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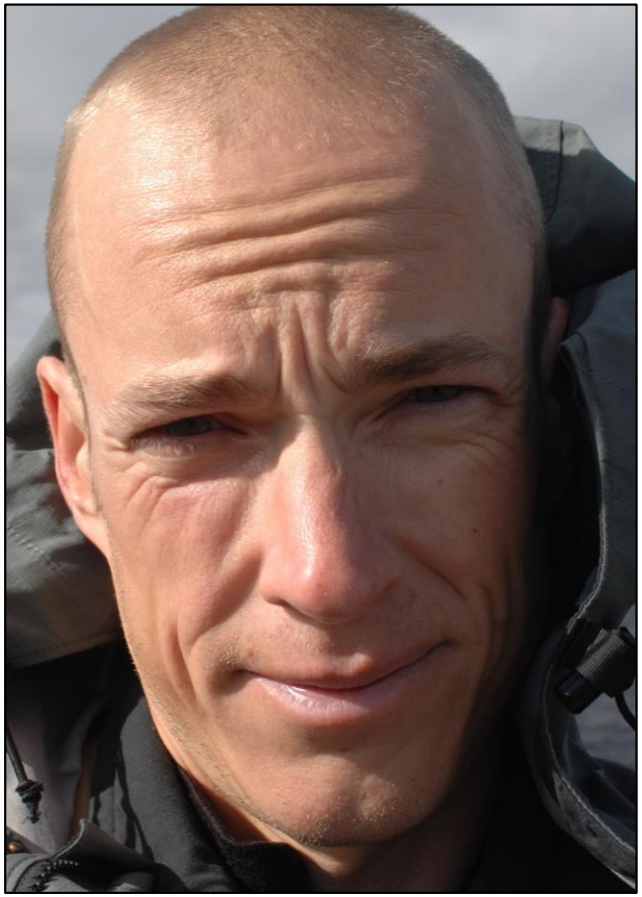
Building Nunavut Together
Nunavuliuqatigiingniq
Bâtir le Nunavut ensemble

ᐊᐸᑎᓕᕆᔨᖏᑦ
Department of Environment
Avatiliqiyikkut
Ministère de l'Environnement

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

Introductions

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



Evan Richardson
Polar Bear Biologist
Environment and Climate Change Canada

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

Outline

- Survey Process
- 2021 GN Aerial survey
- ECCC Biopsy darting study
- ECCC Collaring Research
- Ongoing GN Research/Public Safety
- TAH discussion

