

ENR South Slave Regional Wildlife Workshop Summary Report

3rd biannual South Slave Regional Wildlife Workshop
October 29-31, 2013
Roaring Rapids Hall, Fort Smith

Attendees:

Delegate Organizations: Salt River First Nation, Smith Landing First Nation, Fort Smith Metis Council, NWT Metis Nation, Deninu K'ue First Nation, Fort Resolution Metis Council, K'atloodeeche First Nation, Hay River Metis Local, Ka'a'gee Tu First Nation, Deh Gah Got'ie First Nations, Athabasca Denesuline

Public: The workshop is open to the public so a number of other organizations and attendees were present. Some of these included Parks Canada staff, the Aurora College – Environmental and Natural Resource Technology Program, researchers from southern universities and interested resident hunters.

Introduction

The third biannual ENR South Slave Regional Wildlife Workshop was held October 29-31, 2013, at the Roaring Rapids Hall in Fort Smith. A goal of the regional workshops is to get feedback and ideas from local and traditional knowledge holders about our wildlife research, monitoring and management programs. We hold the workshop in October so that there is little conflict with any fall harvest, allowing more harvesters to participate. Attendance includes both delegates from regional aboriginal organizations, students and the public. The 2013 workshop was well attended with approximately 50-80 people on the first two days and 30 -40 people on the 3rd day.

The objectives of the workshops are to:

1. Provide a forum for open discussion of regional wildlife issues.
2. Provide the opportunity to ensure that all delegates of local organizations and the public are updated on recent and ongoing wildlife programs being delivered by ENR.
3. Provide a forum for other agencies, departments and/or ENR programs to present research findings.
4. Ensure continued dialogue about wildlife research and monitoring between interested Parties in the South Slave region.

The workshop was structured to include a combination of 15 minute presentations and a series of breakout discussions to address specific questions. At the 2013 workshop there were 21 presentations made by 15 presenters. Presentations and presenters are listed at the back of this report and copies of presentations are available upon request or can be found at (http://www.gov.nt.ca/live/documents/content/2013_South_Slave_Biennial_Wildlife_Workshop.pdf). Presenters were asked to include the following information:

- 3 things that we have learnt from our research or studies
- 3 things we hope to find out through our current research

Seven breakout sessions were held on topics that ranged from “what do we need to know about moose?” to “what would make a great knowledge study?” People attending the workshop were split into different groups to discuss the questions and to provide feedback and ideas. The results of the breakout discussions are listed below.

The following pages document the discussions that came out of the breakout groups. The main priorities from all breakouts are summarized following each topic. The closing comments and other discussions are summarized into major themes on the final pages of this document.

Before beginning the presentations on the first day a brief review of the concerns raised during the 2011 workshop was reviewed. 2011 Attendees were interested in hearing more about:

- ### 2013 Introductions and Reflection Question:

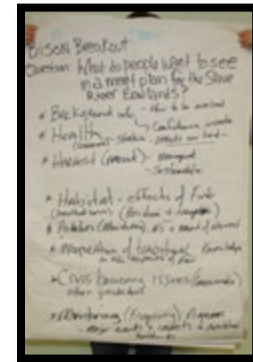
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Breakout question: *What do people want to see in a bison management Plan for the Slave River Lowlands?*

Flip Chart notes – results from the breakout groups. Areas that were identified as a priority by the breakout group are bolded

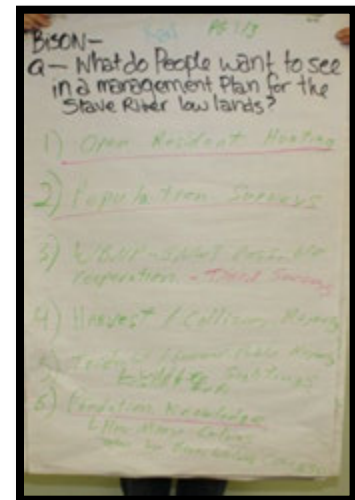
Bison Management Plan Group 1

- Background info (how to be involved, confidence in data)
- Health (diseases) status (Effects on herd)
 - Harvest (Management, Sustainable)
- Habitat effects of fire (Prescribed burns, positive and negative)
- Predators (monitoring), numbers and amount of harvest
- Incorporation of traditional knowledge in all aspects of the plan
 - Cross boundary issues (Communication to other jurisdictions)
- Monitoring (frequency) programs
 - Major events and impacts to population and population numbers



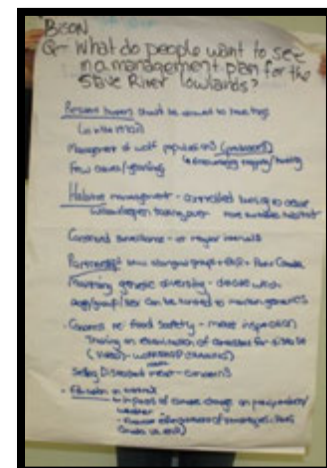
Bison Management Plan Group 2

- **Open Resident Hunting**
- **Population Surveys**
- **Predation knowledge**
 - How many calves are taken by bear, wolves, cougar
- **Habitat monitoring – management**
- **Weather and icing events – snow/rain and snow pack**
- WBNP- GNWT possible cooperation – timed surveys
- Harvest/collision reporting
- Incidental/General public Reporting (Wildlife sightings, Contact info)
- Effects of invasive species (deer)
- Harvest reporting – cow/calves (Population model)
- Composition surveys
- Predator management
- Problem animal plan (Dealing with and prevention, highway and town)
- Why is the calf ratio low?
- Anthrax – emergency plan
- Climate change impact - monitoring

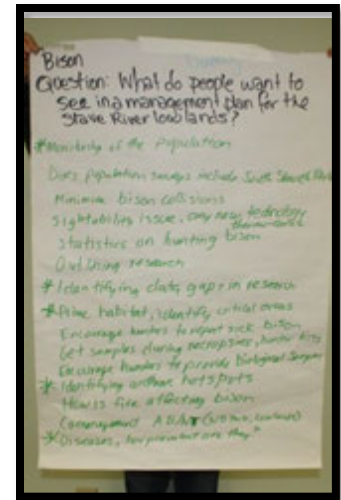


Bison Management Plan Group 3

- **Resident Hunters should be allowed to have tags (as in the 1970s')**
- **Management of wolf populations (predators) – encourage trapping and hunting**
- **Habitat management – controlled burning to create willow/aspen taking over. More suitable habitat**
- **Partnerships between aboriginal groups and ENR and Parks Canada**
- **Education on anthrax - impacts of climate change on precipitation and weather.**
- Evaluate effectiveness of strategies (Parks Canada vs. ENR)
- Continued surveillance – at regular intervals
- Maintain genetic diversity – decide which age/group/sex can be hunted to maintain genetics.
- Concerns regarding food safety – meat inspection. Training on examination of carcasses for disease (video) –annual workshop training
- Selling diseased meat concerns
- Establish ideal population numbers – minimum and maximum



