BRITISH COLUMBIA

# Northeast Roundtable Caribou Update 2025

BC CARIBOU RECOVERY PROGRAM

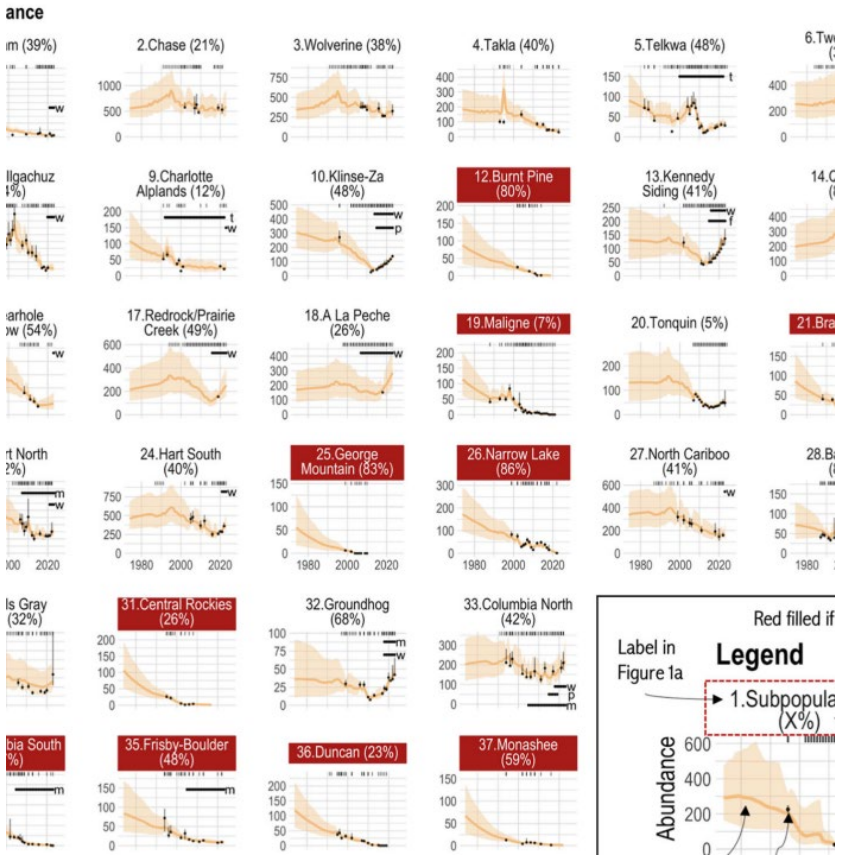
# Caribou in the North East

- Boreal Woodland Caribou
  - NE corner
  - 5 subpopulations
  - 2 transboundary herds (AB and NWT)
  - Threatened

- Southern Mountain Caribou – Central Group
  - 6 subpopulations
  - 2 transboundary herds (AB)
  - Threatened
- Southern Mountain Caribou – Northern Group
  - Graham subpopulation
  - Threatened
- Northern Mountain Caribou
  - 6 subpopulations
  - Special Concern

# Caribou population monitoring

- Objective: provide reliable up-to-date population estimates for caribou in BC
- Populations estimates are 1 key metric used for decision support
  - Prioritize when/where to focus recovery actions
  - efficacy/effectiveness of the recovery actions
- Population growth is typically± 5-10% annually
- “A total of 509 caribou (95% CI 485-556)”



Caribou are difficult to count, ecosystems are complex, population ranges are large

Slide courtesy of Doug Heard

# In the wide open.

# But especially in the trees

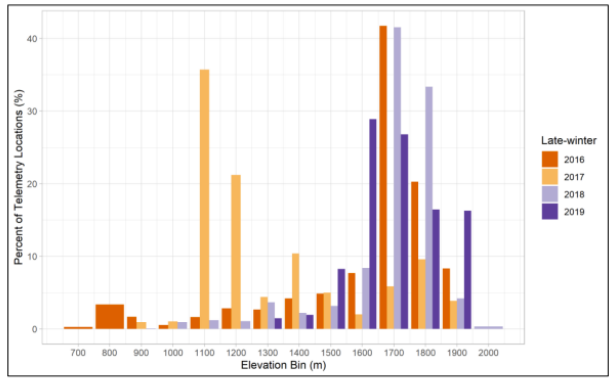
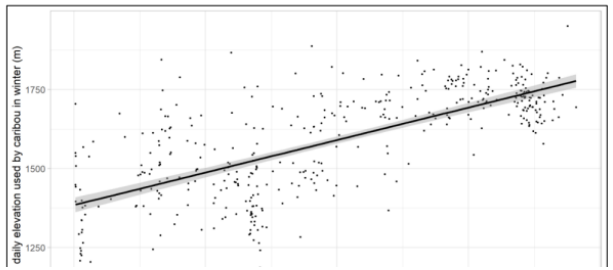



Figure 7. Use of elevation by GPS-collared adult female caribou in the Wolverine range in late-winter (February 1 to March 31) of 2016, 2017, 2018, and 2019.



- For Mountain Caribou: snow depth is a key driver of distribution in late-winter
  - Most central group caribou are driven up to high elevation if snow is deep
  - Northern/central group: windswept alpine terrestrial lichen

- Distribution can vary by herd and ecotype
- More caribou will stay at low elevations low if snow depth is low

- For a population survey - snow depth can be a significant advantage or major challenge – depending on the year or survey timing.
  - Context doesn't make it into the graphs/results

- Important to note that caribou behavior/distribution can vary by herd or even within the herd.

- Can makes it challenging to figure out numbers over time, if there are significant changes in distribution during survey time

# Caribou Population Surveys

- When surveying a population from aircraft inevitably animals (caribou) are missed.
- Missed animals are referred to as sightability or visibility bias
- The “mark” on caribou are GPS collars which are placed on a random portion of the population
- During a population survey the proportion of collared animals missed can be used to estimate the proportion of the population missed

