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CHAPTER 19: MOOSE MANAGEMENT REPORT

From: 1 July 2011
To: 30 June 2013[1]

LOCATION

GAME MANAGEMENT UNIT: 17 (18,800 mi^2)

GEOGRAPHIC DESCRIPTION: Northern Bristol Bay

BACKGROUND

Moose are relatively new inhabitants in the Bristol Bay area, possibly migrating from middle Kuskokwim River drainages. Until recent years, populations were low, and moose primarily inhabited the Nushagak-Mulchatna river system. Local residents harvested moose opportunistically; however, caribou, reindeer, bears, and beaver were historically the main sources of game meat. The Alaska Department of Fish and Game (ADF&G or department) began collecting data on the Unit 17 moose population in 1971. At that time, Faro (1973) reported moose were not abundant in the unit and animals close to the villages were subject to heavy hunting pressure. Information from pilots Tom Tucker and Bo Darden, both long time locals who were flying this country in 1970, suggests much of the lower Mulchatna River and Stuyahok River were void of timber at that time (Tom Tucker and Bo Darden, personal communication, 2015). Today these areas have abundant willow and alder communities as well as coniferous forests.

Hunting seasons have varied over the years, but the legal bag limit has always been restricted to bulls. In the past, a general disregard for seasons and bag limits by unit residents were suspected to be the principal factor contributing to low densities of moose in the unit (Taylor 1990).

In the last 3 decades, moose populations throughout Unit 17 have increased substantially in number and range. Reasons for this increase likely include moderate snowfalls in several successive winters, and decreased harvest of female moose. The reduction in the female harvest resulted in part from a positive response by unit residents to department education efforts, and from the abundance of an alternative big game resource as the Mulchatna caribou herd grew and extended its range (Van Daele 1995).

Moose are now common throughout the unit in areas of suitable habitat. Moose successfully extended their range westward into and beyond the Togiak river drainages of Unit 17A, where a viable population has become established.

[1] At the discretion of the reporting biologist, this unit report may contain data collected outside the report period.

MANAGEMENT DIRECTION

MANAGEMENT OBJECTIVES

Unit 17A

- Manage for a minimum population of 300 moose and a target population of 1,100–1,750 moose.

Unit 17B

- Achieve and maintain a density of 1 moose/mi^2 on habitat considered good moose range.
  - Intensive Management Objective: Manage for a population of 4,900–6,000 moose with a harvest objective of 200–400 moose.

Unit 17C

- Maintain a minimum density of 0.5 moose/mi^2.
  - Intensive Management Objective: Manage for a population of 2,800–3,500 moose with a harvest objective of 165–350 moose.

METHODS

Moose populations in Unit 17A were monitored in cooperation with personnel from the Togiak National Wildlife Refuge (TNWR). Movements along the border of Units 17A and 17C were monitored during a radiotelemetry study from 1989 to 1994. In March 1998, 36 moose were radiocollared in Unit 17A to study movements and population parameters (Aderman et al. 1999). Additional moose in Unit 17A are periodically radiocollared to continue this study.

Late winter aerial surveys of Unit 17A were conducted during this reporting period, but no surveys were conducted in Units 17B or 17C. Aerial surveys of trend count areas in Units 17B and 17C were used in the past to sample sex and age composition and to collect data on population trends in representative portions of the unit. Optimal survey periods were 1 November–15 December, when moose were thought to be established on their winter ranges and bulls still had their antlers. In most years, however, suitable weather, snow cover, and survey aircraft were not available during the optimal period. Late fall composition surveys in the upper Nushagak and Mulchatna river drainages were initiated in 1992–1993 to investigate demographic trends, but have not been conducted since 1998.

Moose population estimation surveys have been conducted in various portions of Units 17B and 17C in the past. In 1983 a portion of Unit 17C, in 1987 a portion of Unit 17B that included the upper Mulchatna River area, and in 1995 western Unit 17C and most of Unit 17A were surveyed using the Gasaway population estimation technique (Gasaway et al. 1986). Beginning in March 1999, a geospatial population estimator technique (DeLong 2006, Kellie and DeLong 2006) has been used for population estimation surveys in Units 17B and 17C.

We collected harvest data by means of harvest ticket reports and registration permit reports. Hunters who did not report were sent reminder letters and eventually put on the failure to report list if they failed to comply with the permit reporting requirements. We monitored harvest and cooperated with enforcement efforts of the Alaska Wildlife Troopers during the hunting season.

RESULTS AND DISCUSSION

POPULATION STATUS AND TREND

Population Size

In 1995, Aderman et al. (1995) estimated there were approximately 100 moose in Units 17A and a portion of 17C surveyed at that time. Each year during late winter, department staff and TNWR staff attempt to survey Unit 17A east of and including the Matogak River drainage and north of the Nushagak Peninsula. A survey conducted in March 2011 indicated a minimum population of 1,166 moose in Unit 17A (A. Aderman, Wildlife Biologist, TNWR, Dillingham, personal communication, 2014). Lack of snow prevented surveys during this reporting period. The present population size in Unit 17A probably exceeds 1,200 moose given that the trajectory of the population leading up to the most recent survey in regulatory year (RY) 2010, which begins 1 July and ends 30 June (e.g., RY10 = 1 July 2010–30 June 2011), was of an increasing population.

The moose population in Unit 17B was estimated to be 2,500–3,000 moose in 1987 (Taylor 1990). That estimate was based on extrapolations from a survey in the upper Mulchatna River area. Assuming that 50% of Unit 17B is good moose habitat, we established the intensive management population objective for Unit 17B as a minimum of 4,900 moose. In March 2001, 2006, and 2010, moose population estimation surveys were completed in the western portion of Unit 17B using the geospatial survey technique. These estimates indicate the Unit 17B moose population is stable, but below the intensive management population objective (Table 1). Surveys were not conducted during this reporting period.

The moose population in Unit 17C was estimated to be 1,400–1,700 moose in 1987 (Taylor 1990). That estimate was based on extrapolations from the moose survey conducted in 1983. The intensive management objective for the unit is a minimum of 2,800 moose. In March 1999, 2004, and 2008, moose population estimation surveys were completed in Unit 17C north of the Igushik River using the geospatial survey technique. These estimates indicate the Unit 17C moose population is above the minimum intensive management population objective (Table 1). Surveys were not conducted during this reporting period.