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

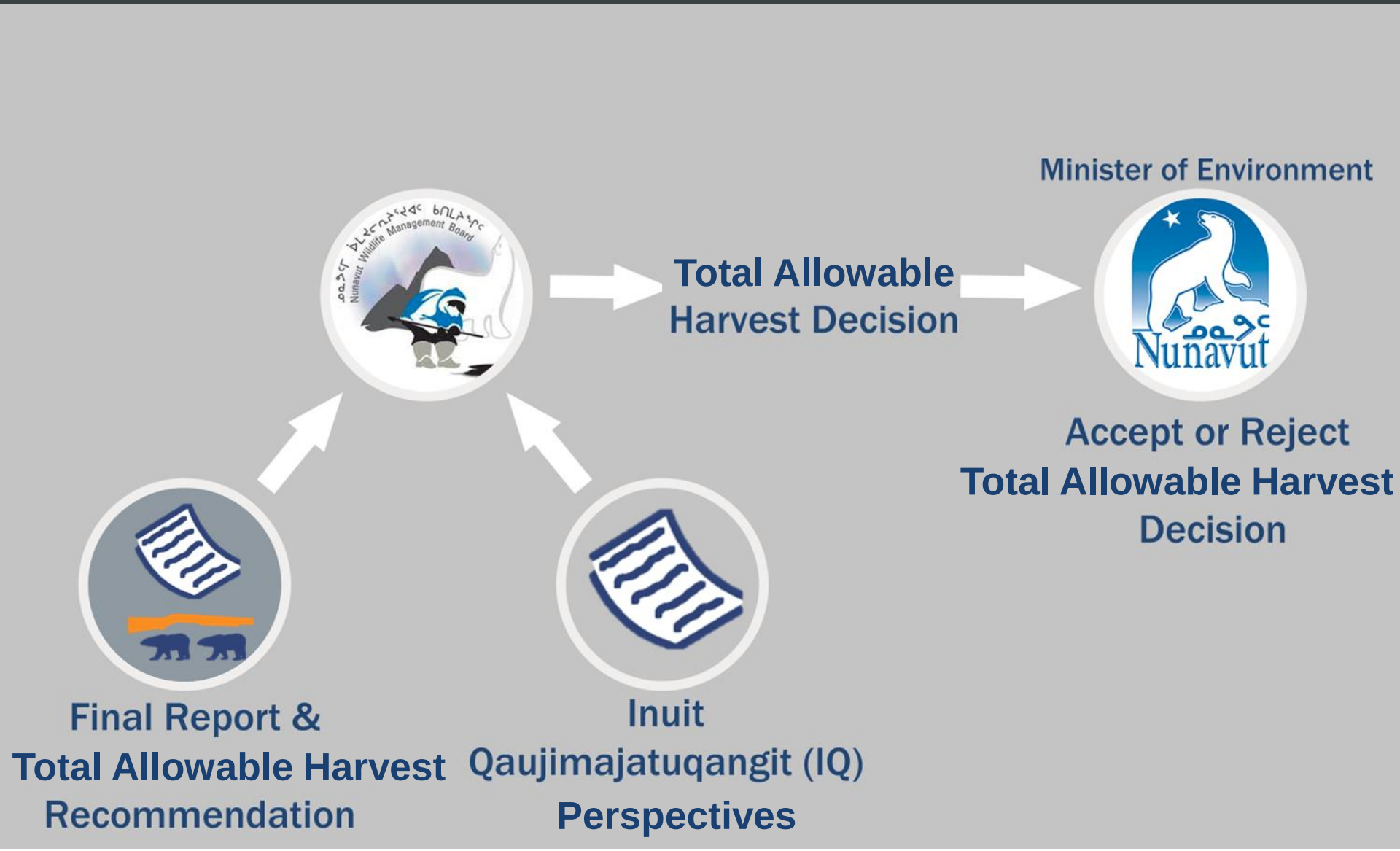
Survey Process

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

Accept or Reject
Total Allowable Harvest
Decision

Accepts

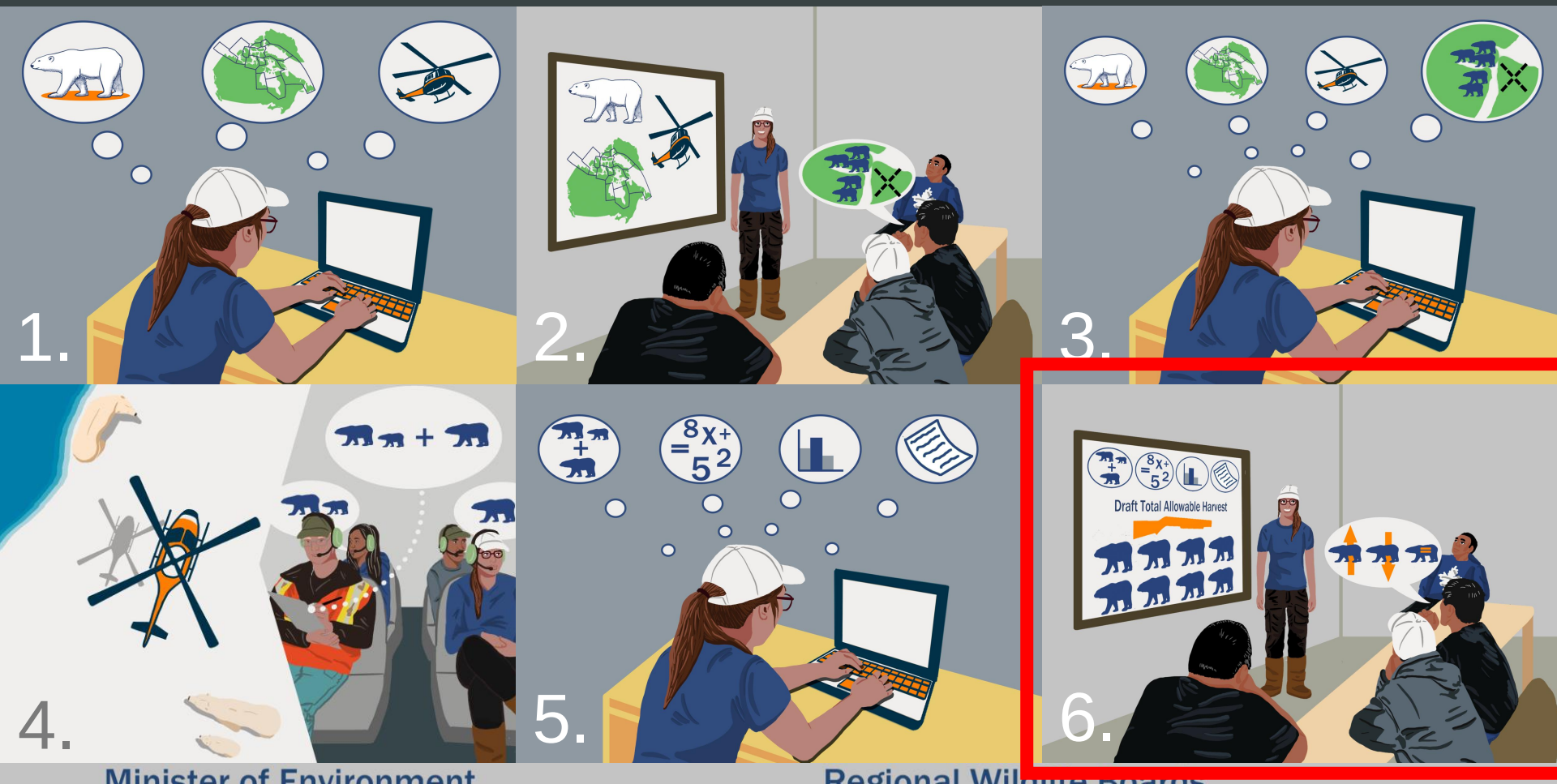
Regional Wildlife Boards

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

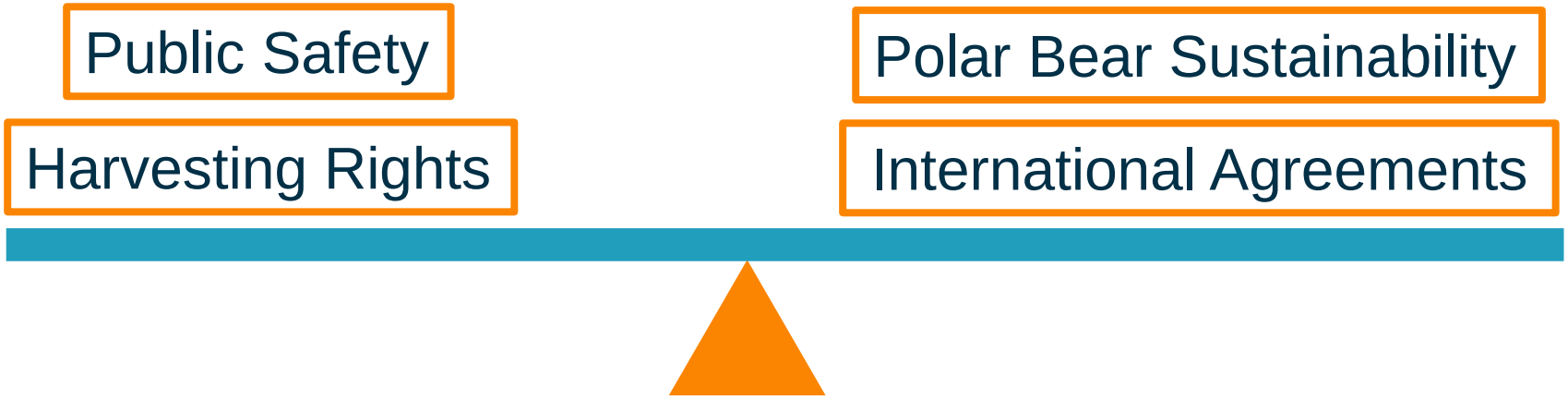
7.

Accepts

Harvest Management

Job of the Department of Environment

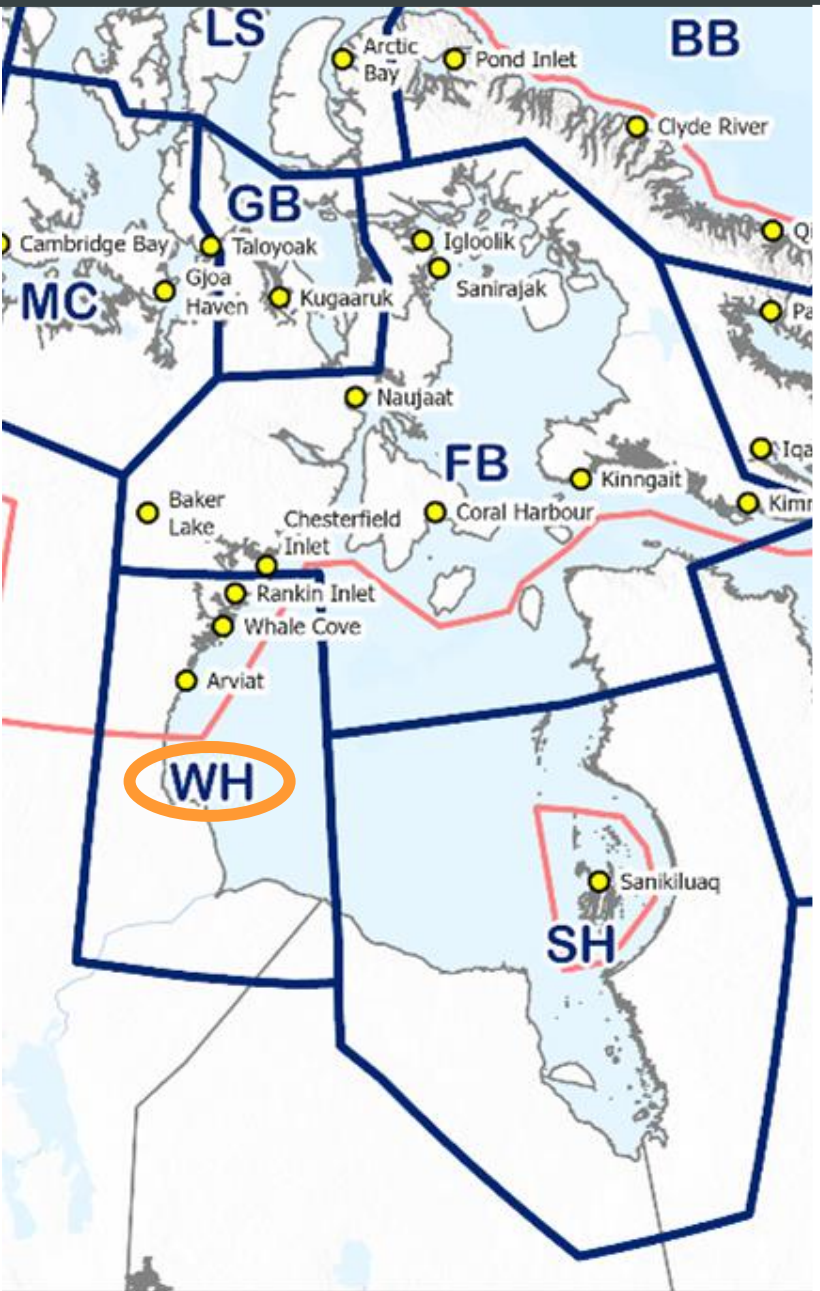
- Balancing act



Total Allowable Harvest (TAH)

- The current TAH for Western Hudson Bay is 38 bears per year.
- Department of Environment at this time is **recommending a TAH of 38.**

Western Hudson Bay Subpopulation



- Previously surveyed by the Government of Nunavut in 2011 and 2016

- Ongoing studies being done by Environment and Climate Change Canada since the 1980s
  - Work done in Manitoba
- 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 Survey Report

2021 AERIAL SURVEY OF THE WESTERN HUDSON BAY POLAR BEAR SUBPOPULATION

FINAL REPORT

November 16, 2022

Stephen N. Atkinson[1], John Boulanger[2], Mitch Campbell[3], Vicki Trim[4], Jasmine Ware[5] and Amélie Roberto-Charron[6]

Submitted to meet requirements of:
Wildlife Research Permit WL 2021-0061, Wapusk National Park Research and Collection Permit Number WAP-2021-3990

Status Report 2022, Nunavut Department of Environment, Wildlife Research Section, Igloolik, NU

