica lucida	205
Wild chives	*Quagaq*	Allium schoenoprasum	206
Wild potato	*Masu*	Hedysarum alpinum	207
Wild rhubarb	*Qunulliq*	Oxyric digyna	208

TABLE C-2 (cont.): WAINWRIGHT SPECIES CODING LIST

Species	Inupiaq Name	Scientific Name	Code
Wild spinach	*Qaugaq*	Rumex arcticus	209
Willow leaves	*Akutuq*	Salix sp.	210
Minerals			220
Clay	*Qiku*		221
Coal	*Aluaq*		222
Fine sand	*Maggaraaq*		223
Gravel	*Qaviaraaq*		224
Water			230
Fresh water	*Imiq*		231
Fresh water ice	*Sikutaq*		232
Fresh water sea ice	*Siku*		233
Snow	*Apun*		234

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Estimated Size or Measurement: A four digit numeric code that was used mainly in the coding of fish, coal, water/ice, or berry harvests. If the respondent reported his/her fish or coal harvest in sacks, the number of sacks was entered in this column. Similarly, the number of quarts of berries or gallons of water or sledloads of ice were recorded in this column, with a note written in the Comments variable confirming the unit of measurement used.

Time in Field:

Hours: A two digit numeric code representing the hours the hunter spent in this harvest event. This variable can be used independently of Days for any trip under 24 hours, but would be used in conjunction with Days for trips longer than 24 hours. That is, a 26 hour trip would be represented as 2 hours and 1 day.

Days: A one or two digit numeric code representing the number of days the hunter spent away from Wainwright in this harvest activity. Used in conjunction with hours above, as needed.

Household Harvesters: A series of two digit numeric codes (unique within each household) that identify the household members who actually participated in the harvest. If more than five members of the household participated in an event, the five members who where most active in the event were coded.

No. of Household Participants: A two digit numeric code representing the total number of household members present during the harvest documented by this record. In most instances, this value corresponded to the number of household harvesters above. However, for harvest activities that occurred during an extended visit to a hunting or fishing camp (for which the majority of the family was in attendance) this value represented the total number of household members present.

No. of Non-HH Participants: A two digit numeric code representing the number of non-household members present during the harvest documented by this harvest record. When recording whaling crew member shares, the total number of crew member shares (minus the number of household harvesters) was noted in this column.

Comments: A string code of text with a maximum length of 156 printable characters (including spaces). Only comments directly related to the harvest record were coded here (e.g., an estimated size or measurement, names of participants).

A harvest activity sheet was filled out for every household harvest discussion completed. If a household reported no harvests during the time period since the last contact, the interviewer simply filled in the top portion of the form showing the household identification number, person contacted, researcher's identification, the time period covered, and the date. The words "no harvest" were written on the sheet. These data created a harvest record that indicated no harvests had occurred and served to confirm that this household was

interviewed regarding the time period indicated. Some households ultimately did not harvest anything all year. Those households were just as important to the analysis as those who did harvest.

The Household Record

Figure C-2 presents the household record form used to collect data on the study households one time near the end of the study. This record provided data that gave a profile of certain household characteristics that were seen as potentially explanatory variables to crosstabulate with subsistence data. A description of each variable and how it was coded follows.

HHID: (Household identification number) This variable is the same one used in the harvest record to link the data to the correct household.

HH Size: The researcher asked the family how many people lived in their household during Year One and how many lived there during Year Two. In the event that the household size changed during the study year, the researcher attempted to find out the household size that was most representative of that year.

Ethn: (Ethnicity) These variables describe the ethnicity of the household in each study year. As defined by this study, a household was Inupiat if the head of household or spouse was Inupiat. Similarly, a household was classified Other Alaska Native if the head of household or spouse was Alaska Native (but not Inupiat). The appropriate code from the lower left corner of the form was used to code these variables.

Income: The respondent indicated which income bracket reflected the household income each year, and the researcher entered the appropriate code from the table on the lower portion of the form into the appropriate income box.

Months Employed: This set of 24 variables was designed to indicate how many people in the household worked each month during the study period. If someone worked half-time or less, or worked half the month or less, that employment counted as 0.5 person-months. Full-time employment (or any employment over half-time) counted as one person-month of employment.

Total Person-Months of Employment: Not shown on the form is the subtotal for each study year of the amounts entered in each month box.

