**Alaska Department of Fish and Game**
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# CHAPTER 13: MOOSE MANAGEMENT REPORT

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

## LOCATION

**GAME MANAGEMENT UNIT:** 14A (2,561 mi$^2$)

**GEOGRAPHIC DESCRIPTION:** Matanuska Valley

## BACKGROUND

The moose population and the human population in Game Management Unit 14A has grown significantly since the area was settled by relocated farmers of the 1930s. Moose were described as scarce during the 1930s. The moose population likely grew to numbers approaching 7,000 during the 1960s (Griese 1996). Moose numbers fluctuated with deep snow winters, but stabilized between 5,000 and 6,000 animals in the 1990s. The human population in the Matanuska–Susitna Valley continues to be one of the fastest growing areas in the state. Land clearing activities associated with agriculture, development, and road construction have contributed to an increase in moose browse. As the area continues to grow, much of the early seral moose habitat has been replaced with homes, roads, and associated industry (Peltier 2012).

Between statehood (1959) and 1971, harvests ranged from 20 to 1,300 (Griese 2000). The harvest was predominantly bulls, but the harvest of antlerless moose was as high as 1,131 in regulatory year (RY) 1962 (Griese 2000). A regulatory year begins 1 July and ends 30 June (e.g., RY62 = 1 July 1962–30 June 1963). Following several severe winters, antlerless moose seasons were discontinued from RY72 to RY77 and the mean annual harvest of bulls declined, ranging between 167 and 346. Antlerless seasons began again in RY78. Starting in RY93, the bull harvest during the general season was restricted to moose with antlers having a spike or fork on at least one side or a minimum of 3 brow tines on at least one side or a minimum total width of 50 inches. This selective harvest strategy is referred to as "spike fork 50-inch" (Schwartz et al. 1992). Between RY93 and RY10, the average general season harvest averaged 363 (range 226–498).

Habitat enhancement efforts during the 1990s were aided by fires. In 1993, a successful cooperative effort between state agencies resulted in a 900-acre controlled burn to enhance wintering moose habitat near Willow (Collins 1996). In June 1996, a 37,000-acre human-caused fire occurred in the Big Lake area termed the Miller's Reach Fire (Griese and Masteller 1998).

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

Even though the habitat enhancement from this fire substantially enhanced moose forage and habitat in Unit 14A, politically it restricted future prescribed burn opportunities. Since 2001, the Ruffed Grouse Society, and the State of Alaska's Division of Forestry and Department of Fish and Game (ADF&G) have been cooperating on mechanical habitat enhancement efforts in the Matanuska Valley Moose Range to benefit both moose and ruffed grouse. In addition, ADF&G staff in Palmer have been cooperating regularly with Division of Forestry staff on proposed timber sales in an effort to enhance moose habitat in lieu of prescribed fires (Kavalok 2008).

## MANAGEMENT DIRECTION

### MANAGEMENT GOALS

- Maintain and enhance the moose population to provide for high levels of human consumptive use.
- Provide maximum opportunity to participate in hunting moose.
- Provide opportunities for nonconsumptive uses.

### MANAGEMENT OBJECTIVES

- Maintain a post-hunt population of 6,000–6,500 moose with a sex ratio of 20–25 bulls:100 cows.
- Achieve an annual harvest of 360–750 moose.

## METHODS

Moose populations were surveyed 14–19 November 2011 using the geospatial population estimator (GSPE) technique (Kellie and DeLong 2006). Winter 2011 was exceptionally snowy, and we recorded an increase in the number of moose-vehicle collisions, moose-rail collisions, nuisance moose reports, and moose mortality reports during that winter and spring. Concern for a possible population decline led us to attempt to repeat the GSPE survey the following year, however conditions in fall 2012 precluded a full GSPE survey. We completed a sex and age composition survey on 26–27 November 2012. Previous sex and age composition surveys were completed by having pilot-observer teams fly to areas of known winter moose concentrations until a minimum of 1,000 moose were counted. In order to reduce the potential for bias that could occur by concentrating our efforts in the post-rut wintering aggregation areas, we subdivided the unit into equal parts and sent pilot-observer teams to each area. This approach is believed to result in estimates that more accurately reflect the composition of Unit 14A.

