



**RE-EVALUATION OF THE NORTHERN KIVALLIQ MUSKOXEN
(*Ovibos moschatus*) DISTRIBUTION, ABUNDANCE, AND
TOTAL ALLOWABLE HARVEST IN MUSKOX MANAGEMENT
UNITS MX-10.**

**The Government of Nunavut, the Department of Environment, accept this report
in totality and would like to inform NWMB of the results and management
recommendations.**



29.2% and 7 km spacing between transect line (Figure 1).

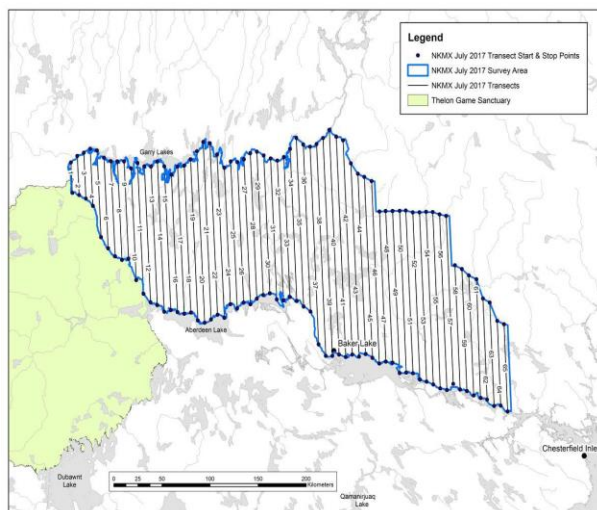


Figure 1: Study area and transect of the July 2017 Northern Kivalliq muskox survey. The study area is delineated based on estimated densities from IQ studies and past survey results.

Aircraft configuration

This survey was flown using a Cessna 206 Grand Caravan high wing single engine turbine aircraft. The transect line were surveyed at a speed of 160 km/hr and the survey altitude was maintained as close as possible of 152 meters above ground level (AGL). Using distance sampling techniques, the strip width was marked at 0, 250, 500, 750, 1,000 meters on each side of the aircraft for a total of 2,000 m strip width along each transect. An independent double observer pair, sight-re-sight method was used. Observers on both side of the plane were responsible for continuously searching for, spotting, and counting muskox including the number of calves. Only counts of adults

and yearling was used in the final estimate. Incidental sightings of caribou, polar bear, wolverine, and wolf were also recorded.

Results

Distribution

The survey was conducted from July 21st to July 29th, 2017. Survey observations suggest that the muskox of NKMx has extended their geographic distribution east and southeast (Figure 2; blue vs red dots). This was monitored with the increase in study area from 35,378 km² in 1999, 49,302 km² in 2012, and 60,576 km² in 2017 which represent a range increase of 41%.

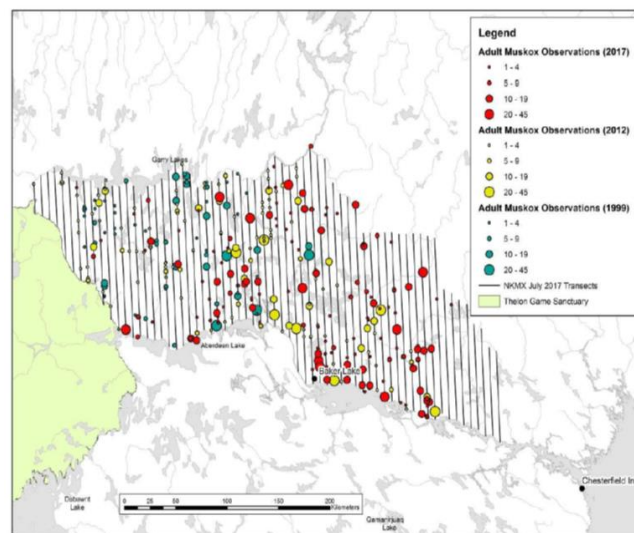


Figure 2: Northern Kivalliq muskox aerial survey observations of muskox from July 1999 (blue) to July 2012 (yellow) and July 2017 (red).

Figure 3: Northern Kivalliq muskox population trend in the Muskox Management Unit MX-10 for 1999, 2012, and 2017 from aerial surveys