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Building Nunavut Together
Nunavuliuqatigiingniq
Bâtir le Nunavut ensemble

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Department of Environment
Avatiliqiyikkut
Ministère de l'Environnement

Community Consultations For The Southern Hudson Bay Polar Bear Aerial Survey Study 2021

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Introductions

Alyssa (“Uh-Liss-Uh”) Bohart
Polar Bear Biologist
Department of Environment
Government of Nunavut

Joe Northrup
Regional Biologist
Wildlife Research and
Monitoring Section
Ontario Ministry of Natural Resources
and Forestry

Transition

- Since 2021 there has been a transition at the Department of Environment in the Government of Nunavut
  - Tragic loss of our Polar Bear Biologist Markus Dyck in an accident
  - Two Polar Bear Biologists resigned last year
  - There are two new biologists continuing the program

Survey Process

1. Create a study design

Survey Process

1.

2. Consult on study design and get feedback

Survey Process

3. Incorporate feedback into study design

Survey Process

4. Fly the survey

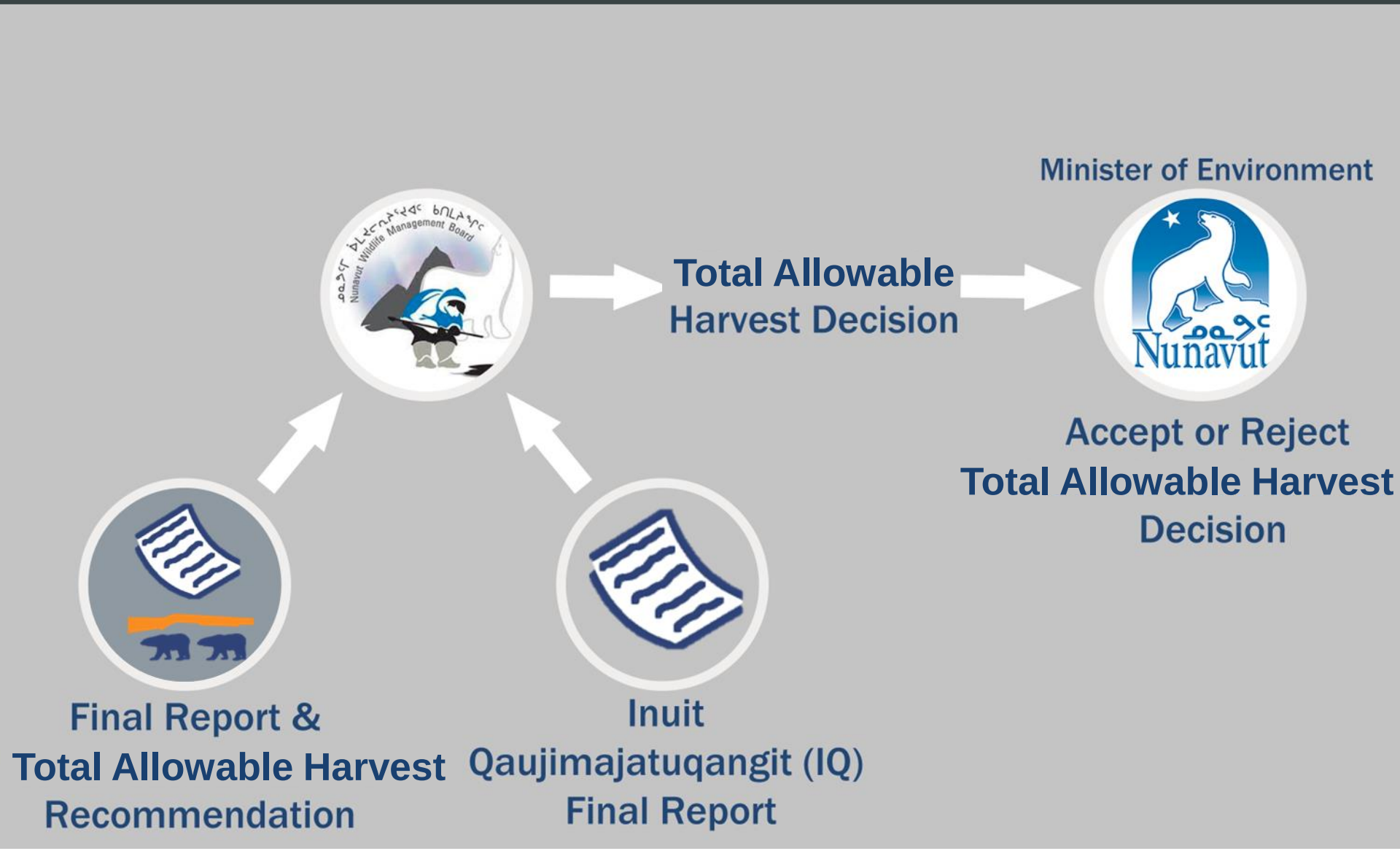
Survey Process

5. Analysis & Writing Final Report

Survey Process

6. Consulting on Final Report

Survey Process



7. Total Allowable Harvest Decision-Making

Survey Process

