

# **Caribou Forever – Our Heritage, Our Responsibility**



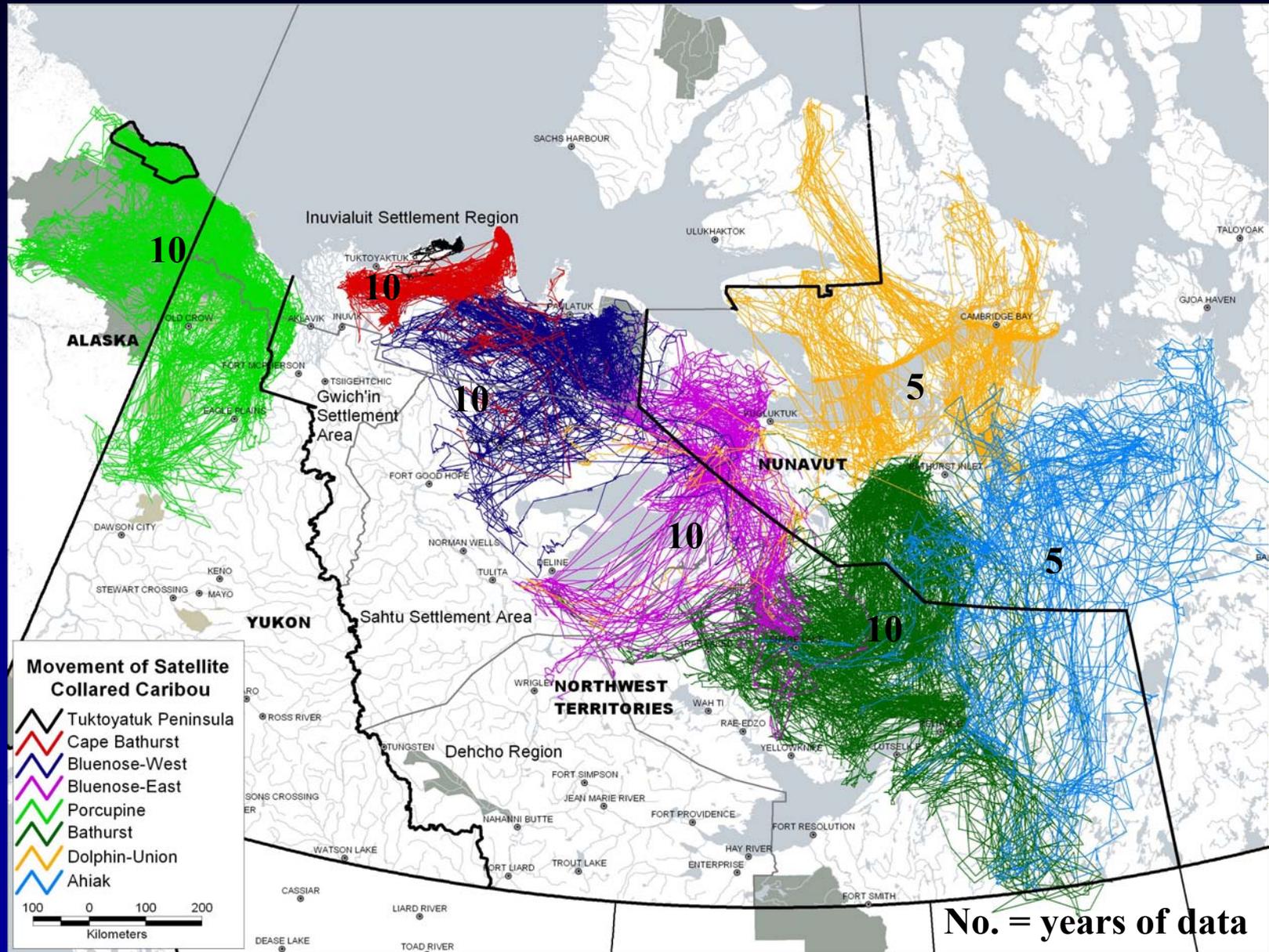
**Presentation to Sahtu Renewable Resources  
Board – Public Hearing  
November 2007  
Environment and Natural Resources**

# Introduction



- How do we define a caribou herd?
- Why are herds the basis for management?
- What information is collected on a herd?
- Variation in herd size – cycles
- What factors affect herd size?
- What do we know about harvest of Bluenose-West caribou?
- What did we hear from communities, co-management boards, and RRCs/HTCs about Bluenose-West and other barren-ground caribou?

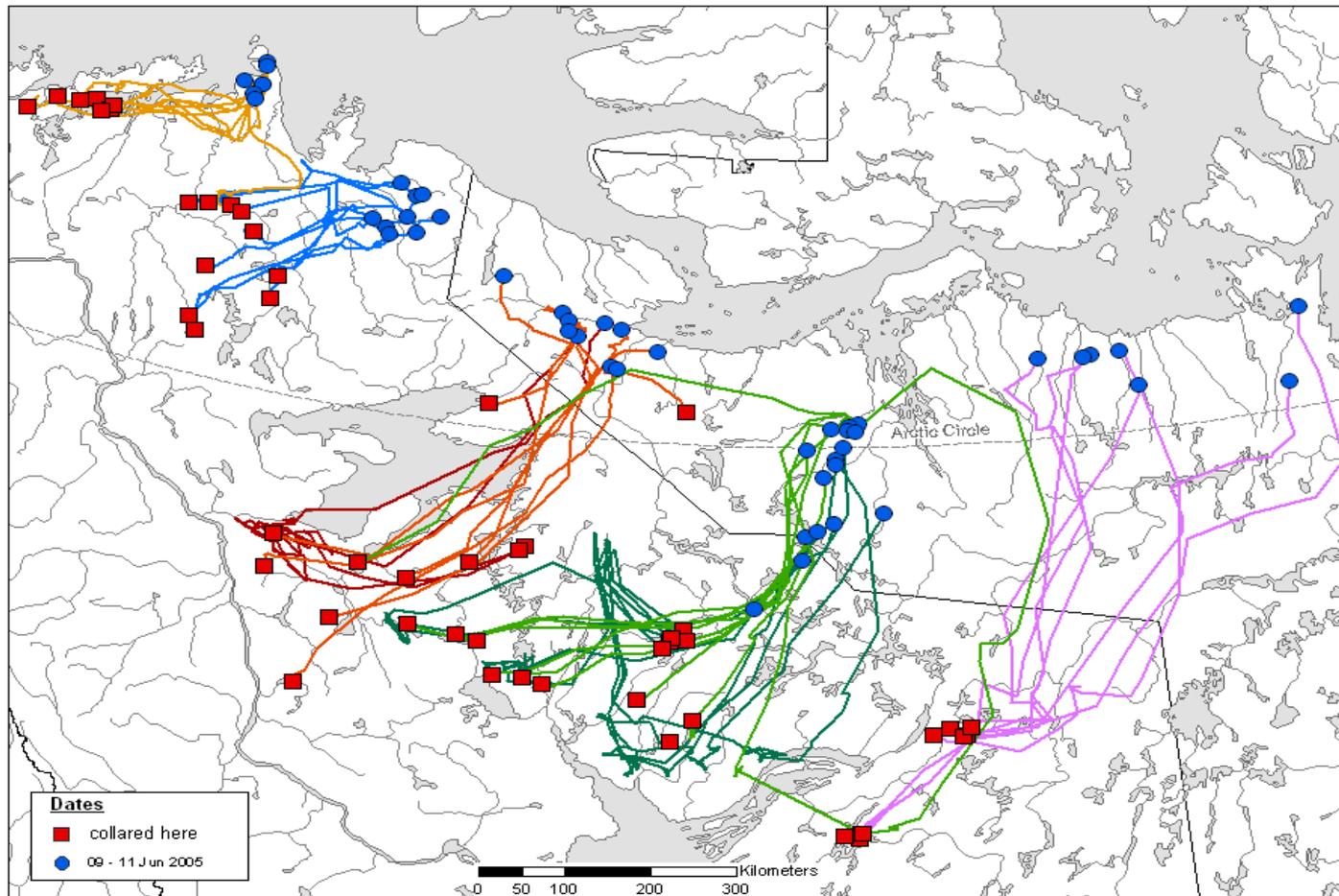
# How are herds defined?



# Calving Areas

- less than 2% interchange in NWT

Movements of barren-ground caribou cows from when collared to calving season 2005.  
Lines of darker tones of a color are from Oct 2004 collars, others are from Mar 2005 collars.



# Why Manage by Herds?

- Each herd range has different conditions
- Each herd used by different communities
- Each herd needs to be monitored separately

