
CHAPTER 14: MOOSE MANAGEMENT REPORT

From: 1 July 2011
To: 30 June 2013¹

LOCATION

GAME MANAGEMENT UNIT: 14B (2,152 mi²)

GEOGRAPHIC DESCRIPTION: Western Talkeetna Mountains

BACKGROUND

The first survey of moose in Unit 14B was conducted in fall 1987 with estimated moose numbers at 2,814 ± 248 (Masteller 1994). Deep snow winters in 1989–1990 and 1994–1995 likely contributed to declining populations reflected in the 1999 survey estimate of 1,687 ± 244 (Masteller 1994, 1998). Surveys completed in 2005 showed a further decline to 1,413 ± 215 (Table 1; Peltier 2006). Surveys in 2009 showed an improving trend (1,662 ± 220; Table 1; Peltier 2012) although a deep snow winter in 2011 may have slowed the trend.

Moose harvest has decreased over the last 30 years in Unit 14B. Harvest averaged 259 moose during the 1980s, and liberal cow seasons allowed peak harvests to reach 534 in regulatory year (RY) 1984 (regulatory year begins 1 July and ends 30 June, e.g., RY84 = 1 July 1984 through 30 June 1985) (Griese 1993). With the decline in moose population, the annual harvest during the 1990s fell to 58 moose and has remained, on average, at that level. 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).

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.

MANAGEMENT OBJECTIVES

- Attain a population of 2,500–2,800 moose, with a sex ratio ≥20 bulls:100 cows during the rut.
- Achieve an annual harvest of 100–200 moose.

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

METHODS

Alaska Department of Fish and Game staff compiled population estimates and sex and age composition data from a geospatial population estimation (GSPE) survey conducted in fall 2009 (Kellie and DeLong 2006, Ver Hoef 2001).

Department staff monitored harvest using harvest reports from Unit 14B hunters. All harvest data were reviewed for accuracy and updated as necessary; therefore, some figures may not match those previously reported. The Alaska Railroad Corporation provided numbers of moose killed by trains, and the Alaska Department of Public Safety provided some numbers of moose killed illegally, by highway vehicles, or in defense of life or property.

RESULTS AND DISCUSSION

POPULATION STATUS AND TREND

Population Size

The moose population was not surveyed during this reporting period. The last survey was conducted in November 2009 using the GSPE technique (Kellie and DeLong 2006). The population is believed to be $1,662 \pm 220$ (80% CI).

Population Composition

The ratio of bulls:100 cows for the 2009 GSPE survey was 34 and the ratio of calves:100 cows was 18.

Trends in the population and calf:cow ratios indicate an increasing population. Surveys completed after the reporting period also indicate that the population has recovered from the low levels of the 1990s and early 2000s.

MORTALITY

Harvest

Seasons and Bag Limits. The fall general open season was 10–17 August (for archery-only hunters) and 25 August–25 September for all resident and nonresident hunters. The bag limit was 1 spike-fork 50-inch or 3 brow tines bull.

Alaska Board of Game Actions and Emergency Orders. There were no changes to the moose hunting regulations during this reporting period.

Harvest by Hunters. The average harvest declined during the reporting period (66 vs. 84 for RY09–RY10; Table 2). This decrease is mainly the result of the RY12 hunting season. Overall, total participation was also down (Table 3). Fall 2012 was very wet and cool throughout much of Southcentral Alaska and there was reduced participation in moose hunting in several units.

Hunter Residency and Success. Local residents of Unit 14 consistently make up the majority of the hunter composition (Table 3). In spite of changes to the moose population over the past decade there has been little fluctuation in the number of hunters in the unit or the percentage of successful hunters.

Harvest Chronology. Typically the greatest proportion of moose is taken during the last 10 days of the season—as moose become more vulnerable closer to the rut (Table 4).

Transport Methods. All-terrain vehicles and highway vehicles account for the majority of the transportation types used by successful hunters in the past 10 seasons (Table 5).

Other Mortality

Moose killed by train collisions numbered 129 and 7 in RY11 and RY12, respectively (Table 2). RY11 was a record snowfall year in the valley and subsequently moose mortality was high throughout the railroad corridor. Moose mortality by vehicle collision during this reporting period was provided by the Department of Public Safety (Table 2). Previous reports estimated the amount of road-killed moose because reporting by dispatch was inconsistent. Nonetheless because the number reported killed on the roads or rail corridors is the number of moose actually observed, it does not account for moose that may have wandered away from an accident and died later. Thus, this number should be considered a minimum estimate of mortality.

HABITAT

Enhancement

Most of the unit has mature stands of forest and very little early stage willow components. Small clear cuts along near the Willow Fishhook Road has resulted in a few stands of deciduous trees being converted to an earlier successional stage; however, larger habitat projects in the area would benefit the moose population by increasing available forage. Browse surveys should be completed to aid in determining biological carrying capacity and to identify potential areas for treatment.

CONCLUSIONS AND RECOMMENDATIONS

The average annual harvest by hunters has increased in recent years (excluding RY12) and may reach the lower end of the objective of 100–200 moose. However, hunters are limited by access in the unit and by the demography. Increased access would allow more hunters into remote portions of the unit.

Annual movements often carry moose across borders of Units 13E, 16A, 14A, and 14B (Modafferi 1999). Therefore, management decisions for Unit 14B should be made with consideration to neighboring units.

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Table 1. Unit 14B fall aerial moose composition surveys, Alaska, regulatory years^a 1999–2009.

