

2008 WMUs 505 and 507 moose

Section Authors: Hugh Wollis and Curtis Stambaugh

Suggested citation:

Wollis, H. and C. Stambaugh. 2009. WMUs 505 and 507 moose. Pages 87-91. *In*: N. Webb and R. Anderson. Delegated aerial ungulate survey program, 2007-2008 survey season. Data Report, D-2009-008, produced by the Alberta Conservation Association, Rocky Mountain House, Alberta, Canada. 97 pp.

Wildlife Management Unit 507 is a very popular hunting area for local residents and urban dwellers from nearby Edmonton. Previous surveys were conducted in 1995, 1999 and 2004. In 2006, a significant change in moose management occurred with the elimination of the General Moose Archery season. This change caused concerns from local archery hunters who met with the Minister, citing among other things poor and out-of-date data for aerial surveys. The Minister supported the season change but agreed to give 507 a high priority for aerial surveys in 2008. Wildlife Management Unit 505, which is adjacent to WMU 507, had been flown in conjunction with 507 in 2004 and was also surveyed in 2008 in order to coordinate aircraft charters and reduce overall survey costs.

Study area

Wildlife Management Unit 507 extends roughly from Whitecourt to Barrhead, which is 100 km northwest of Edmonton (Figure 18). The WMU is bisected by the Athabasca River, an important feature for wildlife. The WMU is in the Boreal Mixedwood natural region and is a mixture of patented agricultural land east of the Athabasca where the land is primarily dominated by forage crops and pasture with some grain. West of the river the land is primarily Crown with some patented land that features mostly forage and pasture land near Ft. Assiniboine. The Connor Creek Provincial Grazing Reserve, the Ft. Assiniboine Wildland Park and the Holmes Crossing Ecological Reserve are parcels of land with special management considerations.

WMU 505 lies east of WMU 507 bounded on the south by Highway 18 from Barrhead to Westlock and extending north about 50 km. Most of the area is characterized by agriculture – grain crops, forage and grazing. The northwest portion of the WMU is bounded by the Athabasca River. There is a large muskeg/sand hills complex of wooded Crown land around Goodridge Lake adjacent to the Athabasca River.

Survey methods

The survey was conducted over four consecutive days from February 4 to 7, 2008. The survey method followed the modified Gasaway technique (Gasaway et al. 1986). The WMUs were stratified by using habitat classifications that have remained relatively constant among previous surveys. Aerial photos, the Praire Farm Rehabilitation Administration woodlot maps and personal knowledge were used to determine whether blocks fell within the high, medium or low stratum. For this survey, staff attempted to improve the precision of our results by classifying survey blocks along the Athabasca River in WMU 507 into a separate stratum. In previous years, blocks along the river were classified the same as high blocks on the upland, which do not support similar populations of moose in winter. Therefore, for the 2008 survey, the river valley blocks were made into a separate stratum and sampled separately from the upland.