Harvest was monitored with general harvest and draw permit reports from Unit 14A hunters. All harvest data were reviewed for accuracy and updated if necessary. Some figures may not match those previously reported. The Alaska Railroad Corporation provided numbers of moose killed by trains. After several years of difficulty getting accurate information from MATCOM dispatch regarding road kills, moose killed illegally, or in defense of life or property, the Alaska Department of Public Safety once again provided those numbers during this reporting period.

## RESULTS AND DISCUSSION

### POPULATION STATUS AND TREND

*Population Size*

In 2011 the population was estimated at 7,993 ± 1,167 (80% CI; Table 1). The results of this survey indicate that the population has increased from the 2008 survey of 6,613 ± 727 (Peltier 2010). Both surveys included a sightability correction factor calculated from additional intensive surveys of a randomly selected subsample of the survey units.

*Population Composition*

The results of the 2011 GSPE survey showed a bull:100 cow ratio of 17.4 and a calf:100 cow ratio of 43.5 (Table 1). The bull:cow ratios for 2011 showed a decrease from the previous estimates of 23 bulls:100 cows for the 2008 GSPE survey and 24.7 for the 2009 composition survey. The results of the 2012 sex and age composition survey was a bull:100 cow ratio of 26–29 and a calf:100 cow ratio of 27.8–30.8. The range of values is the result of the methodology used and subsequently may not be directly comparable to previous information.

### MORTALITY

*Harvest*

Seasons and Bag Limits. The fall general open season was 25 August–25 September for all resident and nonresident hunters for both years and 10–17 August for archery-only hunters. During this period, the bag limit was 1 bull with a spike or fork antler on at least one side, or with an antler spread at least 50 inches or 3 or more brow tines on at least one side.

The department issued 400 drawing permits for antlerless moose for the 25 August–25 September period in 2011 (Table 2). Concern about excessive winter kill during winter 2011 led to the cancellation of the antlerless draw hunts for RY12.

Alaska Board of Game Actions and Emergency Orders. During the spring 2011 meeting, the Board of Game added a winter antlerless draw hunt to the other draw hunts available from 1 January to 25 February. The area selected for the hunt was the central portion of the unit. The board also added a new type of hunt that was designed specifically to address nuisance moose issues and areas where moose-vehicle collisions are likely to occur. This hunt, initially labelled RM and now AM415, provided up to 200 permits. Under the permit conditions, hunters were required to possess a valid hunter education card, and had to register during October. Those that signed-up were randomly drawn as either nuisance moose were identified, or were assigned to a predetermined area along road corridors where a high number of moose-vehicle collisions were known to occur. During the spring 2012 meeting the board shifted the dates for the winter antlerless draw hunt from 1 November to 25 December to address concerns about the possibility of taking bulls in the midwinter hunt, and increased the total number of permits available to 1,000 permits.

Harvest by Hunters. Harvest by hunters was highest for the past 10 years in RY11 (788) followed by one of the lowest years in RY12 (457; Table 3). Some of the reduction in harvest was due to the cancellation of the draw permits. Nevertheless it was still within the harvest

objectives. The number of moose taken during the archery-only season of 10–17 August has increased in the past few years.

Permit Hunts. In order to help keep the population in Unit 14A in check, the department is authorized to issue up to 400 antlerless drawing permits in several hunt areas. In RY11 all available permits were issued; however, due to the hard winter of 2011, no permits were issued for RY12. Hunters took 235 moose from the draw hunt in RY11 (Table 2).

Beginning in RY11, a new type of permit hunt was established (AM415) where up to 200 permits may be issued. In RY11, 50 permits were issued and 42 moose taken, in RY12, 189 permits were issued and 143 moose were taken (Table 2).

Hunter Residency and Success. Fewer people hunted bulls during the general season this reporting period than the previous reporting (2,729 vs. 3,213 during RY09–RY10; Table 4). Local residents of Unit 14 consistently make up the majority of the hunter composition, harvesting 96–98% percent of all moose taken in Unit 14A. Hunter success increased slightly to 15% compared to the average of 13.4% during the previous 5 years; however this increase is due to the good hunting in RY11. Hunter participation and success rates were down throughout Southcentral Alaska in RY12. Residency composition of hunters changed little from previous years.

