

2016 - 2021



2016 - 2021

2021 - 2023



2016 - 2021

2021 - 2023

2023 - Present





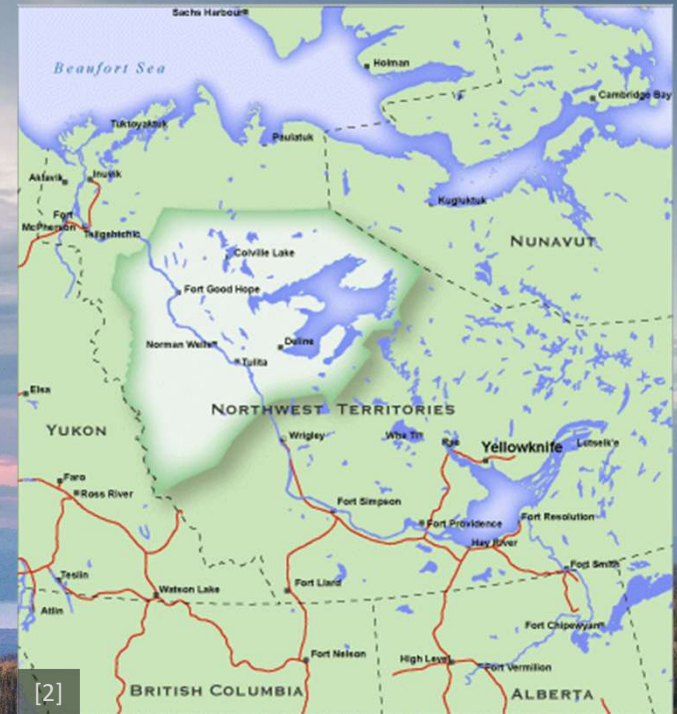
Boreal forests: a new frontier for muskox research

Nick Luymes, Frances Stewart, Kevin Chan, and Jan Adamczewski



Sahtú Settlement Area

Traditional territories of the K'asho Got'ine, Sahtú Got'ine, K'áálq Got'ine, and Shita Got'ine, land that is currently governed under the Sahtú Dene and Métis Comprehensive Land Claim Agreement



Déłjñę Dene

Tulita Dene

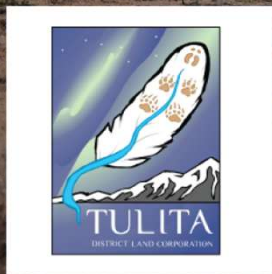
Norman Wells Métis

Fort Norman Métis

Colville Lake Dene

Fort Good Hope Dene

Fort Good Hope Métis



Public Listening Sessions

- Opportunity to share of knowledge and concerns



(srrb.nt.ca)

Public Listening Sessions

- Opportunity to share of knowledge and concerns



[3]

Muskox populations
increasing



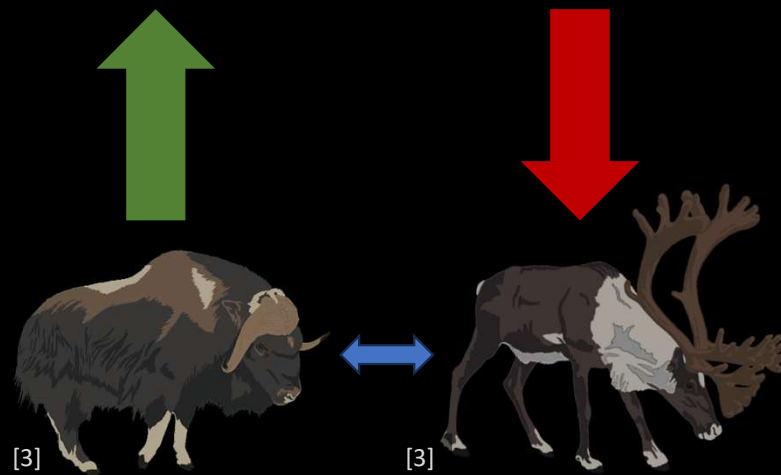
[3]

Caribou populations
decreasing



Public Listening Sessions

- Opportunity to share of knowledge and concerns



Competition for habitat?



Where is muskox habitat?

Tundra ✓

Boreal forest ?



