
CHAPTER 6: MOOSE MANAGEMENT REPORT

From: 1 July 2011

To: 30 June 2013

LOCATION

GAME MANAGEMENT UNIT: 5 (5,800 mi²)

GEOGRAPHICAL DESCRIPTION: Cape Fairweather to Icy Bay, eastern Gulf of Alaska coast

BACKGROUND

Moose were first documented along the lower Alsek River in eastern Game Management Unit 5 in the late 1920s or early 1930s. Range expansion to the west followed slowly, with animals not documented on the Malaspina Forelands west of Yakutat Bay until the 1950s. It is believed that the glaciers and waters of Icy Bay curtailed westward movement of this moose population.

The moose population in Unit 5 grew rapidly and peaked in the early 1960s, with a population estimate exceeding 2,000 animals. The population began declining toward a more realistic carrying capacity (thought to be substantially lower than 2,000) in the mid 1960s. During this period, aggressive harvest strategies, including cow hunts, were employed to lower the moose numbers and prevent degradation of moose habitat. Poor reproductive success and severe winters in 1970 and 1972 depressed moose numbers further and resulted in the Unit 5A moose-hunting season being closed from 1974 to 1977. After the hunting closures in the mid 1970s, the Yakutat Forelands moose population slowly increased to its present level of 600–800 animals. The population appears to have reached a threshold that is at the carrying capacity of the area. A moose population study conducted on the Yakutat Forelands during 2000–2002 by the USFS and ADF&G indicated that cow moose were in good condition, with high pregnancy and twinning rates, indicative of healthy moose with good habitat. Predation appears to be a major limiting factor for this population.

The Nunatak Bench area was closed to hunting after rising water levels from the Hubbard Glacier ice dam flooded much of the moose habitat there in the summer of 1986, resulting in a dramatic decline of moose in this area. We presume moose immigrated to adjacent areas to escape the high water levels that displaced them from low lying habitats. The increased water level was also found to have flooded and killed willow shrubs, a main source of browse for moose. Following the retreat of the Hubbard Glacier and subsidence of the waters of Russell Fjord in the fall of 1986, moose slowly recolonized this area over the next 7 years. Based on 1994 aerial survey counts, the Alaska Board of Game (BOG) reopened moose hunting in this area, beginning with the 1995 season. However, the Hubbard Glacier blocked off Russell Fjord again when it advanced in 2002. The water level rose approximately 65 feet, again drowning

much of the moose habitat in this area. The moose season has been closed since that time due to low moose numbers.

Since 1978 Unit 5 moose hunting under state regulation has been managed under a registration permit system. In 1991 a federal subsistence season was instituted that ran concurrently with the state season. This federal season restricted hunting on federal public lands to local resident hunters during the first week of the season. In 1996 the Federal Subsistence Board lengthened the federal season by 1 week, starting it a week earlier than the state season (8 October compared to 15 October). Although the concurrent seasons had been managed under the state’s registration permit system, the new “early hunt” was administered under a separate federal registration permit issued by the U.S. Forest Service (USFS) and the National Park Service and prohibited hunting on federal public lands except by Yakutat residents from 8–21 October. However, a block of 9 nonfederal townships lie near Yakutat where non-federally qualified subsistence users can legally hunt during the first week of the state season that begins 15 October. Just prior to the 2004 hunting season, the Alaska Department of Fish and Game (ADF&G, department) worked with the USFS to craft a joint state and federal permit that now serves as the only permit needed to hunt the Yakutat Forelands. Development of this joint permit made it possible for the department to track all hunting effort and obtain necessary data for management of moose in this area.

Beginning in 2007 the department worked with the USFS to reduce the joint state and federal moose hunt guideline harvest levels on the Yakuat Forelands to accommodate lower than optimal bull:cow ratios. In 2007 the guideline harvest level was reduced from 30 to 20 for that portion of Unit 5A west of the Dangerous River. In 2008 the guideline was raised to 25 bulls. Biologists will continue to monitor the moose population bull:cow ratios through aerial surveys, and recommend adjusting the guideline harvest levels as needed.

