

Polar bears in Ontario: a Threatened species at the southern limit of its range

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Outline

Polar bears in Ontario

- Ecology
- Life history
- Population status

Research at York U-MNR

- Movement and habitat use
- Body size and condition
- Remnant ice surveys
- Telemetry without collars
- Human-polar bear coexistence / *Omushkego* (Cree) Knowledge



Ongoing Projects

Late-season (remnant) sea ice surveys

- Ontario Ministry of Natural Resources (OMNR)
- Environment and Climate Change Canada (ECCC)
- Mushkegowuk Council

Movement and habitat use

- OMNR
- University of Alberta
- ECCC

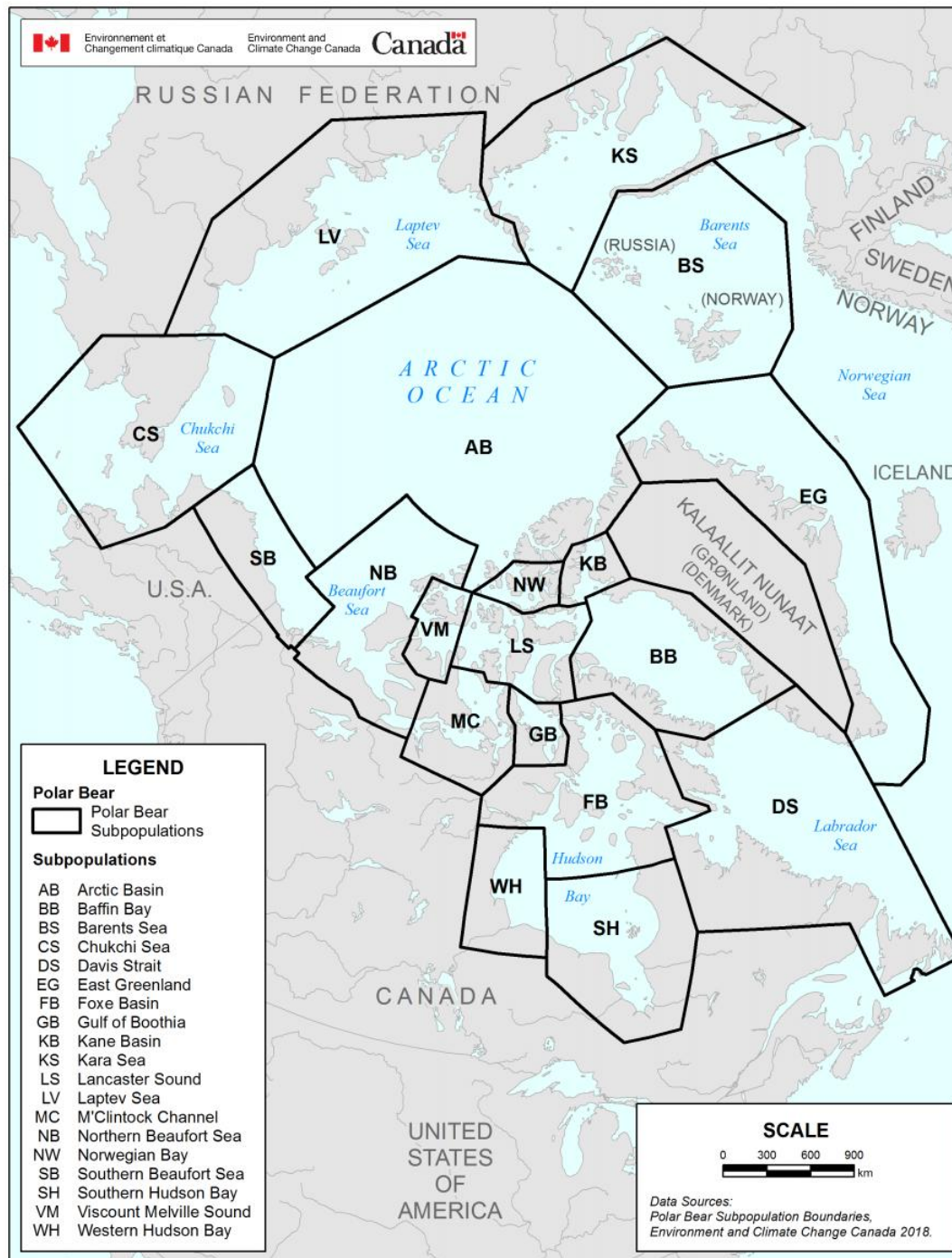
Denning ecology

- OMNR
- University of Alberta
- Diet and body condition
- OMNR

Human-polar bear coexistence and community knowledge

- Mushkegowuk Council
- OMNR
- San Diego Zoo Wildlife Alliance
- Polar Bears International





Abundance

Global estimate:
26,000

20 subpopulations



Habitat: Annual sea ice





Primary prey

Ringed seal
(*Pusa hispida*)



Stable landfast ice

Bearded seal
(*Erignathus barbatus*)



