Re: Assumptions, Notes and Calculations for the Basic Needs Level for Communities other than Coral Harbour of the Southampton Island Caribou Herd

1. Nunavut Wildlife Harvest Study Statistics (NWHS)
    As per Article 5.6.23, the harvest study will be used to establish the Basic Needs Level. It is important that the harvest statistics that are reported in the harvest study are a fair and accurate representation of the harvest.

2. The NHWS GIS viewer, descriptive data available for each harvest record in the NHWS, such as place names, geographic coordinates, and National Topographic System codes were used and examined in order to determine which communities in addition to Coral Harbour harvested from the Southampton Island caribou herd during the period of the harvest study. The primary piece of information utilized was the place name of "White Island". Three additional communities were identified. They are Chesterfield Inlet, Rankin Inlet, and Repulse Bay.

3. It was assumed that the subsistence harvest statistics collected in the Nunavut Wildlife Harvest Study (1996-2001) for the communities of Chesterfield Inlet, Rankin Inlet and Repulse Bay for this caribou herd during the period of the study are accurate.

4. It was assumed that commercial harvest statistics were not included in the harvest statistics for these three additional communities and therefore the calculations do not reflect these statistics. These should be included in the final calculations as per the original submission.

5. Further, we were unable to locate any commercial harvest statistics for these three additional communities and thus these calculations only include the recorded harvest in the NWHS.

6. We were also unable to locate documented harvest for these three communities for the last five years prior to the imposition of the TAH. Therefore, the calculation under 5.6.23(b) was not completed. It may be possible to complete this calculation if the communities, GN or another source can provide the appropriate statistics.

7. Each harvest record for Southampton Island was then adjusted according to Section 4 of the NWHS to provide an estimate of the harvest.

The estimated monthly harvest by stratum is calculated as:

$$Ymcs = \frac{Nmcs * (Sum\ of\ ymcsi)}{nmcs}$$

Where:

Y_{mcs} = estimated harvest for month m, community c, and stratum s

N_{mcs} = number of hunters registered in month m, community c, and stratums s

n_{mcs} = number of hunters interviewed in month m, community c, and stratum s

y_{mcsi} = harvest reported by the reporting hunter i in month m, community c, and stratum s

Basic Needs Levels for Chesterfield Inlet, Rankin Inlet and Repulse Bay using 5.6.23(a)

1. BNL for Chesterfield Inlet (Article 5.6.23 (a))

   The BNL was calculated as 4 and is the sum of the greatest amount harvest in any one year during the study (5) and the Average annual amount harvested over the five years of the study (2) divided by two.

$$BNL = 4 = \frac{5+2}{2}$$

2. BNL for Rankin Inlet

   The BNL was calculated as 8 and is the sum of the greatest amount harvest in any one year during the study (13) and the Average annual amount harvested over the five years of the study (3) divided by two.

$$BNL = 8 = \frac{13+3}{2}$$

3. BNL for Repulse Bay

   The BNL was calculated as 26 and is the sum of the greatest amount harvest in any one year during the study (30) and the Average annual amount harvested over the five years of the study (21) divided by two.

$$BNL = 26 = \frac{30+21}{2}$$

Basic Needs Level Calculations for Southampton Island Caribou Herd as per Section 5.6.23 of the Nunavut Land Claims Agreement for the Communities of Chesterfield Inlet, Rankin Inlet and Repulse Bay

<u>**Chesterfield Inlet**</u>

1) **5.6.23 (a)**

   - ***BNL = 4*** as per NLCA 5.6.21 (a)

     - "Greatest amount harvested in any one year during the Study" = 5

     - "Average annual amount harvested over the five years of the Study" = 2

     - $BNL = \frac{5+2}{2}$

   - As per NLCA 5.6.21 (b), Chesterfield Inlet HTO did not nominate a specific year of the NWMB Harvest Study to be used in the calculation of the BNL (at least to our knowledge).

2) **5.6.23 (b)**

   - ***BNL = n/a*** as per NLCA 5.6.23 (b)

     - "Greatest amount harvested in any one year during the five years prior to imposition of a total allowable harvest" (2007-2011) = n/a

     - "Average annual amount taken over the five years of the Study" = 2

     - $BNL = \frac{x+2}{2}$

Rankin Inlet

   3) 5.6.23 (a)

- ***BNL = 8*** as per NLCA 5.6.21 (a)

  - "Greatest amount harvested in any one year during the Study" = 13

  - "Average annual amount harvested over the five years of the Study" = 3

  - $BNL = \frac{13+3}{2}$

- As per NLCA 5.6.21 (b), Rankin Inlet HTO did not nominate a specific year of the NWMB Harvest Study to be used in the calculation of the BNL (at least to our knowledge).

