

Special Publication No. 2014-02

**Subsistence Wildlife Harvests in Brevig Mission,
Deering, Noatak, and Teller, Alaska, 2011–2012**

by

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May 2014

Alaska Department of Fish and Game

Division of Subsistence



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Weights and measures (metric)		General		Mathematics, statistics	
centimeter	cm	Alaska Administrative Code	AAC	<i>all standard mathematical signs, symbols and abbreviations</i>	
deciliter	dL	all commonly-accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.	alternate hypothesis	H_A
gram	g			base of natural logarithm	e
hectare	ha			catch per unit effort	CPUE
kilogram	kg			coefficient of variation	CV
kilometer	km	all commonly-accepted professional titles	e.g., Dr., Ph.D., R.N., etc.	common test statistics	(F, t, χ^2 , etc.)
liter	L			confidence interval	CI
meter	m	at	@	correlation coefficient (multiple)	R
milliliter	mL	compass directions:		correlation coefficient (simple)	r
millimeter	mm	east	E	covariance	cov
		north	N	degree (angular)	$^\circ$
Weights and measures (English)		south	S	degrees of freedom	df
cubic feet per second	ft ³ /s	west	W	expected value	E
foot	ft	copyright	©	greater than	>
gallon	gal	corporate suffixes:		greater than or equal to	\geq
inch	in	Company	Co.	harvest per unit effort	HPUE
mile	mi	Corporation	Corp.	less than	<
nautical mile	nmi	Incorporated	Inc.	less than or equal to	\leq
ounce	oz	Limited	Ltd.	logarithm (natural)	ln
pound	lb	District of Columbia	D.C.	logarithm (base 10)	log
quart	qt	et alii (and others)	et al.	logarithm (specify base)	\log_2 , etc.
yard	yd	et cetera (and so forth)	etc.	minute (angular)	'
		exempli gratia (for example)	e.g.	not significant	NS
Time and temperature		Federal Information Code	FIC	null hypothesis	H_0
day	d	id est (that is)	i.e.	percent	%
degrees Celsius	$^\circ\text{C}$	latitude or longitude	lat. or long.	probability	P
degrees Fahrenheit	$^\circ\text{F}$	monetary symbols (U.S.)	\$, ¢	probability of a type I error (rejection of the null hypothesis when true)	α
degrees kelvin	K	months (tables and figures)	first three letters (Jan, ..., Dec)	probability of a type II error (acceptance of the null hypothesis when false)	β
hour	h	registered trademark	®	second (angular)	"
minute	min	trademark	™	standard deviation	SD
second	s	United States (adjective)	U.S.	standard error	SE
		United States of America (noun)	USA	variance	
Physics and chemistry		U.S.C.	United States Code	population	Var
<i>all atomic symbols</i>		U.S. state	two-letter abbreviations (e.g., AK, WA)	sample	var
alternating current	AC				
ampere	A	Measures (fisheries)			
calorie	cal	fork length	FL		
direct current	DC	mideye-to-fork	MEF		
hertz	Hz	mideye-to-tail-fork	METF		
horsepower	hp	standard length	SL		
hydrogen ion activity (negative log of)	pH	total length	TL		
parts per million	ppm				
parts per thousand	ppt, ‰				
volts	V				
watts	W				

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**SUBSISTENCE WILDLIFE HARVESTS IN BREVIG MISSION,
DEERING, NOATAK, AND TELLER, ALASKA, 2011–2012**

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May 2014

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ABSTRACT

This report summarizes the results of big game subsistence harvest surveys conducted in Brevig Mission, Deering, Noatak, and Teller in the spring of 2012. Since 1999, the Alaska Department of Fish and Game Division of Subsistence, with support from the Division of Wildlife Conservation, has conducted this limited scope harvest survey in communities within game management units (GMUs) 22 and 23 that harvest from the Western Arctic caribou herd. The survey asked heads of households in each community about their harvests of caribou, moose, other large land mammals, and furbearers between May 2011 and April 2012. Researchers documented the number, sex, and harvest timing for these subsistence resources, as well as observations, if any, of unhealthy animals. Reported results were expanded to account for unsurveyed households. In the 2011–2012 study year, Brevig Mission hunters harvested an estimated 46 caribou, approximately 15.5 edible pounds per person. In Deering, hunters harvested an estimated 237 caribou, or approximately 206 edible pounds per capita. Noatak’s estimated harvest was 360 caribou, 90 pounds per person. In Teller, hunters harvested an estimated 17 caribou, 9.5 pounds per capita.

Key words: caribou, moose, brown bears, Dall sheep, muskoxen, furbearers, Brevig Mission, Deering, Noatak, Teller, WAH, Western Arctic caribou herd, subsistence hunting.

INTRODUCTION

Caribou *Rangifer tarandus* are an important subsistence resource for communities in the Northwest, Arctic, and Interior regions of Alaska. People from more than 40 villages, from Wainwright in the north to Kotlik in the south, as well as from the regional centers of Barrow, Kotzebue, and Nome, are known to harvest caribou from the Western Arctic caribou herd (WAH; Figure 1). This herd, which roams throughout an area of 140,000 square miles, is the largest caribou herd in Alaska (ADF&G 2012). The Western Arctic caribou herd has declined from an estimated 348,000 animals in the 2009 census to 325,000 caribou in July of 2011; this represents a 5% decline between the respective censuses. At its peak in 2003, the herd numbered 490,000 caribou. It has declined at a rate of 4–6% annually since that peak. This population decline is expected to continue, especially given recent severe icing events, reports received from local residents that predator numbers are high in many portions of the herd's range, and documented changes to the conditions of the herd's winter range (Western Arctic Caribou Herd Working Group 2012).

The role of caribou in the nutritional, cultural, and economic health of northwestern Alaska communities varies. In some communities, caribou meat is a large portion of the total subsistence harvest each year. In communities where other resources are more abundant, caribou may represent a smaller portion of the total subsistence harvest. Because of a village's location, residents may have only occasional access to the WAH. In villages located along key migration routes, residents might take caribou during several months of the year. A variety of other factors may also influence caribou harvests each year, including gasoline prices, user conflicts, weather, the success (or lack thereof) in harvesting other subsistence resources, migration timing, and so forth. Subsistence harvesters adapt to local conditions. Therefore, inter-annual variation in harvest numbers and characteristics is not uncommon, even within a single village.

It is the statutory responsibility of the Alaska Department of Fish and Game (ADF&G) Division of Subsistence to provide information to the public, agencies, the Alaska Board of Fisheries, and the Alaska Board of Game about the role of subsistence hunting and fishing in the lives of Alaska residents (AS 16.05.094). The division studies and reports on the seasonality, methods, sharing and trading, use areas, cultural and economic values, and trends of subsistence harvests and uses. This information is increasingly necessary as development projects are proposed throughout rural areas of Alaska. Documenting and understanding subsistence harvests is also necessary in order to evaluate reasonable opportunities for customary and traditional uses of wild resources. Other duties of the division set forth in statute include:

- quantifying the amount, nutritional value, and extent of dependency on foods acquired through subsistence hunting and fishing;
- evaluating the impacts of state and federal laws and regulations on subsistence hunting and fishing, and when corrective action is indicated, making recommendations to the department; and
- making recommendations to the Board of Game and the Board of Fisheries regarding adoption, amendment, and repeal of regulations affecting subsistence hunting and fishing.

Subsistence harvest surveys of varying scope have been conducted in over 200 Alaska communities since the division was formed in 1978. This research helps ADF&G estimate subsistence harvests and understand the role of subsistence in local economies. Each year since 1999, ADF&G, in cooperation with the Maniilaq Association and Kawerak, Inc., has gathered big game harvest information in selected Kotzebue and Norton Sound area communities.

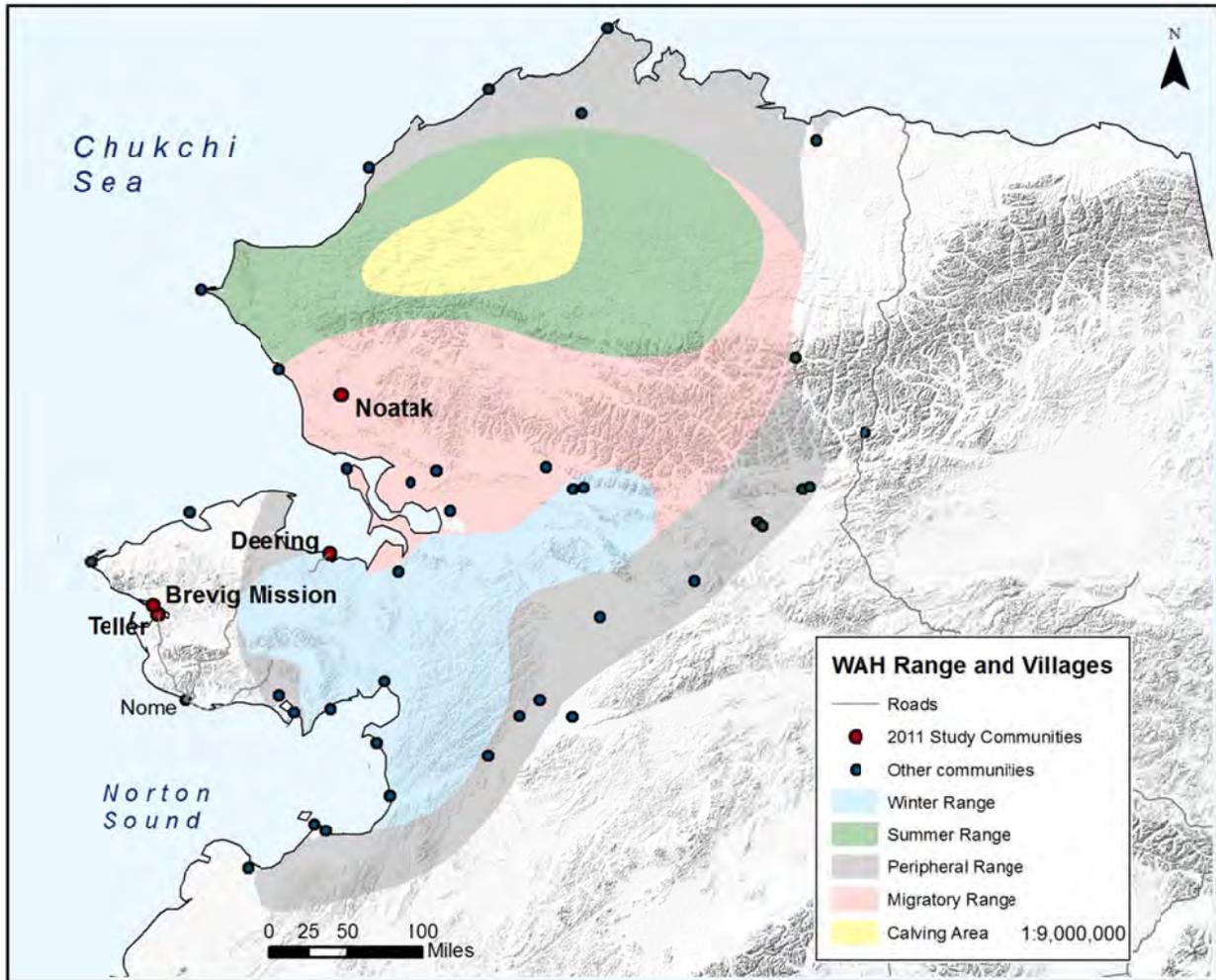


Figure-1.- Western Arctic caribou herd range and communities surveyed in 2012.

METHODS

In 2012, division staff collected subsistence harvest information in 4 communities in the Kotzebue Sound and Bering Strait regions: Brevig Mission, Deering, Noatak, and Teller. All data were processed and analyzed by the division. Survey data were expanded to account for unsurveyed households.

