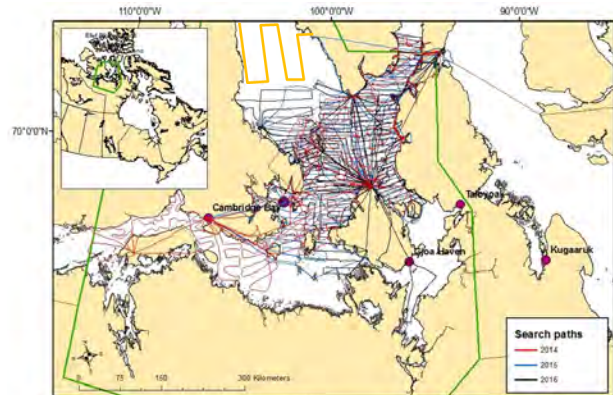


DEPARTMENT OF ENVIRONMENT:

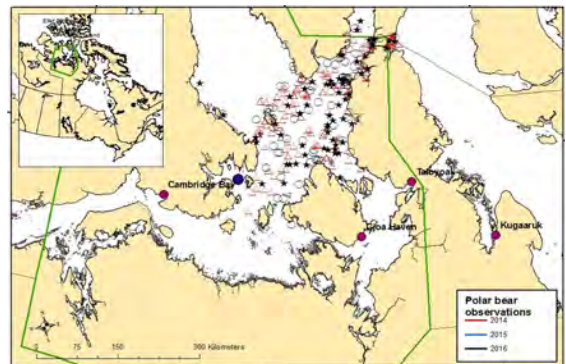
M'Clintock Channel (MC) polar bear study 2014 — 2016

Key Points:

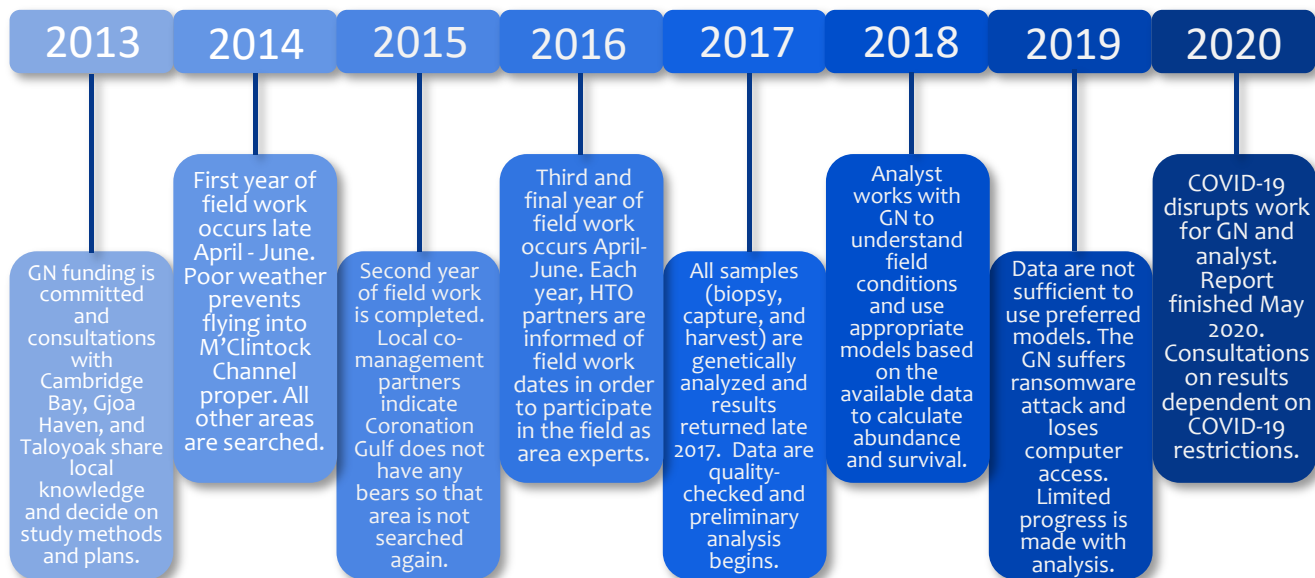
- There are an estimated **545-945 (average 716)** bears in MC **2014-2016**.
- There are **more bears now** than during the last study in 1998-2000 when abundance was 284.
- Calculating abundance, survival, and reproductive indicators was very challenging because there were **not enough data to use preferred models which means our estimates are less accurate**.
- **The population has recovered** after being overharvested between 1970s-1990s.
- Bears were in **better body condition** in 2014-2016 than 1998-2000.
- The abundance estimate consists of bears that spend most, or all, of their time in MC **and** bears that **move in or out temporarily** from other areas like Gulf of Boothia and Lancaster Sound. **Because of this mingling of bears, and not having movement information**, we cannot determine exactly how many bears from other areas are included in the estimate of 716 bears.
- HTOs selected the less-invasive biopsy mark-recapture method during consultations. **No bears were physically handled or collared for this study**.