   4) 5.6.23 (b)

- ***BNL = n/a*** as per NLCA 5.6.23 (b)

  - "Greatest amount harvested in any one year during the five years prior to imposition of a total allowable harvest" (2007-2011) = n/a

  - "Average annual amount taken over the five years of the Study" = 3

  - $BNL = \frac{x+3}{2}$

Repulse Bay

5) 5.6.23 (a)

- **_BNL = 26_** as per NLCA 5.6.21 (a)

    - "Greatest amount harvested in any one year during the Study" = 30

    - "Average annual amount harvested over the five years of the Study" = 21

    - $BNL = \frac{30+21}{2}$

- As per NLCA 5.6.21 (b), Repulse Bay HTO did not nominate a specific year of the NWMB Harvest Study to be used in the calculation of the BNL (at least to our knowledge).

6) 5.6.23 (b)

- **_BNL = n/a_** as per NLCA 5.6.23 (b)

    - "Greatest amount harvested in any one year during the five years prior to imposition of a total allowable harvest" (2007-2011) = n/a

    - "Average annual amount taken over the five years of the Study" = 21

    - $BNL = \frac{x+21}{2}$

Table 1- Subsistence harvest statistics for the Southampton Island caribou herd for the community of Chesterfield Inlet recorded during the five year (1997-2001) Nunavut Wildlife Harvest Study. Commercial harvest records for the same period were not available.

NWMB Harvest Study Year	Community	Species	Subsistence harvest (NWMB)	Commercial harvest	Total harvest
Year 1 - 1996	Chesterfield Inlet	Caribou	0	n/a	0
Year 2 - 1997	Chesterfield Inlet	Caribou	0	n/a	0
Year 3 - 1998	Chesterfield Inlet	Caribou	5^1	n/a	5
Year 4 - 1999	Chesterfield Inlet	Caribou	2	n/a	2
Year 5 - 2000	Chesterfield Inlet	Caribou	2	n/a	2
		5 yr Average			**2**
		Greatest 1 year	**(Year - 1998)**		**5**

Table 2- Subsistence harvest statistics for the Southampton Island caribou herd for the community of Rankin Inlet recorded during the five year (1997-2001) Nunavut Wildlife Harvest Study. Commercial harvest records for the same period were not available.

NWMB Harvest Study Year	Community	Species	Subsistence harvest (NWMB)	Commercial harvest (DoE)	Total harvest
Year 1 - 1996	Rankin Inlet	Caribou	0	n/a	0
Year 2 - 1997	Rankin Inlet	Caribou	0	n/a	0
Year 3 - 1998	Rankin Inlet	Caribou	0	n/a	0
Year 4 - 1999	Rankin Inlet	Caribou	0	n/a	0
Year 5 - 2000	Rankin Inlet	Caribou	13	n/a	13
		5 yr Average			**3**
		Greatest 1 year	**(Year - 2000)**		**13**

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[1] Subsistence harvest was calculated based on recorded harvest in the Nunavut Wildlife Harvest Study (NWHS). In all cases, these were identified by the place name of "White Island". These values were then adjusted according to the formula provided in section 4 of the NWHS. Specifically, the estimated monthly harvest by stratum was calculated by multiplying the reported harvest by the inverse of the response rate. A description is provided in Section 4 of the NWHS.

Table 3- Subsistence harvest statistics for the Southampton Island caribou herd for the community of Repulse Bay recorded during the five year (1997-2001) Nunavut Wildlife Harvest Study. Commercial harvest records for the same period were not available.

NWMB Harvest Study Year	Community	Species	Subsistence harvest (NWMB)	Commercial harvest (DoE)	Total harvest
Year 1 - 1996	Repulse Bay	Caribou	21	n/a	21
Year 2 - 1997	Repulse Bay	Caribou	17	n/a	17
Year 3 - 1998	Repulse Bay	Caribou	30	n/a	30
Year 4 - 1999	Repulse Bay	Caribou	17	n/a	17
Year 5 - 2000	Repulse Bay	Caribou	18	n/a	18
		5 yr Average			**21**
		Greatest 1 year	**(Year - 1998)**		**30**