Survey timing was designed to coincide with the end of a major harvest period. Brevig Mission, Deering, Noatak, and Teller households were asked about their harvest of caribou, other large game and furbearers between May 2011 and April 2012. Fieldwork occurred in the communities of Deering and Noatak in April 2012, while other work responsibilities delayed Division of Subsistence staff from beginning fieldwork in Brevig Mission and Teller until May 2012. Funding for the big game survey came from ADF&G divisions of Wildlife Conservation and Subsistence.

The division's policy is to seek community approval before conducting local research. Community approval from the traditional councils of all study communities was obtained by the Division of Subsistence. Nicole Braem and Alida Trainor (Division of Subsistence) traveled to Brevig Mission, Deering, Noatak, and Teller in April and May 2012, where they trained local surveyors and helped administer surveys. Four local residents in Brevig Mission, Matilda Nayokpuk, Frieda Olanna, Lucy Olanna, and Debbie Seetot, were hired to update the household list and complete surveys. In Deering, Kevin Moto and Clayton Barr were hired. Elsie Goodro, Sandra Atorak, Monetta Booth, and Hannah Onalik were hired in Noatak. Bobbi Miller and Kathleen Miller worked on the survey in Teller.

SURVEY DESIGN IN 2012

The Division of Subsistence standard method for collecting harvest information in smaller communities is to attempt to survey every household, usually by talking to the head or heads of each household.

Confidentiality is protected by using randomly assigned household numbers instead of names on the survey form. Before starting the project, survey workers compile an updated list of every household present in the community during the study period. Participation in surveys is voluntary—people may refuse to answer any or all questions. Surveyors try to contact each household on 3 separate occasions. If no contact is made, then that household is recorded as “no contact.” There are a variety of reasons that a household is marked “no contact:” they may be out of town during the survey effort; they may have moved to another community; or the household members may have passed away during or after the study year. Surveyors often go door to door but make appointments for surveys when necessary.

The big game survey used in 2011 gathered demographic information for each household member: the age, sex, and relationship to the head(s) of household, how many years each person had lived in the community, and whether members were Alaska Native (Table 1).

The survey (Appendix A) included questions about harvests and uses of caribou, moose *Alces alces*, brown bear *Ursus arctos*, Dall sheep *Ovis dalli*, muskoxen *Ovibos moschatus*, and several furbearers. Researchers also asked about sharing (i.e., if a household gave away a resource to other households or if the household received it). Harvest location was recorded by ADF&G Division of Wildlife Conservation Uniform Coding Unit (UCU). These units are geographical areas that can vary in size from just a few square miles to several thousand square miles. Respondents were asked about the locations of harvests, the sexes of harvested animals, and the months in which harvests occurred. In this study period, as in the previous year's survey, respondents were given the option of naming a season of harvest. At times, season of harvest (for example, fall) is the most detail that can be obtained; in previous studies this has been merely recorded as “unknown,” in effect discarding useful information. Respondents were also asked if any members of their household harvested animals with diseases or other physical abnormalities. Surveys typically took 5–10 minutes to administer.

Sample achievement varied in the 4 communities (Table 1): 67% of Brevig Mission households, 70% of Deering households, 74% of Noatak households, and 75% of Teller households were surveyed.

Table-1.–Demographic characteristics of sampled households in WAH study communities, 2011–2012.

Characteristics	Community				Total
	Brevig Mission	Deering	Noatak	Teller	
Sampled	60	30	92	59	241
Eligible households	89	43	125	79	336
Percentage	67.4%	69.8%	73.6%	74.7%	71.7%
Household size					
Mean	4.5	3.6	4.4	3.2	4.0
Minimum	1	1	1	1	1
Maximum	11	7	10	7	11
Age					
Mean	24.8	29.6	28.4	28.3	27.6
Minimum ^a	0	0	0	0	0
Maximum	86	78	86	80	86
Median	20.0	24.0	23.0	24.0	23.50
Sex					
Estimated male					
Number	221.8	87.4	292.1	132.6	734
Percentage	55.0%	56.0%	53.6%	53.2%	54.2%
Estimated female					
Number	181.6	68.8	252.7	116.5	620
Percentage	45.0%	44.0%	46.4%	46.8%	45.8%
Alaska Native					
Estimated households ^b					
Number	83.1	41.6	118.2	65.6	308
Percentage	93.3%	96.7%	94.6%	83.1%	91.8%
Estimated population					
Number	385.60	154.80	525.82	230.31	1,297
Percentage	95.6%	99.1%	96.5%	92.5%	95.8%

Source ADF&G Division of Subsistence household surveys, 2012.

a. A minimum age of 0 (zero) is used for infants that are less than 1 year of age.

b. The estimated number of households in which at least one head of household is Alaska Native.

ANALYSIS

Since its establishment in 1978, the Division of Subsistence Information Management (IM) team has adopted standards based on observations and findings to analyze subsistence harvest resource data. The base unit for the majority of surveys is the household. IM generates harvest estimates and participation rates at the community level. The statistical program SPSS¹ is used to analyze data and prepare tables.

Results from surveyed households were entered into the division's data repository in MS SQL Server. Each survey was entered 2 times by different staff. As the first step in data validation, the two versions were compared and corrected according to the actual values recorded on paper surveys. Once entered and validated, data were then extracted using SPSS v19.0 and analyzed using standard division methods.

1. Product names are given because they are established standards for the State of Alaska or for scientific completeness: they do not constitute product endorsement.

Harvest amounts and demographic information were extrapolated to unsurveyed households to derive total harvest and human population estimates for each community. Fractional estimates are the direct result of this expansion procedure and are rounded to the nearest tenth in accompanying report tables. Participation levels, presented in percentages, are derived directly from the sampled data and are assumed to be the same as estimated participation levels for the entire community.

Harvest estimates and responses to all questions were calculated based upon the application of weighted means (Cochran 1977). These calculations are standard methods for extrapolating sampled data. The formula applied for this method is:

$$X_C = \frac{N}{n} \sum_{i=1}^n x_i$$

Where:

x = household harvest

i = i th household in the community

n = number of sampled households in the community

N = number of households in the community

X_C = total estimated community harvest

In addition to harvest estimates, the division reports confidence intervals (CI) to provide some context to the quality and accuracy of the sample. This value represents the relative precision of the mean, or likelihood that an unknown value falls within a certain distance from the mean. In the accompanying tables, the CI is expressed as a percent and applies to both the mean household harvest and total community harvest. The division standard is to use a 95% confidence interval. The formula applied to produce this value is:

$$C.I.\%(\pm) = \frac{t_{\alpha/2} \times s_x}{\bar{x} \times \sqrt{n}} \times \sqrt{\frac{N-n}{N-1}}$$

Where:

$t_{\alpha/2}$ = Student's t statistic for given alpha level (α) with $n-1$ degrees of freedom (95% CI with $n-1$ degrees of freedom). The commonly accepted standard is to use 1.96; however, for very small populations, less than ~140, the appropriate value must be identified from a look-up table.

s = the sample standard deviation

\bar{x} = sample mean for the community

n = sample size for a community

N = total households in a community

RESULTS

CARIBOU

Percentages of households in the 4 study communities that reported use of caribou during the study year varied. In Noatak, 95% of households reported using this resource, followed by 94% of Deering households. In Teller and Brevig Mission, both of which are situated outside of the commonly understood range of the Western Arctic caribou herd, 22% and 52% of households reported using caribou during the study year, respectively. Although access to caribou may be more difficult for hunters in these communities, traditional food distribution networks based on sharing and barter may account for the higher levels of use in comparison with lower harvest numbers. The percentage of households in each community that hunted caribou varied. Deering had the highest percentage of households attempting to harvest caribou (63%), compared with only 12% of households in Teller. Sixty-two percent of Noatak households and 37% of Brevig Mission households reported attempting to harvest this resource, respectively (Table 2).

Table 2.—Estimated harvest and uses of caribou, WAH study communities, 2011–2102.

Community	Percentage of households reporting					Estimated harvest (lb)			
	Use %	Attempt to harvest %	Harvest %	Give %	Receive %	Total individual	Mean household (lb)	Mean per capita (lb)	95% CI harvest
Brevig Mission	51.7	36.7	26.7	20.0	46.7	46.0	0.5	15.5	29.0
Deering	93.3	63.3	63.3	76.7	76.7	236.5	5.5	205.9	37.2
Noatak	94.6	62.0	50.0	51.1	78.3	359.7	2.9	89.8	18.5
Teller	22.0	11.9	11.9	10.2	20.3	17.4	0.2	9.5	56.4

Source ADF&G Division of Subsistence household surveys, 2012.

Household success rates (roughly measured by dividing the number of households attempting to harvest caribou by the number of households that did so) were relatively high for all 4 study communities. In Deering and Teller, 100% of households that attempted to harvest caribou were successful in their efforts, while 81% and 73% were successful in Noatak and Brevig Mission, respectively. This rough measure of success does not, however, account for effort: the number of trips made, instances of trips made with no harvest, distance traveled, and the money spent on gasoline and other supplies. The prevalence of sharing subsistence food accounts for the difference between harvest and uses in all 4 study communities. For example, 62% of households in Noatak harvested caribou, while 95% used the resource during the study year.

Caribou harvest in a given year is influenced by several factors, including: village location relative to varied herd range and migration routes, the availability of other resources (notably marine mammals), success in harvests of other available subsistence resources, travel conditions, gas prices, food preferences, and others.

Estimates of total caribou harvest by community ranged from 17 in Teller to 360 in Noatak. Looking at results in terms of per capita harvests (pounds per person) allows comparisons of results from communities with varied population sizes as well as results from one community over time. In terms of this measure, Deering harvested the most caribou during the study year, an estimated 206 pounds per resident. Noatak harvested the second most caribou per capita (90 lb), followed by Brevig Mission at 15.5 pounds per capita. Teller harvested an estimated 9.5 pounds per capita during study period. Detailed information on the harvest and uses of caribou and all other resources asked about during the survey is available in Appendix B.

The sex ratio of individual community harvest varied, as did harvest timing. For a complete breakdown of caribou harvest by sex and month, see Appendix C.

A majority of Brevig Mission’s harvest was bulls (61%), while another 19% were cows. Nineteen percent were unknown sex, with respondents not able to recall the sex of harvested animals. Harvests took place in December 2011, as well as February through April 2012 (Figure 2).

Harvests in February through April (40 caribou) comprised 87% of the total harvests. Subsistence hunters have more daylight, generally good travel conditions, and less severe weather (compared with earlier in the winter) during this time of year.

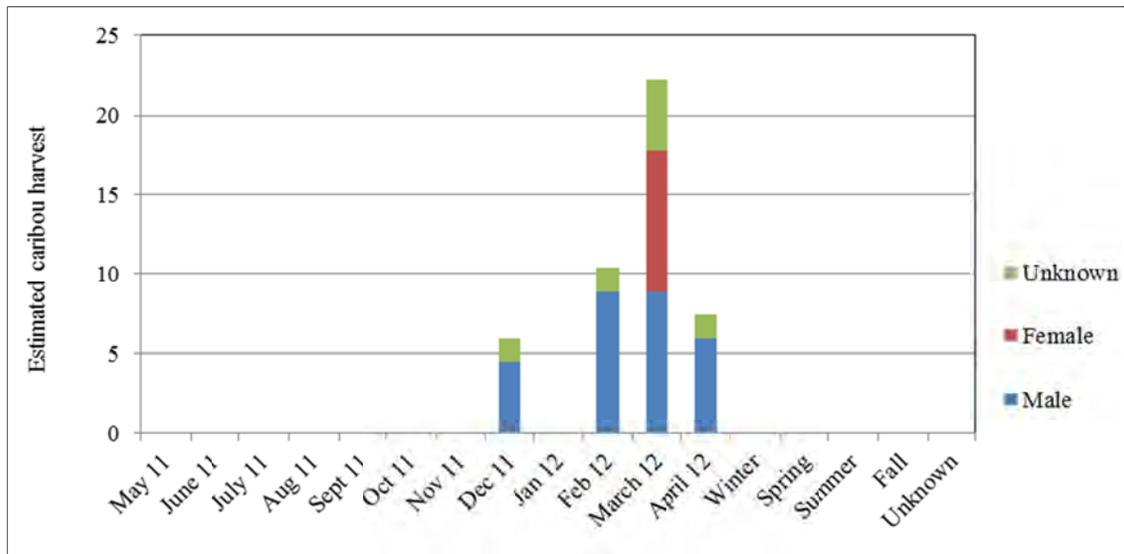


Figure-2.–Estimated caribou harvest by month, Brevig Mission, 2011–2012.