MANAGEMENT DIRECTION

MANAGEMENT OBJECTIVES

The following objectives, based on existing biological data, have been identified by staff with input from the public and are contained in the Strategic Plan for Management of Moose in Region I, Southeast Alaska (ADF&G 1990). They are compared with current population estimates and use levels (these estimates include data from both state and federal hunts).

	Current report period (RY 2011– RY 2012)	Plan objective
<u>Unit 5A Yakutat Forelands</u>		
Post-hunt moose numbers (estimated)	600–800	1000
Annual hunter kill (average)	39	70
Number of hunters (annual average)	138	250
Hunter-days of effort (annual average)	533	1025
Hunter success (annual average)	28%	28%

Unit 5A Nunatak Bench

Post-hunt moose numbers (estimated)	18	50
Annual hunter kill (average)	0	5
Number of hunters (annual average)	0	10
Hunter-days of effort (annual average)	0	60
Hunter success (annual average)	0%	50%

Unit 5B Malaspina Forelands

Post-hunt moose numbers (estimated)	200	250
Annual hunter kill (average)	4	25
Number of hunters (annual average)	12	50
Hunter-days of effort (annual average)	52	200
Hunter success (annual average)	30%	50%

METHODS

We conducted aerial surveys on the Yakutat Forelands of Unit 5A during both regulatory years and surveyed Nunatak Bench only in RY12 (Table 1); no surveys were conducted on the Malaspina Forelands. All surveys were flown with a Cessna 185 or 206 aircraft because better-suited survey aircraft (super cub) are not available in Yakutat.

Two state hunts and 1 joint state/federal registration permit hunt were used to manage moose hunting effort in Unit 5: RM062 (Unit 5B), RM059 (Unit 5A-Nunatak Bench), and RM061 (Unit 5A-Yakutat Forelands-joint state/federal permit). The USFS helps manage the RM061 hunt by issuing a federal emergency order (EO) concurrently with the state EO to close the season when guideline harvest levels are reached. The department issues all permits and collects all permit reports, analyzes all hunt data, and is responsible for issuing emergency orders to close the state portion of the season. Successful hunters must provide the lower jaw from the animal taken and deliver a completed hunt report to the department no later than 15 days after the hunt closes. We ask hunters to voluntarily provide a photograph of harvested bull moose antlers for age and antler development comparisons. When possible department staff contacts hunters in the field to collect hunt information, permit report cards, biological samples, and photographs of harvested moose.

Harvest data were summarized by regulatory year (RY), which begins 1 July and ends 30 June (e.g. RY11 = 1 July 2011–30 June 2012).

RESULTS AND DISCUSSION

POPULATION STATUS AND TREND

Population Size

Portions of the Yakutat and the Malaspina forelands consist of dense coniferous forests that make it difficult to detect moose. Until recent years, the department assumed moose sightability across the forelands to be about 50% (Smith and Franzman 1979). However a moose study conducted on the Yakutat Forelands during 2000–2004 by the USFS and ADF&G yielded a moose sightability model that has given us a sightability correction factor for most available

habitats. In general, moose sightability is estimated to be about 70% across the entire survey area—when surveys are done, about 70 percent of the moose present are actually seen and counted. Although this model was developed in Unit 5A on the Yakutat Forelands, we use it to provide us with insight into our survey results in Unit 5B as well. Nunatak Bench lacks coniferous stands, so sightability is much higher in this area. However, due to the dense alder thickets a solid snow base is essential to provide for a reliable survey in this area.

Several factors affect our ability to conduct annual comprehensive moose surveys in the Yakutat area. Variable snow coverage, strong drainage winds, inclement weather, and the availability of survey aircraft in Yakutat all affect when and where we conduct surveys. Consequently survey frequency and coverage can vary considerably from year to year (Table 1). The Yakutat Forelands in Unit 5A are generally surveyed annually, although in some years we attempt surveys only to acquire a sample of moose for composition analysis. We try to survey Nunatak Bench every other year because the population has declined dramatically due to recent flooding of prime habitat by rising water levels of Russell Fjord. In Unit 5B, our survey schedule is less consistent because the lower hunting pressure means less need to monitor this population annually.

