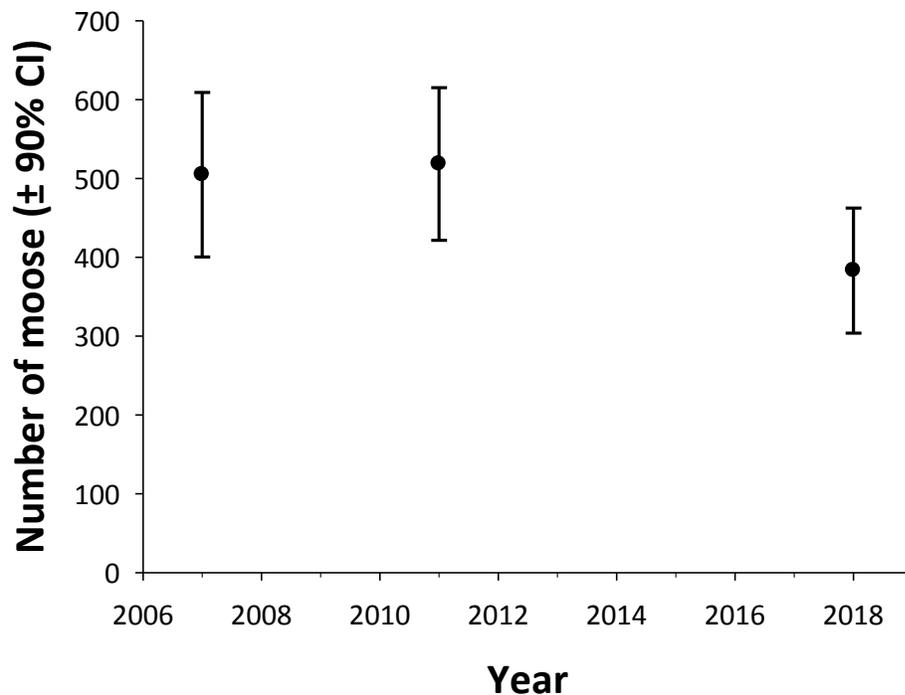


## 2018 Big Game Surveys

Manitoba Sustainable Development conducted aerial moose surveys in three areas of the province this past winter. Moose surveys are generally flown in early January to mid-February, once there is a minimum of 25 centimetres of snow cover. This amount of snow cover helps to ensure that moose are readily detected by survey observers.

### Moose, Game Hunting Area 17A (*Eastern Region*)

An aerial survey was conducted in Game Hunting Area 17A from January 17 to February 1, 2018, to obtain current information on the moose population. A stratified random block survey method was used and sample units were grouped into three sample unit categories (strata). Intensive sampling was conducted on 31% of the total survey area. The survey produced a point estimate of 383 (90% Confidence Interval: 304 – 462) moose and an average density of 0.11 (90% Confidence Interval: 0.09 – 0.13) moose/km<sup>2</sup>. The calf/cow and bull/cow ratios were 50 (90% Confidence Interval: 38 – 61) calves/100 cows and 36 (90% Confidence Interval: 26 – 46) bulls/100 cows, respectively. Survey results suggest that the moose population in Game Hunting Area 17A has declined since the previous survey conducted in 2011 (518 moose; 90% Confidence Interval: 422 – 615).



**Figure 1:** Point estimates of number of moose ( $\pm$  90% CI (confidence interval)) in Game Hunting Area 17A, Manitoba derived from aerial surveys using stratified random sampling methods. For

surveys depicted on this graph, an equal quadrat method was used over a survey area of 3456.7 km<sup>2</sup> (2007) and 3472.6 km<sup>2</sup> (2011, 2018).