Completeness of Data: Also not shown on the form are two variables that describe whether the household record was complete for this

FIGURE C-2

NORTH SLOPE SUBSISTENCE STUDY
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Wainwright Household Variables

HHID _____
Date completed _____

YEAR	HH SIZE	ETHN	INCOME	TOTAL MONTHS EMPLOYED BY HOUSEHOLD MEMBERS 16 OR OLDER											
				JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1988							Year 1								
1989							Year 2								
1990															

Ethnicity codes:

1 Inupiat
2 Other AK Native
3 White
4 American Indian
5 Hispanic
6 Filipino
7 Oriental
8 Black
10 Other

Income codes:

All sources of income for all household members combined for the calendar year

1 Under $4,999	6 $25,000 - $29,999
2 $5,000 - $9,000	7 $30,000 - $39,999
3 $10,000 - $14,999	8 $40,000 - $49,999
4 $15,000 - $19,999	9 $50,000 - $59,999
5 $20,000 - $24,999	10 $60,000 and above

Miscellaneous codes:

98 Ref
99 DK or NA

household for Year One (Y1COMPLT) and for Year Two (Y2COMPLT). This summary information would allow the households for whom incomplete Year One or Year Two household data were recorded to be dropped in certain analyses, if desired.

Data Processing and Presentation

By maintaining stringent procedures as to the coding of individual data items for computer entry, the study team was able to analyze the data collected using SPSS/PC+, a statistical analysis software. SPSS was the primary tool for data entry, reorganization, and analysis of the numeric data. Ultimately, the SPSS data were presented in the tables, graphs and charts included in this report. Arc/Info was the software used by the NSB GIS to digitize harvest location data and produce the report maps of Wainwright subsistence harvests.

Processing Harvest and Household Data

Once the raw data forms were properly coded, SRB&A staff entered the data into the appropriate SPSS data files. Harvest records were entered into one file, and household records were entered into another file. The harvest records formed a data base consisting of 2,282 records of Year One data and 2,311 records of Year Two data, including "no harvest" records, gifts and other distributed subsistence foods, and subsistence harvests. In contrast, the household record generated only one record per household (124 records for Year One and 119 records for Year Two).

The household data, for the most part, required little processing. However, the harvest data, which represented the vast majority of the data collected, required considerable processing to obtain variables that indicate the number of pounds harvested by species and by household. A separate program processed the data into pounds and number of animals harvested by species, household, and month. The resulting data files allowed the study team to produce output reporting, by species and by year, on: total harvests (pounds and number of animals) for the community, household harvest means, per capita harvest means, the percent of total pounds harvested that each species represents, percent of households harvesting that species, and the number and pounds harvested by month for each species.

GIS Data Processing

As mentioned above, during harvest discussions with study households, the hunter or researcher marked on a 1:250,000 scale map the location where each harvest occurred. The researcher later coded this spot with the unique entry ID number linking the location to the data variables that describe the harvest (i.e., household ID, date of harvest, species harvested, and so on). SRB&A researchers aggregated harvest locations and their entry ID numbers from individual harvest forms onto maps that were transferred to the North Slope Borough. The NSB digitized (i.e., plotted) the mapped data points, along with the unique entry ID numbers, into their computerized mapping system. SRB&A staff converted a subset of the SPSS harvest data to an ASCII file and transferred this file to the NSB GIS. The file included the household ID, entry ID, species, amount harvested, pounds harvested, and date harvested for every mapped resource harvest record. Individual records in this file were matched with the digitized location already entered into the GIS using the entry ID. Data in the GIS thus include household and entry ID numbers, species, amount harvested, date harvested, and a digitized location for each resource harvest observation. The NSB GIS could then select and map a subset of digitized points based on the descriptive variable(s) selected. For example, by selecting only the species walrus and polar bear, and assigning a different symbol to represent each of those two species, a map showing (and differentiating) all walrus and polar bear harvest locations can be produced. This brief description greatly understates the amount of detailed work performed by NSB GIS staff in producing the many individual maps included in this report.

Methodological Issues in Data Processing and Presentation

In the process of analyzing the data and producing output for the tables and figures, the study team had to decide (1) how to deal with households that were present only part of the study year in terms of using their data in analyses; and (2) how to assign a usable weight per animal for each species harvested, particularly in the case of bowhead whales. The study team resolved these issues in favor of the highest level of representativeness. However, this approach meant, in the case of the part-year households, running some analyses

based on full- and part-year households combined, and other analyses based only on the full-year households. Also, the assignment of a usable weight was done differently for bowheads than for other species. Footnotes in the tables and figures attempt to clarify what might appear to the reader to be discrepancies. However, the footnotes are very brief; a more detailed explanation of our method for resolving these issues is provided in the following sections.