Dynamic pack ice

Harp seal



© Fisheries & Oceans, Canada

Walrus



Beluga



Harbour seal



© D. Bowen

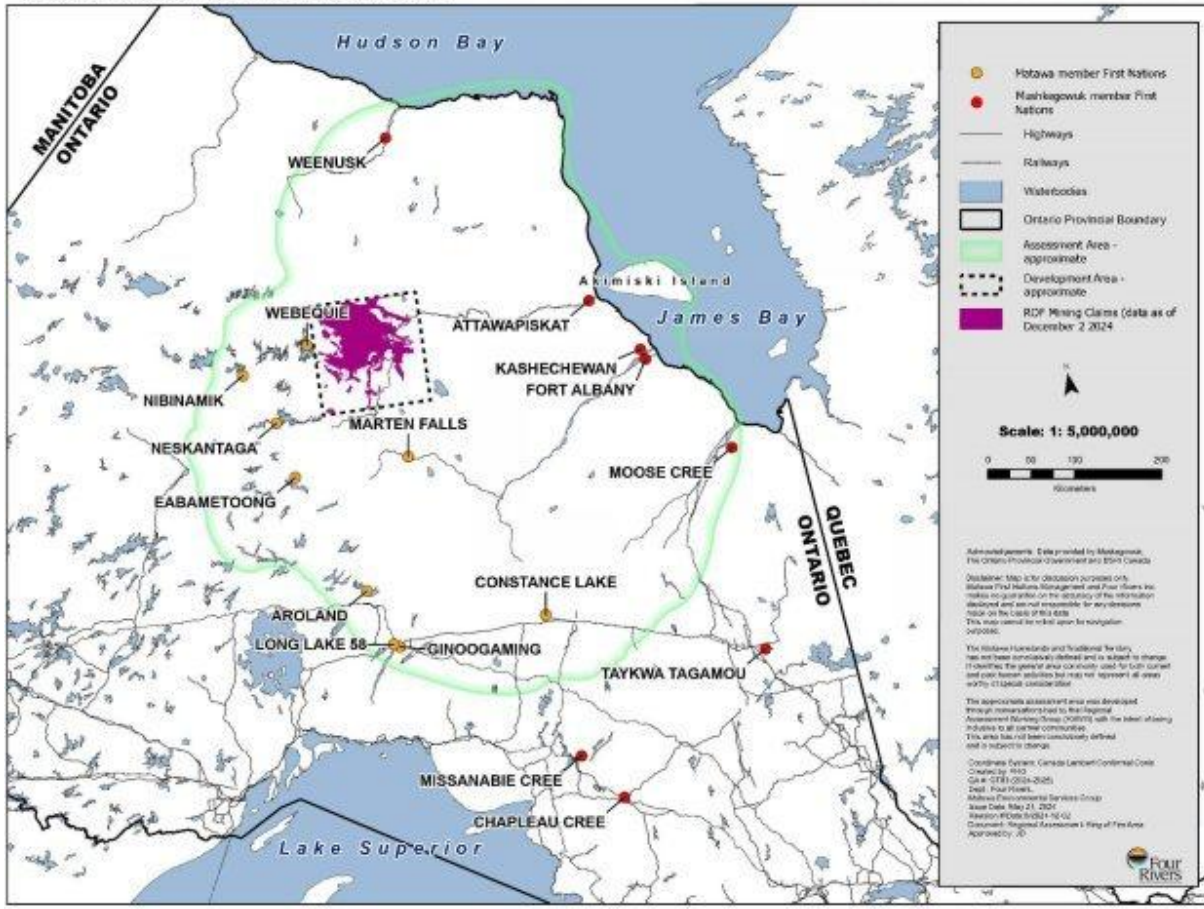








REGIONAL ASSESSMENT - RING OF FIRE AREA



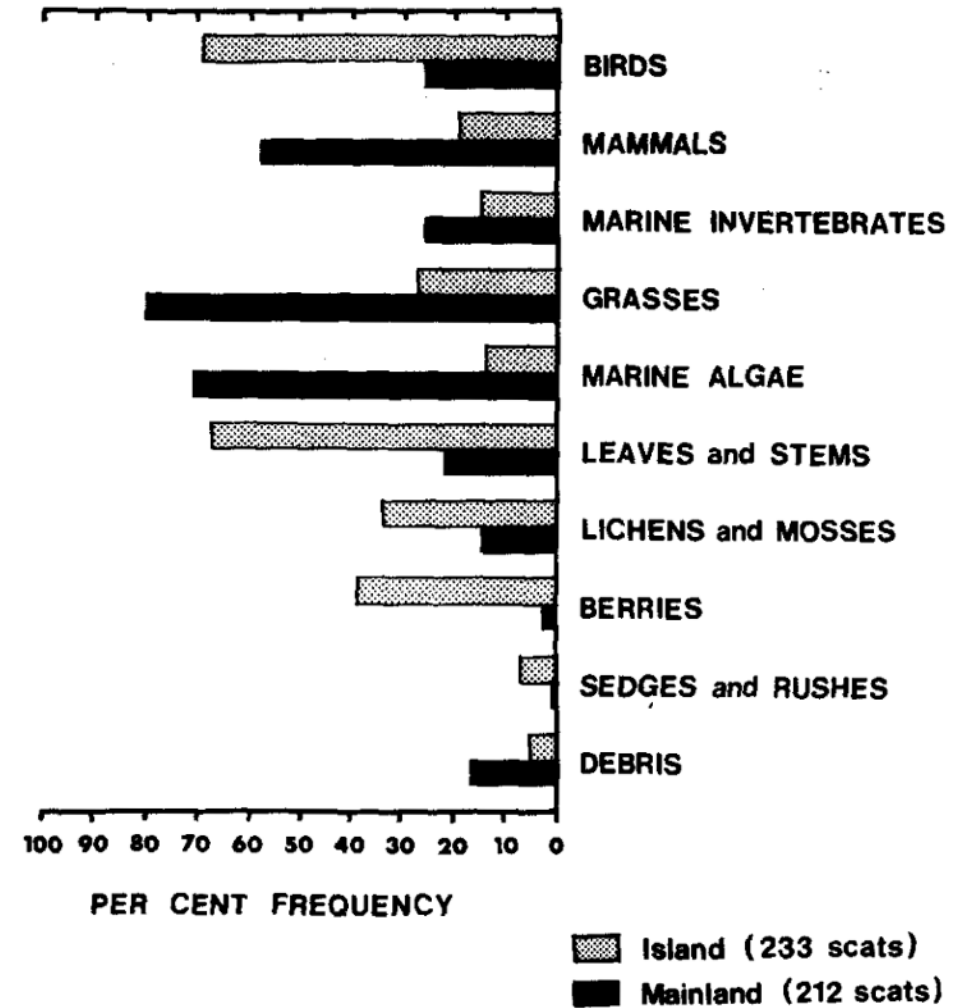
Regional Assessment in the Ring of Fire Area, Interim Report 5000 Figure 1



The Food Habits of Polar Bears of James Bay and Southwest Hudson Bay in Summer and Autumn