# Essential data gathered from radio collars and aerial surveys

## Population data

**Proportion of calves**
(aerial surveys)

**Cows' survival**
(year-round collar monitoring)

**EVIDENCE OF POPULATION GROWTH**

**15-16% of calves in population**

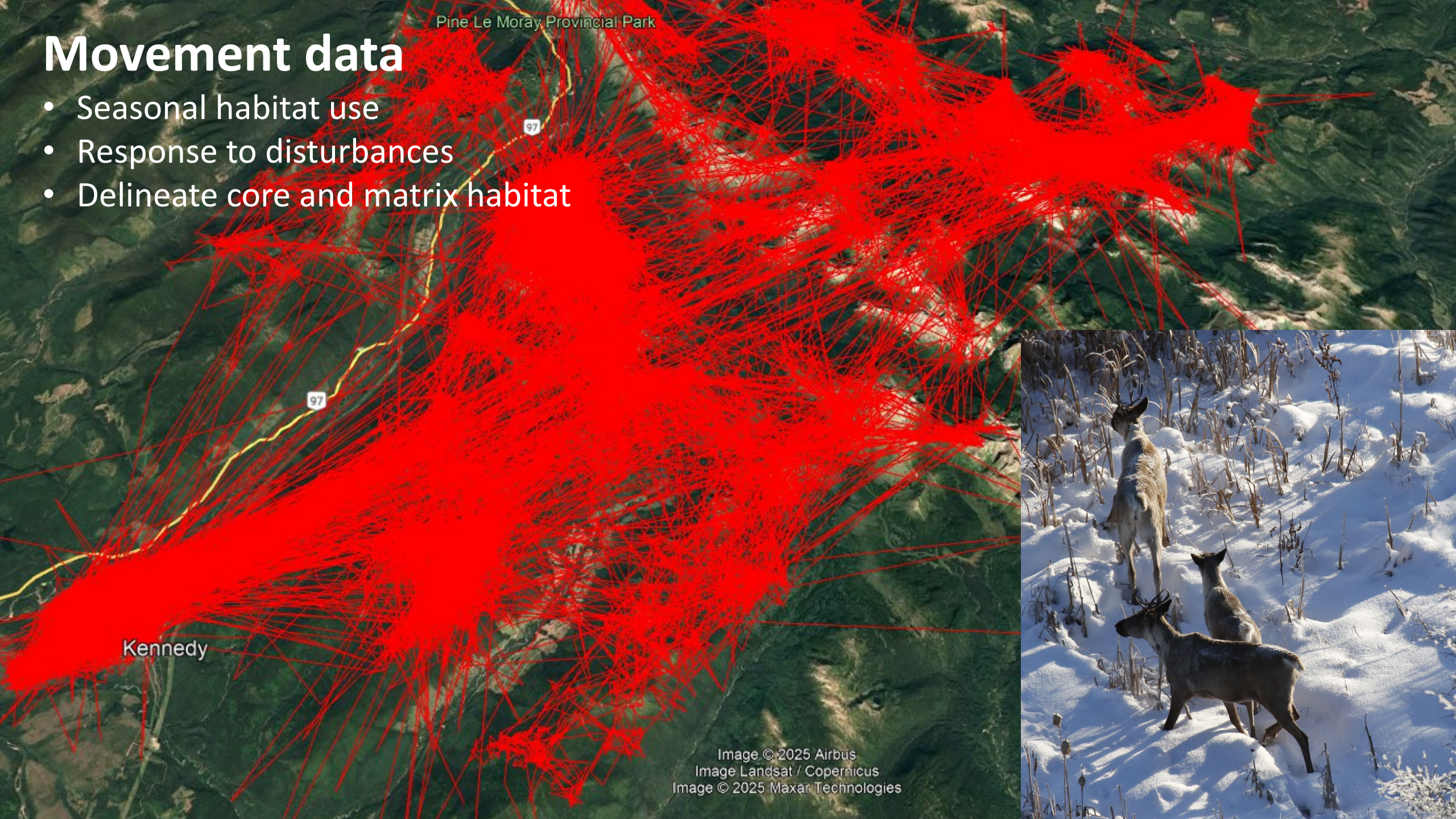
**25-28 calves/100 cows**

## Health data

- Pregnancy status
- Parasite load
- Trace minerals
- Hormones

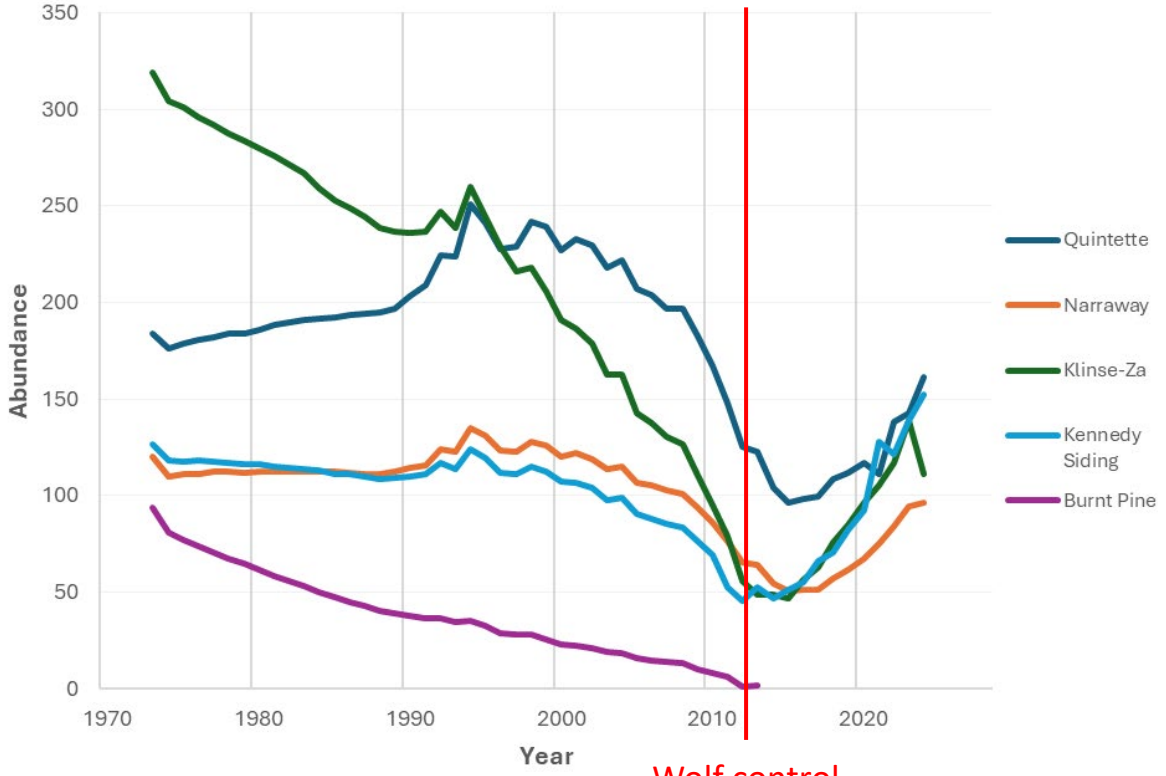
# Movement data

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

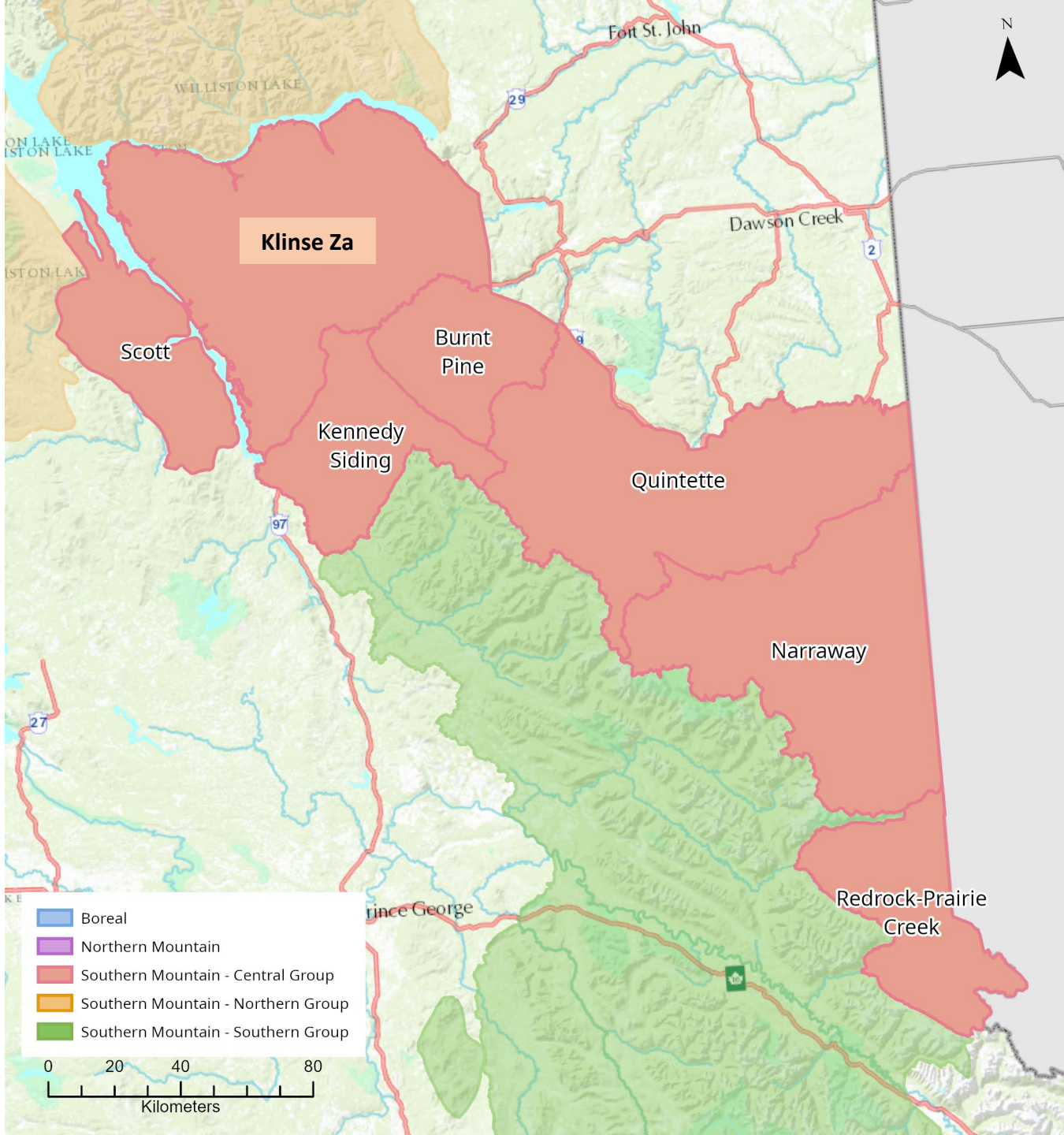


# SM-Central Group – population trend

1500 caribou added to SMC pops since the implementation of emergency recovery actions



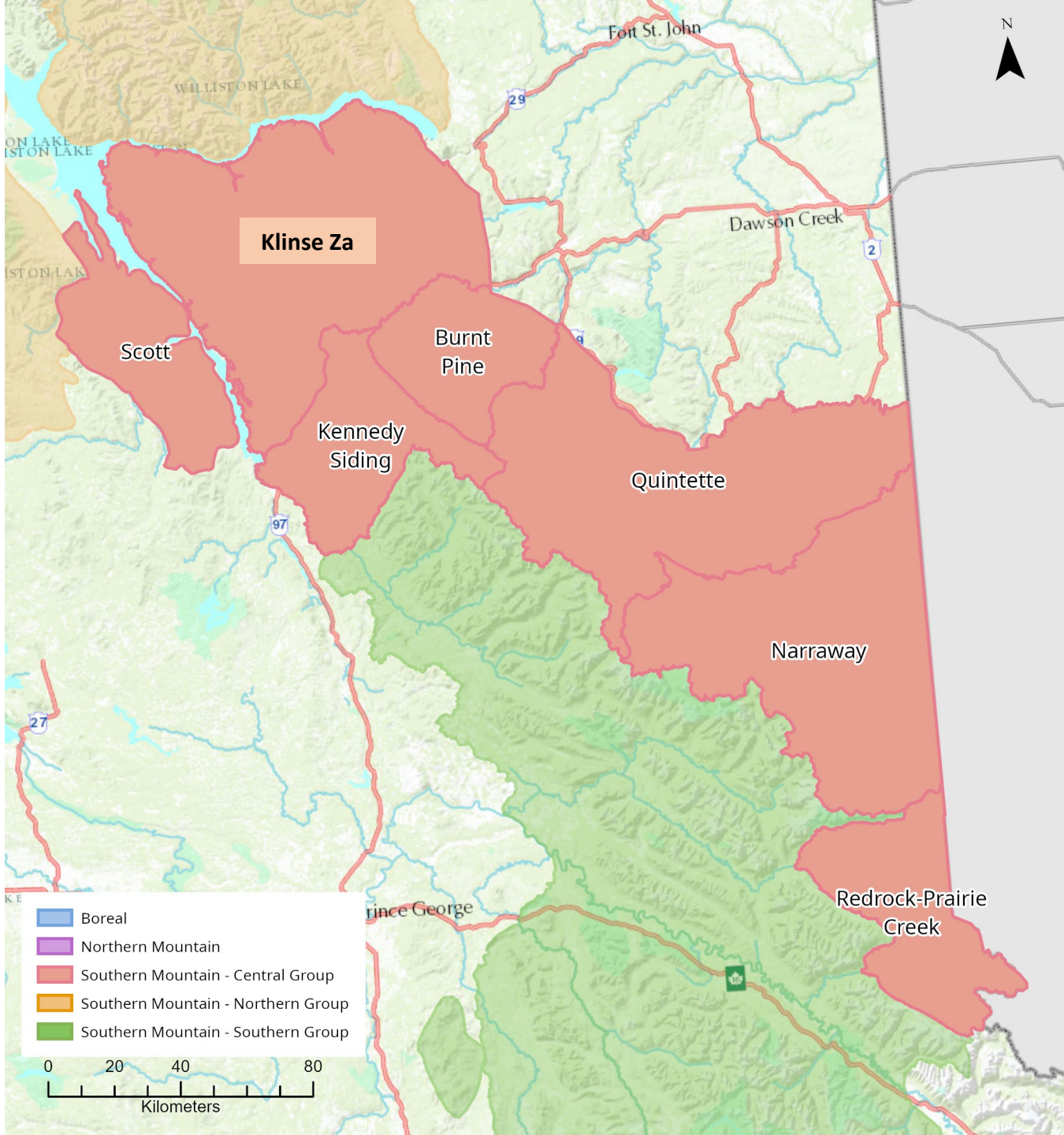

Wolf control
Mat pen
Supp feeding



# SM-Central Group – recent monitoring results

## Captures 2025

| Range | # of collars deployed Jan 2025 | # of active collars – Feb 2025 | # of deaths since April 1st 2024 |
|---|---|---|---|
| Kennedy Siding / Burnt Pine | 5 | 11 | 0 |
| Quintette | 5 | 8 | 1 |
| Narraway (BC) | 2 | 6 | 0 |
| **TOTAL** | **12** | **25** | **1** |



# SM-Central Group – recent monitoring results

## Inventory 2024

| Range | Survey count | % calves | Calves:100 cows | Bulls:100 cows | Pop est |
|---|---|---|---|---|---|
| Klinse-Za | 159 | 19% | 70 | 127 | 154 |
| KS/BP MR | 155 | 21% | 46 | 59 | 155 (SCF = 1) |
| Quintette (Old boundary) | 75 (Minimum) | 24% | 44 | 39 | |
| Narraway (BC & AB) | 125 (Minimum) | 23% | 48 | 0 | |