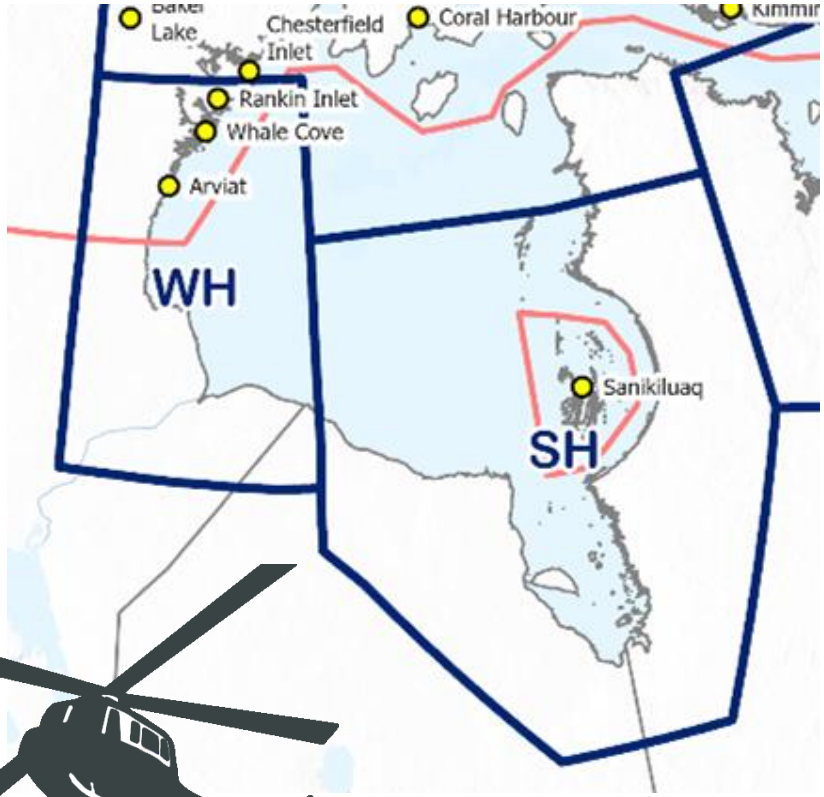
Thank You

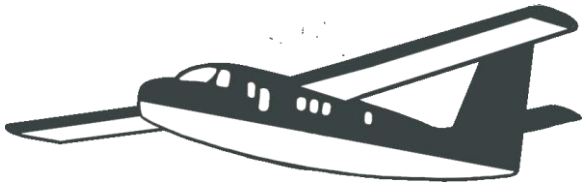
This work would not have been possible without the participation and support of the HTOs and the following observers:

- Gerard Maktars
- Timothy Kookeyuk
- Timothy Pissuk
- Kevin Subgut
- Conor Camphaug
- Clayton Tartuk
- Jack Backstone

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



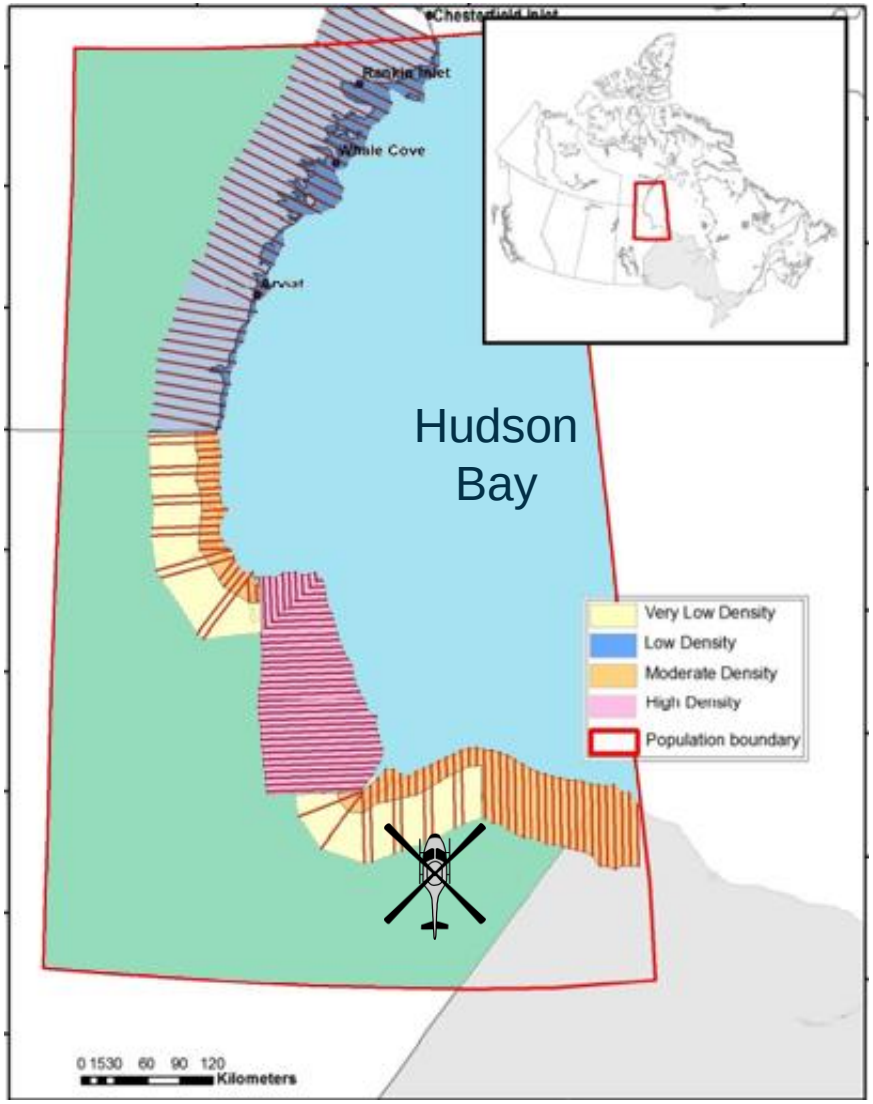


What is an Aerial Abundance Survey?

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

Aerial Abundance Surveys

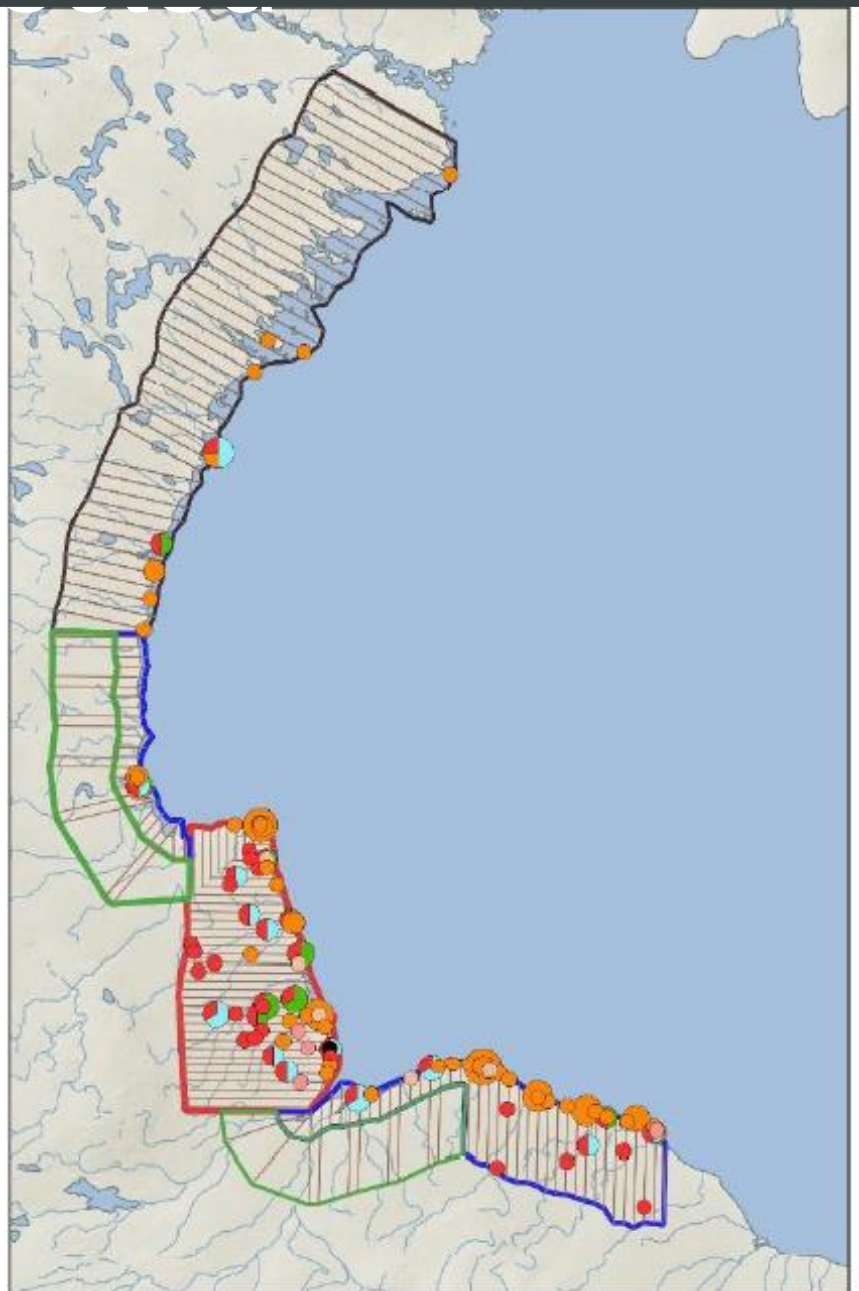
- Used same transects as 2016 study
- Transects in 2016 determined using:
  - 2011 survey and results
  - Inuit Qaujimajatuqangit (IQ)
  - Telemetry data (University of Alberta & Environment and Climate Change Canada
- Transects divided into 4 densities:
  - **Very low**: inland outside of Wapusk Park
  - **Low**: northern Western Hudson Bay
  - **Moderate**: north and west of Churchill River
  - **High**: Wapusk Park, coast between Churchill and Nelson River