RICHARD H. RUSSELL¹

Arctic, Vol. 28 No. 2 (1975): June: 85–152



Annual life history

Apr - Jul

Aug - Nov

Dec - Mar



On ice

On land

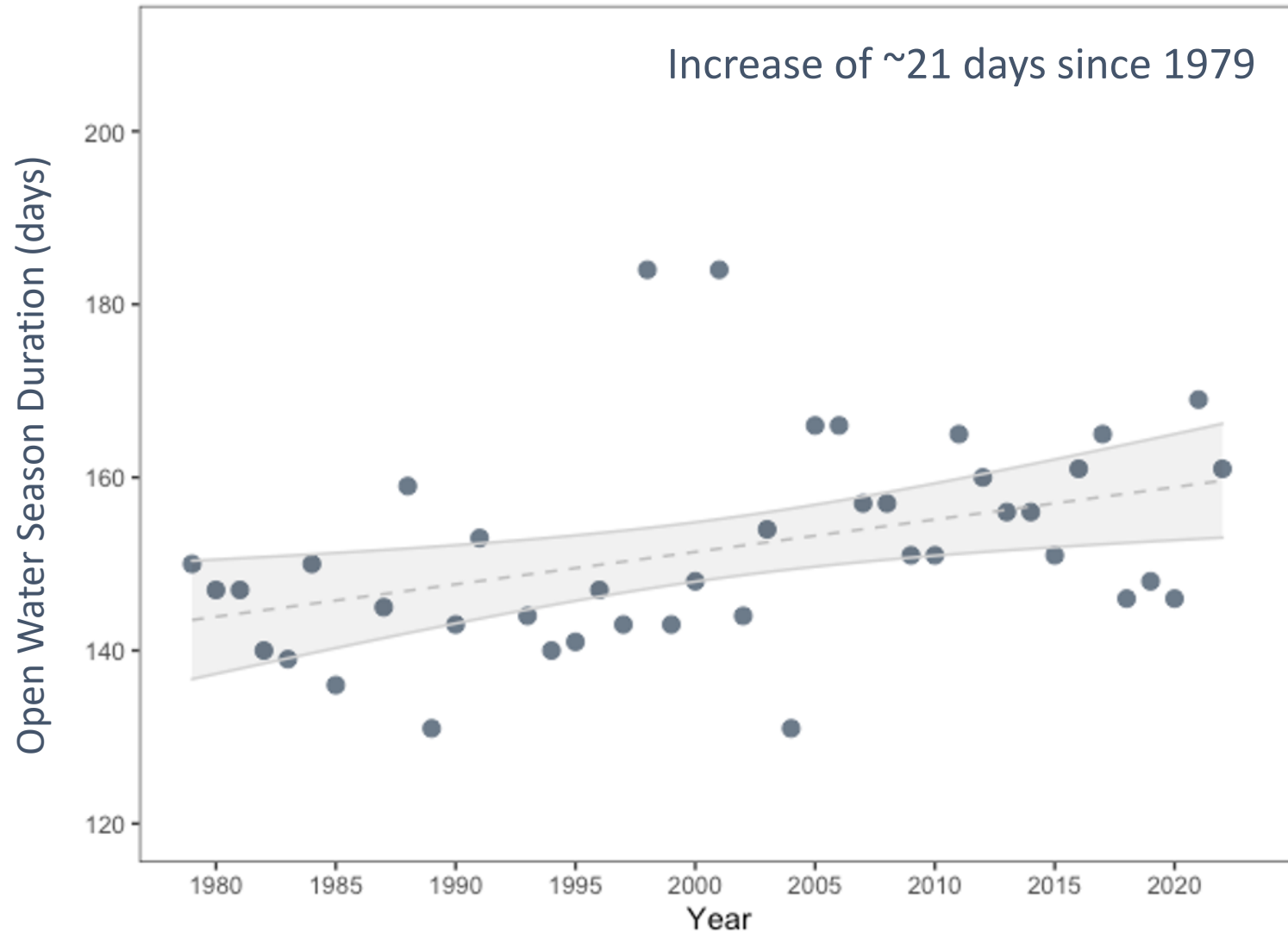
On ice

Feeding

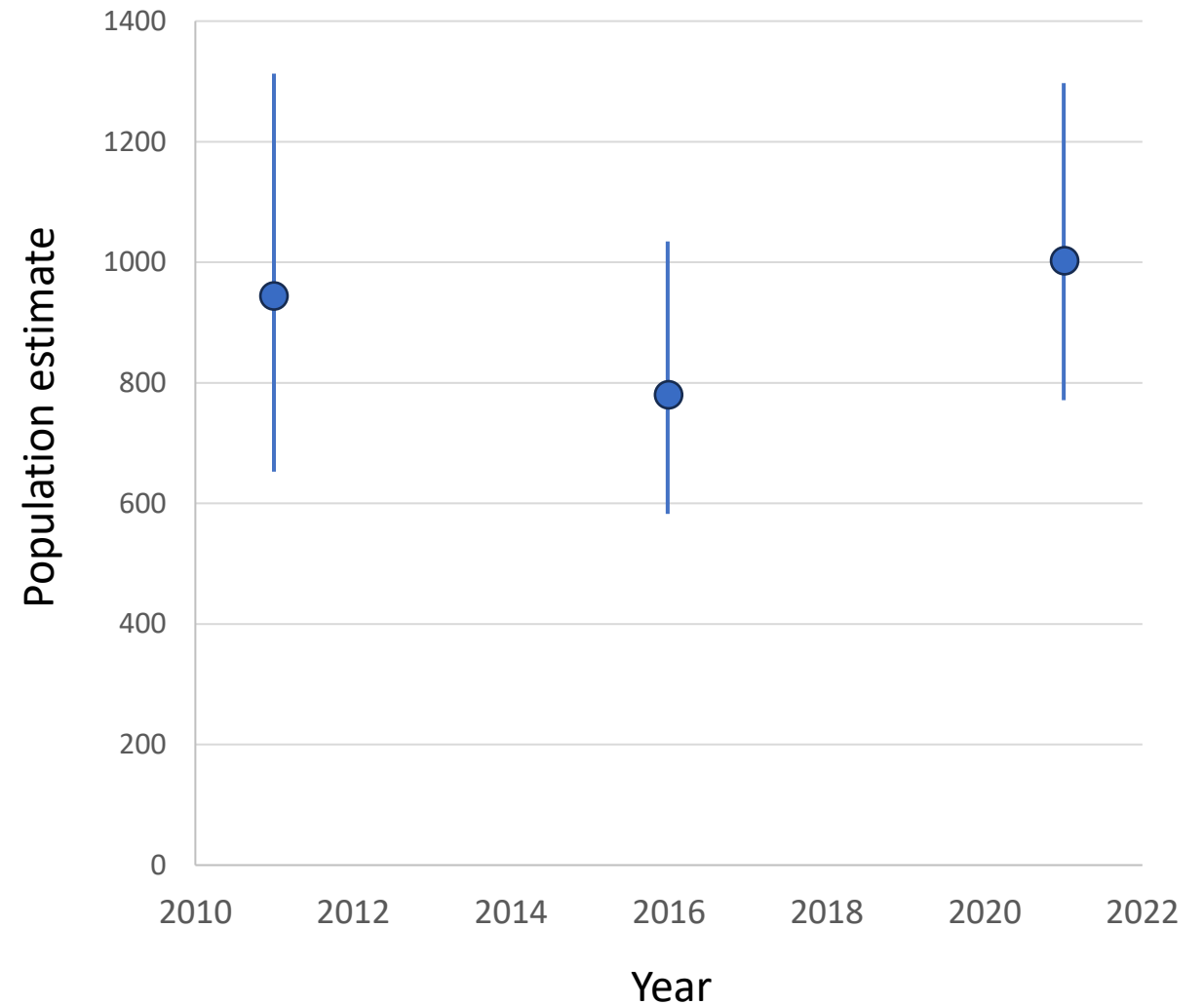
Fasting

Fasting?