**Population Growth target**

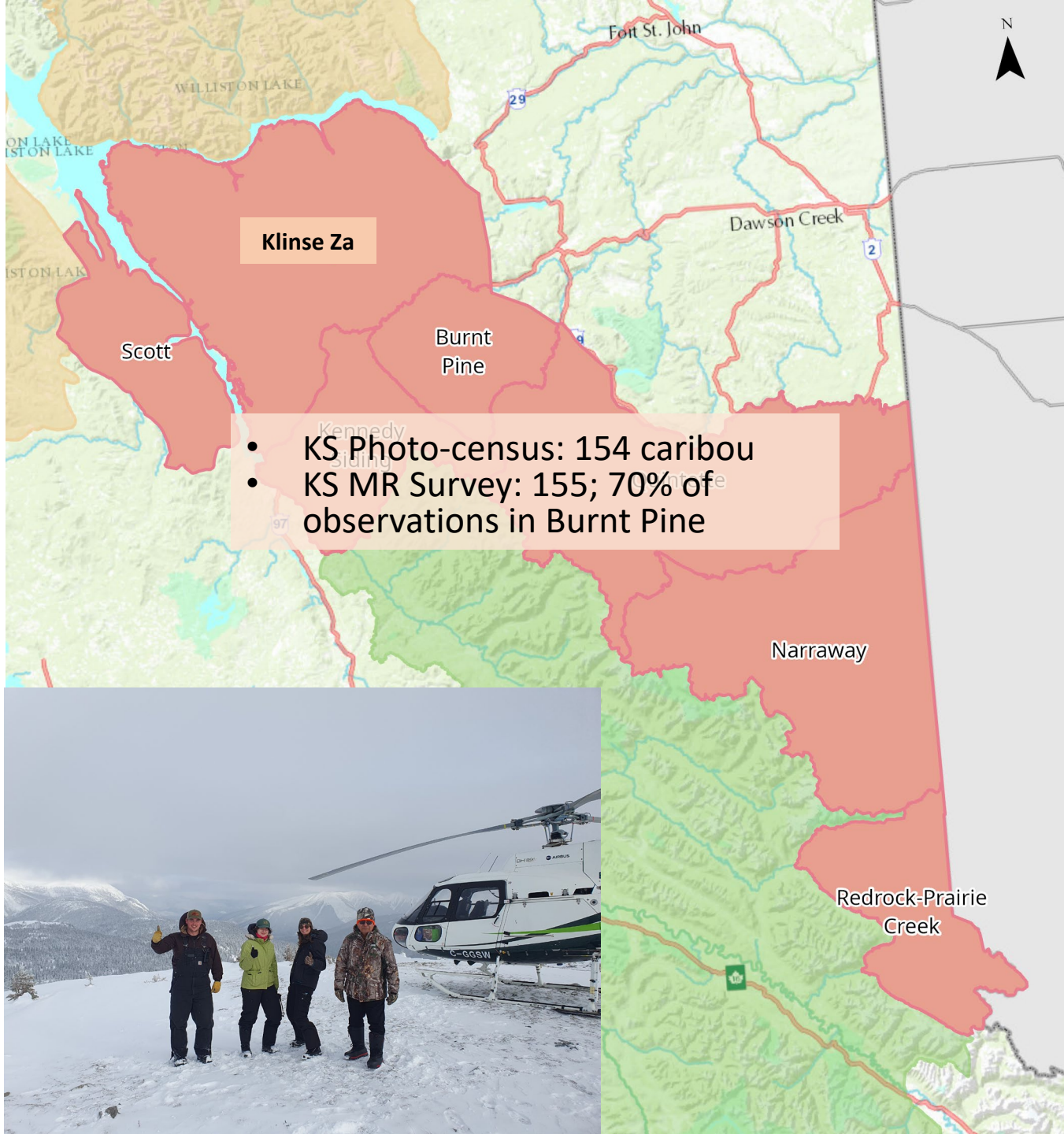
**15-16% of calves in pop**

**25 calves:100 cows**

**Winter 2025:**

- Maintenance of collars
- Mark-resight in Quintette
- Recruitment in Narraway (maybe)






- KS Photo-census: 154 caribou
- KS MR Survey: 155; 70% of observations in Burnt Pine

# SM-Northern Group – Graham 2024

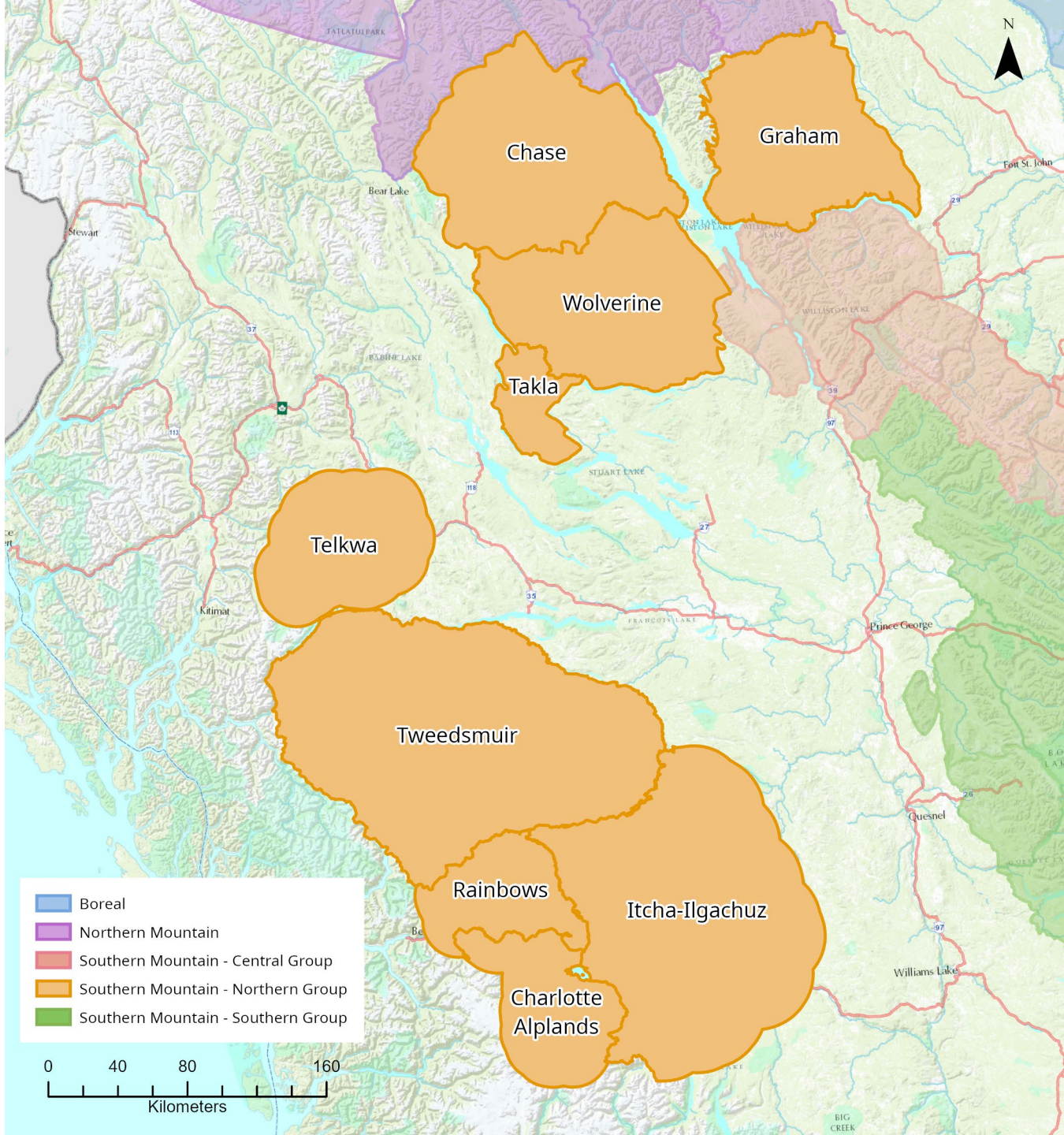
| # observed | % calves | Calf:cow | Bull:cow | Adult female survival | Pop estimate |
|---|---|---|---|---|---|
| 272 | 20.6% | 48.2 | 77.6 | 94% | 436 |

- Challenging survey conditions in 2024

- Increase from 2021 estimate of 197 caribou (92-417, 95% CI) with 63% sightability (12/19)