In Deering, 39% of the caribou harvested were cows, while bulls comprised 26% of the harvest. The remaining 35% of the total estimated harvest was caribou of unknown sex. Some respondents also had difficulty recalling the timing of harvest, 33% of caribou were harvested in an unknown month or season.

For the remaining harvests, Deering hunters took a majority of their caribou from late winter into the spring months. Sixty-five caribou, or 27% of total estimated harvest, were taken in April 2011 and January through March 2012. Lesser harvests were reported in the months of July through October. Some respondents were able to recall the season, but not the month of harvest; 15% (36 caribou) of the total estimated harvest was taken in the spring, while 12% of the harvest was taken in the fall and summer seasons (Figure 3).

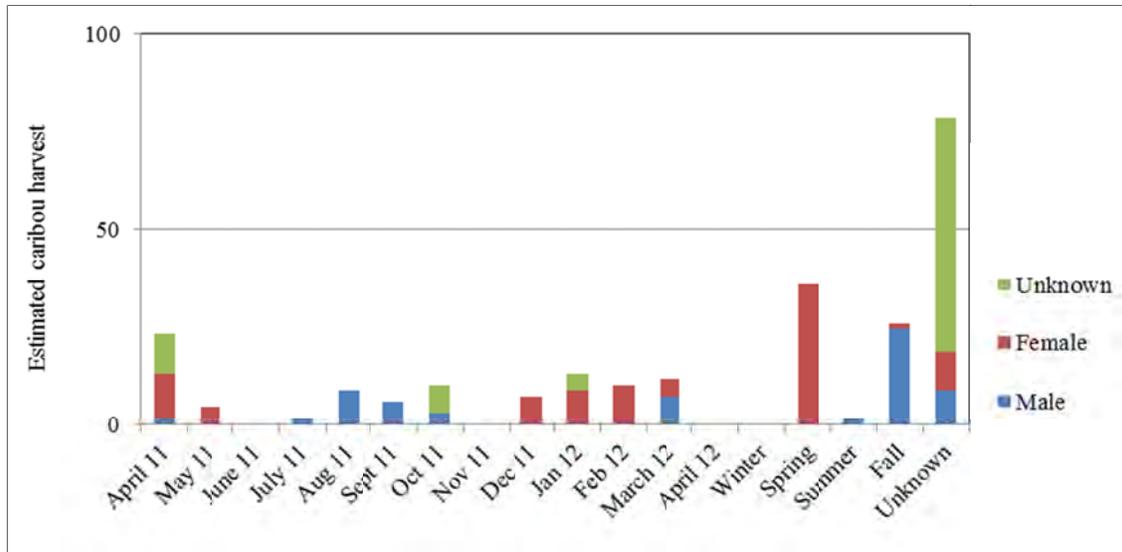


Figure-3.–Estimated caribou harvest by month, Deering, 2011–2012.

The vast majority of Noatak’s harvest was bulls (308 caribou), which composed 86% of the total estimated harvest. A further 16 caribou taken by residents were cows (4%), while 35 caribou were of unknown sex (10%).

As in Deering, a number of Noatak respondents were unable to recall the specific month or season of a portion of their harvests; 100 caribou (28%) were taken in the fall season and 16 caribou (4%) were taken during an unknown month or season. The majority of harvests occurred in August and September (220 caribou), composing 61% of the total estimated harvest. Lesser harvests occurred in the months of October through December and in February and March (Figure 4).

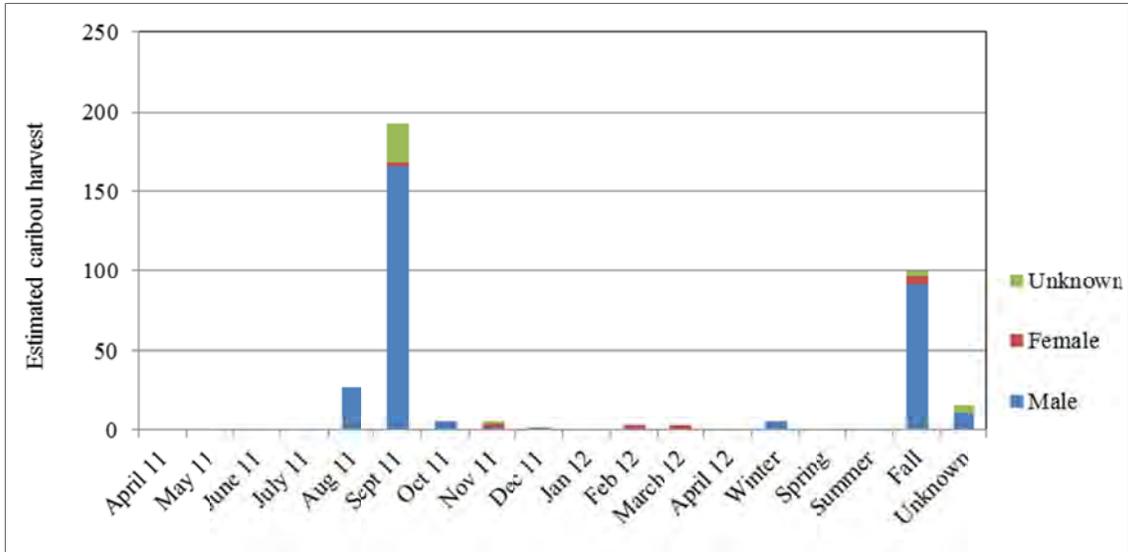


Figure-4.–Estimated caribou harvest by month and sex, Noatak, 2011–2012.

In Teller, the majority of the harvest was bulls (13 caribou), which composed 77% of the total estimated harvest. A further 3 harvested caribou were cows (17%), and 1 caribou was of unknown sex (6%). Fifty-four percent of Teller harvests occurred in the month of January (9 caribou), while 16% (3 caribou) occurred in an unknown month, and 7% occurred in the fall season. Lesser harvests occurred in August and September as well as in the month of April (Figure 5).

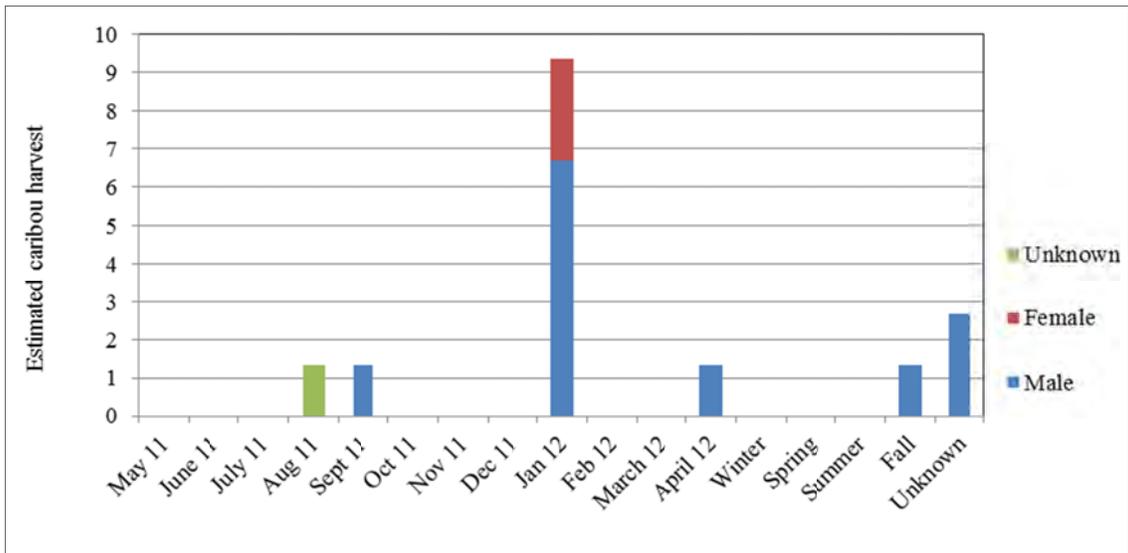


Figure-5.–Estimated caribou harvest by month and sex, Teller, 2011–2012.

With the exception of Deering, a majority of respondents were able to attribute all caribou harvested to specific months of the year, although unknown timing of harvests was documented in all communities except Brevig Mission. Uncertainty about month of harvest can be attributed to a number of factors, including: the length of the study period, the time between harvest of animals and survey administration, the sheer number of animals harvested by a particular hunter or household (in the case of caribou), and which member of the household answers the survey questions. While surveyors attempt to speak to the hunters, they are at times unavailable, and another household member responds to the survey questions. A hunter may be out of town, for example, and while the spouse can provide the number of caribou harvested, he or she may not be able to recall the sex or the exact month the caribou was harvested. Often, season of harvest (for example, fall) is the most detail that can be obtained.

There were a few reports of caribou harvested but determined to be too unhealthy to eat in the 2011–2012 study period. In Brevig Mission, 2 households reported external lesions found on 4 individual caribou, while 3 others reported a variety of respective abnormalities on individual animals. One household in Deering reported harvesting a caribou with internal lesions, and 4 households in Noatak reported harvesting individual caribou with internal lesions, discoloration, cysts or tumors, and gross malformation. While there were reports in every community except Teller, they represent 12 caribou (2% of the total estimated harvest) out of the 660 caribou harvested across all 4 study communities. A complete list of symptoms and general comments is presented in Appendix D.

Hunters in 2 out of the 4 study communities also reported limited use and harvest of reindeer during the study year. These were likely animals from a local reindeer herd, not feral reindeer that were mixed in with caribou. Seven percent of households in Brevig Mission reported using, attempting to harvest, and harvesting reindeer. This resource was also shared within the community, with 2% of households reporting giving reindeer away and 3% of households reporting receiving the resource. Hunters in the community harvested an estimated 7 individuals, or 2 lb per capita. Five percent of Teller households reported using reindeer, with 2% reporting attempting to and harvesting the resource. Three percent of households reported receiving reindeer. The total estimated harvest of this resource in Teller was 1 reindeer, or 0.7 lb per capita.

Caribou harvest took place in 29 UCUs near the study communities in 2011–2012 (Figure 6). Harvest by location is broken down by community in tabular form in Appendix E; the following maps (figures 6–10) show harvests apportioned to the UCUs for each community. Limitations to this study's approach to data collection are that it does not ask where hunters hunted caribou, but rather where they killed them; another is its very rough, generalized approach to location. In any year, hunters may use a vastly larger (or smaller) area than reflected in the maps.

In Brevig Mission, hunters took caribou in a wide variety of locations. Ten caribou (23% of estimated harvest) were taken in an area to the north of the community which includes the Pinguk and Nuluk rivers. A further 9 caribou (20%) were harvested in an area to the southeast of the community, which includes the Kuzitrin River drainage, and 6 caribou (13%) were taken to the area immediately to the south of this region in the area of the Pilgrim River. Three caribou (7%) were taken in a UCU farther to the east in the interior of the Seward Peninsula, which includes the Noxapaga River. Hunters harvested an additional 6 caribou (13%) in 2 separate UCUs in the vicinity of the Agiapuk River and American River drainages, respectively. Two caribou (3%) were taken to the southeast of the community near the Imuruk Basin, and another 2 caribou (3%) were taken near Nome. Brevig Mission hunters harvested a further 2 caribou (3%) east of the community near the Kougarok River. No geographic harvest information was available for 6 caribou (13%).