Inconsistent early snowfall often means aerial surveys occur after antler drop, resulting in unreliable composition data. When composition data is not available, survey reports note total number of moose and numbers of adults and calves (Table 1).

Unit 5(A) Yakutat Forelands: During RY11 and RY12, we counted 229 and 197 moose on the forelands, respectively (Table 1). Both surveys were conducted towards the end of the calendar year and had excellent snow conditions covering 100% of the ground and adequate snow on vegetation for sightability. In RY11 bad weather forecasts limited the amount of flight time available for the survey, however compositional data resulted in a high number of moose seen with relatively little effort. The RY12 survey occurred in December when antler drop had already begun so positively identifying bulls was unsuccessful which resulted in 168 unidentified adult moose. In addition moose on the Yakutat forelands had begun moving inland and to dense spruce forests where it is difficult to detect them; this likely contributed to the lower number of moose observed during this report period.

Unit 5(A) Nunatak Bench: Aerial surveys of the Nunatak Bench area were completed only during RY12. In February 2012, 12 moose were observed with only 2 calves. This moose herd continues to suffer the effects of habitat depletion from the 2002 flooding. Managers will attempt to survey this area every other year until a sufficient number of moose are present to support a hunt.

Unit 5(B) Malaspina Forelands: We conducted no surveys in 5(B) during the reporting period.

Population Composition

Unit 5A, Yakutat Forelands: During this report period the RY12 aerial survey was conducted after antler drop began so we were unable to collect reliable composition data. Therefore, survey data lists cows, calves, bulls, and adult moose of unknown sex (Table 1). The minimal bull:100 cow ratio in RY11 and RY12 was 20:100 and 2:100, respectively, with a minimum calf:100 cow

ratio of 46:100 and 8:100, respectively. The minimum percent calves observed was 26% in RY11 and 7% in RY12.

In addition to sex composition data, age structure of harvested bull moose provides valuable population information (Table 2). During the past decade, the mean age at harvest of Unit 5A Yakutat Forelands moose has ranged from a low of 3.0 years in RY05 and RY10 to a high of 4.4 years in RY02. Mean age at harvest during this report period was 2.8 years. The number of yearling and 2-year-old bulls was 31 and 25, respectively, during this report period, an increase from the previous report period. The number of 3- and 4-year-old bulls decreased slightly as did the number of 5 and 6 year old bulls, however overall harvest was on average with previous years (Table 2). Based on the strong representation in the harvest, the calf cohort from previous years has had good survival levels that continue to contribute to the herd. The age range of bulls harvested each year suggests the age classes are well represented in the population. The number of yearling bulls in both RY11 and RY12 (Table 2) indicates calf survival is high enough to provide continued harvest of bull moose at a level similar to recent years.

Nunatak Bench: At Nunatak Bench, the RY12 survey did not provide reliable composition data (Table 1), however it indicates the population is still struggling. No moose were harvested during the report period.

Malaspina Forelands: In contrast to the relatively consistent age of moose harvested in Unit 5A, the mean age of harvested Malaspina Forelands moose has been erratic, ranging between 3.0 and 7.5 years since 1999. The mean age of 3.7 during the report period is within the age structure range of the last 10 years. The number of yearling bulls harvested in both years of the current report period (1 and 0, respectively) is similar to the previous report period. Typically, the presence of young bulls in the harvest occurs when the total harvest is higher than the 10-year average but because of the low hunter effort and harvest in the unit, the usefulness of the age data is limited.

MORTALITY

Harvest

Season and bag limits

Resident and nonresident hunters

Unit 5A, except Nunatak Bench

15 Oct–15 Nov

1 bull by registration permit only; up to 60 bulls may be taken; the commissioner may close the season in that portion west of the Dangerous River when 25 bulls have been taken from that area

Unit 5A, Nunatak Bench

15 Nov–15 Feb

1 moose by registration permit only; up to 5 moose may be taken

Unit 5B
1 bull by registration permit
Only; up to 25 bulls
may be taken

15 Sep–15 Dec

Game Board Actions and Emergency Orders. No Emergency Orders for Unit 5 moose hunts during the reporting period. In RY11 and RY12, the Alaska Board of Game reauthorized the Nunatak Bench Antlerless Moose hunt. The board must reauthorize antlerless moose hunts annually.