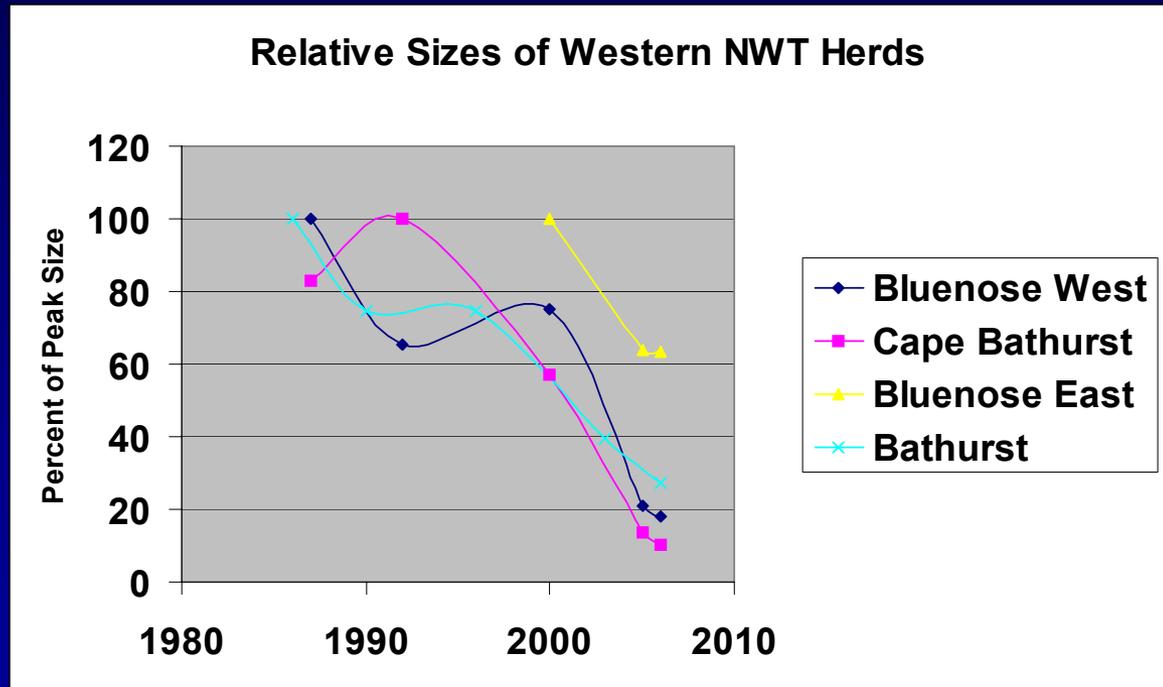


# Monitoring Herd Status

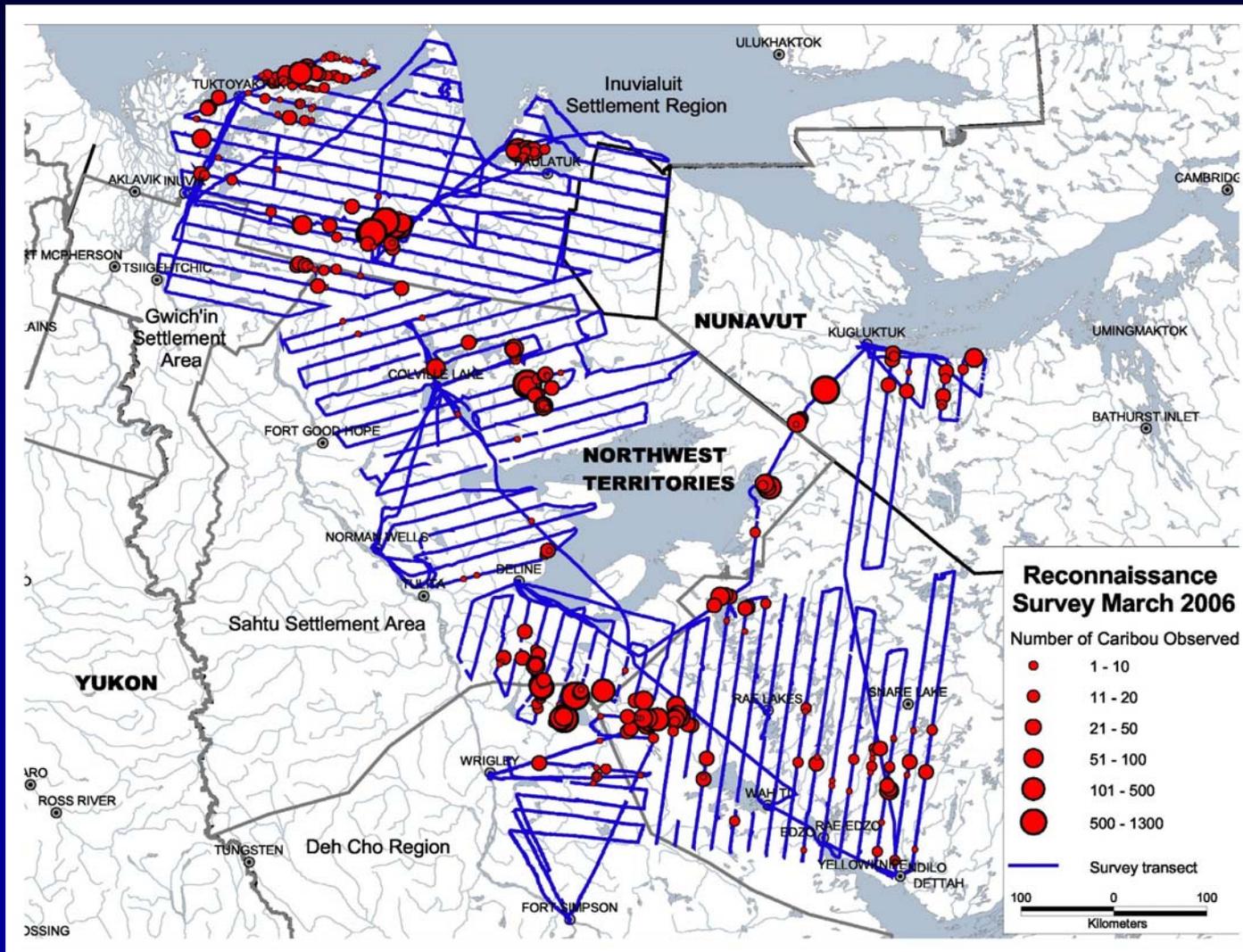
**Trend** based on several surveys + other information

Other information =

- traditional knowledge
- adult & calf survival
- pregnancy rates and calf production
- body condition
- adult sex ratio
- winter distribution

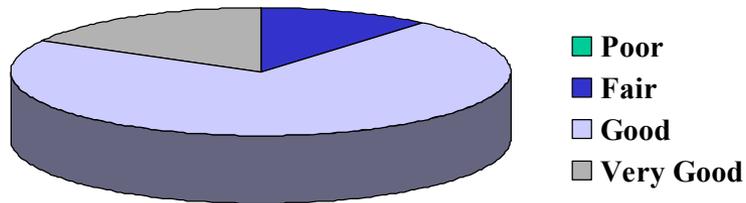


# Winter Distribution Flights

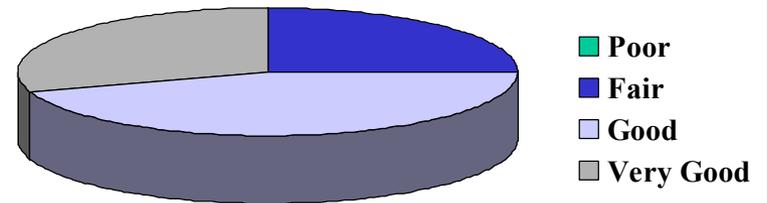


# Body Condition Monitoring

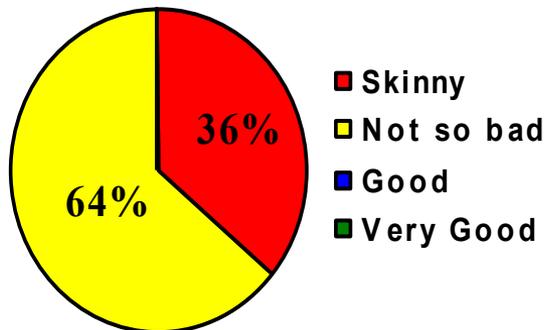
BNE 2004



BNE 2005



BNE 2006



# Census



**Jan-01**



**Barren-Ground Caribou Herds**

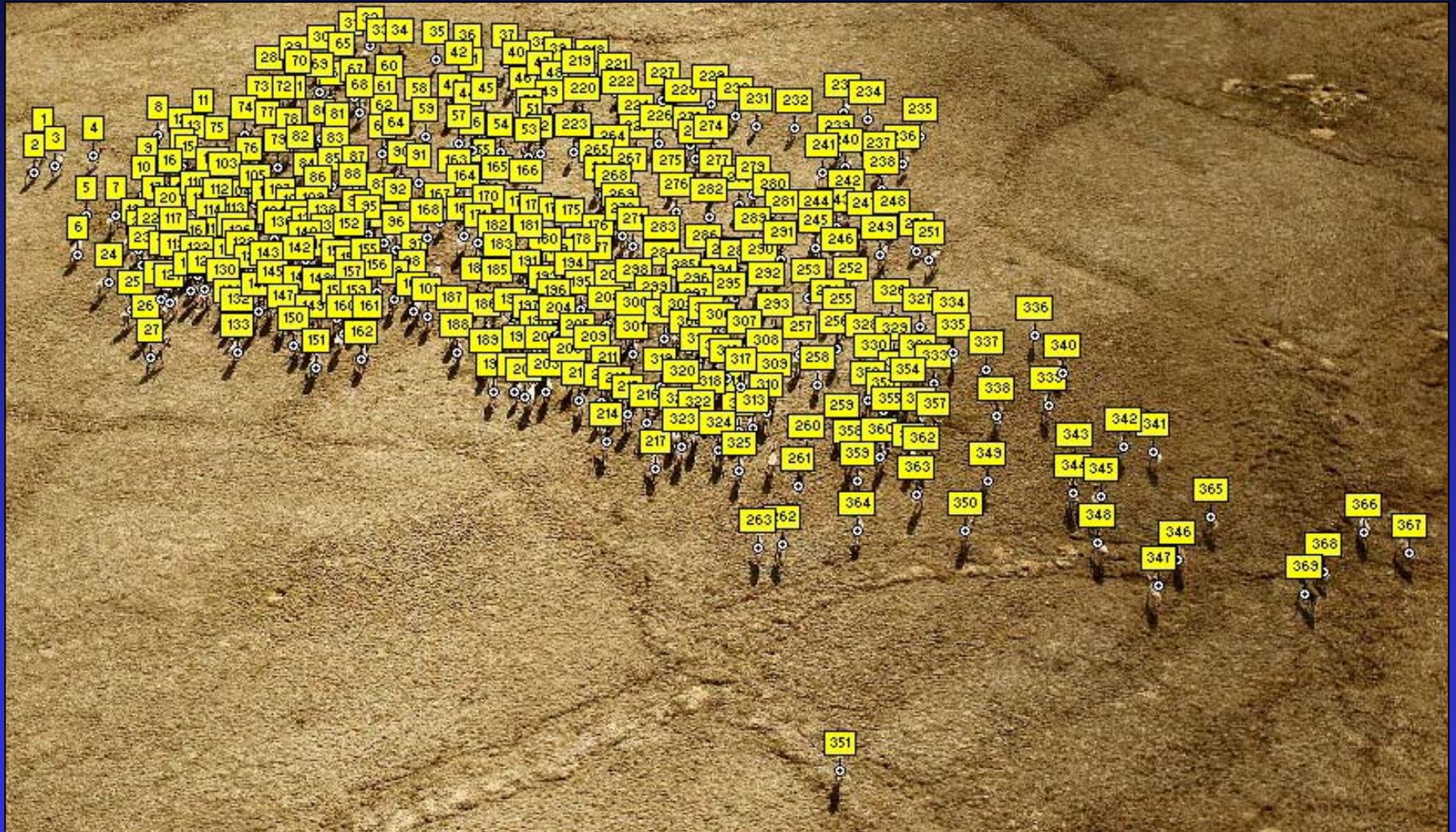
- |                |               |               |
|----------------|---------------|---------------|
| Central Arctic | Bluenose-West | Dolphin-Union |
| Porcupine      | Bluenose-East | National Park |
| Cape Bathurst  | Bathurst      |               |
- Scale 1:10,500,000