Boreal forests

- Canada's largest forest region



Boreal forests

- Canada's largest forest region
- Mostly coniferous trees



Boreal forests

- Canada's largest forest region
- Mostly coniferous trees
- Forest fires are common and important for maintaining a mosaic of habitats



[6]

Forest fire and habitat



Grasses and
shrubs



Pioneer tree
species



Mature
conifers

Years since fire

Forest fire and habitat



[3]

Grasses and shrubs



[3]

Pioneer tree species



[3]

Mature conifers



Years since fire

How do we identify muskox habitat?

We follow them

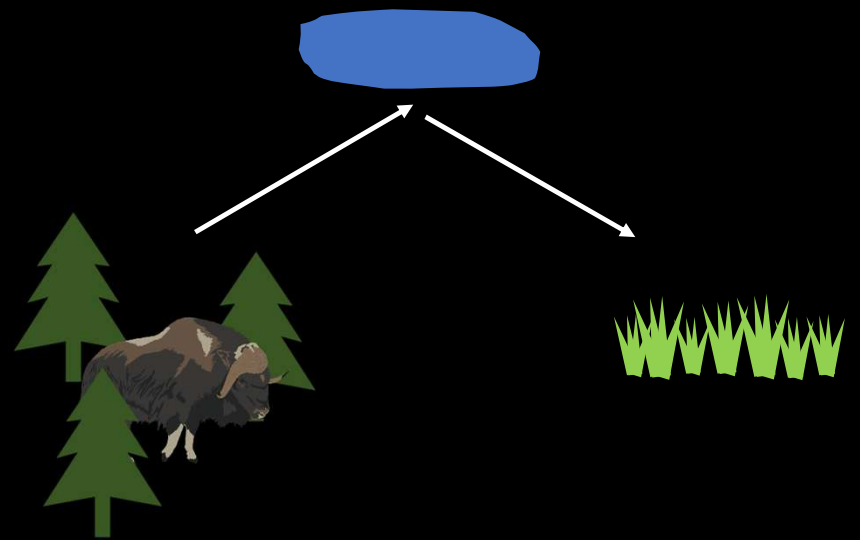
- GPS collars



How do we identify muskox habitat?