Minister of Environment

Nunavut

Accepts

Regional Wildlife Boards

Accept or Reject
Total Allowable Harvest
Decision

Decide how many
tags each comunity gets

Send tags to
communities

7. Total Allowable Harvest Decision-Making

Survey Process

Minister of Environment

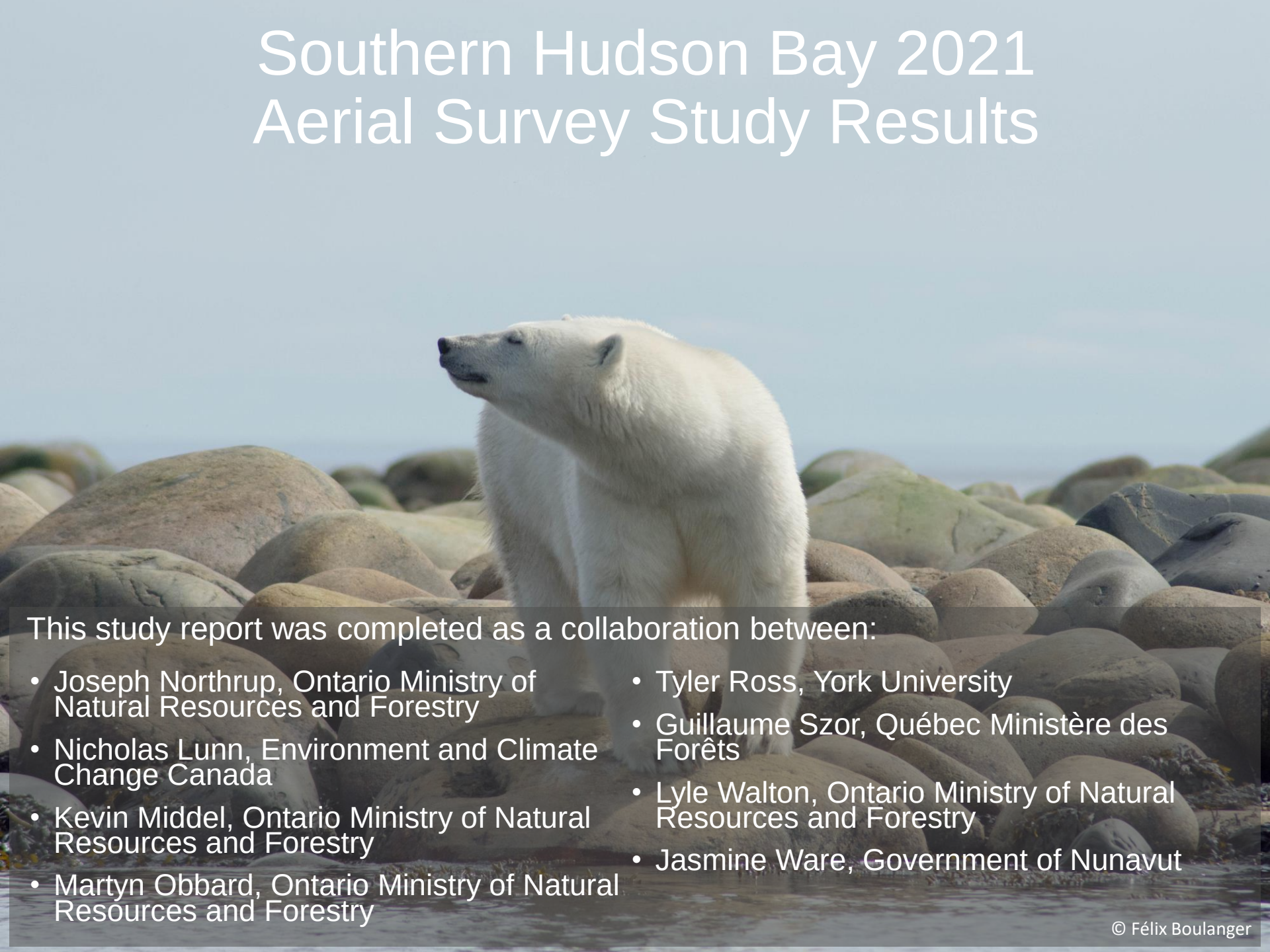
Regional Wildlife Boards

7.

Nunavut

Accepts

Southern Hudson Bay 2021 Aerial Survey Study Results



This study report was completed as a collaboration between:

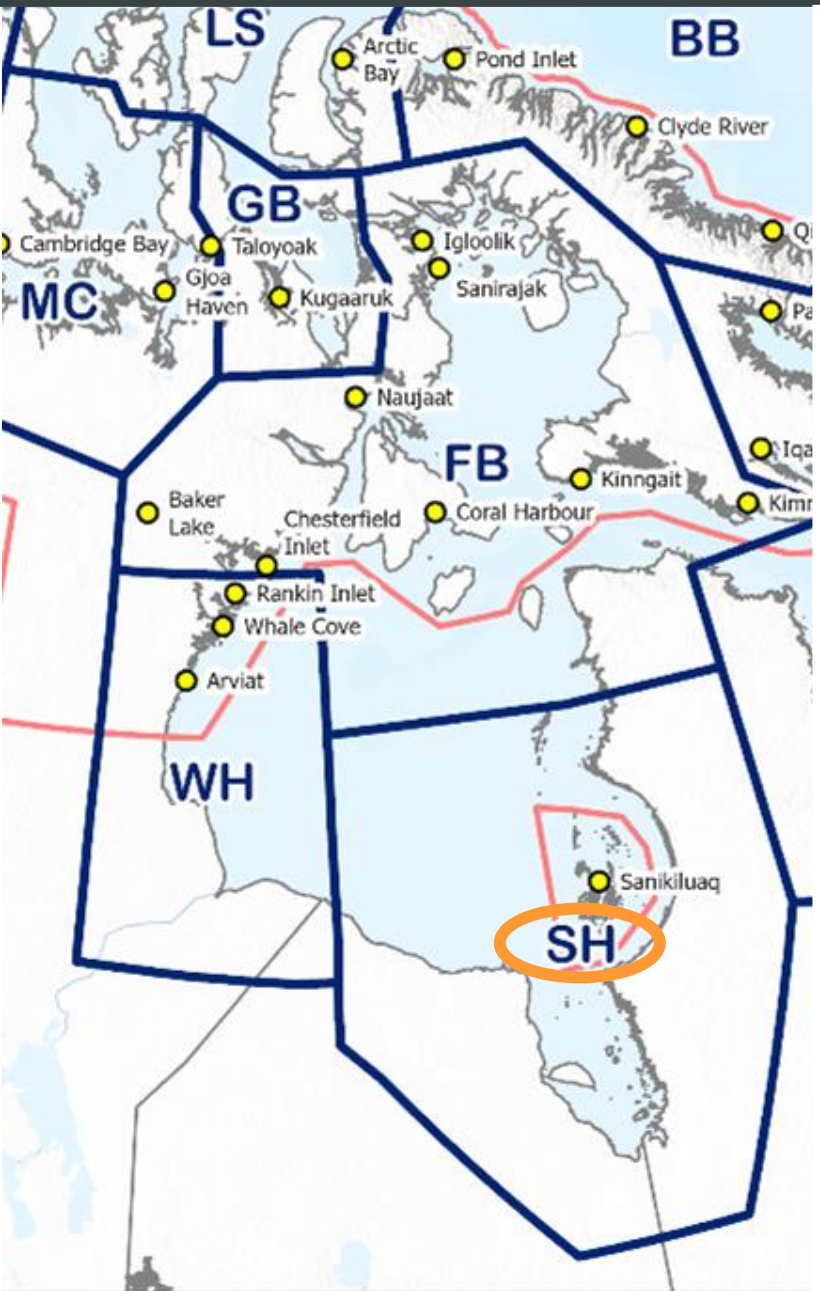
- Joseph Northrup, Ontario Ministry of Natural Resources and Forestry
- Nicholas Lunn, Environment and Climate Change Canada
- Kevin Middel, Ontario Ministry of Natural Resources and Forestry
- Martyn Obbard, Ontario Ministry of Natural Resources and Forestry
- Tyler Ross, York University
- Guillaume Szor, Québec Ministère des Forêts
- Lyle Walton, Ontario Ministry of Natural Resources and Forestry
- Jasmine Ware, Government of Nunavut

Thank You

This work would not have been possible without the participation and support of the HTOs and the following observers:

- S. Weetaltuk
- Q. Napartuk
- J. Kasudluak
- M. Arnasuk
- P. Ippak
- J. Ippak
- C. Takatak

Southern Hudson Bay Subpopulation

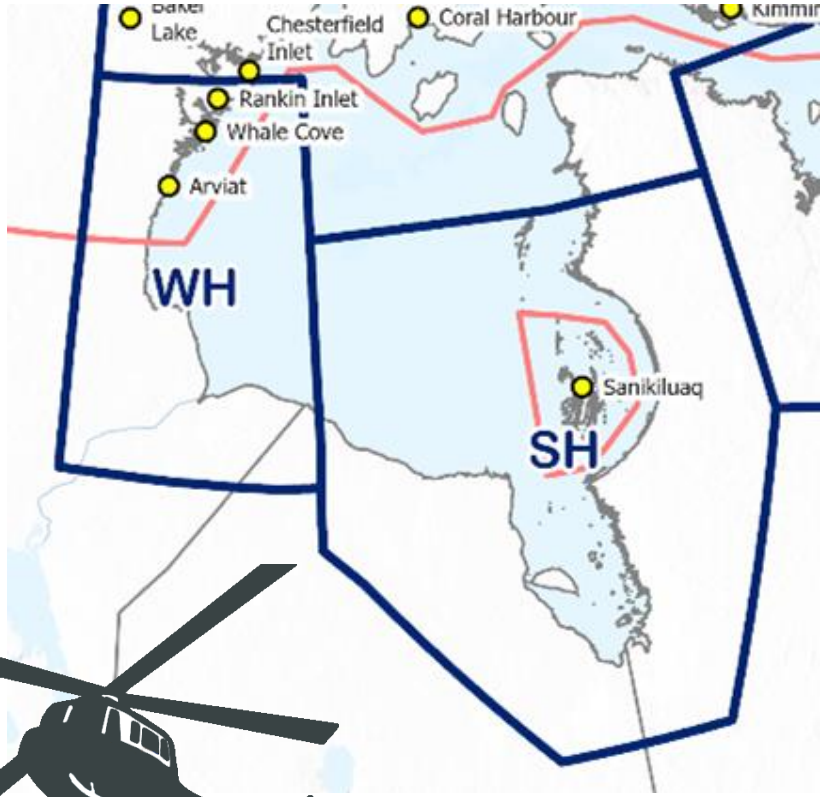


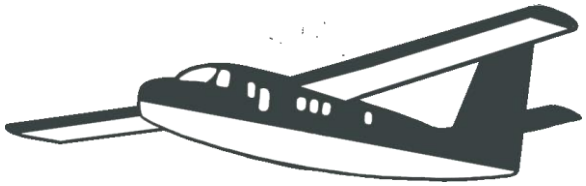
- Previously aerial surveyed in 2011 and 2016