- **Monitoring of the population**
- **Identifying data gaps in research**
- **Prime habitat, identify critical areas**
- **Identifying anthrax hotspots**
- **Diseases, how prevalent are they?**
- Do the population surveys include south slave and park?
- Minimize bison collisions
- Sight ability issue, any new technology? Thermo cams
- Statistics on hunting bison
- Outlining research
- Encourage hunters to report sick bison
- Get samples during necropsies, hunter kits
- Encourage hunters to provide biological samples
- How is fire affecting bison?
- Co-management AB/NT (WB Park, lowlands)



Summary of Bison Breakout Discussions: *What do people want to see in a bison management Plan for the Slave River Lowlands?*

- Research (population surveys and monitoring, look at the data gaps)
- Health (disease status, effect of disease on herd, prevalence of disease, hot spots and need for public education)
- Harvest (management, sustainable, open resident hunting)
- Habitat (effects positive and negative of fire, controlled burns)
- Monitoring (weather events, prime habitat, identify critical areas)
- Predation knowledge (how many calves are taken by predators, encourage trapping and hunting)
- Partnerships (between aboriginal groups, ENR and Parks Canada, info on how to be involved)

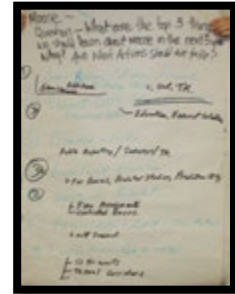




Breakout question: *What are the top 3 things we should learn about moose in the next 5 years? Why? What actions should we take?*

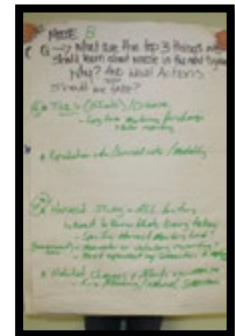
Moose Group 1

- **Home Range/Moose movements:** Public reports, collaring, game cameras, tracks, scat, TK
- **Quality of Habitat:** Fire Assessments & Controlled burns
- **Harvest (all) – quality of data/ Education and harvest selection**
- Bear/Wolf Predation
- Fur bonus, predator studies, predation quality
- Disease – Ticks - Public reporting/surveys/TK
- Productivity – calf/cow ratios and calf survival
- Hunting pressure (12 hour waits) and travel corridors



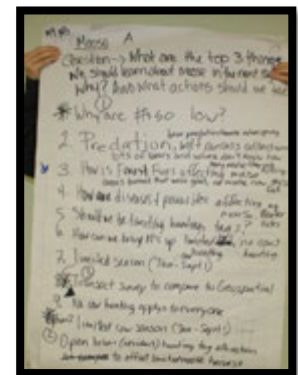
Moose Group 2

- **Ticks (effects)/disease**
- **Harvest study – all hunters**
 - a) Long term monitoring for change – hunter reporting
- Reproduction rate/survival rate/mortality
- Need to know what's being taken
 - a) Specific harvest monitors hired?
 - b) Mandatory or voluntary reporting? (License renewal time?)
 - c) Need agreement by communities to?
- Habitat changes and effects on moose
 - a) Fire/flooding/natural succession

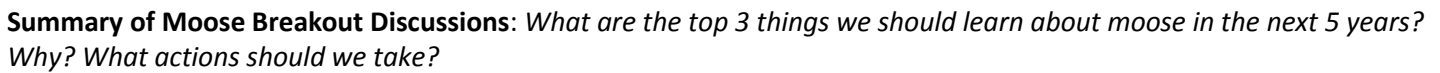


Moose Group 3

- **Why are numbers so low?**
- **Open bison (resident) hunting tag allocation to offset limited moose harvest.**
- **Transect survey to compare to geospatial**
- Predation
 - a) wolf carcass collection, lots of bears and wolves and don't know how many moose they are killing
 - b) bear predation/moose calves spring
- How are forest fires affecting moose areas burned that were good, no moose now this fall?
- How are diseases and parasites affecting moose? Winter ticks
- Should we be limiting hunting, tags?
- How can we bring #'s up? Limited bull, no cows hunting?
- Limited season (Jun-Sept1)
- No cow hunting applies to all/limited cow season (Jan – Sept 1)



- Current population – why is it lower?
- Habitat: influence of areas of burns/forest fires, decreased water levels and loss of habitat, are burns creating habitat, climate change influence on habitat
- winter ticks – relationship to climate change: survey for ticks
- overharvesting – follow traditional laws: more people hunting moose because of the lack of caribou, set quotas to limit number hunted, educating young people on harvest
- Wolf/predation populations – encourage more trapping
- Contaminants – influence of diet – changes in diet and water quality
- Demographics of moose – how many in current population
- Brain worm – disease investigation
- Drones for surveillance – alternative surveillance
- Info on reproductive status – fertility
- Hunters should report how many hunted/killings
- Officer surveillance and enforcement and monitoring of hunters
- Subsidize hunters to submit samples for testing



- Research questions (Why are moose numbers lower? What is the population trend? Need a variety of approaches on moose movements, transect survey)
- Health (Survey for ticks, effects of ticks and disease on moose populations)
- Harvest (Need a harvest study, education on harvest selection, following traditional laws – not overharvesting)
- Habitat (What is the quality of the habitat? Controlled burning? Fire assessments? Effect of climate? Effect of decreased water levels?)
- Predation (Numbers of moose taken by predators compared to hunters)
- Management (Open bison tags to resident hunters, limit to bull hunting or season for cows)



Predators

Breakout question: *What are the top 3 things we should learn about predators in the next 5 years? Why? What actions should we take?*

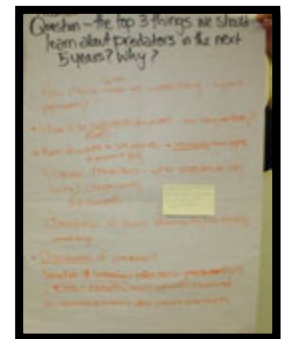
Predator Group 1

- **What are wolves/bears eating (scat analysis):** Seasonal food changes, How many moose calves do bears and wolves eat?
- **Bear/Wolf populations – how many?**
- **Impacts of bear outfitting on moose populations**
- Range/home range/movements of predators?
- Cougars influence on moose?
- Historical predator populations?



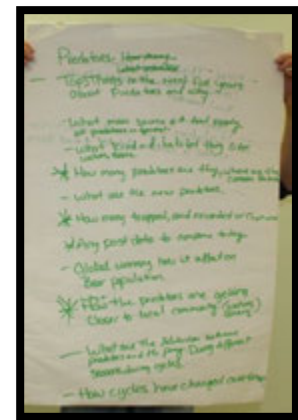
Predator Group 2

- **What is the population of wolves?** How many are there?
- **Ratio of wolves to big game** – relationships between How many caribou/moose are wolves taking? Impacts on population?
- **Distribution of predators/populations of predator and prey**
- Disease transmission- what diseases do they carry (tapeworm) (fish parasites)
- Distribution of bears influenced by bear fencing around dump
- What are the results of the specimens over time? Are the toxins getting higher or lower?
- Studies of beneficial effects of predators: Role in ecosystem, keeping populations balanced, how decreased populations affect predator distribution



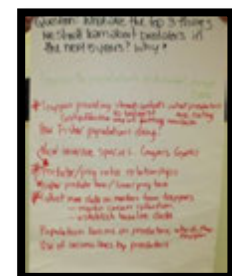
Predator Group 3

- **How many predators are there? Where are the common habitats?**
- **How many trapped, and recorded or captured?/ Any past data to compare today?**
- **Why and how are the predators getting closer to communities**
- What main source of food supply all predators in general
- What kind of habitat do they like – wolves, bears etc.?
- What are the new predators?
- Global warming how it effects on bear population.
- What are the relationships between predators and the prey? During different seasons, during cycles? How cycles have changed over time.
- More traditional knowledge with local community. Elders and trappers and hunters local harvesters
- How many predators are in competition within a certain habitat and food source?