Open water season is getting longer in Southern Hudson Bay



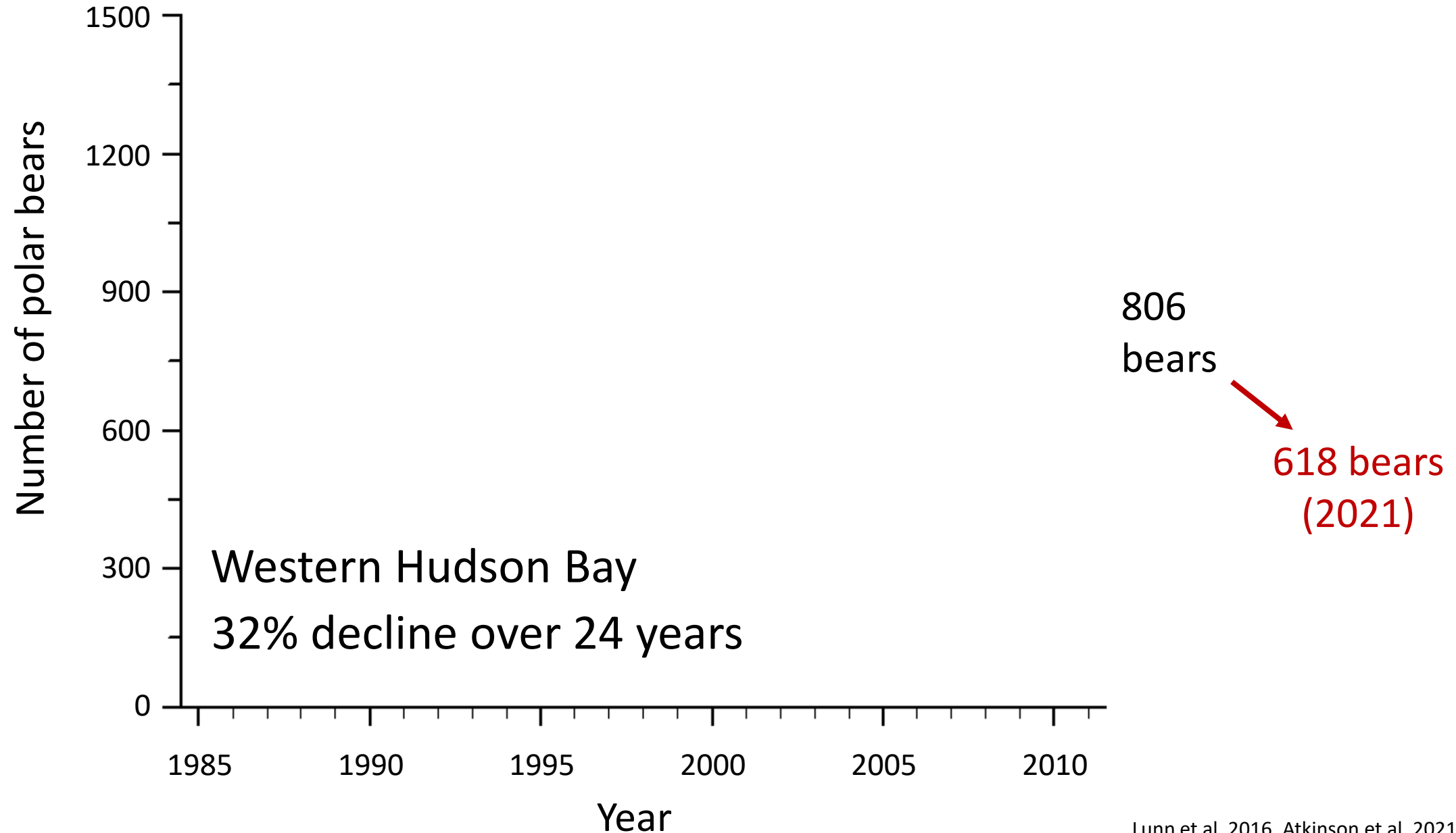
Stable abundance: Southern Hudson Bay



Obbard et al. (2018) *Arctic Science*, 4, 634–655.

Northrup et al. (2021)