Western Hudson Bay Subpopulation

Aerial Abundance Survey Results

- 17,000 km flown
- Observed 194 bears, in 125 groups observed
- Estimate: 618 bears
- 8% of bears in Nunavut
- Males mostly along coast
- Females mostly inland



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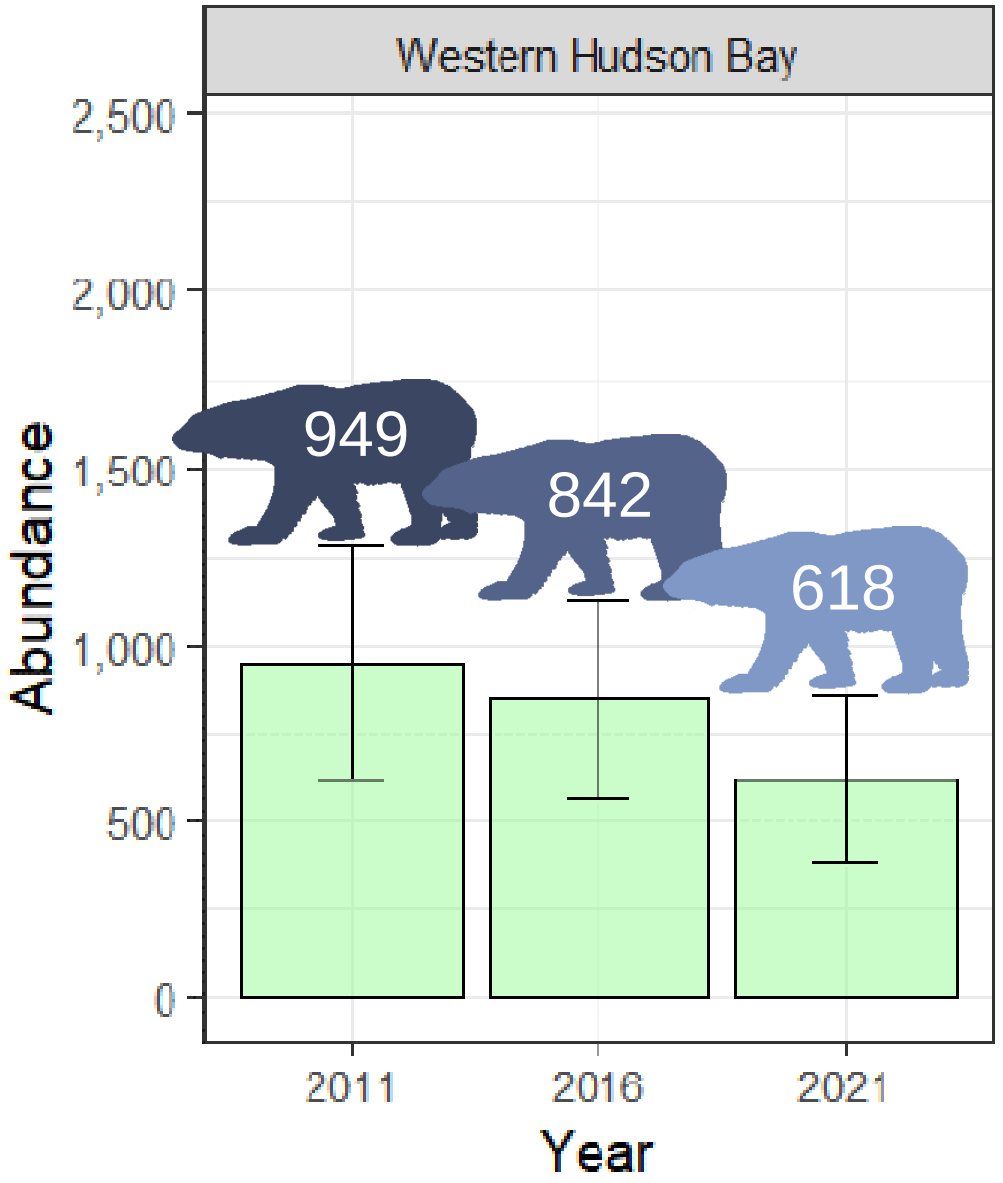
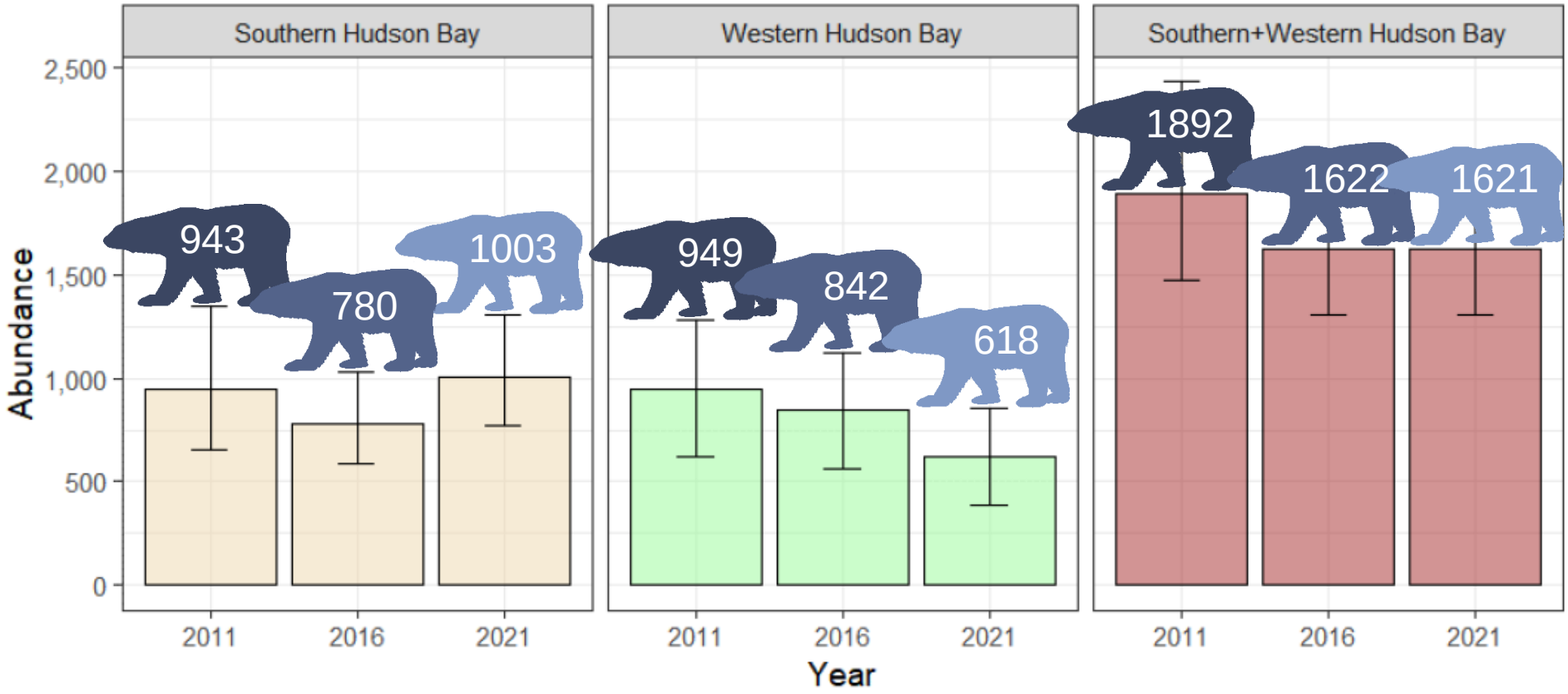