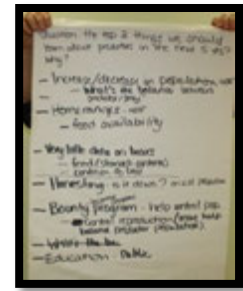
Predator Group 4

- **Trappers providing stomach contents to biologist, what predators are eating – cost effective way of getting raw data**
- **Predator/prey ration relations:** Higher predator base/lower prey base
- **Collect more data on martens from trappers:** Marten carcass collection, Establish baseline data
- How are populations distributed, range sizes, How are fisher populations doing? New invasive species – cougars, coyotes, Population booms on predators, why do they happen? Use of seismic lines by predators



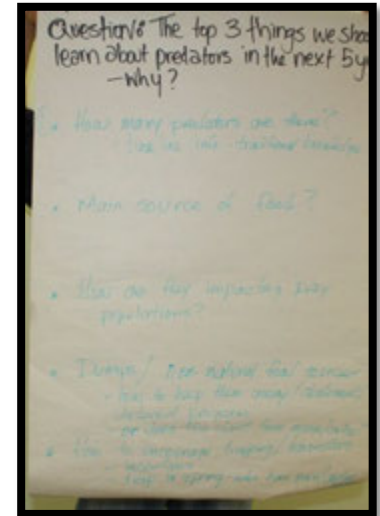
Predator Group 5

- Increase/decrease in populations – wolf: What’s the balance between predator/prey
- Home ranges – wolf - Food availability
- Very little data on bears: Feed (stomach contents), Condition of bear
- Harvesting – is it down? On all predators?
- Bounty program – incentive programs – help control populations, Control reproduction (may help balance predator population)
- Education - public



Predator Group 6

- **How many predators are there?**
- **Main source of food?**
- **How are they impacting prey populations**
- Why stop incentive program with current low state of big game? Is the incentive program effective? Increase to Saskatchewan trappers trapping in NWT
- Baseline info – traditional knowledge
- Dumps/ non-natural food sources: How to keep them away/abatement/deterrent program Or does this divert from moose and caribou?
- How to encourage trapping/harvesters/ Incentives/ Trap in spring when have pups/capture
- Change zoning/open areas for outfitting (Slave River Lowlands) for predators
- Are there accumulated contaminants from eating big game?
- Competition from predators moving up from the south? Cougars?
- Predator's mortality rates? Cause of death? Starvation, disease, contaminants, changes to habitat, hunting, and other predators.
- Relationship of water to everything else: E.g. Wildlife numbers



Summary of Predator Breakout Discussions: *What are the top 3 things we should learn about predators in the next 5 years? Why? What actions should we take?*

- Research (what are predators eating? How many predators are out there? What is the ratio of predators to big game? What is the predator distribution? Is there historical predator data that can be compared to a current survey? What is the impact of predators on prey populations?)
- Harvest (How many predators are trapped, there is a need for more data from trappers, incentives for trapping)
- Monitoring (what is the proximity of predators to communities)

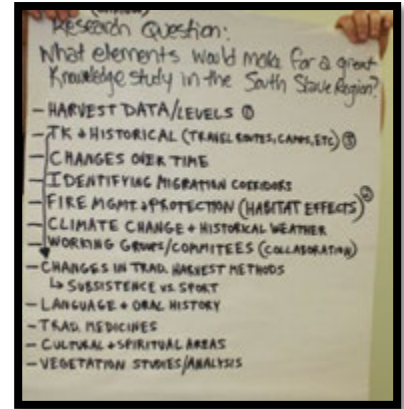


Knowledge Study

Breakout question: *What elements would make for a great knowledge study in the South Slave Region?*

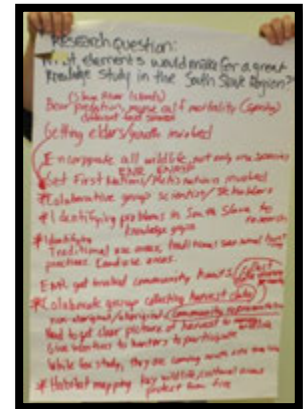
Knowledge Study Group 1

- **Harvest Data/levels**
- **TK and Historical (travel routes, camps, etc.)**
- **Fire management and Protection (Habitat effects)**
- **Changes in traditional harvest methods: Subsistence vs. sport**
- Changes over time, climate change and historical weather
- Identifying migration corridors
- Working groups/committees (Collaboration)
- Language and oral history
- Traditional medicines, cultural and spiritual areas, passing on legends and stories to youth, identification of traditional trails/camps, traditional cookbooks
- Vegetation studies and analysis



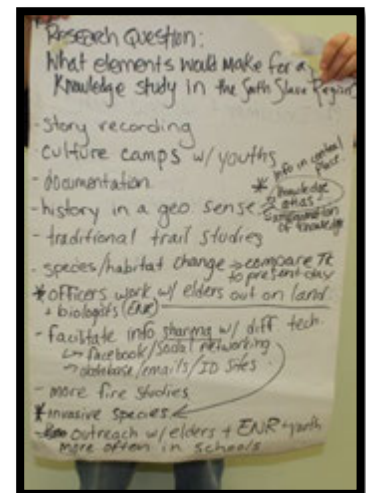
Knowledge Study Group 2

- **Collaborative Group:** Getting elders/youth involved, Get First Nations/Metis Nations/ENR/ENRTP/Scientists/Traditional Knowledge holders
- **Identify problems in the South Slave to research – knowledge gaps**
- **Collaborative group collecting harvest data:** Community representative collect data anonymously, Non-aboriginal/aboriginal, Need to get a clear picture of harvest to manage wildlife, give incentives to participate
- Bear predations (Slave River Islands), moose calf mortality (spring), different food sources, white fox study,
- Incorporate all wildlife, not only one species
- Identifying traditional use areas, traditional seasonal hunting practices, land use areas
- ENR get involved in community hunts
- Habitat mapping key wildlife, cultural areas, protect from fire



Knowledge Study Group 3

- **Information in a central place**
 - History in a geo sense
 - Knowledge atlas
 - Amalgamation of knowledge
- **Officers work with elders out on the land and biologists (ENR)**
- **Invasive species (social networking)**
- Story recording
- Culture camps with youth
- Documentation
- Traditional trails study
- Species/habitat change – compare TK to present day
- Facilitate info sharing with different technologies
 - Facebook/social networking
 - Database/emails/ID sites
- Outreach with elders and ENR and youth more often in schools

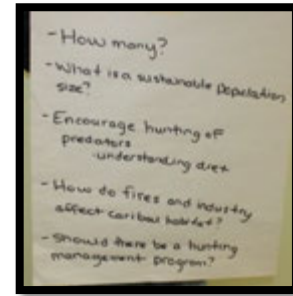




Breakout question: *What are the top 3 things we should learn about caribou in the next 5 years? Why?*

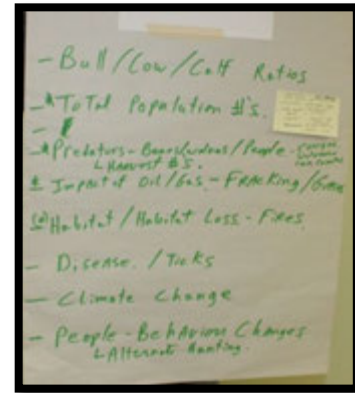
Caribou Group 1

- How many? What is a sustainable population size?
- Encourage hunting of predators
- Understanding diet of predators
- How do fires and industry affect caribou habitat?
- Should there be a hunting management program?