About one-quarter of Deering's caribou harvest (63 animals) was taken in the immediate vicinity of Deering. Twenty-four percent of the estimated harvest (57 caribou) came from a UCU to the east of the community in the vicinity of Kugruk River. Thirty caribou (13%) were taken further to the east in the vicinity of the Kiwalik River drainage, and 5 caribou (2%) were harvested west of the community in the

area of the Goodhope and Cripple river drainages. Three caribou (1%) were harvested in the area near Buckland. Hunters in the community also harvested 3 caribou (1%) near Eschscholtz Bay. Respondents in Deering were unable to give the geographic location of their harvests for 75 caribou, 32% of the estimated harvest.

Slightly more than one-half of Noatak's caribou harvest (187 animals) came in the immediate vicinity of the community. Of the remaining harvests, most occurred in the vicinity of the Noatak River and its tributaries (92), including the Kelly River, Kogorurok River, Poktovik Creek, Nakolik Creek, and Aklummayuak Creek. Noatak hunters took 5 caribou (2%) in an area near the Maiyumerak Mountains and Eli River, and another 5 (2%) in the Lake Narvakrak region. Four additional caribou (1%) were taken to the southeast of Noatak in an area near Squirrel River. Three caribou were harvested to the north of the community in the area near Wrench Creek, and another 3 were taken to the east near Grand Canyon. Hunters in the community took an additional 3 caribou in an area along the coast near Imik Lagoon. No harvest location information was available for 58 caribou, 16% of the estimated harvest.

Teller hunters took 9 caribou (54%) in a UCU to the east of the community, which includes the Agiapuk and Arctic rivers. A further 7 caribou (39%) were killed near the community in an area that also includes the Bluestone River. Harvest location information was unavailable for 1 caribou, 7% of the harvest.

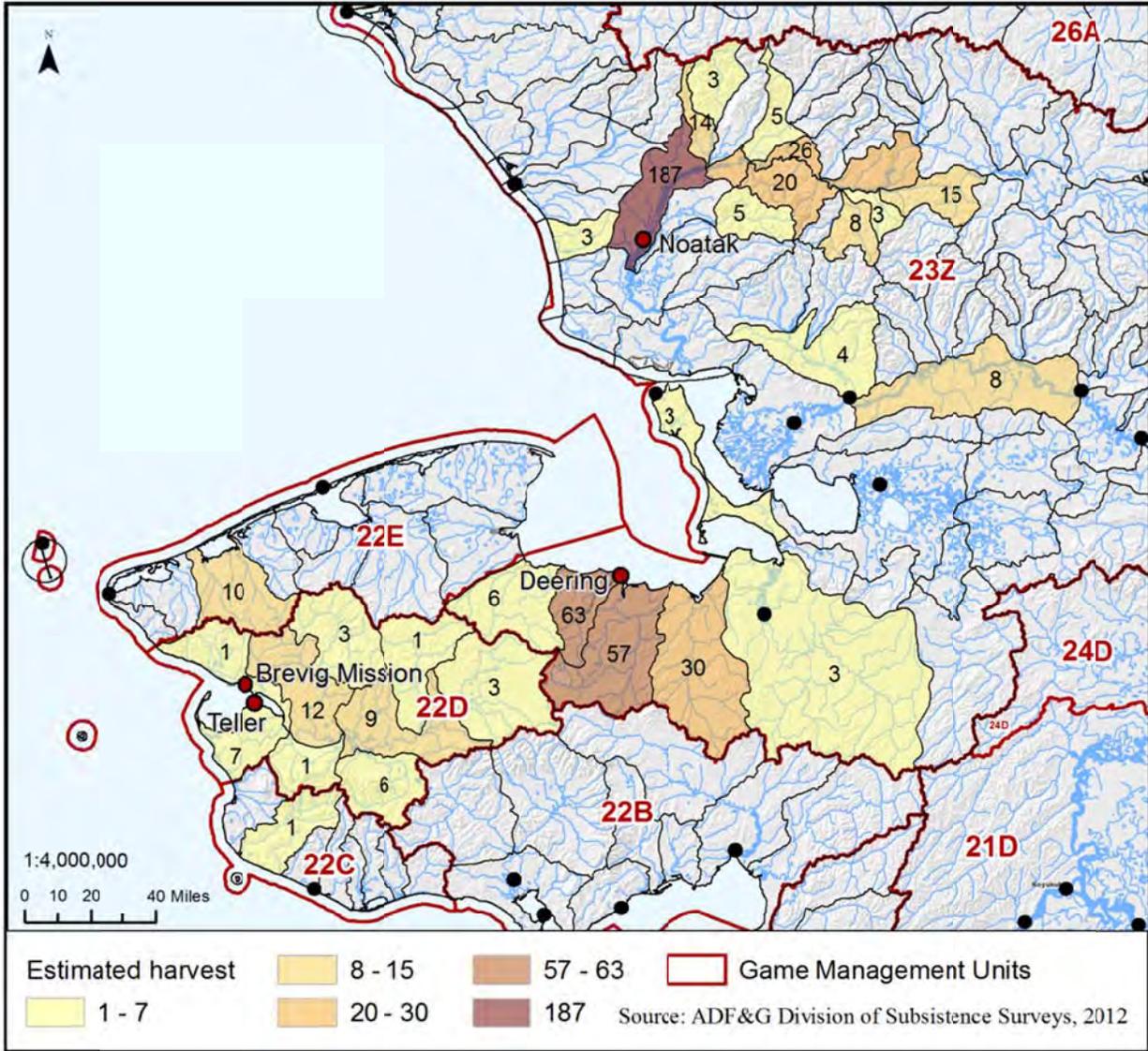


Figure 6.—Estimated caribou harvest by UCU, Brevig Mission, Deering, Noatak, and Teller, 2011–2012.

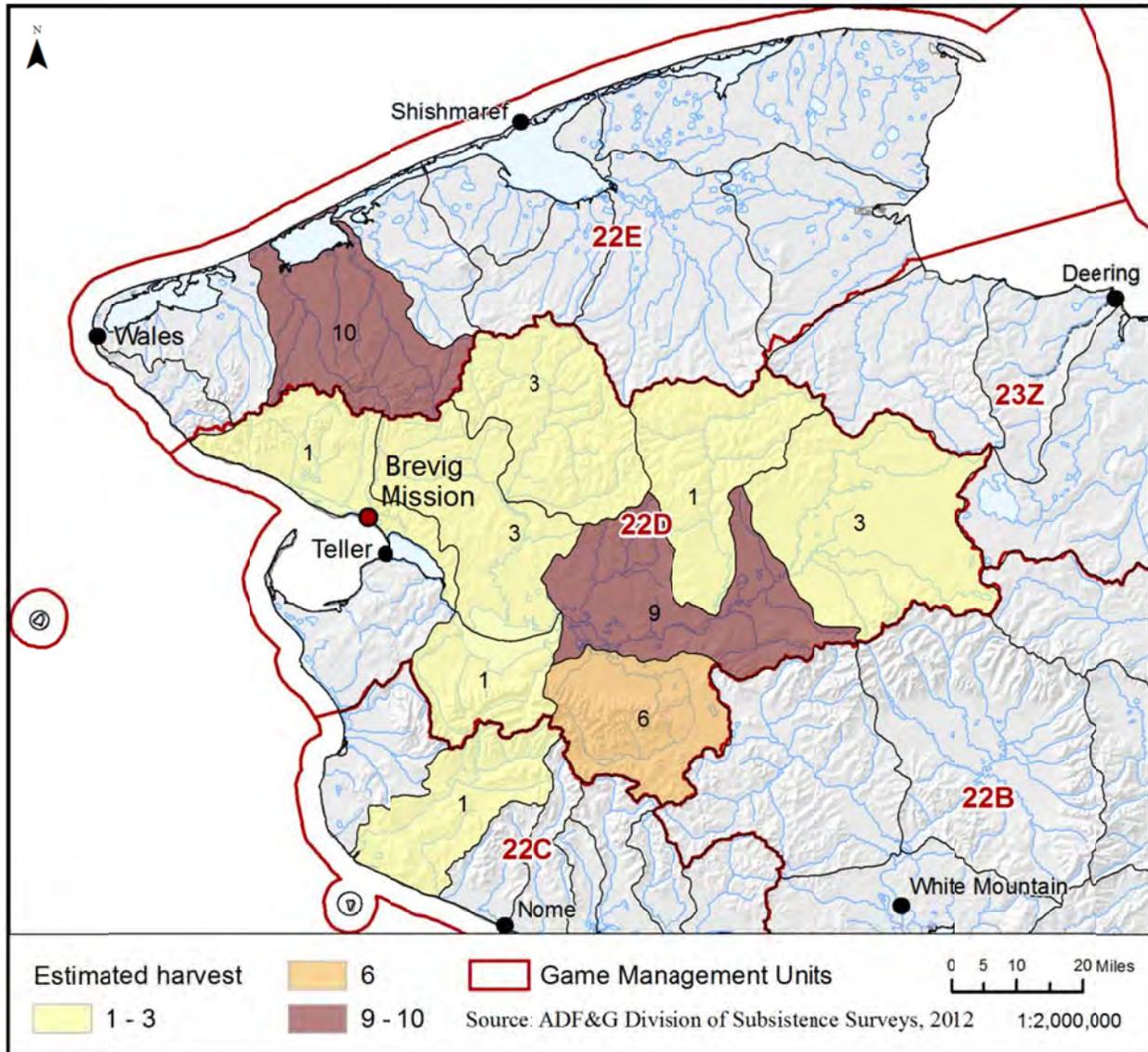


Figure 7.—Estimated caribou harvest by UCU, Brevig Mission, 2011–2012.

