Aerial Wildlife Survey Report

Wildlife Management Unit 517 Aerial Ungulate Survey (2018-19)

Background

Winefred LakeWildlife Management Unit (WMU 517) covers an area of 4,949 km^2 and is located directly north of the Cold Lake Air Weapons Range (CLAWR), between the Saskatchewan border to the east and the hamlet of Conklin to the west. Most of the area consists of coniferous forest (51%) dominated by black spruce with remaining areas interspersed with broadleaf (10%) and mixed-wood (10%) pockets.

Timber harvesting occurs throughout the region and oil and gas exploration and development is mostly concentrated in the area west of Winefred Lake. Correspondingly, there has been a proliferation of industrial access and human activity in and around Conklin. WMU 517 comprises portions of the Cold Lake and East Side Athabasca River caribou ranges. A Key Wildlife Biodiversity Zone corridor runs along the Christina river in the northwest corner of the WMU, covering and area of 575 km^2.The Chipewyan Prairie First Nation resides within WMU 517.

The objective of the 2018/19 survey was to assess the status of the moose population in WMU 517 by estimating abundance, density and the age-sex composition.

Survey Method

An aerial survey for moose was conducted February 12 and 13, 2019 using distance sampling techniques (Buckland *et al*., 2001; Thomas *et al*., 2010). A total of 247 north-south transect lines (survey effort = 2,200.4 km) were flown with two jet ranger helicopters, each outfitted with rear bubble windows to maximize visibility. Moose were classified by age class (adult or calf) and sex. Other wildlife sightings were recorded.

Results

Moose

A total of 132 moose were observed in 81 groups, which included; 61 cows, 36 calves, and 35 bulls (23 antlerless and 12 with antlers). The estimated density was 0.085 moose/km^2 (90% CI 0.065 – 0.112) and the estimated abundance was 406 individuals (90% CI 309 – 535; Table 1). A total of 132 moose were successfully classified and the bull:cow:calf ratio was estimated to be 57:100:59.

Table 1. Historical and current moose survey estimates for WMU 517. Estimates include number of individuals, density and age-sex composition ratios. Ranges in parentheses represent 90% confidence limits.

Species	Survey Year	Survey Method	Abundance Estimate	Density	Ratio to 100 Cows	
			Mean (90% CI)	Sq. km	Bulls	Calves
Moose	2018	Distance	406 (309 – 535)	0.09	57	59
	2013	Random Block	305 (169 – 441)	0.06	63	84
	2006	Random Block	224 (168 – 279)	0.03	83	39
	2001	Random Block	398 (273 – 522)	0.08	37	34
	1994	Random Block	550 (386 – 714)	0.12	70	49

Acknowledgements

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Literature

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