Aerial Wildlife Survey Report
WMU 351 Aerial Ungulate Survey (February 2018)

Background

Wildlife Management Unit (WMU) 351 covers an area of 4,362 km² and is delimited:

- to the north by the southern boundary of Township 72 skirting the East Prairie Métis Settlement Area to the south and then by the southern boundary of Township 71
- to the west by the western boundary of Range 18, northern boundary of Township 69, and the western boundary of Range 19 to the Goose River
- to the south by the main tributary of the Goose River and the Goose Forestry Tower Road, and
- to the east by Highway 33

The most recent moose (Alces alces) survey in WMU 351 was completed during the winter of 2009-10 using a modified Gasaway survey technique. The estimated population density was 0.48 moose/km² and the estimated population size was 2,107 moose (90% CI 1802 – 2411). The age-sex composition ratio (bull:calf:100cow) based on the moose observed was 41:46:100).

The objective of this survey was to estimated total population size, population densities, and age-sex composition ratios of moose in WMU 351 to inform game management decisions.

Methods

An aerial ungulate survey was conducted in WMU 351 during February 1 to 4 using the distance sampling method (Buckland et al. 2001). A total of 79 parallel east-west transects lines (survey effort 705.35 km, interval 1.2 km) were flown with a Bell 206 Long Ranger over 4 consecutive days. Data were analyzed using the program “Distance” (Version 6.0, Release 2; Thomas et al. 2010).

Results

A total of 171 moose were observed in 117 groups. Of these 41 (24.0%) were bulls, 86 (50.3%) were cows and 44 (25.7%) were calves which yielded an age-sex composition ratio (bull:calf:100cow) of 48:51:100. The encounter rate was 0.17 moose/km and the mean group (cluster) size was 1.5.

The final estimated moose density in WMU 351 was 0.36 moose/km² (90% CI 0.285 – 0.462), and the estimated abundance was 1,584 moose (90% CI 1245 – 2015; Table 1).
Table 1. Age-sex composition ratios, abundance estimates (N), and density (D; moose/km²) estimates for WMU 360 for recent aerial ungulate surveys

<table>
<thead>
<tr>
<th>Year</th>
<th>Survey Type</th>
<th>Composition Ratio (Bull:Calf:100Cow)</th>
<th>N (90% CI)</th>
<th>D (90% CI)</th>
<th>CV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993/94</td>
<td>Stratified Random Block</td>
<td>19:53:100</td>
<td>2151 (1797 – 2507)</td>
<td>0.52</td>
<td>0.17</td>
</tr>
<tr>
<td>1997/98</td>
<td>Stratified Random Block</td>
<td>42:28:100</td>
<td>2451 (1980 – 2922)</td>
<td>0.56</td>
<td>0.19</td>
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<tr>
<td>2000/01</td>
<td>Stratified Random Block</td>
<td>32:45:100</td>
<td>2457 (2199 – 2714)</td>
<td>0.56</td>
<td>0.11</td>
</tr>
<tr>
<td>2009/10</td>
<td>Stratified Random Block</td>
<td>41:46:100</td>
<td>2107 (1802 – 2411)</td>
<td>0.48</td>
<td>0.15</td>
</tr>
<tr>
<td>2017/18</td>
<td>Distance Sampling</td>
<td>48:51:100</td>
<td>1584 (1245 – 2015)</td>
<td>0.36</td>
<td>0.15</td>
</tr>
</tbody>
</table>

Literature Cited