- Biopsy darting studies done by Environment and Climate Change Canada and Ontario Ministry of Natural Resources and Forestry
  - Western & Southern Hudson Bay
- Agreement that the **number of human-bear conflicts has increased over time**
- Frequent studies needed to **detect sudden changes** in bear population when using aerial surveys

Aerial Abundance Surveys

- Surveys were done in 2011, 2016, and 2021
- Surveys done in **late August-early September**
- Bears **on land**
- Western (WH) and Southern Hudson (SH) Bay **done at same time**



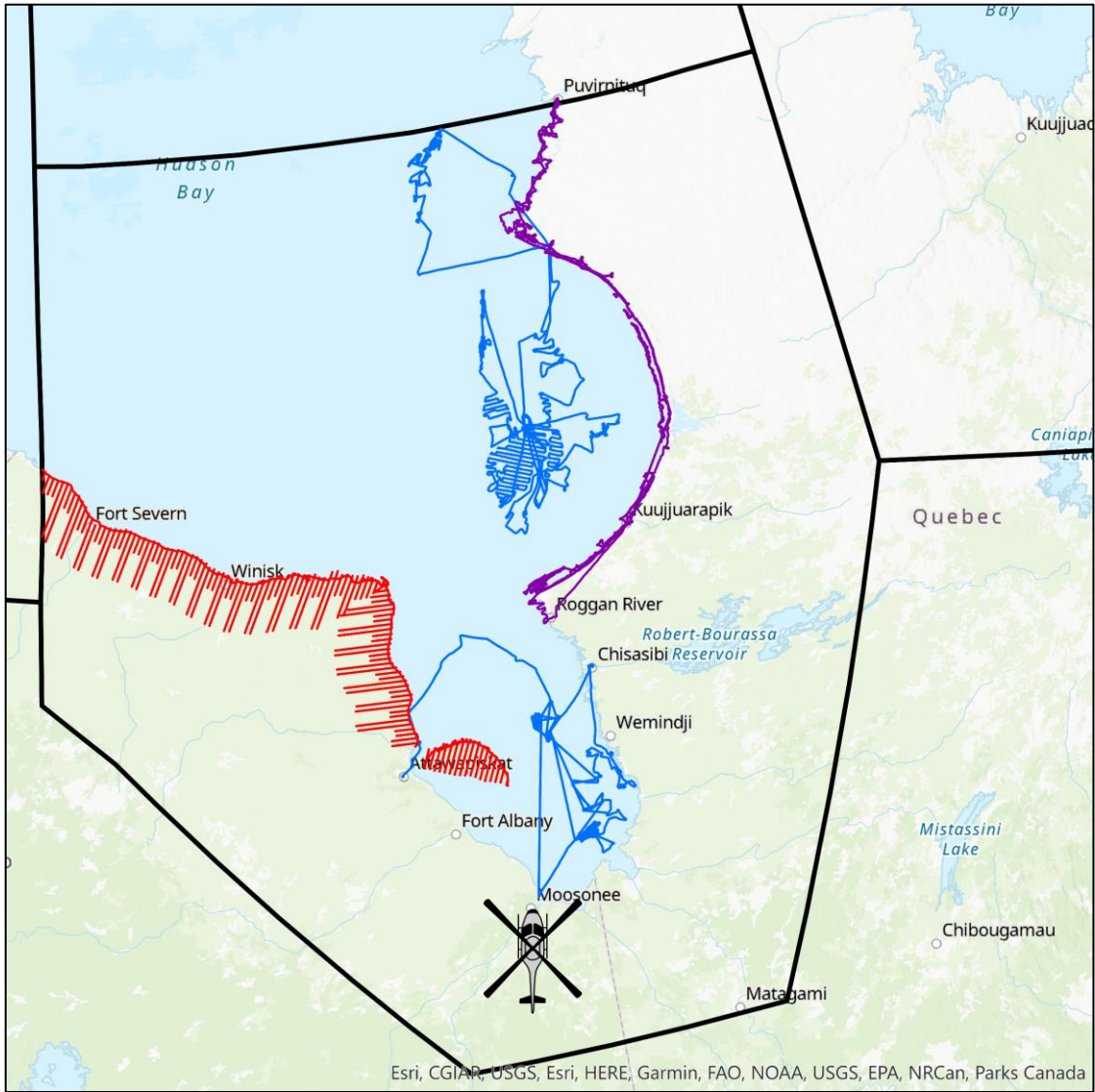


What is an Aerial Abundance Survey?

- Collect data to **estimate the abundance** of a species
- **Distance sampling, double observer,** and **census** method
- Strata and transects based on **past survey data, harvest data**, and **community feedback**

Aerial Abundance Surveys

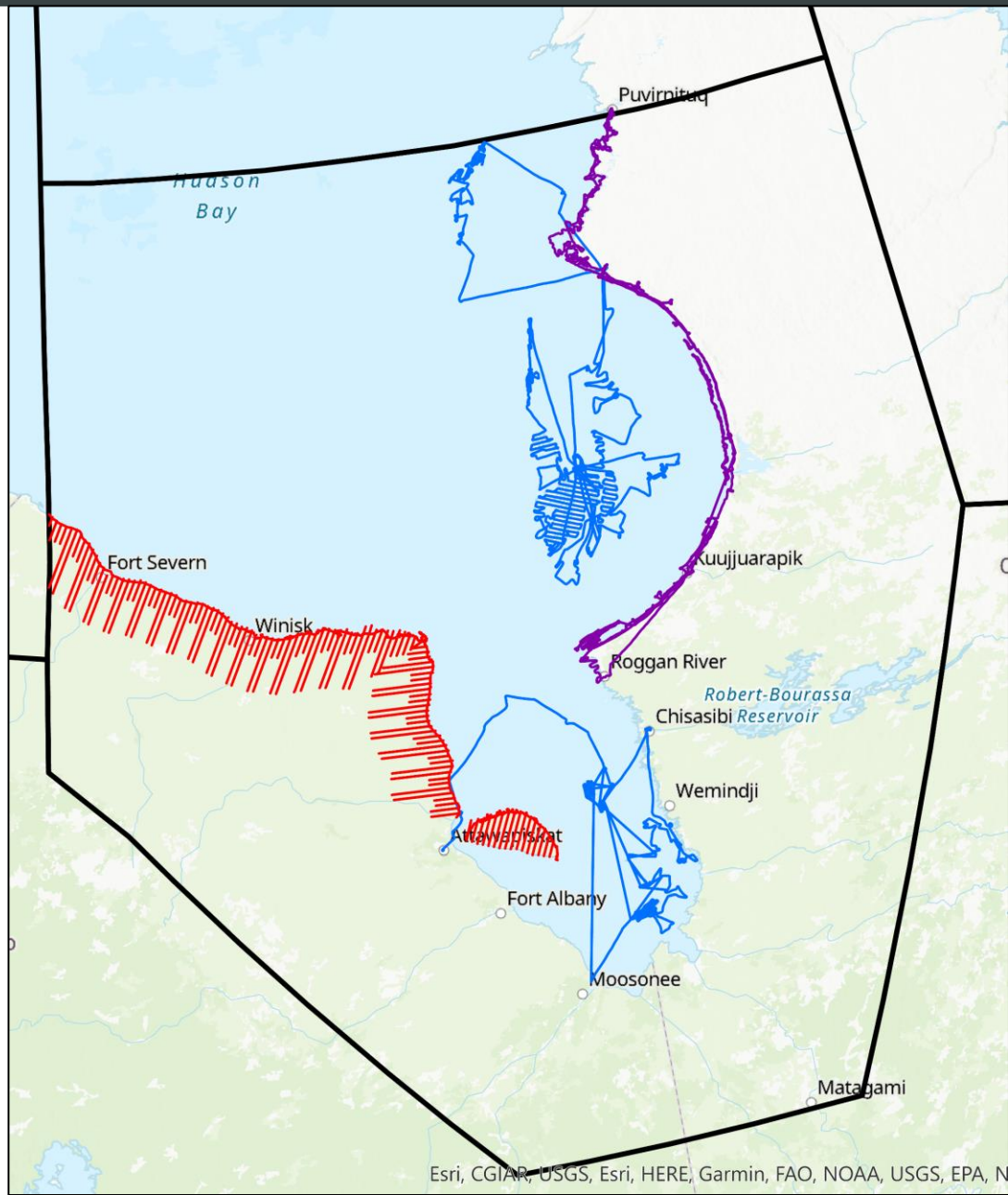
- Used same transects as 2011 & 2016 study
  - Except reduced coverage of inland Quebec after discussion with communities
- Transects determined using:
  - 2011 survey and results
  - Traditional Knowledge
  - Telemetry data



