2009 WMU 525 Moose

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Aerial ungulate surveys are invaluable for setting license numbers for resident and non-resident hunters, for ungulate depredation discussions and for habitat protection efforts. Moose in WMU 525 were surveyed previously in 1995 and 2002. The winter of 2006/2007 was particularly severe in WMU 525 with deep snow persisting through late winter and a high prevalence of ticks documented in many of the neighboring WMUs. WMU 525 is a destination for aboriginal and recreational moose hunters. Oil and gas development has increased both quantity and quality of access in recent years and moose hunters have taken advantage of this increased access resulting in relatively high hunting pressure on moose in WMU 525. This combination of factors necessitated an updated population estimate with age and sex ratios for moose in WMU 525. This report contains the results and analysis of the moose survey conducted in WMU 525 in 2009.

Study Area

WMU 525 falls primarily within the MD of Clear Hills. In the south, the WMU is bordered by the Canfor east-west road which runs along the southern edge of the Clear Hills. The western boundary is the Alberta-BC border and portions of the Notikewin River – Square River and Doig River form the northern boundary of the WMU. WMU 525 is almost completely Crown land and includes portions of the Lower Foothills, Lower Boreal Highlands and Upper Boreal Highlands subregions, as described by the Natural Regions Committee (2006). Mixedwood forests of aspen, pine and spruce dominate the southern hills of the WMU. Central and northern portions of the zone combine spruce and pine dominated forest with peatlands and several lotic systems. Forestry activity in the eastern and south-western portions of the zone has created additional forage for moose. Increased oil and gas development has increased both quantity and quality of access in recent years. Attempts to limit access have not been

effective. Portions of the central and northern portions of the zone remain relatively remote.