Harvest Chronology. Most moose are taken either during the first week or the last week of the general season (Table 5). Typically moose become more vulnerable to hunters during the end of the season as they approach the rut, however competition for moose in Unit 14A may lead a lot of hunters into the field at the start of the season. Further analysis of the harvest data showed a trend toward the percentage of bulls greater than the spike-fork component decreasing during the hunting season, while the percentage of the spike-fork component increases as the season progresses. This may be the result of the decrease in availability of the larger age classes of bulls, a decrease in the selectivity of hunters as the season progresses, or a combination of the 2 factors.

Transport Methods. All-terrain vehicles, such as 4-wheelers, and highway vehicles combined have accounted for a majority of the transportation types used by successful hunters for well over the past 10 seasons (Table 6). Access throughout Unit 14A is good relative to the surrounding units and continues to improve each year.

*Accidental and Illegal Mortality*

The snowy winter of 2011 led to a very high mortality of moose from both vehicle and railroad collisions (Table 3). Improved reporting of vehicle collisions by the Department of Public Safety has greatly increased our confidence in the accuracy of the numbers reported.

*Other Mortality*

Winter of RY11 had an exceptional amount of snow which began early in the season and persisted well into April. The impact of the winter on the moose population was noted through the increase in the amount of road and rail kill, the number of nuisance or weakened moose reports received in the Palmer office, and the anecdotal reports of dead or emaciated moose

which began to increase in late December. As a result, the department cancelled the antlerless permits for RY12, and the Alaska Moose Federation developed plans for a supplemental feeding program. However, subsequent twinning and GSPE surveys conducted in spring 2012 and fall 2013, respectively, indicated that the impact of winter RY11 was not as severe as originally feared.

### HABITAT

*Enhancement*

Since 2001, ADF&G in cooperation with the Ruffed Grouse Society, and occasionally Rocky Mountain Elk Foundation and the Division of Forestry, contracted aspen cutting in the Matanuska Valley Moose Range to produce early successional growth to benefit grouse, moose, and other species. During RY11, 32 acres of aspen were treated and another 38 acres were treated in RY12. Since the start of the project, 559 acres have been treated. However, large mature contiguous stands of aspen are becoming scarce in the Matanuska Valley Moose Range and other projects for habitat enhancement should be explored.

## CONCLUSIONS AND RECOMMENDATIONS

The fact that the moose population has continued to increase beyond the population objective in spite of increased harvest is concerning. Harvest objectives have been consistently met or exceeded since 2001. While the harvest of antlerless moose has helped keep the population in check, harvests will need to continue and the population should be closely monitored to ensure that it has not been overharvested or grown to the point that nutritional limitations could start to have an effect.

Effective intensive management and mitigation for increased development and urban expansion in this subunit requires investigation into the distribution and movement of moose. Specifically, studies investigating the annual moose movement patterns into the Point MacKenzie agricultural area, the 1996 Big Lake burn and other areas, will reveal the proportion of moose that are migratory and where these individuals spend the non-winter months. The Point MacKenzie winter population exceeds 10 moose/mi$^2$. These areas are critical to moose in the unit and may be used by moose summering within adjacent units. Movement and previous habitat studies may help us understand how many moose the unit can hold from a biological and a social perspective. As the Matanuska Valley continues to grow, human development will result in increased conflicts with a growing moose population. Movement data may also help demarcate travel corridors and ameliorate conflicts arising from future road expansion.

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Table 1. Unit 14A, fall aerial moose composition surveys and censuses, Alaska, regulatory years[a] 2003–2012.

| Regulatory year | Bulls: 100 Cows | Yearling bulls: 100 cows | Calves: 100 cows | Calves (%) | Adults observed | Moose observed | Moose observed /mi$^2$ | Estimated population size[b] |
|---|---|---|---|---|---|---|---|---|
| 2003[c] | 21 | 9 | 29 | 19 | 1,498 | 1,869 | 4.1 | 6,564 ± 748 |
| 2004[d] | | | | | | | | |
| 2005[d] | | | | | | | | |
| 2006[d] | | | | | | | | |
| 2007[e] | 33 | | 32 | 19 | 540 | 665 | | |
| 2008[f] | 23 | 8 | 42 | 25 | 1,498 | 2,158 | 4.1 | 6,613 ± 727 |
| 2009[f] | 25 | | 49 | 28 | 546 | 761 | | |
| 2010[d] | | | | | | | | |
| 2011 | 17 | 6.5 | 44 | 27 | 1,384 | 1,863 | 3.5 | 7,993 ± 1167 |
| 2012 | 26–29 | | 28–31 | | 1,190 | 1,474 | | |

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2003 = 1 July 2003–30 June 2004.
[b] At an 80% confidence interval.
[c] Ver Hoef spatial estimator survey method (Ver Hoef 2001).
[d] No surveys completed.
[e] Composition count of known wintering areas.
[f] Geospatial population estimator.

