



**SUBMISSION TO THE**

**NUNAVUT WILDLIFE MANAGEMENT BOARD**

**FOR**

**Information: X**

**Decision:**

**Issue:** Northeast Mainland June 2021 Caribou Abundance Survey

**Background:**

- The Nunavut Department of Environment (DOE) initiated research into the Northeast Mainland caribou (NEM) herds (Ahiak, Wager Bay and Lorillard herds) in April 1999. Low coverage reconnaissance surveys were followed with the satellite collaring of Lorillard and Wager Bay caribou cows. Collaring from this earlier program stopped in 2006, and a broader scale telemetry program was established north of Baker Lake in 2009, continuing to the present day.
- Herd movements were monitored and in 2013 an assessment of herd seasonal movements undertaken. This distribution information, along with collar movement data, was used to design and adjust survey strata for the NEM abundance survey.
- Using this spatial information along with input received from Hunters and Trappers Organizations (HTO) and Regional Wildlife Organizations (RWO), the GN delineated and flew the calving ranges of the Ahiak, Wager Bay, and Lorillard herds between June 4 and June 15, 2021.

**Current Status:**

- The NEM caribou abundance survey of the Ahiak, Wager Bay, and Lorillard herds was successfully completed on June 15, 2021 (**Figure 1**). Overall, caribou distribution across the survey area was well predicted by compiled telemetry data and HTO and RWO observed distributions (**Figure 2**).
- Coefficients of Variation (CVs) are a measure of accuracy and precision within the estimates. We plan these surveys to achieve CVs between 10 and 15% which offers good accuracy and precision for trend assessments. CVs were below target for the Wager Bay and Ahiak herds suggesting high confidence in these estimates.
- The Lorillard herd CV of 19.2% was above targeted CVs because of unexpected and atypical clumping on their calving ground. This type of clumping has not been previously noted; survey data suggests it is a rare event of unknown cause.
- We estimated 23,118 females (CV= 7.6%) within the Ahiak survey strata which yielded a whole herd estimate of 39,131 adults (95% CI=33,385-45,867; CV=7.8%). We

estimated 19,764 females (CV= 19.1%) within the Lorillard survey strata which yielded a whole herd estimate of 33,454 adults (95% CI=22,503-49,735; CV=19.2%). We estimated 26,588 females (CV= 7.1%) within the Wager Bay survey strata which yielded a whole herd estimate of 45,005 adults (95% CI=38,732-52,293; CV=7.3%).

- We observed 122 wolves (30 within Ahiak strata, 60 within the Wager Bay strata, and 32 within the Lorillard strata), 3 Barren-ground grizzly bears all within the Ahiak strata, 16 wolverines (1 in the Ahiak strata, 7 within the Wager Bay strata, and 8 within the Lorillard strata), and 36 polar bears (10 within the Ahiak strata and 27 within the Wager Bay strata) (**Figure 2**). We observed 225 muskoxen (118 muskoxen within the Ahiak survey strata, 46 within the Wager Bay strata, and 61 within the Lorillard survey strata) (**Figure 3**).
- Of the three herds surveyed, only the Ahiak had been previously surveyed in June 2011. Survey strata were similar between the two surveys, however, there was likely some mixing between the Ahiak and Beverly herds on the Adelaide Peninsula (AP) in June 2011; collar data analysis suggests the mixing was small. Regardless of whether estimates included the area of mixing, a statistically significant decline of 5% in Ahiak caribou herd abundance between June 2011 and 2021 was detected.
- As the 2021 June abundance survey represents the first of its kind for the Wager Bay and Lorillard herds, no assessment of trends can be made. These herd estimates will be used as a benchmark for future assessments of trends.
- Although estimates for the Ahiak, Wager Bay, and Lorillard herds have been completed and little to no change is expected during final analysis, further work is being undertaken to better understand how these three barren-ground caribou herds interact across their annual range with a focus on the calving and breeding range.
- Results from all analyses will be provided in the final report which is anticipated to be available in November 2022.