Use of Part-Year and Full-Year Households

As discussed previously (in A Census vs. a Sample in this appendix, and in Basis of Harvest Estimates in the body of the report), the number of Wainwright households involved in the study at any time during the two years varied. Throughout Year One, harvest discussions were conducted with 124 households. By the end of Year One, a full year's harvest data had been collected from 107 of the 124 households. Data for the remaining 17 households did not cover the full year for various reasons (e.g., some households moved into the community mid-year, some moved away, some one-person households passed away, and some households refused). During Year Two, 119 households were included in the study, of which nine were present only part of the year and the remaining 110 households were included for the full year.

Because the Wainwright study attempts to report on the harvest activities of the entire community (rather than on a representative sample), all harvest data collected have been included in the estimates of total community harvest for each year (and for the two years averaged), including the harvests of the households that participated for only part of the year. Calculations of average harvest amounts per household and per capita for Year One (revised) and Year Two and the percentage of households harvesting each resource, however, are based only on the data provided by the 100 households that were present in the community and participated for the full two years of data collection. Throughout this report, these 100 households are referred to as the "core study households."

To include part-year households in the calculation of average household harvests for the entire year would have skewed the results; it seemed more

accurate to include only those households for whom we actually had a full year's data. The same reasoning applied to using only full-year households in the calculation of per capita means and the percentage of households participating in the harvest of any given species. However, because the number of full-year households varied from Year One to Year Two, the study team opted to base these calculations on only those 100 households who were present for all of Year One and all of Year Two for the sake of obtaining a better level of year to year comparability and consistency.

Conversions from Numbers to Pounds

In the process of analyzing the data and producing output for the tables and figures, the study team had to decide how to assign a usable weight per animal for each species harvested, particularly in the case of bowhead whales. The harvest data are presented as the number of animals harvested and usable pounds of resource product. The usable weights were selected as the uniform reporting unit in order to provide the public with data that are easily compared with ADF&G data. The ADF&G has published the bulk of Alaska subsistence studies and the majority of their research is reported as edible (usable) pounds. (One notable exception is the Kivalina study by Burch [1985]. Burch [1985] discusses the variations in what is considered by the harvesters and users as the usable weight of an animal. Burch mentions fish as an example of how usable weight varies significantly and that usable weight may be as high as 99 percent of live body weight [Burch 1985]). In the body of this report, the study team has expressed cautions about the difference between "usable" (i.e., potentially edible) and what is actually eaten (as measured in pounds). For consistency with ADF&G data and due to the inability to estimate how much of an animal is "typically" eaten, the study team presented the pounds harvested in terms of total potentially usable weight.

Although using the same conversion weights as ADF&G has some advantages, one disadvantage is that the weights may not be specifically representative for Barrow. Animals vary in size depending on the habitat of the specimen, its sex, its age and the overall status of the population. For example, salmon caught on the North Slope are typically smaller than those caught in

southcentral Alaska (J. Fall, ADF&G Subsistence Division, personal communication). With walrus, individual animals tend to be smaller when the population is large, and vice versa. In addition, the proportion of an animal typically eaten by humans varies across Alaska. Similarly, harvest practices may be selective. For example, according to local residents, Barrow hunters tend not to harvest large bull walrus. Therefore, we offer the caveat that these weights are estimates only and may vary. In particular, a review of this report in draft form generated the observation that estimates for brant and white-fronted geese seemed high. Live weights for white-fronted geese (adults) average 5.9 pounds, implying that the estimated edible weight of 4.5 pounds is too high. Live weights for adult brants averaged approximately 3.2 pounds, meaning that the edible weight of 3.0 pounds is also very likely too high.

The usable weight conversions for each subsistence resource are listed in Table C-3. Fish harvests often required an additional conversion, an estimate of the number of fish per sack. These estimates were highly approximate and the actual number of fish per sack varied considerably. Unless otherwise noted, the type of sack is a large garbage or gunny sack. For those fish harvests that were reported in number of sacks, the number of fish in a sack were computed as shown in Table C-4.