Population Composition

Bull:cow ratios in all areas of Unit 17 have historically been high, but no composition data were collected during this reporting period or since 1998. Calf production and survival appear to fluctuate between areas and years based on the percentages of calves seen during aerial surveys. In 1997–1998, late winter survey data indicated minimum calf percentages of 19.4% in the Mulchatna drainages (Nushagak-Red Veils, including the Mosquito, Old Man, and Stuyahok Rivers), and 24.9% in the upper Nushagak River drainages from Big Bend to Koliganek. These surveys included only the river corridors as listed. Minimum calf percentages obtained during the most recent population estimation surveys conducted in Unit 17 indicate percentages are generally lower in Unit 17B (4–8%) than in Unit 17C (11–15%) but are generally overall low (Table 1).

Distribution and Movements

Much of Unit 17 is wet or alpine tundra, and moose are located predominantly along the riparian areas. We know little about specific moose movement patterns, except that they are influenced primarily by the rutting season in late September and by snow conditions throughout the winter.

Data from a joint ADF&G and TNWR radiotelemetry study indicated most moose radiocollared in western Unit 17C stayed in that area, but there was some movement into Unit 17A. One collared moose and her calf moved from Weary River to Kulukak River (Jemison 1994), which is at least 24 miles straight-line distance. During the February 1995 population estimation survey, 29 moose were observed moving into Unit 17A from the upper Sunshine Valley in Unit 17C (Aderman et al. 1995). Aderman et al. (2000) found that in Unit 17A, some collared moose remained in the same range during winter and summer, while others used different ranges during those seasons. Since then, moose collared in Unit 17A have moved into western Unit 17A and the southern part of Unit 18. These moose seem to be part of a continued westward expansion of moose into previously unpopulated moose habitat (Aderman and Woolington 2005, Aderman 2008).

MORTALITY

Harvest

Seasons and Bag Limits. Harvest data were summarized by regulatory year.

The fall resident-only registration hunt in Unit 17A was open 25 August–20 September. The winter resident-only 2-week registration hunt in Unit 17A (RM575) during RY11 was 10–23 December, while in RY12 it was 18–31 December. The department uses its discretion to open this hunt when snow conditions are sufficient to allow snowmachines to be used for hunting. Registration permit holders could take 1 bull in a regulatory year. There was no general hunt or nonresident hunting season for moose in Unit 17A.

The general moose hunt in Units 17B and 17C was open for resident hunters 1–15 September. The bag limit for residents was 1 bull with spike-fork or 50-inch or greater antler spread or with 3 or more brow tines on at least one side. The general moose hunt in Unit 17B for nonresident hunters was 5–15 September with a bag limit of 1 50-inch bull with at least 4 brow tines on one side. Nonresidents were prohibited from hunting moose in Unit 17C.

The fall Alaska resident-only registration hunt in Units 17B and 17C (RM583) was open 20 August–15 September. Resident registration permit holders could take 1 bull (no antler size restriction) in a regulatory year. The fall nonresident-only registration moose hunt in the Unit 17B nonresident corridor (RM587) was 5–15 September. Nonresident registration permit holders could take 1 50-inch bull with at least 4 brow tines on one side. The area open for this registration hunt was a corridor extending 2 miles on either side of, and including the Nushagak River beginning at the southern boundary of Unit 17B and extending north to the Chichitnok River, and including Harris Creek, King Salmon River, and the Chichitnok River; Mulchatna River upstream to the mouth of the Chilchitna; Nuyakuk River extending west to the falls; Koktuli River upstream to the mouth of the Swan River; and Stuyahok River to the confluence of the east and west forks.

The winter resident-only registration hunt in Units 17B and 17C (RM585) was open 1–31 December. Registration permit holders could take 1 bull in a regulatory year.

Registration hunt RM573 permits were valid only in Unit 17A and were available 5 August–20 September to any Alaska resident who applied in person at Togiak or Dillingham. Registration hunt RM575 permits were valid only in Unit 17A and were available (throughout the open season) to any Alaska resident who applied in person at Togiak or Dillingham. Permits for registration hunts RM583 and RM585 were valid for both Units 17B and 17C. Permits were available to any Alaska resident who applied in person at Dillingham (RM583: 15 July–31 August; RM585: 25 October–31 December), or when issued at Nushagak river drainage communities. Only a single day is designated for issuing permits in each of Koliganek, New Stuyahok, and Ekwok.

Alaska Board of Game Actions and Emergency Orders. No regulatory changes due to Board of Game action took place for moose hunting in Unit 17 during this reporting period. Emergency orders during this reporting period consisted of the opening of registration hunt RM575 each winter.

Harvest by Hunters. As a result of a more than 2-fold increase in moose hunters afield in Unit 17 since 1983 (RY83 = 580; RY10 = 1,289), reported moose harvests have more than doubled (RY83 = 127; RY10 = 343). However, the most recent years have seen a decline in harvest from the peak year of RY03 (Table 2).

Hunters continued to harvest moose with large antlers throughout this reporting period. During each of the 5 seasons previous to this reporting period, at least 42% of the completed harvest reports included moose with antler spreads of 50″ or greater. This trend continued with 47% and 44% of the moose antlers ≥50″ for RY11 and RY12 respectively. The largest antlers reported for each season since RY92 has been at least 69″ with many years exceeding 70″ (Table 3).

General Hunt. The general moose hunt in Units 17B and 17C is shorter and has a more restrictive bag limit than the registration hunt. Greater numbers of nonlocal Alaska residents and nonresidents hunt moose during this hunt than local (Unit 17) Alaska residents (Table 4). This is because local residents take advantage of the registration permit hunts that are less restrictive and have an earlier starting date than the general season. Unit 17A has not had an open general moose hunting season since RY80. The reported harvest during the 5 years prior to this reporting period for the general moose season in Unit 17B ranged from 18 to 53, with a mean annual harvest of 39 moose (Table 5). During this reporting period the harvest ranged from 30 to 40, with a mean annual harvest of 35. In Unit 17C, the previous 5-year mean annual harvest for the general hunt was 19 moose, with a range of 11 to 25 (Table 6). During this reporting period the harvest was 13 moose each year.

Permit Hunts. Longer seasons and more liberal bag limits have enticed many resident hunters to participate in the registration hunts (RM573, RM575, RM583, and RM585). In fall and winter RY11, 1,427 resident permits were issued for Unit 17 registration moose hunts, and 1,121 permittees reported they hunted, killing 306 moose. In fall RY11, 35 nonresidents were issued permits for registration hunt RM587, all permittees hunted, and 13 killed a moose. In fall and winter RY12, 1,376 resident permits were issued for Unit 17 registration moose hunts, and 1,091

hunters reported hunting, killing 248 moose. In fall RY11, 39 nonresidents were issued permits for registration hunt RM587, 35 permittees reported they hunted, killing 13 moose. In RY12, 45 permits were issued for RM587, 38 permittees hunted and they harvested 12 moose. Each year 15–20% of those receiving registration moose hunting permits for Unit 17 reported that they did not hunt (Tables 7, 8, 9, and 10).

