



BRITISH
COLUMBIA

Northeast Region – Caribou Population Monitoring Update 2023/2024



BC CARIBOU
RECOVERY PROGRAM



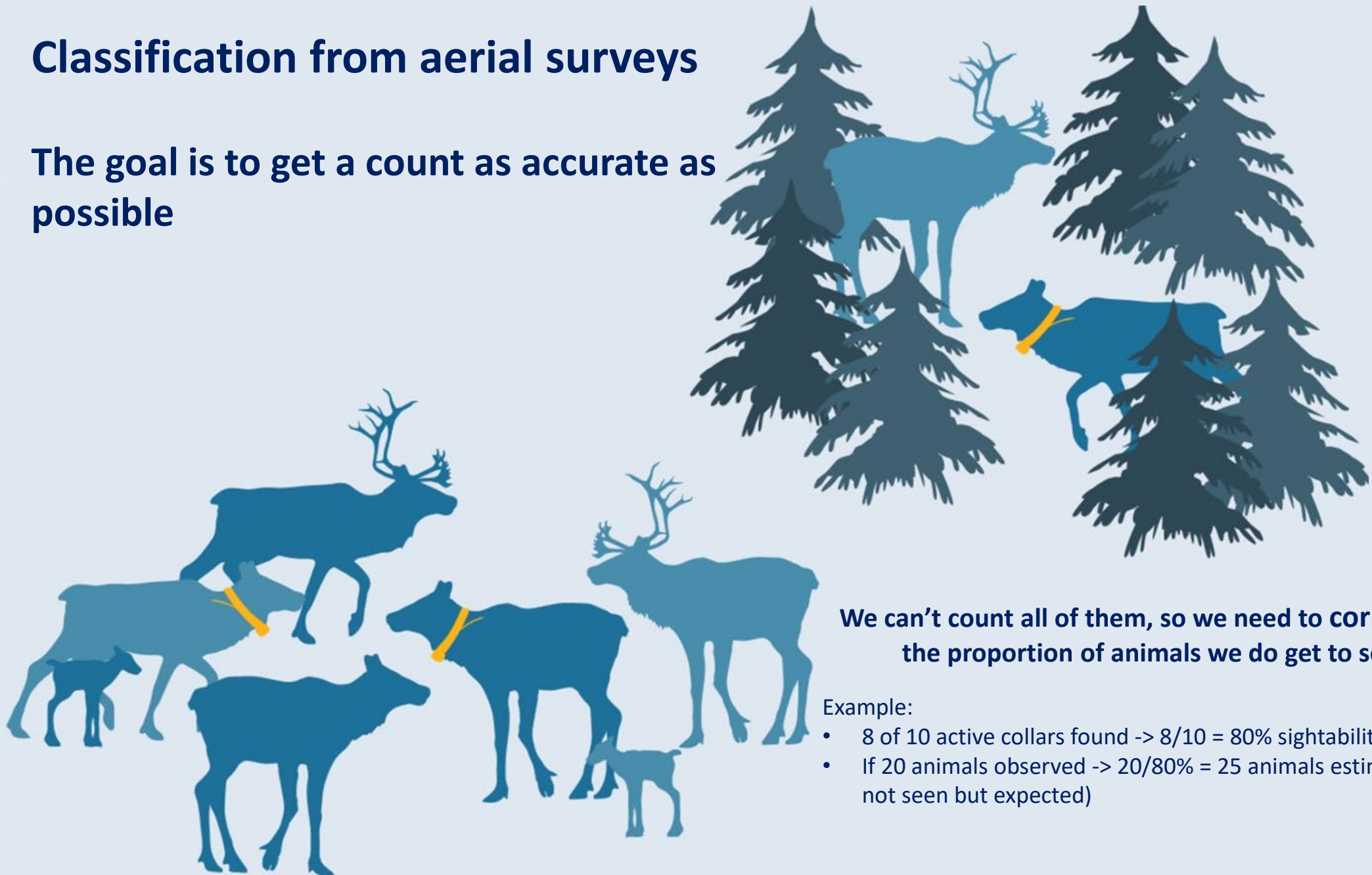
Documented caribou declines

Federal mandate to recover populations to self-sustaining levels



Classification from aerial surveys

The goal is to get a count as accurate as possible



We can't count all of them, so we need to correct for the proportion of animals we do get to see

Example:

- 8 of 10 active collars found -> $8/10 = 80\%$ sightability
- If 20 animals observed -> $20/80\% = 25$ animals estimated (5 not seen but expected)

Essential data gathered from radio collars

Population data

Proportion of calves
(aerial surveys)



Cows' survival
(year-round collar monitoring)