Southern Hudson Bay Subpopulation

Aerial Abundance Survey Results

- Observed more bears total than 2016 and similar to 2011
- Encountered 138 groups of bears observed
- Comparable analysis to 2016: 1003 (773 – 1302)
- 29% increase from 2016



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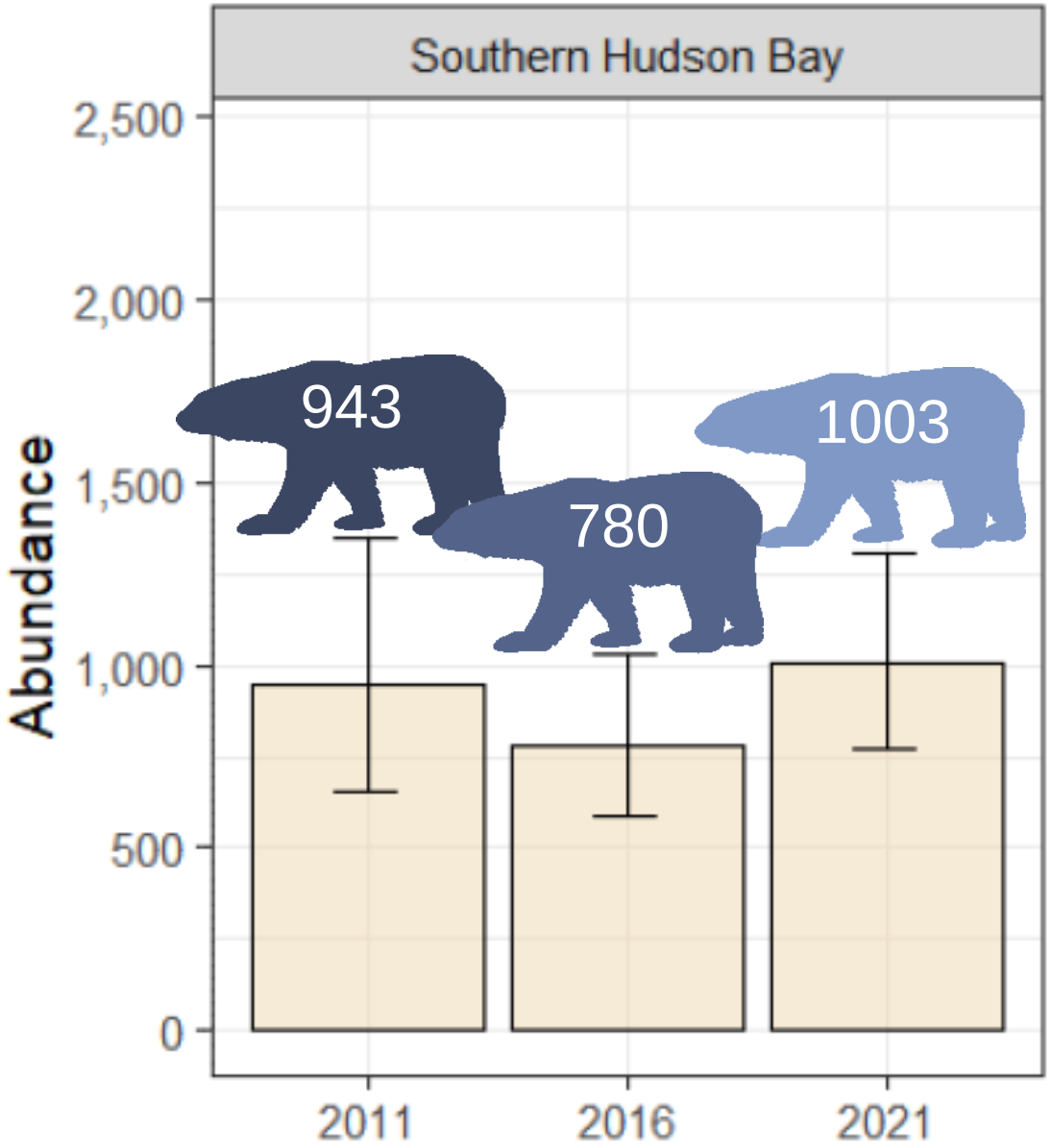
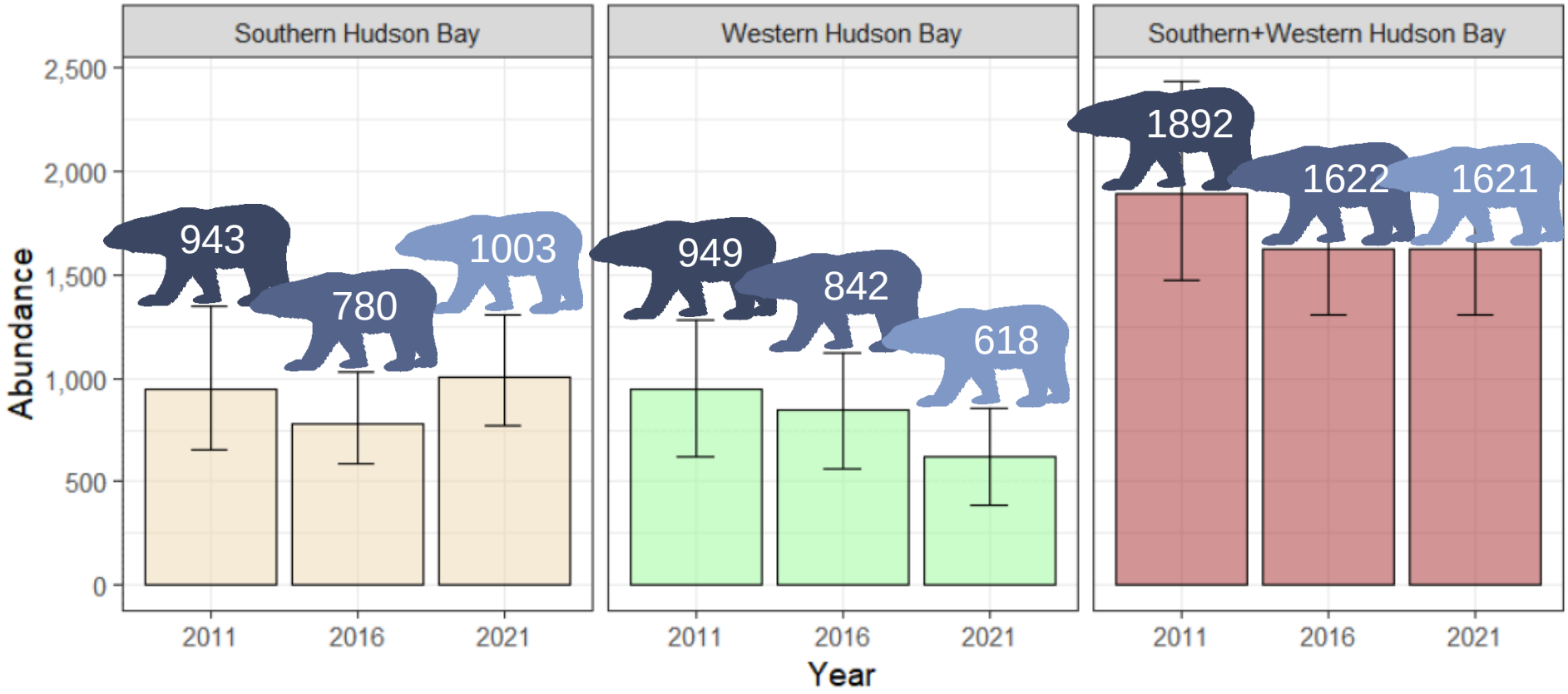


Southern Hudson Bay Subpopulation

Aerial Abundance Survey Results

- Reasons for increase?
  - Annual shifts into Southern Hudson Bay?