Hunter Residency and Success. The mean number of moose hunters participating each year in the general moose hunting season in Unit 17 during the 5 years prior to this report period was 226, and declined to 141 during this reporting period. This pattern of decreasing general season hunters has been evident since the late 1990s (Table 4). Participation by resident hunters in the general hunt has declined because of increased interest in the registration hunt. Decline by nonresident hunters has followed a statewide decline in nonresident moose hunters, as well as a decline in moose in Unit 17B. Unitwide success during the general hunt for this reporting period averaged 25%, similar to that of the previous 5 years. During this reporting period, nonresidents accounted for 32% of the reporting hunters in the general hunt, residents of Unit 17 accounted for 28%, and other residents from Alaska made up the remaining 40%. During the previous 5 years this distribution was quite different, with 46% of the hunters being nonresidents and only 16% being residents of Unit 17 (Table 4).

The mean number of resident moose hunters participating in registration moose hunts in Unit 17 during this reporting period was 1,128, well above the previous 5-year average of 943. Success during the registration hunts in Unit 17 for Alaska residents ranged from 26% to 38% during the 5 years prior to this reporting period, with a mean annual hunter success rate of 32%. During this reporting period, success for resident hunters ranged from 23% in RY12 to 27% in RY11. Residents of Unit 17 composed 90% and other residents of Alaska made up 10% of hunters in the resident registration hunts during this reporting period. This is similar to the 5 years prior to this reporting period when local residents made up 89% and nonlocal residents 11% of resident hunters (Table 10).

Harvest Chronology. An interesting aspect of the fall harvest chronology for both the permit hunts and the general season is the comparison between the periods of 1–10 September and 11–20 September. All the fall moose hunts in Unit 17 (except RM573 in Unit 17A) close on 15 September, yet hunters get as many or more moose during the 6-day period of 10–15 September as they do during the first 10 days of September. The main reason for this is the approach of the rutting period near mid-September that makes bull moose much more vulnerable than during the earlier part of the season (Tables 11 and 12). Unit residents were the main participants in the August and December seasons. These seasons were originally established to provide local residents an opportunity to harvest moose that were not rutting and discourage the illegal killing of female moose during closed seasons.

Transport Methods. Aircraft continued to be the primary means of access for successful moose hunters in the general hunt in Unit 17 during this reporting period, with 81% of the hunters using this form of access (Table 13). This differs dramatically from hunters in the registration hunts who primarily used boats (62% during reporting period) or snowmachines (24% during reporting period) for access (Table 14). In RY90, use of off-road vehicles during the fall, including 3- and 4-wheelers, became prohibited modes of transportation for big game hunters in Unit 17B. As participation increases for the winter hunts, snowmachines have become an increasingly

important means of transportation. The use of boats during the permit hunts is largely from people hunting the Tikchik Lake system, and the Nushagak, Mulchatna, and Togiak rivers. These waterways provide direct access to moose hunting, and many local hunters are outfitted with the necessary boats and equipment to take advantage of this opportunity.

Other Mortality

Observations of predation by wolves and bears occurred regularly throughout this reporting period. Reports from local resident and nonlocal hunters suggest wolf numbers have been increasing unitwide, and brown bears are common. Snow depths throughout the unit were moderate during the winters of this reporting period, and there were no reports of excessive winter mortality. Moose were apparently able to find adequate forage on winter ranges in riparian areas.

Illegal harvest of moose in Unit 17 was probably more of a problem in the past than during recent years. Unit residents used to actively pursue moose with snowmachines during the winter and spring, when both male and female moose were taken. Attitudes are changing following considerable efforts by state and federal management agencies working with local communities to help hunters see the benefits of reducing illegal moose kills. It is now common to see moose near local villages throughout the winter.

HABITAT

Assessment

Aderman et al. (1999) established 7 intensive mapping areas in Unit 17A, based on computer-aided analysis of Landsat photos. He visited 104 sites for ground-truthing in July 1998. Information collected included dominant vegetation species, slope, aspect, and drainage. Aderman et al. (1999) estimated a minimum of 560 mi^2 of optimal moose winter habitat and another 520 mi^2 of secondary moose winter habitat in Unit 17A.

No formal habitat-monitoring programs were conducted in the remainder of Unit 17. Moose winter ranges along the Nushagak and Mulchatna rivers, and along the lower reaches of the major tributaries to those rivers, are probably in good condition. Although there is evidence of heavy browsing in some areas, willow stands on gravel bars are abundant and include a good mix of brush heights. There are some areas formerly used by moose where browse species appear to have grown out of reach. Winter range conditions in the middle and upper reaches of the tributaries have not been assessed, but probably are not as productive.

Enhancement

A small-scale willow regeneration project in the lower Nushagak River sponsored by the USDA Natural Resources Conservation Service (NRCS) was conducted during winters RY09 and RY10 (J. Loiland, District Conservationist, NRCS, Dillingham, personal communication). Though willow growth in the study plots was encouraging, no quantitative analysis was conducted. Because of the relative inaccessibility of most of the unit and the occurrence of natural habitat change, human-caused habitat enhancement activity on a large scale is not practical.

Lightning-caused wildfires occur in the unit, however these are typically too small to produce substantial amounts of enhanced moose habitat. During this reporting period, there were no large wildfires.

In most years, the most important natural force responsible for enhancing moose habitat has been the scouring of gravel bars and low-lying riparian areas by ice and water during spring thaw. This was especially true for the Nushagak, Togiak, and Mulchatna rivers and the lower reaches of the major tributaries to those rivers.

NONREGULATORY MANAGEMENT PROBLEMS

Dramatic increases in the number of caribou in the Mulchatna herd through the mid-1990s impacted the moose population in this unit, though there was little direct competition between these ungulates. Short-term impacts of large caribou populations include decreased illegal moose harvest by local residents and increased hunting pressure by other residents and nonresidents interested in combination hunts for moose and caribou. The most significant long-term impact on moose may be the response of predator populations to abundant prey resources. Wolf numbers appeared to increase in the unit during this reporting period. There were few instances of wolves following the caribou herd, so when the herd moved out of a pack's territory, moose became the primary source of meat for wolves. The same prey shift probably happened over a larger area of the unit as the caribou herd declined (Woolington 2005). As the Mulchatna herd has declined, reduction in nonresident hunting opportunity for caribou has likely affected the number of nonresident hunters hunting moose in Unit 17.