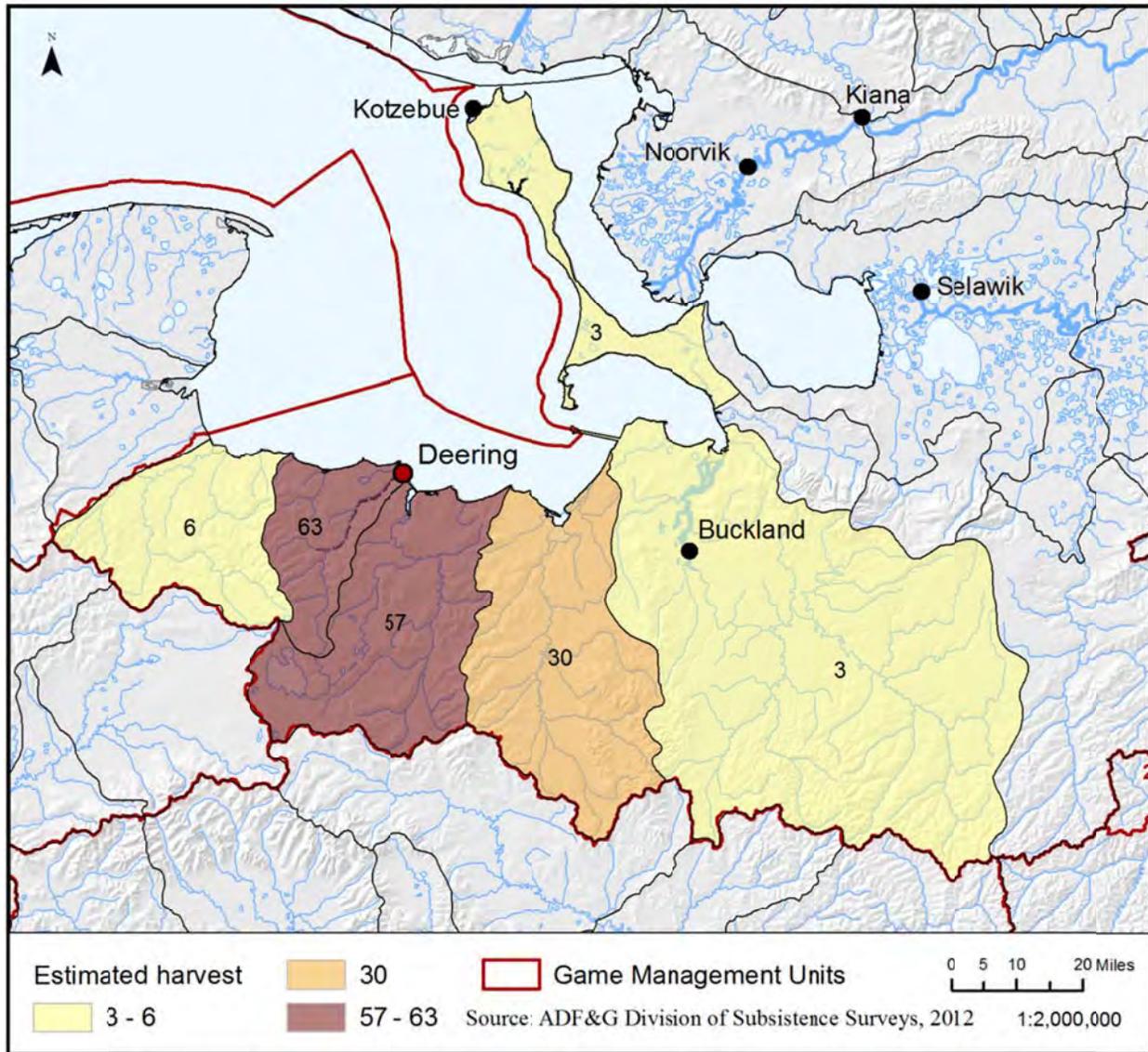


Figure 8.—Estimated caribou harvest by UCU, Deering, 2011–2012.

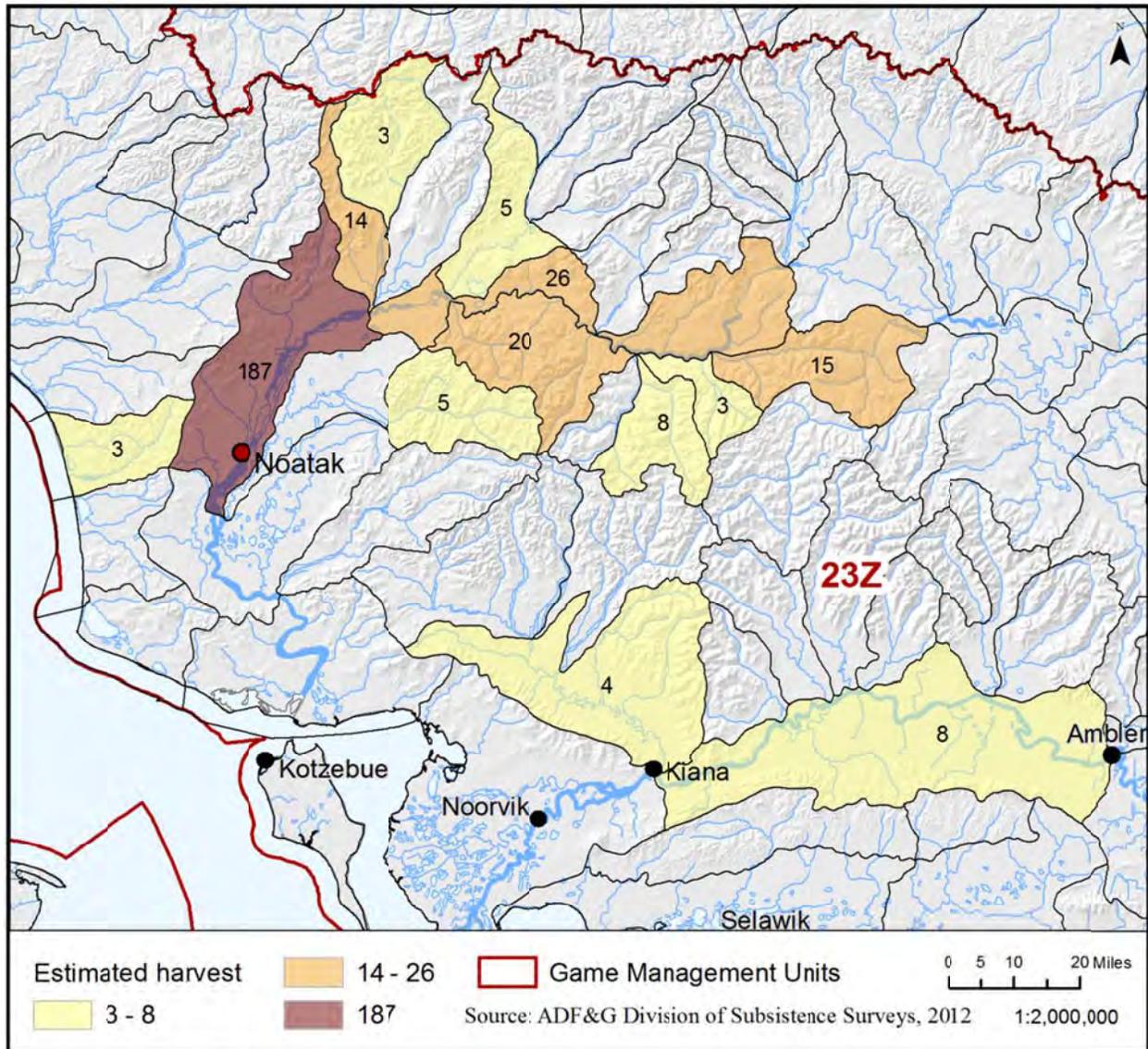


Figure 9.—Estimated caribou harvest by UCU, Noatak, 2011–2012.

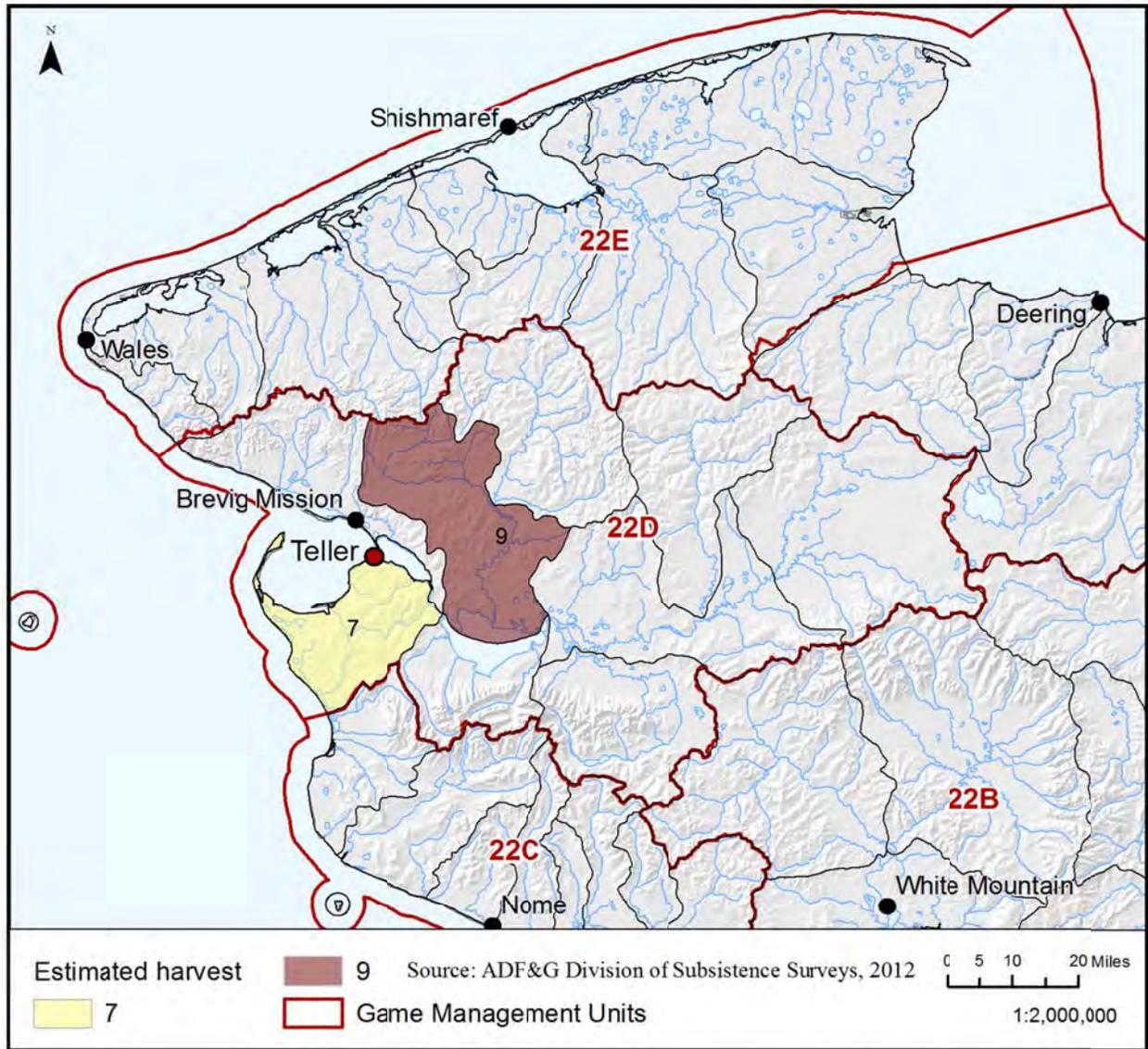


Figure 10.—Estimated caribou harvest by UCU, Teller, 2011–2012.

MOOSE AND OTHER BIG GAME

Levels of use of moose in the 4 study communities were similar, although harvest levels varied. Use rates ranged from 43% of households in Brevig Mission to 30% of households in Deering. Not surprisingly in consideration of the highest use rates, Brevig Mission, located in Game Management Unit 22, also had the highest percentage of households hunting moose (32%) and harvesting (22%). Noatak, located in GMU 23, had the next highest percentages of attempting to harvest and harvesting, with 24% of households attempting to harvest moose and 9% doing so. Nineteen percent of Teller households attempted to harvest moose, and 5% were successful in their efforts. No households in Deering attempted to or actually harvested a moose during the study year. Sharing among households also varied slightly by community, with Noatak (13%) and Teller (10%) reporting the highest percentage of households giving moose away. The 3 study communities that harvested moose reported similar rates of receiving moose; percentages of households reporting that they received the resource ranged from 35% in Brevig Mission to 25% in Noatak and Teller (Table 3).

Table 3.—Estimated harvest and uses of moose, WAH study communities, 2011–2012.

Community	Percentage of households reporting					Estimated harvest (lb)			
	Use %	Attempt to harvest %	Harvest %	Receive %	Give away %	Total individual	Mean household (lb)	Mean per capita (lb)	95% CI harvest
Brevig Mission	43.3	31.7	21.7	35.0	6.7	17.8	0.2	23.7	29.7
Deering	30.0	0.0	0.0	30.0	3.3	0.0	0.0	0.0	0.0
Noatak	31.5	23.9	8.7	25.0	13.0	13.6	0.1	13.4	36.9
Teller	30.5	18.6	5.1	25.4	10.2	4.0	0.1	8.7	57.1

Source ADF&G Division of Subsistence household surveys, 2012.

Estimated moose harvest in the 4 communities in 2011–2012 was 14 in Noatak, 18 in Brevig Mission, 4 in Teller, and no harvest of moose in Deering. In terms of per capita harvests, Brevig Mission hunters harvested an estimated 24 pounds per person. Noatak hunters brought home an estimated 13 pounds per person, followed by 9 pounds per person in Teller. Deering hunters did not harvest moose during the study year. Moose harvest is broken down by sex, month, and location of harvest for each village in Appendix F.