-Survey results suggested population increase

- Next mark-resight planned for March 2026

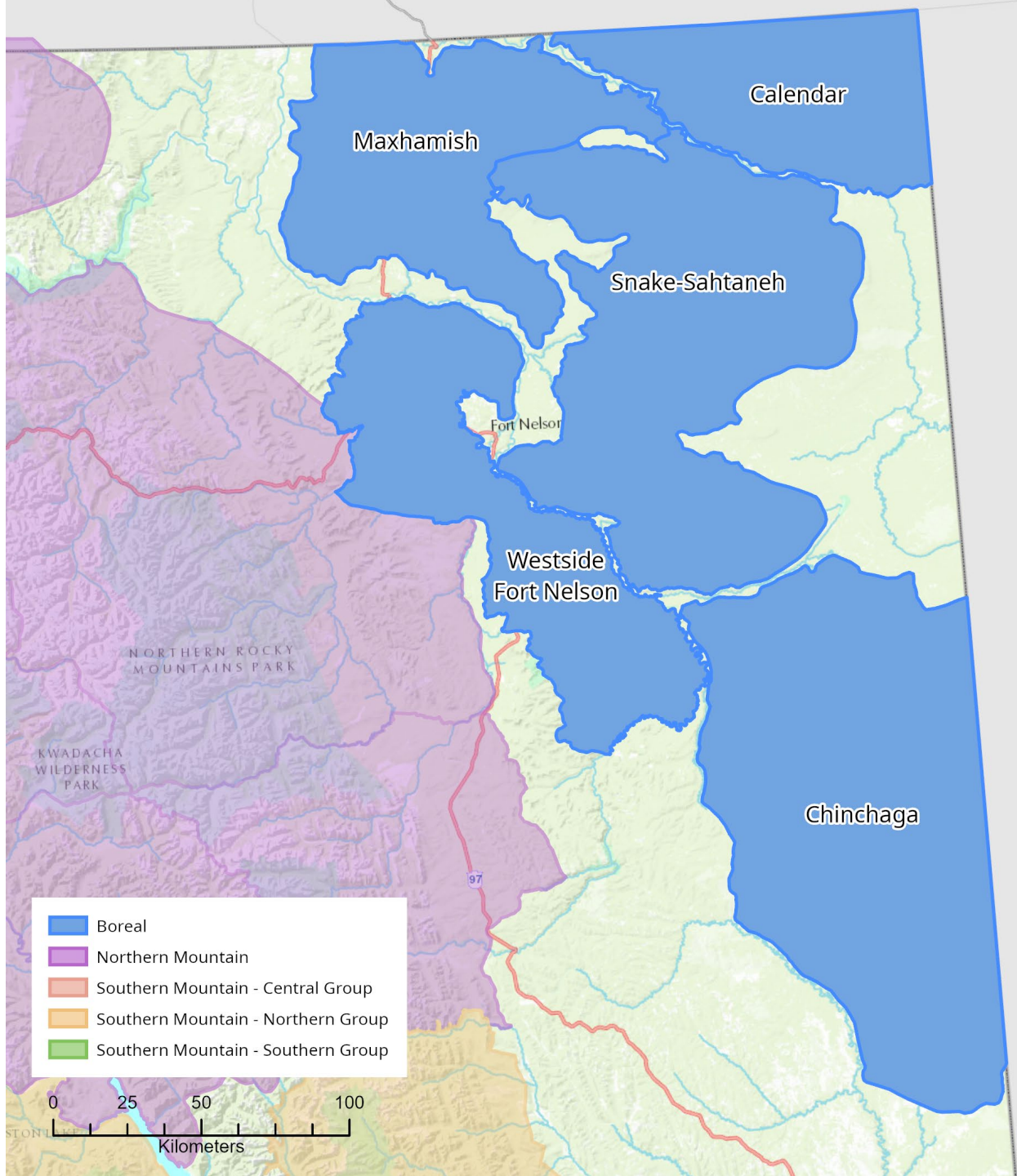


# Boreal – Population trend

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

**Important to maintain our collar #s for accurate data**

| 2014-2024 | Calendar | Chinchaga | Maxhamish | Snake-Sahtaneh | Westside Fort Nelson | Boreal Total |
|---|---|---|---|---|---|---|
| Calf:cow | 0.20 | 0.21 | 0.24 | 0.21 | 0.22 | **0.21** |
| Calf % | 13.3 | 14.7 | 16.1 | 14.2 | 14.1 | **14.4** |
| Survival Rate | 0.85 | 0.91 | 0.89 | 0.90 | 0.92 | **0.89** |
| Growth Rate | -0.07 | 0.01 | 0.00 | 0.00 | 0.03 | **-0.01** |

