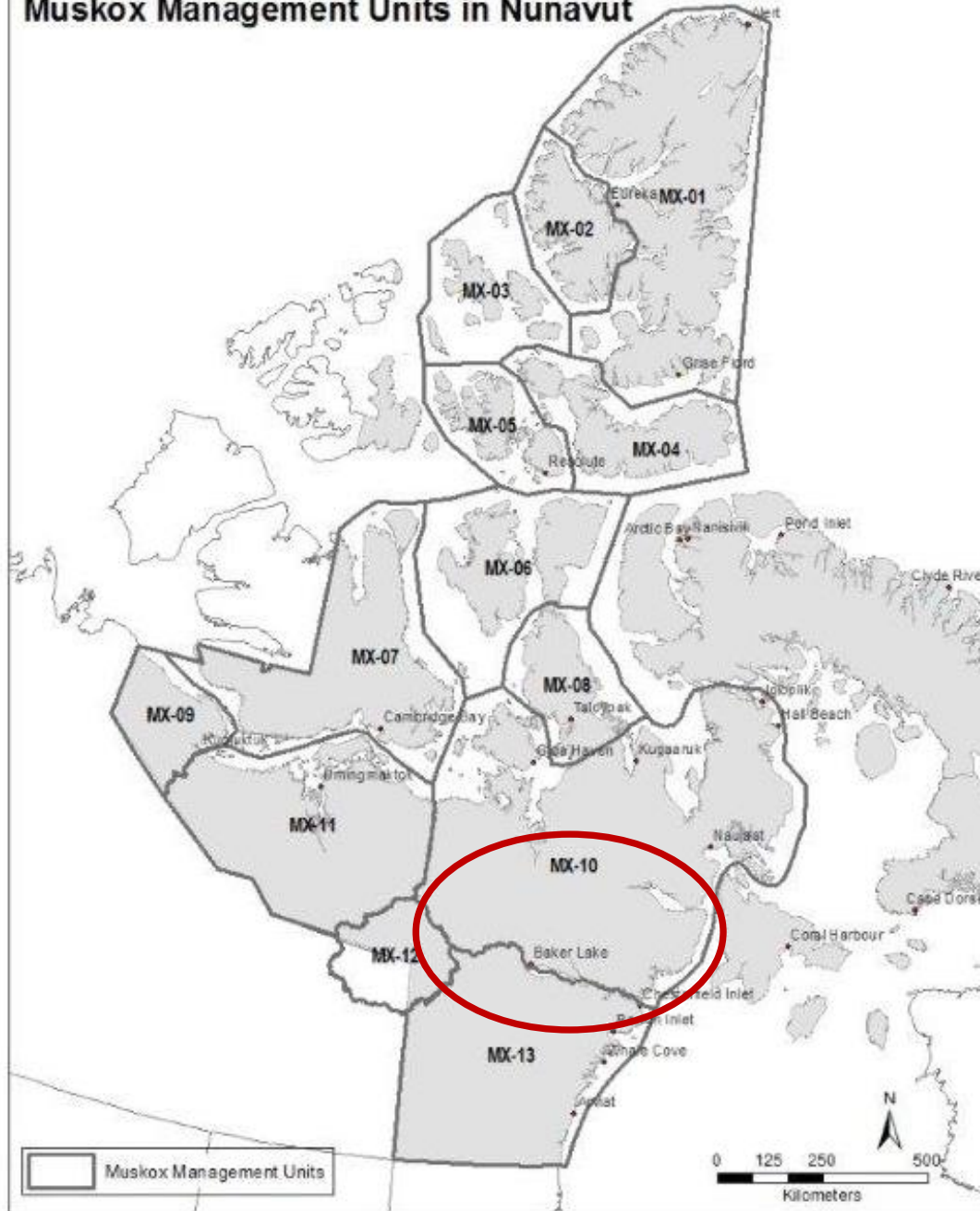




The Department of Environment (DOE) would like to inform the Nunavut Wildlife Management Board (NWMB) on the research and monitoring of Muskox Management Unit MX-10 based on the 2017 survey work and the current and make management recommendations.