Noatak reported limited use of black bears during the study year; 2% of households reported receiving the resource. Two percent of households also reported attempting to harvest black bears, although none actually did. In the other 3 communities, no households reported use or harvest of black bears. (A complete summary of big game harvest data appears in Appendix B). Only Deering and Noatak reported any use or harvest of brown bears. Use in both cases was minimal (3% in Deering and 7% in Noatak). In Deering, just 3% of households hunted brown bears and none successfully harvested the resource; 3% of households received brown bears. In Noatak, 8% of households attempted to harvest brown bears, while 2% were successful in their attempt. It is unknown if any of the brown bears were taken for food. Few communities in northwest Alaska still eat brown bears, but its use as food has been documented in the region previously (Loon and Georgette 1989).

Noatak households reported limited use and harvest of Dall sheep during the study year, with 3% of households reporting hunting and 2% reporting harvest of the resource. No use or harvest of Dall sheep was reported in the other 3 communities during the study year. All four of the study communities reported limited use of muskoxen, and only Noatak households attempted to harvest the resource (1% hunted and no households were successful). Three percent of households in Brevig Mission and 1% in Noatak and Teller reported using the resource, which they received. Deering had higher rates of use (7%), and all those reporting use of the resource received it. Although none of the study communities reported

harvesting muskoxen, ADF&G's Division of Wildlife Conservation records indicate that 2 muskoxen were taken by Brevig Mission. It is likely that these households were not surveyed by this project.

FURBEARERS

Furbearers were less widely used than caribou and moose in all communities, and a full summary of harvest and use data for furbearers can be found in Appendix B. Beavers were the most commonly used furbearer, with all 4 study communities reporting varying levels of use. The use of this resource ranged from 12% in Noatak to 3% in Brevig Mission and Deering. Every community reported some harvest of beavers, with the exception of Deering (3% of households received the resource). Wolf and wolverine use was also common amongst the 4 study communities, although not every community used both. Use of the two was highest in Noatak, where 9% of households used wolves and 8% used wolverines. The most widely used furbearers in Brevig Mission were also wolverines (8%) and wolves (5%). In Deering, red foxes were the most widely used furbearer (10%). Teller households used beavers (7%) the most out of all furbearers in 2011–2012. Noatak was the only community to use all 6 species of furbearers asked about on the survey.

No particular species of furbearer was commonly shared in the 4 study communities during the study year. Percentages of giving and receiving them ranged from 0–3% in all communities with the exception of Teller and Noatak. In Teller, 7% of households reported receiving beavers, although none reported giving the resource away. In Noatak, 5% of households reported receiving wolves and none reported giving the resource away.

Noatak harvested the most beavers (30) of surveyed communities. Brevig Mission harvested the most wolverines (9), and wolves (5). Noatak was the only community to harvest lynx (12). In summary, Brevig Mission harvested an estimated 9 wolverines, 5 wolves, 3 red foxes, and 3 beavers. Deering households harvested 12 red foxes and 1 wolverine. Noatak harvested 30 beavers, 12 lynx, 11 red foxes, 7 wolverines, and 4 wolves. Teller harvested 4 beavers and 1 wolf.

COMPARING THE 2011-2012 RESULTS WITH PREVIOUS SURVEY DATA

2012 was the third year in which big game harvest information was collected for Brevig Mission, Deering, and Teller. Brevig Mission and Teller had been previously surveyed in 2000 and 2005, while Deering had first been surveyed in 1994 and again in 2007. Noatak has been surveyed the most, with previous surveys taking place in 1994, 1999, 2002, 2007, and 2010. See Appendix G for a summary table of results, 1994–2010, for these communities.

When comparing harvests between communities of different sizes through time, per capita harvest (pounds per person) is a useful measure. In terms of caribou, comparing pounds per capita (per person) allows one to compare how much caribou a community harvests per person; for example, Deering harvested 206 lb per person while Teller harvested 10 lb per person during the study year. Another way to compare harvests (while controlling for community size) is to compare per capita animals; Deering harvested 5.5 caribou per person while Teller harvested 0.2. Because comparing tenths of animals is a more abstract and difficult approach, the following section will make comparisons based on per capita pounds of caribou and moose.

Brevig Mission harvested an estimated 16 lb per capita of caribou per person during the 2011–2012 study period (Figure 11). This figure is slightly over one-half of the estimated harvest of caribou in 2000 (35 lb per capita). Per capita harvests in 2005 (18) were closer to this study year. A linear trendline drawn between the three points shows a decline over the time period. However, with only 3 data points to draw from, it is unclear whether this is indicative of a long-term trend.

Deering harvested 206 pounds per capita during the study year, representing a larger harvest than was documented in 1994 (130 lb per person) and 2007 (162 lb per person). Teller harvested 10 pounds per

person during the 2011–2012 study years, which was only slightly less than the documented 12 lb per person in 2000. In 2005, the community had no harvest of caribou.

In 2011–2012, Noatak households harvested 90 lb per person. This harvest is significantly higher than the 2010–2011 estimated harvest which documented only 16 lb per person. In both 2009 and 2010, the WAH displayed unusual fall migration patterns, moving through the Noatak drainage in an unusually narrow east–west corridor along the Anisak River drainage. In 2010, the caribou were relatively late moving south, with a majority of caribou moving through the Dall Creek–Kobuk–Shungnak areas in mid-October. As a result of these unusual migration patterns, Noatak residents reported having to travel much further than usual and often being unsuccessful in their harvest attempts. Aside from the anomalous year in 2010, per capita harvests have largely decreased over time since the first survey in 1994. Harvests have ranged from a high of 224 lb per person in 1999, 120 lb in 2002, 114 lb in 2007, and 90 lb during the current study year.

Moose per capita harvests in Brevig Mission in 2011–2012, 24 lb, were less than the estimated 43 lb per person documented in 2000; moose harvests were slightly larger during the study year than the 13 lb per capita estimated in 2005 (Appendix G). In Deering, no harvest of moose was reported during the study year or in 2007; this stands in contrast to the 56 lb per person documented in 1994. Teller households harvested 9 lb of moose per person in 2011–2012, which was slightly less than what was documented in 2000 (14 lb per person) and in 2005 (11 lb). Noatak hunters harvested 13 lb of moose per person during the study year, the highest amount documented in recent survey efforts. Moose harvests in the community have remained relatively stable over time, ranging from 4 lb per person in 1994 to 11 lb per person in 2007.

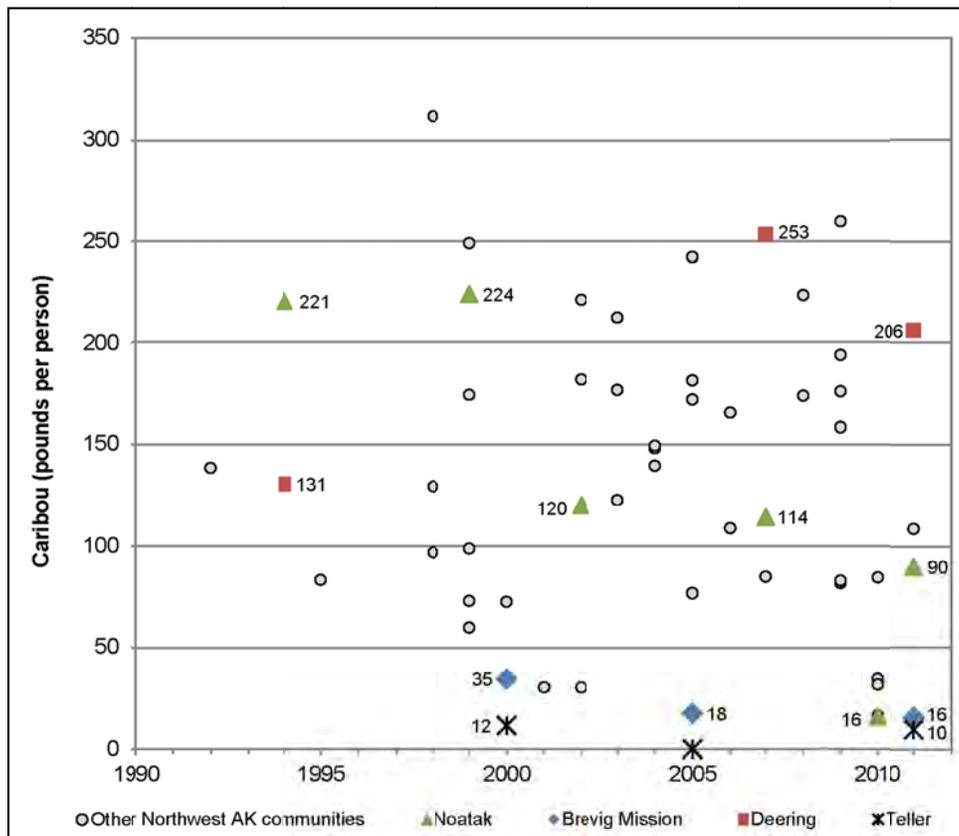


Figure 11.–Pounds per person caribou harvests, study communities and other Northwest Alaska communities, 2011–2012.

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- ADF&G. 2012. "Western Arctic Caribou Herd Numbers 325,000 Animals in Recent Survey. [press release] July 3, 2012." Juneau.
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- Loon, Hannah, and Susan Georgette. 1989. "Contemporary Brown Bear Use in Northwest Alaska." Kotzebue: Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 163. <http://www.adfg.alaska.gov/techpap/tp163.pdf>.
- Western Arctic Caribou Herd Working Group. 2012. "Caribou Census Complete: 325,000 Animals." *Caribou Trails* (12): 1.

APPENDIX A
SURVEY INSTRUMENT

WESTERN ARCTIC CARIBOU HERD SUBSISTENCE SURVEY	
DEERING, ALASKA	
APRIL 2011 to MARCH 2012	
COOPERATING ORGANIZATIONS	
<p>DIVISION OF SUBSISTENCE ALASKA DEPT OF FISH & GAME BOX 689 KOTZEBUE, AK 99752</p> <p>(800) 478-3420</p>	<p>NATIVE VILLAGE OF DEERING</p> <p>BOX 36089 DEERING, AK 99736</p> <p>(907) 363-2138</p>



<p>We are doing this survey to better understand subsistence in Alaska. Similar surveys have been conducted in more than 100 Alaska communities, including Deering, Buckland, Kotzebue, Kivalina, Noatak, Shungnak, Shishmaref, and Wales. Surveys help us estimate subsistence harvests. Surveys also help us describe the role of subsistence in Alaska's economy.</p> <p>The survey asks how much game your household harvested last year, and for any observations you may have about the health of game you harvested.</p> <p>It also asks about who lived in your household and their age(s). We will NOT identify your household. We will NOT use this information for enforcement. Participation in this survey is voluntary. If you start a survey, you may stop at any time.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">HOUSEHOLD ID:</td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> </tr> <tr> <td>COMMUNITY ID:</td> <td>DEERING</td> <td>110</td> </tr> <tr> <td>RESPONDENT ID:</td> <td></td> <td></td> </tr> <tr> <td>INTERVIEWER:</td> <td></td> <td></td> </tr> <tr> <td>INTERVIEW DATE:</td> <td></td> <td></td> </tr> <tr> <td>START TIME:</td> <td></td> <td></td> </tr> <tr> <td>STOP TIME:</td> <td></td> <td></td> </tr> <tr> <td colspan="2">DATA CODED BY:</td> <td></td> </tr> <tr> <td colspan="2">DATA ENTERED BY:</td> <td></td> </tr> <tr> <td colspan="2">SUPERVISOR:</td> <td></td> </tr> </table>	HOUSEHOLD ID:			COMMUNITY ID:	DEERING	110	RESPONDENT ID:			INTERVIEWER:			INTERVIEW DATE:			START TIME:			STOP TIME:			DATA CODED BY:			DATA ENTERED BY:			SUPERVISOR:		
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HOUSEHOLD MEMBERS

HOUSEHOLD ID

First, I would like to know a few things about the people in your household. I want to know only about permanent members of your household, including college or high school students who return home every summer. I am NOT interested in people who lived with you temporarily, even if they stayed several months.