# A computer is used to count caribou on photos



# Until all the caribou are counted



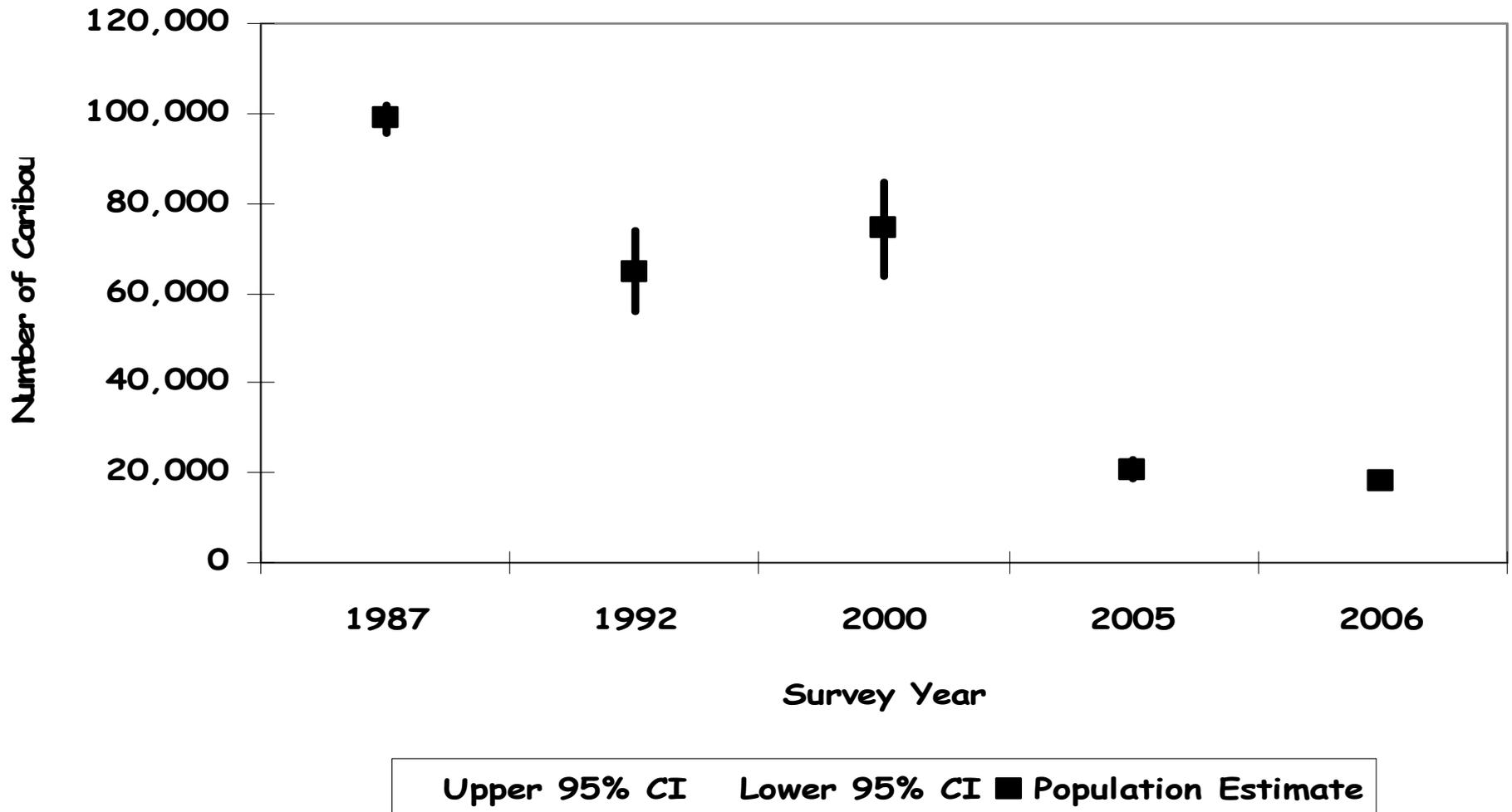


2056 non-calf; 857 calf = 2913

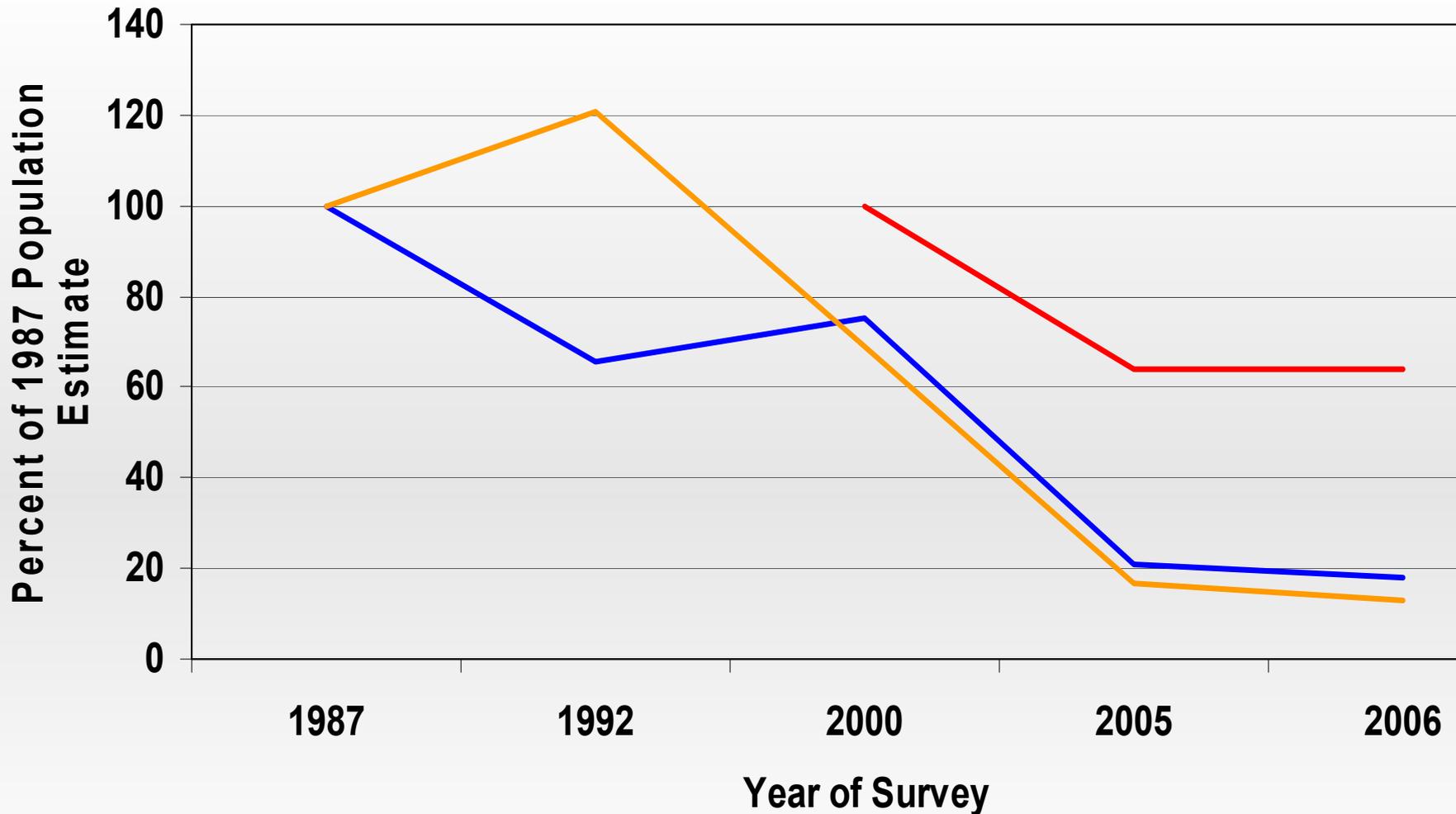
# Photocensus Results



# Population Trend for the Bluenose-West Herd (Non-Calf): 1987-2006



# Population Trends: 1987-2006



— Bluenose-West — Cape Bathurst — Bluenose-East

# Long Term Caribou Cycles

How do we know?

- Traditional Knowledge
- Herd counts over last 35 years across NWT show a similar pattern - low numbers in the late 1970s, increases through 1980s and 1990s, followed by decline



# Long Term Caribou Cycles

- Biologists in Alaska have found similar regular cycles in numbers of caribou in at least 5 herds



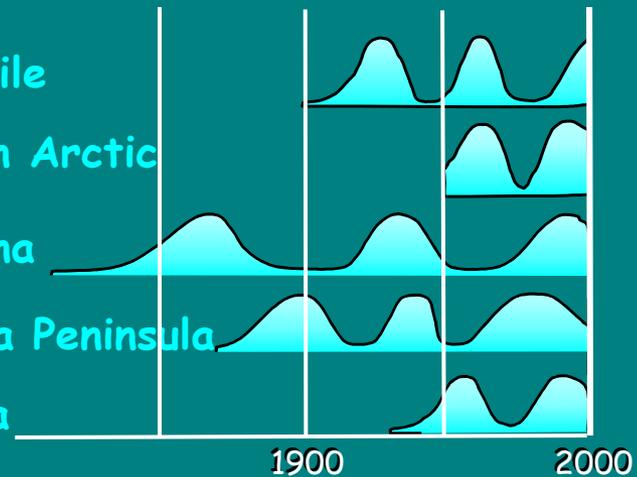
Forty mile

Western Arctic

Mulchatna

N. Alaska Peninsula

Nelchina



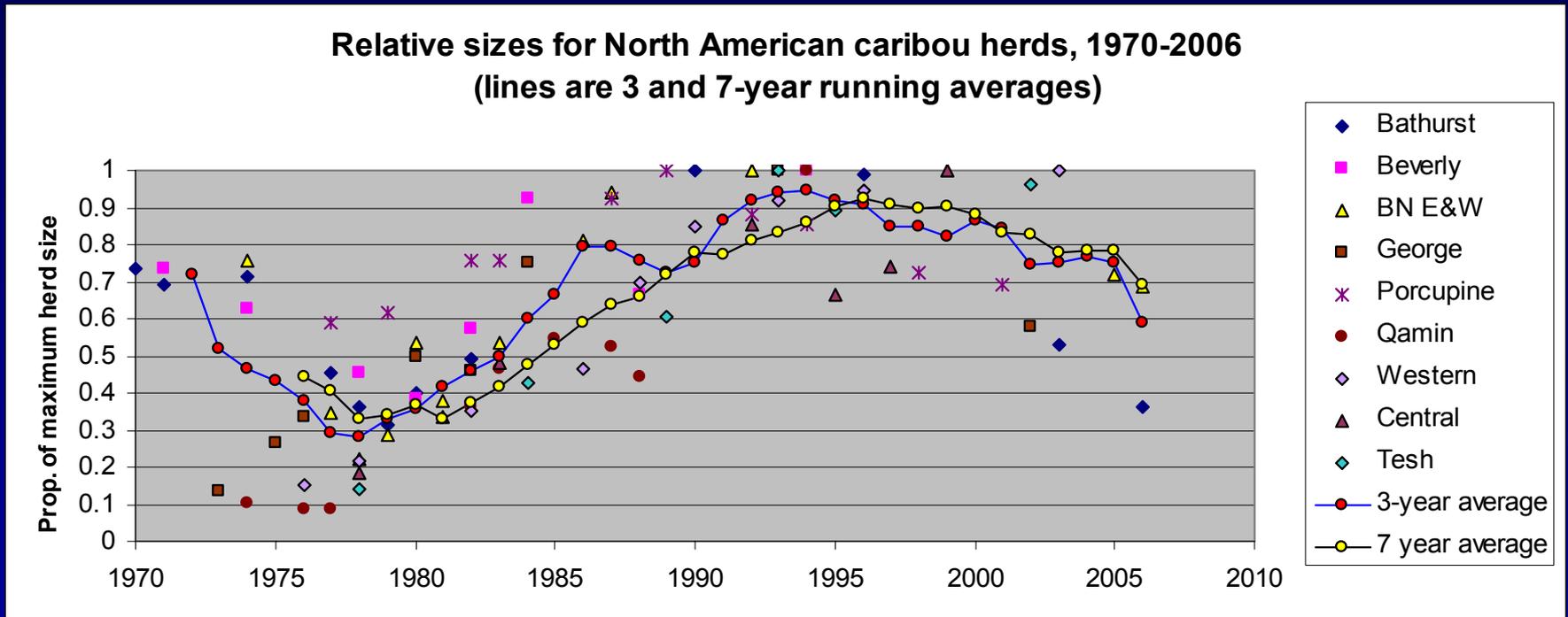
Alaskan caribou herds (smoothed curves)

Data from Pat Valkenburg pers. comm. 2001

# Long Term Caribou Cycles

How do we know?