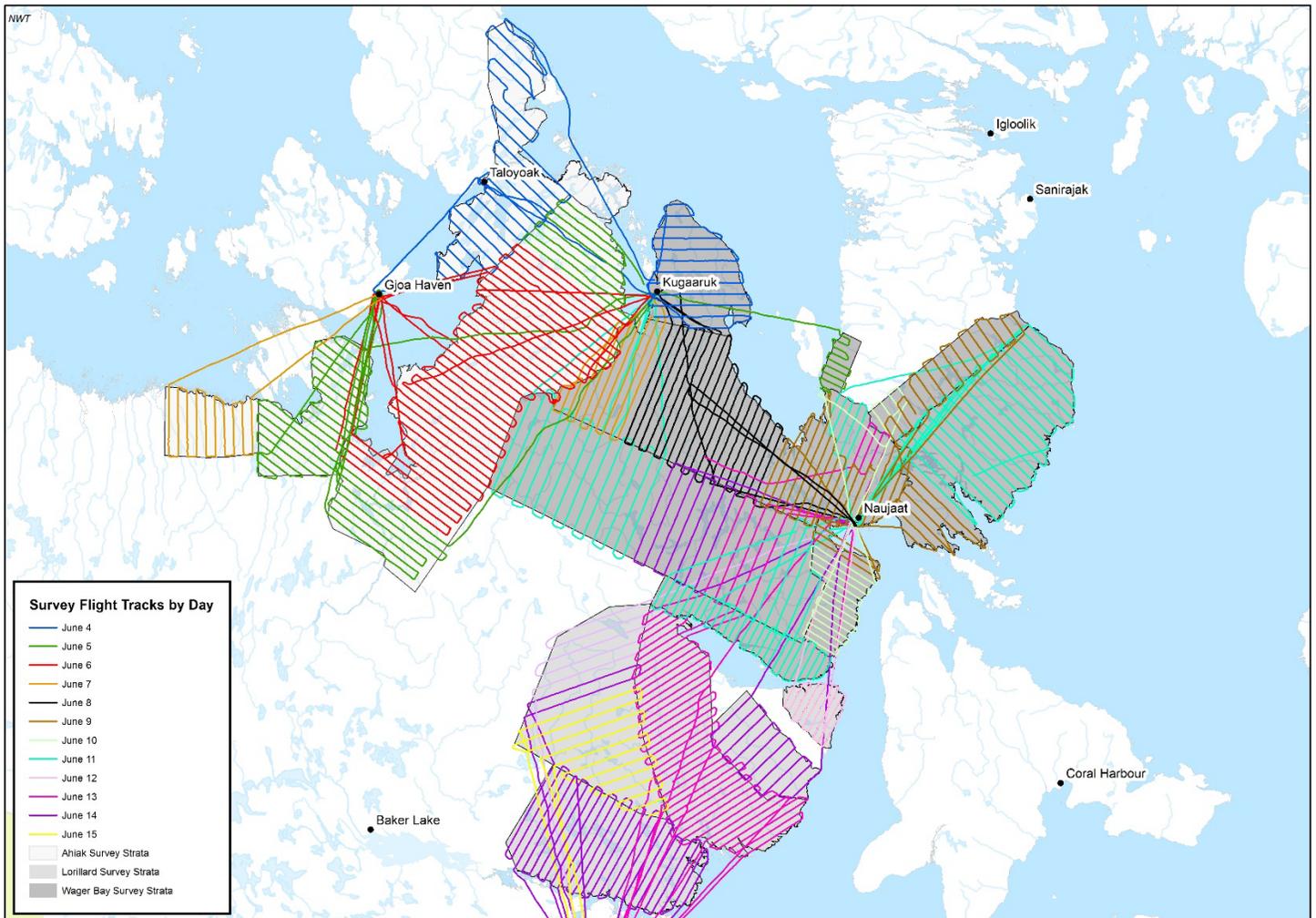
### **Consultation:**

- DOE planned in-person consultations with all affected HTOs and the three RWOs during the winters of 2020 and 2021 however, COVID-19 restrictions and outbreaks in several communities postponed some meetings, leading to the use of virtual meetings for most organizations. Despite these delays and the inability to meet face to face, meetings were successfully held, survey material presented, and Inuit Qaujimaqatuqangit (IQ) identified and incorporated into survey plans to the best of the GNs ability given the challenges encountered.
- Affected communities and the three RWOs were generally supportive of the survey efforts and recognize the data gaps in our understanding of the NEM herds and their interactions/distributions across their range.
- DOE will visit the affected HTOs following the completion of the survey analyses and distribution of the final report to discuss survey results and possible management actions. DOE will also attend the RWOs annual general meetings to discuss survey results and possible management actions.

