



SUBMISSION TO THE

NUNAVUT WILDLIFE MANAGEMENT BOARD

FOR

Information:

Decision: X

Issue: Total Allowable Harvest Recommendations for the Gulf of Boothia Polar Bear Subpopulation

Background:

- The Gulf of Boothia (GB) polar bear subpopulation is entirely managed by Nunavut (Figure 1). The last inventory study to estimate abundance was conducted between 1998-2000, which resulted in an estimate of 1592 bears. The GB polar bear subpopulation was considered stable in 2000, or slightly increasing.
- Communities from Igloodik, Sanirajak, Naujaat, Taloyoak, Gjoa Haven, and Kugaaruk harvest from GB. The current Total Allowable Harvest (TAH) for GB is 74 bears per year. The average harvest between 2004/2005 and 2018/2019 was 63 bears per year (Figure 2). The lower actual harvest relative to the TAH is likely a result of proactive management by communities, whereby they stopped the harvest when the female allocation in the 2:1 male to female quota was reached to avoid female overharvest and subsequent quota reductions, and poor ice conditions that prevented travel to preferred GB hunting locations.
- The population data were out-of-date, and a new study was needed to assess the status of this subpopulation. Following community consultations during 2012 and 2013, a new 3-year study began in 2015. The method used for this study was the less-invasive genetic mark-recapture DNA-biopsy sampling. The new study was conducted between 2015 and 2017.
- The Government of Nunavut, Department of Environment (DOE) initially planned to have a community project to collect local traditional knowledge from GB community members and hunters. However, the COVID-19 pandemic prevented local in-person meetings for interviews during 2020. As a result, that study could only be conducted remotely and is ongoing as of January 2021.

Current Status:

- The final report and results for the 2015-2017 study was completed and distributed to all relevant co-management partners in Summer 2020. The new abundance estimate of 1525 bears is not scientifically different from the previous estimate of 1592 (1998-2000).
- The new results suggest that the subpopulation is stable and has good reproductive performance. Mean cub-of-the-year and yearling litter sizes for the period 2015-2017 were 1.61 (95% confidence interval [CI] = 1.51 – 1.70) and 1.53 (95% CI = 1.41 – 1.64), respectively, with no apparent trend compared to 1998-2000.
- Body condition of bears in spring increased between the periods 1998-2000 and 2015-2017, which is likely due to changing sea ice conditions (i.e., reduction in multi-year ice) in the study area. The changes from less multi-year ice to more annual ice may have provided bears with improved prey accessibility.
- Due to the lack of movement data (e.g., telemetry/spatial) it is difficult to quantify the amount of immigration and emigration that occurs between GB and neighbouring subpopulations. Although there are subpopulation boundaries, bears in adjacent subpopulations likely move back and forth across boundaries at different times of year. The abundance estimate represents the “superpopulation” (e.g., it includes all bears that were using the GB management area).
- The TAH of 74 has not been filled for this subpopulation over the past ten harvest seasons. The average harvest over the last five years has been 64 bears (Figure 2).

Consultations:

- In-person community consultations with relevant representatives from GB Hunters and Trappers Organizations (HTO) were held between 20-28 October 2020.
- There was consensus among HTO members regarding the findings of the GN report, although some HTO members inquired about how they could get more tags.
- There was a consistent concern among HTOs that tag allocation needed to be revisited to ensure fairness and equity among the communities that harvest from the GB subpopulation
- Staff from Nunavut Tunngavik Inc., Nunavut Wildlife Management Board, Kitikmeot Regional Wildlife Board (KRWB), and Qikiqtaaluk Wildlife Board (QWB) were also available to attend several meetings (see details in GB Consultation Summary Report by GN DOE).
- Representatives from the Kivalliq Wildlife Board (KWB) were unable to attend.

Recommendations:

1. DOE recommends **no change to the current TAH of 74 bears at a 1:1 male to female sex harvest ratio.**

Rationale:

- a. The recommended TAH considers the management objective to maintain a viable polar bear subpopulation. The results of the survey show that the population has remained stable with a TAH of 74 bears.
 - b. The recommendation also factors in the changes to the ecosystem, of which GB bears are an integral part. The ecosystem has undergone a drastic change due to climatic changes and the long-term effects, as conditions continue to change, are unknown.
 - c. Setting GB harvest levels too high increases the risk for biological decline or depletion, not only in GB but also for neighboring subpopulations due to the unknown emigration/immigration rates.
 - d. The TAH of 74 has not been filled for this subpopulation over the past ten harvest seasons. The average harvest over the last five years has been 64 bears.
2. DOE recommends that all involved Regional Wildlife Organizations discuss the GB tag allocations with the affected communities, including the ones harvesting from the M'Clintock Channel (MC) polar bear subpopulation.

