





# Rationale

- Rates of climate change may be affecting ecology of Arctic marine mammals
- Subsistence harvest of beluga important for economic, cultural and health reasons
- Beluga in some locations have been heavily harvested in the past and are not recovering
  - Coastal waters of Arctic Quebec (Nunavik) are endangered: Ungava Bay (UB) and Eastern Hudson Bay (EHB)
- Therefore: need to increase understanding of population dynamics, habitat selection and behavioural ecology

# Nunavik Communities Involved

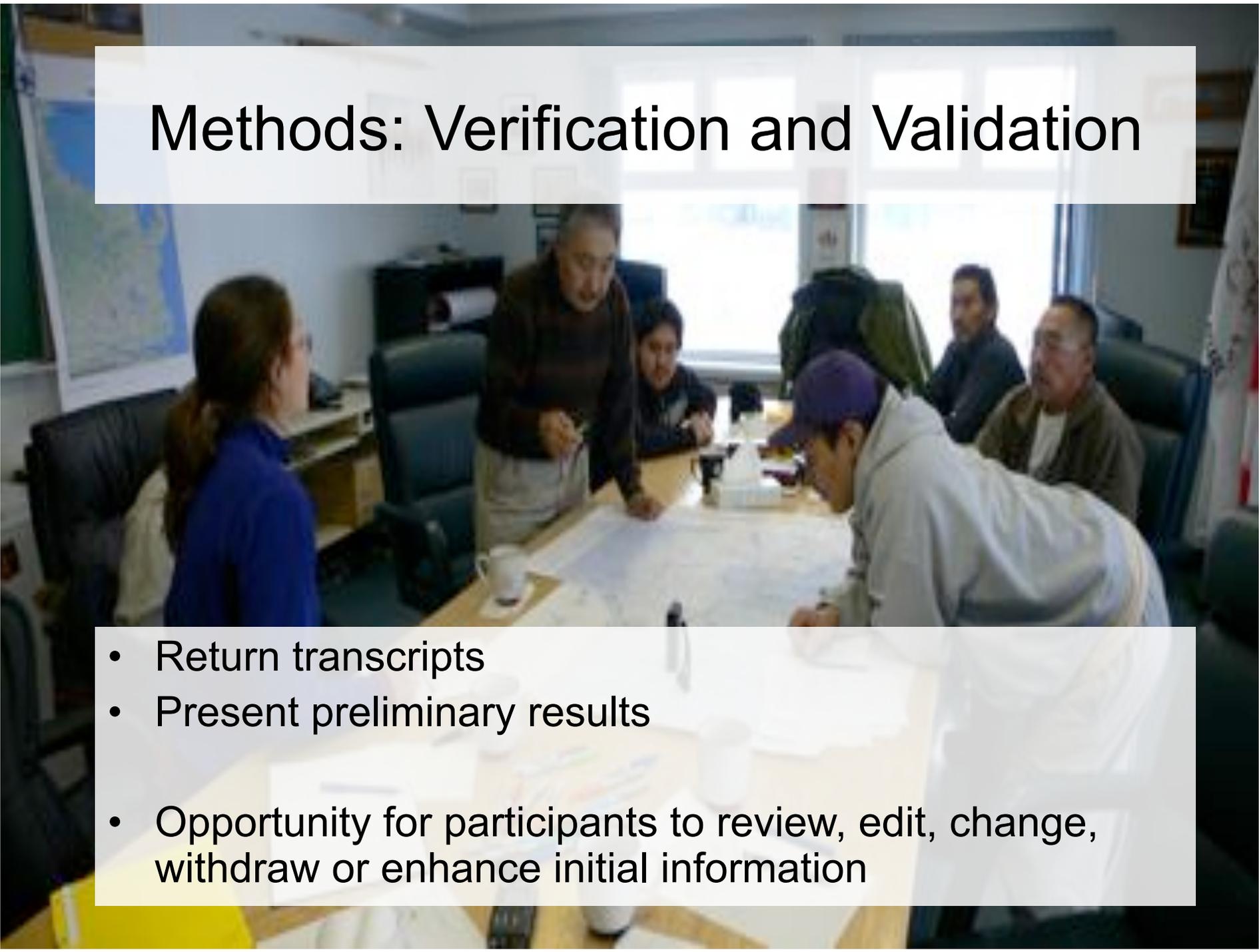


# Methods

- 29 semi-directive interviews following an ethnocartographic format
- Participants were chosen based on their knowledge and experience of belugas
- February and March of 2009 (Ivujivik: March 2010)
- Transcribed all interviews
- Analyzed TEK with NVIVO qualitative analysis software

Community	Number of participants	Age range	Mean age	Gender		Number of interviews with interpretation
				Male	Female	
Quaqtaq	11	33-82	63	8	3	6
Kangiqualujjuaq	8	35-85	~64	8	0	5
Kuujuaraapik	10	38-76	56	7	3	4
<b>Total</b>	<b>29</b>	<b>33-85</b>	<b>61</b>	<b>23</b>	<b>6</b>	<b>15</b>

# Methods: Verification and Validation

A group of people are gathered around a large conference table in a meeting room. They are looking at and discussing documents spread across the table. The room has a window in the background and a map on the wall to the left.