Hunter Harvest. The annual harvest of moose in Unit 5A (Yakutat Forelands) ranged from 30 to 48 during RY01–RY10, with a mean of 38. The average harvest for this report period was 39 moose/year. The number of moose harvested annually since RY03 has increased with RY04, RY07 and RY12 harvests of 40 or more moose. The yearling and 2.5 year old bull component of the harvest was very strong in all of these years suggesting good survival for the age classes. Based on aerial survey data moose numbers are healthy, with no reason to suspect the population has changed dramatically in recent years. With our paucity of reliable bull:cow ratio data over time, we don't know if the proportion of bulls in the herd has changed (Table 1).

No registration permits were issued for the Nunatak Bench portion of Unit 5 (RM059). No moose were harvested at Nunatak Bench during the report period. This area has been closed to moose hunting since RY06 due to low numbers of moose observed during aerial surveys (Table 1).

The harvest in Unit 5B decreased substantially from the previous report period to 3 in RY11, and 4 in RY12 (Table 3). Total harvest for the report period (7 moose) is similar to harvests in the mid-2000s. The number of hunters and days hunted (Table 4) decreased again during this report period, which was reflected in a decline in the number of moose taken. Access to Unit 5B is often limited by weather and once on the ground hunters tend to remain close to the beach. This suggests hunters may not be using much of the available moose habitat and the overall harvest may be less than it could be.

Permit Hunts. Permits issued for the Yakutat Forelands hunt (RM061) in RY11–RY12 totaled 188 and 166 respectively. The number of permittees who actually hunted in RY11–RY12 was similar to the previous report period with 147 and 128 hunters respectively (Table 4).

The number of permits issued for the Unit 5B hunt (RM062) vary year-to-year. In RY11 and RY12, 33 and 28 permits, respectively, were issued; and 14 and 9 hunters, respectively, hunted (Table 4). The mean number of permits issued for the period RY01–RY10 was 42; and the mean number of hunters for the same period was 22. The number of permits and hunters for the current report period are similar to the long term means and demonstrate the variation in interest and moose hunting effort in Unit 5B. As noted above, Unit 5B can be difficult to access so if hunters can participate in the Unit 5A hunt they likely choose to because of easier access and relatively good harvest opportunities close to Yakutat.

Staff from the Department of Public Safety/Alaska Wildlife Troopers and both ADF&G fisheries divisions continued to assist with issuing registration permits and monitoring these hunts.

Enforcement personnel from the USFS also helped monitor the Unit 5A hunt during the report period. We used reminder emails and multiple reminder letters to increase compliance with reporting requirements for state permit hunts. Adoption of the joint state/federal permit during RY04 made it easier for ADF&G to keep track of the reporting process for RM061.

Hunter Residency and Success. The first portion of the moose hunt traditionally accounts for a majority of the 5A harvest, and because most easily accessible land is under federal management, harvest by Yakutat residents predominates. Yakutat hunters took 52 of 78 bulls (67%) harvested in 5A during the report period (Table 5). The majority of moose taken by local hunters were taken during the first 2 weeks of the season. Later in the season, use increased by nonlocal hunters in areas farther from Yakutat (especially east of the Dangerous River) and in those areas accessible only by airplane. Nonlocal Alaskans residents hunting but not living in Unit 5 took 21 moose (27%) during the report period. Nonresidents took only 5 moose during the report period, lower than the mean of 3.0 moose harvested per 2-year period for the past 5 report periods (Table 5). Since RY01 the overall success of Unit 5A hunters has ranged from 22% to 32% (Table 3). Hunter success was 26% in RY11 and 31% in RY12.