- Herd size estimates over past 35 years



# What factors affect herd size?

## Indirect Impacts & Cumulative Effects



- Mines & mineral exploration
- Oil and gas
- Winter roads

# What factors affect herd size?

## Direct Impacts

- Predation
- Harvesting
- Disease



# Caribou Harvest in the Sahtu



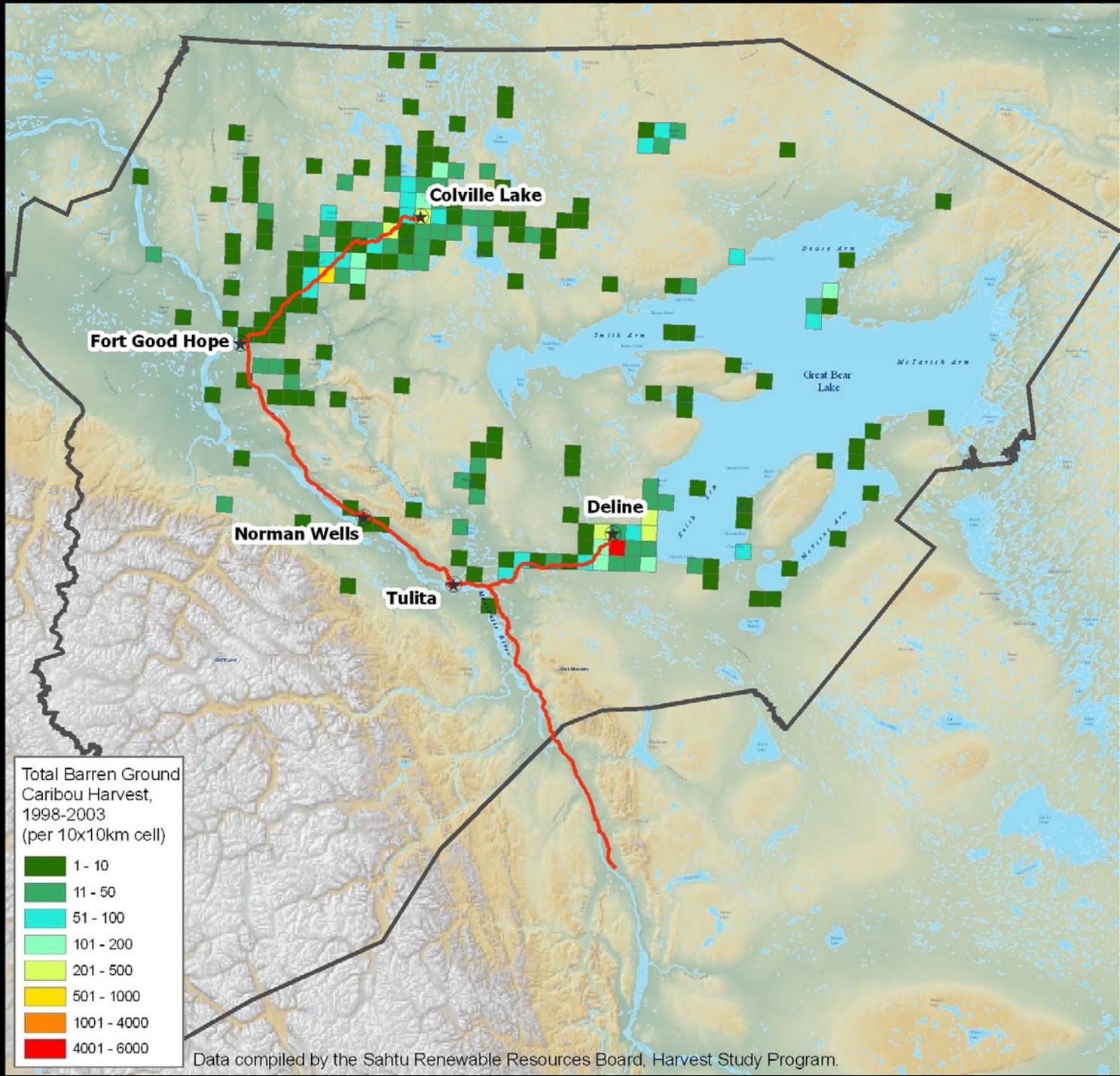
# Harvest of Barren-ground Caribou By Sahtu Dene & Metis – Sahtu Settlement Harvest Study

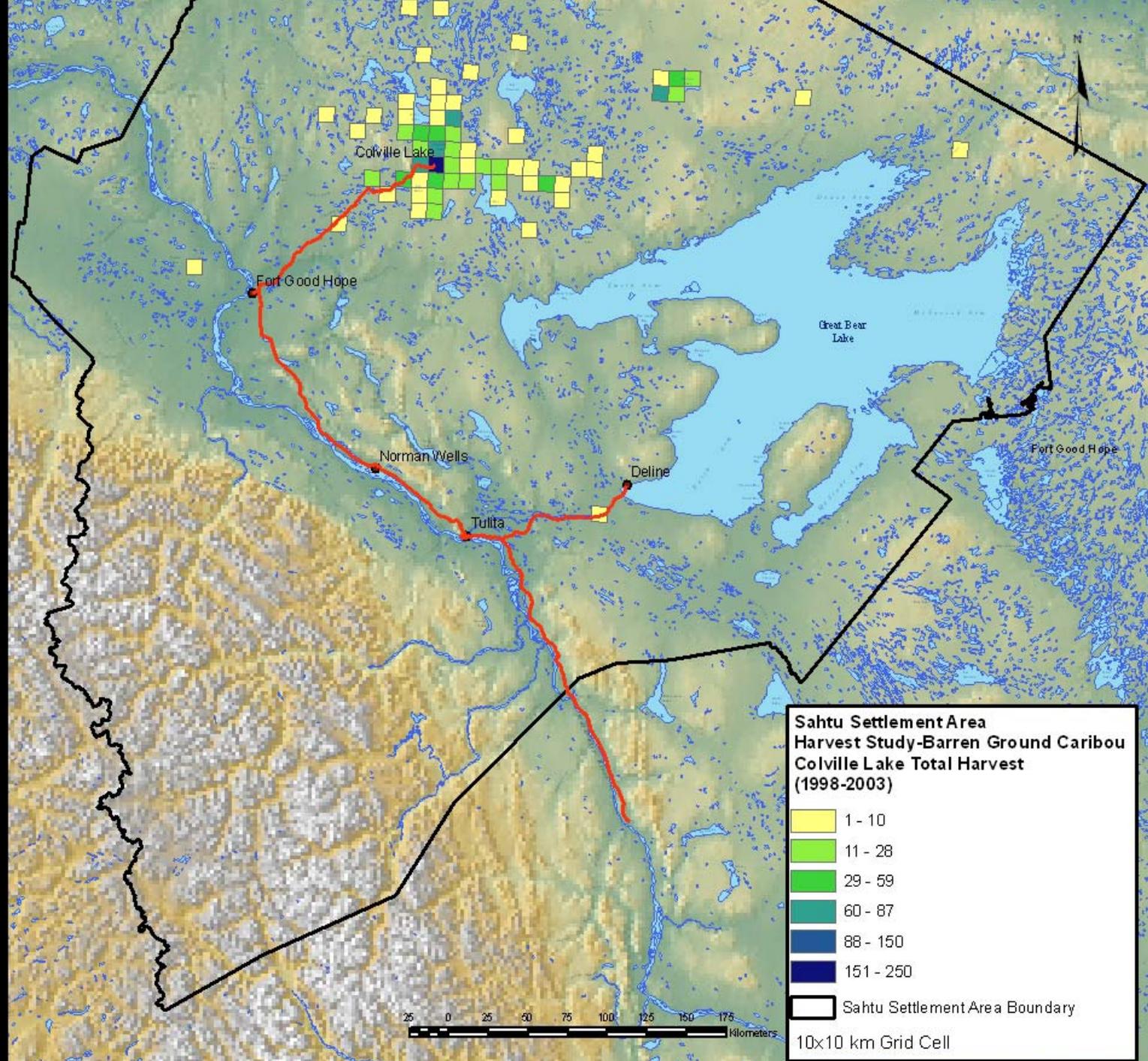
<u>Year</u>	<u>Harvest</u>	<u>% Bluenose-East</u>
1999	3098	68.7
2000	2793	66.3
2001	2561	77.7
2002	1895	81.8
2004	1999 *	66.3
2005	1418 *	77.7

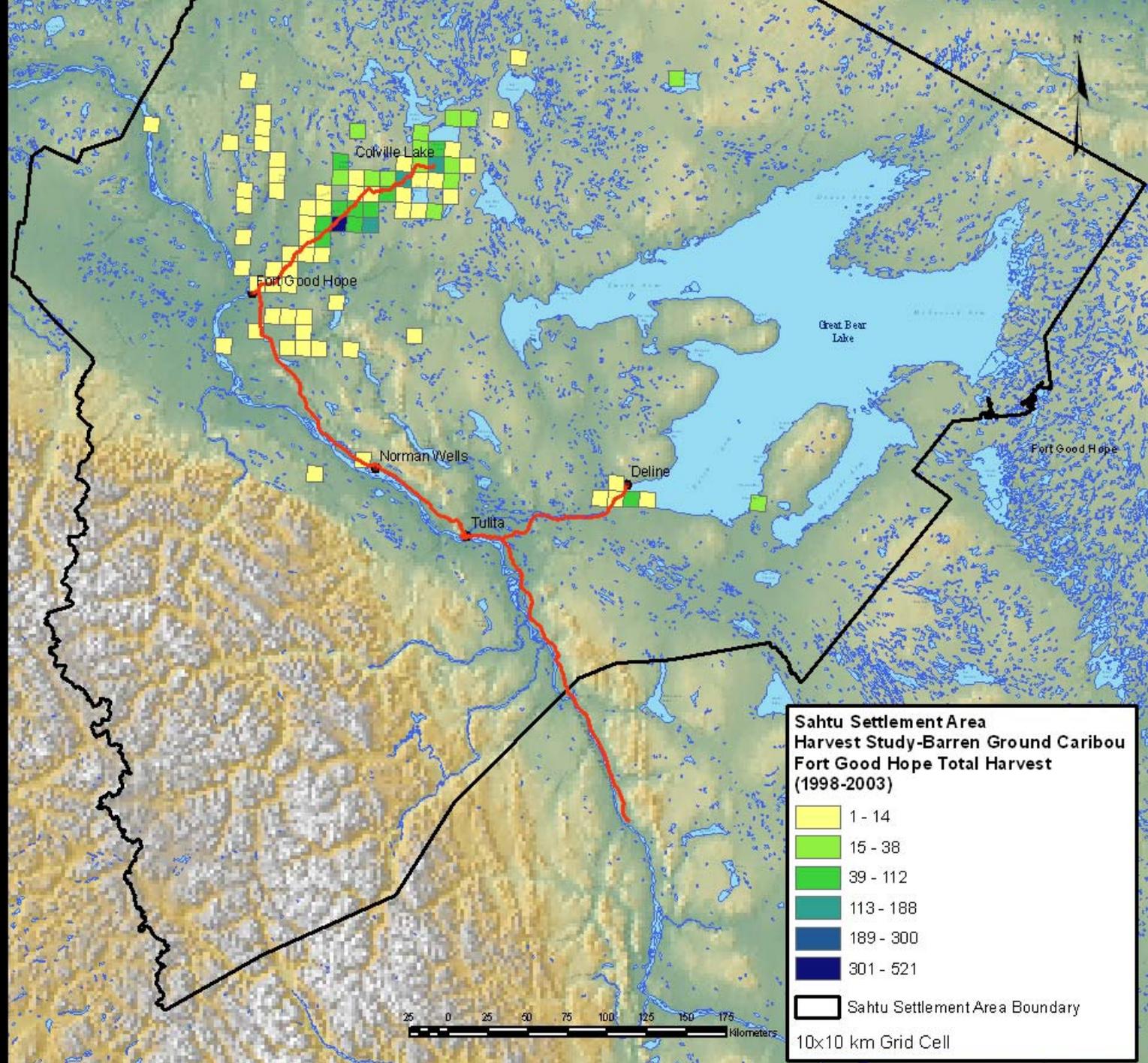
Estimated numbers from quarterly interviews and not all harvesters interviewed

