

Saskatchewan Wildlife Survey Report

Aerial Survey – Moose

2025 Wildlife Management Zone 67 Survey

Background

Wildlife Management Zone (WMZ) 67 is located in northwest Saskatchewan and encompasses a diverse area of boreal forest and mixed-wood habitat. The zone is primarily forested, consisting of black spruce, jack pine and areas of mixed deciduous cover. An extensive network of forestry access roads is present throughout the zone due to historical and ongoing forestry activity.

WMZ 67 is bordered by several notable geographic features. The city of Meadow Lake lies to the north, providing a regional reference point and access to northern areas of the province. Makwa Lake Provincial Park lies to the west of the zone. The town of Big River is located on the eastern edge of the zone. WMZ 67 is an important area for rights-based and licensed hunters.

WMZ 67 is one of four areas in the province with repeat aerial moose surveys (Table 1). This is the fifth aerial moose survey with an objective to estimate population density and determine composition of bulls, cows and calves in the population. This current information is crucial in guiding wildlife management decisions and harvest allocation.

Survey Method

A rotary-wing aerial survey for moose in WMZ 67 was conducted from February 21 to 25, 2025. Distance sampling methodology was employed, in accordance with standardized protocols (AEP 2016; Buckland et al., 2001), to estimate moose population density and composition. Transects were randomly distributed across the zone to ensure broad spatial coverage. A total of 508 transects, each up to 10 km in length (average of 8.7 km), were oriented east-west. Of these, 141 were randomly selected and flown.

Canopy cover, snow cover and moose activity (e.g. standing, bedded, moving) were recorded and used as covariates in detection modeling. Moose were classified as bulls, cows, or calves according to standardized protocol (Beveridge, 2006).

Results

A total of 141 transects were flown, covering 1,200 km of survey lines over 22 hours of flight time. During the survey, 159 moose were observed across 96 groups, with an average group size of

1.65 individuals. Of the total observed, 156 moose were successfully classified: 68 cows, 62 bulls, and 26 calves. Three individuals remained unclassified.

The observed bull:cow:calf ratio was 91:100:38, with an estimated density of 220 moose per 1,000 km². This corresponds to a population abundance estimate of 1,364 individuals (90 per cent CI: 1,182–1,546). These results indicate that moose densities in WMZ 67 have remained low (i.e. <400 moose per 1,000 km²) since 2007. Despite the low overall density, the sex and age composition remain above management objectives, consistent with trends observed in other low-density moose populations.

Results from the survey provide updated estimates for moose population size, density and sex/age composition in WMZ 67. The data collected will support ongoing monitoring efforts and inform provincial wildlife management decisions. Overall, the survey contributes to a broader understanding of moose demographics in Saskatchewan and supports adaptive management strategies in response to population trends.