The Malaspina Forelands hunt is dominated less by local residents because it is less convenient to hunt, and poor weather often deters local hunters from short excursions to this area. During this report period Unit 5 residents took 29% of the Unit 5B moose harvest, nonresidents took 43%, and other Alaska residents took the remaining 29% of the harvest (Table 5). Unit 5 residents generally take the majority of moose in Unit 5B because they are positioned to take advantage of weather breaks to cross Yakutat Bay.

Harvest Chronology. Most of the Unit 5A harvest on the Yakutat Forelands took place during the first 3 weeks of the 5A season, when areas adjacent to Yakutat and easily accessible by boat or highway vehicle are open. The federal season opens on 8 October, whereas the state season opens a week later on 15 October. However, up to 22 October, only federally qualified subsistence hunters can hunt on federal land in Unit 5A.

In Unit 5B, 5 moose (71%) were taken in October and 2 in September. Clusters in the harvest chronology often represent several boat loads of hunters working together to get moose, as is the case for most of the October moose harvest during the report period. The Unit 5B season remains open until 31 December but fall and early winter weather conditions make access to the unit difficult.

Transport Methods. Transport methods used on the Yakutat Forelands changed slightly during the current report period. The use of aircraft decreased to 26% from 33% during R09–RY10; and the use of boats remained similar to the previous report period at 24% (Table 6). The use of 3 or 4 wheelers and other off-road vehicles (ORVs) and highway vehicles was slightly higher than the previous report period at 50%. Three and 4-wheelers, and other forms of ORVs are probably underrepresented because some hunters reporting highway vehicles or “other” likely used off-road vehicles as well. Many unsuccessful hunters also use these machines for access. Virtually every fish camp has 1 or more of these machines present, and although these off-road vehicles have been used in Yakutat for many years, more hunters seem to be using them in a less incidental fashion and more as a primary method of access. They are commonly used to drag

whole moose from a kill site to the nearest road. Rutted meadows from wheeled vehicles are a common sight in Unit 5A.

Despite the importance of aircraft for nonlocal hunter transportation, relatively few Yakutat residents use them. Most locals hunt with the aid of riverboats, ORV, or highway vehicles, while most nonresident hunters charter aircraft for access. The use of aircraft generally increases later in the season as nonlocal hunters begin hunting where there are no roads.

Commercial Services. Commercial services were used by 22% of Unit 5 moose hunters during the report period (Table 7). Nonlocal hunters were more likely to use commercial services, usually for transport to the field. Nonresidents used a registered guide in many cases, especially in Unit 5B. Commercial services were used by a higher percentage of Unit 5B hunters (65%) than Unit 5A hunters (19%). This difference in commercial services used can be attributed to the difficulty in accessing Unit 5B.

Other Mortality

The winter of RY11 was one of the most severe on record in many parts of Southeast Alaska, with above average snowfall in Yakutat. The winters of RY07–RY08 were only slightly less extreme. Snowfall amounts were slightly below average during the winter of RY12 giving moose a respite after a series of difficult winters. Winter mortality from consecutive hard winters has been detected in other northern Southeast moose populations and Unit 5 moose have likely experienced above average winter mortality as well.

CONCLUSIONS AND RECOMMENDATIONS

None of the management objectives for Unit 5 moose hunts were met during this report period. The most glaring shortfalls have been in the harvests, which were well below the objectives. This is not easily explained given that the populations of the Malaspina and Yakutat foreland moose herds have not indicated a significant change in number and traditionally have supported a higher moose harvest. The number of yearling and 2-year-old bulls in the harvest remains strong suggesting recruitment continues to be good. We hope that will translate into higher moose harvests in the future. The Nunatak moose population continues to be depressed but the factors contributing to low numbers of moose are not known. The department will continue to monitor this population and will allow hunting when moose numbers can support a harvest. Complete fall sex and age composition counts of all Unit 5 moose herds need to be conducted, if possible, during the next report period. Reliable survey data will allow us to both better interpret the decline in moose harvest and make necessary adjustments to our management strategies. The lower guideline harvest west of the Dangerous River should be kept in place until we see improved bull:cow ratios in that area.

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Table 1. Unit 5 aerial survey data, regulatory years 2003 through 2012¹.