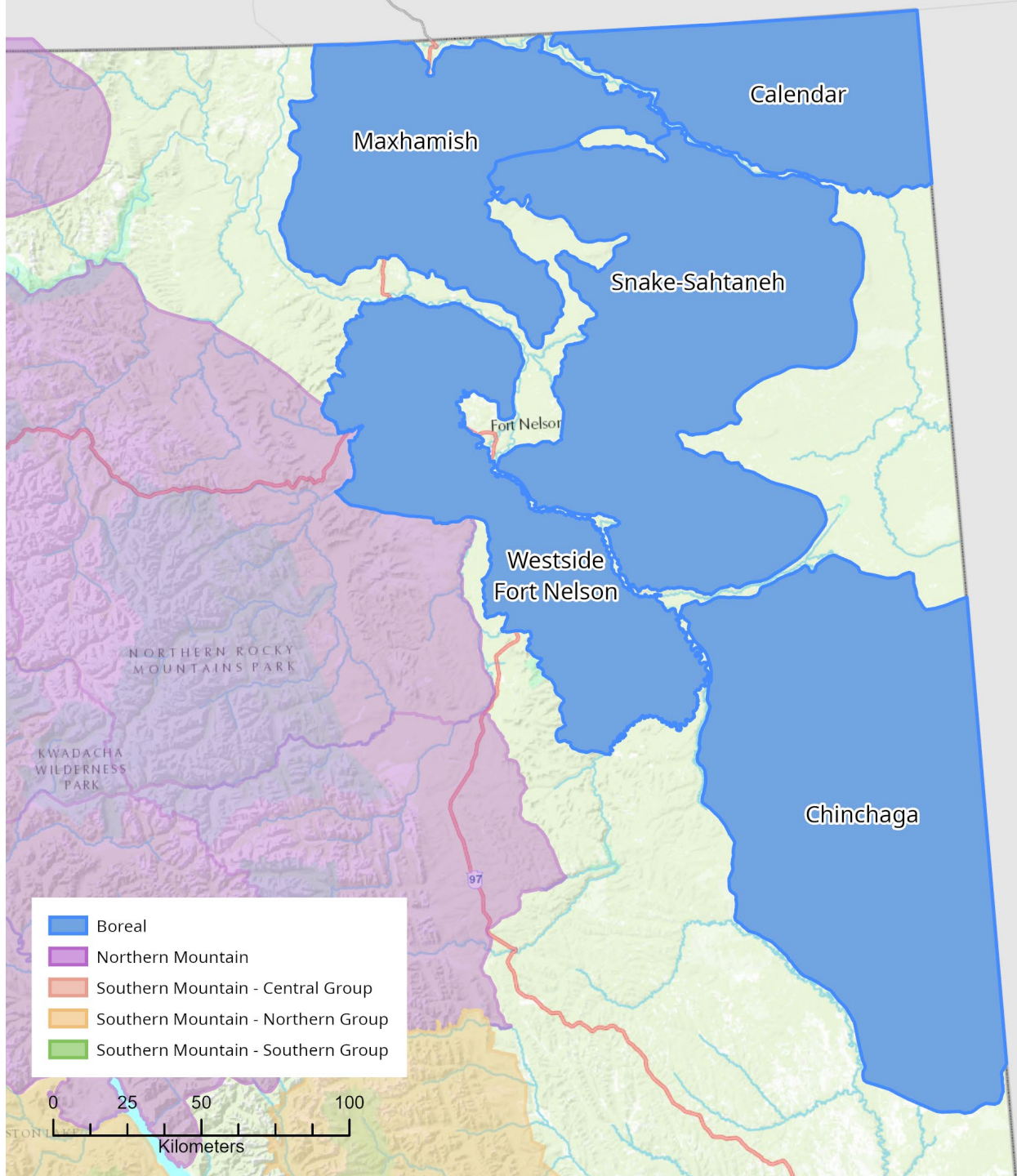


# Boreal – Population trend

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

**Important to maintain our collar #s for accurate data**

| | # of active collars | # observed | Calf % | Calf:Cow | Annual survival | Growth rate |
|---|---|---|---|---|---|---|
| 2014 | 171 | 723 | 8.71 | 0.12 | 0.75 | -20.4% |
| 2015 | 163 | 678 | 9.88 | 0.15 | 0.85 | -8.0% |
| 2016 | 151 | 728 | 14.15 | 0.20 | 0.89 | -1.7% |
| 2017 | 149 | 499 | 14.83 | 0.21 | 0.91 | -0.2% |
| 2018 | 106 | 454 | 16.08 | 0.24 | 0.96 | 8.7% |
| 2019 | 69 | 418 | 11.90 | 0.18 | 0.99 | 10.0% |
| 2020 | 38 | 480 | 11.25 | 0.17 | 0.88 | -4.7% |
| 2021 | 59 | 643 | 14.20 | 0.25 | 0.93 | 5.0% |
| 2022 | 83 | 972 | 13.70 | 0.22 | 0.90 | 0.2% |
| 2023 | 120 | 798 | 18.3 | 0.29 | 0.81 | -7.0% |
| 2024 | 124 | 870 | 19.5 | 0.30 | 0.95 | 9.3% |

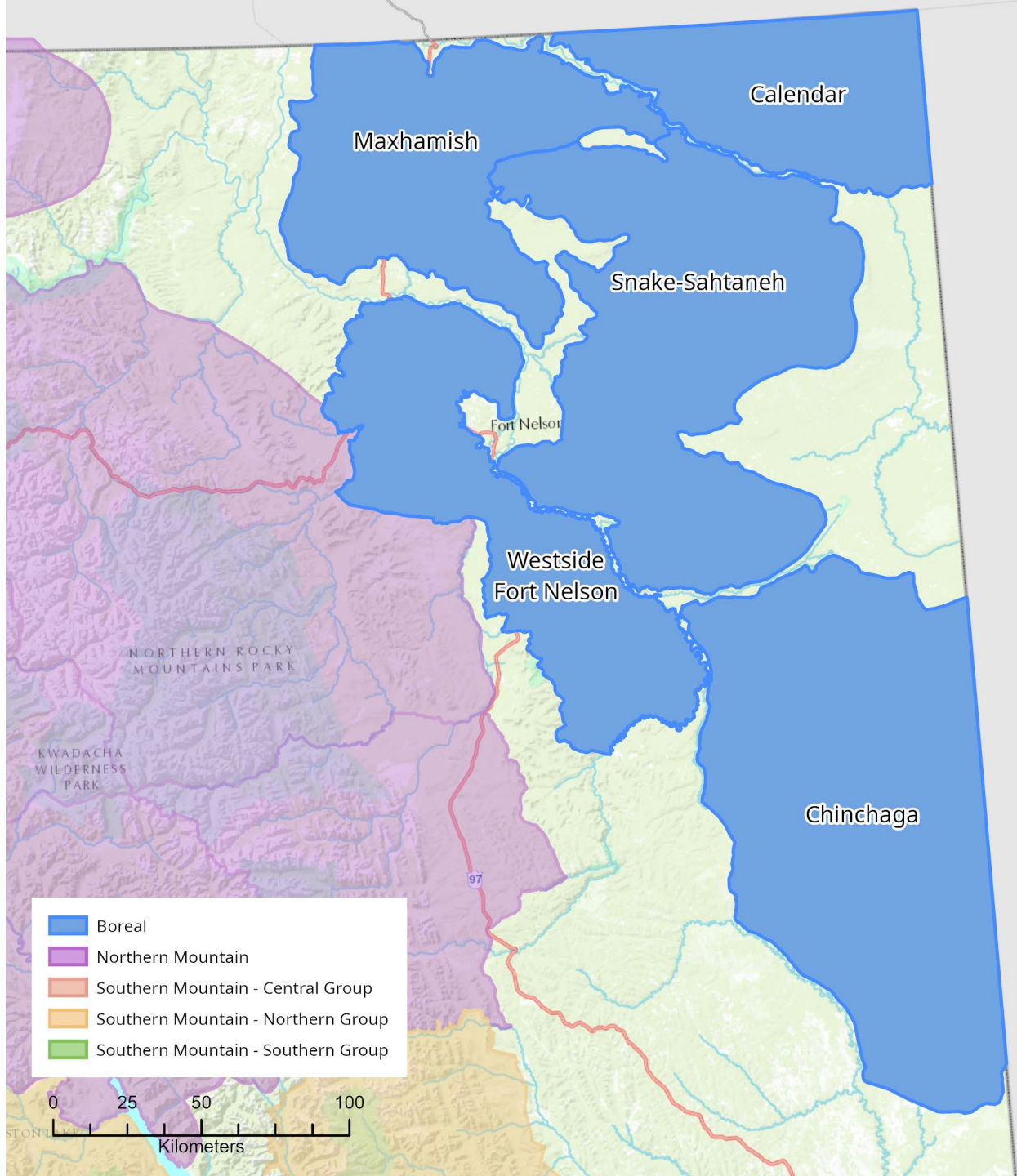


# Boreal – Recent monitoring results

## Captures 2025

**Lowest # of captures since start of regular monitoring in 2012: this is a good thing, # of collars brought back up to the level needed for efficient monitoring**