Aerial Abundance Survey Results

- Reasons for decrease?
  - 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

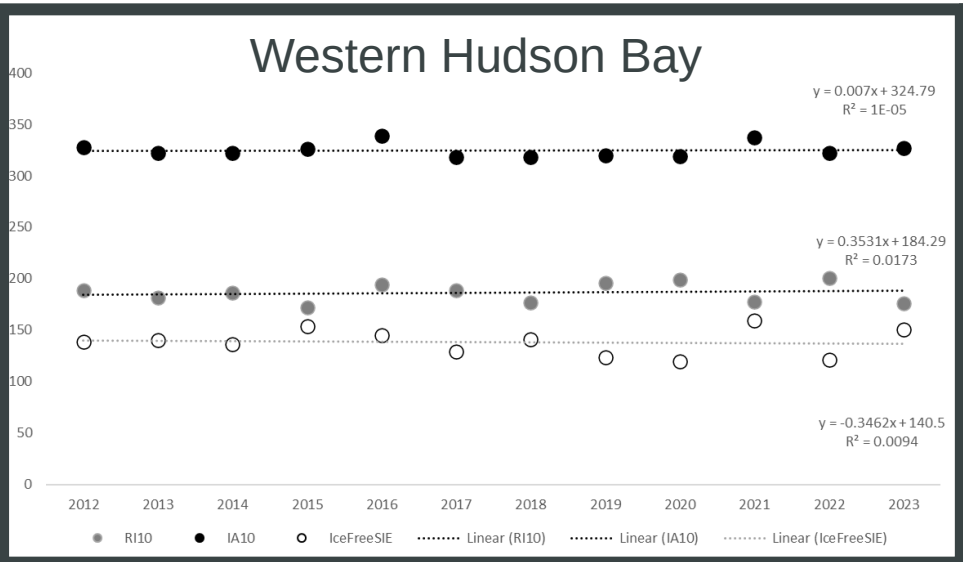
- Biopsy sampling – bears **not physically handled** or **sedated**

