

Aerial Wildlife Survey Report

Wildlife Management Unit 356
Aerial Ungulate Survey for Moose - 2014

Background

A survey for moose was last conducted in 2002 using the random stratified block design methodology. The 2002 population estimate was 5554 moose (90% C.I. = 15.6%) with a density of 0.86 moose/km² or 2.22 moose/mi. Industrial activity has been high throughout this unit since the last survey. Traditional non-licensed harvest is unknown, but expected to be higher than in previous years. Currently there is an early (Sept 24 to Oct 31) and a late (Nov 1 to Nov 30) antlered moose special licence season within this WMU. The objectives of this survey were to assess the status of the population since 2002, determine a population estimate, population split for sex and age classes, and a density estimate.

Survey method

The survey was conducted using distance sampling methods. Transects were generated by constructing a grid of rectangles (1.2 km by 10 km) oriented north-south. We selected a simple random sample of rectangles, and surveyed the centerline of these rectangles. Transects were stratified into low, medium, and high density moose density based on ecological subregions and expected relative densities. The survey was flown as described in the Distance Sampling Chapter of the Aerial Ungulate Survey Protocol Manual (ESRD, 2014).

Results

One hundred and fifty seven transects were surveyed on February 22 to 25, 2014 for a total survey effort of 1224 km. In total 215 moose were observed from 119 independent groups of moose. Of the 215 moose that were successfully classified, 42 (20%) were bulls, 137 (63%) were cows, and 36 (17%) were calves. The calf:cow and bull:cow ratio were 0.26 (90% CI 0.20, 0.32) and 0.31 (90% CI 0.21, 0.40), respectively. The final density estimate was 0.423 with a log-based 90% confidence interval of (0.338, 0.528) and a CV of 13.6%. This corresponds to a traditional 90% confidence interval that is +/- 25% of the density estimate. The estimated moose abundance is 2755 (90% CI 2204, 3443). The population split is estimated to be 1756 cow, 538 bull, and 461 calf moose.

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Table 1. Previous density, and age/sex composition ratios for WMU356. Survey types have included quadrat surveys or block surveys, random stratified block (RSB) or Gasaway surveys, and distance sampling methods. Ranges in parenthesis represent 90% confidence limits.

Year	Survey type	Population estimate	Density moose / km ²	Bull: Cow	Calf: Cow
1982*	Block survey	N/A	0.23	0.02	0.22
1984*	Block survey	N/A	0.50	0.49	0.54
1987*	Block survey	N/A	0.31	0.67	1.05
1990*	Block survey	N/A	0.61	0.42	0.59
2002	RSB	5554 (4688, 6420)	0.86 (0.72, 0.98)	0.34 (0.30, 0.37)	0.56 (0.52, 0.60)
2014	Distance	2755 (2204, 3443)	0.42 (0.34, 0.53)	0.31 (0.21, 0.40)	0.26 (0.20, 0.32)