Table 2. Moose harvest data by permit hunts in Unit 14A, Alaska, regulatory years[a] 2006–2012.

| Hunt/Unit /Location | Regulatory year | Applicants | Permits issued | Percent did not hunt | Percent unsuccessful hunters | Percent successful hunters | Bulls | Cows | Unknown | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| DM400, Unit 14A, Susitna River, Redshirt Lake | | | | | | | | | | |
| | 2006 | 1,258 | 30 | 13 | 73 | 27 | 0 | 7 | 0 | 7 |
| | 2007 | 1,086 | 20 | 15 | 63 | 37 | 1 | 9 | 0 | 10 |
| | 2008 | 1,180 | 20 | 15 | 47 | 53 | 0 | 8 | 0 | 8 |
| | 2009 | 1,294 | 25 | 8 | 39 | 61 | 1 | 13 | 0 | 14 |
| | 2010 | 1,291 | 25 | 0 | 36 | 64 | 0 | 16 | 0 | 16 |
| | 2011 | 1,211 | 25 | 8 | 30 | 70 | 0 | 11 | 0 | 11 |
| | 2012 | 967 | 0 | | | | | | | |
| DM401, Unit 14A, Susitna River, Figure Eight Lake | | | | | | | | | | |
| | 2006 | 440 | 10 | 20 | 75 | 25 | 1 | 1 | 0 | 2 |
| | 2007 | 435 | 10 | 30 | 29 | 71 | 0 | 2 | 0 | 2 |
| | 2008 | 425 | 10 | 0 | 40 | 60 | 0 | 6 | 0 | 6 |
| | 2009 | 497 | 10 | 0 | 40 | 60 | 0 | 6 | 0 | 6 |
| | 2010 | 394 | 10 | 30 | 29 | 71 | 0 | 5 | 0 | 5 |
| | 2011 | 429 | 10 | 30 | 29 | 71 | 0 | 4 | 0 | 4 |
| | 2012 | 332 | 0 | | | | | | | |
| DM402, Unit 14A, Point Mackenzie | | | | | | | | | | |
| | 2006 | 2,844 | 50 | 6 | 30 | 70 | 1 | 31 | 0 | 32 |
| | 2007 | 2,595 | 40 | 5 | 18 | 82 | 0 | 31 | 0 | 31 |
| | 2008 | 2,595 | 40 | 10 | 42 | 58 | 0 | 21 | 0 | 21 |
| | 2009 | 2,704 | 48 | 8 | 30 | 70 | 2 | 28 | 0 | 30 |
| | 2010 | 2,972 | 48 | 4 | 24 | 76 | 4 | 31 | 0 | 35 |
| | 2011 | 2,727 | 50 | 8 | 24 | 76 | 2 | 31 | 0 | 33 |
| | 2012 | 2,336 | 0 | | | | | | | |
| DM403, Unit 14A, Big Lake | | | | | | | | | | |
| | 2006 | 1,521 | 20 | 5 | 37 | 63 | 1 | 11 | 0 | 12 |
| | 2007 | 1,517 | 20 | 10 | 33 | 67 | 0 | 12 | 0 | 12 |
| | 2008 | 1,639 | 20 | 5 | 28 | 72 | 0 | 13 | 0 | 13 |