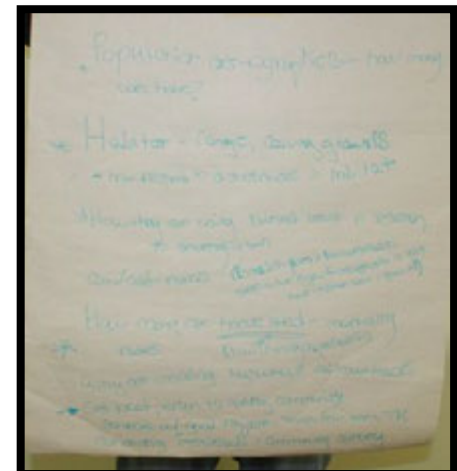
Caribou Group 2

- **Total Population numbers** Bull/Cow/Calf Ratios
- **Predators:** bears/wolves/people/cougars/wolverine/lynx/coyotes Harvest numbers
- **Impact of oil and Gas:** Fracking/gases
- **Habitat/Habitat loss – fires**
- Disease/ticks
- Climate change
- People -Behavior changes/ Alternate hunting



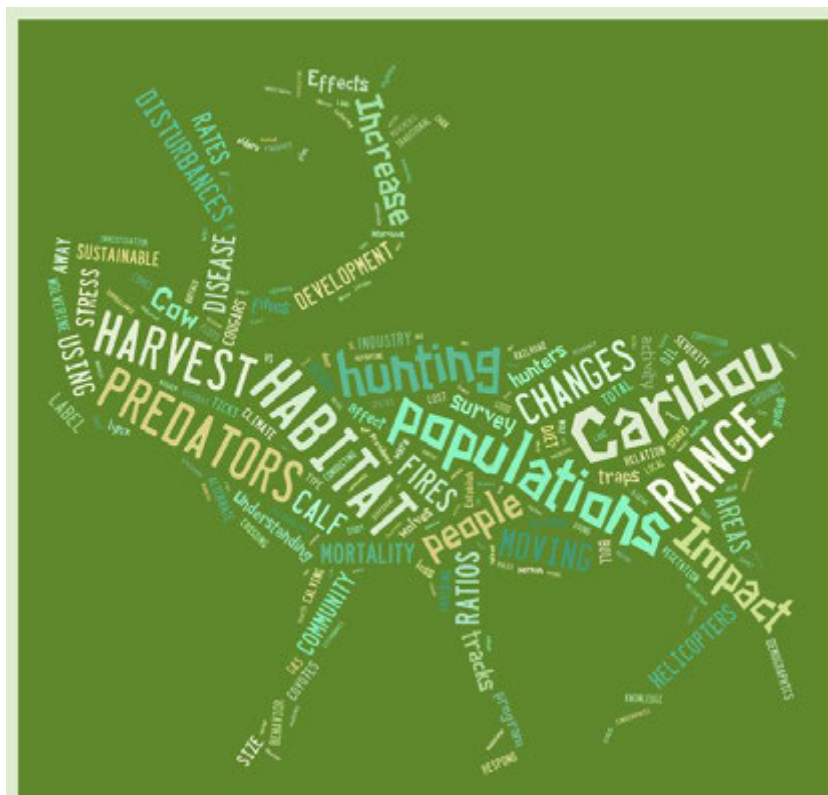
Caribou Group 3

- **Population demographics – how many do we have?**
- **Habitat – Range, calving grounds**
 - How to respond to disturbances in habitat
 - How are they using burned areas in relation to severity of burn
 - Establish plots in burned areas to see what type of vegetation is there and how it comes back (regrowth)
- **How many are harvested – mortality rates**
 - How many are lost to Hunting vs. predation
- Cow/Calf Ratios
- Why not crossing highway and railroad tracks
- Get a local person to survey community
 - Someone with good rapport
 - Stories from elders – Traditional Knowledge
 - Conducting interviews – community survey
- Should do a study north of Fort Providence (Chan Lake)
- Disease investigation
- Impact of deer populations/buffalo range
- Disturbance/competition from other species
- Develop a sound management plan
- Tracking wolf movements
- How big of an impact are they having on caribou populations?
- Different methods of surveillance – helicopters?



- Duck
- ① population #'s
 - harvest estimate
 - ② what is the range
 - how long
 - where
 - throughout range
 - if collaring induces stress
 - is mortality rates
 - ↓
 - new marks
 - increasing residency for hunters
 - before eligibility to hunt
 - increase monitoring + reporting collaboratively for all ppl (could on the land (hunters officers))

- Research (Population numbers – how many are there? What is a sustainable population size? What is the diet?)
- Harvest (How many are harvested? Collect harvest data? Compare harvest data with how many predators take)
- Habitat (What is the range, calving areas, impact of oil and gas development, habitat loss from fire, use of burned areas, regrowth following a burn)
- Patrols (Increase monitoring of people out on the land, have bigger fines for illegal activity)



Species



Breakout question: *What species are here now that weren't around when you were a child?*

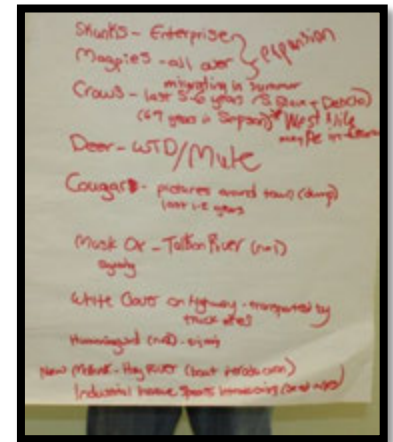
Species Group 1

- White-tailed deer
- Skunks
- Cougars
- Earthworms
- Wood worm
- Magpie
- Pigeons
-
- Raccoons
- Arctic fox?
- Mt. Pine Beetle
- Dandelions
- Hummingbird
- Crows
- Flying squirrels
- Chipmunks
- Groundhogs
- Coyotes
- Sweet clover
- Alfalfa
- Slugs
- Cicadas