CONCLUSIONS AND RECOMMENDATIONS

Predation by wolves and bears, and reported harvests of moose increased in recent years. Good browse conditions and a continuing series of average winters resulted in stable to increasing moose populations in Units 17A and 17C during this reporting period. The moose population exceeded the minimum goal in Unit 17A and continued to increase. Population estimation surveys during the previous and present reporting period indicate the moose population in Unit 17B is below management objectives. Population estimation surveys during previous reporting periods indicate the moose population in Unit 17C is above the minimum management objective.

Although objective habitat evaluations were lacking for most of the unit, it appeared that browse quality and quantity were sufficient to support the present population on most of the winter ranges.

Fall trend counts have been notoriously unreliable in providing consistent data on moose populations in Unit 17. Suitable survey conditions, including complete snow coverage, light winds, and moose movements onto winter range rarely occur before antler drop. Regular population estimation surveys of portions of the unit during late winter provide the best moose population information. Unfortunately, they do not provide reliable information on sex or age composition.

The moose population in Unit 17A increased dramatically in recent years. We worked with local residents and staff from TNWR and continued work on a draft moose management guideline that established an objective of 1,100–1,750 moose in the unit. We also continued work on a

cooperative moose research project with TNWR to 1) document population trends, 2) evaluate the moose habitat in the unit and estimate carrying capacity, and 3) develop appropriate management goals and regulatory proposals. It is critical that these cooperative efforts be coupled with continuing efforts to inform the local public of the advantages of reducing illegal harvest of moose in the unit.

Recommended management actions for the next few years include the following:

- Conduct a population estimation survey of subunits each winter on a rotating basis.
- Continue to develop the moose management plan for Unit 17A in cooperation with Togiak National Wildlife Refuge, local advisory committees, and local citizen groups.
- Continue to seek cost-effective and accurate methods to obtain bull:cow ratios within the unit.

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Table 1. Unit 17 moose population estimation surveys, Alaska, regulatory years[a] 1998–2009.

Survey area	Regulatory year	Population estimate	Moose/mi^2	Total survey (mi^2)	Moose habitat (mi^2)	Moose/mi^2	Min. % calves
Unit 17B (west)[b]	2000	1,202 (± 141)	0.22	5,524	2,932	0.41	5
	2005	1,210 (± 120)	0.22	5,524	3,140	0.39	12.5
	2009	1,137 (± 159)	0.21	5,510	3,146	0.36	8
Unit 17B (east)[c]	2001	1,953 (± 254)	0.46	4,269	2,914	0.67	4
	2008[d]	1,466 (± 424)	0.37	3,981	2,913	0.50	8
Unit 17C	1998	2,955 (± 488)	0.54	5,447	3,795	0.78	15
	2003	3,670 (± 542)	0.67	5,447	4,096	0.90	11
	2007	3,235 (± 354)	0.59	5,447	4,280	0.76	12

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1998 = 1 July 1998–30 June 1999.

[b] That area of the Nushagak River drainage upstream of the confluence of the Nushagak and Mulchatna rivers.

[c] That area of the Mulchatna River drainage upstream of the confluence of the Nushagak and Mulchatna rivers. Does not include that area of Lake Clark National Park within Unit 17B.

[d] Estimate for entire survey area, however high winds/turbulence prevented counting in some selected sample units, especially some considered high density strata in riparian areas of the lower Mulchatna River.

Table 2. Reported moose harvest data for all hunts in Unit 17, Alaska, regulatory years[a] 1978–2012.

Regulatory year	Reported harvest	Hunters afield	Percent success	Unit[b]			
				17A	17B	17C	Unk
1978	65	160	41				
1979	33	68	49				
1980	89	212	42				
1981	76	209	36				
1982	49	149	33				
1983	127	293	43	0	72	48	7
1984	158	344	46	0	86	70	2
1985	148	401	37	0	94	52	2
1986	202	486	42	0	122	73	7
1987	207	499	41	0	152	42	13
1988	187	457	41	0	157	28	2
1989	175	438	40	0	122	48	5
1990	225	489	46	0	178	44	3
1991	268	590	45	0	172	85	11
1992	263	705	37	0	160	90	13
1993	249	705	35	1	150	78	20
1994	296	800	37	0	167	94	35
1995	336	881	38	0	192	109	35
1996	373	913	41	0	207	113	53
1997	347	956[c]	36	15	168	126	38
1998	389	1,048[c]	37	10	168	171	40
1999	425	1,116[c]	38	10	170	192	53
2000	373	1,112[c]	34	10	226	136	1
2001	419	1,175[c]	36	7	186	222	4
2002	404	1,147[c]	35	8	183	210	3
2003	426	1,168[c]	36	11	163	251	1
2004	383	1,204[c]	32	20	168	193	2
2005	380	1,182[c]	32	25	117	232	6
2006	384	1,103[c]	35	36	113	233	2
2007	388	1,142[c]	34	40	113	213	22
2008	353	1,230[c]	29	45	79	229	0
2009	322	1,231	26	31	81	206	4
2010	343	1,289	27	37	75	151	80
2011	349	1,279	27	50	63	236	0
2012	301	1,281	23	46	55	200	1

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1978 = 1 July 1978–30 June 1979.
[b] Harvest data not broken down by unit before regulatory year 1983.
[c] Included hunters who registered for both fall and winter registration hunts.

Table 3. Unit 17 moose antler sizes (%) in the reported harvest, Alaska, regulatory years[a] 1992–2012.

Regulatory year	Antler size (%)[b]			Largest antlers (inches)
	<30″	30–50″	>50″	
1992	6	36	57	80
1993	3	30	68	73
1994	9	29	62	73
1995	7	35	57	78
1996	9	26	65	75
1997	6	36	57	73
1998	9	35	56	74
1999	7	37	56	71
2000	8	27	65	80
2001	19	28	53	72
2002	20	35	46	69
2003	13	33	54	78
2004	15	33	52	72
2005	18	30	52	73
2006	17	38	45	76
2007	13	41	46	77
2008	5	35	59	73
2009	6	33	61	72
2010	5	38	57	70
2011	15	39	46	69
2012	12	44	44	72

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1992 = 1 July 1992–30 June 1993.
[b] Includes only those with antler size reported on harvest card.