| Hunt/Unit /Location | Regulatory year | Applicants | Permits issued | Percent did not hunt | Percent unsuccessful hunters | Percent successful hunters | Bulls | Cows | Unknown | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 1,846 | 30 | 7 | 14 | 86 | 1 | 23 | 0 | 24 |
| | 2010 | 2,199 | 30 | 9 | 26 | 74 | 0 | 20 | 0 | 20 |
| | 2011 | 2,144 | 40 | 15 | 18 | 82 | 1 | 27 | 0 | 28 |
| | 2012 | 2,224 | 0 | | | | | | | |
| DM406, Unit 14A, Bald Mountain Ridge | | | | | | | | | | |
| | 2006 | 1,892 | 40 | 13 | 52 | 48 | 0 | 16 | 0 | 16 |
| | 2007 | 1,853 | 40 | 15 | 46 | 54 | 3 | 16 | 0 | 19 |
| | 2008 | 1,974 | 40 | 13 | 32 | 68 | 0 | 23 | 0 | 23 |
| | 2009 | 2,199 | 50 | 8 | 48 | 52 | 0 | 24 | 0 | 24 |
| | 2010 | 2,508 | 50 | 22 | 26 | 74 | 0 | 20 | 0 | 20 |
| | 2011 | 2,215 | 50 | 20 | 35 | 65 | 2 | 24 | 0 | 26 |
| | 2012 | 1,906 | 0 | | | | | | | |
| DM407, Unit 14A, Matanuska River, North | | | | | | | | | | |
| | 2006 | 2,927 | 60 | 10 | 37 | 63 | 2 | 32 | 0 | 34 |
| | 2007 | 3,117 | 60 | 10 | 45 | 55 | 1 | 28 | 0 | 29 |
| | 2008 | 3,337 | 60 | 5 | 30 | 70 | 1 | 38 | 0 | 39 |
| | 2009 | 3,592 | 80 | 17 | 32 | 68 | 0 | 45 | 0 | 45 |
| | 2010 | 4,028 | 80 | 4 | 34 | 66 | 0 | 52 | 0 | 52 |
| | 2011 | 3,468 | 85 | 12 | 33 | 67 | 1 | 56 | 0 | 57 |
| | 2012 | 2,983 | 0 | | | | | | | |
| DM408, Unit 14A, Matanuska River, South | | | | | | | | | | |
| | 2006 | 868 | 30 | 13 | 52 | 48 | 1 | 11 | 0 | 12 |
| | 2007 | 1,195 | 50 | 10 | 38 | 62 | 1 | 27 | 0 | 28 |
| | 2008 | 1,359 | 50 | 14 | 43 | 57 | 2 | 21 | 0 | 23 |
| | 2009 | 1,469 | 65 | 18 | 30 | 70 | 2 | 35 | 0 | 37 |
| | 2010 | 1,496 | 65 | 26 | 56 | 4 | 0 | 20 | 1 | 21 |
| | 2011 | 1,466 | 75 | 15 | 44 | 56 | 2 | 34 | 0 | 36 |
| | 2012 | 1,246 | 0 | | | | | | | |

| Hunt/Unit /Location | Regulatory year | Applicants | Permits issued | Percent did not hunt | Percent unsuccessful hunters | Percent successful hunters | Bulls | Cows | Unknown | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| DM410, Unit 14A, Knik River | | | | | | | | | | |
| | 2006 | 1,954 | 40 | 5 | 45 | 55 | 0 | 21 | 0 | 21 |
| | 2007 | 2,025 | 30 | 7 | 39 | 61 | 0 | 17 | 0 | 17 |
| | 2008 | 2,189 | 30 | 13 | 23 | 77 | 1 | 19 | 0 | 20 |
| | 2009 | 2,226 | 40 | 5 | 32 | 68 | 0 | 26 | 0 | 26 |
| | 2010 | 2,655 | 40 | 12 | 23 | 77 | 1 | 26 | 0 | 27 |
| | 2011 | 2,438 | 50 | 12 | 27 | 73 | 1 | 31 | 0 | 32 |
| | 2012 | 1,924 | 0 | | | | | | | |
| DM412, Unit 14A, Point MacKenzie[b] | | | | | | | | | | |
| | 2007 | 300 | 10 | 0 | 50 | 50 | 1 | 4 | 0 | 5 |
| | 2008 | 221 | 10 | 0 | 70 | 30 | 0 | 3 | 0 | 3 |
| | 2009 | 361 | 12 | 0 | 25 | 75 | 0 | 9 | 0 | 9 |
| | 2010 | 380 | 12 | 8 | 27 | 73 | 0 | 8 | 0 | 8 |
| | 2011 | 428 | 15 | 13 | 38 | 62 | 1 | 7 | 0 | 8 |
| | 2012 | 394 | 0 | | | | | | | |
| RM/AM415, Unit 14A, Targeted Hunt[c] | | | | | | | | | | |
| | 2011 | 432 | 50 | 4 | 9 | 91 | 10 | 32 | 0 | 42 |
| | 2012 | 205 | 189 | 6 | 25 | 75 | 22 | 121 | 0 | 143 |

[a] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2006 = 1 July 2006–30 June 2007.
[b] DM412 added in 2007, boundaries are the same as DM402.
[c] RM415 renamed AM415 in regulatory year 2012.