We can now assess if population is renewing itself

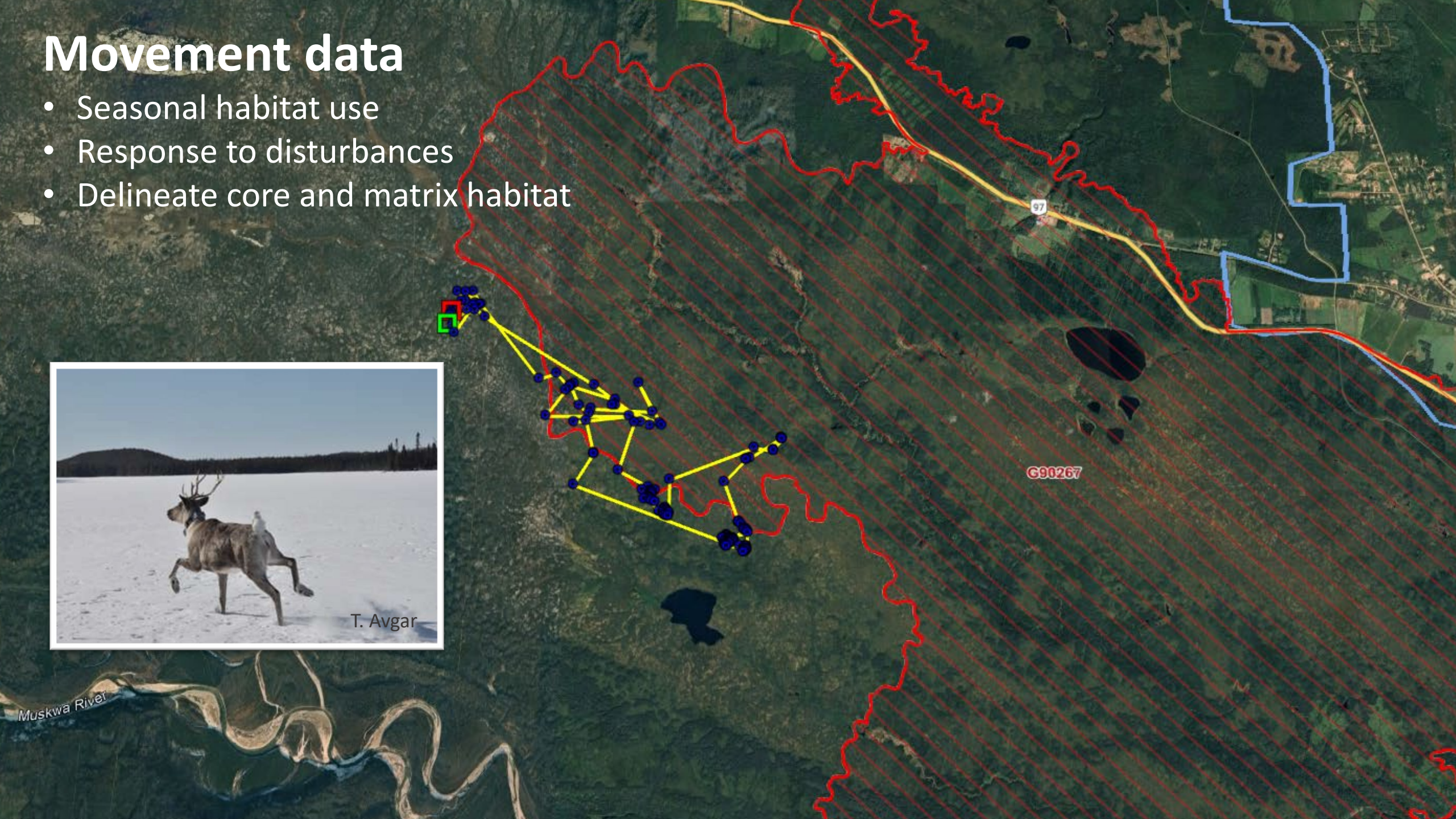
EVIDENCE OF RENEWAL

15-16% of calves in population

25-28 calves/100 cows

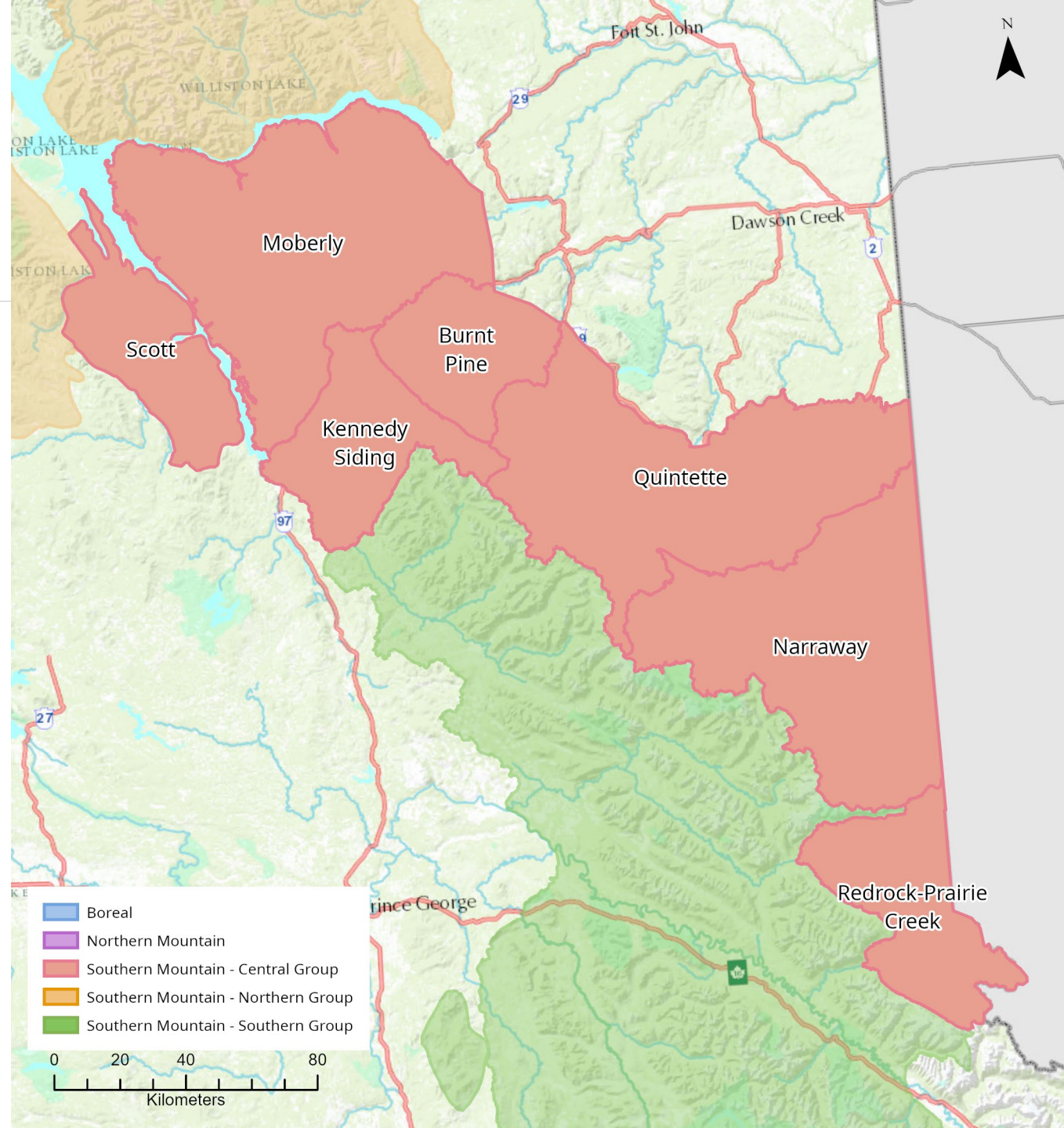
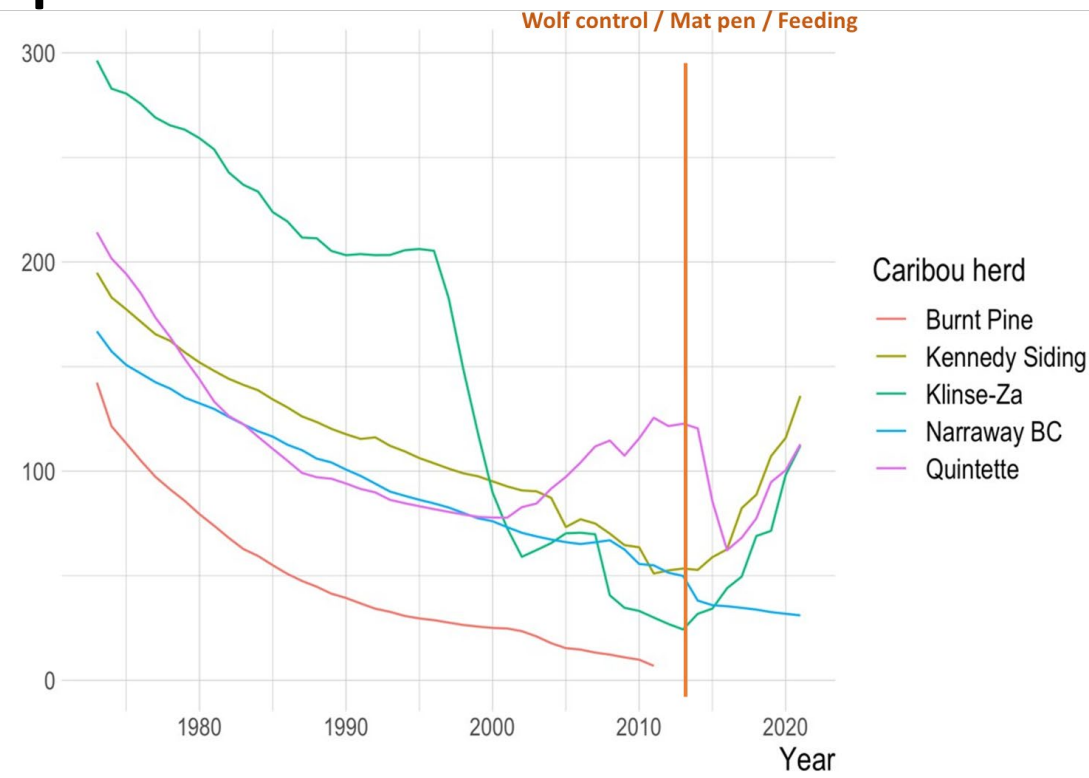
Movement data

- Seasonal habitat use
- Response to disturbances
- Delineate core and matrix habitat