Muskox Management Units in Nunavut





Survey History and Area

- Previous surveys were done in 1999 and 2012. The 2012 survey showed an increase from **1,522** to **2,341** muskox.
- Previous surveys also showed a range expansion eastward for the North Kivalliq Muskox (NKMX).
- The muskox appear healthy and there have been no indications of disease in the herd.

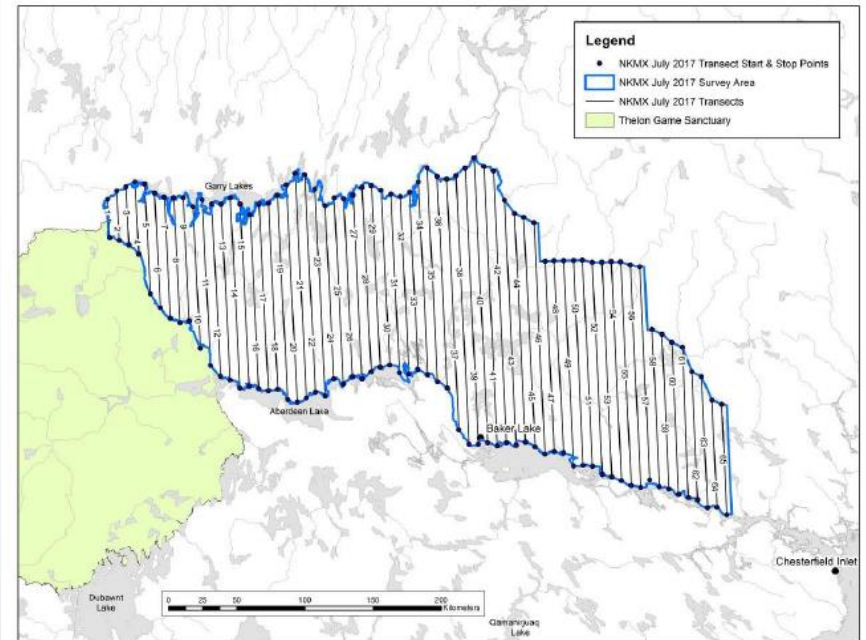


Figure 5. Study area and transects of the July 2017 northern Kivalliq muskox survey. The study area delineated based on estimated densities from IQ studies and past survey results.



Monitoring

- Survey completed in July 2017 with a study area of 60,576 km².
- 941 adult muskoxen counted on transect.
- Proportion of calves increased to 17%.
- Population estimate of 3,239 muskoxen.

Table 3. A summary of northern Kivalliq muskox survey results north of Chesterfield Inlet/Thelon River and west to the NWT/Thelon Game Sanctuary boundaries (1999–2017).

<i>Year</i>	<i>Total stratum area (km²)</i>	<i>Population estimate</i>	<i>Standard error</i>	<i>CV</i>	<i>Lower 95% CI</i>	<i>Upper 95% CI</i>	<i>% calves</i>	<i>Authors</i>
1999 (July)	35,378	1,522	331	0.22	843	2,365	12.5	Campbell & Setterington, 2006
2012 (July)	49,302	2,341	275	0.12	1,796	2,886	13.2	Campbell & Lee, 2013.
2017 (July)	60,576	3,239	510	0.16	2,228	4,249	17.0	This Study