Biopsy Darting Report

Environment and Climate Change Canada | Environnement et Changement climatique Canada

Distributional shifts of polar bears (*Ursus maritimus*) in Hudson Bay in relation to sea ice dynamics, 2017-2022 Final Report

D. McGeachy[1,4], N. J. Lunn[1], J. M. Northrup[2], V. Trim[3], C. Davis[4], A. E Derocher[4]

[1] Environment and Climate Change Canada, CW-405 Biological Sciences Building, University of Alberta, Edmonton, AB T6G 2E9
[2] Ontario Ministry of Natural Resources and Forestry, DNA Building B217, Trent University, 2140 East Bank Drive, Peterborough, ON K9L 1Z8
[3] Manitoba Department of Natural Resources and Northern Development, Water Stewardship and Biodiversity Division, Wildlife and Fisheries Branch, Box 28, 59 Elizabeth Drive, Thompson, MB R8N 1X4
[4] Department of Biological Sciences, University of Alberta, Edmonton, AB T6G 2E9

David McGeachy
Polar Bear Technician
Environment and Climate Change Canada

Biopsy Darting

Biopsy Darting

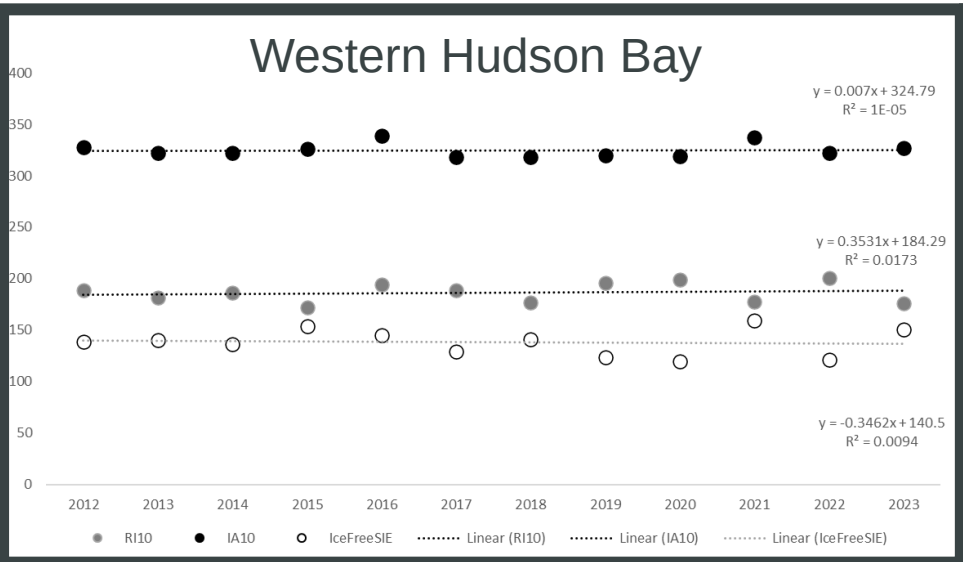
- Biopsy sampling – bears **not physically handled** or **sedated**