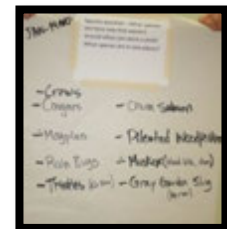
Species Group 2

- Skunks – Enterprise (expansion)
- Magpies – all over (expansion)
- Deer – White-tailed deer/Mule
- Cougar – pictures around town (dump) (last 1-2 years)
- Musk ox – Taltson River (n=1) sighting
- Purple loosestrife
- Arctic Fox
- Chipmunk
- Crows (Migrating in summer, last 5-6 years (South Slave and Dehcho), 6-7 years in Simpson, West Nile maybe in future)
- Coyotes – 1972 (large numbers) Pine Lake Road to Hay Camp Road. 1973 – mange (now rare)
- Bats: summertime roost – Roaring Rapids Hall
- White clover on highway transported by truck tires
- Hummingbird (n=2) – sightings
- New Mollusk – Hay River (boat introduction)
- Industrial invasive species introduced (seed mixes)
- Whooping Cranes expansion
- Pelicans (last 7 years)- Kakisa and Trout Lake (4-5 every year)



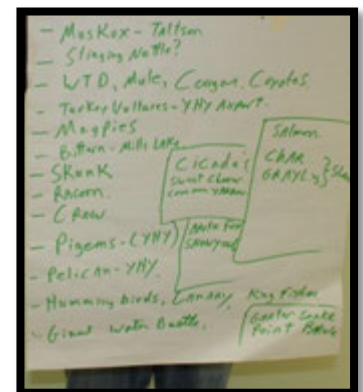
Species Group 3

- Crows
- Cougars
- Magpies
- Rain bugs
- Muskox (Leland Lake, Dam)
- Gray Garden Slug (Hay River)
- Chum salmon
- Pileated woodpeckers
- Thistles (Fort Providence)



Species Group 4

- Muskox- Taltson
- Stinging nettle
- White-tailed deer, Mule Deer, Cougar, coyotes
- Turkey vultures – YHY Airport
- Magpies
- Bittern – Mills Lake
- Skunk
- Raccoon
- Crow
- Pigeons (YHY)
- Pelican (YHY)
- Cicadas
- Sweet clover
- Common yarrow
- Arctic fox
- Snowy owl
- Hummingbirds, Canary, king fisher
- Giant water beetle
- Garter snake – Point Brule
- Salmon
- Char
- Grayling (Slave)



Final Comments and Suggestions for next Workshop

After the final presentation on the 31st, a roundtable discussion was held and attendees were asked to share final comments. We have grouped these comments into the following categories: important take-away from the workshop, what were some successes from the workshop and suggestions for 2015.

Important take-away message from the 2013 workshop

- More money for ENR program
- Workshop report summary needed and circulated to the band offices. The summary should include next steps. Something should be done with our comments – follow up is important.
- Would like to see caribou management done like the process used by the Porcupine Caribou Management Board.
- How many boreal caribou do we have? Do something before it is too late
- We need to agree on minimum number/population thresholds for moose
- Moose numbers are lower (in the Slave River Lowlands than in the 90s’).
- It’s good to be involved along the way (creating management plans)
- Open the bison hunt again in the Slave River Lowlands for resident hunting, but have a pre-set ‘stop number’.
- We need to be more proactive
- Important for delegates to take information back to their organizations and communities and see what changes can be made as individuals and as a community
- Seeing less young people on the land, ENR should increase funds for youth on the land programs.
- Reporting concerns to officers is important

Successes from 2013

- Information sharing and youth involvement was very positive
- Good to see people working together
- Good to hear what other communities are concerned about.
- Good to see the data and results from research.
- Like the new style of workshop, the breakout format is good
- Good to have people who speak out
- Feel like we are being heard, it was good to express ideas and views
- Feel good about the information sharing that happened
- Liked that the processes and science was included – not just the results
- Was good to have the ENRTP students here
- Can see that ENR responded to concerns that were raised in 2009

Suggestions for 2015

- Have more land users and elders involved. Delegates from a conservation organization should be involved so there are representatives from long-time resident hunters.
- The workshop could be better advertised to draw in more people (social media rather than just newspaper, radio and posters)
- Include spirituality perspectives in presentations
- More on muskox and muskox harvesting
- More on fish
- More on ducks and geese
- Would like to see more elders and more youth

Next Steps

ENR

- Distribute workshop summary report to delegate organizations, the Aurora College and post on the website at: (http://www.gov.nt.ca/live/documents/content/2013_South_Slave_Biennial_Wildlife_Workshop.pdf)
- Secure funding to host another Regional Wildlife Workshop in 2015
- Consider recommendations and suggestions made at the 2013 workshop and develop a set of priorities for future research and monitoring programs.

Delegates

- Provide summary report to organization

List of Presentations (available upon request: Karl_Cox@gov.nt.ca)

1. **Bison Program**– Terry Armstrong, ENR Bison Biologist
2. **Bison Control Area** – Karl Cox, ENR Wildlife Technician
3. **Moose Program** – Alicia Kelly, Wildlife Biologist
4. **Predator Program** – Karl Cox, ENR Wildlife Technician
5. **Small Mammals and Hare** – Suzanne Carriere, Wildlife Biologist
6. **Furbearer Trapping Program** – Francois Rossouw, Fur Marketing & Traditional Economy
7. **Beverly and Qamanirjuaq Caribou Management Board** – Earl Evans, Chair, BQCMB
8. **Barren-ground Caribou Program** – Alicia Kelly, Wildlife Biologist
9. **Fire Management** – Rick Olsen, ENR Fire Operations Manager
10. **Caribou Joint Monitoring Program** – Tina Giroux, Athabasca Denesuline NeNe Land Corp
11. **Wildlife Samples** – Karl Cox, ENR Wildlife Technician
12. **Sight-in-your-Rifle Event** – Cheyenne Paulette, ENR Renewable Resource Officer
13. **Traditional Knowledge – Caribou Cycle** – Danny Beaulieu, ENR Renewable Resource Officer
14. **NWT Bat Research** – Laura Kaupas, Student, University of Calgary
15. **Whooping Cranes** - Mark Bidwell, Environment Canada
16. **New Species and Species Expansions** - Suzanne Carriere, Wildlife Biologist (Biodiversity)
17. **NWT Water Stewardship Strategy** – Erin Kelly, Manager, Watershed Programs
18. **Industry Update** – Albert Bourque, Regional Environmental Coordinator / Kathleen Groenewegen
19. **Bear Fence in Hay River** – Albert Bourque, Regional Environmental Coordinator
20. **Boreal Caribou Program** - Alicia Kelly, Wildlife Biologist
21. **Boreal Caribou Recovery Strategy** – Nicole McCutchen, ENR Manager, Wildlife Research and Management

List of Posters

- Map of Developments
- Mosquito trapping results from Fort Smith 2010
- Small mammal/hare NWT
- Bison status/Bison Control Area
- Wood Buffalo National Park Posters
- Bats of the Northwest Territories
- White Pelican colony monitoring/ Pelican advisory group
- ENRTP Aurora College Student Posters
- Results of the 2011 Moose Survey

Photos



Links & Numbers

New species – <https://www.facebook.com/groups/NWTSpecies/>
New species or invasive species - NWTSOER@gov.nt.ca or NWTBUGS@gov.nt.ca
Report a Poacher – 1-866-762-2437
South Slave Regional Office – 872-6400
Fort Providence – 699-3002
Hay River – 875-5550
Fort Resolution – 394-4596
www.enr.gov.nt.ca