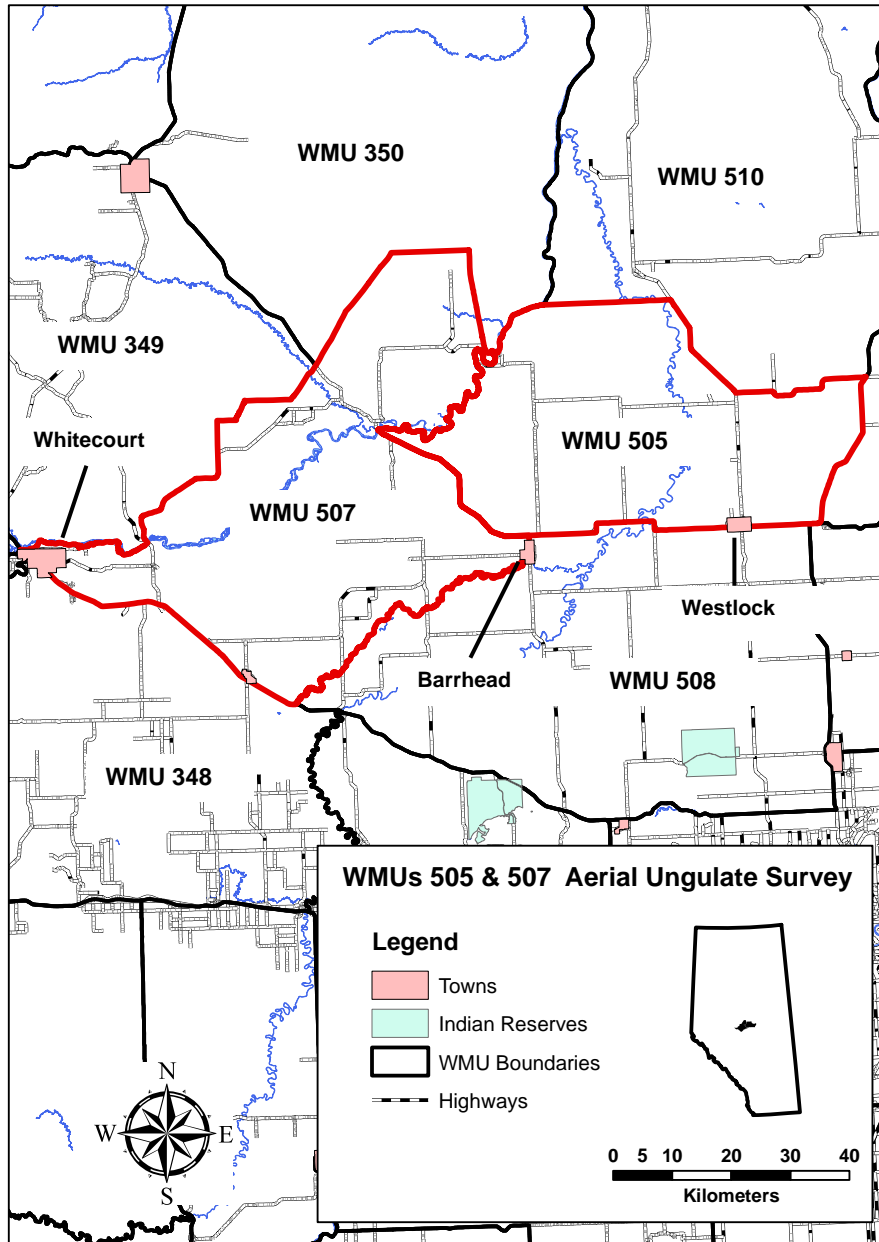


Figure 18. Location of the Wildlife Management Units 505 and 507 aerial ungulate survey in Alberta.

Survey blocks were chosen randomly for each of the high, medium and low stratum. Intensive survey lines with 400 m spacing were searched with a Bell 206 helicopter. Observations were recorded by the front observer/navigator with a waypoint recorded on a GPS unit. The observer recorded the species, sex, and age of the animal seen and made a note of the habitat. If the sex of the moose was in question, the pilot circled until the observers could verify the presence or absence of a white vulva patch. Therefore, we assumed individuals were correctly classed for gender. The survey crew also recorded all sightings of mule deer, elk, white-tailed deer and great grey owls (*Strix nebulosa*).

Results

Weather conditions were good during all four survey days.

WMU 507 – The estimated moose population was $1,253 \pm 19.0\%$ moose with an overall density of $0.45/\text{km}^2$ (Table 21). Classifying the river valley blocks into a separate stratum in 2008 resulted in a density estimate that the survey crew felt was a significant improvement over previous years.

The bull/female/calf ratio in 507 was 23 bulls/100 cows/68 calves. The proportion of bulls was less than recorded in 2004 (52/100) and 1999 (45/100). The calf/cow ratio for 2008 was similar to that from 2004 and 1999, but was lower than the 81/100 recorded in 1995. The calf ratios recorded in 2008 appear consistent with the previous two surveys.

WMU 505 – The estimated population was $564 \pm 23.8\%$ moose with an overall density of $0.30/\text{km}^2$ (Table 21). The bull/cow/calf ratio was 18/100/49. For WMU 505 there are less historical data with which to compare as the boundaries of the unit have changed twice in the past 20 years. The survey in 2004 estimated 487 moose and bull/cow/calf ratios of 32/100/43. The calf/cow ratios are similar between the two years.

Incidental observations of mule deer, white-tailed deer, elk and other wildlife are reported in Table 22.

Table 21. Population estimates, densities, and herd composition for moose in Wildlife Management Units 505 and 507 during 2008, with comparisons to previous years.

WMU	Year	Population Estimate (confidence limits).	Density/km ²	Ratio to 100 females	
				Males	Juveniles
505	2008	564 (23.7%)	0.30	19	49
	2004	487 (31.7%)	0.25	32	43
507	2008	1253 (19.0%)	0.45	23	59
	2004	793 (14.5%)	0.37	41	58
	1999	1534 (40.6%)	0.51	45	58
	1995	882 (23.1%)	0.35	52	81

Table 22. Numbers of ungulates and other wildlife species observed incidentally during the 2008 moose surveys in Wildlife Management Units 505 and 507.

Species	Sex/Age Class	Number Observed	
		WMU 505	WMU 507
White-tailed deer	Buck	12	9
	Doe	19	39
	Fawn	15	42
	Unclassified	145	538
Mule deer	Buck	0	43
	Doe	0	44
	Fawn	0	0
	Unclassified	2	64
Elk	Bull	0	6
	Cow	0	8
	Calf	0	0
	Cows and Calves	0	28
	Unclassified	2	0
Other		wolf, 2 great grey owl, 4 coyote	2 sharp-tailed grouse

Literature Cited

Gasaway, W.C., D. DuBois, D.J. Reed, and S.J. Harbo. 1986. Estimating moose population parameters from aerial surveys. Biological Papers of the University of Alaska No. 22, Fairbanks, Alaska. 108 pp.