Central Mountain

Population Trend

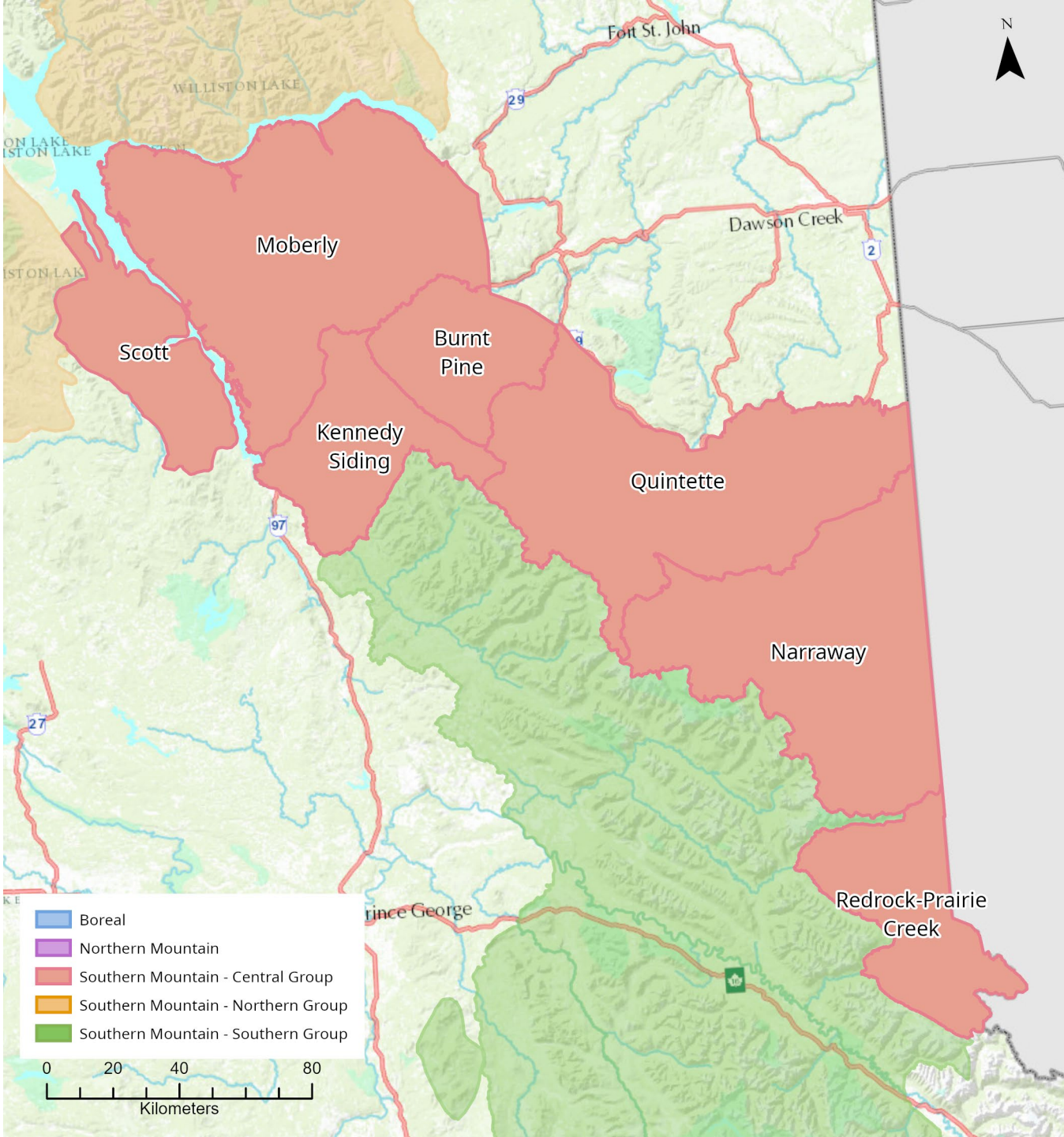


Central Mountain

Captures 2024

Range	# of collars deployed Jan 2024	# of active collars - April 1 st 2024	# of deaths since April 1 st 2023
Kennedy Siding / Burnt Pine	0	12	1
Quintette	3	11	1
Narraway (BC)	2	3	0
TOTAL	5	26	2