*Thank-you for a great 2013
ENR South Slave Regional Wildlife Workshop!*



List of presentations

1. Bison Program – Terry Armstrong, ENR, Bison Ecologist
2. Bison Control Area – Karl Cox, ENR, Wildlife Technician
3. Moose Program – Alicia Kelly, ENR, Wildlife Biologist
4. Predator Program – Karl Cox, ENR, Wildlife Technician
5. Small Mammals and Hare – Suzanne Carriere, ENR, Wildlife Biologist
6. Furbearer Trapping Program – Francois Rossouw, Fur Marketing & Traditional Economy
7. Beverly and Qamanirjuaq Caribou Management Board – Earl Evans – Chair, BQCMB
8. Barren-ground Caribou Program – Alicia Kelly, ENR, Wildlife Biologist
9. Fire Management – Rick Olsen, ENR, Fire Operations Manager (Presentation Not Available)
10. Caribou Joint Monitoring Program – Tina Giroux, Athabasca Denesuline NeNe Land Corp
11. Wildlife Samples – Karl Cox, ENR, Wildlife Technician
12. NWT Bat Research – Laura Kaupas, Student, University of Calgary
13. Whooping Cranes – Mark Bidwell, Environment Canada
14. New Species and Species Expansions – Suzanne Carriere, ENR, Wildlife Biologist
15. NWT Water Stewardship Strategy – Erin Kelly, ENR, Manger – Watershed Programs
16. Boreal Caribou Program – Alicia Kelly, ENR, Wildlife Biologist
17. Boreal Caribou Recovery Strategy – Nicole McCutchen, ENR Manager, Wildlife Research and Management.

Northwest Territories Bison Program



NWT Bison Program

- Bison management and management planning
- Population monitoring
- Disease surveillance & response

Management Plans

- Mackenzie
 - Nearing completion
- Nahanni
 - In progress
- Slave River Lowlands
 - Next
- Guide management of each population for next 10 years



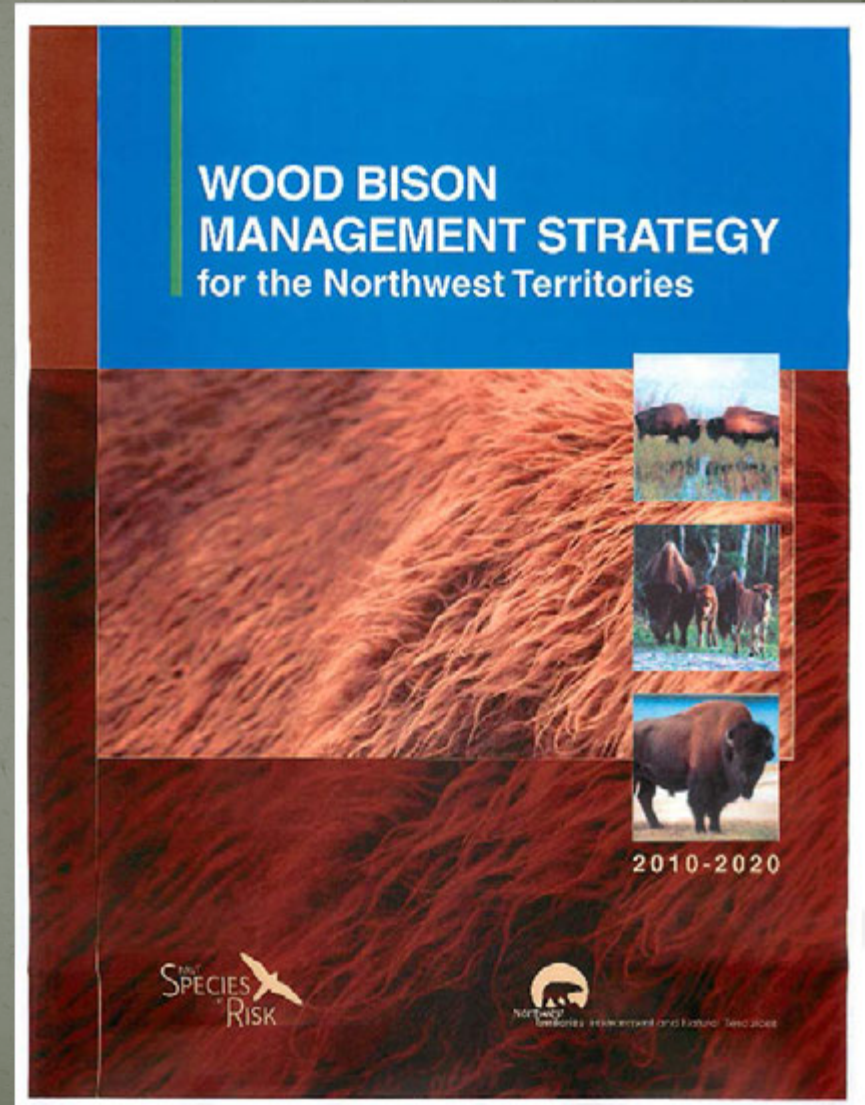
Management Plans

- Mackenzie Wood Bison Working Group
 - Numerous organizations
- Nahanni
 - No formal working group
 - Series of community meetings
- Slave River Lowlands
 - ?



Why are Management Plans Needed?

- Purpose is to guide bison population management
- Overall strategy outlined in 2010
- Mackenzie plan since 1987
- No previous management plans for Nahanni or Slave River Lowlands



Diseases

- TB & Brucellosis
 - Bison Control Area
 - Periodic sampling
- Anthrax
 - Annual surveillance
- No anthrax cases in SRL since 2010
- Major outbreak in Mackenzie in 2012
 - Over 440 died



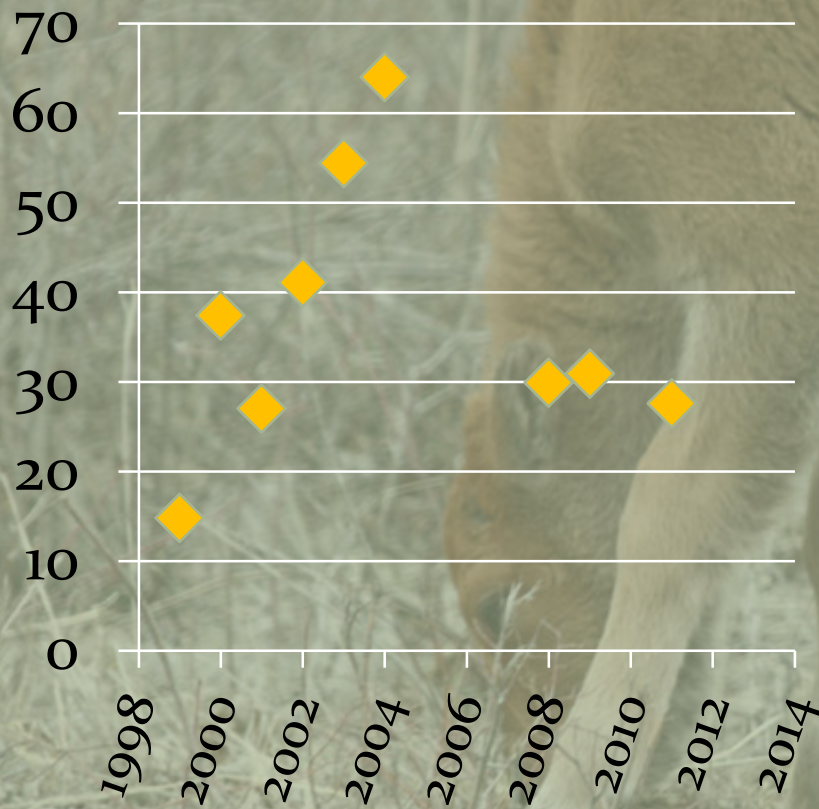
Population Monitoring

- Nahanni Population
Size: 400
 - Same in 2004 and 2011
 - Next in March 2015
- Slave River Lowlands:
~1700 in 2009
 - Was ~500 in 2000
 - Next survey scheduled for March 2014