Table 3. Unit 14A, moose harvest[a] and accidental death, Alaska, regulatory years[b] 2003–2012.

| Regulatory year | Harvest | | | | | | | Accidental deaths[c] | | | Grand total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Reported | | | | Estimated | | | | | | |
| | M | F | Unk | Total[d] | Unreported[e] | Illegal[f] | Total | Road | Train | Total | |
| 2003 | 415 | 177 | 2 | 594 | 29 | 60 | 89 | 247 | 21 | 268 | 951 |
| 2004 | 360 | 135 | 3 | 498 | 25 | 60 | 85 | 209 | 14 | 223 | 806 |
| 2005 | 379 | 160 | 2 | 541 | 27 | 60 | 87 | 200[g] | 14 | 214 | 842 |
| 2006 | 397 | 131 | 3 | 531 | 28 | 60 | 88 | 200[g] | 23 | 223 | 842 |
| 2007 | 269 | 146 | 2 | 417 | 19 | 60 | 79 | 245 | 15 | 260 | 756 |
| 2008 | 390 | 157 | 2 | 549 | 27 | 60 | 87 | 345 | 37 | 382 | 1,018 |
| 2009 | 474 | 213 | 6 | 693 | 33 | 60 | 93 | 247 | 22 | 269 | 1,055 |
| 2010 | 504 | 209 | 0 | 713 | 35 | 60 | 95 | 229[h] | 41 | 270 | 1,078 |
| 2011 | 525 | 261 | 2 | 788 | 37 | 60 | 97 | 300[i] | 71 | 371 | 1,256 |
| 2012 | 339 | 122 | 1 | 462 | 24 | 60 | 84 | 179[i] | 21 | 200 | 746 |

[a] Includes permit hunt harvest.
[b] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2003 = 1 July 2003–30 June 2004.
[c] Road and train kills are minimum numbers.
[d] Includes moose of unknown sex.
[e] Derived by taking 7% of the reported harvest of bulls.
[f] Includes moose taken in defense of life or property, enforcement cases, and an estimate of out of season take.
[g] Road kill estimates for 2005–2006 and 2006–2007 are minimum estimates based on reported numbers which were known to be incomplete.
[h] Roadkill estimate is based on the number of heads turned in to the Palmer office.
[i] Roadkill estimate is based on location data provided from Department of Public Safety.

Table 4. Unit 14A, moose hunter residency and success[a], Alaska, regulatory years[b] 2003–2012.

| Regulatory year | Successful | | | | | | Unsuccessful | | | | | | Total hunters |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Local resident[c] | Nonlocal resident | Nonresident | Unk | Total | (%) | Local resident[c] | Nonlocal resident | Nonresident | Unk | Total | (%) | |
| 2003 | 385 | 16 | 14 | 0 | 415 | (13) | 2,590 | 63 | 38 | 0 | 2,691 | (87) | 3,106 |
| 2004 | 329 | 9 | 14 | 8 | 360 | (13) | 2,295 | 56 | 47 | 0 | 2,398 | (87) | 2,758 |
| 2005 | 344 | 19 | 13 | 6 | 382 | (13) | 2,419 | 58 | 42 | 20 | 2,539 | (87) | 2,921 |
| 2006 | 363 | 14 | 14 | 4 | 395 | (13) | 2,530 | 53 | 50 | 37 | 2,670 | (87) | 3,065 |
| 2007 | 247 | 10 | 6 | 3 | 266 | (10) | 2,208 | 59 | 50 | 5 | 2,322 | (90) | 2,588 |
| 2008 | 355 | 22 | 15 | 1 | 393 | (13) | 2,599 | 59 | 33 | 15 | 2,706 | (87) | 3,099 |
| 2009 | 430 | 27 | 18 | 2 | 477 | (15) | 2,662 | 63 | 45 | 20 | 2,790 | (85) | 3,267 |
| 2010 | 473 | 15 | 13 | 4 | 505 | (16) | 2,535 | 60 | 64 | 16 | 2,675 | (84) | 3,180 |
| 2011 | 469 | 25 | 21 | 3 | 518 | (18) | 2,298 | 71 | 46 | 8 | 2,423 | (82) | 2,941 |
| 2012 | 288 | 15 | 9 | 2 | 314 | (12) | 2,098 | 60 | 42 | 3 | 2,203 | (88) | 2,517 |