Renewal target
15-16% of calves in pop
25 calves:100 cows

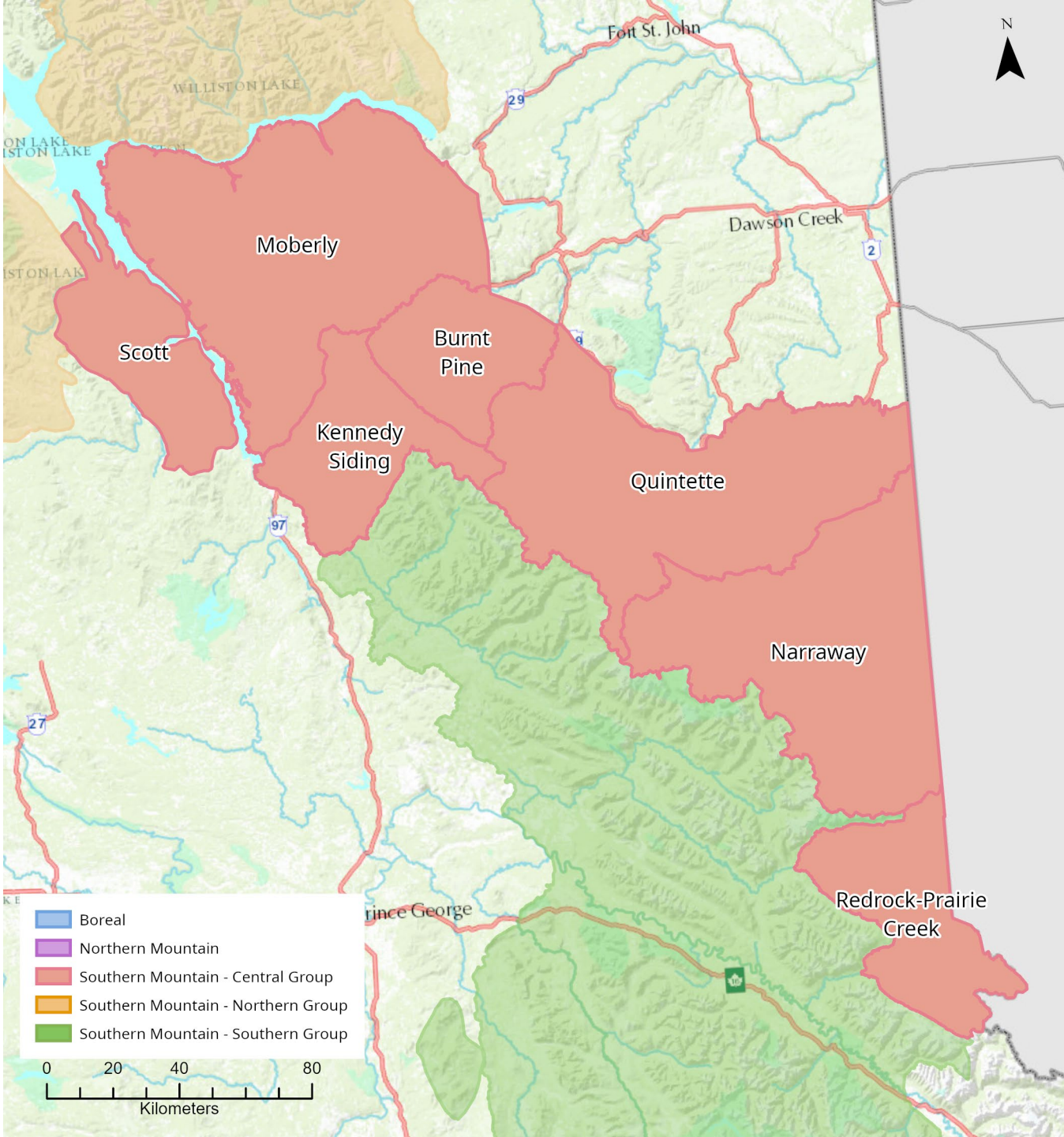


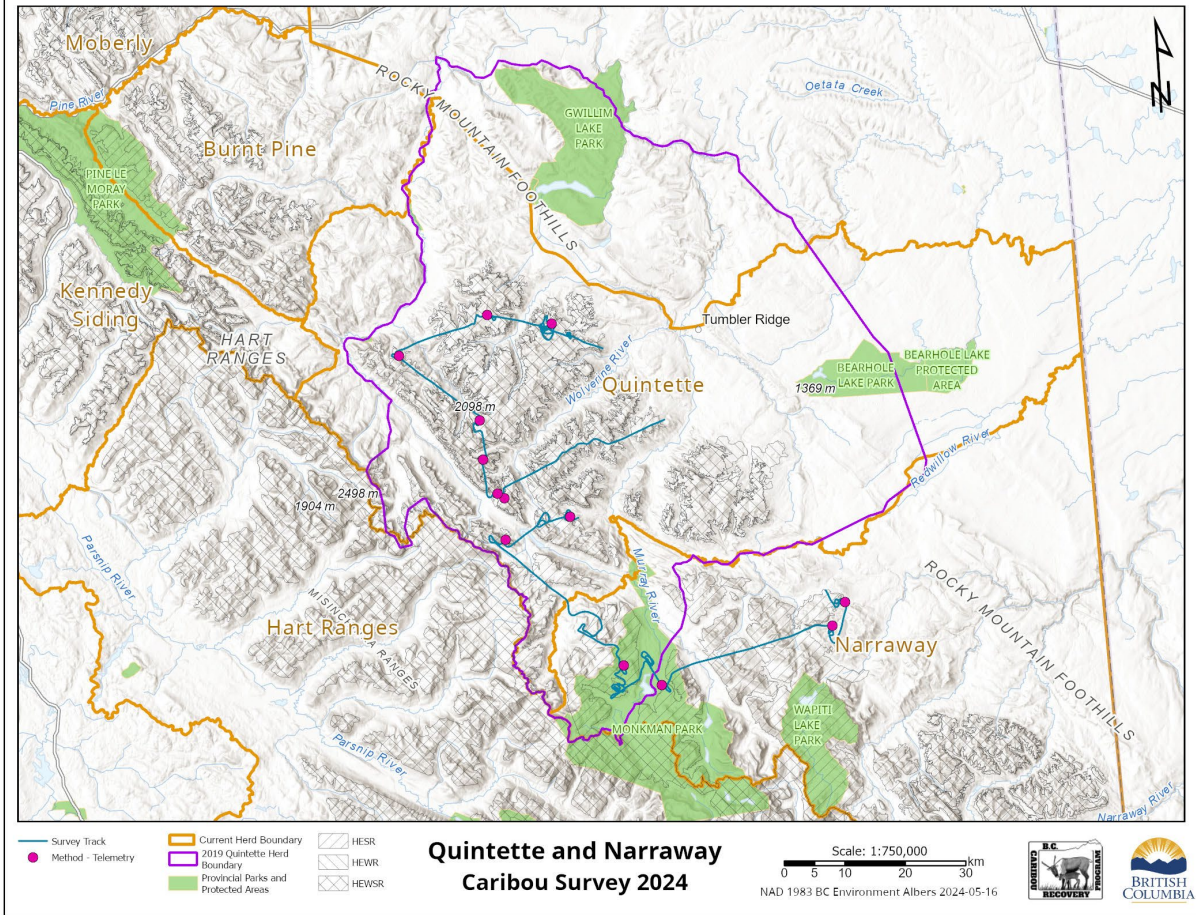
Central Mountain

Inventory 2024

Range	Survey count	% calves	Calves:100 cows	Bulls:100 cows	Pop est
Klinse-Za	154	19%	70	120	159
KS / BP	155	21%	46	59	155 (SCF = 1)
Quintette	75 (Minimum)	24%	44	39	
Narraway (BC)	10 (Minimum)	30%	60	0	

Renewal target
15-16% of calves in pop
25 calves:100 cows





Plan for 2024/2025:

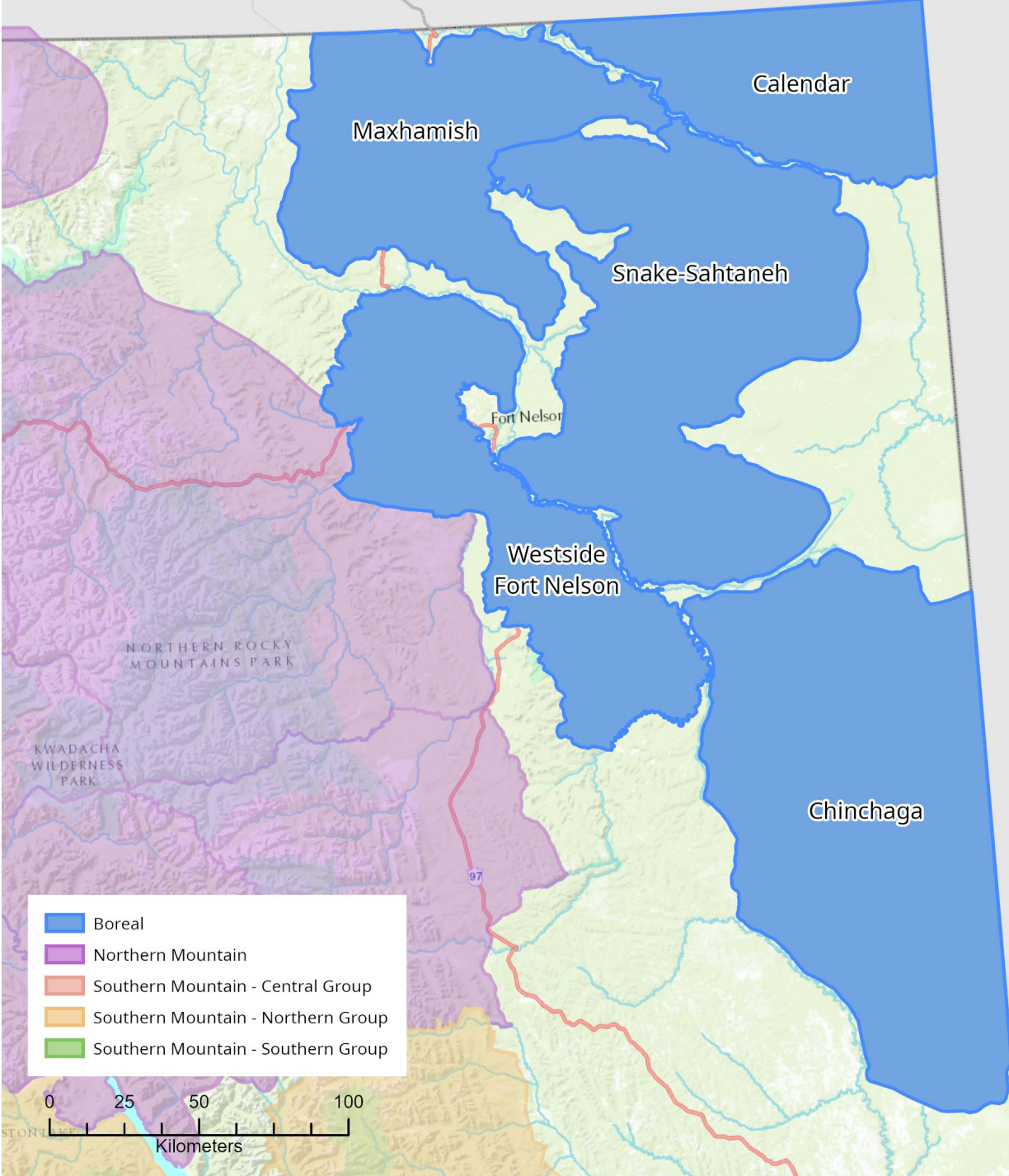
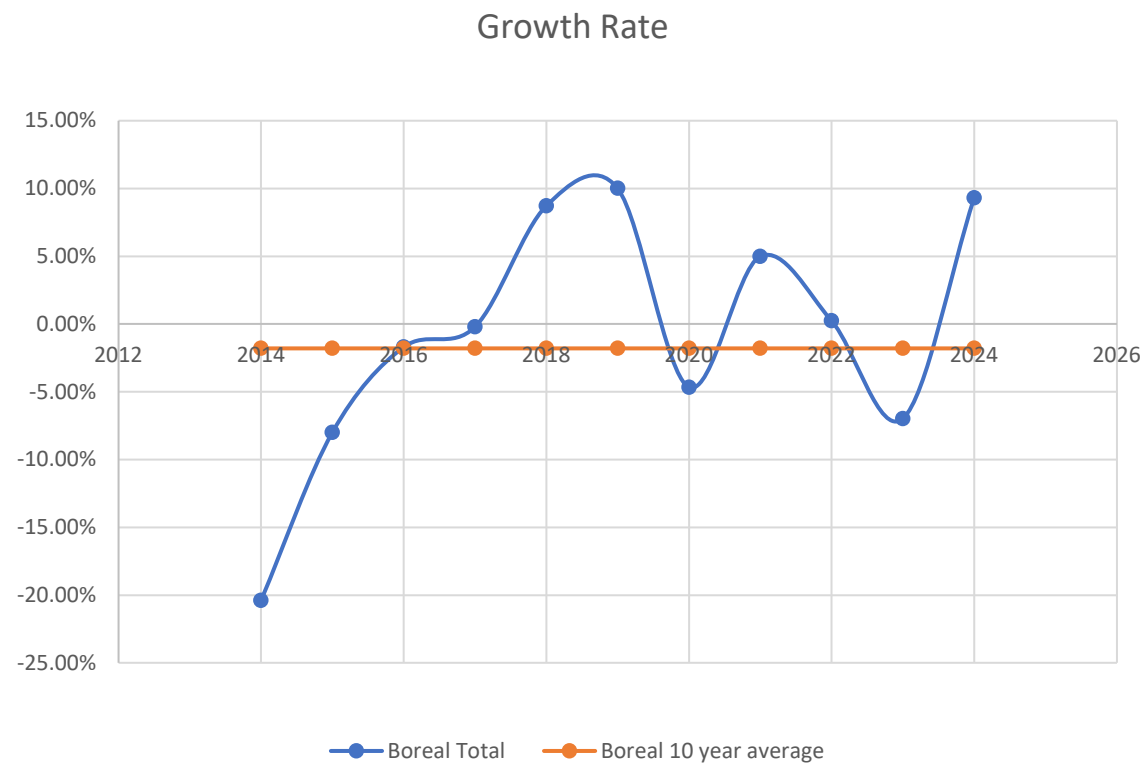
- Maintenance of collars
- Recruitment surveys in Quintette, Narraway, Kennedy Siding/Burnt Pine
- Fill in collar coverage gaps (Narraway)