Year	MM	FF	Calves	Unk	Total	Count time (hrs)	MM Per 100 FF	Calves per 100 FF	Percent calves in herd	Moose per hour
<u>5A Yakutat Forelands</u>										
2003	11	46	48	262	367	10.3	NA	NA	13	36
2004	No survey									
2005	41	71	75	445	632	12.1	NA	NA	12	52
2006 ²	10	119	11	0	140	3.4	9	11	8	42
2007	79	70	74	462	685	9.0	15	13	11	76
2008	47	266	44	0	360	5.0	18	17	12	72
2009	NA	NA	25	276	301	8.5	NA	NA	8	35
2010	No survey									
2011	28	141	60	0	229	2.1	20	43	26	110
2012	3	12	14	168	197	2.3	NA	NA	7	88
<u>5A Nunatak Bench</u>										
2003	1	1	1	22	25	0.4	NA	NA	NA	63
2004	No survey									
2005	1	2	2	9	14	.5	NA	NA	14	28
2006	3	8	0	0	11	1.4	38	0	0	8
2007	NA	6	7	4	17	.5	---	---	41	34
2008	No survey									
2009	NA	NA	1	13	14	.6	NA	NA	7	23
2010-2011	No survey									
2012	NA	2	2	8	12	.8	NA	NA	17	15
<u>5B Malaspina Forelands</u>										
2003	20	19	20	94	153	4.2	NA	NA	NA	37
2004	No survey									
2005	6	8	9	43	66		NA	NA	14	NA
2006	0	21	21	125	167	4.8	NA	NA	13	35
2007	NA	13	13	56	82	3.7	NA	NA	16	22
2008-2012	No survey									

¹ Due to survey timing, poor snow conditions, extreme winds, and less than ideal survey aircraft, herd composition data is not often not reliable and is noted as (NA=data not available).

² Composition survey of west side of Dangerous River-under poor survey conditions.

Table 2. Unit 5 age structure of harvested moose, regulatory years 2003 through 2012.

Year	Age Class																Total kill	% Aged	Mean Age
	0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5			
<u>Yakutat Forelands</u>																			
2003	0	11	4	7	2	1	1	0	0	0	0	0	1	0	0	0	30	90	3.2
2004	1	12	12	6	3	2	0	3	1	0	0	0	0	0	0	0	40	100	3.1
2005	0	14	9	5	2	0	2	3	0	0	0	0	0	0	0	0	37	95	3.0
2006	0	9	11	4	2	1	1	0	1	0	0	0	1	0	0	0	33	91	3.2
2007	0	14	12	14	4	1	0	0	1	0	0	0	0	0	1	0	48	98	3.1
2008	0	9	7	10	6	2	1	0	0	0	0	0	0	0	0	0	35	100	3.2
2009	0	9	10	7	3	5	1	0	2	0	0	0	0	0	0	0	38	97	3.4
2010	0	15	6	8	0	4	2	1	0	0	0	0	0	0	0	0	37	97	3.0
2011	0	18	9	4	1	2	4	0	0	0	0	0	0	0	0	0	38	100	2.8
2012	0	13	16	6	1	1	0	0	2	0	0	0	0	0	0	0	40	98	2.8
<u>5A Nunatak Bench</u>																			
2003	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	3	100	6.5
2004	0	0	0	1	0	0	0	1	2	0	0	0	0	0	0	0	4	100	7.0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	---	---
2006- 2012	No Harvest																		
<u>5B Malaspina Forelands</u>																			
2003	0	0	1	0	3	2	0	2	0	0	0	0	0	0	0	0	9	89	5.3
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	---
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	---	---
2006	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	100	7.5
2007	0	2	1	3	2	1	0	0	0	0	0	0	0	0	0	0	10	90	3.4
2008	0	4	0	2	2	1	0	0	0	0	0	0	0	0	0	0	9	100	3.1
2009	0	2	3	1	1	2	0	0	0	0	0	0	0	0	0	0	11	82	3.3
2010	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	4	100	3.5
2011	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	33	3.5
2012	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	4	100	3.8

Table 3. Unit 5 historical harvests, hunters, and success, regulatory years 2003 through 2012.