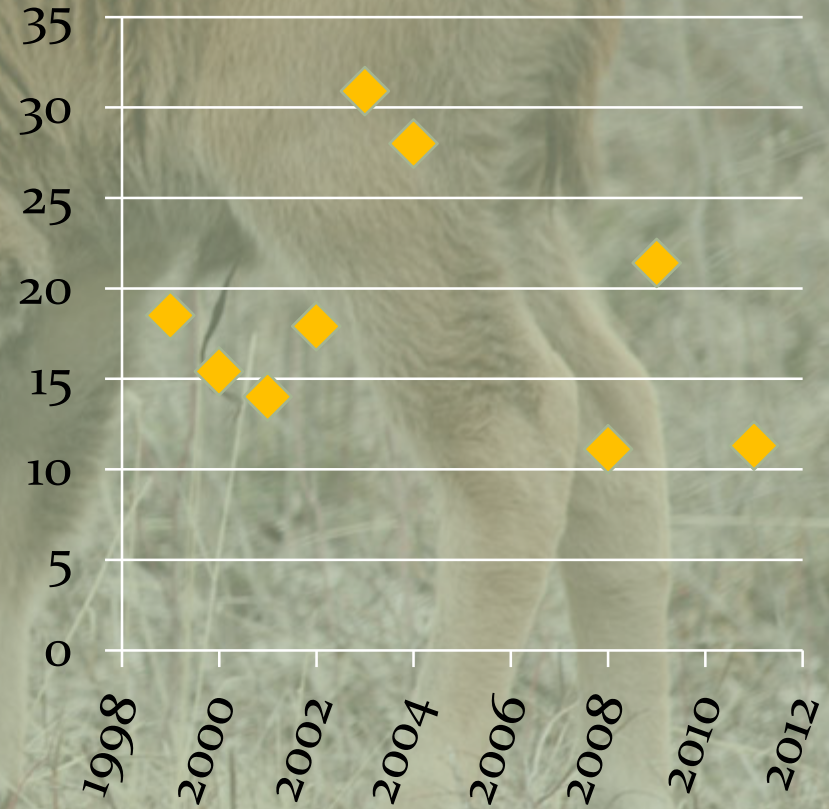


Population Monitoring – Slave Lowlands

36 Calves / 100 Cows

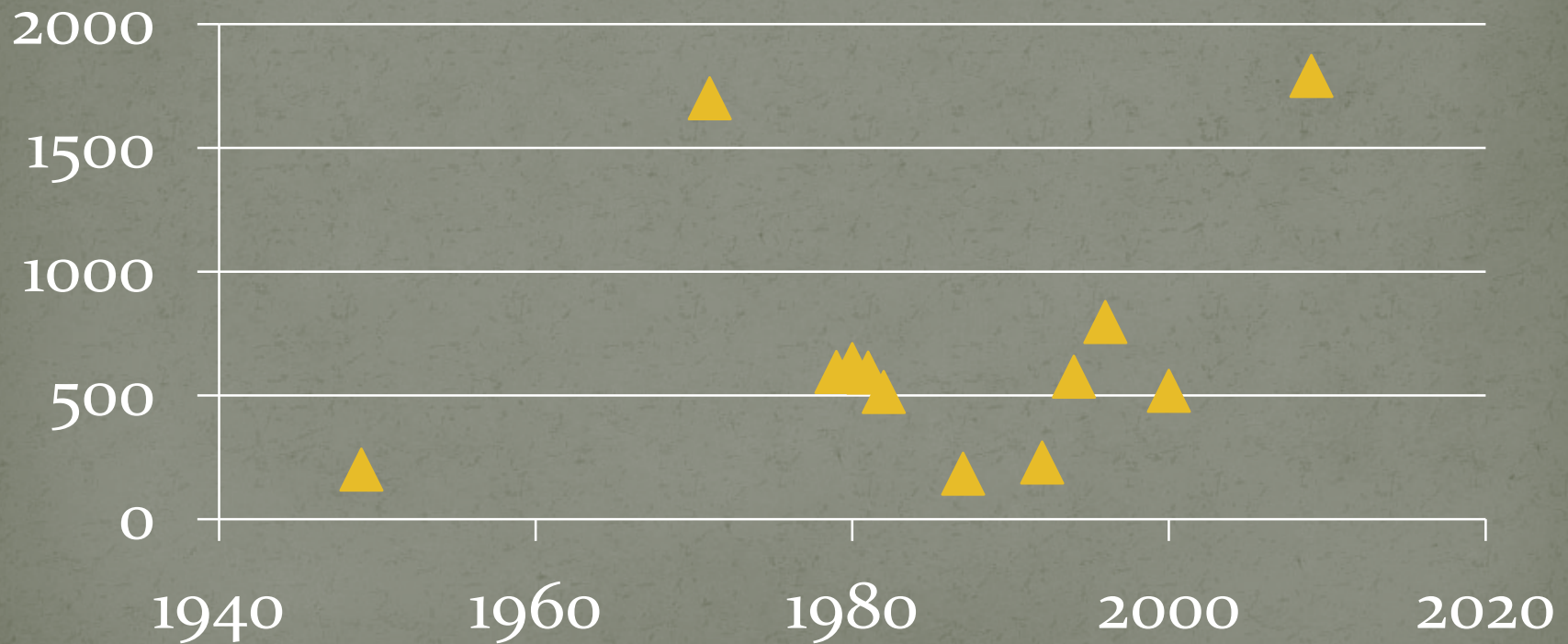


19 Yearlings / 100 Cows



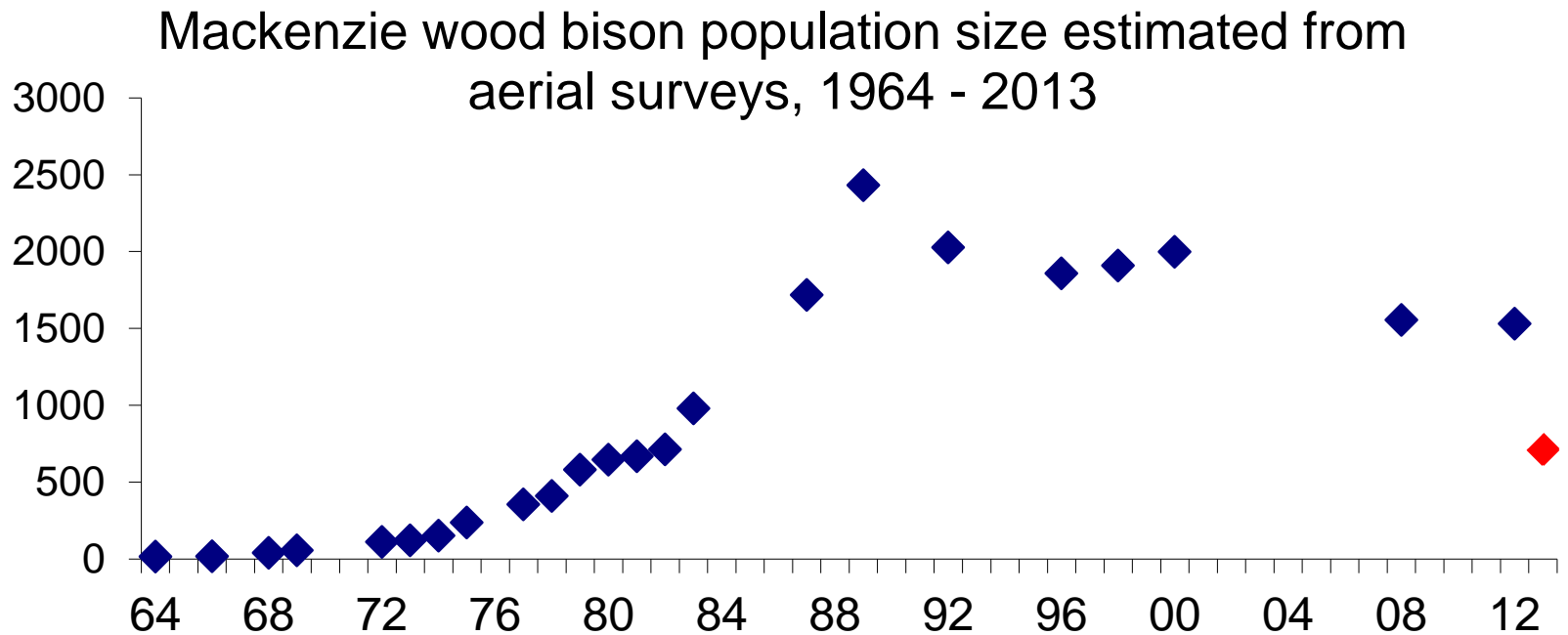
Population Monitoring – Slave Lowlands

**Bison population estimates from
aerial surveys, 1949 - 2009**



Population Monitoring

- Mackenzie
 - Major die-off in 2012 – anthrax
 - 1500 in March 2012, 700 in March 2013



Mackenzie Bison

- All hunting halted for 2012 – 13
- Consultations on-going for 2013 – 14
- How long for population to recover to 1000?
 - Depends on
 - Calving rate