Boreal

Population Trend

- Based on aerial survey counts and classification
- Survival data from collared females

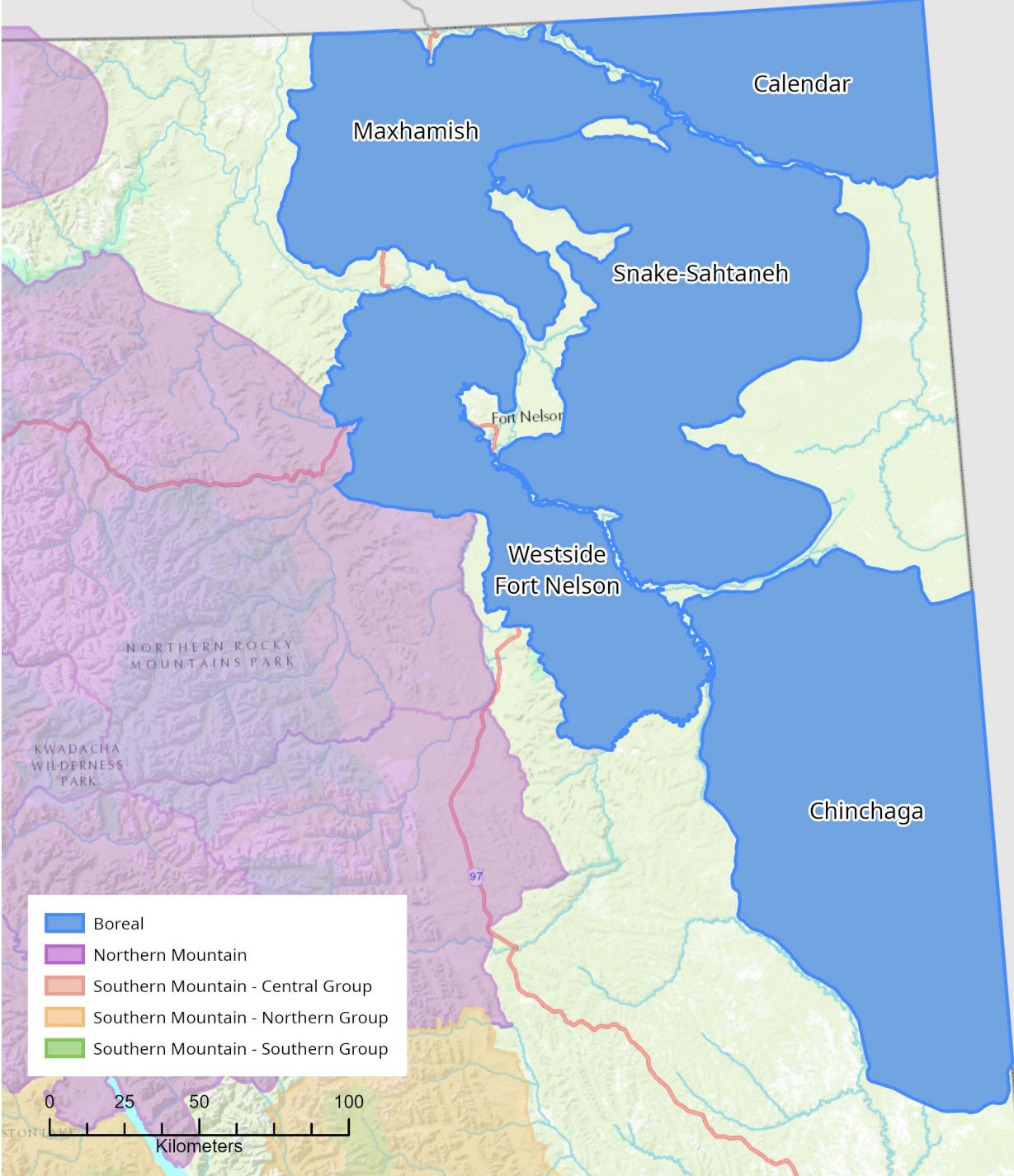
Important to maintain our collar #s for accurate data