Regulatory year	Bulls:100 cows	Yearling bulls:100 cows	Calves:100 cows	Percent calves	Adults observed	Moose observed	Observable moose/mi ²	Population estimate (±80% CI ^b)
1999 ^c	40.2	12.3	21.3	13.2	616	699	1.6	1,687 ± 244
2005 ^d	29.8	5.4	15.5	10.7	582	646		1,413 ± 215
2009 ^d	34.0	11.7	19.1	12.2	653	744	2.2	1,662 ± 220

^a Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 1999 = 1 July 1999–30 June 2000.

^b Confidence interval.

^c Data from "Gasaway surveys" conducted in late October-early November. Sightability correction factor estimated at 1.20, 1.33, 1.15 and 1.03 for low, medium, high, and super-high density strata, respectively.

^d Data from geospatial population estimator surveys.

Table 2. Unit 14B moose harvest and accidental death, Alaska, regulatory years^a 2003–2012.

Regulatory year	Reported				Estimated			Accidental deaths ^b			Grand total
	M	F	Unknown	Total	Unreported ^c	Illegal ^d	Total	Road	Train	Total	
2003	56	0	0	56	6	20	26	29	10	39	121
2004	56	0	0	56	6	20	26	29	78	107	189
2005	47	1	0	48	5	20	25	20 ^e	19	39	112
2006	57	0	0	57	6	20	26	20 ^e	6	26	109
2007	49	0	0	49	5	20	25	20 ^e	19	39	113
2008	57	0	1	58	6	20	26	20 ^e	36	56	140
2009	78	0	2	80	8	20	28	20 ^e	30	50	158
2010	91	1	0	92	9	20	29	20 ^e	39	59	180
2011	83	0	1	84	8	20	28	28	129	157	269
2012	46	0	0	46	5	20	25	16	7	23	94

^a Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2003 = 1 July 2003–30 June 2004.

^b Road and train deaths are minimum numbers. Roadkills do not include unsalvageable animals.

^c Derived by taking 10% of the total reported kill.

^d Includes moose taken in defense of life or property.

^e Estimated minimum based on the previous years as data was missing for this period.

Table 3. Unit 14B moose hunter residency and success, Alaska, regulatory years^a 2003–2012.

Regulatory year	Successful					Unsuccessful					Total hunters
	Local resident ^b	Nonlocal resident	Nonresident	Unk	Total (%)	Local resident ^b	Nonlocal resident	Nonresident	Unk	Total (%)	
2003	54	1	1	0	56 (12)	372	15	17	1	405 (88)	461
2004	52	1	2	1	56 (13)	355	13	13	6	387 (87)	443
2005	46	1	1	0	48 (11)	345	16	18	3	382 (89)	430
2006	43	6	8	0	57 (13)	343	16	11	4	374 (87)	431
2007	43	4	2	0	49 (12)	340	13	17	0	370 (88)	419
2008	49	2	7	0	58 (13)	370	20	12	0	402 (87)	460
2009	62	8	10	0	80 (14)	466	17	19	8	510 (86)	590
2010	84	2	6	0	92 (17)	422	11	17	1	451 (83)	543
2011	75	1	7	1	84 (16)	412	12	11	1	436 (84)	520
2012	41	2	4	0	47 (11)	370	11	8	1	390 (89)	437

^a Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2003 = 1 July 2003–30 June 2004.

^b Unit 14 residents.

Table 4. Unit 14B moose harvest chronology, Alaska, regulatory years^a 2003–2012.

Regulatory year	August			September					Unknown	Total ^b
	10–17	20–26	27–31	1–7	8–14	15–20	21–25	26–30		
2003 ^c	0	5	2	5	4	12	12	16		56
2004 ^c	0	8	1	6	7	12	9	13		56
2005 ^c	0	3	6	2	5	8	6	16	2	48
2006 ^c	1	7	3	7	9	12	4	13		56
2007 ^d	1	4	1	6	9	26				47
2008 ^d	0	17	5	2	10	21			3	58
2009 ^e	4	5	8	9	14	23	13		4	80
2010 ^e	3	4	7	12	23	23	17		3	92
2011 ^e	1	6	8	13	16	14	25		1	84
2012 ^e	3	5	2	4	13	8	12			47

^a Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2003 = 1 July 2003–30 June 2004.

^b Chronology does not include moose taken out of season.

^c Open season = 10–17 August (archery only), 10 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 5. Unit 14B percent transport methods of successful moose hunters, Alaska, regulatory years^a 2003–2012.

Regulatory year	Transport method (%)									No. moose harvested
	Airplane	Horse	Boat	3- or 4- wheeler	Snowmachine	ORV ^b	Highway vehicle	Unknown	Airboat	
2003	5	2	3	52	0	16	20	2	0	56
2004	2	0	1	58	0	11	21	7	0	57
2005	10	0	8	44	0	17	19	2	0	48
2006	11	0	3	53	0	11	16	2	4	57
2007	4	0	2	55	0	14	25	0	0	49
2008	9	0	10	44	2	19	16	0	0	57
2009	12	1	9	50	0	3	19	6	0	80
2010	7	1	0	58	0	12	18	4	0	90
2011	4	0	4	59	0	8	20	5	0	84
2012	7	0	6	45	0	21	11	10	0	47

^a Regulatory year begins 1 July and ends 30 June, e.g., regulatory year 2003 = 1 July 2003–30 June 2004.

^b ORV = off-road vehicle.