Between APRIL 2011 to MARCH 2012...
...who lived in your household?

ID#	How is this person related to head 1?	Is this person MALE or FEMALE?	How old is this person?	Is this person Alaska Native?	Is this person answering questions on this survey?	Comments <i>enter text</i>
	<i>relation</i>	<i>circle</i>	<i>age</i>	<i>circle</i>	<i>circle</i>	
HEAD 1	SELF	M F		Y N	Y N	
01	1					

NEXT, enter spouse or partner (including "play wife" or "play husband"). If household has a SINGLE HEAD, leave HEAD 2 blank.

HEAD 2	SPOUSE	M F		Y N	Y N	
02	2					

BELOW, enter children (oldest to youngest), grandchildren, grandparents, brothers, sisters, and other household members.

ID#		M F		Y N	Y N	
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						

PERMANENT HH MEMBERS: 01

DEERING: 110

HARVESTS: LARGE LAND MAMMALS (continued) HOUSEHOLD ID

In 2011, did your household...					In 2011, where did members of your HH catch _____?			
Use?	Try to Harvest?	Give Away?	Receive?		WHERE were they harvested?	Were these MALE or FEMALE?	HOW MANY animals were killed?	In what MONTH were these animals harvested?
<i>circle one</i>					<i>enter UCU</i>	<i>circle one</i>	<i>enter number</i>	<i>enter one month</i>
MOOSE								
<i>Timiikaq</i>								
211800000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		BULL COW ?		
						BULL COW ?		
						BULL COW ?		
						BULL COW ?		
						BULL COW ?		
GRIZZLY BEAR								
<i>Akmaq</i>								
210800000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		BOAR SOW ?		
						BOAR SOW ?		
						BOAR SOW ?		
						BOAR SOW ?		
BLACK BEAR								
<i>Iyyagriq</i>								
210600000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		BOAR SOW ?		
						BOAR SOW ?		
						BOAR SOW ?		
						BOAR SOW ?		
DALL SHEEP								
<i>Ipnaiq</i>								
212200000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		RAM EWE ?		
						RAM EWE ?		
						RAM EWE ?		
						RAM EWE ?		
MUSKOXEN								
<i>Uminmak</i>								
212000000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		BULL COW ?		
						BULL COW ?		
						BULL COW ?		
						BULL COW ?		

HARVESTS: FURBEARERS HOUSEHOLD ID

This page asks about furbearers such as wolf, wolverine, and beaver.
 Do members of your household USUALLY hunt or trap furbearers for subsistence?..... Y N

Between APRIL 2011 to MARCH 2012..
 ...Did members of your household USE or TRY TO CATCH furbearers?..... Y N

IF NO, go to the next page.

If YES, continue on this page...

Please estimate how many furbearers ALL MEMBERS OF YOUR HOUSEHOLD for subsistence use last year. INCLUDE furbearers you gave away, ate fresh, lost to spoilage, or got by helping others. If hunting or trapping with others, report ONLY YOUR SHARE of the catch.

	In 2011, did your household...				How many did your HH use for FUR ONLY? <i>enter number</i>	Comments? <i>enter text</i>
	Use? <i>circle one</i>	Try to Harvest?	Give Away?	Receive?		
WOLF <i>Amaguq</i> 223200000	Y N	Y N	Y N	Y N	<input type="text"/>	<input type="text"/>
WOLVERINE <i>Qapvik</i> 223400000	Y N	Y N	Y N	Y N	<input type="text"/>	<input type="text"/>
MARTEN <i>Qapvaitchaiq</i> 222000000	Y N	Y N	Y N	Y N	<input type="text"/>	<input type="text"/>
LYNX <i>Nuutuuyiq</i> 221600000	Y N	Y N	Y N	Y N	<input type="text"/>	<input type="text"/>
RED FOX <i>Kayuqtuq</i> 220804000	Y N	Y N	Y N	Y N	<input type="text"/>	<input type="text"/>

	In 2011, did your household...				In 2011, how many _____ did members of your HH catch?			
	Use? <i>circle</i>	Try to Harvest?	Give Away?	Receive?	How many did your HH use for FUR ONLY? <i>enter number</i>	How many did your HH use for FOOD? <i>enter number</i>	TOTAL HARVEST? <i>sum of all harvests</i>	Comments <i>enter text</i>
BEAVER <i>Paluqtuq</i> 220200000	Y N	Y N	Y N	Y N	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

APPENDIX B
HARVESTS AND USES OF WILD RESOURCES,
WAH STUDY COMMUNITIES, 2011–2012

Appendix B-1.–Harvests and uses of wild resources, Brevig Mission, 2011–2012.

Resource	Percentage of households					Harvest weight (lb) ^a			Harvest quantity		95% confidence limit (±%)
	Use %	Attempt %	Harvest %	Give %	Receive %	Total	Per household	Per capita	Total	Per household	
Land mammals	66.7	58.3	48.3	26.7	55.0	16,709.8	187.8	41.4	84.6	1.0	22.6
Large land mammals	65.0	55.0	43.3	26.7	55.0	16,709.8	187.8	41.4	65.3	0.7	22.6
Black bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brown bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Caribou	51.7	36.7	26.7	20.0	46.7	6,253.7	70.3	15.5	46.0	0.5	29.0
Moose	43.3	31.7	21.7	6.7	35.0	9,576.4	107.6	23.7	17.8	0.2	29.7
Muskox	3.3	1.7	1.7	1.7	3.3	879.6	9.9	2.2	1.5	0.0	114.2
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Small land mammals	13.3	16.7	13.3	0.0	0.0	0.0	0.0	0.0	19.3	0.2	41.7
Beaver	3.3	3.3	3.3	0.0	0.0	0.0	0.0	0.0	3.0	0.0	80.1
Red fox	1.7	1.7	1.7	0.0	0.0	0.0	0.0	0.0	3.0	0.0	114.2
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wolf	5.0	10.0	5.0	0.0	0.0	0.0	0.0	0.0	4.5	0.1	64.8
Wolverine	8.3	11.7	8.3	0.0	0.0	0.0	0.0	0.0	8.9	0.1	52.2

Source ADF&G Division of Subsistence household surveys, 2012.

a. A harvest weight of zero pounds for a resource with a non-zero harvest quantity indicates that the resource was used exclusively for fur, and not eaten.

Appendix B-2.–Harvests and uses of wild resources, Deering, 2011–2012.

Resource	Percentage of households					Harvest weight (lb) ^a			Harvest quantity		95% confidence limit (±%)
	Use %	Attempt %	Harvest %	Give %	Receive %	Total	Per household	Per capita	Total	Per household	
Land mammals	93.3	66.7	66.7	76.7	80.0	32,164.0	748.0	205.9	249.4	5.8	37.2
Large land mammals	93.3	63.3	63.3	76.7	80.0	32,164.0	748.0	205.9	236.5	5.5	37.2
Black bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Brown bear	3.3	3.3	0.0	3.3	3.3	0.0	0.0	0.0	0.0	0.0	0.0
Caribou	93.3	63.3	63.3	76.7	76.7	32,164.0	361.4	205.9	236.5	5.5	37.2
Moose	30.0	0.0	0.0	3.3	30.0	0.0	0.0	0.0	0.0	0.0	0.0
Muskox	6.7	0.0	0.0	3.3	6.7	0.0	0.0	0.0	0.0	0.0	0.0
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Small land mammals	13.3	23.3	10.0	10.0	10.0	0.0	0.0	0.0	12.9	0.3	80.1
Beaver	3.3	6.7	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0
Red fox	10.0	13.3	10.0	6.7	3.3	0.0	0.0	0.0	11.5	0.3	75.5
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Marten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Wolf	3.3	13.3	0.0	3.3	3.3	0.0	0.0	0.0	0.0	0.0	0.0
Wolverine	3.3	13.3	3.3	3.3	0.0	0.0	0.0	0.0	1.4	0.0	112.5

Source ADF&G Division of Subsistence household surveys, 2012.

a. A harvest weight of zero pounds for a resource with a non-zero harvest quantity indicates that the resource was used exclusively for fur, and not eaten.

Appendix B-3.–Harvests and uses of wild resources, Noatak, 2011–2012.

Resource	Percentage of households					Harvest weight (lb) ^a			Harvest quantity			95% confidence limit (±%)
	Use %	Attempt %	Harvest %	Give %	Receive %	Total	Per household	Per capita	Total	Per household		
Land mammals	95.7	66.3	53.3	55.4	84.8	57,081.2	456.6	104.8	443.9	3.6	17.6	
Large land mammals	95.7	65.2	52.2	54.3	83.7	56,869.2	455.0	104.4	380.1	3.0	17.6	
Black bear	2.2	2.2	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	
Brown bear	6.5	7.6	2.2	0.0	4.3	233.7	1.9	0.4	2.7	0.0	71.8	
Caribou	94.6	62.0	50.0	51.1	78.3	48,918.1	391.3	89.8	359.7	2.9	18.5	
Moose	31.5	23.9	8.7	13.0	25.0	7,309.8	58.5	13.4	13.6	0.1	36.9	
Muskox	1.1	1.1	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	
Dall sheep	5.4	3.3	2.2	1.1	3.3	407.6	3.3	0.7	4.1	0.0	75.7	
Small land mammals	19.6	25.0	14.1	5.4	7.6	212.0	1.7	0.4	63.9	0.5	71.8	
Beaver	12.0	15.2	8.7	3.3	4.4	212.0	1.7	0.4	29.9	0.2	53.3	
Red fox	5.4	12.0	3.3	1.1	3.3	0.0	0.0	0.0	10.9	0.1	64.5	
Lynx	6.5	14.1	4.3	2.2	2.2	0.0	0.0	0.0	12.2	0.1	62.6	
Marten	2.2	8.7	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	
Wolf	8.7	15.2	3.3	0.0	5.4	0.0	0.0	0.0	4.1	0.0	58.3	
Wolverine	7.6	15.2	3.3	0.0	4.3	0.0	0.0	0.0	6.8	0.1	67.2	

Source ADF&G Division of Subsistence household surveys, 2012.

a. A harvest weight of zero pounds for a resource with a non-zero harvest quantity indicates that the resource was used exclusively for fur, and not eaten.

Appendix B-4.–Harvests and uses of wild resources, Teller, 2011–2012.

Resource	Percentage of households					Harvest weight (lb) ^a			Harvest quantity			95% confidence limit (±%)
	Use %	Attempt %	Harvest %	Give %	Receive %	Total	Per household	Per capita	Total	Per household		
Land mammals	47.5	30.8	18.6	15.3	42.4	4,528.4	57.3	18.2	26.8	0.3	49.5	
Large land mammals	42.4	22.3	15.3	15.3	37.3	4,528.4	57.3	18.2	21.4	0.3	49.5	
Black bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Brown bear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Caribou	22.0	11.9	11.9	10.2	20.3	2,367.3	30.0	9.5	17.4	0.2	56.4	
Moose	30.5	18.6	5.1	10.2	25.4	2,161.1	27.4	8.7	4.0	0.1	57.1	
Muskox	1.1	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	57.1	
Dall sheep	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Small land mammals	6.8	11.9	5.1	0.0	6.8	0.0	0.0	0.0	5.4	0.1	60.8	
Beaver	6.8	6.8	5.1	0.0	6.8	0.0	0.0	0.0	4.0	0.1	57.1	
Red fox	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Lynx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Marten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Wolf	1.7	3.4	1.7	0.0	0.0	0.0	0.0	0.0	1.3	0.0	100.7	
Wolverine	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Source ADF&G Division of Subsistence household surveys, 2012.

a. A harvest weight of zero pounds for a resource with a non-zero harvest quantity indicates that the resource was used exclusively for fur, and not eaten.

