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Field Summary - 2025-26 Moose Surveys – North Slave Region

Survey Objectives

Aerial moose composition and abundance surveys were conducted by Environment and Climate Change (ECC) - North Slave Region during December 2025 and March 2026 under GNWT Wildlife Research Permit WL501430. The objective of these surveys was to 1) measure calf:cow and bull:cow ratios to provide an indicator of population health, and 2) obtain updated moose abundance and density estimates for areas around the Tłı̨chǫ HWY and north of Great Slave Lake. The results will be used to evaluate if the population has increased or decreased since the last survey in 2020/21. The 2025/26 surveys followed the same study design used in 2020/21.

Moose Composition Survey

The moose composition survey was conducted between Dec. 1-6, 2025, using an Aviat A-1B Husky single passenger aircraft (Hoarfrost River Huskies Ltd.) piloted by Dave Olesen, with Stefan Goodman (ECC) as navigator/data recorder. The survey was flown in December before bull moose dropped their antlers to ensure reliable identification of sex and age classes of moose to obtain bull:cow and calf:cow ratios. Groups of moose were recorded along transects flown within a subset of the larger moose abundance survey area flown in March 2026. Some of the planned transects had to be adjusted on the fly due to poor weather conditions in the northern part of the study area (low visibility and icing). When moose were observed, the aircraft veered off transect to fly over the group and obtain a GPS location and take photos. Photos were used to verify sex and age class identification and number of moose per group (see example in Figure 1).

A summary of the 2025 moose composition survey results is provided in Table 1, and a map of the flight lines and moose observations is provided in Figure 2. Results from the 2020 survey are included in Table 1 for comparison. In 2025, forty (40) groups of moose were observed along ~3700 km of transects flown within the study area. Group sizes ranged from 1 to 5 individuals. A total of 70 moose were classified: 26 cows, 21 calves, and 32 bulls. This yielded an overall calf:cow ratio of 0.81, or 81

calves per 100 cows. The bull:cow ratio was 1.23, or 123 bulls per 100 cows. Two cows were observed with twins. Other wildlife species observed included 2 wood bison, 28 boreal caribou in 5 groups, 1 red fox and 1 wolverine.

Figure 1. Photo of a group of 5 bull moose, the largest group of moose seen during the classification survey (Photo credit: S.Goodman/GNWT-ECC)

Table 1. Summary of 2020 and 2025 moose composition survey results from the North Slave region of the NWT.

	2020	**2025**
Number of Groups Observed	38	40
Cows	26	26
Calves	12	21
Bulls	16	32
Total	**55**	**70**
Calf:Cow	0.46	0.81
Bull:Cow	0.62	1.23
Number of Cows with Twins	1	2