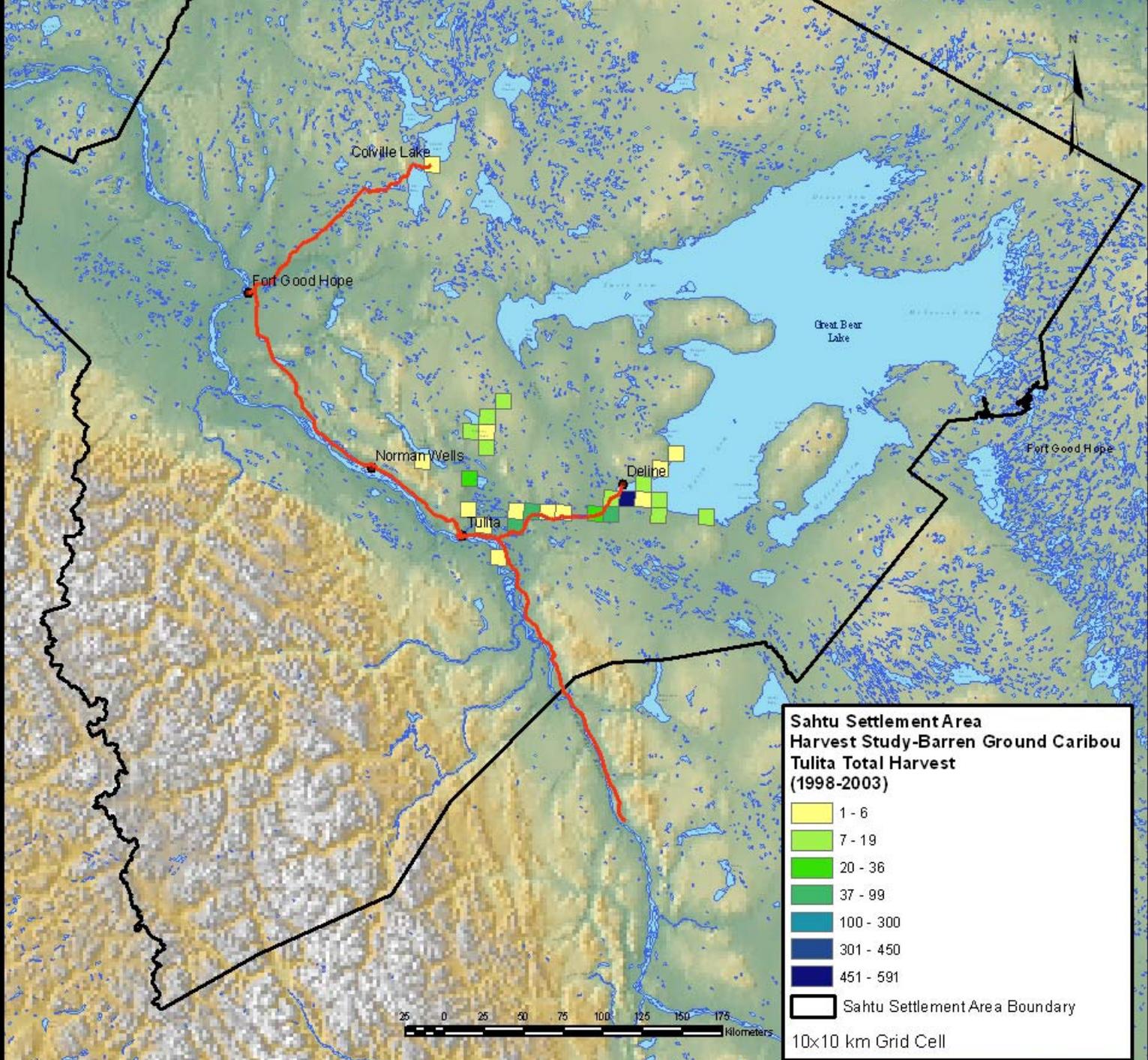
**Average – 72.7% Bluenose-East**

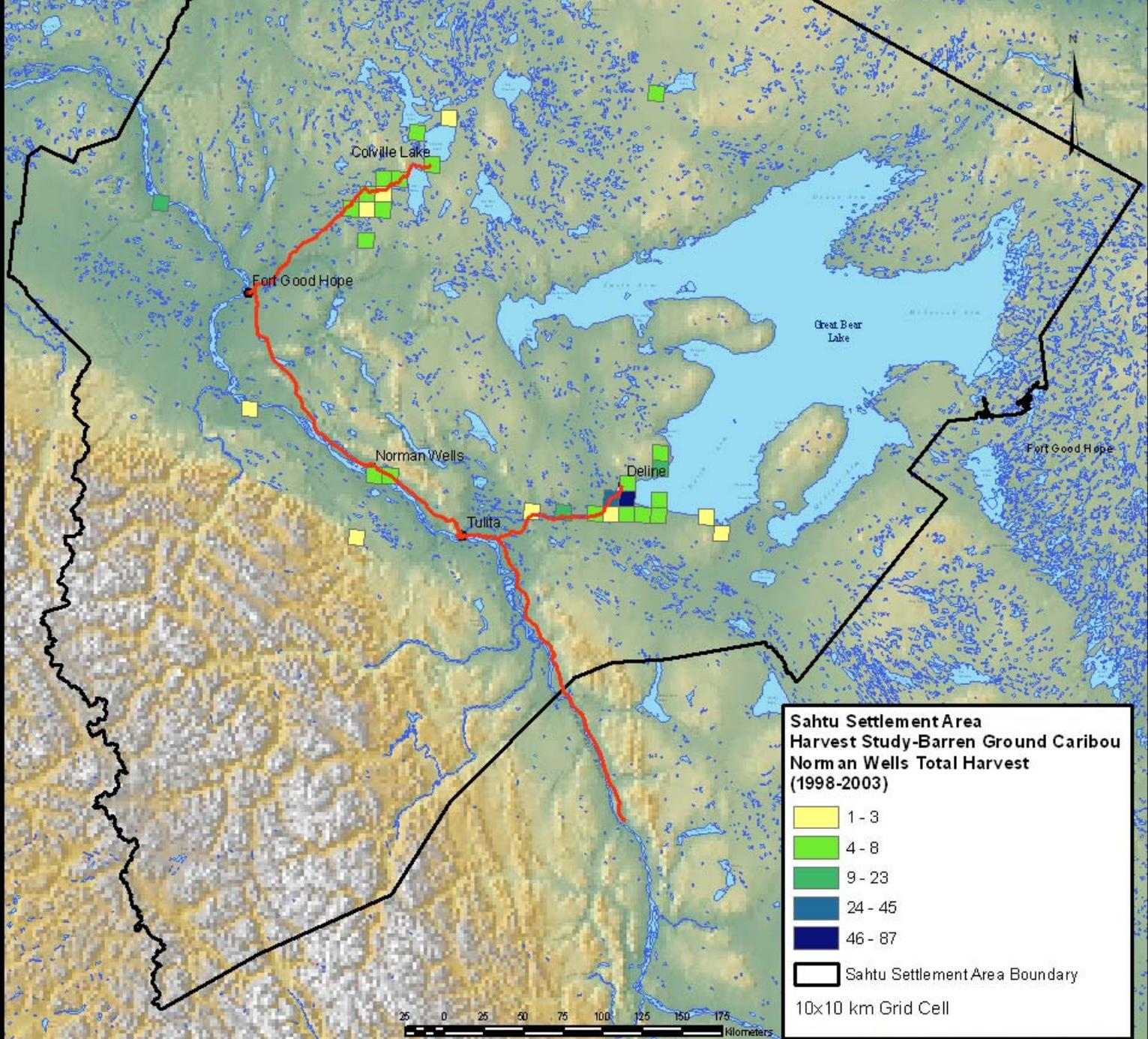


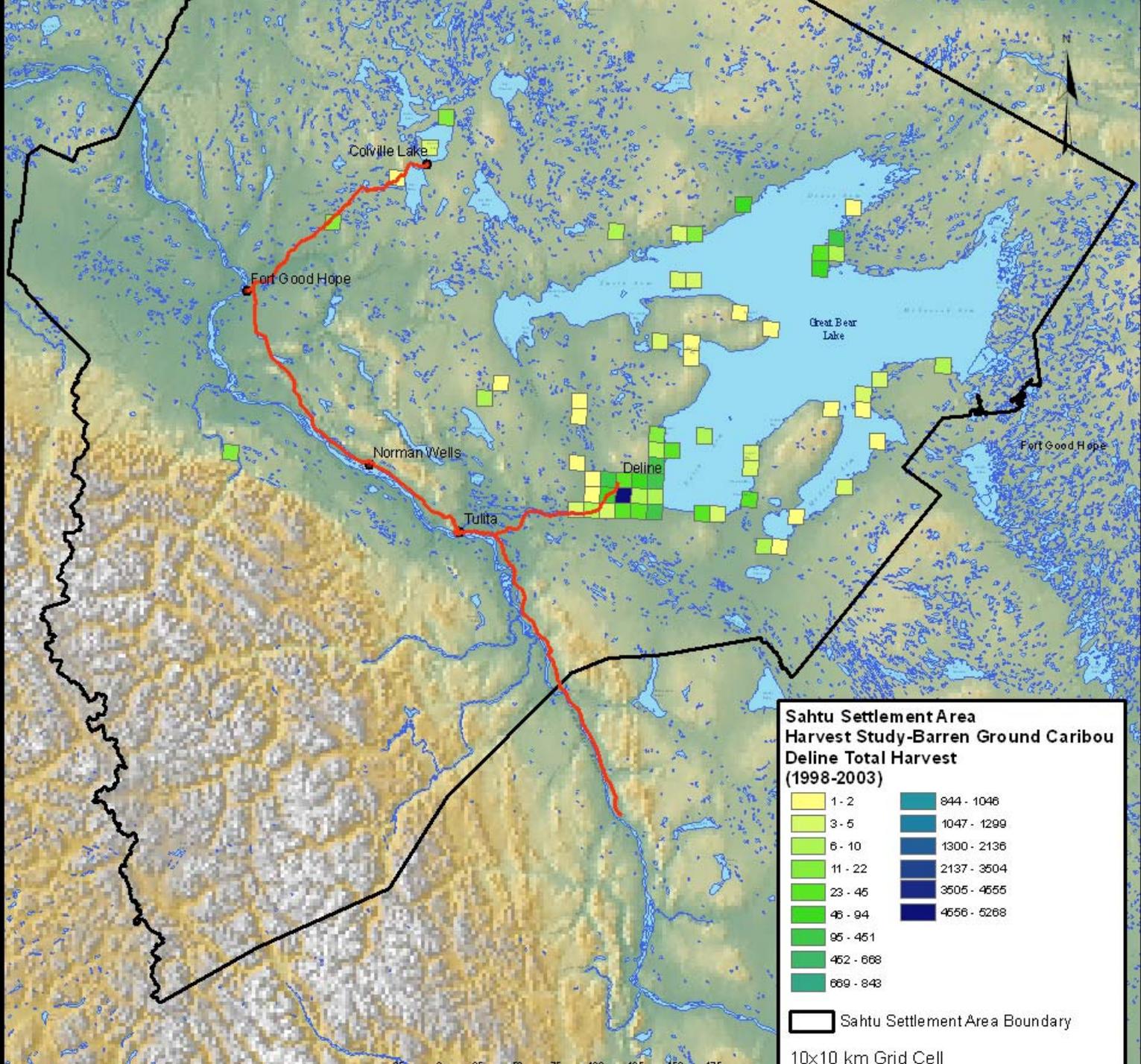












# Barren-ground Caribou Harvest – Deline: 1946-2005

Year	Harvest	Year	Harvest
1946-47	254	1984-85	214
1951-52	218	1985-86	649
1952-53	99	1986-87	317
1953-54	802	1988-89	268
1954-55	1237	1989-90	445
1956-57	46	1990-91	389
1957-58	341	1991-92	256
1958-59	22	1992-93	68
1960-61	9	1993-94	170
1961-62	34	1994-95	253
1962-63	41	1999	1772
1976-77	407	2000	1470
1977-78	890	2001	1602
1981-82	223	2002	1377
1982-83	589	2003	947
1983-84	905	2004	1006
		2005	645

# Subsistence Harvest of Barren-ground Caribou: Bluenose-West/Sahtu

		Colville Lk	FGH	N Wells	Total
1999		355	641	26	1022
2000		245	727	31	1003
2001		120	505	53	678
2002		169	185	9	363
2004		237	153	18	408
2005		98	107	65	270
<b>Total</b>		<b>1553</b>	<b>2667</b>	<b>219</b>	<b>4,439</b>
<b>Average</b>	<b>All Years</b>	<b>222</b>	<b>381</b>	<b>31</b>	<b>634</b>
<b>Average</b>	<b>2004 &amp; 05</b>	<b>168</b>	<b>130</b>	<b>42</b>	<b>339</b>

## Sex of animals harvested: All Sahtu



Year	% Cows
1998*	42.3
1999	47.2
2000	54.0
2001	64.8
2002	67.9
2003	71.4
2004	66.6
2005	65.4
Avg	60.0

\* only Apr-Dec;  
does not include Deline