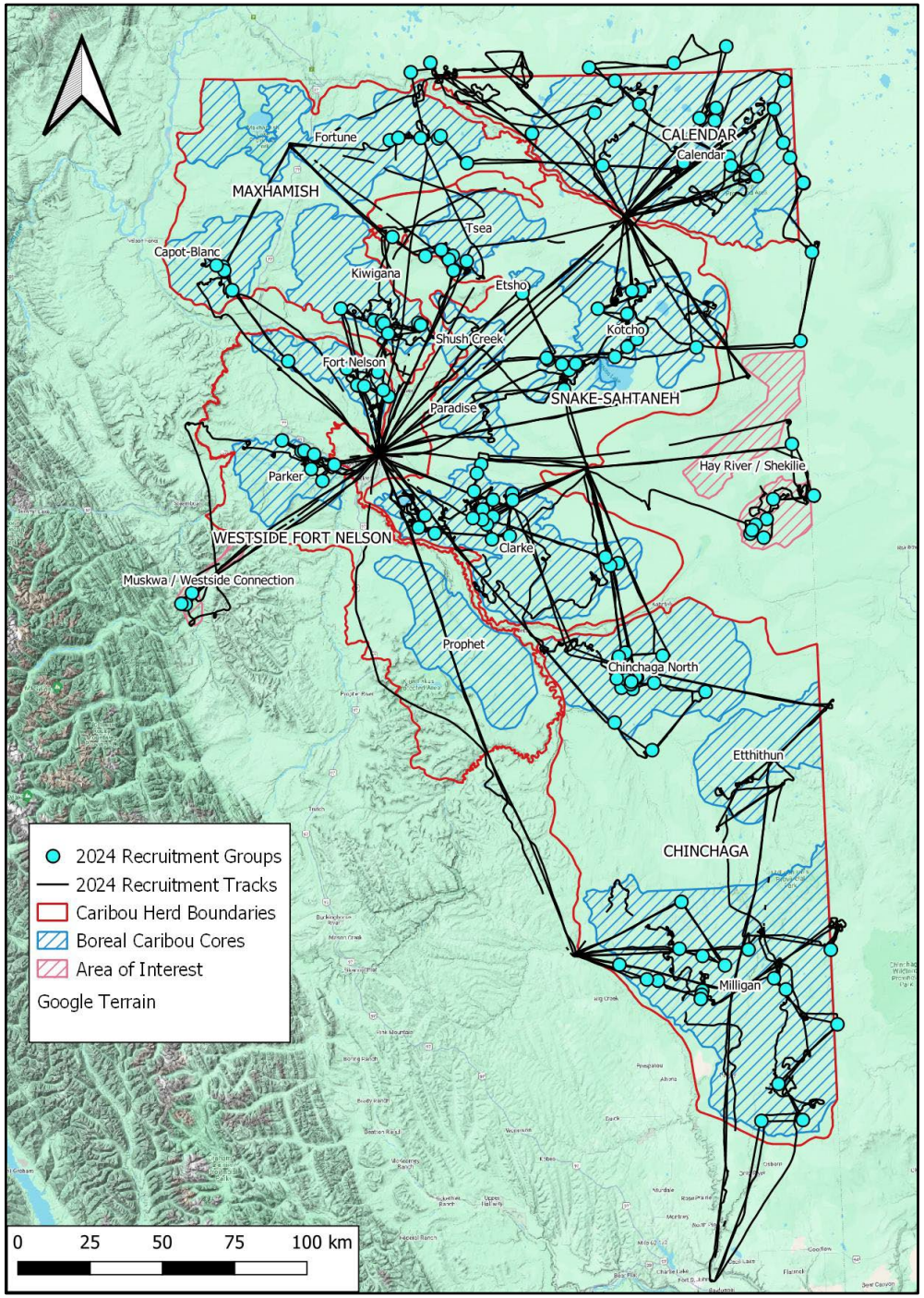
| Range | # of collars deployed Jan 2025 | # of active collars Feb 2025 | # of deaths since April 1st 2024 |
|---|---|---|---|
| Calendar | 1 | 21 | 0 |
| Chinchaga | 1 & 1 R | 33 | 4 |
| Hay River | 3 | 7 | 0 |
| Maxhamish | 2 R | 21 | 2 |
| Snake-Sahtaneh | 2 & 1 R | 45 | 3 |
| Westside Fort Nelson | 1 | 14 | 2 |
| **TOTAL** | **12** | **141** | **11** |



# Boreal – Recent monitoring results

## Aerial survey 2024

| # observed | % calves | Calves:100 cows | Bulls:100 cows |
|---|---|---|---|
| 870 | 19.5% | 29.9 | 21.1 |



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

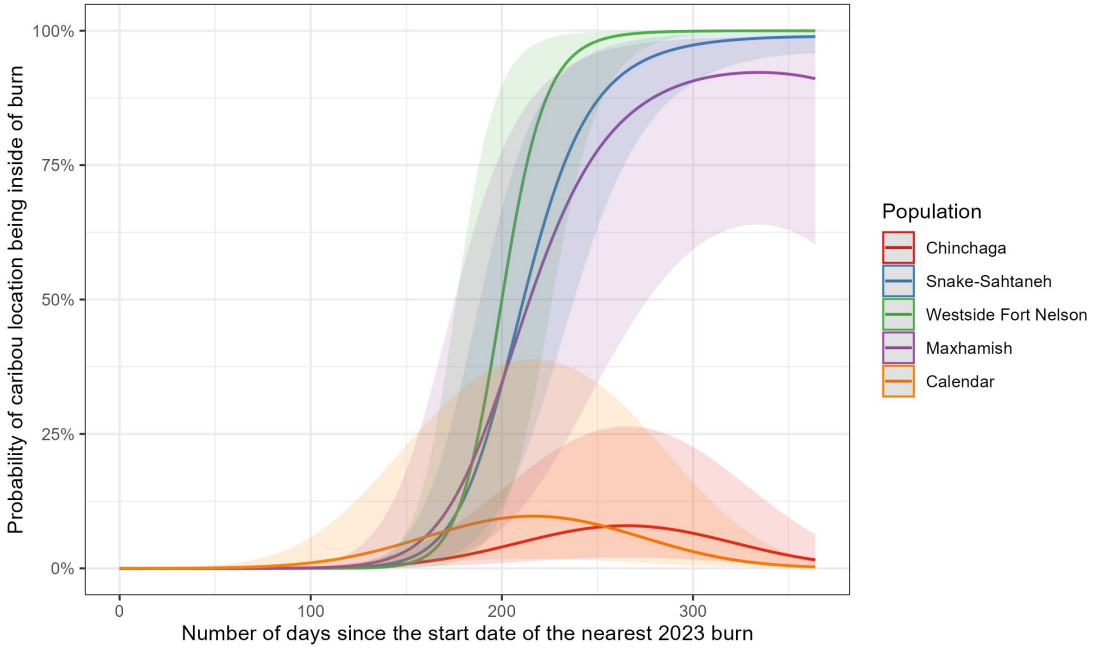
**If enough samples are collected, we can estimate how many caribou are on the land without needing to see them directly**

## 5-year project with DNA collections – so far:

| Year | Range | # of sites | # of samples | Prelim. Population Estimate | # of Crew |
|---|---|---|---|---|---|
| 2021-2022 | Westside Fort Nelson | 47 | 393 | 203 (95% 176-247) | 17 |
| 2022-2023 | Chinchaga-BC | 81 | 631 | Pending – 304 unique | 30 |
| 2022-2023 | Chinchaga-AB | 71 | 738 | Pending – 333 unique | 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 | 112 | 866 | Pending | 15 |

## 2025 - collaboration with FNFN:

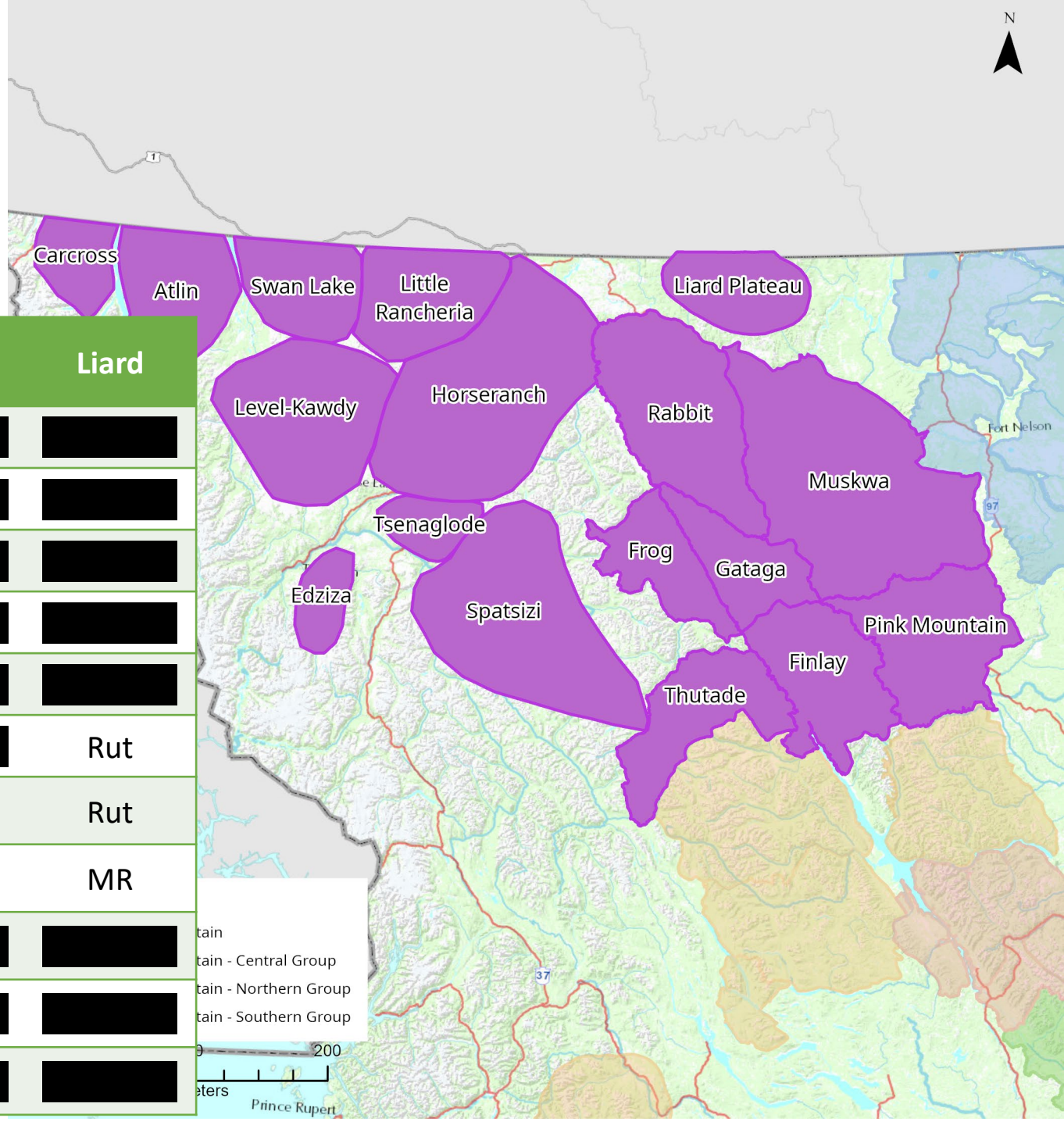
- Collared ~12 animals in boreal ranges to maintain >140 collars
- Calendar DNA completed
- Recruitment surveys in March 2025