Boreal

Captures 2024

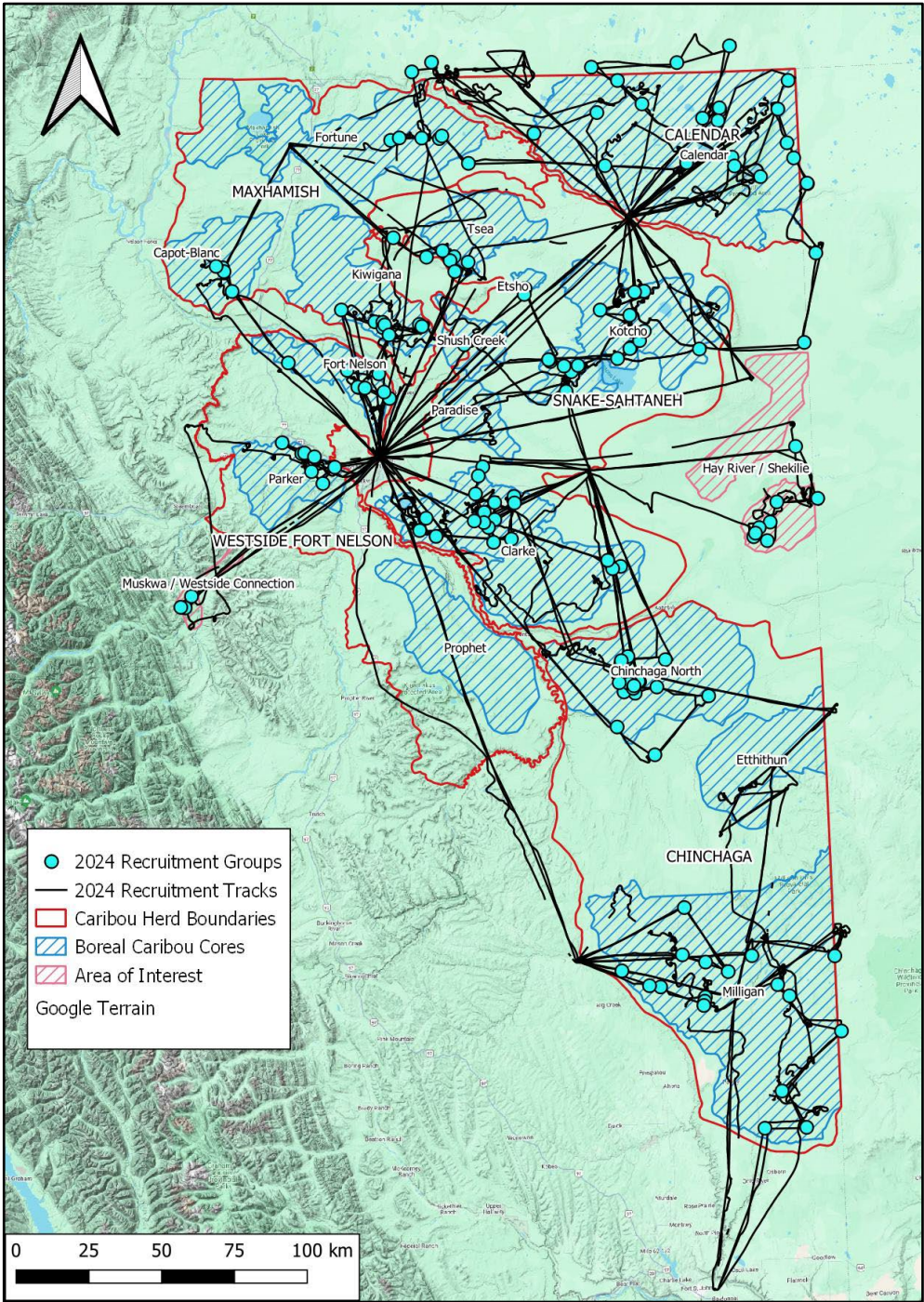
Range	# of collars deployed Jan 2024	# of active collars April 1 st 2024	# of deaths since April 1 st 2023
Calendar	9	21	0
Chinchaga	12	36	5
Hay River	1	4	0
Maxhamish	10	24	1
Snake-Sahtaneh	18	48	2
Westside Fort Nelson	7	15	1
TOTAL	57	148	9



Inventory 2024

Survey count	% calves	Calves:100 cows	Bulls:100 cows
870	19.5%	29.9	21.1

Boreal caribou are hard to see under forest cover, so it can be difficult to get an accurate population count from aerial surveys.



**The DNA found in caribou feces can be used
to identify unique individuals**



**If enough samples are collected, we
can estimate how many caribou are on
the land without needing to see them
directly**

5-year project with DNA collections – so far:

Year	Range	# of sites	# of samples	Prelim. Population Estimate	# of Crew Involved
2021-2022	Westside Fort Nelson	47	393	203 (95% 176-247)	17
2022-2023	Chinchaga-BC	81	631	Pending	30
2022-2023	Chinchaga-AB	71	738	Pending	16
2022-2023	Hay River	26	292	Pending	16
2023-2024	Snake-Sahtaneh	90	970	Pending	30
2023-2024	Maxhamish	46	555	Pending	30
2024-2025	Calendar				

Plan for 2024/2025 - collab with FNFN:

- Collar ~10 animals in boreal ranges to maintain 150 collars
- Recruitment surveys
- Calendar DNA