# Sex of animals harvested: Bluenose-West



Year	% Cows
1998*	40.0
1999	46.7
2000	49.5
2001	40.7
2002	43.2
2003	37.6
2004	38.7
2005	47.2
Avg	42.0

\* only Apr-Dec





# Estimated Harvest of Bluenose-West Herd 2002-2003 (includes Sahtu data)

<u>Type</u>	<u>Harvest</u>	<u>% of Total</u>
Subsistence	1735	90.7
Resident	58	3.0
Commercial	52	2.7
Non-resident	69	3.6
Total	1914	(does not include wounding loss)

**2.6% of estimated herd size (non-calf) in 2000**



# Estimated Harvest of Bluenose-West Herd 2002-2003 (includes Sahtu data)

<u>Type</u>	<u>Harvest</u>	<u>% of Total</u>
Subsistence	1735	90.7
Resident	58	3.0
Commercial	52	2.7
Non-resident	69	3.6
Total	1914	(does not include wounding loss)

**9.2%** of estimated herd size (non-calf) in **2005**



# Estimated Annual Harvest of the Bluenose-West Caribou Herd

2005-present

<u>Type</u>	<u>Harvest</u>
Subsistence - Sahtu	300-400
Subsistence - Inuvialuit	500-700
Subsistence - Gwich'in	100
<b>Total</b>	<b>900-1200</b>

**5.0 - 6.7%** of estimated herd size (non-calf) in **2006**



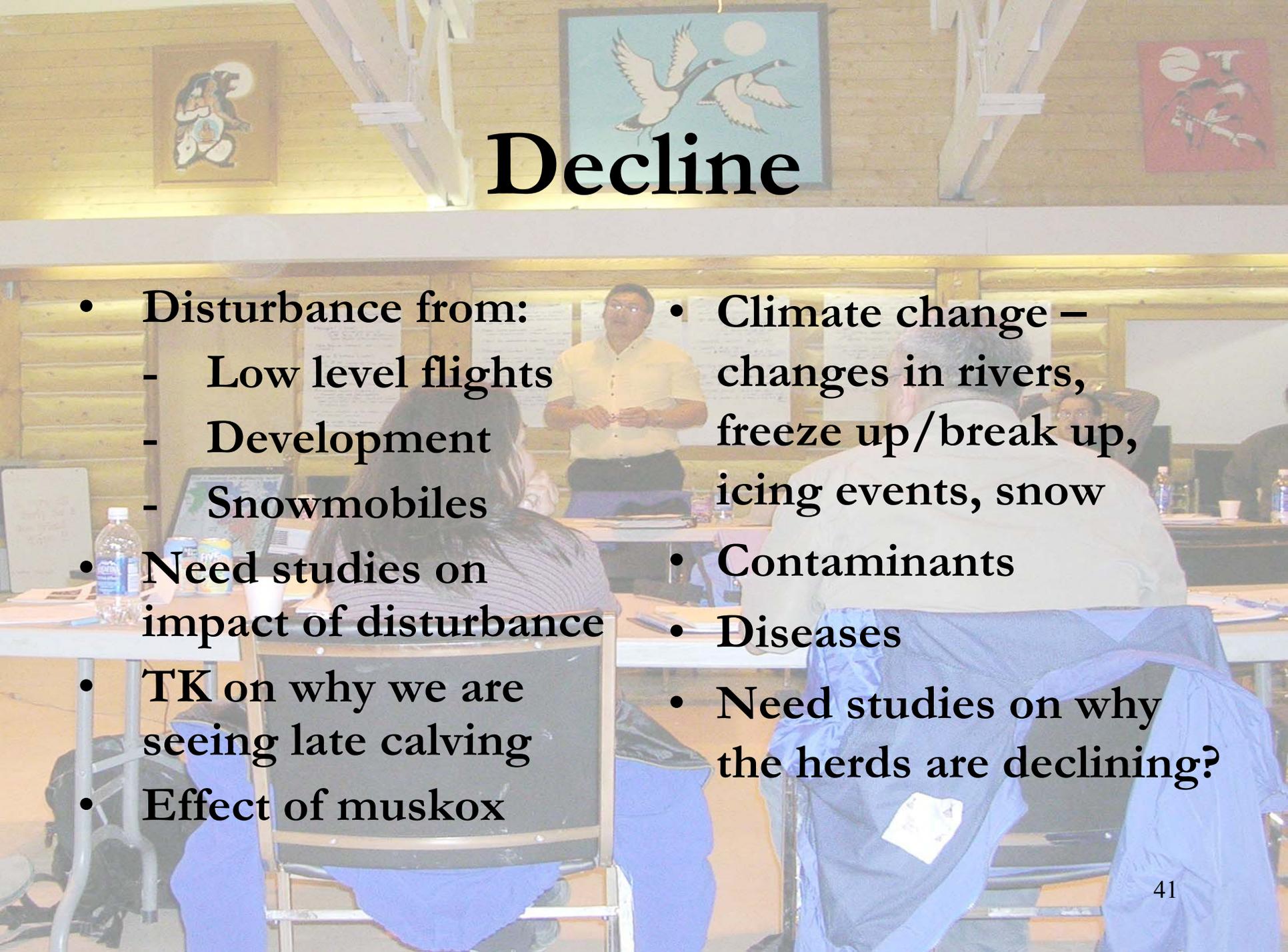
# Co-management Board, RRC/HTC, Schools and Community Consultation

# What We Heard

- **Comments on Census Design**
- **Comments on the Decline**
- **Comments on Harvest**
- **Recommended Management actions**