Map showing MC and search flight lines 2014-2016. The golden line represents the plane reconnaissance flight during April 2016 to look for bear signs.



All locations in MC where a bear or group of bears was encountered from April to June 2014-2016 and sampled with a biopsy dart.



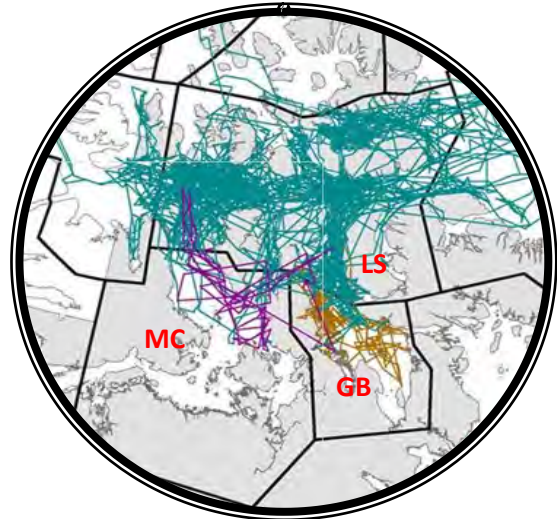
DEPARTMENT OF ENVIRONMENT:

M'Clintock Channel (MC) polar bear study 2014-2016

- The first scientific count of **1081** bears was determined from a study between **1973 and 1978** where MC and Gulf of Boothia (GB) were not considered separate areas for polar bears.
- The numbers of bears were **then increased to 900 each for MC and GB** because some areas were not sampled and experts thought bears might have been missed.
- In the mid 1990s, **local knowledge indicated that there were fewer bears** and so the abundance estimate was revised **downward to 700 for MC**.
- The next study, **1998-2000**, used mark-recapture methods, considered GB and MC separate areas, and estimated **abundance of 284 bears in MC**.
- There was **no hunting 2001-2004** and a **reduced harvest** of 3 bears per year followed until 2015.
- **Hunter and local knowledge** during the late 2000's indicated that **recovery** may be occurring and the **harvest increased to 12 bears per year in 2016**.
- DNA analysis suggests MC and GB bears are different from one another genetically. Inuit hunters say bears **use and live in GB/MC areas equally**. Harvest recoveries indicate bears **move out of MC into LS**. The amount of **movement in/out of MC relative to the total population is unknown**.
- Limited **movement data from the 1990s** shows bears **spend most of their time in either MC or GB**. There are **no recent movement data** to examine changes in distribution and habitat use over time.
- HTO members from **Cambridge Bay and Taloyoak participated** in field work.



Willy Nakashook, from Cambridge Bay, searches for bears in MC 2015.



Example of polar bear movement data collected 1990-2000 for the Lancaster Sound (LS), MC, and GB polar bear subpopulations. Different colour lines are for bears tagged in the different sub-population areas.



Biopsy sampling does not require touching a bear or putting it to sleep. Most bears ignore the darts—a male polar bear sits after being sampled. The dart (circled) has a small piece of skin and fat inside (see inset).



Adult male bears congregated by a lead near a carcass site.