Declining Abundance: Western Hudson Bay





James Bay

- 2012-2015
- GPS satellite collars on adult females

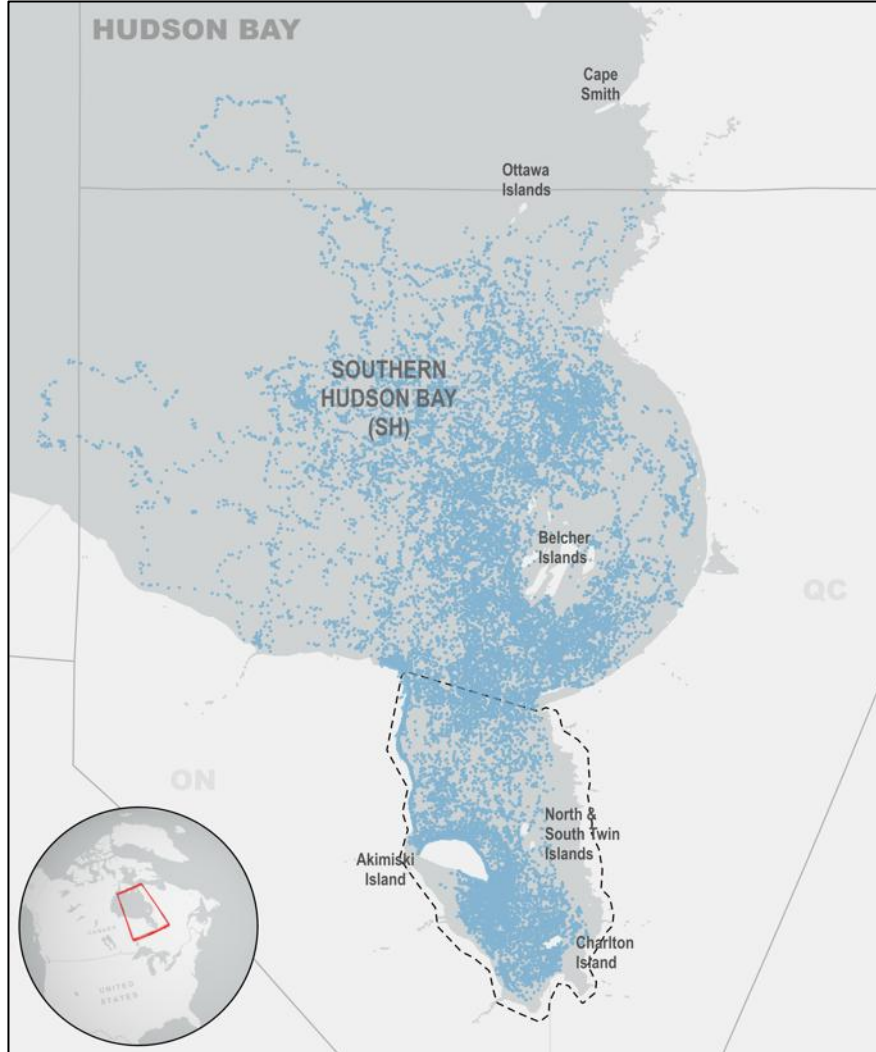


Objectives

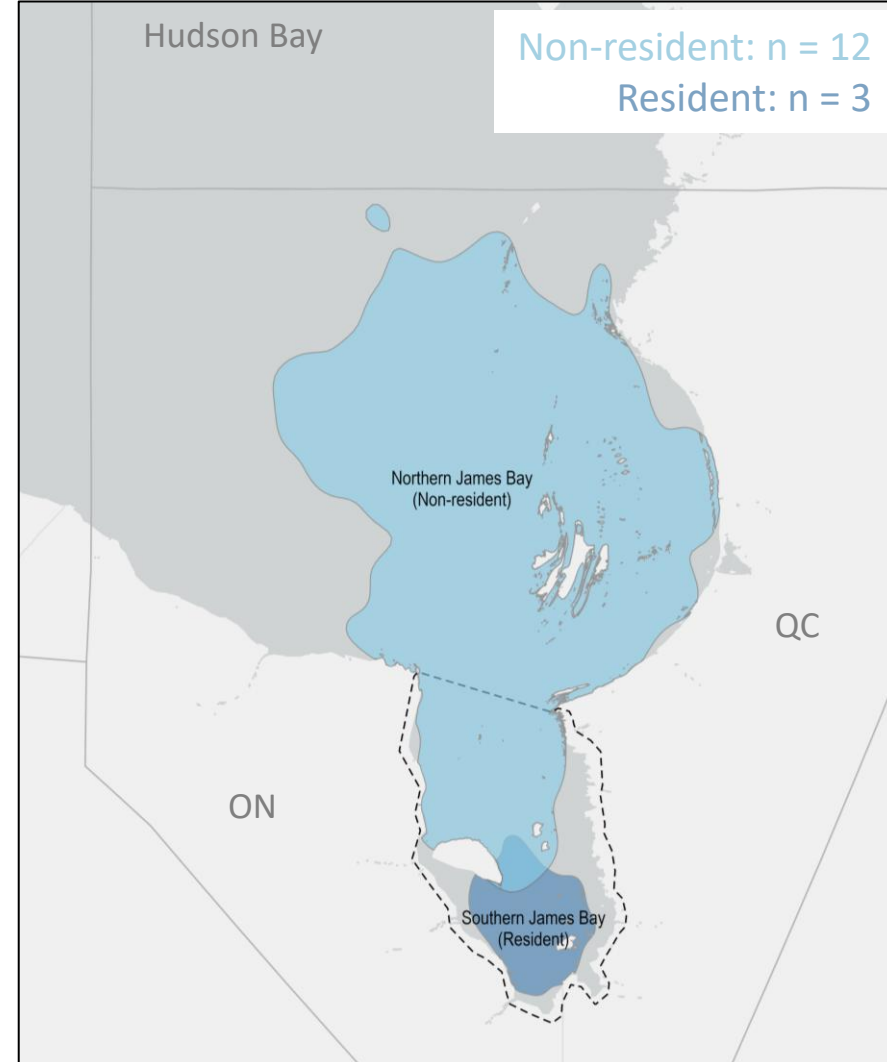
- Movement
- Habitat selection
- Denning
- Diet and body condition
- Video collars

Two distinct groups of polar bears occupy James Bay

GPS locations from 19 adult female polar bears (2012-2017)



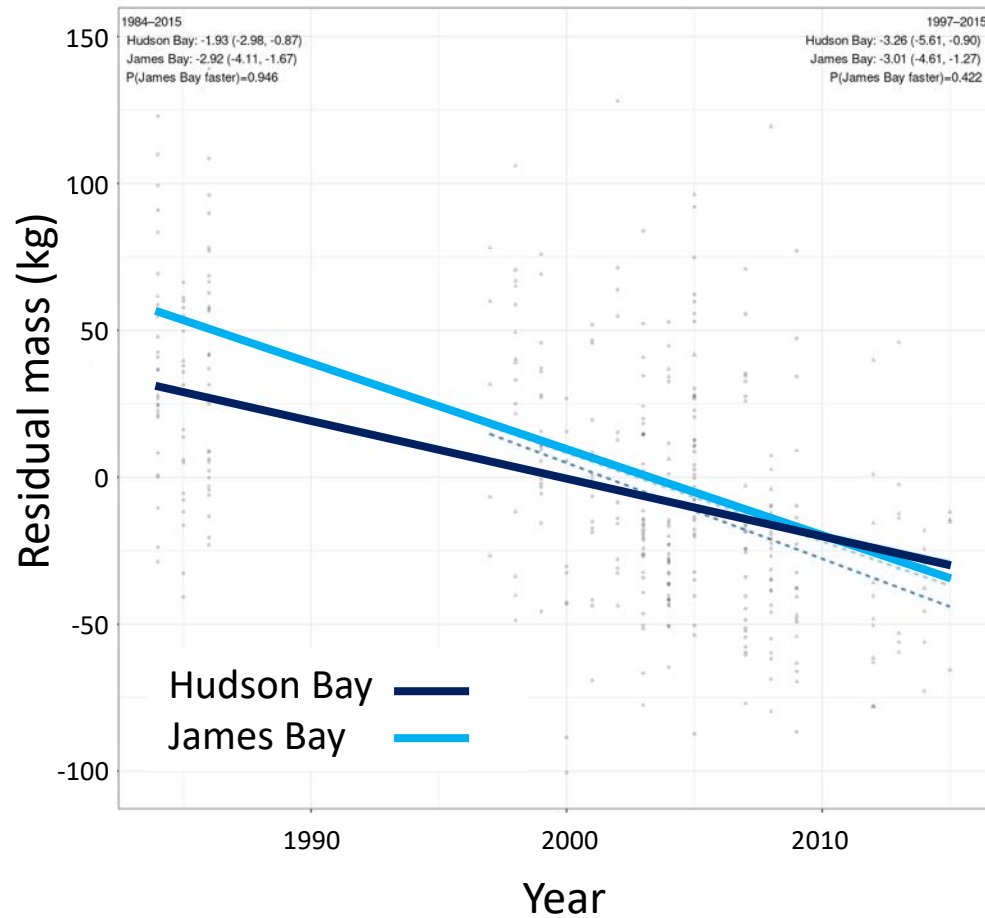
Core use areas (95% kernel density estimates) for 15 bears with full year of data