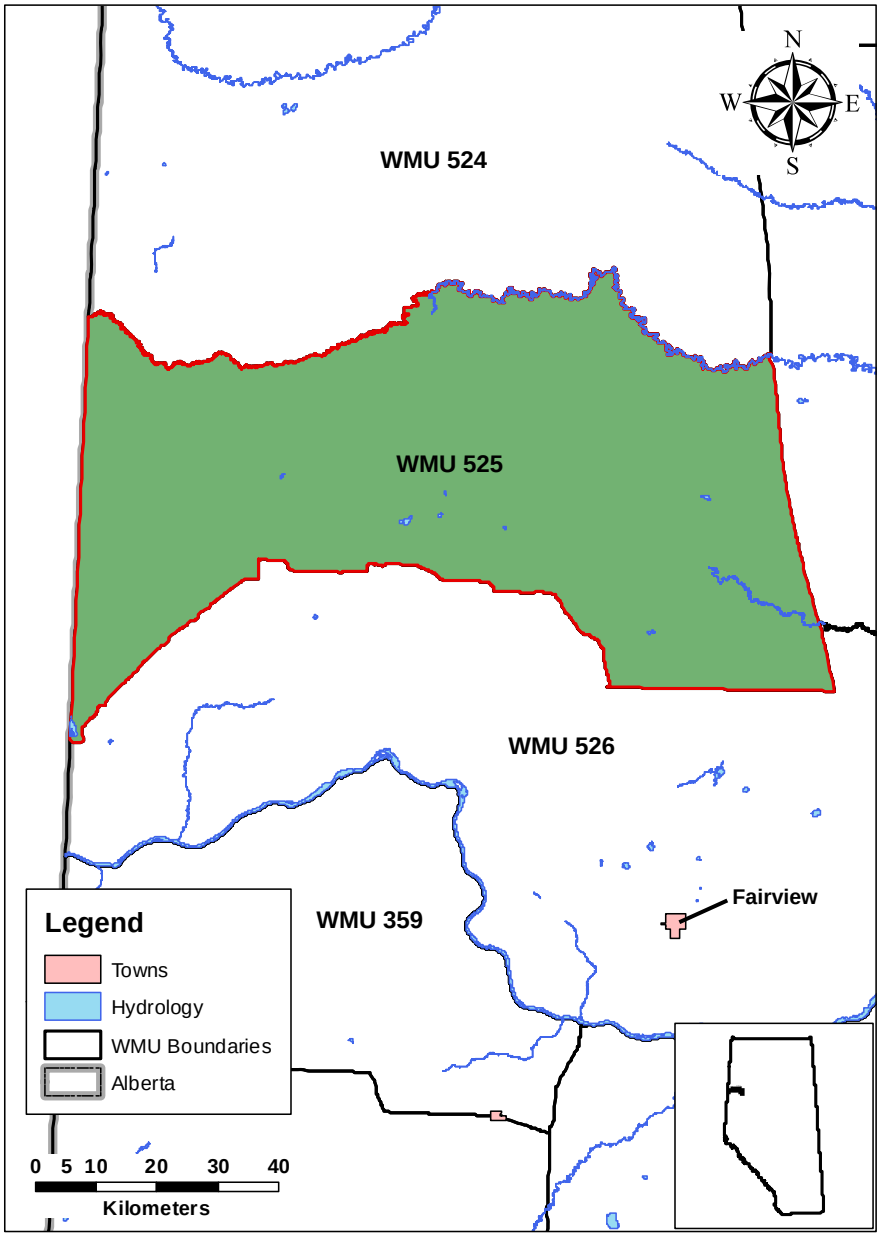

Figure 6.12.1. Location of WMU 525 in Alberta.

Survey Methods

Wildlife staff of Alberta Conservation Association and Alberta Sustainable Resource Development flew transects across WMU 525 using fixed-wing aircraft (Cessna 206) on February 15-16, 2009 to stratify the distribution of moose across 127 sampling blocks in preparation for detailed surveys of moose using rotary-wing aircraft. Crews flew along every minute of latitude within the WMU, as opposed to the common practice of not flying on the boundary lines of latitude between survey blocks. Crews recorded the location of moose and other incidentally encountered wildlife as being north or south of the line. GPS locations of animals and aircraft flight tracks were plotted to ensure that all sightings were recorded in the proper survey block. Although the additional flying did add to the overall cost, the extra data was useful for an effective stratification. Air speed during stratification flights was approximately 150 km/h, and flight altitude was maintained between 60 and 90 m. Winds were calm, and snow cover was complete, though some melt-outs were present. Visibility was generally excellent throughout the survey.

Sample blocks were classified according to the number of moose observed during fixed-wing stratification flights following a modified Gasaway technique (Gasaway et al. 1986, Lynch 1997). Based on counts, survey blocks were classified for moose as low (0 or 1 moose observed), and medium (2 to 4 moose observed), and high (5 or more moose observed). Following this initial classification, blocks were re-examined based on relative densities from stratification flights as well as application of local knowledge of animal concentrations, food sources, cover availability, and animal movement patterns in winter. After this second iteration, several blocks were reclassified to better reflect their true size and/or historic high and low density pockets. Nineteen sample blocks were randomly selected for intensive search by helicopter. Of the sample blocks flown, 5 were classed as low, 10 as medium and 4 as high.

Bell 206 helicopters were used as observation platforms to count and classify moose within each of the randomly selected blocks on February 18 - 20, 2009. Each block was flown in an east to west orientation on flightlines spaced approximately 400 m apart, at 100-140 km/h, and at an altitude of approximately 30 m. Each flight crew consisted of 3 passengers: a navigator/recorder/observer up front, observer left-behind, and observer right-behind. Observers on each side of the helicopter were responsible for a field of view approximately 200 m wide. All moose were identified by sex and age using

physical characteristics that were easily observed from the air (e.g. presence of white vulva patch on cow moose, or antlers on males). In addition to observations of moose, sightings of elk, deer, wolves or kill sites were also marked.

Conditions for rotary-wing surveys were generally favourable with good snow coverage. Daytime temperatures varied from -20° C on the 18th, to -0° C on the 20th. The warm weather on the 20th generated some concern that moose were seeking shelter in the cooler spruce stands, specifically in the sample blocks with more mixed wood and cutblocks. Winds were generally calm, resulting in excellent flying conditions.

Results

We estimated 1,349 moose, with confidence limits of 17.9 % (Table 6.12.1). There were 24 bulls/100 cows and 17 calves/100 cows. Twinning rate was 3.6%, and the overall density was 0.23 moose/km^2. No comparison of age structure of adult male moose could be done in 2009, as all of the bulls observed had shed their antlers.

Table 6.12.1. Comparison of current results with the previous survey of moose survey in WMU 525.

Year	Population Estimate (confidence limits)	Density / km^2	Ratio to 100 Females	
			Males	Juveniles
2009	1349 (17.9%)	0.23	23	17
2002	1964 (18.1%)	0.34	17	43

Literature Cited

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