Monitoring

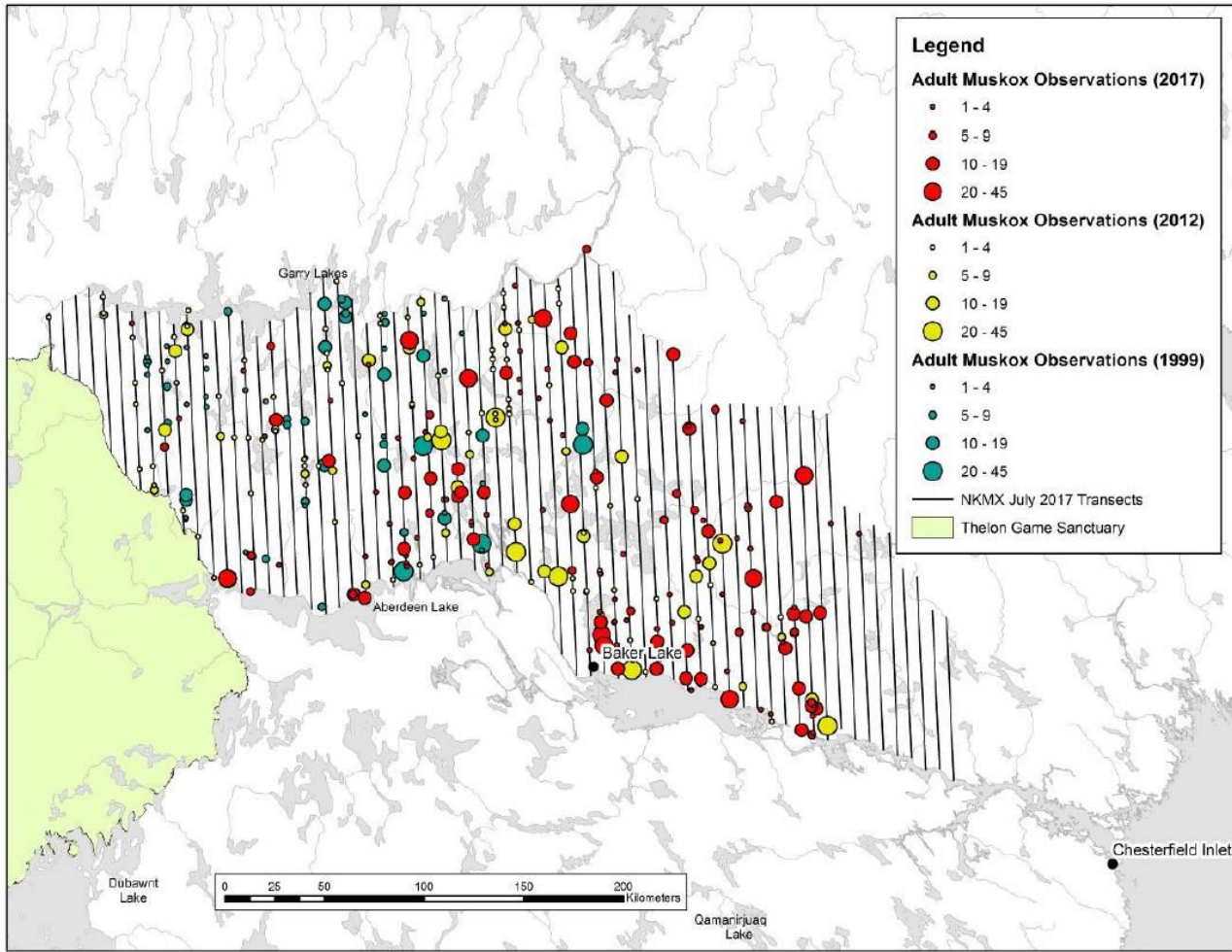