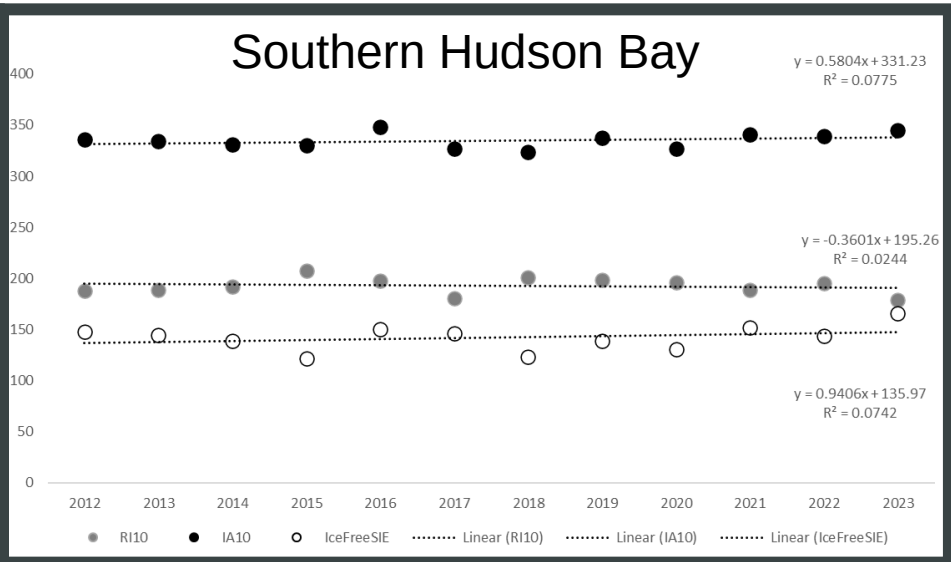
Genetics/DNA

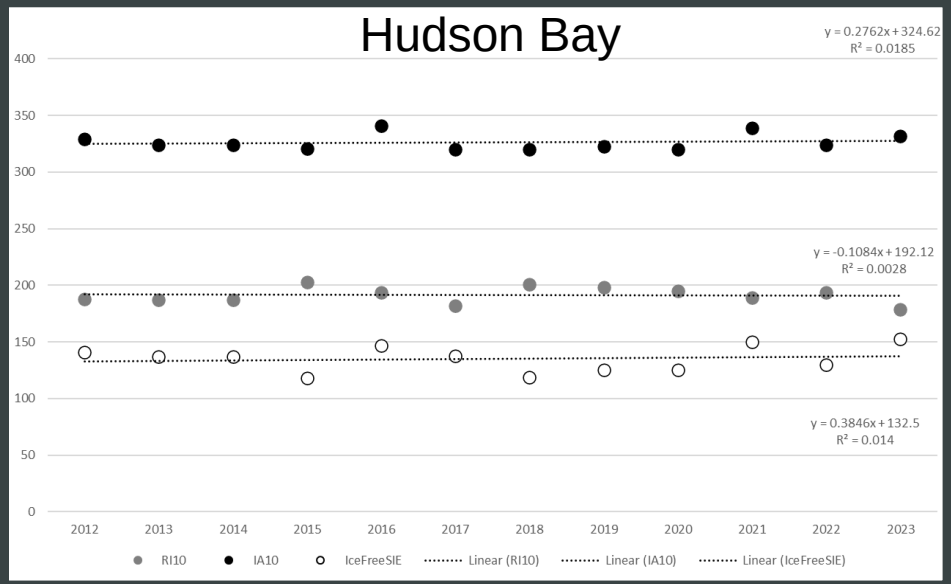

Hudson
Bay
SH


Hudson
Bay
WH
SH

Results – Sea Ice



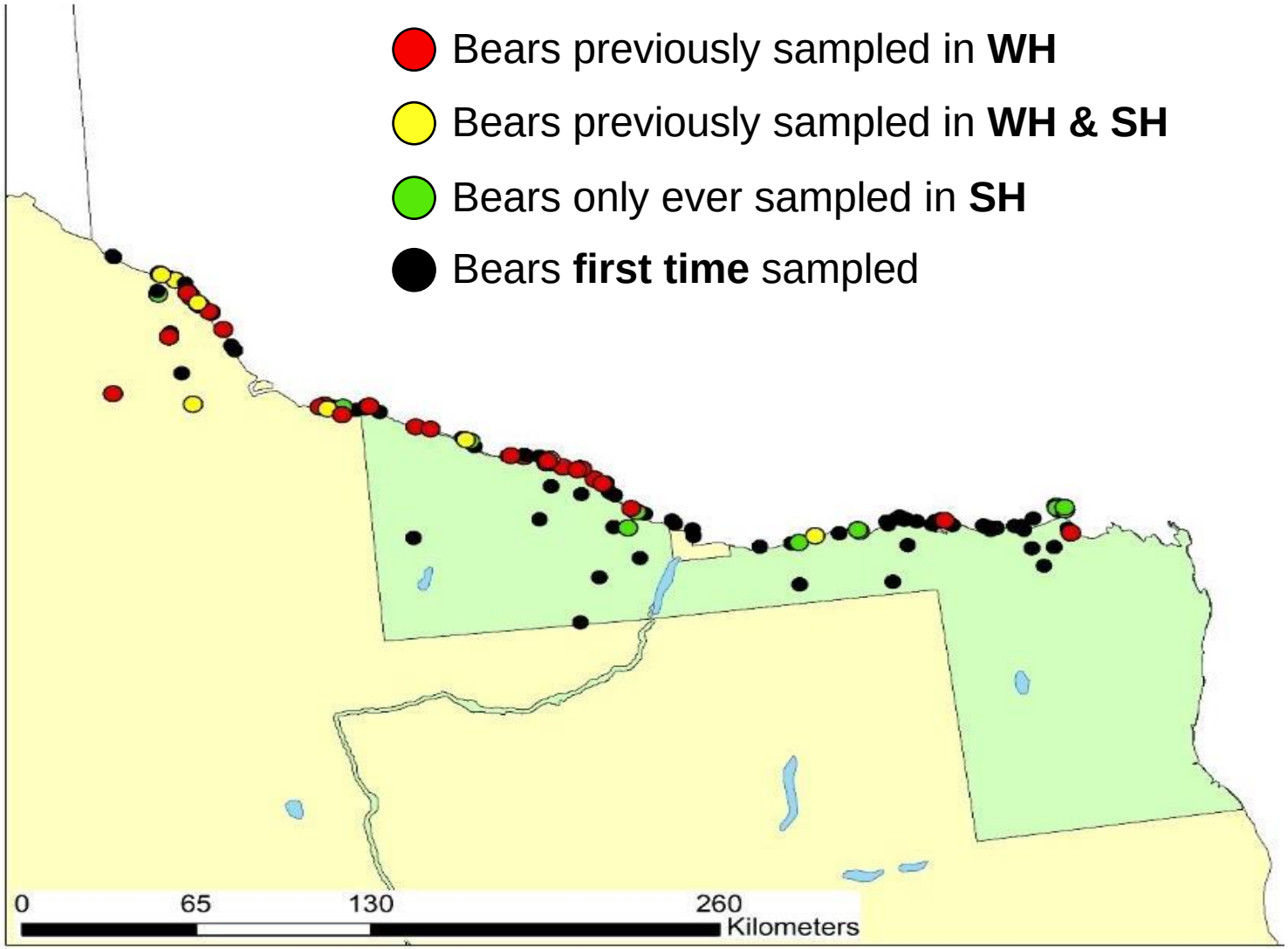


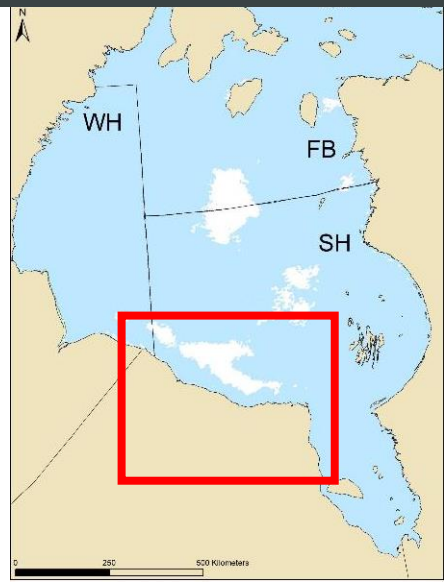


Results – 2021 SH Recaptured Bears

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

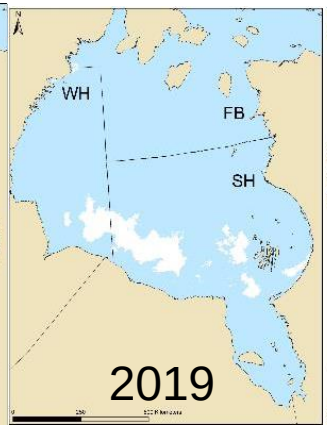
WH

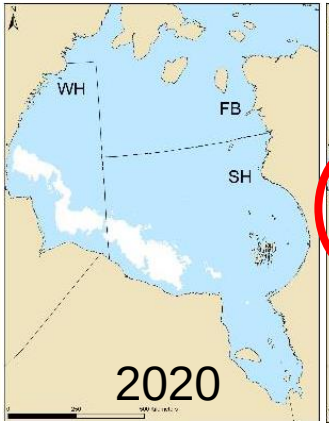
SH

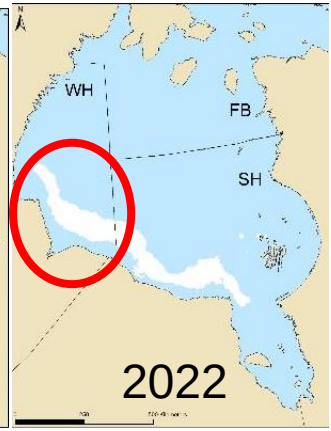
35%

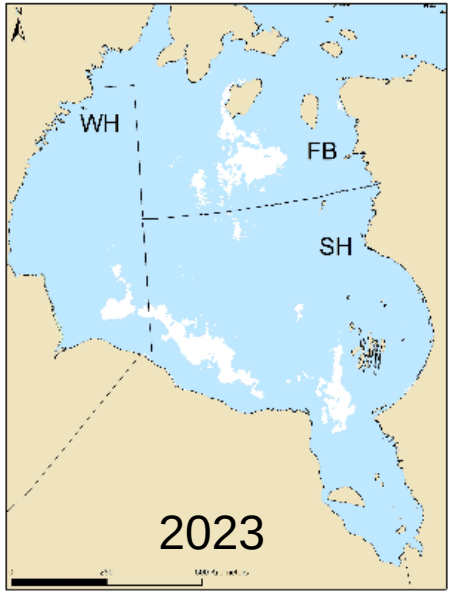
0 187.5 375 750 Kilometers

Results – Last area of consolidated ice before summer

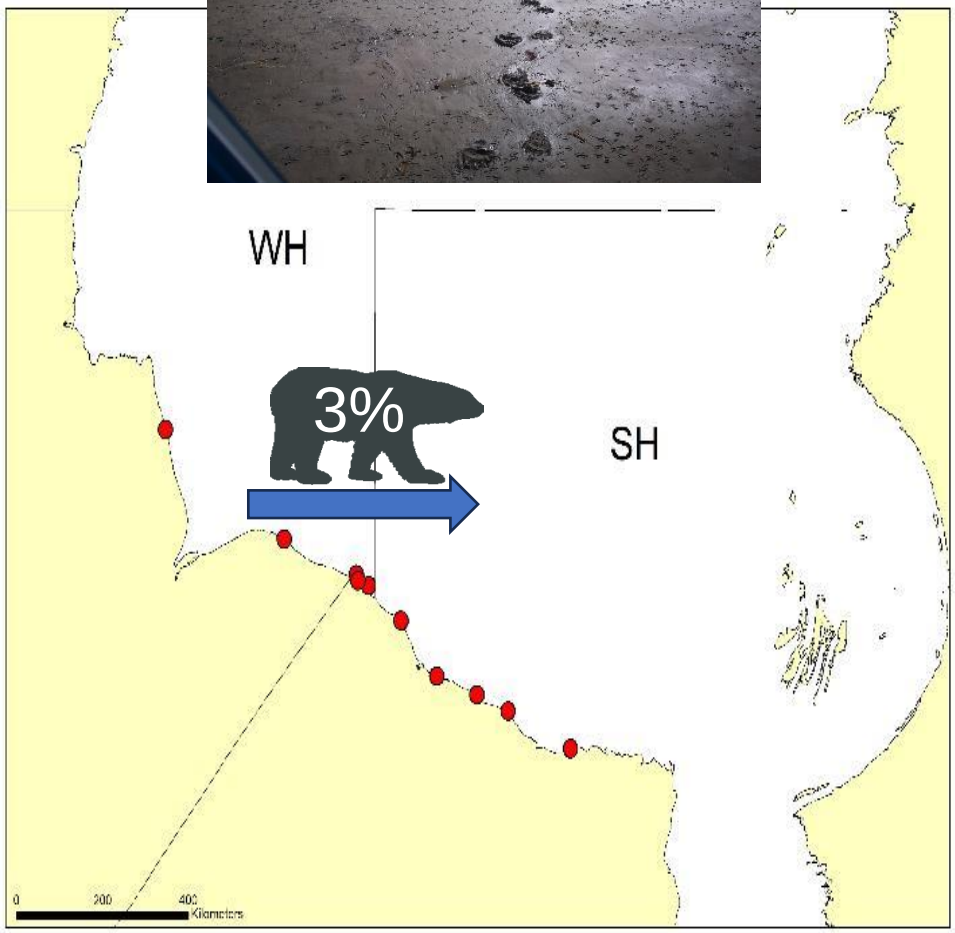


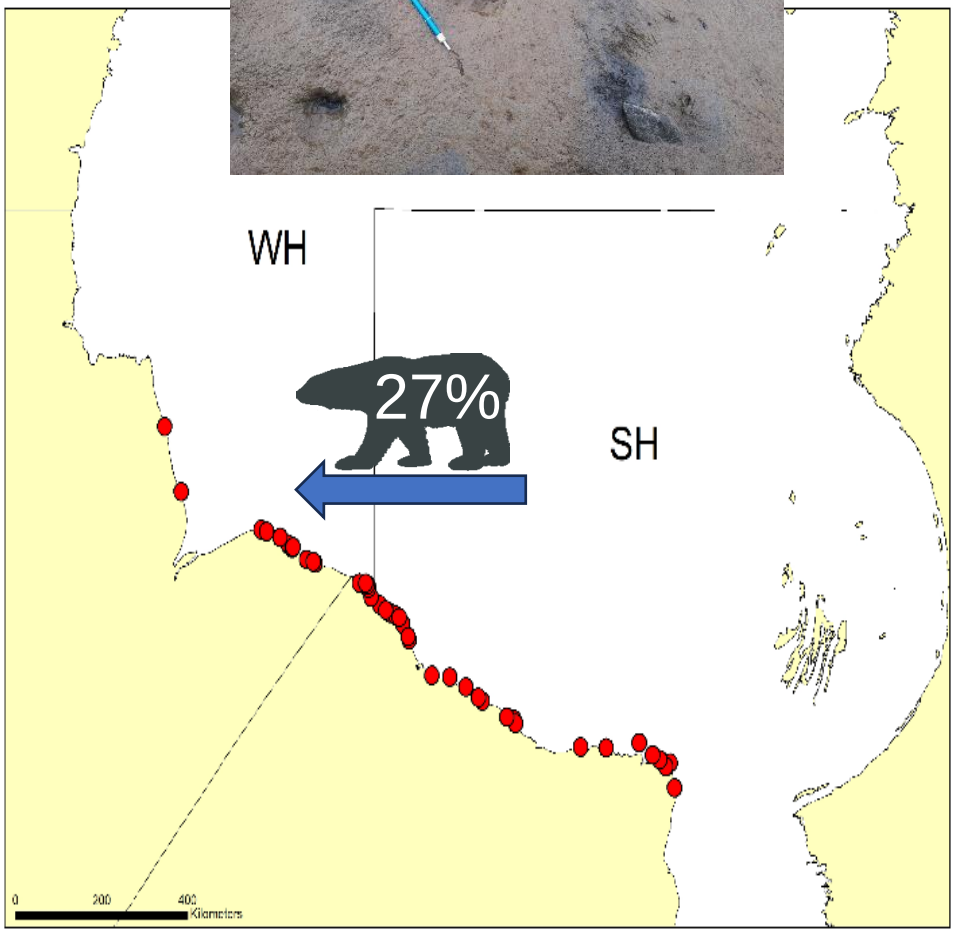




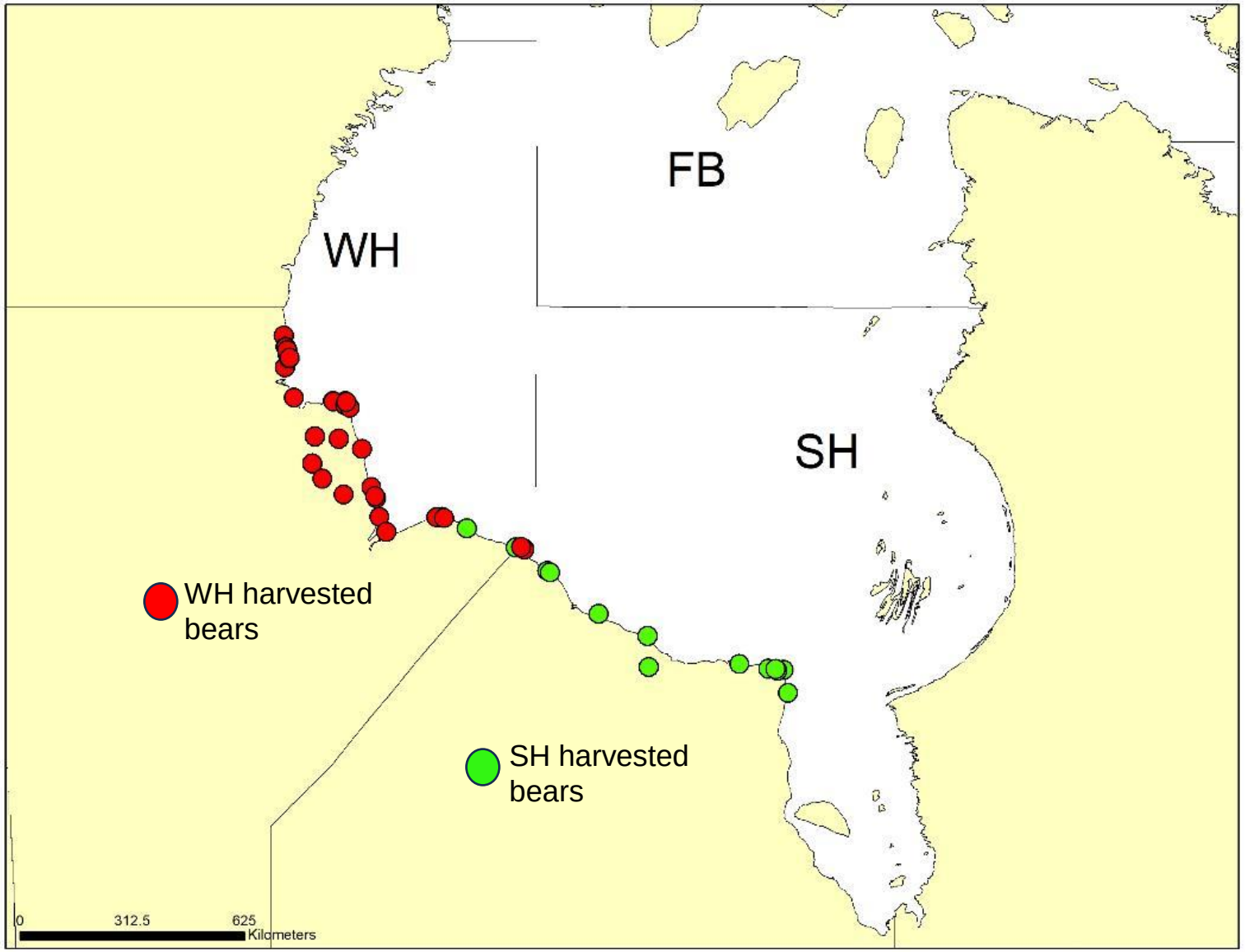


Results – WH to SH and SH to WH 2022/2023