APPENDIX C
HARVESTS OF CARIBOU BY SEX AND MONTH OF HARVEST,
WAH STUDY COMMUNITIES, 2011–2012

Appendix C-1.–Harvests of caribou by sex and month of harvest, WAH study communities, 2011–2012.

Community	Sex	2011										2012				Season				Unknown	Total					
		Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Win	Spr	Sum	Fall								
Brevig Mission ^a	Male	–	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.0	8.9	8.9	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.2	
	Female	–	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.9
	Unknown	–	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	1.5	4.5	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.9
Deering ^b	Male	1.4	0.0	0.0	1.4	8.6	5.7	2.9	0.0	0.0	0.0	0.0	0.0	7.2	–	0.0	0.0	1.4	24.4	8.6	61.6					
	Female	11.5	4.3	0.0	0.0	0.0	0.0	0.0	0.0	7.2	8.6	10.0	4.3	–	0.0	35.8	0.0	1.4	10.0	93.2						
	Unknown	10.0	0.0	0.0	0.0	0.0	0.0	7.2	0.0	0.0	4.3	0.0	0.0	–	0.0	0.0	0.0	0.0	60.2	81.7						
Noatak ^b	Male	0.0	0.0	0.0	0.0	27.2	165.8	5.4	1.4	1.4	0.0	0.0	0.0	–	5.4	0.0	0.0	91.0	10.9	308.4						
	Female	0.0	0.0	0.0	0.0	0.0	2.7	0.0	2.7	0.0	0.0	2.7	2.7	–	0.0	0.0	0.0	5.4	0.0	16.3						
	Unknown	0.0	0.0	0.0	0.0	0.0	24.5	0.0	1.4	0.0	0.0	0.0	0.0	–	0.0	0.0	0.0	3.9	5.3	35.0						
Teller ^a	Male	–	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	6.7	0.0	0.0	1.3	0.0	0.0	0.0	1.3	2.7	13.4						
	Female	–	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7						
	Unknown	–	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3						

Source ADF&G Division of Subsistence household surveys, 2012.

Note A dash (–) indicates months not included in survey period.

a. Survey period May 2011–April 2012 for Brevig Mission and Teller.

b. Survey period April 2011–March 2012 for Noatak and Deering.

APPENDIX D
HOUSEHOLD ACCOUNTS OF CARIBOU THAT WERE HARVESTED BUT NOT EATEN,
WAH STUDY COMMUNITIES, 2011–2012

Appendix D-1.–Household accounts of caribou that were harvested but not eaten, WAH study communities, 2011–2012.

Community	Comments, reasons, or symptoms	Households	
		reporting ^a	Quantity ^b
Brevig Mission	External lesions	2	4
Brevig Mission	Internal lesions	1	1
Brevig Mission	Other abnormalities	1	1
Brevig Mission	Different smell	1	1
Deering	Internal lesions	1	1
Noatak	Internal discoloration	1	1
Noatak	Internal lesions	1	1
Noatak	Cysts or tumors present	1	1
Noatak	Gross malformation–structural	1	1

Source ADF&G Division of Subsistence household surveys, 2012.

a. "Households reporting" indicates the number of households that reported either harvesting or receiving caribou that was not eaten because it was considered unfit for human consumption.

b. "Quantity" indicates the number of caribou that were harvested (not received) by households that later discarded the meat because it was considered unfit for human consumption.

APPENDIX E
HARVESTS OF CARIBOU BY MONTH AND LOCATION OF HARVEST,
WAH STUDY COMMUNITIES, 2011–2012

Appendix E-1.—Caribou harvest by location, Brevig Mission, 2011–2012.

Polygon	Sex	2011										2012				Season				Unknown	Total ^a
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Win	Spr	Sum	Fall			
22CN000501	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22DN000102	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
22DN000201	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	1.5
22DN000202	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22DN000203	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22DN000301	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5
22DN000302	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22DN000303	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
22DN000304	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22EH000103	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9	1.5	3.0	0.0	0.0	0.0	0.0	0.0	0.0	10.4
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Missing	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	1.5	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	5.9
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2012.

a. Survey period May 2011–April 2012.

Appendix E-2.—Caribou harvest by location, Deering, 2011–2012.

Polygon	Sex	2011										2012				Season				Unknown	Total ^a		
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Win	Spr	Sum	Fall					
23ZH000101	Male	0.00	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
	Female	4.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3
	Unknown	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23ZH000201	Male	1.433	0.0	0.0	0.0	8.6	0.0	2.9	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	21.5	0.0	0.0	0.0	0.0	35.8
	Female	0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	7.2	2.9	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	15.8
	Unknown	0	0.0	0.0	0.0	0.0	0.0	7.2	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.5
23ZH000301	Male	0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0	1.4	2.9	0.0	0.0	0.0	0.0	8.6
	Female	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.2	0.0	0.0	0.0	35.8	0.0	0.0	0.0	0.0	0.0	1.4	48.7
	Unknown	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23ZH000401	Male	0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3
	Female	2.867	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.7	0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.9
	Unknown	10.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	12.9
23ZH000501	Male	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Female	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9
	Unknown	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23ZH000601	Male	0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9
	Female	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown	Male	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	8.6
	Female	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.6	8.6
	Unknown	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57.3	57.3

Source ADF&G Division of Subsistence household surveys, 2012..

a. Survey period April 2011–March 2012.

Appendix E-3.—Caribou harvest by location, Deering, 2011–2012.

Polygon	Sex	2011										2012				Season				Unknown	Total ^a
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Win	Spr	Sum	Fall			
23ZA003103	Male	0.0	0.0	0.0	0.0	9.5	93.8	4.1	1.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.8	10.9	161.7	
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Unknown	0.0	0.0	0.0	0.0	0.0	24.5	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.8
23ZA003302	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	0.0	5.4	
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23ZA003401	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.2	0.0	12.2	
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	1.4	
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23ZA003403	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23ZA003501	Male	0.0	0.0	0.0	0.0	2.7	6.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.3	0.0	25.8	
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23ZA003502	Male	0.0	0.0	0.0	0.0	0.0	14.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.9	
	Female	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23ZA003503	Male	0.0	0.0	0.0	0.0	0.0	1.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23ZA003601	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	0.0	0.0	0.0	0.0	0.0	5.4	
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23ZA003801	Male	0.0	0.0	0.0	0.0	0.0	8.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23ZA003901	Male	0.0	0.0	0.0	0.0	14.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.9
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23ZB001201	Male	0.0	0.0	0.0	0.0	0.0	8.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23ZB001301	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.0	4.1	
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23ZH004902	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown	Male	0.0	0.0	0.0	0.0	0.0	32.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.2	0.0	44.8	
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.0	4.1	
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	5.3	9.1	

Source ADF&G Division of Subsistence household surveys, 2012.

a. Survey period April 2011–March 2012.

Appendix E-4.—Caribou harvest by location, Teller, 2011–2012.

Polygon	Sex	2011									2012				Season				Unknown	Total ^a
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Win	Spr	Sum	Fall		
22DN000101	Male	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	2.7	5.4
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22DN000202	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	1.3
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2012.

a. Survey period May 2011–April 2012.

APPENDIX F
HARVESTS OF MOOSE BY MONTH AND LOCATION OF HARVEST,
WAH STUDY COMMUNITIES, 2011–2012

Appendix F-1.—Harvests of moose by sex and month of harvest, Brevig Mission, 2011–2012.

Polygon	Sex	2011									2012				Season				Unknown	Total ^a			
		April	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Win	Spr	Sum	Fall					
22BN000401	Male	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22DN000201	Male	0.0	0.0	0.0	0.0	3.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22DN000202	Male	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22DN000203	Male	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23ZH000101	Male	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Missing	Male	0.0	0.0	0.0	0.0	3.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2012.

a. Survey period May 2011–April 2012.

Appendix F- 2.–Harvests of moose by sex and month of harvest, Deering, 2011–2012.

Polygon	Sex	2011										2012				Season				Unknown	Total ^a	
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Win	Spr	Sum	Fall				
	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

No moose were harvested in Deering

Source ADF&G Division of Subsistence household surveys, 2012.

a. Survey period April 2011–March 2012.

Appendix F- 3.–Harvests of moose by sex and month of harvest, Noatak, 2011–2012.

Polygon	Sex	2011										2012				Season				Unknown	Total
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Win	Spr	Sum	Fall			
23ZA003103	Male	1.4	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	5.4	
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
23ZA003302	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
23ZB001201	Male	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Unknown	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	2.7	
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	1.4		

Source ADF&G Division of Subsistence household surveys, 2012.

a. Survey period April 2011–March 2012.

Appendix F- 4.–Harvests of moose by sex and month of harvest, Teller, 2011–2012.

Polygon	Sex	2009					2010				Season				Unknown	Total ^a						
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr			Win	Spr	Sum	Fall		
22DN000101	Male	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22DN000202	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unknown	Male	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Female	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Unknown	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source ADF&G Division of Subsistence household surveys, 2012.

a. Survey period May 2011–April 2012.

APPENDIX G
COMPARISON OF 2011 HARVEST ESTIMATES WITH PREVIOUS SURVEY RESULTS

Appendix G-1.–Comparison of 2011 harvest estimates with previous survey results.

Brevig Mission	Estimated number harvested			Per capita pounds harvested		
	2000	2006 ^a	2011	2000	2006 ^a	2011
Resource						
Brown bear	0	0	0	0.0	0.0	0.0
Caribou	76	43	46	34.6	17.5	15.5
Moose	24	8	18	42.5	12.8	23.7
Muskox	4	2	1	8.2	4.0	2.2
Gray wolf	8	9	4	–	–	–
Wolverine	3	5	9	–	–	–

Deering	Estimated number harvested			Per capita pounds harvested		
	1994	2007	2011	1994	2007	2011
Resource						
Brown bear	4	2	0	1.4	0.9	0.0
Caribou	142	182	237	130.5	161.6	205.9
Moose	15	0	0	56.4	0.0	0.0
Muskox	n/a	2	0	n/a	5.9	0.0
Gray wolf	13	6	0	–	–	–
Wolverine	12	3	1	–	–	–

Noatak	Estimated number harvested						Per capita pounds harvested					
	1994	1999	2002	2007	2010	2011	1994	1999	2002	2007	2010	2011
Resource												
Brown bear	1	3	1	3	4	3	0.3	0.7	0.2	0.4	0.7	0.4
Caribou	615	683	410	442	66	360	220.6	224.0	120.0	114.1	16.0	89.8
Moose	2	4	3	11	9	14	3.5	5.7	4.0	10.8	8.6	13.4
Muskox	n/a	n/a	n/a	1	0	0	n/a	n/a	n/a	0.7	0.0	0.0
Gray wolf	14	15	7	3	6	4	–	–	–	–	–	–
Wolverine	10	23	9	3	1	7	–	–	–	–	–	–

Teller	Estimated number harvested			Per capita pounds harvested		
	2000	2006 ^a	2011	2000	2006 ^a	2011
Resource						
Brown bear	1	1	0	0.4	0.0	0.0
Caribou	21	0	17	11.5	0.0	9.5
Moose	7	5	4	14.4	10.8	8.7
Muskox	0	0	0	0.0	0.0	0.0
Gray wolf	0	3	1	–	–	–
Wolverine	3	3	0	–	–	–

Source ADF&G Division of Subsistence household surveys, 2012.

Note "n/a" indicates species not asked about in survey.

Note "–" indicates species not eaten.

a. Kawerak Inc. and Division of Subsistence household surveys, 2006. Study period was July 2005–June 2006.