[a] Does not include drawing permit hunters.
[b] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2003 = 1 July 2003–30 June 2004.
[c] Unit 14 residents.

Table 5. Unit 14A moose harvest chronology[a], Alaska, regulatory years[b] 2003–2012.

| Regulatory | August | | | September | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| year | 10–17 | 20–26 | 27–31 | 1–7 | 8–14 | 15–20 | 21–25 | 26–30 | Unk | Total |
| 2003[c] | 13 | 87 | 34 | 57 | 41 | 67 | 54 | 50 | 12 | 415 |
| 2004[c] | 11 | 73 | 17 | 48 | 36 | 62 | 45 | 53 | 15 | 360 |
| 2005[c] | 9 | 70 | 21 | 43 | 50 | 62 | 57 | 57 | 13 | 382 |
| 2006[c] | 10 | 65 | 22 | 47 | 34 | 74 | 50 | 78 | 15 | 395 |
| 2007[d] | 13 | 65 | 22 | 26 | 51 | 83 | | | 6 | 266 |
| 2008[d] | 19 | 108 | 38 | 43 | 71 | 100 | | | 14 | 393 |
| 2009[e] | 32 | 64 | 68 | 62 | 71 | 94 | 72 | | 14 | 477 |
| 2010[e] | 33 | 68 | 73 | 73 | 68 | 76 | 98 | | 16 | 505 |
| 2011[e] | 41 | 82 | 71 | 64 | 65 | 92 | 91 | | 12 | 518 |
| 2012[e] | 23 | 48 | 35 | 56 | 45 | 48 | 52 | | 7 | 314 |

[a] Does not include drawing permit hunts.
[b] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2003 = 1 July 2003–30 June 2004.
[c] Open season = 10–17 August (archery only), 20 August–30 September (General, spike fork 50).
[d] Open season = 10–17 August (archery only), 20 August–20 September (General, spike fork 50).
[e] Open season = 10–17 August (archery only), 25 August–25 September (General, spike fork 50).

Table 6. Unit 14A, transport methods (%) of successful moose hunters[a], Alaska, regulatory years[b] 2003–2012.

| | Transport methods (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Regulatory year | Airplane | Horse | Boat | 3- or 4-wheeler | Snowmachine | ORV | Highway vehicle | Unknown | Airboat | *n* |
| 2003 | 4 | 2 | 11 | 39 | 0 | 6 | 35 | 3 | 0 | 417 |
| 2004 | 7 | 3 | 10 | 38 | 0 | 5 | 30 | 6 | 1 | 361 |
| 2005 | 7 | 3 | 10 | 37 | 0 | 7 | 34 | 1 | 1 | 380 |
| 2006 | 6 | 2 | 9 | 39 | 0 | 6 | 36 | 2 | 0 | 381 |
| 2007 | 7 | 2 | 11 | 40 | 0 | 4 | 36 | 0 | 0 | 254 |
| 2008 | 5 | 2 | 9 | 44 | 0 | 6 | 31 | 1 | 2 | 378 |
| 2009 | 4 | 2 | 6 | 46 | 0 | 6 | 35 | 1 | 0 | 468 |
| 2010 | 4 | 2 | 7 | 45 | 0 | 7 | 30 | 4 | 1 | 505 |
| 2011 | 4 | 3 | 8 | 41 | 0 | 5 | 34 | 5 | 0 | 518 |
| 2012 | 4 | 3 | 11 | 38 | 0 | 4 | 32 | 7 | 1 | 314 |

[a] Does not include drawing permit hunts.
[b] Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2003 = 1 July 2003–30 June 2004.