Polar bears in Southern Hudson Bay are getting skinnier and smaller over time

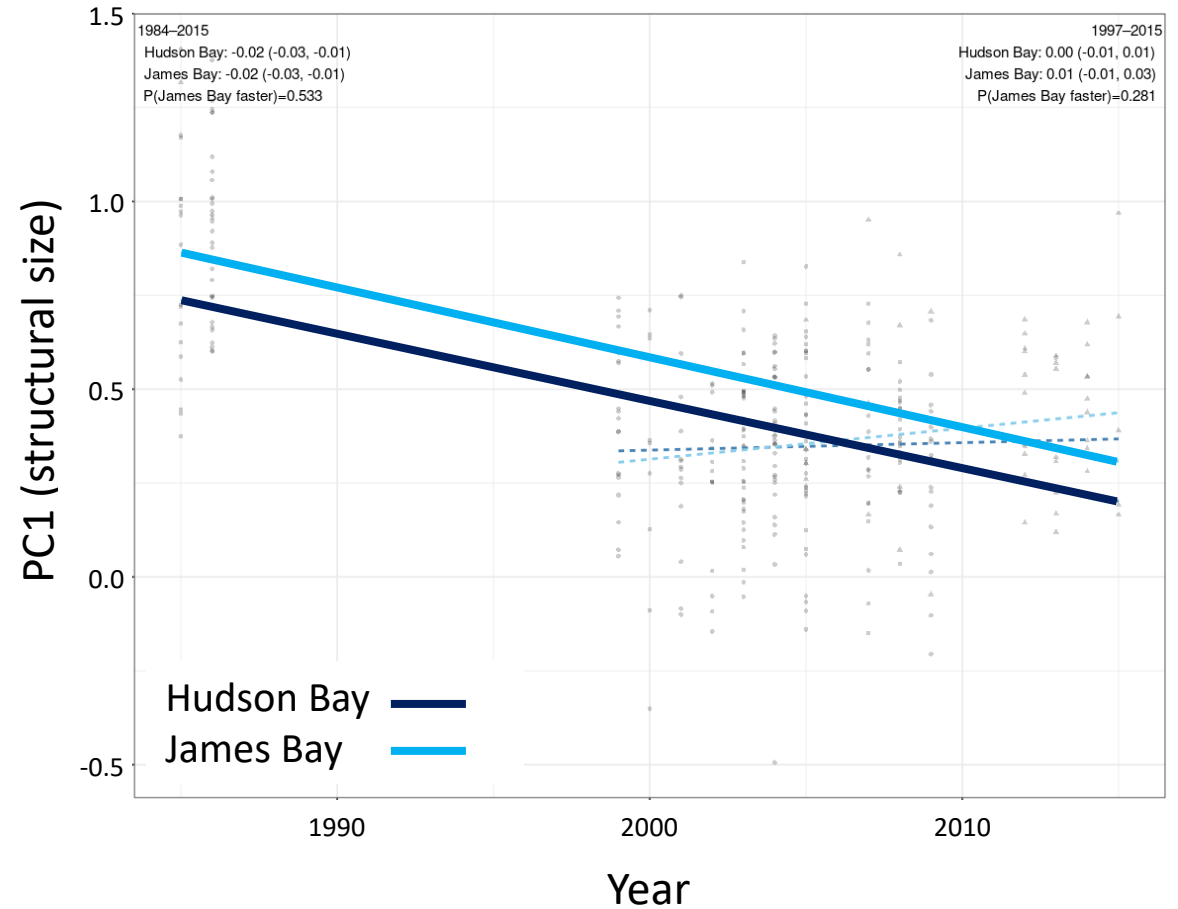
Body condition (fatness)

1984-2015, adult females



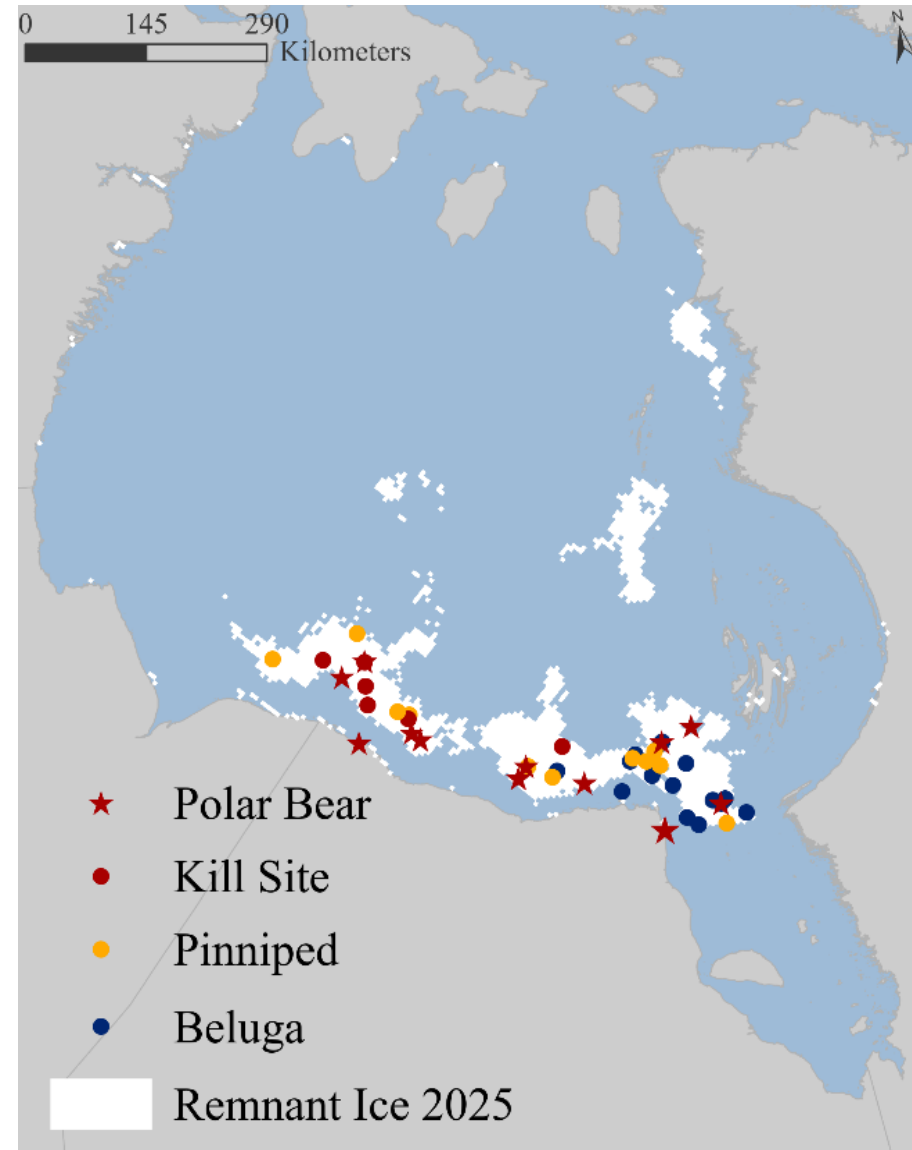
Body size (structural size)