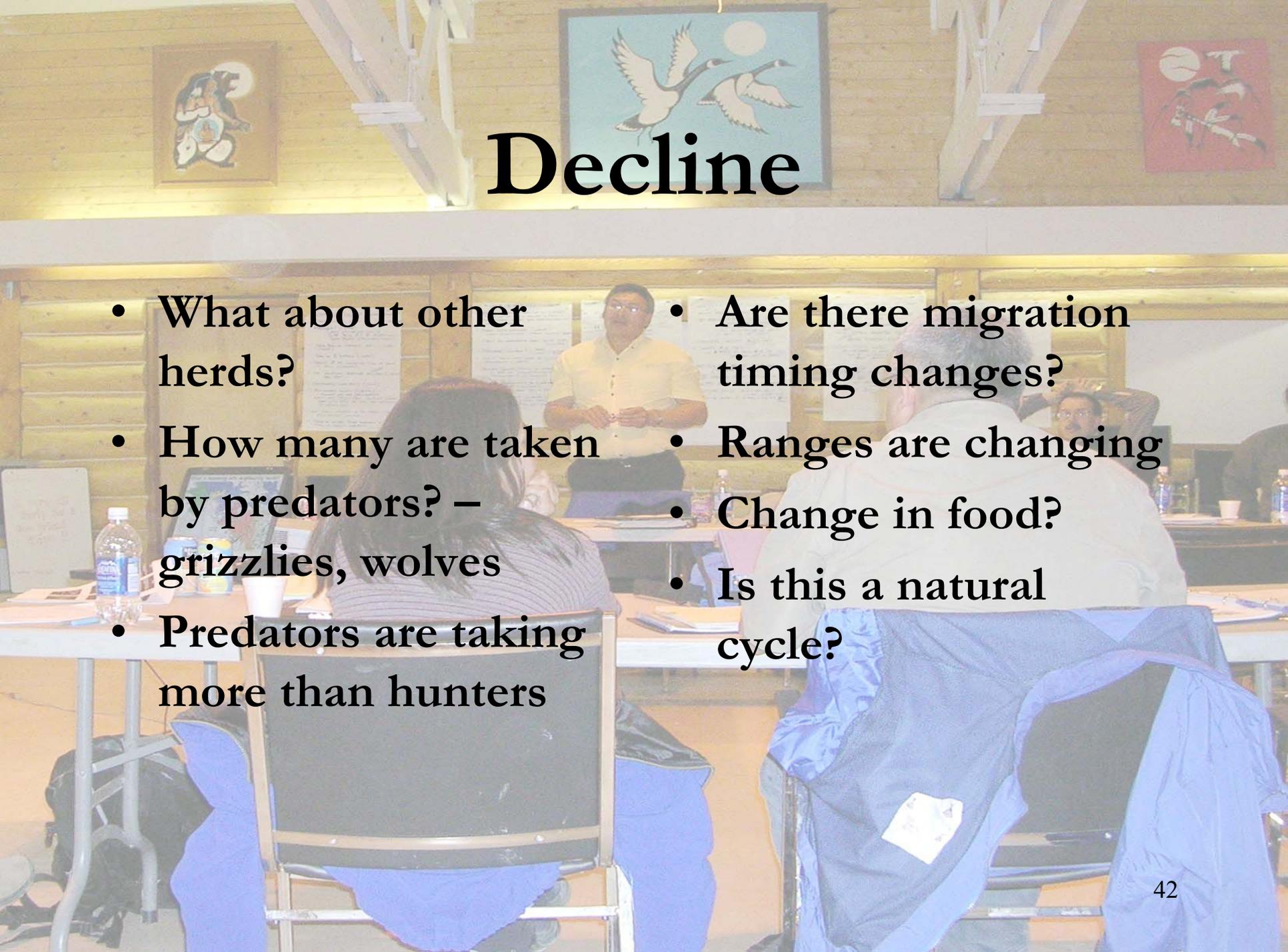
# Census Design

- Missed Groups
- Numbers inaccurate
  - still seeing lots of caribou
- Survey should be done in the fall and use ground-based methods
- Need to include TK
- Hire local assistants
- Don't use as many collars
- Why change census methods over time?



# Decline

- **Disturbance from:**
  - **Low level flights**
  - **Development**
  - **Snowmobiles**
- **Need studies on impact of disturbance**
- **TK on why we are seeing late calving**
- **Effect of muskox**
- **Climate change – changes in rivers, freeze up/break up, icing events, snow**
- **Contaminants**
- **Diseases**
- **Need studies on why the herds are declining?**



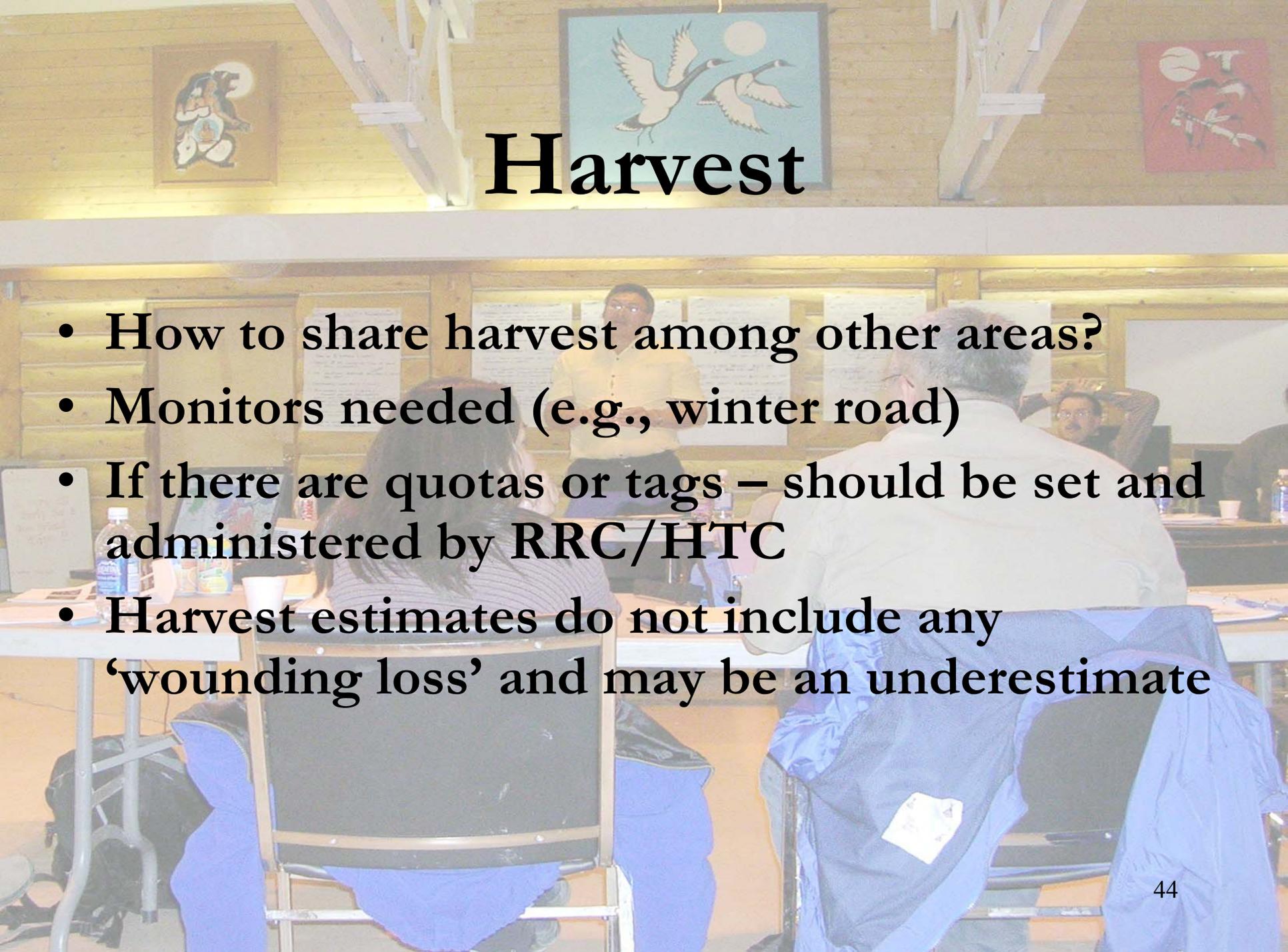
# Decline

- What about other herds?
- How many are taken by predators? – grizzlies, wolves
- Predators are taking more than hunters
- Are there migration timing changes?
- Ranges are changing
- Change in food?
- Is this a natural cycle?



# Harvest

- Rely more on other species – maybe trade among communities
- Need to continue Harvest Studies
- Reduce wastage
- Harvester education needed (youth)



# Harvest

- How to share harvest among other areas?
- Monitors needed (e.g., winter road)
- If there are quotas or tags – should be set and administered by RRC/HTC
- Harvest estimates do not include any ‘wounding loss’ and may be an underestimate

# Management Actions

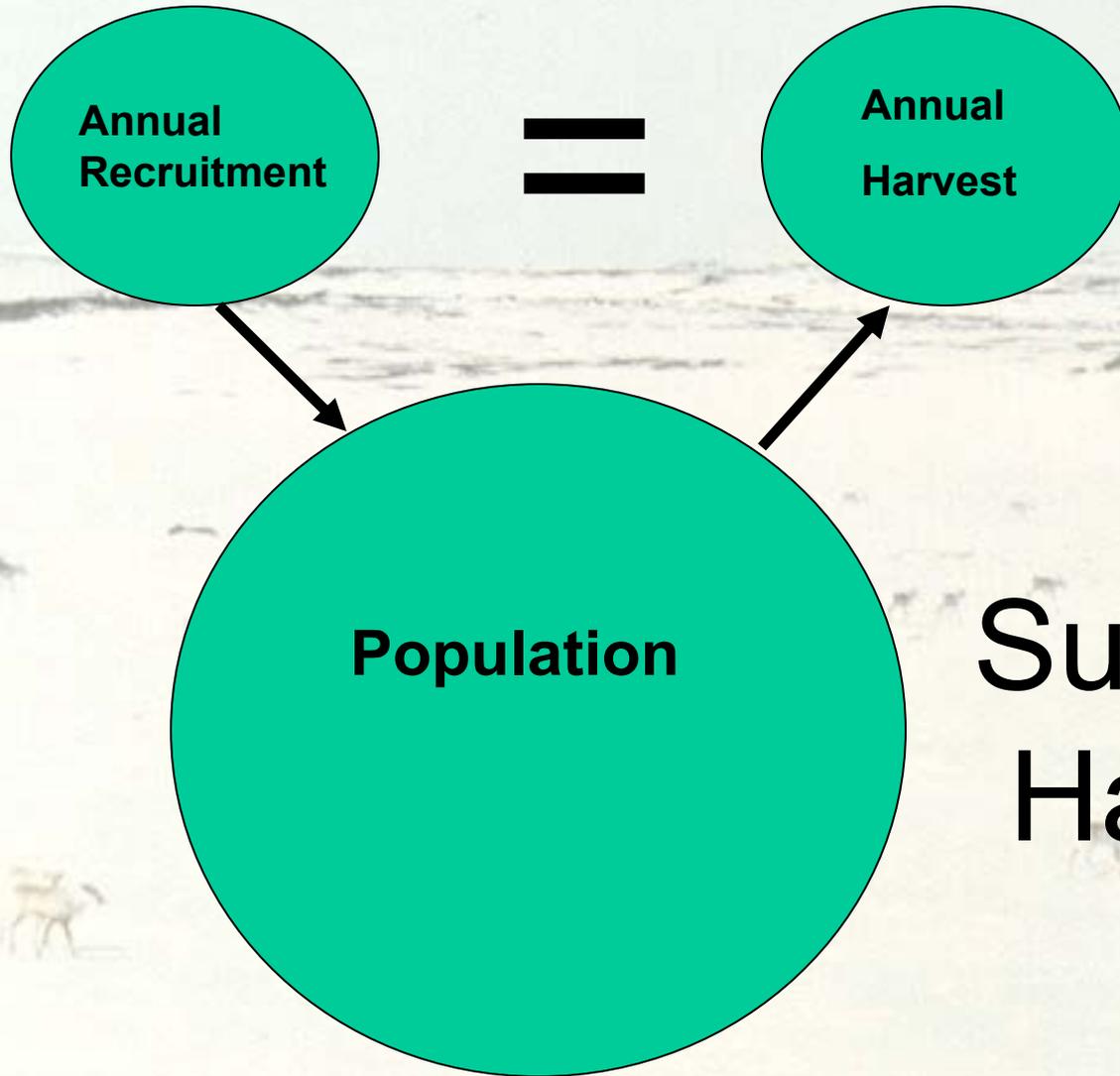
- We need to make some decisions quickly - people should take as little as possible
- Need to get all the RRCs, HTC's, and co-management boards together
- Stop non-subsistence harvest, including commercial.
- Hunting quotas are needed
- Tags might be needed so harvest can be monitored and controlled

# Management Actions

- Need to reduce harvest of cows
- Herd numbers should be monitored more often
- Limit how much development and activity there is in areas important to caribou (e.g., Edaiila)
- Protect calving grounds and other important areas
- Hunter education so people know how to identify bulls from cows

# Management Actions

- If there are restrictions then also need to increase monitoring
- Hard to change legislation once it is in place
- How long to implement legislation?
- How will quota be determined?