Calculation of Year One and Year Two Bowhead Whale Weights

The method used to determine the number of pounds of usable bowhead harvested in Wainwright in Year Two, as in Year One, was based on a formula that calculates usable pounds from the length of the whale. Whereas in Barrow the study team actually weighed crewshares and crew member shares to calculate the amount of usable product harvested from individual whales in Years One and Two (see SRB&A and ISER 1989a), this method was not used in Wainwright. In Year One, the SRB&A field coordinator arrived in Wainwright a short time before most of the town's harvesters went to whaling camps. Thus, the study was not yet well established in Wainwright. Given the study team's newness in the community and people's lack of familiarity with the study, the field coordinator decided that an unobtrusive presence would be more appropriate and thus did not collect more than a few crew member

TABLE C-3: USABLE WEIGHT CONVERSION FACTORS[1]

Species	Inupiaq Name	Estimated Usable Weight per Resource in Pounds
Marine Mammals		
Bearded seal	*Ugruk*	176.0
Ringed seal	*Natchiq*	42.0
Spotted seal	*Qasigiaq*	42.0
Bowhead whale	*Agviq*	35,091.0[2]
Beluga whale	*Qilalugaq*	1,400.0[3]
Polar bear	*Nanuq*	496.0
Walrus	*Aiviq*	772.0
Terrestrial Mammals		
Caribou	*Tuttu*	117.0
Moose	*Tuttuvak*	500.0
Brown bear	*Aklaq*	100.0
Arctic fox (Blue)	*Tigiganniaq*	0.0
Red fox (Cross, Silver)	*Kayuqtuq*	0.0
Ground squirrel	*Siksrik*	0.4
Wolf	*Amaguq*	0.0
Wolverine	*Qavvik*	0.0
Ermine	*Itigiaq*	0.0
River otter		0.0
Fish		
Salmon (non-specified)		6.1[4]
Chum salmon	*Iqalugruaq*	6.1[4]
Pink (humpback) salmon	*Amaqtuq*	3.1
Silver salmon	*Iqalugruaq*	6.0[5]
King salmon		18.0[5]
Whitefish (non-specified)		1.0[5]
Round whitefish	*Aanaakliq*	1.0
Least cisco	*Iqalusaaq*	1.0[5]
Bering, Arctic cisco	*Qaaktaq*	1.0[5]
Arctic grayling	*Sulukpaugaq*	0.8
Arctic cod	*Iqalugaq*	0.2[6]
Tomcod (Saffron cod)	*Uugaq*	1.0[6]
Arctic flounder	*Nataagnaq*	0.5
Sculpin	*Kanayuq*	0.6[6]
Burbot (Ling cod)	*Tittaaliq*	4.0
Rainbow smelt	*Ilhuagniq*	0.12[5]
Lake trout	*Iqalukpik*	4.0

TABLE C-3 (cont.): USABLE WEIGHT CONVERSION FACTORS[1]

Species	Inupiaq Name	Estimated Usable Weight per Resource in Pounds
Birds		
Duck (non-specified)	*Qaugak*	1.5
Mallard	*Kurugaktak*	1.5
Pintail	*Ivugaq*	1.5
Eider (non-specified)		1.5
Common eider	*Amauligruaq*	1.5
King eider	*Qinalik*	1.5
Spectacled eider	*Tuutalluk*	1.5
Stellar's eider	*Igniqauqtuq*	1.5
Goose (non-specified)	*Nigliq*	4.5
Brant	*Niglingaq*	3.0
White-fronted goose	*Niglivialuk*	4.5
Lesser snow goose	*Kanuq*	4.5
Canada goose	*Iqsragutilik*	4.5
Ptarmigan (non-specified)		0.7
Willow ptarmigan	*Aqargiq*	0.7
Rock ptarmigan	Niksaaktuniq	0.7
Arctic loon	*Qaqsrauq*	3.0[5]
Other Resources		
Berries[7]		
Cloudberry	*Aqpik*	0.0
Crowberry	*Paungaq*	0.0
Salmonberry	*Aqpik*	0.0
Water[8]		0.0
Fresh water	*Imiq*	0.0
Fresh water ice	*Sikutaq*	0.0
Coal[9]	*Aluaq*	

1. Sources are ADF&G Division of Subsistence Community Profile Database for Nuiqsut and Kaktovik (n.d.) unless otherwise noted.
2. Whale conversion weight was computed by the study team from the mean total usable weight per whale of the six whales harvested in Years One and Two (see Table 6 in main portion of report).
3. Study team estimate based on Burch (1985) and knowledge of the age and sex of whales harvested.
4. Source: Impact Assessment, Inc. 1989.
5. Study team estimate.
6. Source: Burch 1985.
7. Berries are measured in quarts.
8. Water is measured in gallons and ice is measured in sled loads. A sled load is estimated to equal 100 gallons of water.
9. Coal is measured in sacks. One sack weighs approximately 50 pounds.