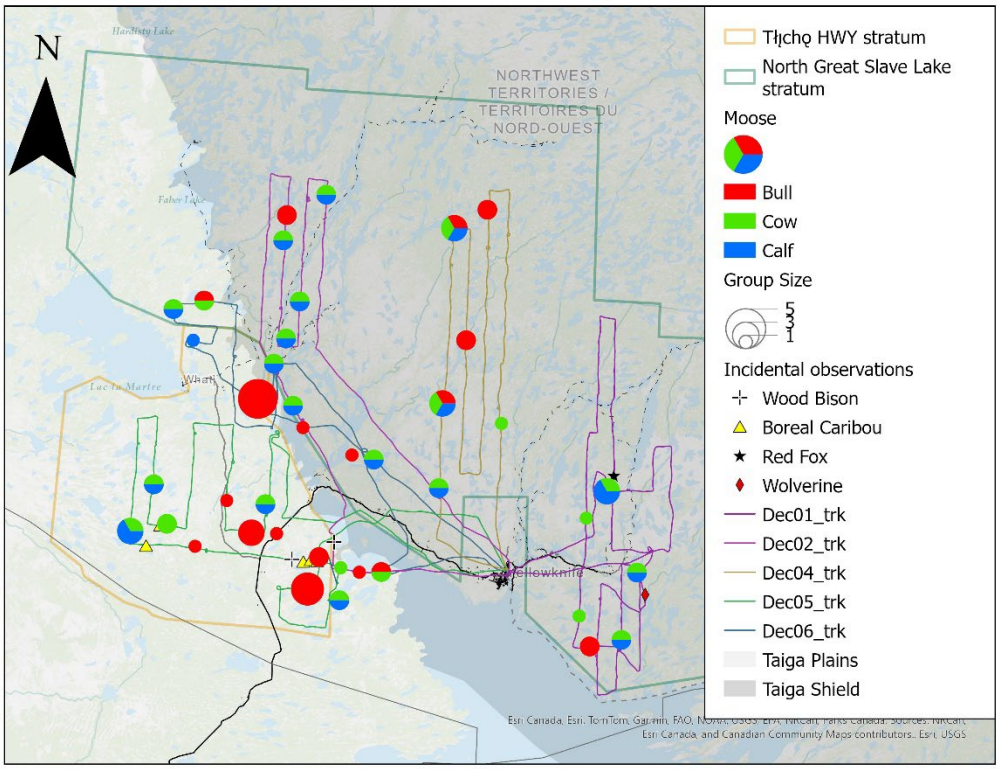

Figure 2. Results of the December 1-6, 2025, North Slave region moose composition survey.

Moose Abundance Survey

The moose abundance survey took place between March 17-24, 2024, using two fixed-wing aircraft, a Cessna 180 piloted by Sergei Mjatelski (Goose Flying Services Ltd.) and a Found Bush Hawk piloted by Dave Olesen (Hoarfrost River Huskies Ltd.). Each aircraft included a navigator/data recorder and 1-2 wildlife observers. Stefan Goodman (ECC) and James Hodson (ECC) participated as navigators/data recorders throughout the survey. The first part of the survey was based in Whatì from March 17-20 and covered the Tłı̨chǫ HWY strata and the western portion of the North Great Slave Lake strata (Figure 3). Tłı̨chǫ observers from Whatì included Shaun Moosenose, Richard Romie, Peter Nitsiza, Traven Nitsiza and Walter Beaverhoe (ECC) (Figure 4). The second part of the survey was based out of Yellowknife from March 21-24 and covered the northern and eastern sections of the North Great Slave Lake strata. Yellowknife observers included Kyle Coumont (North Slave Métis Alliance [NSMA]), Dustin Arychuk (NSMA), Keith Sangris (Yellowknives Dene First Nation [YKDFN]), David Sangris (YKDFN), Stanley Mackenzie (YKDFN), Gabriel Doctor (YKDFN), Alfred Liske (YKDFN), and Amanda Weltman (ECC) (Figure 4).

The 2026 moose abundance survey used a distance sampling design, following the approach used in the 2021 survey. Transects (lines) were flown as sample units and when a moose was observed, a waypoint was taken immediately (on the line) and then the plane broke away from the transect and flew to the sighting, where another waypoint was obtained. This will allow us to calculate the distance the moose was from the transect. We use those distances to model the detection probability of moose from the plane. This parameter is then used to calculate an abundance estimate for each survey stratum, and the entire survey area. Transects were spaced 4 km apart within the Tłı̨chǫ HWY stratum and 8 km apart within the North Great Slave Lake Stratum.

The survey took about 85 hours of flying to complete and covered over 8,000 km of transects. A total of 213 moose were observed in 158 groups ranging in size from 1 to 4 individuals. For comparison, 165 moose were observed in 145 groups within the same survey area in 2021 (Table 2). The total number of moose observed in each survey stratum (Tłı̨chǫ HWY and North Great Slave Lake) was also higher in 2026 than in 2021 (Table 2). Other wildlife observed in 2026 included ~1200 barren-ground caribou in 42 groups, 90 boreal caribou in 19 groups, 40 muskox in 4 groups, 60 wood bison in 12 groups, 9 wolves in 2 groups, 3 red fox, 2 lynx, and 3 wolverines. A map of the survey routes flown and wildlife observations is provided in Figure 3.

Table 2. Number of groups of moose observed and total moose counted along transects within the Tłı̨chǫ HWY and North Great Slave Lake survey strata during the March 2021 and March 2026 moose abundance surveys.