Year	Nr MM	Nr FF	Nr unk.	Total kill	Nr hunters	Percent success
<u>5A Yakutat Forelands</u>						
2003	30	0	0	30	137	22
2004	40	0	0	40	172	23
2005	37	0	0	37	158	23
2006	33	0	0	33	127	26
2007	48	0	0	48	151	32
2008	35	0	0	35	139	25
2009	38	0	0	38	143	27
2010	37	0	0	37	136	27
2011	38	0	0	38	147	26
2012	40	0	0	40	128	31
<u>5A Nunatak Bench</u>						
2003	2	1	0	3	8	38
2004	2	2	0	4	5	80
2005	0	0	0	0	3	0
2006	Season Closed by Emergency Order					
2007-2012	---					
<u>5B Malaspina Forelands</u>						
2003	9	0	0	9	28	32
2004	2	0	0	2	18	11
2005	0	0	0	0	15	0
2006	2	0	0	2	13	15
2007	10	0	0	10	35	29
2008	9	0	0	9	31	29
2009	11	0	0	11	30	37
2010	4	0	0	4	12	33
2011	3	0	0	3	14	21
2012	4	0	0	4	9	44

Includes moose harvested under federal ceremonial permit

Table 4. Unit 5 hunter effort and success, regulatory years 2003 through 2012¹.

Year	Successful hunters				Unsuccessful hunters			Total hunters		
	Permits issued	Nr hunters	Total days	Avg. days	Nr hunters	Total days	Avg. days	Nr hunters	Total days	Avg. days
<u>5A Yakutat Forelands</u>										
2003	171	30	78	2.6	107	586	5.5	137	664	4.8
2004	211	40	121	3.0	132	744	5.6	172	865	5.0
2005	197	37	145	3.9	121	470	3.9	158	615	3.9
2006	174	33	74	2.2	94	428	4.6	127	502	4.0
2007	196	48	148	3.1	103	454	4.4	151	602	4.0
2008	182	35	110	3.1	104	465	4.5	139	575	4.1
2009	192	38	134	3.5	105	564	5.4	143	698	4.9
2010	174	37	96	2.6	99	449	4.5	136	545	4.0
2011	188	38	107	2.8	109	489	4.5	147	596	4.1
2012	166	40	114	2.9	88	356	4.0	128	470	3.7
<u>5A Nunatak Bench</u>										
2003	14	3	3	1.0	5	6	1.2	8	9	1.1
2004	13	4	6	1.5	1	2	2.0	5	8	1.6
2005	13	0	0	0	3	5	1.7	3	5	1.7
2006	Season Closed by Emergency Order									
2007-2012	---									
<u>5B Malaspina Forelands</u>										
2003	53	9	37	4.1	19	93	4.9	28	130	4.6
2004	44	2	20	10	16	87	5.4	18	107	5.9
2005	30	0	0	0	15	95	6.3	15	95	6.3
2006	26	2	13	6.5	11	100	9.1	13	113	8.7
2007	54	10	34	3.4	25	140	5.6	35	175	5.0
2008	44	9	23	2.6	22	138	6.3	31	161	5.2
2009	55	11	22	2.0	19	98	5.2	30	120	4.0
2010	35	4	5	1.3	8	28	3.5	12	33	2.8
2011	33	3	8	2.7	11	70	6.4	14	78	5.6
2012	28	4	18	4.5	5	7	1.4	9	25	2.8

¹ Includes data from both federal and state moose permits. Not all information is available for each hunter; calculations for any given field may only include a subset of hunters.

Table 6. Unit 5 transport methods used by successful hunters, regulatory years 2003 through 2012¹.