1984-2015, adult females



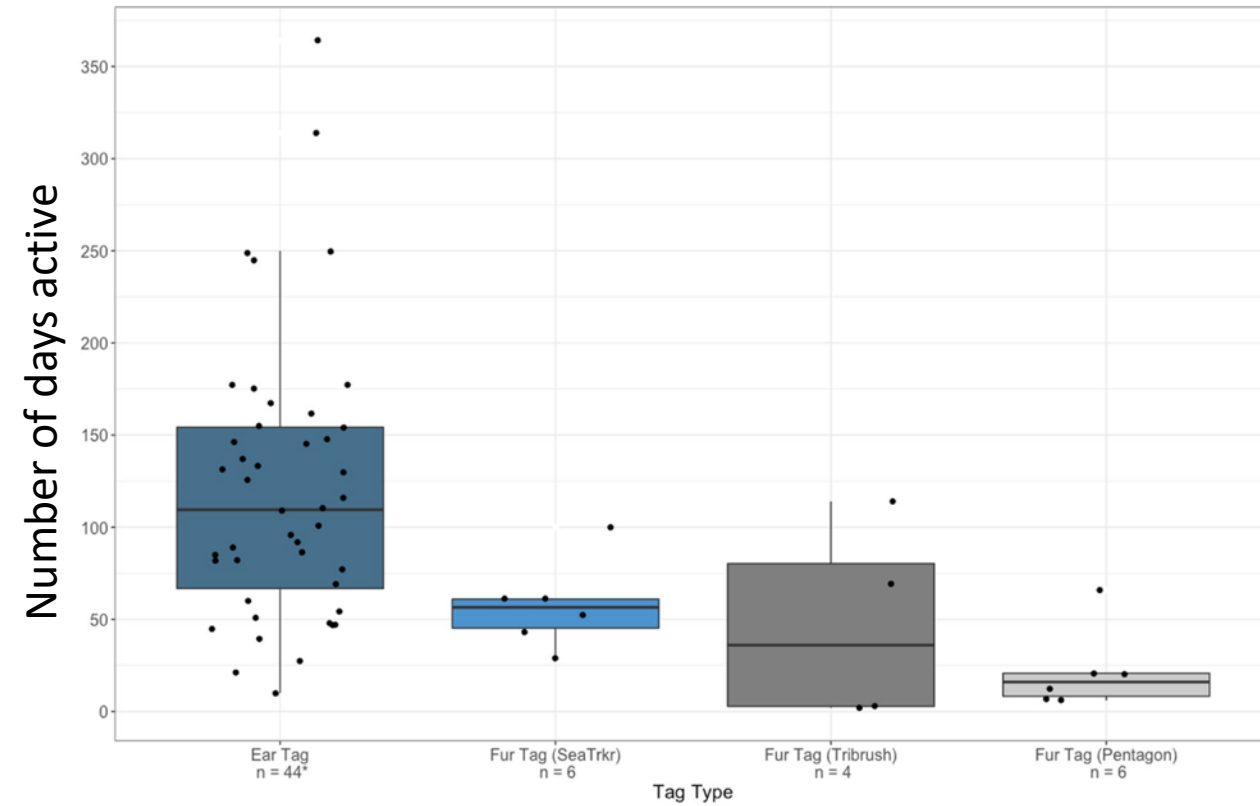
How are polar bears using the last (remnant) seasonal sea ice?

- Final stage of ice melt in Hudson Bay
- Occurs when total ice extent <10%



Marine mammal sightings 2025

Alternatives to collars for tracking polar bears



Promoting human-polar bear coexistence



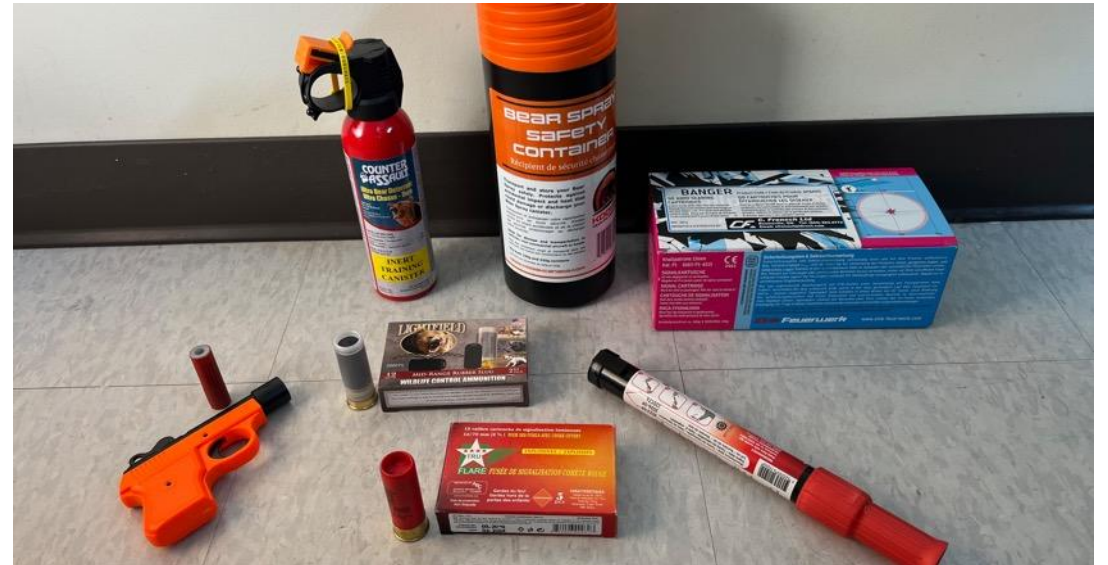
Moose Factory (2021)



Peawanuck (2023)



Peawanuck (2023)





POLAR BEAR SAFETY TIPS

CANADA
Hudson Bay
James Bay

Polar bears are now staying longer on land because the ice-free season is lengthening on Hudson and James Bay.

Bears have a great sense of smell, are naturally curious, and may be attracted to dumps, hunting and fishing camps, or where animals have been cut up.

They might also show up in places they are not typically seen and can be hungry and/or dangerous.