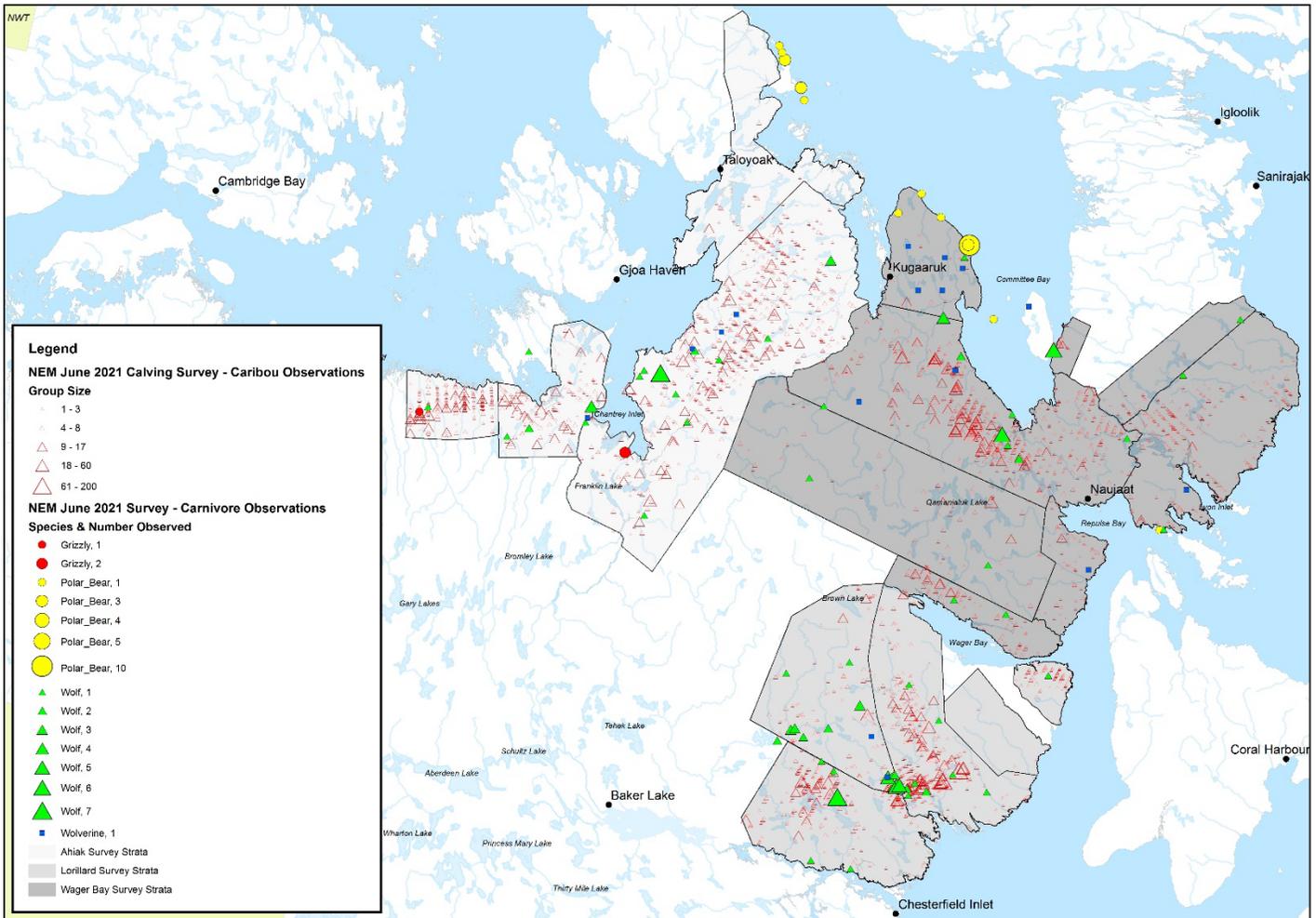
**Recommendations:**

- N/A

**Figure 1.** Survey flight tracks flown between June 4 and 15, 2022.



**Figure 2.** Caribou and carnivore observations made during the June 2021 Northeast Mainland survey. Note Ahiak survey strata as light grey (northwestern extents), Wager Bay survey strata as dark grey, and Lorillard survey strata as medium grey (southern extents).



**Figure 3** Muskox observations recorded during the June 2021 Northeast Mainland caribou survey.