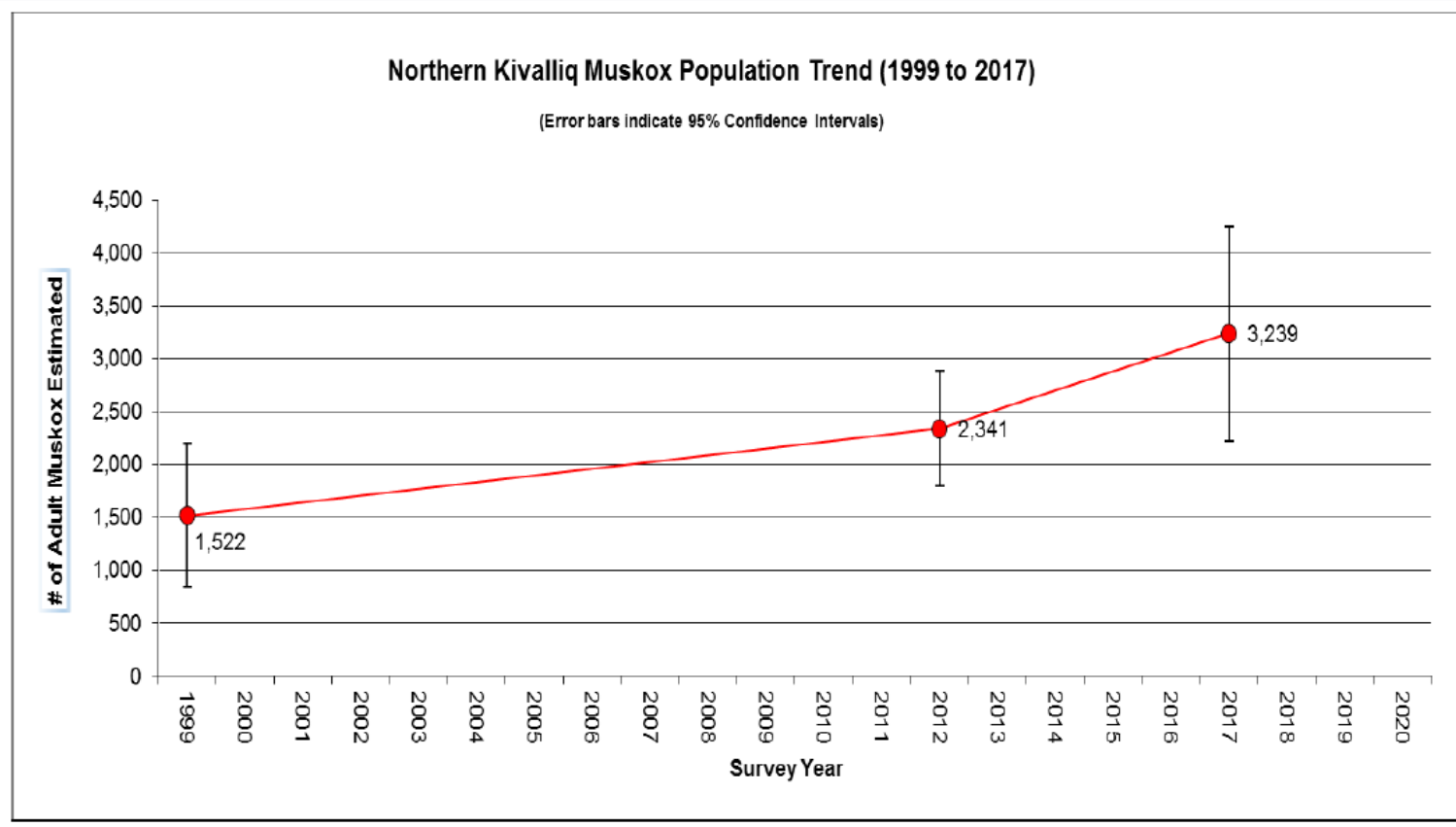