Table 4. Unit 17 general season[a] moose hunter residency and success, Alaska, regulatory years[b] 1992–2012.

	Successful					Unsuccessful					
Regulatory year	Local resident	Nonlocal resident	Nonresident	Total	(%)	Local resident	Nonlocal resident	Nonresident	Total	(%)	Total hunters
1992	61	79	64	212	(41)[c]	65	114	124[c]	310	(59)[c]	522
1993	21	28	93	144	(33)[d]	27	117	142[d]	292	(67)[d]	436
1994	22	41	91	161	(33)[e]	24	117	180[e]	329	(67)[e]	490
1995	23	30	115	171	(35)[f]	28	103	177[f]	314	(65)[f]	485
1996	16	35	144	196	(40)[g]	33	82	174[g]	291	(60)[g]	487
1997	13	33	100	150	(35)[h]	29	79	161	277	(65)[h]	427
1998	15	34	120	169	(32)	27	111	220	359	(68)[i]	528
1999	16	26	99	146	(29)[j]	20	91	235	358	(71)[j]	504
2000	4	41	139	184	(34)	18	98	236	353	(66)[k]	537
2001	11	27	125	169	(36)[l]	14	97	191	304	(64)[l]	473
2002	12	25	77	120	(25)[m]	19	115	217	351	(75)	471
2003	6	38	97	141	(36)	27	96	127	253	(64)[n]	394
2004	4	26	97	129	(31)[o]	20	92	169	283	(69)[p]	412
2005	12	27	61	100	(29)	21	93	130	245	(71)[q]	345
2006	12	25	38	76	(27)[r]	31	60	115	209	(73)[r]	285
2007	9	28	40	78	(28)[s]	23	70	108	205	(72)[s]	283
2008	3	23	24	51	(20)[t]	37	82	76	199	(80)[t]	250
2009	3	15	14	33	(21)[u]	29	48	39	119	(78)[u]	153
2010	3	15	29	47	(29)	29	49	36	114	(71)	161
2011	5	9	14	28	(25)	33	34	18	85	(75)[v]	113
2012	6	18	16	40	(24)	34	53	42	129	(76)[w]	169

[a] Excludes hunters in permit hunts.
[b] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1992 = 1 July 1992–30 June 1993.
[c] Includes 8 successful and 7 unsuccessful hunters of unknown residency.
[d] Includes 2 successful and 6 unsuccessful hunters of unknown residency.
[e] Includes 7 successful and 8 unsuccessful hunters of unknown residency.
[f] Includes 3 successful and 6 unsuccessful hunters of unknown residency.
[g] Includes 1 successful and 2 unsuccessful hunters of unknown residency.
[h] Includes 4 successful and 8 unsuccessful hunters of unknown residency.
[i] Includes 1 unsuccessful hunter of unknown residency.
[j] Includes 5 successful and 12 unsuccessful hunters of unknown residency.
[k] Includes 1 unsuccessful hunter of unknown residency.
[l] Includes 6 successful and 2 unsuccessful hunters of unknown residency.
[m] Includes 6 successful hunters of unknown residency.
[n] Includes 3 unsuccessful hunters of unknown residency.
[o] Includes 2 successful hunters of unknown residency.
[p] Includes 2 unsuccessful hunters of unknown residency.
[q] Includes 1 unsuccessful hunter of unknown residency.
[r] Includes 1 successful and 3 unsuccessful hunter of unknown residency.
[s] Includes 1 successful and 4 unsuccessful hunters of unknown residency.
[t] Includes 1 successful and 4 unsuccessful hunters of unknown residency.
[u] Includes 1 successful and 3 unsuccessful hunters of unknown residency.
[v] Does not include 4 unsuccessful and 2 successful hunters of unknown residency.
[w] Does not include 1 successful hunter of unknown residency.

Table 5. Unit 17B general season reported moose harvest, Alaska, regulatory years[a] 1992–2012.

Regulatory year	Reported harvest					
	M	(%)	F	(%)	Unk	Total
1992	152	(100)	0	(0)	0	152
1993	125	(100)	0	(0)	1	126
1994	132	(100)	0	(0)	0	132
1995	148	(100)	0	(0)	0	148
1996	171	(100)	0	(0)	0	171
1997	127	(100)	0	(0)	0	127
1998	139	(100)	0	(0)	0	139
1999	122	(100)	0	(0)	0	122
2000	165	(100)	0	(0)	0	165
2001	141	(100)	0	(0)	0	141
2002	96	(100)	0	(0)	0	96
2003	114	(100)	0	(0)	0	114
2004	107	(100)	0	(0)	0	107
2005	68	(100)	0	(0)	0	68
2006	53	(100)	0	(0)	0	53
2007	53	(100)	0	(0)	0	53
2008	34	(100)	0	(0)	0	34
2009	18	(100)	0	(0)	0	18
2010	35	(100)	0	(0)	0	35
2011	30	(100)	0	(0)	0	30
2012	39	(100)	0	(0)	1	40

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1992 = 1 July 1992–30 June 1993.

Table 6. Unit 17C general season[a] reported moose harvest and accidental death, Alaska, regulatory years[b] 1992–2012.

Regulatory year	Harvest by hunters: Reported M (%)	Reported F (%)	Reported Unk	Reported Total	Estimated[c] Unreported	Estimated[c] Illegal	Estimated[c] Total	Accidental death	Grand total
1992	56 (100)	0 (0)	0	56[d]	0	0	0	0	56
1993	18 (100)	0 (0)	0	18	0	0	0	0	18
1994	28 (100)	0 (0)	0	28[e]	0	0	0	1[f]	29
1995	32 (100)	0 (0)	0	32[g]	0	0	0	0	32
1996	23 (100)	0 (0)	0	23[h]	0	0	0	2[i]	25
1997	21 (100)	0 (0)	0	21[j]	0	0	0	0	21
1998	27 (100)	0 (0)	0	27[k]	0	0	0	1	28
1999	23 (100)	0 (0)	0	23[l]	0	0	0	0	23
2000	18 (100)	0 (0)	0	18[m]	0	0	0	1	19
2001	26 (100)	0 (0)	0	26[n]	0	0	0	2	28
2002	21 (100)	0 (0)	0	21[o]	0	0	0	0	21
2003	26 (100)	0 (0)	0	26[p]	0	0	0	0	26
2004	21 (100)	0 (0)	0	21[q]	0	0	0	0	21
2005	32 (100)	0 (0)	0	32	0	0	0	0	32
2006	21 (100)	0 (0)	0	21[r]	0	0	0	0	21
2007	25 (100)	0 (0)	0	25	0	0	0	0	25
2008	17 (100)	0 (0)	0	17	0	0	0	0	17
2009	15 (100)	0 (0)	0	15	0	0	0	0	15
2010	11 (100)	0 (0)	0	11	0	0	0	0	11
2011	13 (100)	0 (0)	0	13	0	0	0	0	13
2012	13 (100)	0 (0)	0	13	0	0	0	0	13