- Return transcripts
- Present preliminary results
- Opportunity for participants to review, edit, change, withdraw or enhance initial information

# Results: Kuujjuaraapik Feeding and Prey Species

- Little seasonal variation
- Detailed information provided on beluga prey species
  - Capelin (*Mallotus villosus*)
  - 4 species of sculpin:
    - *Myoxocephalus scorpioides*
    - *Myoxocephalus scorpius*
    - *Trigloopsis quadricornis*
    - *Cottus cognatus*
  - Lump suckers (*Cyclopterus*)
  - Shrimps
  - Greenland cod (*Gadus ogac*)
  - Sea Urchin

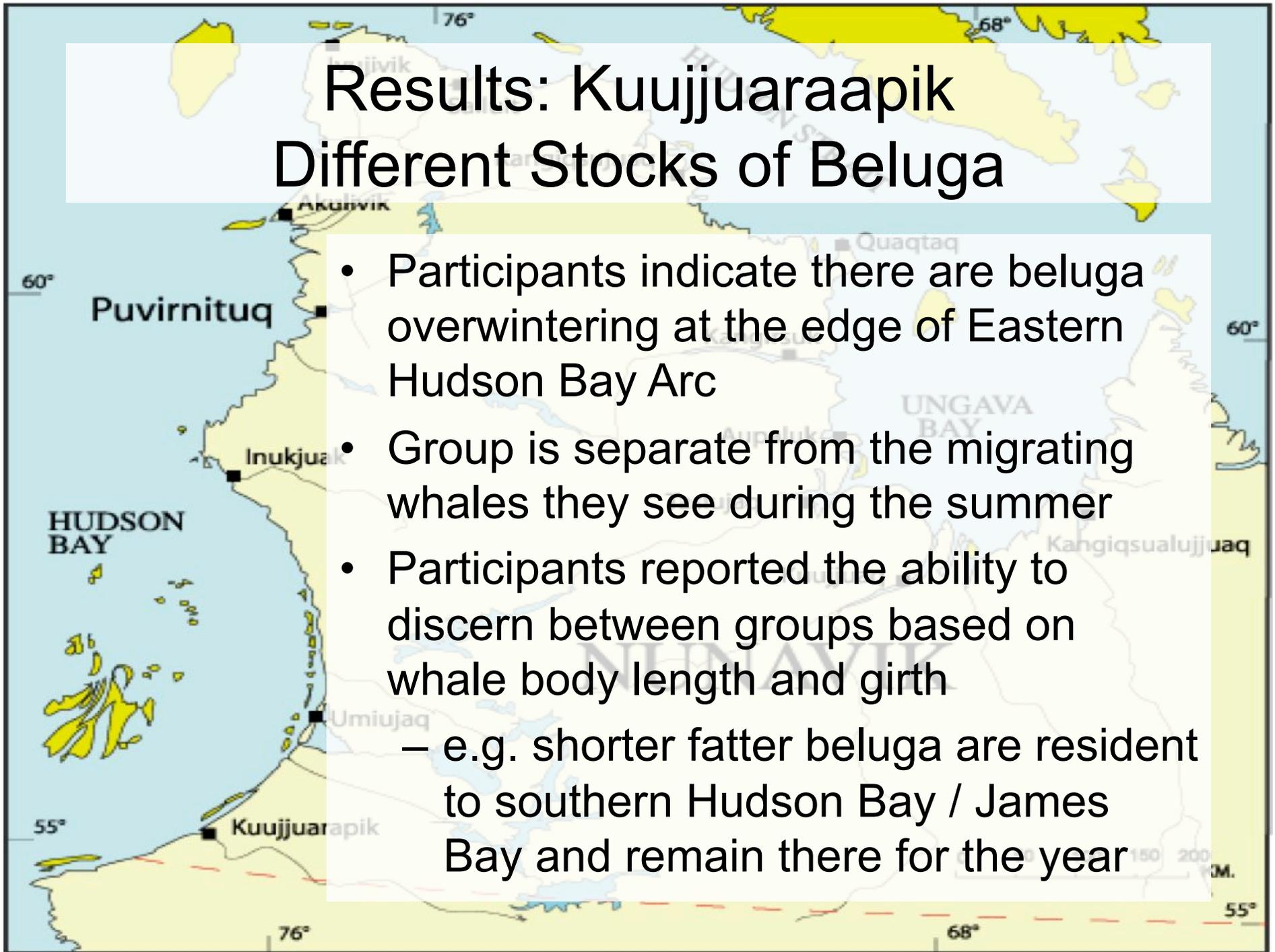


# Results: Kuujjuaraapik Body Condition

- Most participants (5/6) indicated that there is a significant change in blubber thickness during the time that they observe beluga:
  - Arrive thin (~ 7cm) from the north in late May and June
  - Leave fatter (~ 12cm) in October and November

# Results: Kuujjuaraapik Different Stocks of Beluga

- Participants indicate there are beluga overwintering at the edge of Eastern Hudson Bay Arc
- Group is separate from the migrating whales they see during the summer
- Participants reported the ability to discern between groups based on whale body length and girth
  - e.g. shorter fatter beluga are resident to southern Hudson Bay / James Bay and remain there for the year



# Results: Kuujjuaraapik Factors Affecting Location and Movement of Beluga

- Tides and Currents
- Ice conditions
- Weather
- Erosion of Shoreline

- Noise
- Prey availability
- Predation (few accounts)

# Unique Contributions and Significance of the Research

Depth and detail of information provided is providing valuable insights into beluga ecology

Robust and comprehensive understanding of critical and key habitat for beluga in Nunavik

- Implications for EIA and development
- Better management and conservation through a better understanding of critical habitat for beluga



## Acknowledgements

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- Committee and partners: Chris Furgal, Mike Hammill, Brendan Hickie, Bill Doidge and Véronique Lésage
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