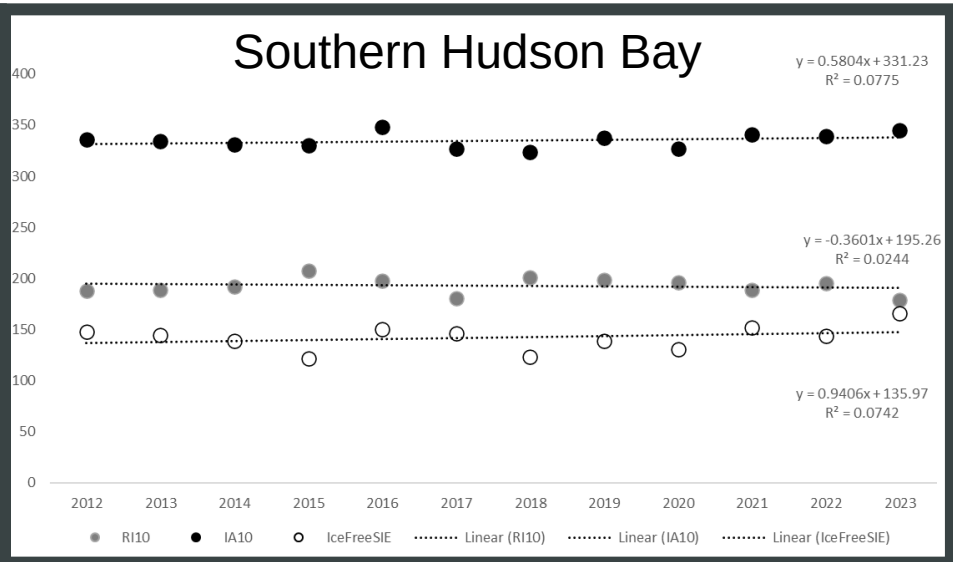
Genetics/DNA

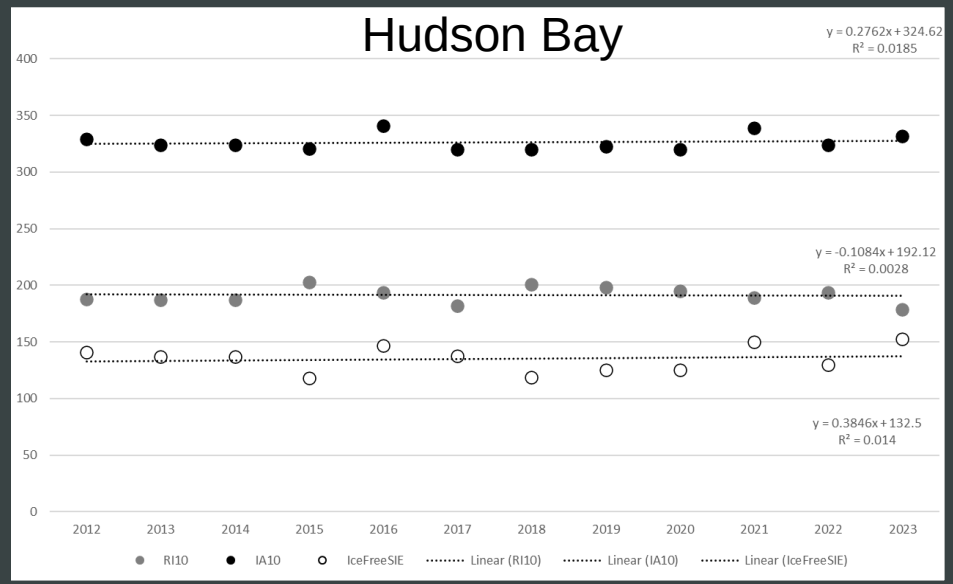

Hudson
Bay
SH


Hudson
Bay
WH
SH

Results – Sea Ice



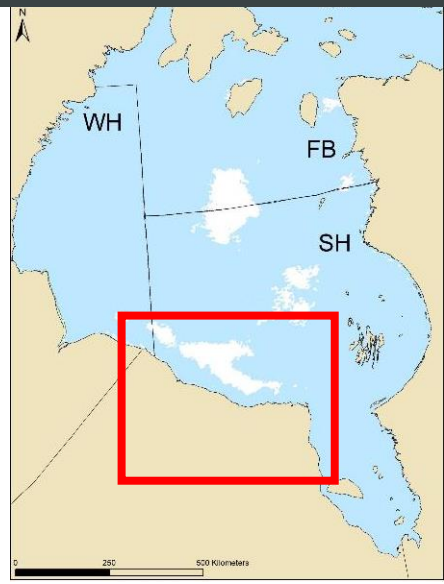


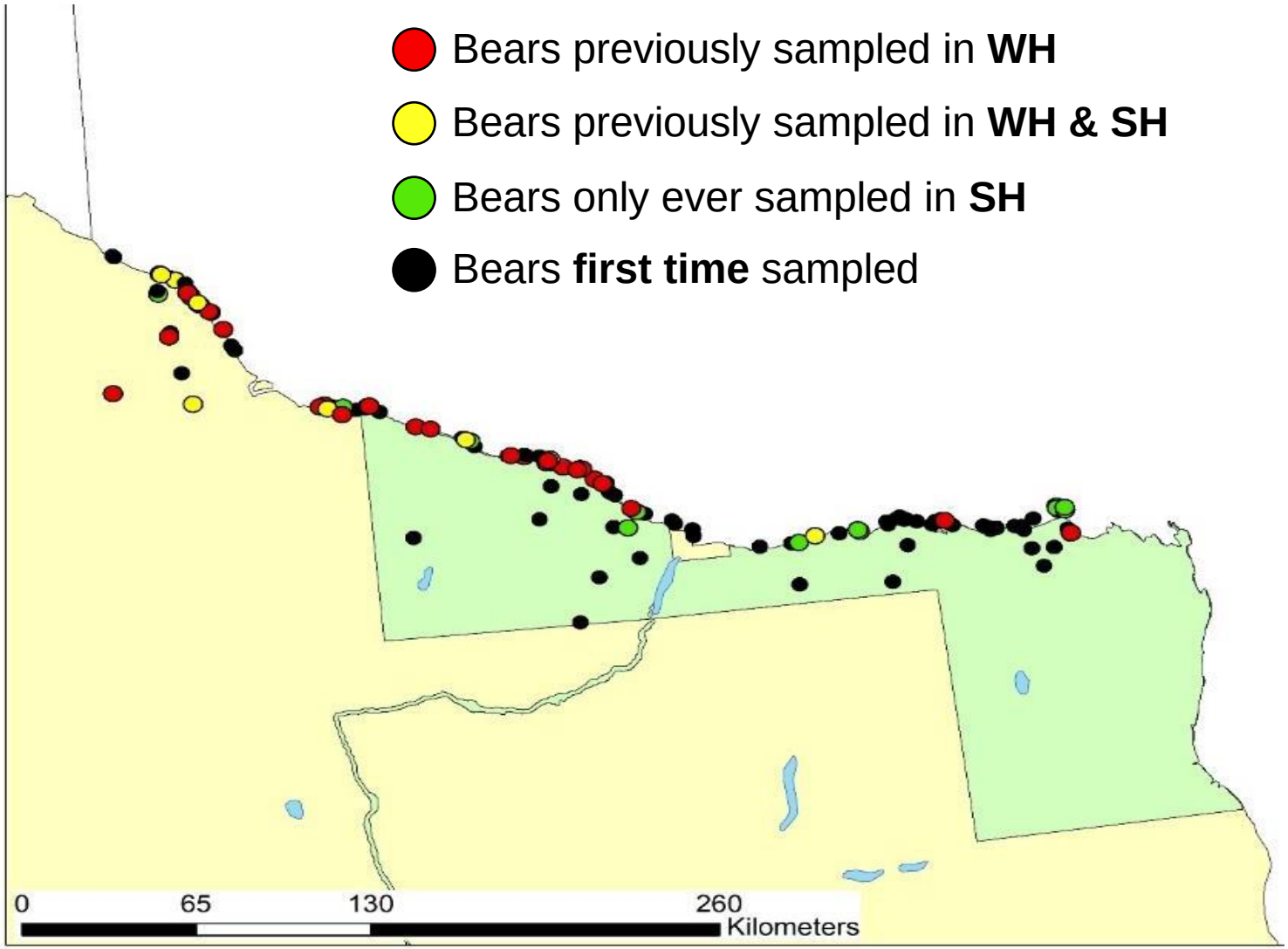


Results – 2021 SH Recaptured Bears

Sampling locations for bears biopsied in 2021 in SH

- Bears previously sampled in **WH**
- Bears previously sampled in **WH & SH**
- Bears only ever sampled in **SH**
- Bears **first time** sampled