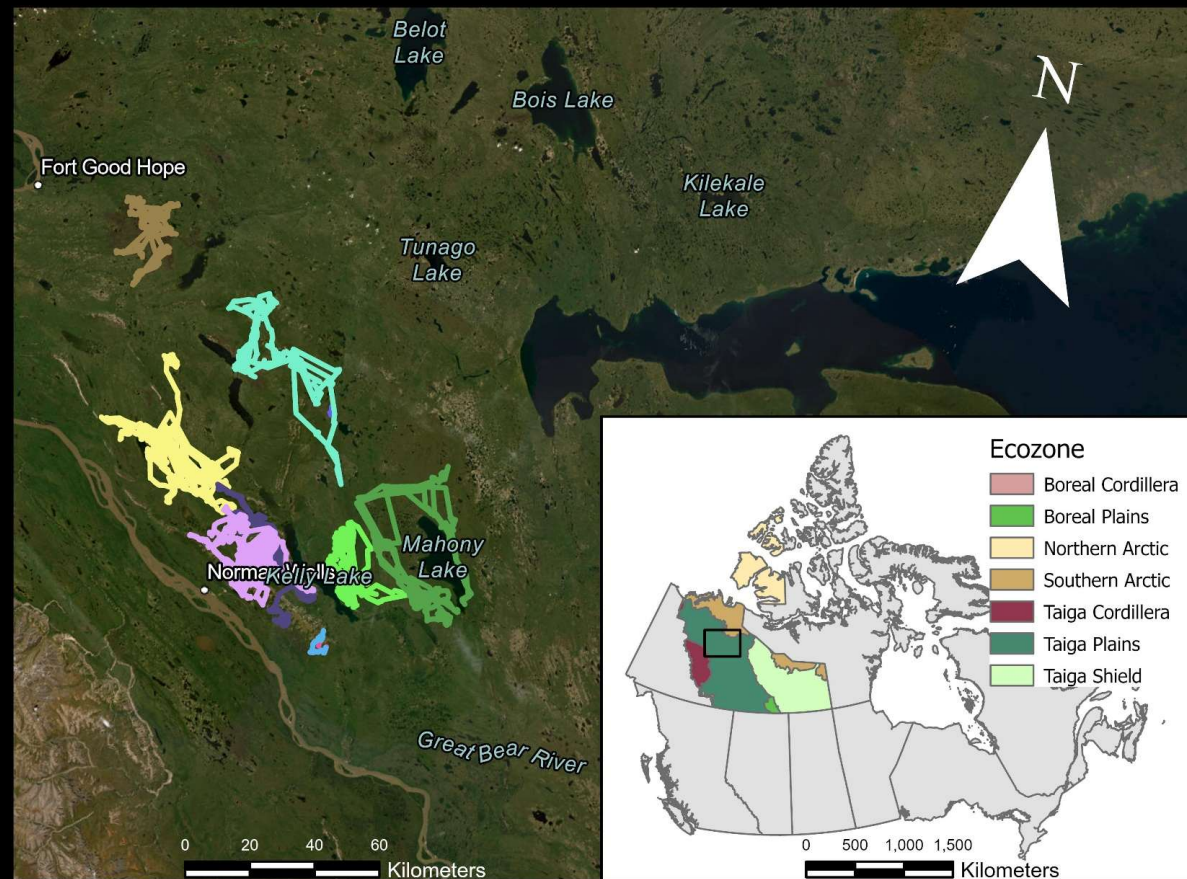
We follow them

- GPS collars
- Compare locations with habitat information



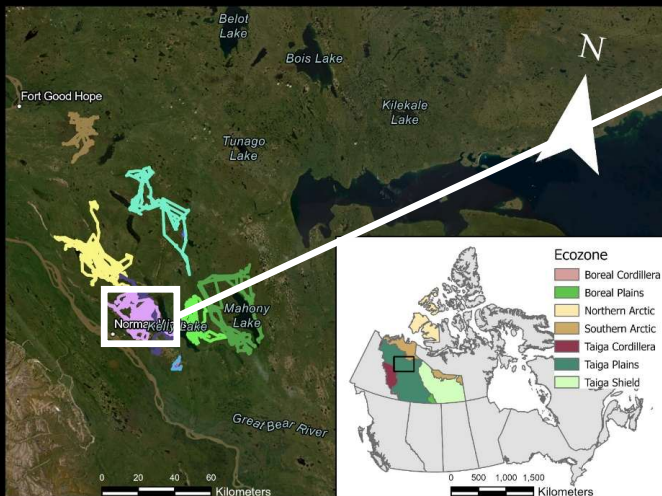
How do we identify muskox habitat?

- 10 collared female muskoxen in Sahtú Region
- Only GPS dataset of muskoxen below treeline