Figure 10. Northern Kivalliq muskox aerial survey observations of muskox from July 1999 (blue), to July 2012 (yellow), and July 2017 (red).



Population Estimate

There was an increase from 1999 to 2017, but seems stable since 2012, as there is not a significant statistical difference between 2012 and 2017.





Predators

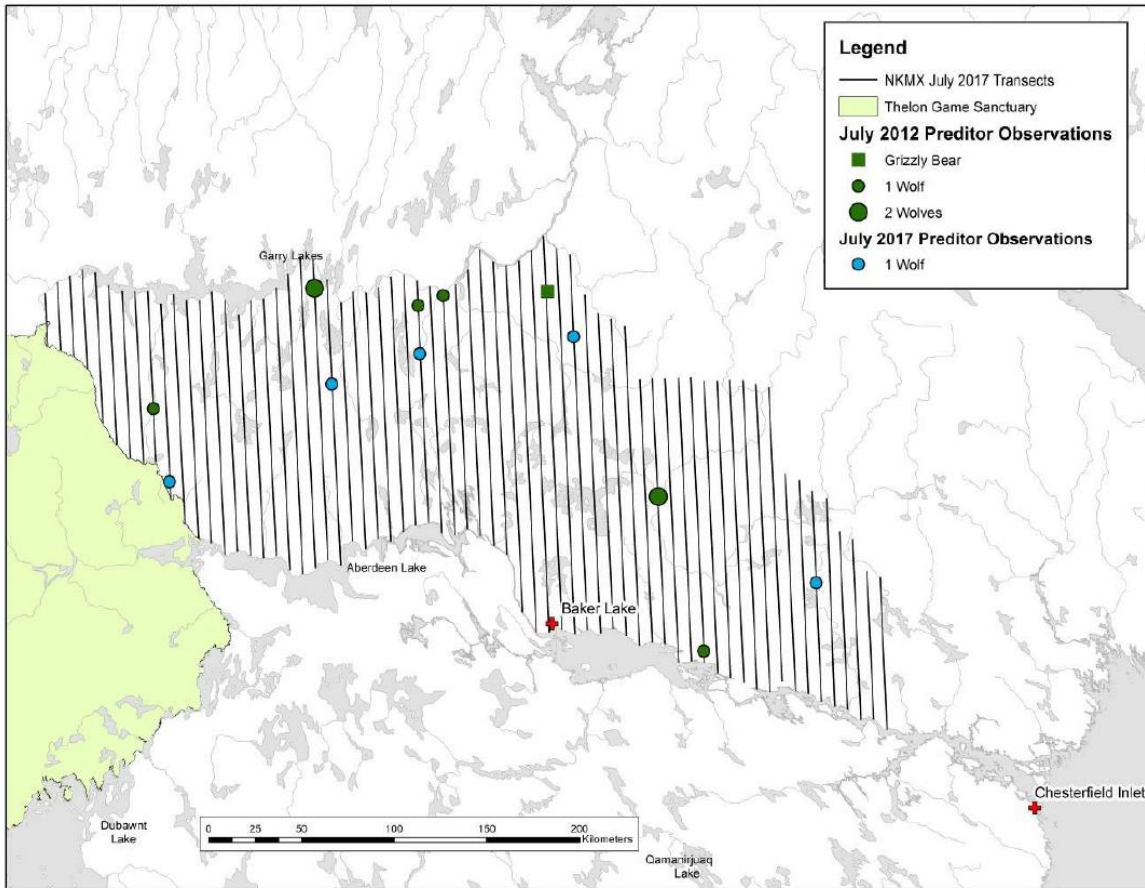


Figure 12. Predator observations during the July 2012 and 2017 northern Kivalliq muskox aerial surveys.

There were no indications of a quantitative change in predator numbers between the 2012 and the 2017 surveys.

2017: five wolves, no grizzly bears

2012: 8 wolves, one grizzly bears



Recommendation

*The Department of Environment is recommending to the Nunavut Wildlife Management Board to increase the TAH of 190 to **240** muskoxen for the Muskox Management Unit MX-10. This is an increase of 50 muskoxen.*

Rationale:

- The 2017 survey results were not significantly higher than the 2012 results but the percent calves showed an increase to 17% from 13.2% in 2012*
- MX-10 muskoxen appear healthy and there have not been signs of disease among the animals in that management unit*
- There have been stable to increasing population trends in the neighbouring muskox management units of MX-08 and MX-13*
- Muskox can provide an alternative harvesting option in light of declining mainland barren-ground caribou herds*
- Local Inuit Knowledge has been successful in observing population changes and trends in this Muskox Management unit, including the expansion of the muskox to the east.*
- The Department of Environment is committed to manage this risk associated with this higher TAH by increasing monitoring and use of local knowledge in the region.*

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THANK YOU
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