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TABLE C-4: NUMBER OF FISH PER SACK

Fish Species	Inupiaq Name	Number of Fish per Sack	
Whitefish (non-specified)		50	
Round whitefish	*Aanaakliq*	50	
Least cisco	*Iqalusaaq*	100	
Bering, Arctic cisco	*Qaaktaq*	100	
Arctic grayling	*Sulukpaugaq*	90	
Rainbow smelt	*Ilhuagniq*	80	per grocery sack
Arctic cod	*Iqualugaq*	80	per grocery sack
Tomcod	*Uugaq*	100	
Sculpin	*Kanayuq*	30	per grocery sack

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share weights on two of the whales. Additionally, compared with Barrow residents, Wainwright residents were not as accustomed to having researchers present at their harvests to weigh and measure bowhead whales in the midst of the butchering and distribution, and to do so would have been intrusive. Consequently, in Year One and again in Year Two, the study team estimated the bowhead usable weight without weighing crewshares.

The formula to calculate usable product from Wainwright whales was developed by the study team in Year One from knowing (1) the length of each of the whales harvested by Wainwright and (2) the study team estimate of usable weight from Year One and Year Two Barrow bowhead harvests, based on data collected by the SRB&A Barrow study team in cooperation with the NSB Wildlife Management Department. The four bowhead whales harvested by Wainwright crews in Year One were, in chronological order of their harvest, 25.9, 29.9, 44, and 49.5 feet in length (converted from 7.9, 9.1, 13.4, and 15.1 meters - AEWC personal communication). (The inches have been converted to tenths to facilitate discussion of the mathematical calculations used). One could simply add up all the usable weights from each 1987 and 1988 Barrow whale and divide the total usable weight by the combined length of all the whales to arrive at an average usable weight per foot (654 pounds) and multiply that figure by the length of each Wainwright whale. However, the weight per foot length of a bowhead whale increases with the length of the whale (i.e., shorter whales have a smaller body circumference and thus weigh less per foot on the average than longer whales whose body mass is proportionately larger per foot). Thus, the study team examined the existing data on Barrow whales and calculated usable weight per foot length for "short" (24 to 34 feet long) and "long" (46 to 56 feet) whales for which we had data and then extrapolated from those length-to-weight ratios to arrive at usable weights per foot for mid-sized whales (35 to 45 feet).

In 1987 and 1988, Barrow whalers harvested 11 "short" whales that ranged in length from 24.5 to 30.5 feet. Based on the total usable weight harvested from these whales, the study team calculated an average of 490 pounds per foot length for whales in this size range (Table C-5).

TABLE C-5: SUMMARY STATISTICS FOR 24 TO 31 FOOT WHALES

NSB Whale ID Number	Date Harvested	Length (in feet)	Estimated Usable Weight
87-B1	5/1/87	30.5'	17,290
87-B2	5/2/87	29.3'	13,750
87-B7	10/29/87	27.8'	22,620
88-B1	4/24/88	29.0'	13,975
88-B2	4/25/88	29.7'	14,150
88-B3	4/25/88	29.7'	13,450
88-B4	4/25/88	25.5'	9,162
88-B5	4/25/88	29.2'	11,267
88-B6	5/2/88	27.3'	14,820
88-B7	5/4/88	26.8'	14,187
88-B8	5/6/88	24.6'	7,030
Average length:		28.13'	
Average usable weight:			13,791

Average usable weight per foot length: 490 pounds of usable product per foot length for bowhead whales between 24.6 and 30.5 feet in length.

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To cross-check the feasibility of using one average weight per foot for this range of whale lengths, we selected sub-ranges and averaged the weights for those sub-ranges (Table C-6), then compared them to the overall weight per foot for the 24.6 to 30.5 foot range. The smallest weight per foot average belonged to the shortest set of whales, 24.6 to 25.5 feet at 323 usable pounds per foot, while the largest per foot average belonged to the second shortest set of whales, 26.8 to 27.8 feet at 630 usable pounds per foot. Because the pounds per foot did not increase proportionately with the length of the whales, our choice to average the pounds per foot length for all whales between 24 and 31 feet was reinforced.

This average usable weight per foot length, 490 pounds for "short" whales, then was multiplied by the length of Wainwright's first two whales in 1988 since their lengths fell within this range. The first whale harvested was 25.9 feet long, which computes to 12,691 pounds of usable product. The second whale, at 29.9 feet, was estimated to yield 14,651 usable pounds.