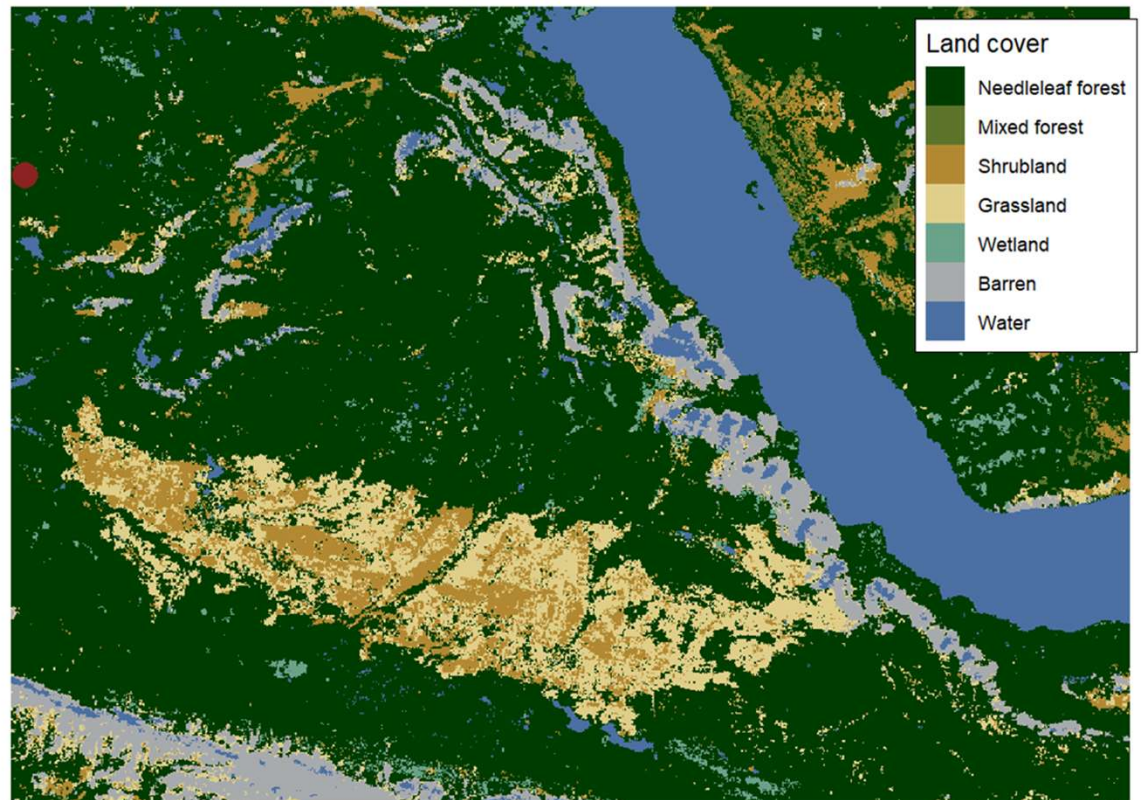


A year in the life of a muskox

- Movement data from January to December 2011



Date: January 2011

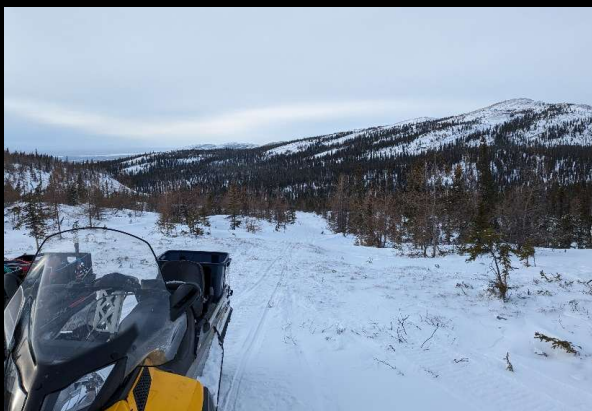
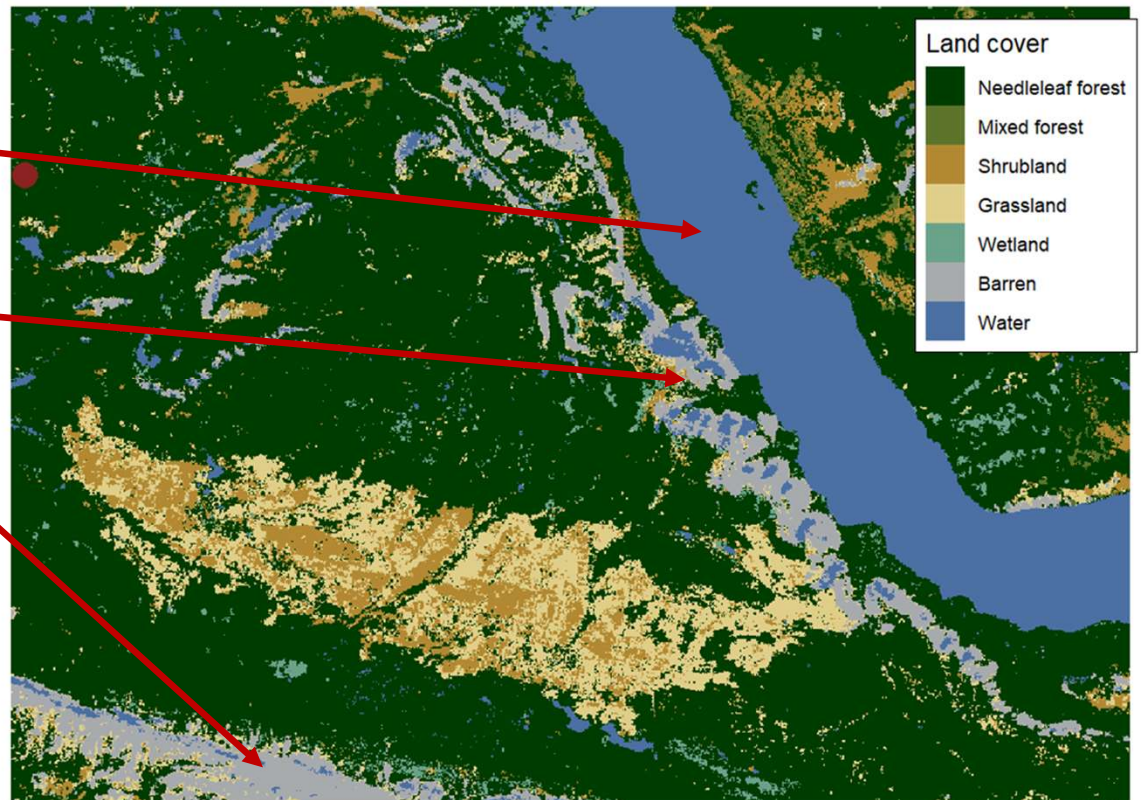