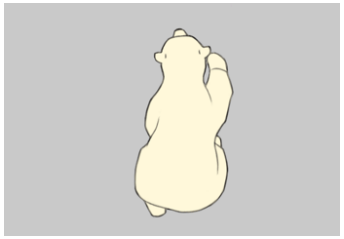


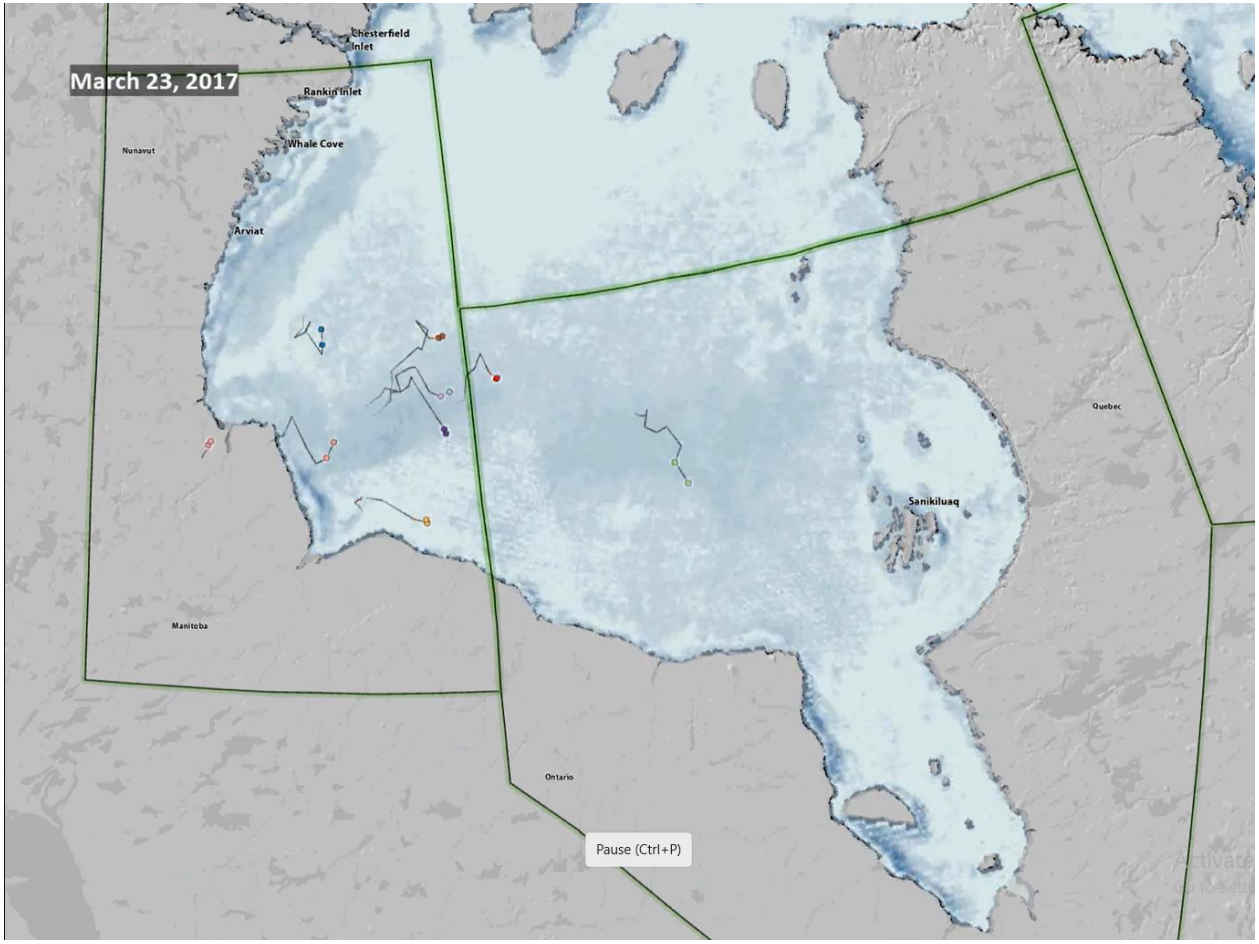


Results – WH to SH and SH live sampling of harvested bears 2017-2023



Collaring




March 23, 2017
Chesterfield Inlet
Rankin Inlet
Whale Cove
Nunavut
Arviat
Quebec
Sanikiluaq
Manitoba
Ontario
Pause (Ctrl+P)

Method Differences

- Aerial Surveys
  - “Snap shot” in time
  - Unable to determine bear movements

- Biopsy Darting
  - Can identify individual bears
  - Determine some level of bear movements

- Collars
  - Can identify individual bears
  - Determine precise movements for 1-2 years

Ongoing GN Research

Arviat

- Joe Savikataaq Jr. – Conservation Officer

- Running bear deterrence/public safety program

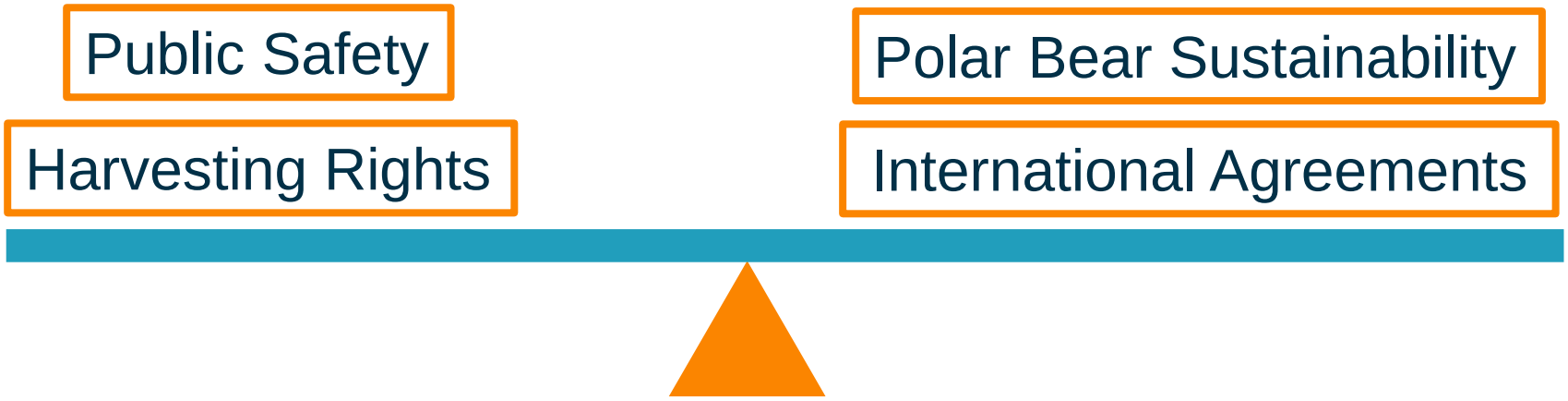