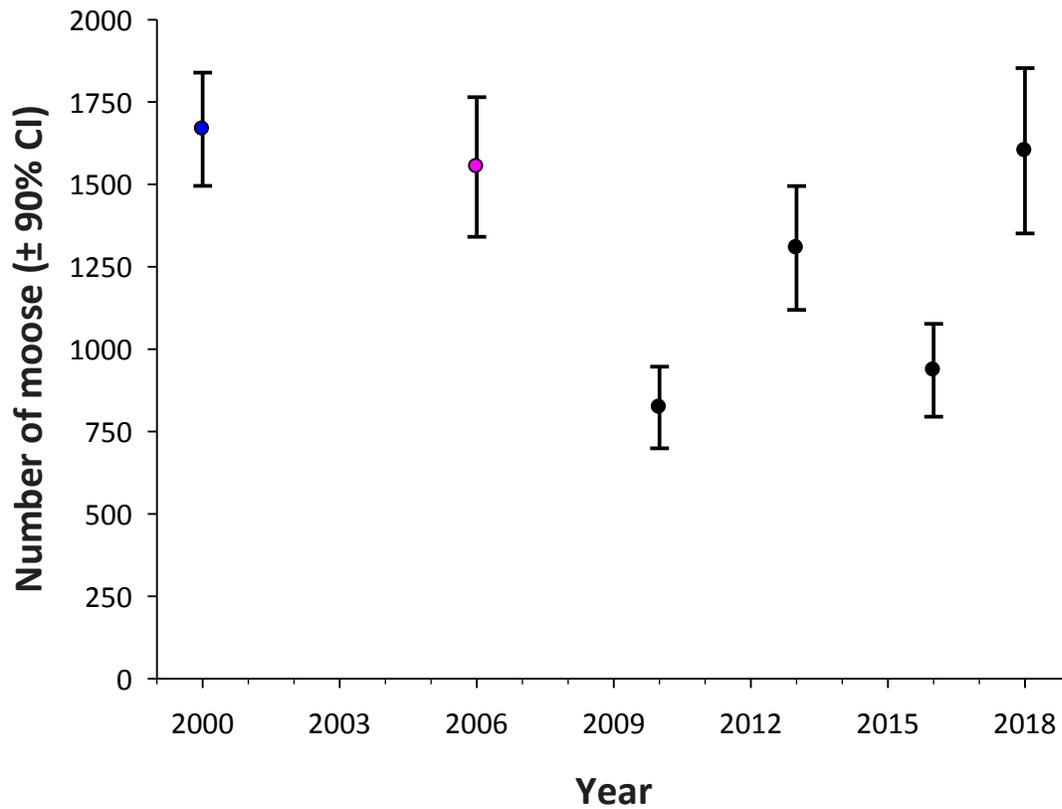
### **Moose, Game Hunting Area 7 (*Northwest Region*)**

An aerial survey was conducted in Game Hunting Area 7 from January 16 to January 24, 2018. This was the first time that a moose population survey had been conducted for this Game Hunting Area. A stratified random block survey method was used and sample units were grouped into two sample unit categories (strata). Intensive sampling was conducted on 26% of the total survey area. The survey produced a point estimate of 206 (90% Confidence Interval: 156 – 257) moose and an average density of 0.04 (90% Confidence Interval: 0.03 – 0.05) moose/km<sup>2</sup>. The calf/cow and bull/cow ratios were 35 (90% Confidence Interval: 21 – 49) calves/100 cows and 33 (90% Confidence Interval: 16 – 49) bulls/100 cows, respectively. Survey results suggest that there is a low density of moose in Game Hunting Area 7.

### **Moose, Game Hunting Area 26 (*Eastern Region – south of Bissett*)**

Aerial survey results in 2010 suggested the moose population in Game Hunting Area 26 was declining. In response, the entire Game Hunting Area was closed to licensed moose hunting and a moose conservation closure restricted moose hunting by right-based hunters in a portion of the Game Hunting Area.

An aerial survey was conducted in Game Hunting Area 26 from January 15 to January 27, 2018 to obtain current information on the status of the moose population, including whether conservation efforts had been effective in its recovery. A stratified random block survey method was used and sample units were grouped into three sample unit categories (strata). Intensive sampling was conducted on 24% of the survey area. The survey produced a point estimate of 1602 (90% Confidence Interval: 1351 – 1853) moose and an average density of 0.21 (90% Confidence Interval: 0.17 – 0.24) moose/km<sup>2</sup>. The calf/cow and bull/cow ratios were 28 (90% Confidence Interval: 24 – 33) calves/100 cows and 52 (90% Confidence Interval: 43 – 61) bulls/100 cows, respectively. Survey results suggest there has been an increase in this population since the 2010 survey when the point estimate was 823 moose (90% Confidence Interval: 699 – 947).



**Figure 2:** Point estimates of number of moose ( $\pm$  90% CI (confidence interval)) in Game Hunting Area 26, Manitoba derived from aerial surveys using stratified random sampling methods. Different colors of point estimates show years for which methods and/or the area surveyed varied slightly. The point estimate depicted in blue was derived from a survey using unequal quadrats and a survey area of 6861.6 km<sup>2</sup>. An equal quadrat method was used over a survey area of 6954.4 km<sup>2</sup> (pink) and 7793.1 km<sup>2</sup> (black). Portions of Game Hunting Area 26 closed to all hunters in January 2012 (Moose Protection Zones).