TO STAY SAFER AROUND POLAR BEARS, HERE ARE SOME THINGS YOU CAN DO:

Always be alert and aware of your surroundings. Assume there could be bears nearby and look around before you go outside or leave a vehicle.

Bears sometimes hide and can be hard to spot. Try to stay in areas where there are fewer hiding places.

Talk loudly or make noise when in areas of low visibility so as not to surprise a bear.

Manage Bear Attractants: Don't leave things near your home or camp that attract bears - including dog food, food waste, animal parts or caches of meat. Put these things in places where bears cannot get them, away from where people are living.

Bears may still come and investigate attractive smells but are less likely to return if they are not successful at getting food.

Avoid walking alone whenever possible, especially in the early morning or after sunset.

Each person should carry deterrents like bear spray, bear bangers, signal flares, or other noise makers. Practice using them so you can do so quickly.

BEAR BANGERS
BEAR SPRAY

NOISE MAKERS

What could you use to scare a bear? (e.g. - bright flashlight, air horn, whistle...)

At camps, consider adding lighting at night and using protective measures such as nail boards, trip wire, or an electric fence.

IF YOU ENCOUNTER A BEAR:

Get ready to use your deterrents or firearm.

BEAR BANGERS
RIFLE
BEAR SPRAY

Do not run.

If available, find a safe place inside a building or vehicle.

If you're in a group, always gather together and then stay together.

As soon as it's safe to do so, let other people know there is a bear around.

IF A BEAR APPROACHES OR CHARGES:

Use your deterrents and/or prepare any potential weapons.

Stand your ground and be prepared to fight with any weapon available (shovel, rocks, axe, etc.).

Shout aggressively at the bear and yell for help.

Stay together.

Moose Cree First Nation (2022)

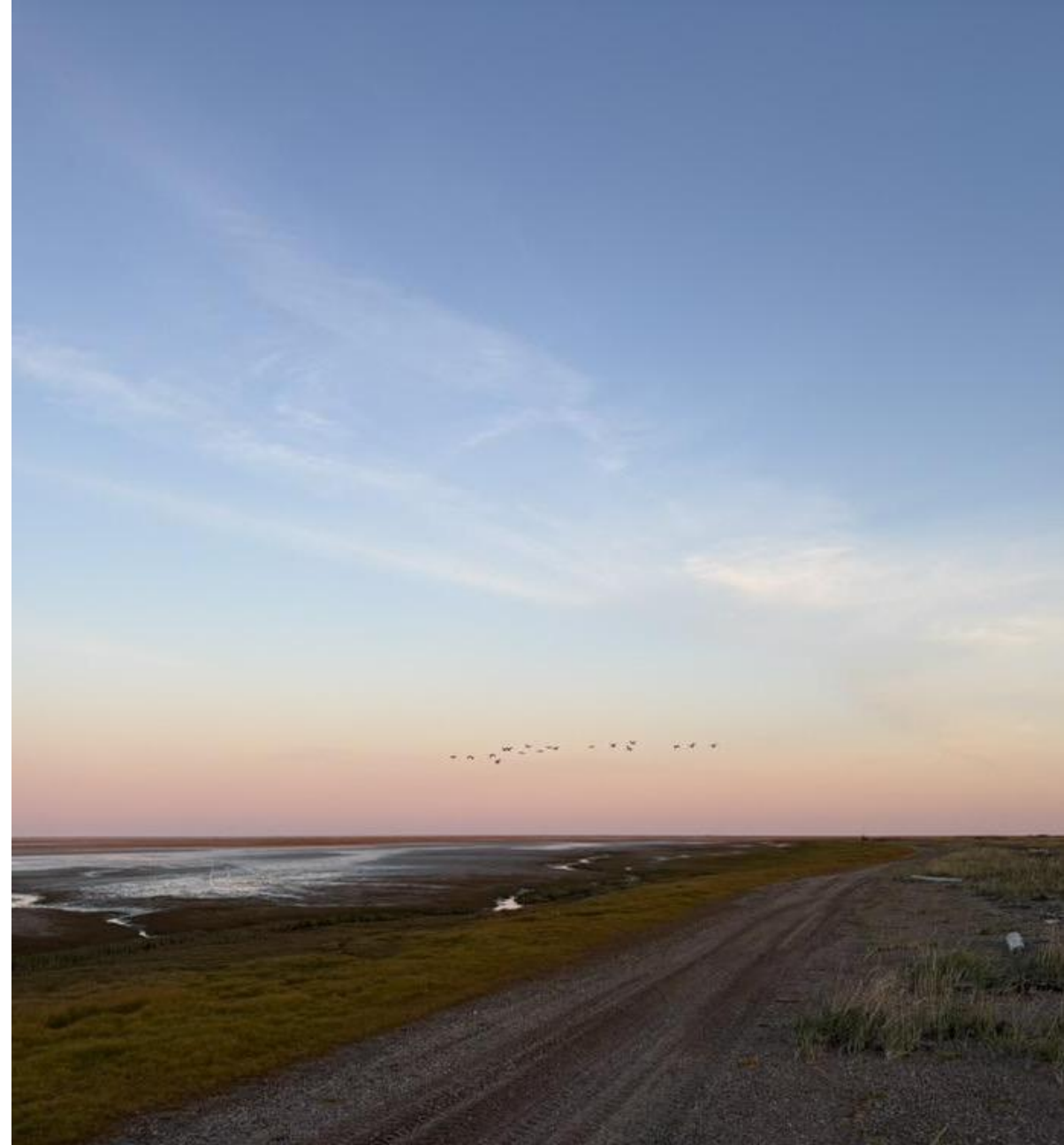
Community-Led Participatory Research

- Indigenous and Decolonial Methodology
- Community Advisory: Co-creators and collaborators at every stage in the research process
- Data sovereignty: Adhering to the data governance principles of OCAP®



For more information:

Dr. Martina Jakubchik-Paloheimo (martinaj@yorku.ca)



Early Interview Results

- Harvest of Polar Bears
- Traditional uses
- Distribution and behaviour
- Respect for *Minopiemateesowin*
- Highly Respected Animal
- Historical legacies and location of each community



Co-existence: Living with Polar Bears

- Respect for the bears (Cultural teachings and education)
- Deterrence Methods? Leave the bears alone, and they leave you alone
- Prevention (Cleaning camp, removing Ski-do seats)
- More safety and deterrent training
- Waste disposal (thinking about what can feed the animals, and where the waste goes)
- Co-existence is already taking place
- Rebuilding trust between communities and government



Polar Bears in the Regional Assessment Area

- Genetically and ecologically unique
- Require both marine and terrestrial habitat
- Ancient relationship with coastal First Nations
- Imperiled by ongoing climate warming



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