A year in the life of a muskox

Date: January 2011

Kelly Lake

Franklin
Mountains

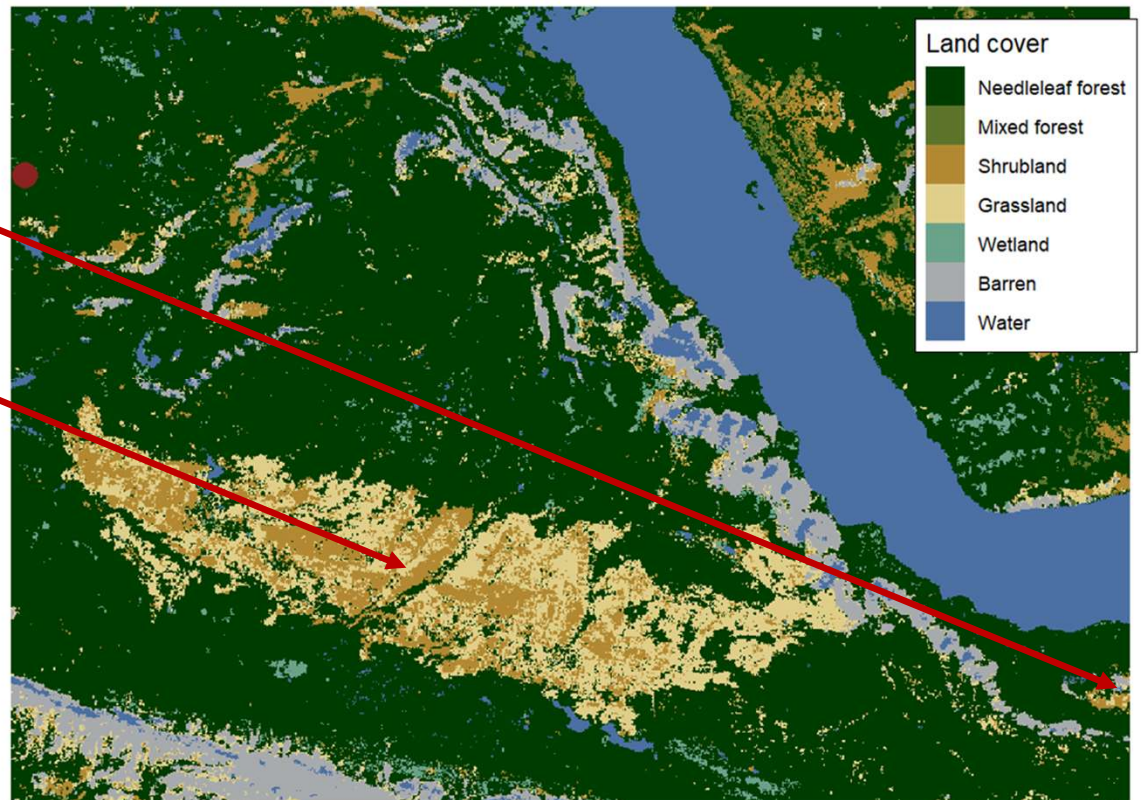


A year in the life of a muskox

Date: January 2011

16-year-old
fire

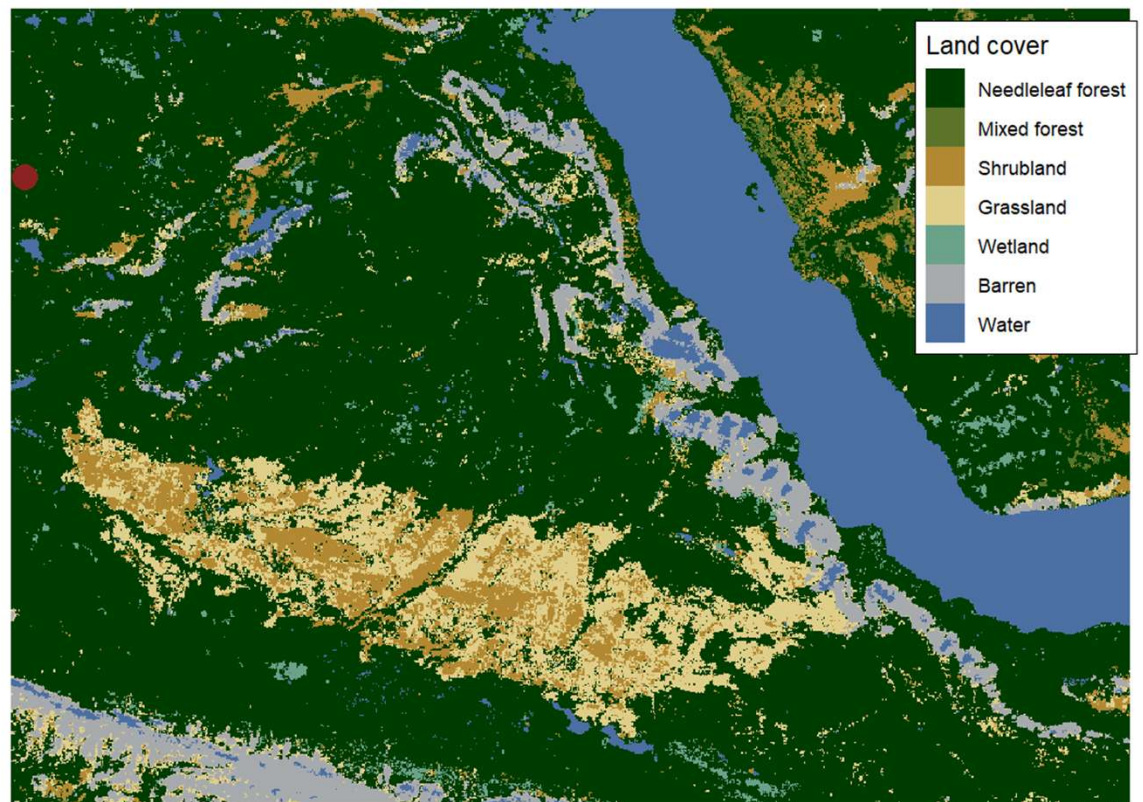
6-year-old
fire



A year in the life of a muskox

- Restricted movement in **winter**
- Targeting open areas in **summer**

Date: January 2011



Muskox habitat in boreal forests