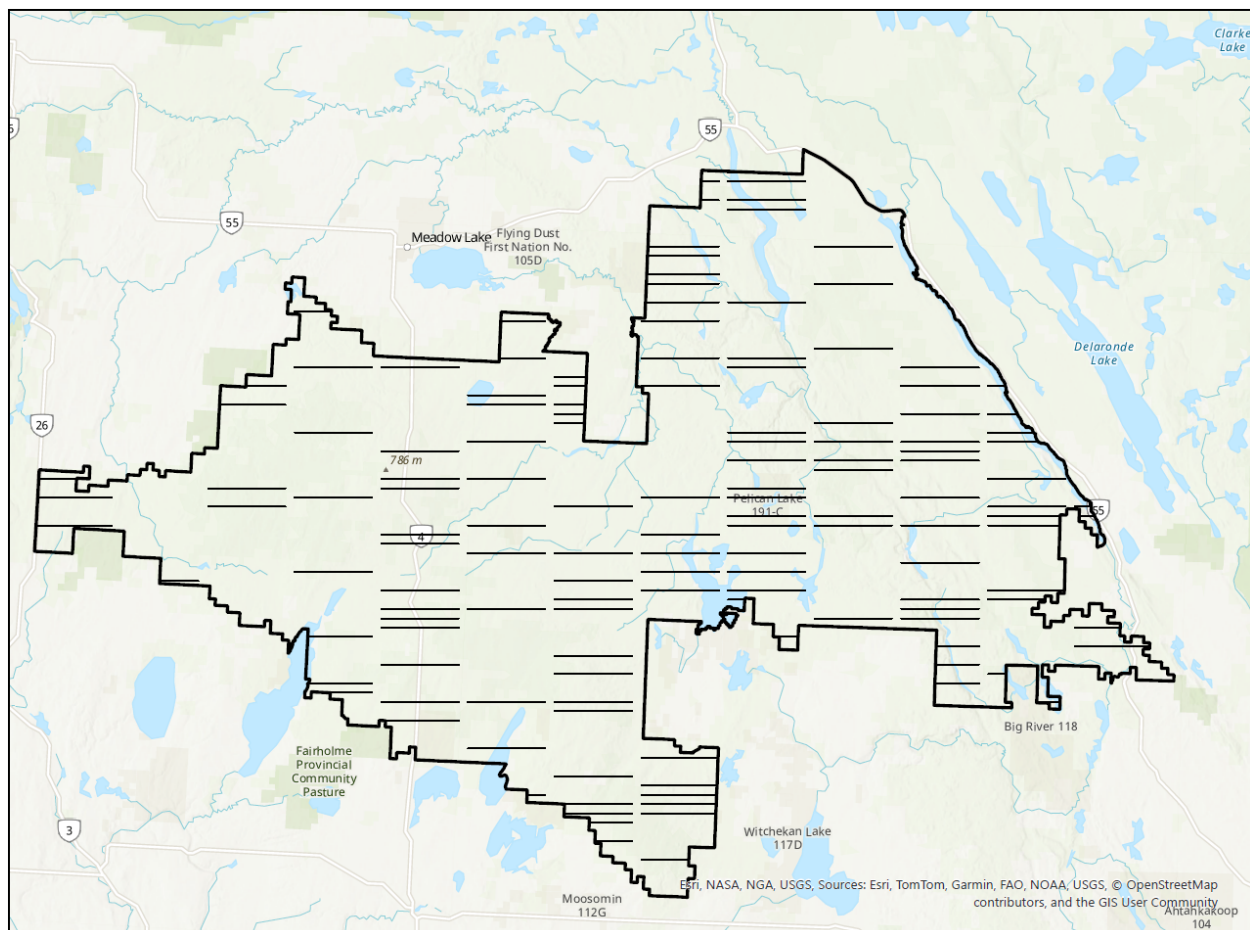


Figure 1. Map of Wildlife Management Zone 67 in Saskatchewan. Black lines indicate aerial transect lines flown during wildlife surveys.

Table 1: Moose Survey Summary

Survey Year	Survey Method	Estimated Abundance (90 percent CI)	Density (/1000 km ²)	Bull	Cow	Calf
2025	Distance	1,364 (1182-1546)	220	91	100	38
2018	Modified Gassaway	1,340 (1,080-1,599)	220	59	100	59
2010	Modified Gassaway	1,860 (1,518-2,202)	310	43	100	36
2007	Modified Gassaway	2,021 (1,639-2,402)	330	42	100	55
2004	Modified Gassaway	3,099 (3,877-2,321)	500	46	100	43

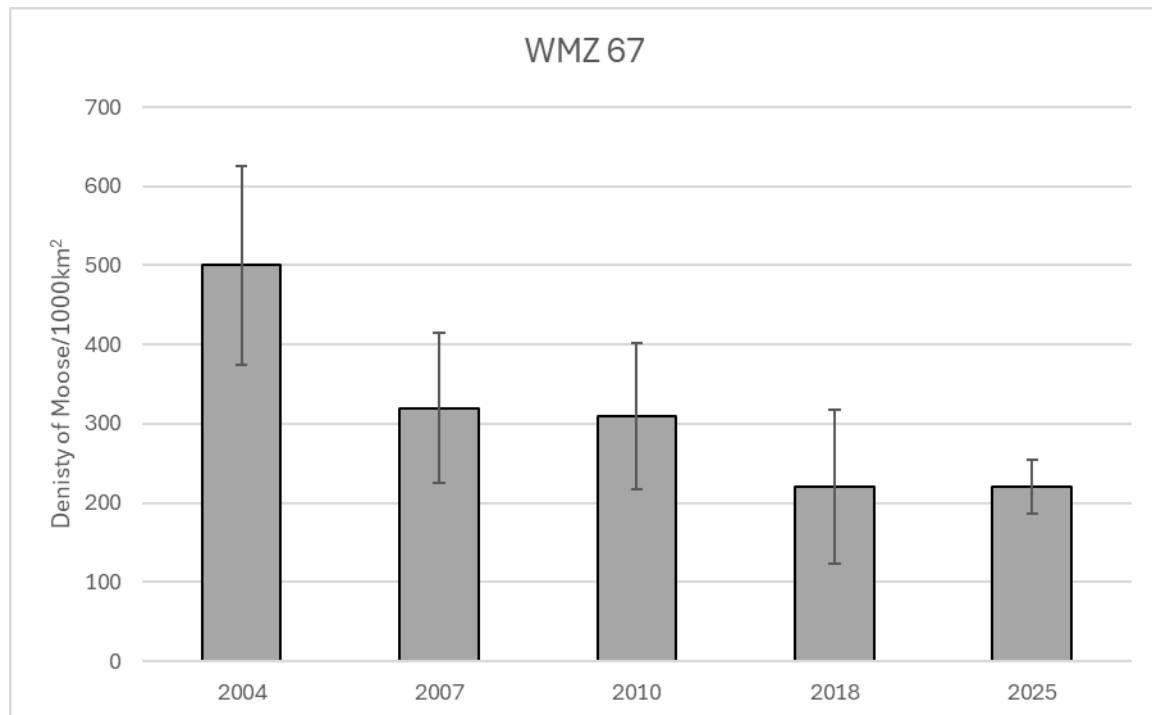


Figure 2. Estimated moose density (individuals per 1,000 km²) in WMZ 67 for the years 2004, 2007, 2010, 2018, and 2025. Error bars represent 90% confidence intervals.

Literature

Alberta Environment and Parks. 2016. Aerial Ungulate Surveys using Distance Sampling Techniques – Protocol Manual.

Beveridge, E.D. 2006. Saskatchewan moose population aerial survey protocol. Resource Stewardship Branch, Saskatchewan Environment, Regina. 78pp.

Buckland, S.t., D.R. Anderson, K.P. Burnham, J.L. Laake, D.L. Borchers, and L. Thomas. 2001. Introduction to Distance Sampling: Estimating Abundance of Biological Populations. Oxford University Press, Oxford, UK.