Year	<u>Airplane</u> Total (%)		<u>Boat</u> Total (%)		<u>3 or 4 wheeler</u> Total (%)		<u>ORV</u> Total (%)		<u>Highway vehicle</u> Total (%)		<u>Foot</u> Total (%)	
<u>5A Yakutat Forelands</u>												
2003	6	(22)	7	(26)	7	(26)	1	(4)	6	(22)	0	---
2004	7	(18)	15	(38)	8	(20)	1	(2)	9	(22)	0	---
2005	6	(16)	9	(24)	14	(38)	0	---	8	(22)	0	---
2006	6	(18)	14	(43)	8	(24)	0	---	5	(15)	0	---
2007	11	(23)	17	(35)	12	(25)	2	(4)	6	(13)	0	---
2008	7	(20)	9	(26)	15	(43)	0	---	3	(8)	1	(3)
2009	13	(34)	7	(18)	11	(29)	1	(3)	6	(16)	0	---
2010	12	(32)	10	(27)	11	(30)	0	---	4	(11)	0	---
2011	12	(32)	6	(16)	10	(26)	0	---	10	(26)	0	---
2012	8	(20)	13	(33)	10	(25)	0	---	9	(22)	0	---
<u>5A Nunatak Bench</u>												
2003	0	---	3	(100)	0	---	0	---	0	---	0	---
2004	0	---	4	(100)	0	---	0	---	0	---	0	---
2005	0	---	0	---	0	---	0	---	0	---	0	---
2006	Season Closed by Emergency Order											
2007-2012	---											
<u>5B Malaspina Forelands</u>												
2003	1	(11)	5	(56)	3	(33)	0	---	0	---	0	---
2004	0	---	1	(50)	1	(50)	0	---	0	---	0	---
2005	0	---	0	---	0	---	0	---	0	---	0	---
2006	0	---	0	---	2	(100)	0	---	0	---	0	---
2007	4	(40)	2	(20)	4	(40)	0	---	0	---	0	---
2008	4	(44)	2	(23)	3	(33)	0	---	0	---	0	---
2009	5	(46)	0	---	4	(36)	2	(18)	0	---	0	---
2010	1	(25)	3	(75)	0	---	0	---	0	---	0	---
2011	2	(67)	0	---	1	(33)	0	---	0	---	0	---
2012	1	(25)	0	---	3	(75)	0	---	0	---	0	---

¹ Not all information is available for each hunter; calculations for any given field may only include a subset of hunters.

Table 7. Unit 5 commercial services used by hunters, regulatory years 2003 through 2012¹.

Year	Unit residents		Other AK residents		Nonresidents		Total use		Transport	Registered guide	Other Services
	No	Yes	No	Yes	No	Yes	No	Yes			
<u>5A Yakutat Forelands</u>											
2003	101	3	26	14	0	0	127	17	16	0	1
2004	117	2	26	21	2	5	145	28	25	1	2
2005	111	5	17	19	1	3	129	27	25	2	0
2006	98	0	17	10	0	1	115	11	10	1	0
2007	95	2	16	25	3	9	114	36	36	1	2
2008	100	1	17	20	1	0	118	21	21	0	0
2009	79	7	21	31	3	1	103	39	38	0	3
2010	78	9	21	24	1	3	100	36	36	0	3
2011	93	6	23	14	3	8	119	28	27	0	1
2012	88	4	12	16	1	3	101	23	21	1	1
<u>5A Nunatak Bench</u>											
2003	6	0	2	0	0	0	8	0	0	0	0
2004	5	0	0	0	0	0	5	0	0	0	0
2005	3	0	0	0	0	0	3	0	0	0	0
2006	Season Closed by Emergency Order										
2007-2012	---										
<u>5B Malaspina Forelands</u>											
2003	11	2	1	4	1	9	13	15	6	8	1
2004	2	0	1	7	1	7	4	14	9	5	0
2005	1	0	4	0	1	9	6	9	9	9	0
2006	2	0	1	1	0	9	3	10	1	9	0
2007	9	2	1	4	1	18	11	24	23	9	7
2008	8	5	0	7	0	11	8	23	23	6	12
2009	9	0	4	7	0	10	13	17	17	6	9
2010	7	0	2	2	0	1	9	3	3	0	0
2011	2	1	2	4	0	5	4	10	7	3	0
2012	4	0	0	2	0	3	4	5	2	0	3

¹ Not all information is available for each hunter; calculations for any given field may only include a subset of hunters.