Working ideas:

- Recent burns provide good forage



Muskox habitat in boreal forests

Working ideas:

- Recent burns provide good forage
- Shallow snow in upland forests benefits movement and foraging



Muskox habitat in boreal forests

Working ideas:

- Recent burns provide good forage
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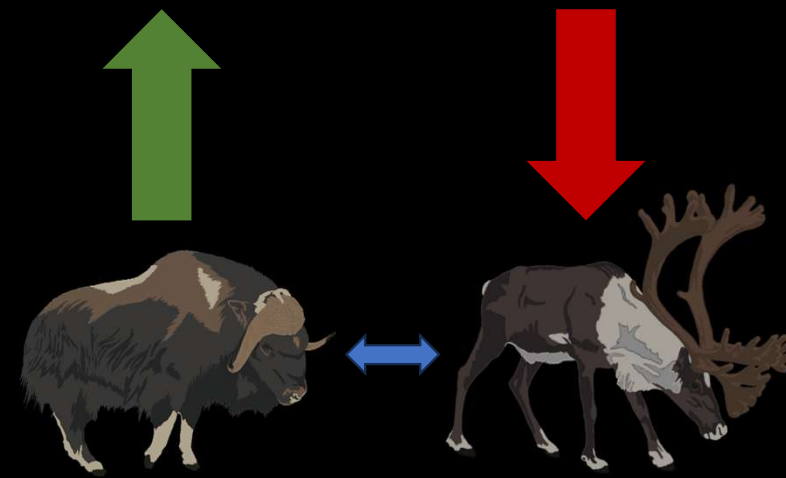
Muskox habitat in boreal forests

Working ideas:

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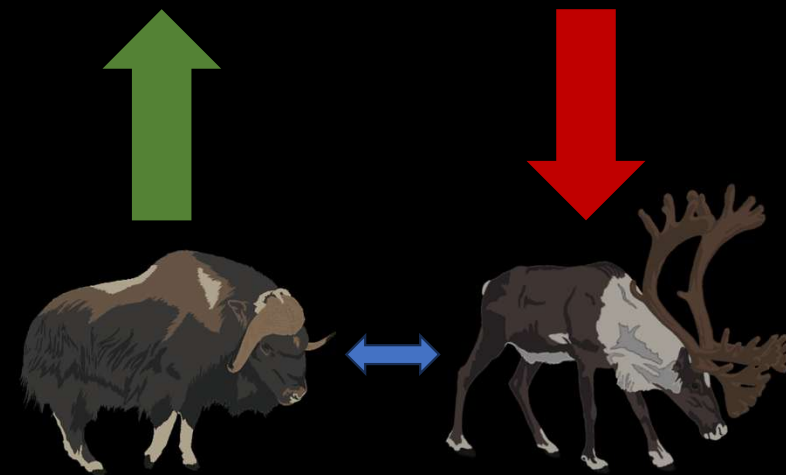
Muskox and caribou



Competition for habitat?

Muskox and caribou

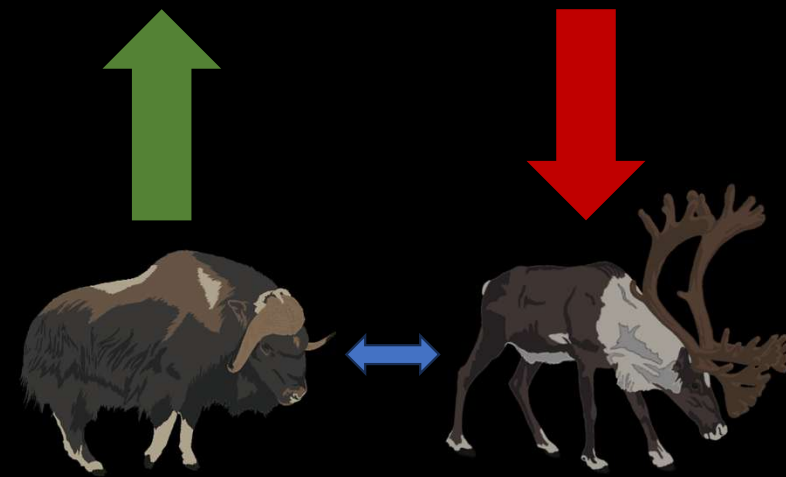
- Caribou require mature forests and have been found to avoid recent burns in some studies



Competition for habitat?

Muskox and caribou

- Caribou require mature forests and have been found to avoid recent burns in some studies
- What role do forest fires play in muskox and caribou abundance?



Competition for habitat?

Acknowledgements

- Kevin Chan and Dr. Jan Adamczewski – GNWT
- Dr. Frances Stewart
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- Boyan Tracz – GNWT muskox monitoring project lead



Questions?



Image References

1. Kevin Chan, Government of Northwest Territories [used with permission]
2. Sahtu Land Use Planning Board, <https://sahtulanduseplan.org/about-slupb>
3. Eric Jolin, Wilfrid Laurier [used with permission]
4. Natural Resources Canada, Canada's forest regions. <https://natural-resources.canada.ca/forest-forestry/sustainable-forest-management/forest-classification>
5. Peuple Loup, Taiga landscape, CC BY-SA 2.0, <https://flickr.com/photos/peupleloup/>
6. Northern Arizona Incident Management Team, Heavy smoke from Taylor Fire, CC BY-SA 2.0, https://commons.wikimedia.org/wiki/File:Heavy_smoke_from_Taylor_Fire_%283910841256%29.jpg
7. Regrowth after forest fire, public domain
8. Andrew Dibble, Birch Trees in a Forest during Fall, <https://www.pexels.com/photo/birch-trees-in-a-forest-during-fall-10969582/>
9. Brodie Guy, Boreal Forest, Tombstone Territorial Park, Yukon, CC BY-NC-ND 2.0, <https://www.flickr.com/photos/brodieguy/6501144077>
10. Province of British Columbia, Close up of mountain caribou, CC BY-NC-ND 2.0, <https://www.flickr.com/photos/bcgovphotos/6810813012>