[a] Excludes permit hunt harvest.
[b] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1992 = 1 July 1992–30 June 1993.
[c] No estimates of unreported/illegal harvests have been made for this unit.
[d] Does not include 3 bulls from an unspecified portion of Unit 17.
[e] Does not include 1 bull from an unspecified portion of Unit 17.
[f] Includes 1 bull killed in defense of life or property.
[g] Does not include 3 bulls from an unspecified portion of Unit 17.
[h] Does not include 11 bulls from an unspecified portion of Unit 17.
[i] Does not include 1 cow and 1 bull killed in motor vehicle accidents.
[j] Does not include 2 bulls from an unspecified portion of Unit 17.
[k] Does not include 3 bulls from an unspecified portion of Unit 17.
[l] Does not include 1 bull from an unspecified portion of Unit 17.
[m] Does not include 1 bull from an unspecified portion of Unit 17.
[n] Does not include 2 bulls from an unspecified portion of Unit 17.
[o] Does not include 3 bulls from an unspecified portion of Unit 17.
[p] Does not include 1 bulls from an unspecified portion of Unit 17.
[q] Does not include 1 bull from an unspecified portion of Unit 17.
[r] Does not include 2 bulls from an unspecified portion of Unit 17.

Table 7. Unit 17A reported moose harvest data by permit hunt, Alaska, regulatory years[a] 1997–2012.

Hunt no.	Regulatory year	Permits issued[b]	Percent did not hunt	Percent unsuccessful hunters[c]	Percent successful hunters[c]	Bulls (%)	Cows (%)	Unk	Total harvest
RM573	1997	44	11	62	38	15 (100)	0 (0)	0	15
	1998	48	10	77	23	10 (100)	0 (0)	0	10
	1999	57	28	76	24	10 (100)	0 (0)	0	10
	2000	56	13	80	20	10 (100)	0 (0)	0	10
	2001	56	16	87	15	7 (100)	0 (0)	0	7
	2002	40	10	78	22	8 (100)	0 (0)	0	8
RM573	2003	77	21	82	18	11 (100)	0 (0)	0	11
& RM575[d]	2004	97	20	74	26	20 (100)	0 (0)	0	20
	2005	149	30	75	25	25 (100)	0 (0)	0	25
	2006	121	24	61	39	36 (100)	0 (0)	0	36
	2007[e]	181	38	64	36	40 (100)	0 (0)	0	40
	2008	213	26	72	28	45 (100)	0 (0)	0	45
	2009[f]	155	17	76	24	31 (100)	0 (0)	0	31
	2010	144	13	70	30	37 (100)	0 (0)	0	37
	2011	181	10	68	32	49 (94)	0 (0)	3	52
	2012	212	23	71	29	44 (96)	0 (0)	2	46

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1997 = 1 July 1997–30 June 1998.
[b] Registration permits were valid for only Unit 17A.
[c] Includes only those permittees reporting that they hunted.
[d] Registration hunt RM575 established beginning winter 2003–2004.
[e] Beginning regulatory year 2007, RM575 winter hunt included western portion of Unit 17C.
[f] Beginning regulatory year 2009, western portion of Unit 17C deleted from RM575 winter hunt.

Table 8. Unit 17B reported moose harvest data by permit hunt, Alaska, regulatory years[a] 1992–2012.

Hunt no.	Regulatory year	Permits issued[b]	Percent did not hunt	Percent unsuccessful hunters[c]	Percent successful hunters[c]	Bulls (%)	Cows (%)	Unk	Total harvest
RM983	1992	277	30	63	27	8 (100)	0 (0)	0	8
RM583	1993	433	19	61	39	23 (100)	0 (0)	1	24
	1994	438	18	56	44	35 (100)	0 (0)	0	35
	1995	521	21	56	44	44 (100)	0 (0)	0	44
	1996	546	20	63	37	36 (100)	0 (0)	0	36
RM583	1997[d]	629	25	63	37	41 (100)	0 (0)	0	41
& RM585	1998	634	25	69	31	29 (100)	0 (0)	0	29
	1999	749	24	53	47	48 (100)	0 (0)	0	48
	2000	685	23	61	39	61 (100)	0 (0)	0	61
	2001	814	20	72	28	41 (100)	0 (0)	0	41
	2002	794	19	66	34	83 (100)	0 (0)	0	83
	2003	880	20	69	31	47 (100)	0 (0)	0	47
	2004	878	20	75	25	60 (100)	0 (0)	0	60
RM583,	2005[e]	887	22	74	26	39 (100)	0 (0)	0	39
RM585, &	2006	841	19	61	39	54 (100)	0 (0)	0	54
RM587	2007	953	22	62	38	60 (100)	0 (0)	0	60
	2008	1,037	21	69	31	45 (100)	0 (0)	0	45
	2009	1,209	21	69	31	63 (100)	0 (0)	0	63
	2010	1,203	17	76	24	45 (100)	0 (0)	0	45
	2011	1,285	20	74	26	45 (98)	0 (0)	1	46
	2012	1,209	20	81	19	27 (96)	0 (0)	1	28

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1992 = 1 July 1992–30 June 1993.
[b] Registration permit valid for both Units 17B and 17C. Permit data are for both areas combined; harvest data are specific to Unit 17B.
[c] Of those permittees that reported hunting in Unit 17B.
[d] Beginning regulatory year 1997, includes permits issued and harvest for both fall (20 August–15 September) and winter (1–31 December) permit hunts.
[e] Beginning regulatory year 2005, includes resident (RM583 and RM585) and nonresident (RM587) registration hunts.

Table 9. Unit 17C reported moose harvest data by permit hunt, Alaska, regulatory years[a] 1992–2012.