Probability of caribou location being inside of burn
100%
75%
50%
25%
0%
0
100
200
300
Number of days since the start date of the nearest 2023 burn
Population
Chinchaga
Snake-Sahtaneh
Westside Fort Nelson
Maxhamish
Calendar

# Northern Mountain – monitoring history

Special concern under SARA

| | Pink Mountain | Muskwa | Gataga | Frog | Rabbit | Liard |
|---|---|---|---|---|---|---|
| 2015 | | | | | | |
| 2016 | R | | | | | |
| 2017 | R | R | | | | |
| 2018 | R | R | | | | |
| 2019 | | | | | | |
| 2020 | | R | | | | Rut |
| 2021 | MR | | R | R | R | Rut |
| 2022 | R | R | | | MR | MR |
| 2023 | R | | MR | MR | | |
| 2024 | | | | | | |
| 2025 | MR | MR | | | | |

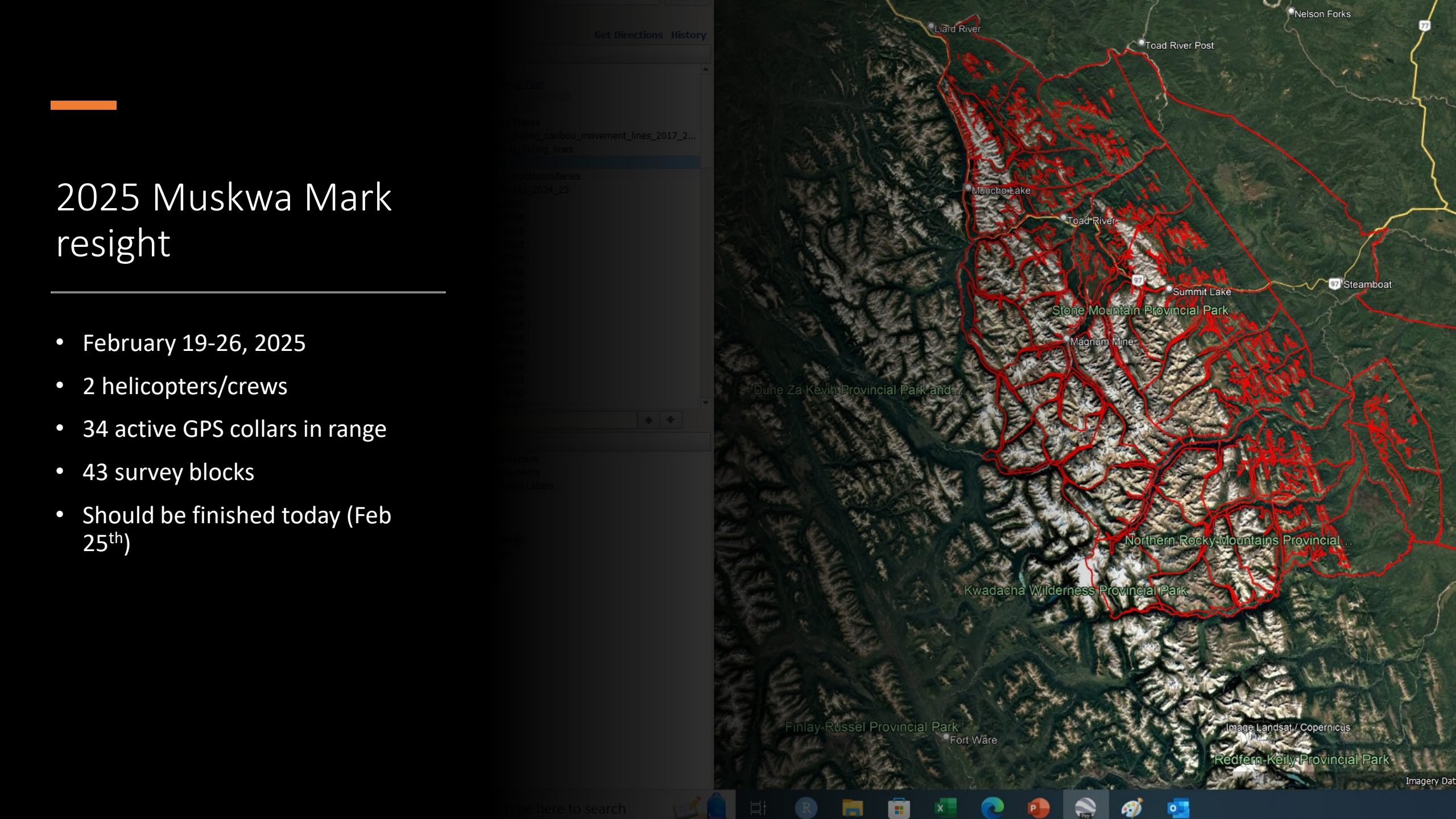


# Northern Mountain – monitoring results

## Mark resight survey results

Should be considered a baseline for future trend assessment

| | Year of last mark-resight | # observed | % calves | Calves : 100 cows | Bulls : 100 cows | Pop estimate | 2017-2024 growth rate |
|---|---|---|---|---|---|---|---|
| Pink Mountain | 2021 | 374 | 17 | 29 | 39 | 542 (SCF=0.63) | 4.5% |
| Liard | 2022 | 151 | 15.9 | 30 | 58 | 151 (SCF=1) | Unk |
| Rabbit | 2022 | 1063 | 13.1 | 26 | 47 | 1110 (SCF=0.95) | Unk |
| Frog (incl. 3 outside blocks) | 2023 | 205 | 19.5 | 56 | 38 | 261 (SCF=0.5) | Unk |
| Gataga | 2023 | 179 | 15.6 | 39 | 81 | 179 (SCF=1) | Unk |
| Muskwa | 2025 | | | | | | 6.1% |

# 2025 Muskwa Mark resight

- February 19-26, 2025
- 2 helicopters/crews
- 34 active GPS collars in range
- 43 survey blocks
- Should be finished today (Feb 25th)