Results – WH to SH and SH to WH 2021/2022

2021

WH

SH

7%

0 187.5 375 750 Kilometers

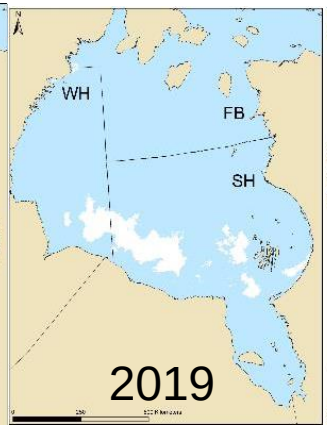
WH

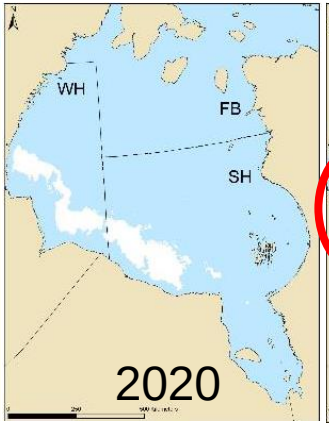
SH

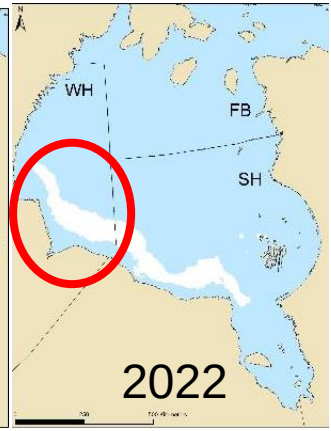
35%

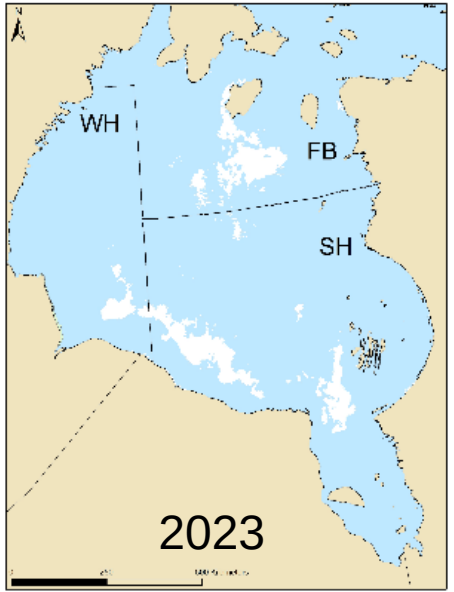
0 187.5 375 750 Kilometers

Results – Last area of consolidated ice before summer

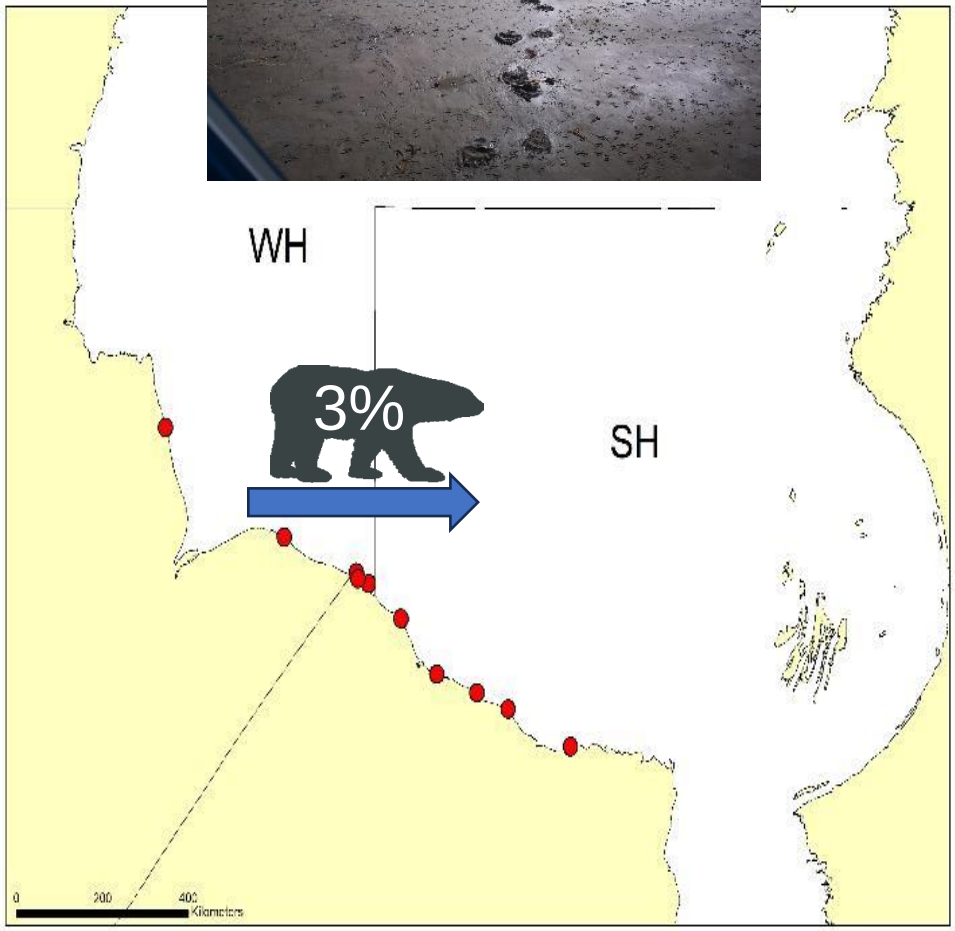


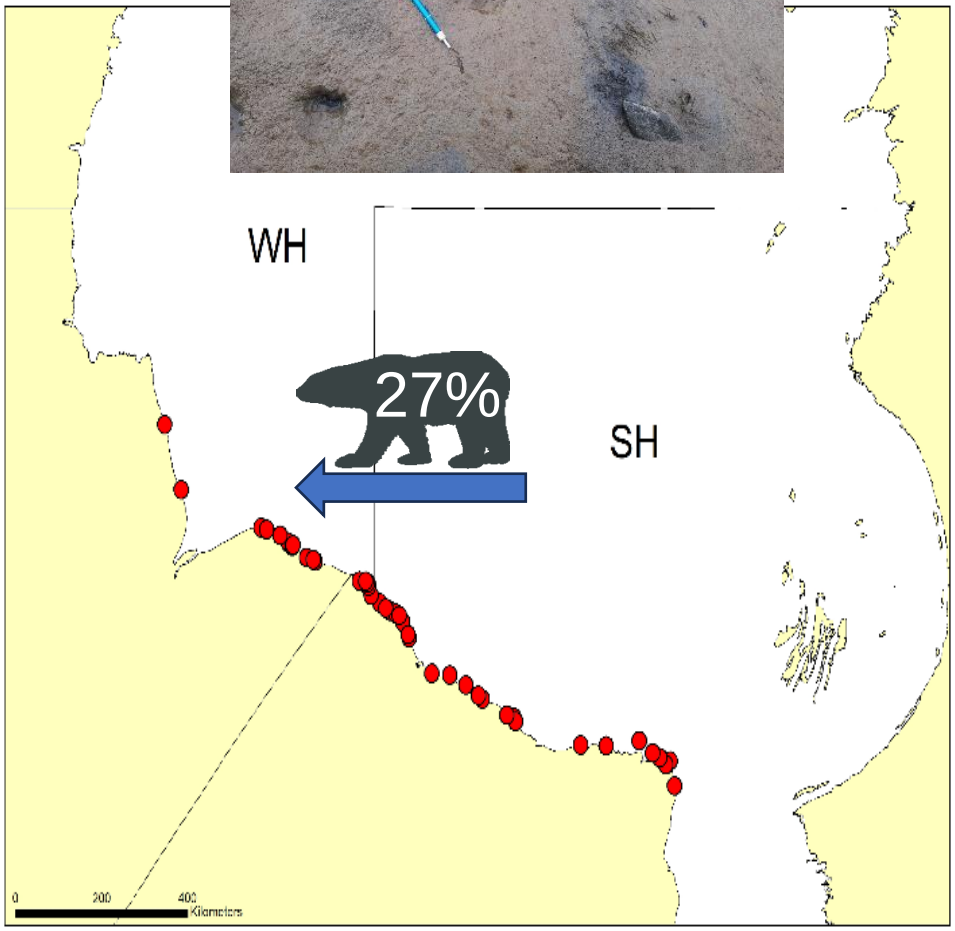




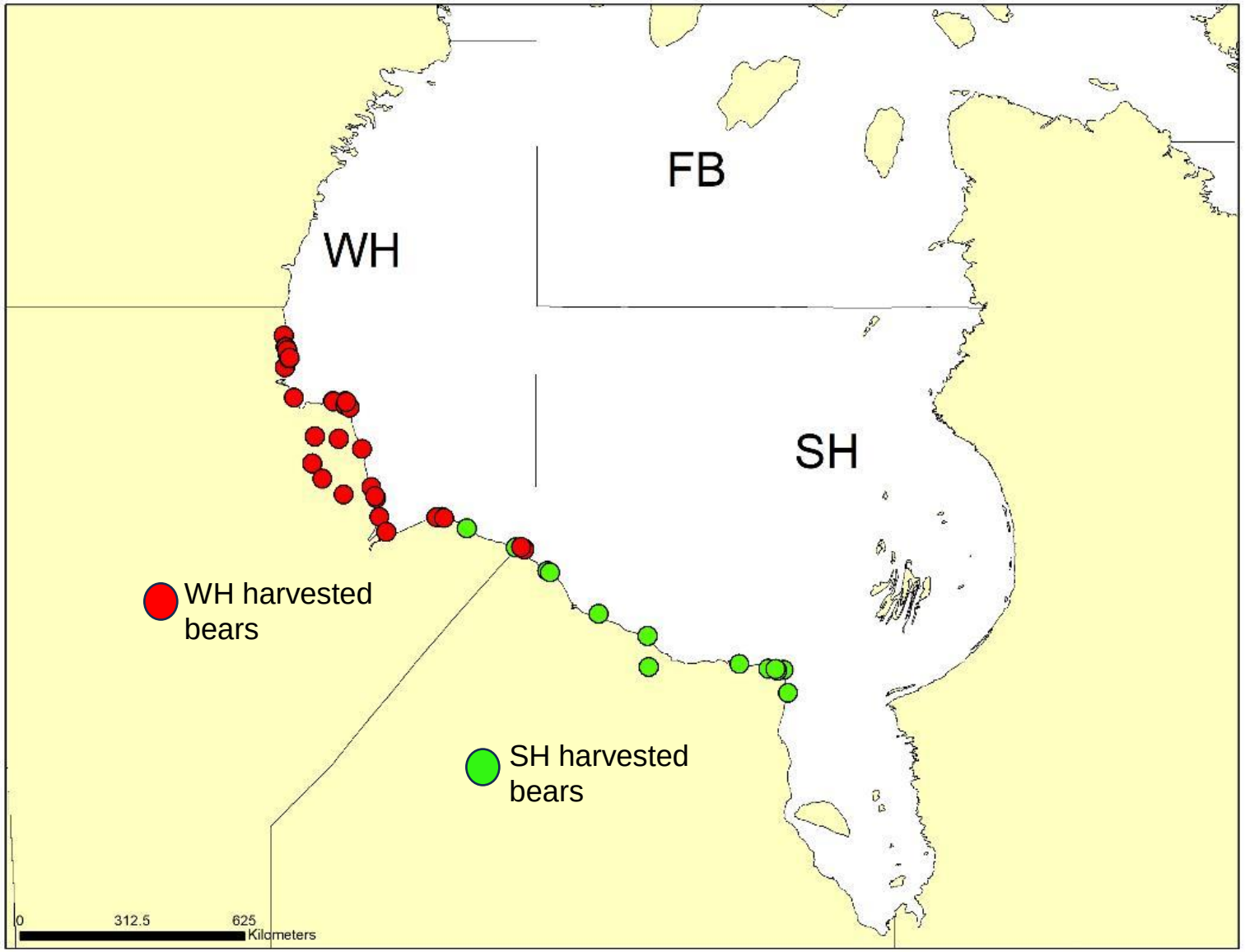


Results – WH to SH and SH to WH 2022/2023





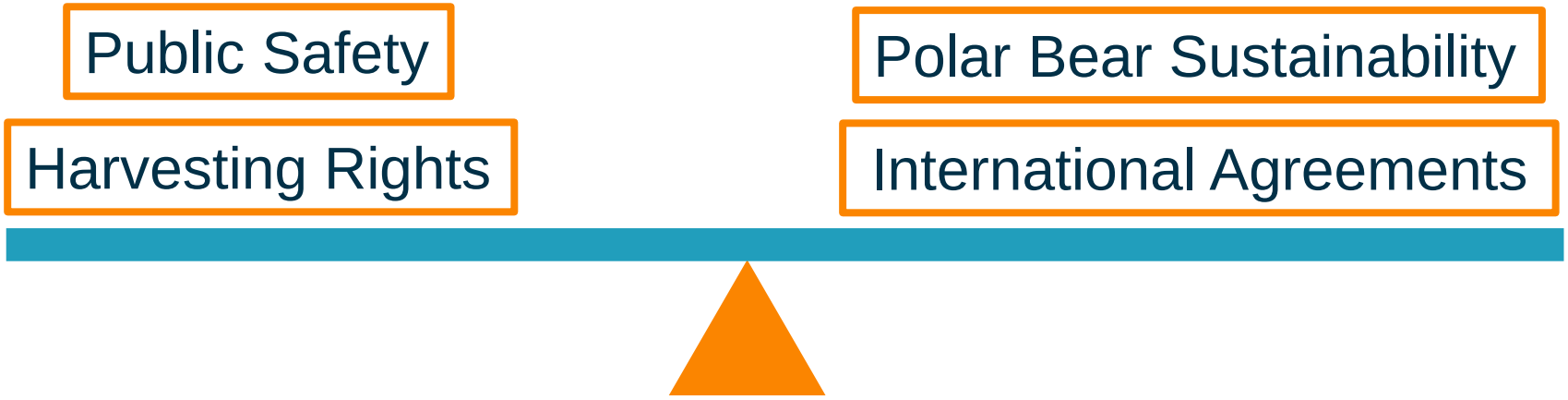
Results – WH to SH and SH live sampling of harvested bears 2017-2023



Next Steps - Harvest Management

Job of the Department of Environment

- Balancing act



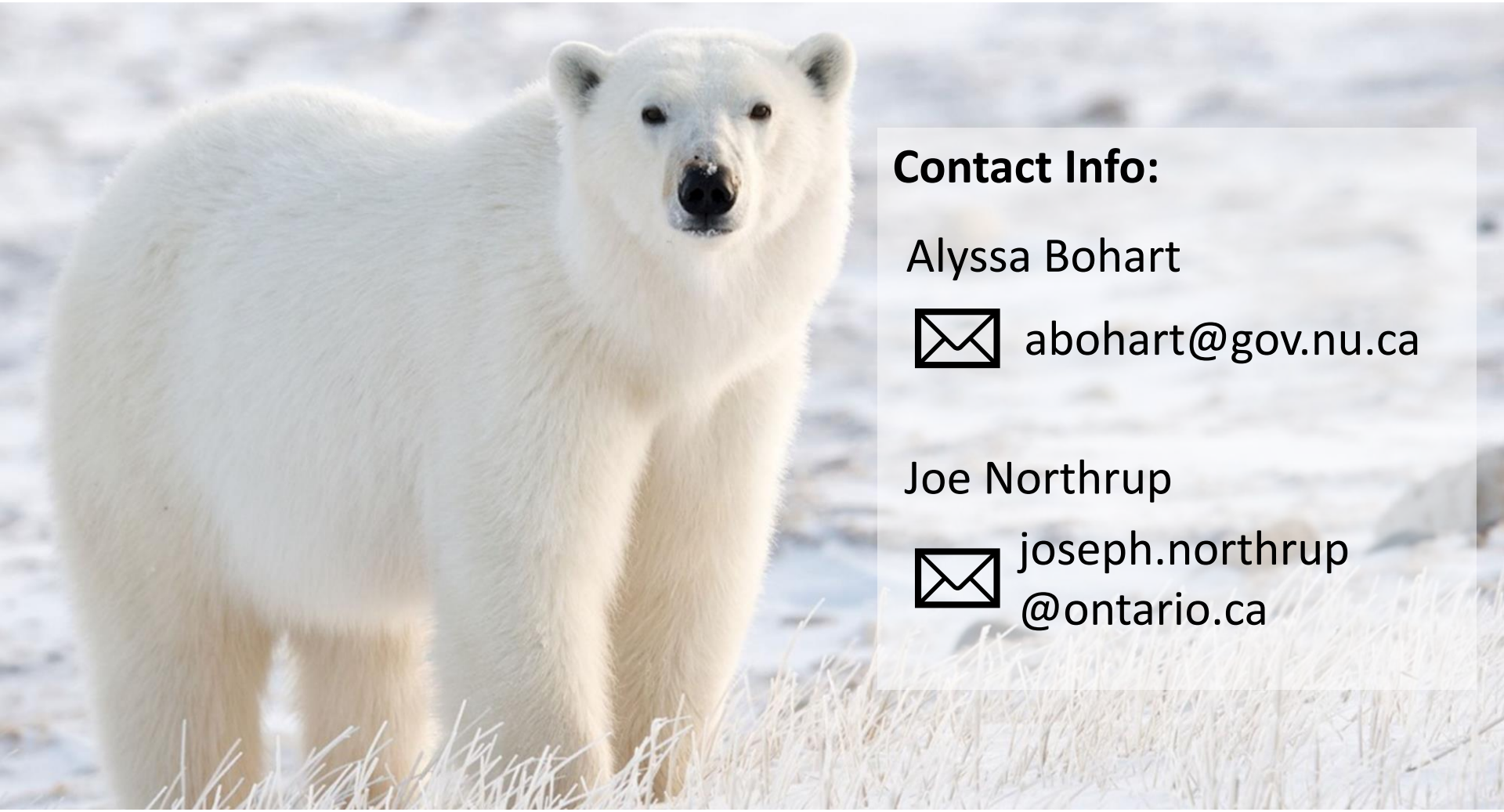
Total Allowable Harvest (TAH)

- The current TAH for Southern Hudson Bay is 25 bears per year.
- Department of Environment at this time is **recommending a TAH of 25.**
  - This is because of the ECCC biopsy darting results **showing movement between WH and SH**

Next Steps - Harvest Management

- Do you agree that the number of polar bears **stayed relatively the same** over time?
- Are there **enough** bears to harvest? Are there **too few**? **Too many**?
- What did you observe in the bears' **body condition** over time?
- Is there anything **special** that you observed and wanted to share with us?
- Where do you **agree/disagree** with our findings?

Thank you!



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Questions?