Hunt no.	Regulatory year	Permits issued[b]	Percent did not hunt	Percent unsuccessful hunters[c]	Percent successful hunters[c]	Bulls	(%)	Cows	(%)	Unk	Total harvest
RM983	1992	277[c]	30	63	27	31[d]	(100)	0	(0)	3	34
RM583	1993	433	19	61	39	59[e]	(100)	1	(0)	0	60
	1994	438	18	56	44	65[f]	(100)	0	(0)	1	66
	1995	521	21	59	41	87[g]	(100)	0	(0)	0	87
	1996	546	20	54	46	89[h]	(99)	0	(0)	1	90
RM583 &	1997[i]	629	25	60	40	105[j]	(100)	0	(0)	0	105
RM585	1998	634	25	48	52	144[k]	(100)	0	(0)	0	144
	1999	749	24	49	51	169[l]	(100)	0	(0)	0	169
	2000	685	23	68	32	118[m]	(100)	0	(0)	0	118
	2001	814	20	60	40	200[n]	(100)	0	(0)	0	200
	2002	794	19	51	49	193	(100)	0	(0)	0	193
	2003	880	20	56	44	227	(100)	0	(0)	0	227
	2004	878	20	65	35	173	(100)	0	(0)	0	173
RM583 &	2005[o]	887	22	63	37	199[p]	(100)	0	(0)	0	199
RM585	2006	841	19	61	39	211	(100)	0	(0)	0	211
	2007	953	22	60	40	188	(100)	0	(0)	0	188
	2008	1,037	21	69	31	212	(100)	0	(0)	0	212
	2009	1,209	21	73	27	190	(97)	0	(0)	5	195
	2010	1,203	17	75	25	189	(97)	0	(0)	5	194
	2011	1,285	20	73	27	220	(99)	0	(0)	3	223
	2012	1,209	20	76	24	184	(98)	0	(0)	3	187

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1992 = 1 July 1992–30 June 1993.
[b] Registration permits valid for both Units 17B and 17C. Permit data are for both areas combined, harvest data are specific to Unit 17C.
[c] Of those permittees who reported hunting in Unit 17C.
[d] Not included are 8 bulls from an unspecified portion of Unit 17.
[e] Not included are 20 bulls from an unspecified portion of Unit 17 and 1 bull from Unit 17A.
[f] Not included are 34 bulls from an unspecified portion of Unit 17.
[g] Not included are 33 bulls from an unspecified portion of Unit 17 and 1 unreported sex.
[h] Not included are 51 bulls from an unspecified portion of Unit 17.
[i] Includes permits issued and harvest for both fall (20 Aug–15 Sep) and winter (1–31 Dec) permit hunts.
[j] Not included are 36 bulls from an unspecified portion of Unit 17.
[k] Not included are 37 bulls from an unspecified portion of Unit 17.
[l] Not included are 52 bulls from an unspecified portion of Unit 17.
[m] Not included are 51 bulls from an unspecified portion of Unit 17.
[n] Not included are 2 bulls from an unspecified portion of Unit 17.
[o] Beginning regulatory year 2005, includes resident (RM583 and RM585) but not (RM587) registration hunts.
[p] Not included are 6 bulls from an unspecified portion of Unit 17.

Table 10. Unit 17 moose hunter residency and success[a] for permit hunts, Alaska, regulatory years[b] 1992–2012.

Regulatory year	Successful					Unsuccessful					Total hunters
	Local[c] resident	Nonlocal resident	Nonresident	Total	(%)	Local[c] resident	Nonlocal resident	Nonresident	Total	(%)	
1992	43	7	0	50	(27)	122	11	0	133	(73)	183
1993	84	21	0	105	(39)	130	33	0	164	(61)	269[d]
1994	106	29	0	135	(44)	128	45	0	175	(56)	310[e]
1995	117	48	0	165	(42)	131	100	0	231	(58)	396
1996	117	60	0	177	(42)	157	92	0	249	(58)	426
1997	164	33	0	197	(37)	272	60	0	332	(63)	529
1998	183	37	0	220	(42)	251	54	0	305	(58)	525
1999	221	58	0	279	(46)	262	71	0	333	(54)	612
2000	144	45	0	189	(33)	304	82	0	386	(67)	575
2001	193	57	0	250	(36)	370	82	0	452	(64)	702
2002	228	56	0	284	(42)	323	69	0	392	(58)	676
2003	214	71	0	285	(37)	407	82	0	489	(63)	774
2004	204	50	0	254	(32)	446	92	0	538	(68)	792
2005	224	45	10	279	(34)	451	80	10	541	(66)	820
2006	254	47	6	307	(38)	405	68	36	509	(62)	816
2007	260	39	11	310	(36)	469	65	15	549	(64)	859
2008	257	38	7	302	(31)	596	70	12	678	(69)	980
2009	238	41	10	289	(27)	712	62	15	789	(73)	1,078
2010	248	40	9	297	(26)	751	53	27	931	(74)	1,128
2011	268	36	13	317	(28)	735	73	22	830	(72)	1,147[f]
2012	214	35	12	261	(24)	742	74	24	840	(76)	1,101[g]

[a] Includes only permittees who reported hunting.
[b] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1992 = 1 July 1992–30 June 1993.
[c] Unit 17 residents.
[d] Includes 0 successful and 1 unsuccessful hunter of unknown residency.
[e] Includes 0 successful and 2 unsuccessful hunters of unknown residency.
[f] Does not include 1 successful and 1 unsuccessful hunters of unknown residency.
[g] Does not include 1 successful and 4 unsuccessful hunters of unknown residency.

Table 11. Unit 17 reported general season moose harvest[a] chronology percent by month, Alaska, regulatory years[b] 1992–2012.