	2021			**2026**		
Stratum	Tłı̨chǫ HWY	North Great Slave Lake	**Total**	Tłı̨chǫ HWY	North Great Slave Lake	**Total**
Number of Groups Observed	35	110	**145**	35	123	**158**
Total Moose Counted	36	129	**165**	48	165	**213**

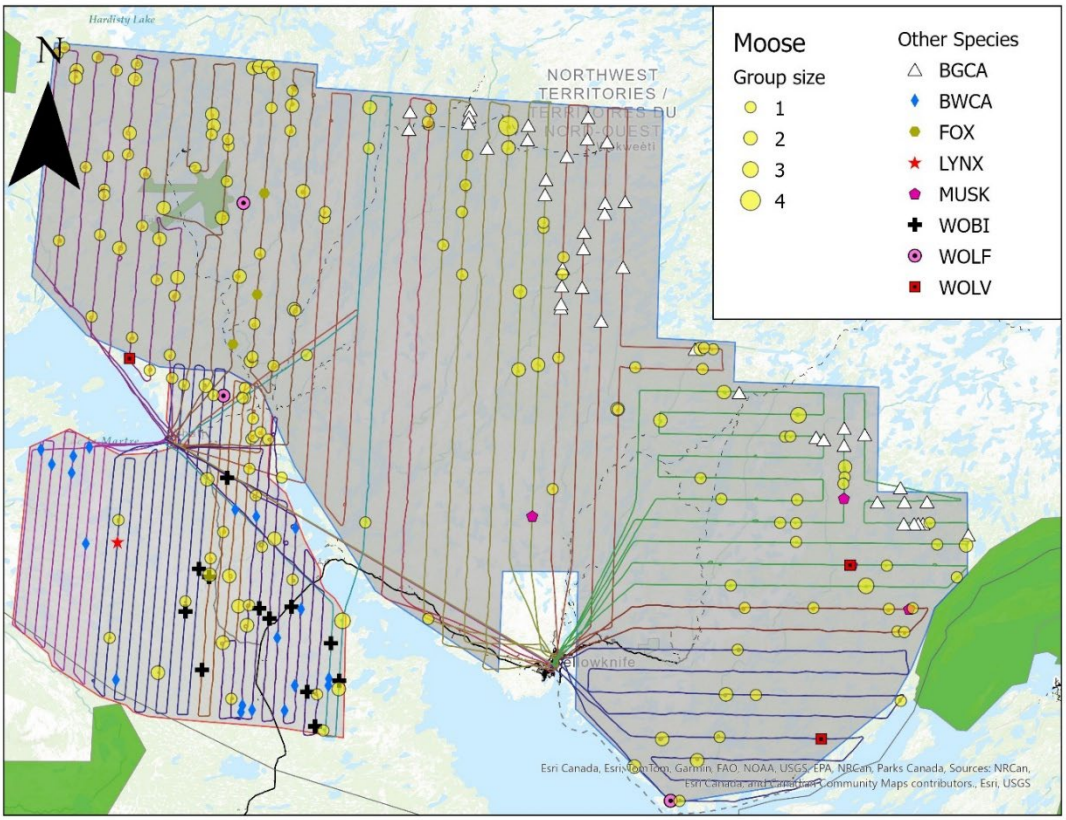

Figure 3. Moose and other wildlife species observed during March 17-24, 2026, North Slave Region moose abundance survey. Species abbreviations are: BGCA = barren-ground caribou; BWCA = boreal woodland caribou, MUSK = muskox; WOBI = wood bison; WOLV = wolverine.

Figure 4. Whatì (left panel) and Yellowknife (right panel) moose abundance survey crews – March, 2026.

Next Steps

Statistical analyses of the moose abundance survey data will be conducted using the distance sampling framework to estimate the density and abundance of moose in the survey area. An ECC Manuscript Report will be prepared describing the analyses and results and will include a comparison to results of previous surveys to assess whether the moose population in the region is increasing, stable, or decreasing. A copy of the Manuscript Report will be circulated once completed.

Acknowledgements

I would like to thank Sergei Mjatelski and Dave Olesen, who piloted their aircraft safely and effectively; Stefan Goodman for assisting with survey planning and logistics; Tłı̨chǫ Government, NSMA, YKDFN, and Ek'edia Services for providing observers; Shaun Moosenose, Richard Romie, Peter Nitsiza, Traven Nitsiza Walter Beaverhoe, Kyle Coumont, Dustin Arychuk, Keith Sangris, David Sangris, Stanley Mackenzie, Gabriel Doctor, Alfred Liske, and Amanda Weltman for their keen eyes spotting moose and other wildlife during the survey; Ahmic Air Ltd. for providing refueling and support services in Yellowknife; and, Fuel Flo Logistics Inc. for delivering fuel to Whatì. The survey was funded by GNWT Department of Environment and Climate Change and Department of Infrastructure (Tłı̨chǫ HWY portion).

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