Rationale:

- a. During consultation meetings (October 20-28, 2020) there were similar concerns expressed in each community that the current tag allocation for GB communities needed a revision and re-allocation.
- b. The TAH of 74 has not been filled for this subpopulation over the past ten harvest seasons. The average harvest over the last five years has been 64 bears.

Appendix 1

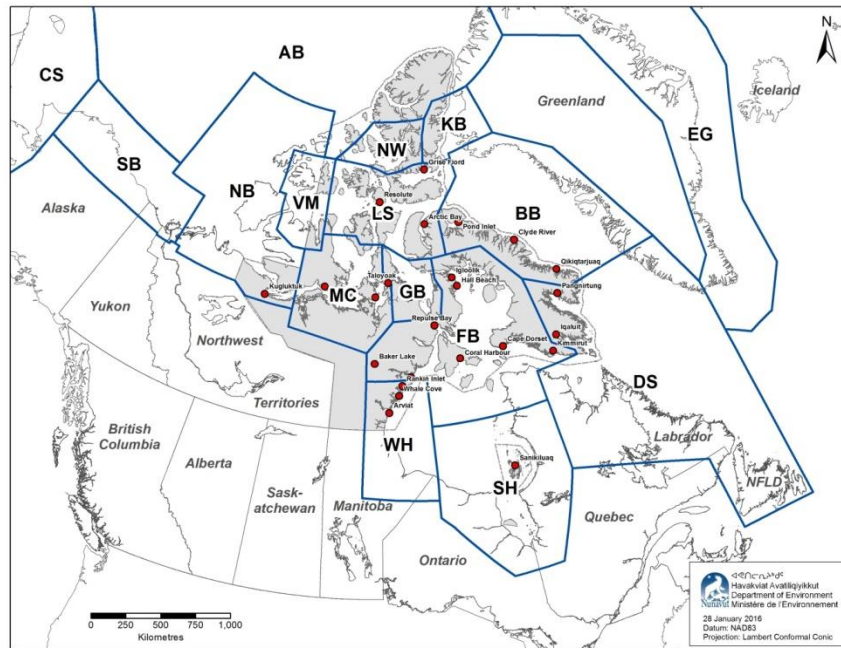


Figure 1. Overview of Nunavut polar bear subpopulations (GB = Gulf of Boothia, MC = M'Clintock Channel).

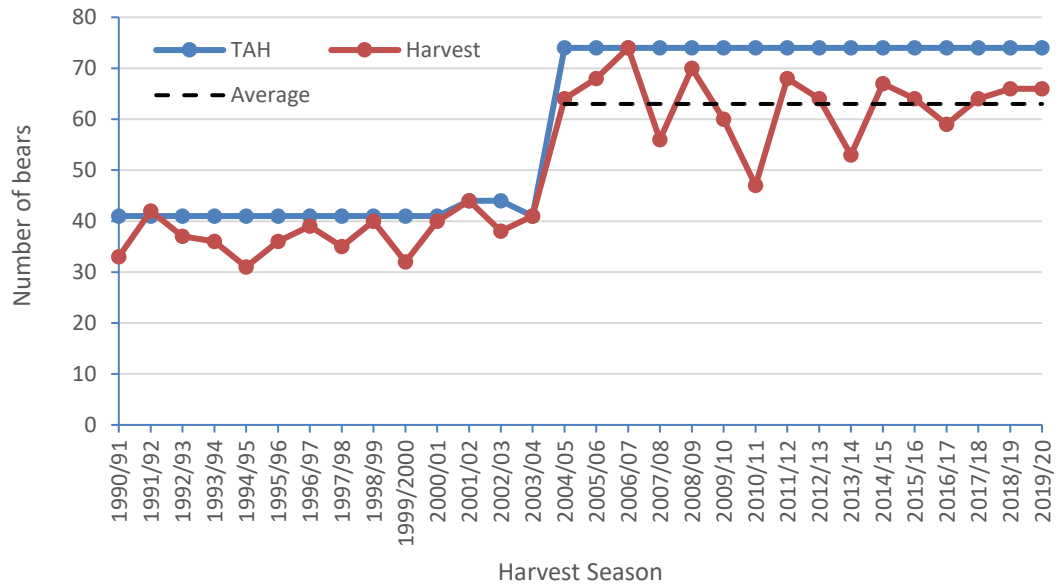


Figure 2. Overview of the Gulf of Boothia polar bear Total Allowable Harvest (TAH), actual and average harvest since 1990.