The existence of data on Barrow whales in the 50 foot range allowed the study team to use a similar process for estimating the usable weight of Wainwright's fourth Year One whale which measured 49.5 feet long. (The third whale will be discussed last.) In spring of 1987, Barrow crews harvested one 51.3 foot whale that yielded an estimated 64,213 pounds of usable product. That fall, a 51.25 foot whale was harvested of which approximately half the meat was spoiled and therefore was unusable. The usable portion of the whale weighed approximately 31,357 pounds. Rather than adjusting this whale's usable weight upwards to approximate an unspoiled whale at this length, the study team decided to accept the low usable weight figure since spoilage does occur occasionally and, based on field observations in Barrow, was more likely to occur with whales in the larger size category. Thus, the average usable weight per foot of length for the two 51 foot whales harvested in Barrow was 932 pounds per foot. Multiplying this weight by 49.5 feet gave an estimated usable weight of 46,134 pounds for Wainwright's fourth whale.

Wainwright's third whale measured 44 feet long. Possessing Barrow data for only one whale in this size range (a 36.75 foot whale), the study team

TABLE C-6: AVERAGE USABLE WEIGHT PER FOOT LENGTH FOR SUB-RANGES OF 24 TO 31 FOOT WHALES, BARROW 1987 AND 1988

Date Harvested	Length (in feet)	Estimated Usable Weight
Subrange #1:		
5/6/88	24.6'	7,030
4/25/88	25.5'	9,162
Totals:	50.1	16,192
Average pounds per foot: 323		
Subrange #2:		
5/4/88	26.8'	14,187
5/2/88	27.3'	14,820
10/29/87	27.8'	22,620
Totals:	81.9	51,627
Average pounds per foot: 630		
Subrange #3:		
4/24/88	29.0'	13,975
4/25/88	29.2'	11,267
5/2/87	29.3'	13,750
4/25/88	29.7'	14,150
4/25/88	29.7'	13,450
Totals:	146.9	66,592
Average pounds per foot: 453		
Subrange #4:		
5/1/87	30.5'	17,290
Average pounds per foot: 567		

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extrapolated from the "short" and "long" whale weight-per-foot ratios to generate a weight-per-foot for a 44 foot whale. The 11 whales that averaged 490 pounds per foot averaged 28.13 feet in length (Table C-5). The "long" whales that averaged 932 pounds per foot were 51.25 feet long. Considering the difference between these average lengths to be a continuum, 44 feet falls at 69 percent between 28.13 and 51.25 feet. This percentage can then be applied to a similar continuum for pounds per foot from 490 to 932. Sixty-nine percent of the difference between those weights is 305 pounds, which is added to the base weight of 490 to give a usable weight per foot of 795 for a 44 foot whale. Thus, Wainwright's third whale was estimated to yield approximately 34,940 pounds of usable product. Table C-7 summarizes the estimated usable weights for the 1988 (Year One) Wainwright whales.

Wainwright's two Year Two bowhead whales measured 52.8 and 56.75 feet in length. At these lengths, the usable weight per foot is estimated by the above method to be 932 pounds. Thus, the 52.8 foot whale yielded approximately 49,241 usable pounds and the 56.75 foot whale yielded approximately 52,891 usable pounds. Summary data on the Wainwright Year Two bowhead harvests follows in Table C-8.

TABLE C-7: SUMMARY STATISTICS ON 1988 WAINWRIGHT WHALE HARVESTS

Harvest Date	Length (in feet)	Estimated Usable Weight (lbs.) Per Foot	Total
4/25/88	25.9'	490	12,691
4/26/88	29.9'	490	14,651
5/6/88	44.0'	795	34,940
5/18/88	49.5'	932	46,134
Average length:	37.3'		
Average weight per foot of length:		677	
Average weight:			27,104

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TABLE C-8: SUMMARY STATISTICS ON 1989 WAINWRIGHT WHALE HARVESTS

Harvest Date	Length (in feet)	Estimated Usable Weight (lbs.) Per Foot	Total
5/15/89	52.8'	932	49,241
5/27/89	56.75'	932	52,891
Average length:	54.8'		
Average weight per foot of length:		932	
Average weight:			51,066

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As the Nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering the wisest use of our land and water resources, protecting our fish and wildlife, preserving the environmental and cultural values of our national parks and historical places, and providing for the enjoyment of life through outdoor recreation. The Department assesses our energy and mineral resources and works to assure that their development is in the best interest of all our people. The Department also has a major responsibility for American Indian reservation communities and for people who live in Island Territories under U.S. Administration.