- Biopsy darting
  - How many conflict bears are the same bear returning?
  - How many conflict bears are conflict bears from Churchill?

- What deterrence tools are most effective?
  - Frozen seal lure stations
  - Trapping and relocation
  - Flares, bangers, etc.

Next Steps - Harvest Management

Job of the Department of Environment

- Balancing act



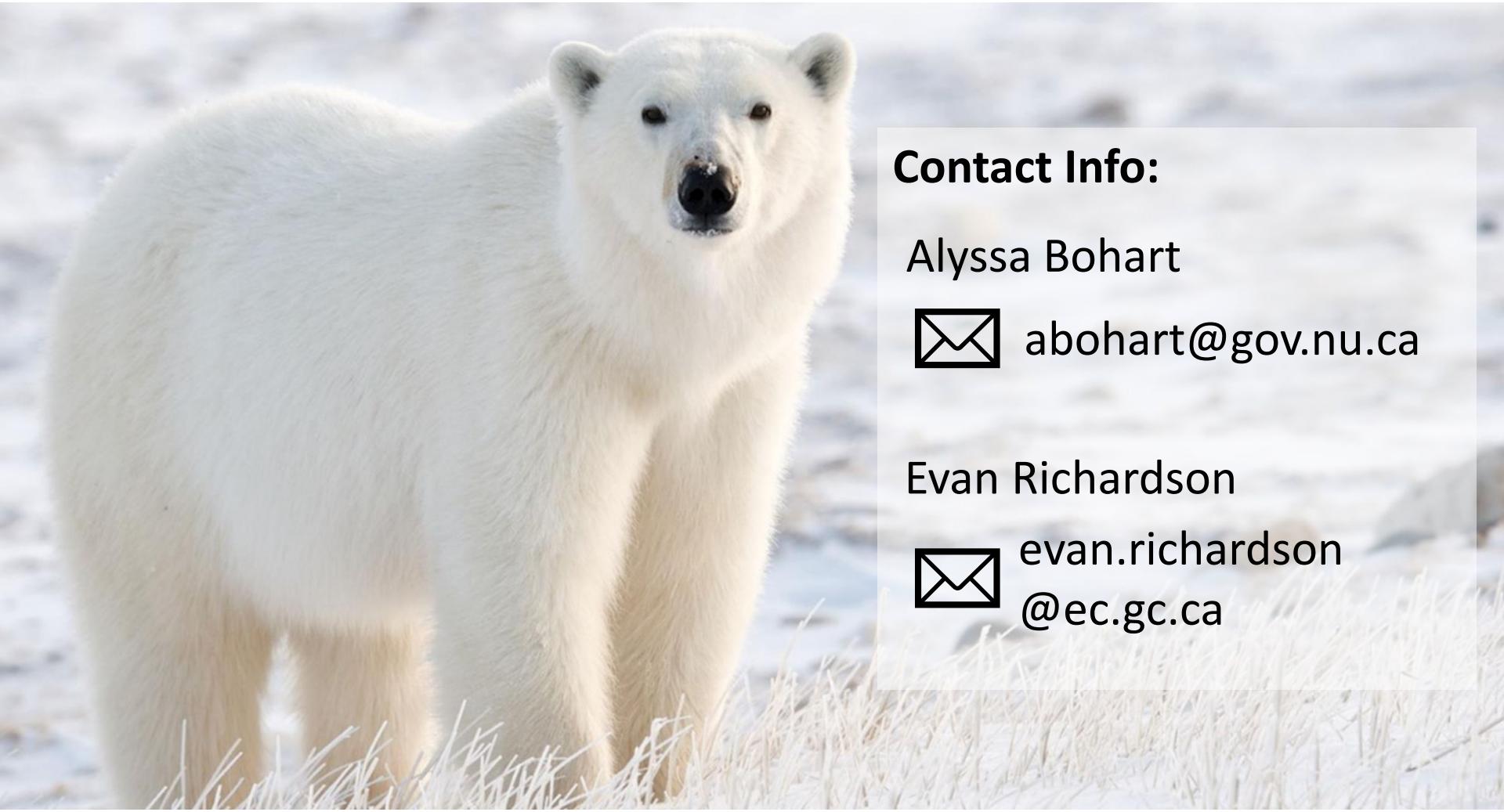
Total Allowable Harvest (TAH)

- The current TAH for Western Hudson Bay is 38 bears per year.
- Department of Environment at this time is **recommending a TAH of 38.**
  - 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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Evan Richardson

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Questions?