Regulatory year	Harvest periods (%)									
	10–20 Aug	21–31 Aug	1–10 Sep	11–20 Sep	21–30 Sep	1–10 Dec	11–20 Dec	21–31 Dec	Unk	n[c]
1992[d]	0	3	44	41	0	2	2	4	3	212
1993[e]	1	2	54	35	0	0	1	1	6	144
1994	1	3	47	37	3	1	2	3	5	161
1995	1	2	55	32	0	0	1	1	9	171
1996	1	2	63	27	0	1	0	2	6	196
1997	0	1	55	36	0	1	1	1	5	150
1998	0	2	60	35	0	0	0	0	2	169
1999	0	3	51	42	0	2	0	1	1	146
2000	0	0	55	40	0	0	0	0	5	184
2001	0	3	57	38	0	1	1	0	1	169
2002	0	2	55	38	0	0	1	0	3	120
2003	0	0	57	39	0	0	0	0	4	141
2004	0	0	50	46	0	0	0	0	4	129
2005	0	0	56	41	0	0	0	0	9	100
2006	0	0	42	53	0	0	0	0	5	76
2007	0	0	40	56	0	0	0	0	4	78
2008	0	0	37	57	0	0	0	0	6	51
2009	0	0	43	55	0	0	0	0	3	33
2010	0	0	43	57	0	0	0	0	0	47
2011	0	0	53	47	0	0	0	0	0	30
2012	0	5	59	30	0	0	0	3	3	40[f]

[a] Excludes permit hunt harvest.
[b] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1992 = 1 July 1992–30 June 1993.
[c] Reported harvest.
[d] Regulatory year 1992 general season dates: Unit 17B (upstream): 1–20 September; Unit 17B (remainder): Residents 1–20 September and 1–31 December, Nonresidents 5–15 September; Unit 17C (Iowithla, etc.): Residents 1–15 September; Unit 17C (remainder): Residents 1–15 September and 1–31 December.
[e] Regulatory year 1993 to present general season dates: Unit 17B Residents: 1–15 September, Nonresidents: 5–15 September; Unit 17C Residents: 1–15 September.
[f] Includes 1 bear of unknown harvest date.

Table 12. Unit 17 reported moose harvest chronology percent for permit hunts, Alaska, regulatory years[a] 1992–2012.

Regulatory year	Harvest chronology for permit hunts (%)									
	10–20 Aug	21–31 Aug	1–10 Sep	11–20 Sep	21–30 Sep	1–10 Dec	11–20 Dec	21–31 Dec	Other/ Unk	n[b]
1992[c]	20	72	2	0	0	0	0	0	6	50
1993[d]	9	40	19	10	2	3	6	5	8	105
1994[d]	7	30	29	10	1	2	7	8	6	135
1995[d]	15	33	26	14	1	2	1	4	6	165
1996[d]	7	33	23	20	1	2	5	3	5	177
1997[e]	6	35	16	21	0	2	4	11	5	197
1998[e]	10	44	22	14	0	1	1	6	2	220
1999	13	44	16	13	0	1	4	4	6	279
2000	17	32	24	19	0	2	1	1	5	189
2001	11	46	21	10	0	2	2	7	1	250
2002	12	41	20	15	0	6	1	1	3	284
2003	14	44	20	13	0	1	2	4	2	285
2004	8	33	16	22	0	5	5	5	5	254
2005	6	42	23	20	0	1	1	1	5	277
2006	15	34	19	17	0	1	4	10	1	306
2007	13	26	20	24	0	1	3	8	5[f]	310
2008	11	22	15	25	0	1	6	13	8[g]	302
2009	6	24	21	29	0	5	5	6	4	289
2010	12	22	21	25	0	5	4	9	4[h]	297
2011	9	23	17	21	0	7	8	12	10	319
2012	4	19	28	25	0	2	5	8	5	261[i]

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1992 = 1 July 1992–30 June 1993.
[b] Reported harvest.
[c] Registration permits valid for 20–31 August.
[d] Registration permits valid for any bull, 20 August–15 September and 1–31 December.
[e] Registration permits valid for any bull; Unit 17A: 25 August–20 September; Unit 17B and 17C: 20 August–15 September and 1–31 December.
[f] Includes 8 bulls taken 2–15 January in Units 17A and western 17C.
[g] Includes 21 bulls taken 5–18 January in Units 17A and western 17C.
[h] Includes 5 bulls taken 1–10 January in Unit 17A.
[i] Includes 11 moose taken in January that do not appear in this table.

Table 13. Unit 17 reported general season moose harvest[a] percent by transport method, Alaska, regulatory years[b] 1992–2012.

Regulatory year	Harvest percent by transport method								Total moose
	Airplane	Horse	Boat	3- or 4-wheeler	Snowmachine	ORV	Highway vehicle	Unknown	
1992	64	0	29	0	2	0	1	3	212
1993	71	0	26	0	9	0	0	1	144
1994	71	0	22	0	2	0	1	3	161
1995	64	0	33	1	1	0	1	1	171
1996	68	0	29	0	2	0	1	1	196
1997	65	0	30	1	3	0	1	0	150
1998	67	0	32	0	1	1	0	1	169
1999	61	0	36	0	3	0	0	0	146
2000	75	0	23	0	0	0	0	2	184
2001	64	0	34	1	0	0	0	1	169
2002	61	0	38	1	0	0	0	1	120
2003	70	0	29	1	0	0	0	0	141
2004	75	0	23	1	0	0	0	1	129
2005	66	0	28	3	0	0	0	3	100
2006	63	0	33	0	0	0	0	4	76
2007	62	0	32	3	0	1	0	3	78
2008	63	0	35	0	0	0	0	2	51
2009	58	0	42	0	0	0	0	0	33
2010	75	0	23	2	0	0	0	0	47
2011	100	0	0	0	0	0	0	0	30
2012	61	0	30	2	0	0	2	5	40

[a] Excludes permit hunt harvest.

[b] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1992 = 1 July 1992–30 June 1993.

Table 14. Unit 17 reported moose harvest by permit hunt, percent by transport method, Alaska, regulatory years[a] 1992–2012.

Regulatory year	Percent of harvest								Total moose
	Airplane	Horse	Boat	3- or 4-wheeler	Snowmachine	ORV	Highway vehicle	Unknown	
1992	9	0	83	1	0	1	1	5	50
1993	15	0	73	0	6	0	4	3	105
1994	18	0	59	0	12	0	3	8	135
1995	25	0	68	0	4	0	1	2	165
1996	26	0	63	0	6	0	2	3	177
1997	8	1	73	0	16	0	1	2	197
1998	5	0	81	3	6	0	0	5	220
1999	11	0	74	1	9	0	2	2	279
2000	13	0	78	1	3	0	1	4	189
2001	10	0	74	1	10	0	1	4	250
2002	12	0	82	1	1	1	2	2	284
2003	11	0	79	1	7	1	1	1	285
2004	6	0	72	3	16	0	0	2	254
2005	12	0	79	1	3	0	1	3	277
2006	4	0	76	2	14	1	2	1	307
2007	5	0	75	2	14	1	2	1	310
2008	8	0	59	2	27	0	2	1	302
2009	10	0	66	4	15	0	2	3	303
2010	6	0	68	1	21	0	1	3	298
2011	6	0	61	1	28	0	1	2	319
2012	7	0	62	0.5	20	0	0.5	10	262

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1992 = 1 July 1992–30 June 1993.