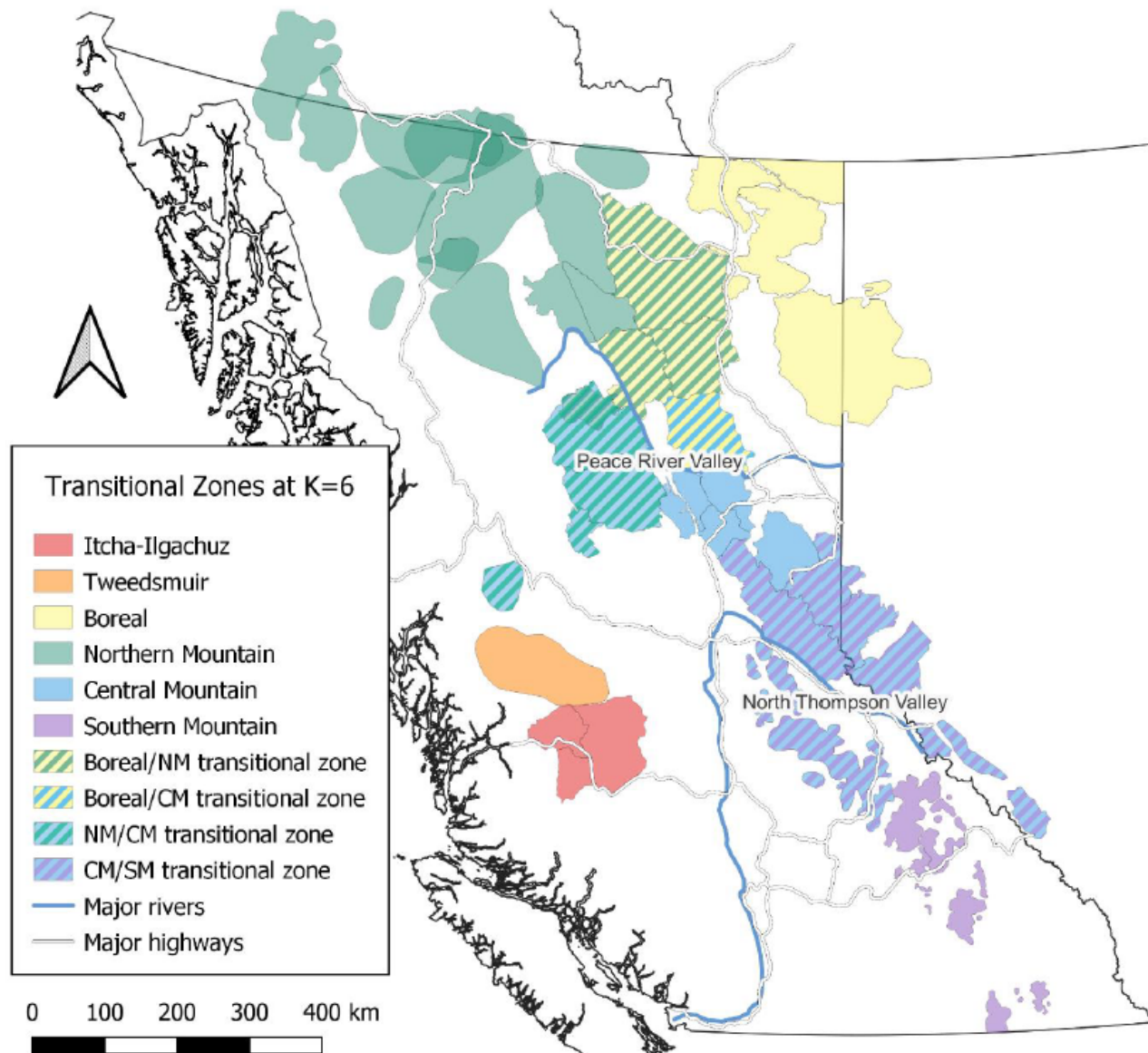


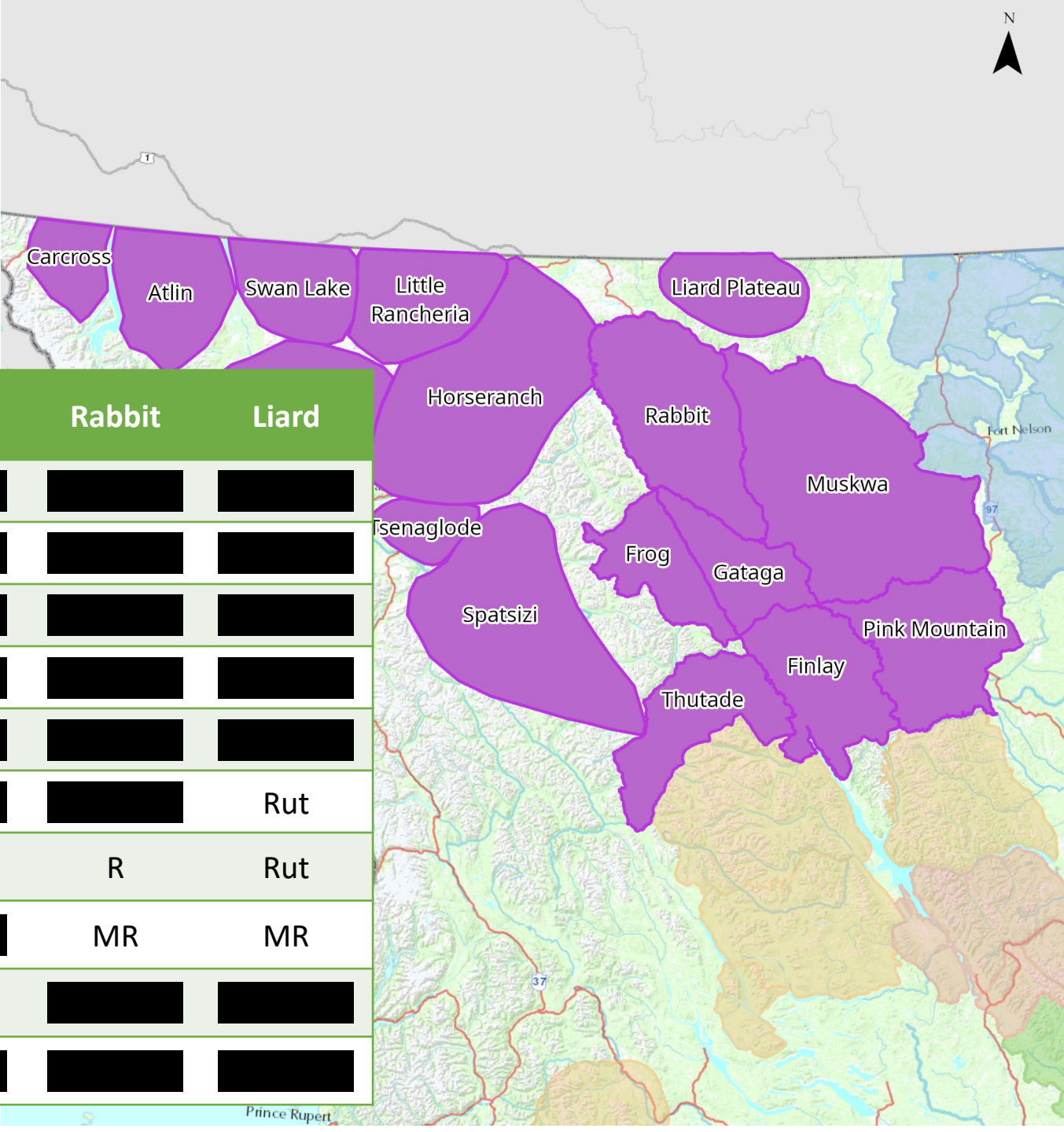
Figure 2.15. Transitional zones for caribou genetic subdivisions at $K=6$ using *Admixture* results. Zone names are based off original Designatable Unit (DU) classifications—Boreal, Northern Mountain (NM), Central Mountain (CM), and Southern Mountain (SM). Transitional zones were identified as any subpopulation having an average individual assignment probability (q) between 0.4 and 0.6. Map created in QGIS.

Northern Mountain

- Issue: lack of information in remote NMC ranges
- Remote areas difficult to access in a timely manner - *problematic for mort investigations*


Survey history

	Graham	Pink Mountain	Muskwa	Gataga	Frog	Rabbit	Liard
2015	R						
2016	R	R					
2017	R	R	R				
2018		R	R				
2019	R						
2020	R		R				Rut
2021	MR	MR		R	R	R	Rut
2022	R	R	R			MR	MR
2023	R	R		MR	MR		
2024	MR						



Goals:

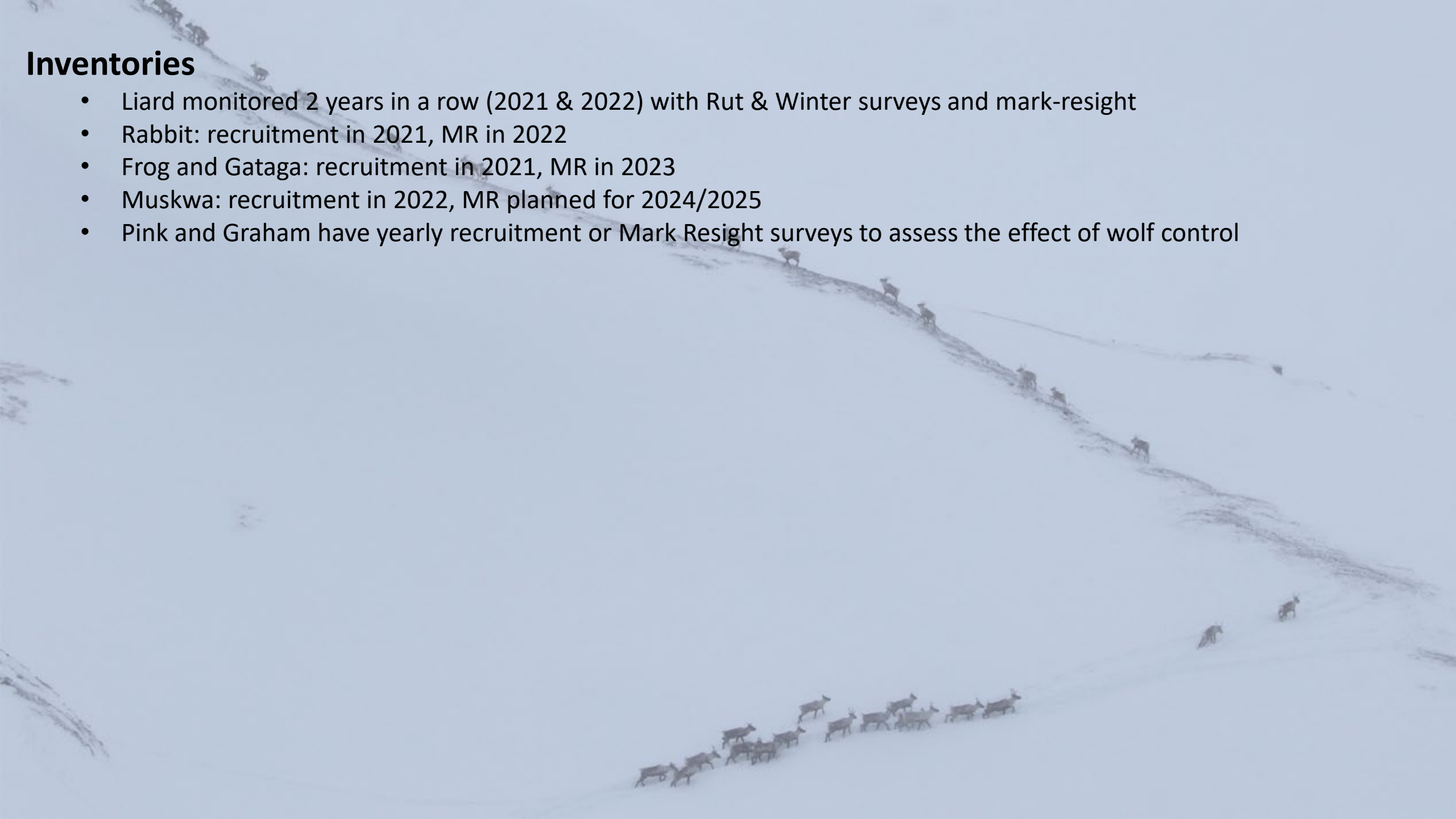
- Scheduled inventories over the next 5 years to fill data gaps
- Monitoring of range boundaries
- Continued maintenance of collars

An aerial photograph showing a large herd of reindeer running across a vast, snow-covered landscape. The reindeer are dark brown with lighter underbellies and are scattered across the frame, moving from the bottom left towards the top right. The ground is covered in a thick layer of snow, with some patches of brown vegetation visible. The background shows a flat, open landscape under a clear sky.

We prioritize aging rather than sexing during aerial surveys to avoid harassing the animals, so calf % is a better metric than the calf:cow ratio to assess recruitment

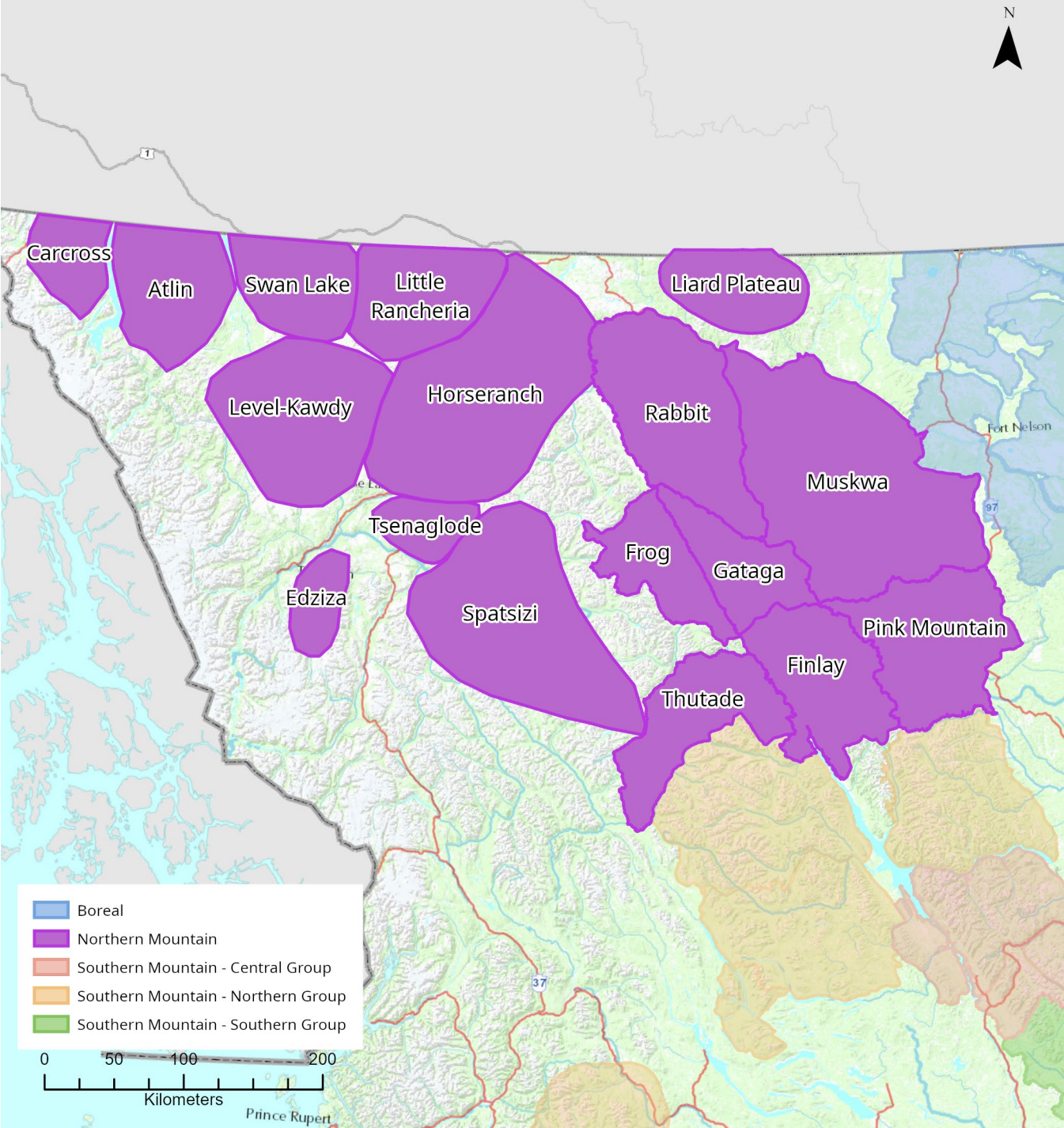
Inventories

- Liard monitored 2 years in a row (2021 & 2022) with Rut & Winter surveys and mark-resight
- Rabbit: recruitment in 2021, MR in 2022
- Frog and Gataga: recruitment in 2021, MR in 2023
- Muskwa: recruitment in 2022, MR planned for 2024/2025
- Pink and Graham have yearly recruitment or Mark Resight surveys to assess the effect of wolf control



Captures 2024

Range	# of collars deployed Jan 2024	# of active collars April 1 st 2024	# of deaths since April 1 st 2023
Liard	0	4	1
Frog	0	15	3
Gataga	0	10	4
Rabbit	0	23	1
Muskwa	21	28	2
Pink	8	24	3
Graham	8	19	1
TOTAL	37	123	15



Inventory 2024

	Females	Bulls	Uncl Ad	Calves	Total	% calves	Calf:cow	Bull:cow	Adult female survival	Pop estimate
Graham 2024 (Mark-Resight)	116	90	10	56	272	20.6%	48.2	77.6	94%	436

Plan for 2024:

- Muskwa: MR 2024/2025
- Pink Mountain: MR 2024/2025
- Graham: Recruitment 2024/2025

Questions?