**Sustainable  
Harvest**

**By definition – when a herd is in decline –  
there is no sustainable harvest**

**Sahtu ENR biologists suggested 3% to  
RRCs and SRRB initially  
in September 2005**

**After discussion, Inuvialuit suggested 4%  
with an 80 bull to 20 cow target sex ratio**

**GRRB and SRRB also proposed 4% and  
and 80:20 ratio**

**For estimated population of 18,050**

**Total allowable harvest would be:**

**722 caribou**

**until next census (2009)**

**With the 80:20 sex ratio, the limits would be:**

**578 bulls**

**144 cows**

**until next census (2009)**



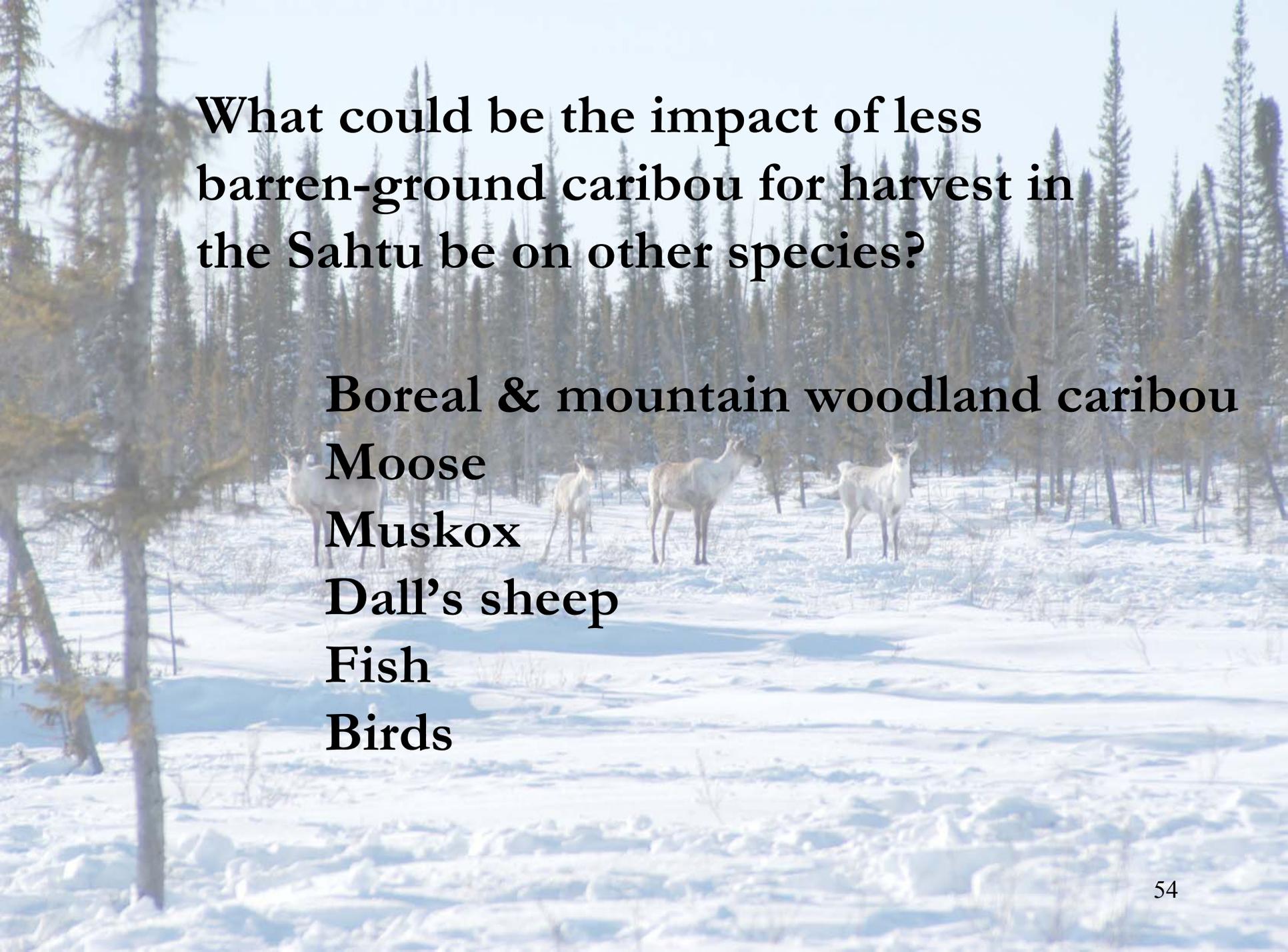
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Subsistence - Gwich'in	100
<b>Total</b>	<b>900-1200</b>

Harvest is currently estimated to be 5.0 – 6.7% of 2006 herd estimate

Total allowable harvest (4% of estimated herd) - 722

A photograph of a snowy forest landscape. In the middle ground, several caribou are standing on a snow-covered field. The background is filled with tall, thin evergreen trees. The sky is bright and clear.

**What could be the impact of less barren-ground caribou for harvest in the Sahtu be on other species?**

**Boreal & mountain woodland caribou**

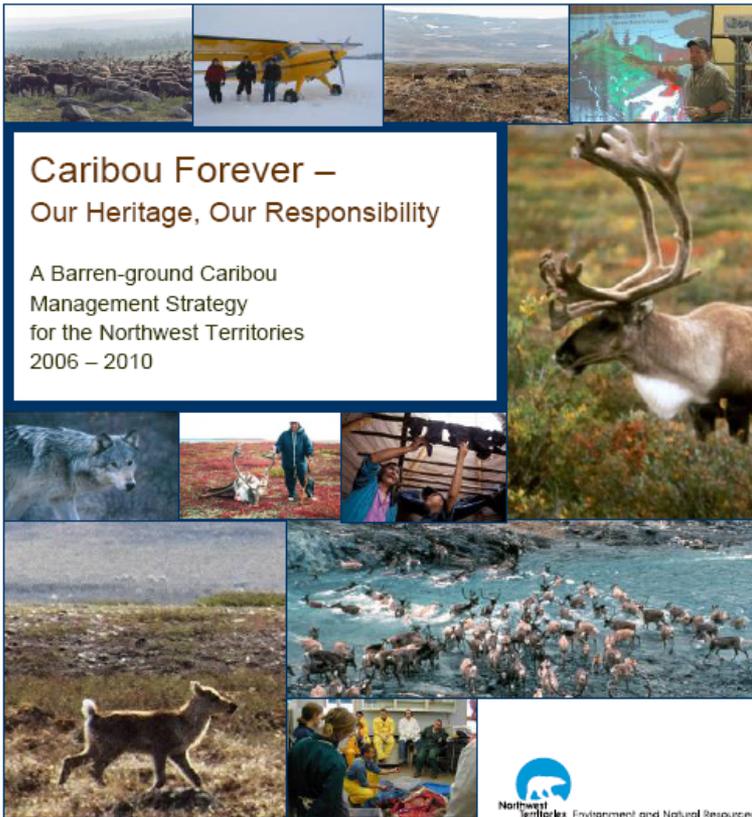
**Moose**

**Muskox**

**Dall's sheep**

**Fish**

**Birds**



## Caribou Forever – Our Heritage, Our Responsibility

A Barren-ground Caribou  
Management Strategy  
for the Northwest Territories  
2006 – 2010

The Strategy has five key components:

- Engaging partners in management
- Ensuring information is available for management decisions
- Managing impacts of human activities
- Public education and compliance
- Addressing hardships from low caribou numbers.



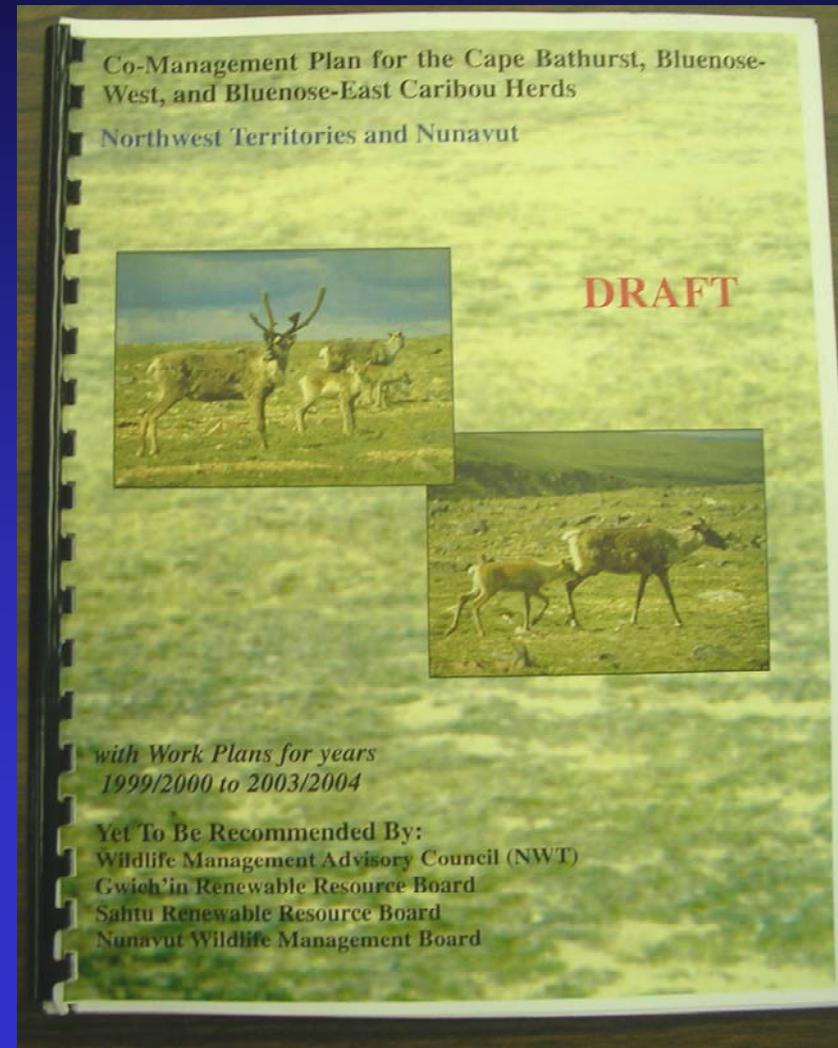
*Inuvik – January 23<sup>rd</sup>-26<sup>th</sup>, 2007*  
**NWT Barren-ground  
Caribou SUMMIT**

*Caribou Forever... Our Heritage, Our Responsibility.*



# Bluenose Caribou Co-management Plan

- Developed with 4 wildlife co-management boards and 14 communities



# Caribou Forever – Our Heritage, Our Responsibility



**THANK YOU!**