 - Survival rates – calves, yearlings, adults

What We Don't Know

- Birth rates & survival rates
 - Modeling populations
- How bison utilize habitats in different populations
 - Critical habitat
 - Sightability on aerial surveys
 - Animal movements, including use of highways
- Anthrax
 - Most effective way to do surveillance for it



Management plan for Slave River Lowlands bison

- How do you want to be involved?
- What do you think should be in the management plan?



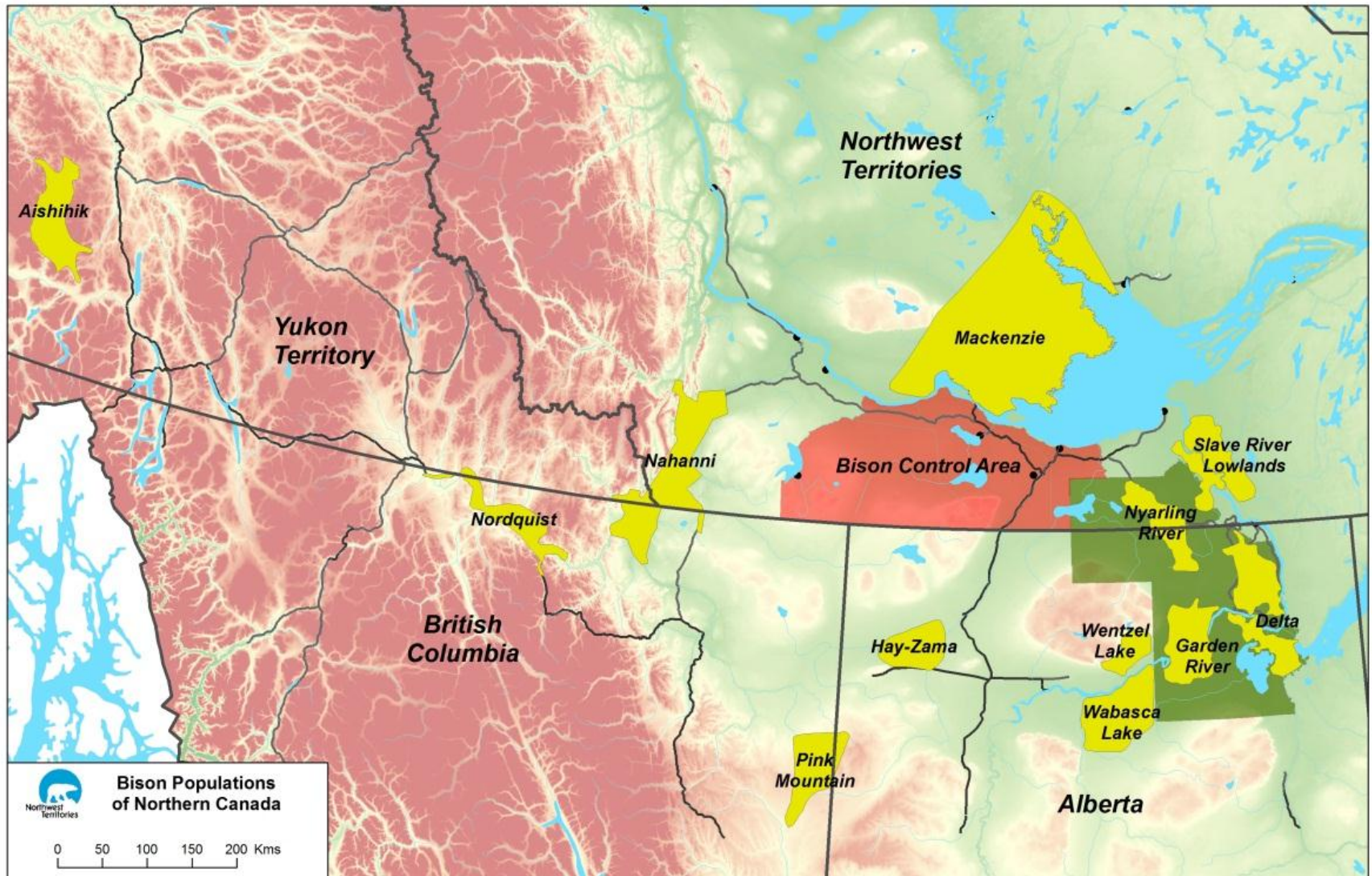
Thank you!



Northwest Territories Bison Control Area



What is the BCA?

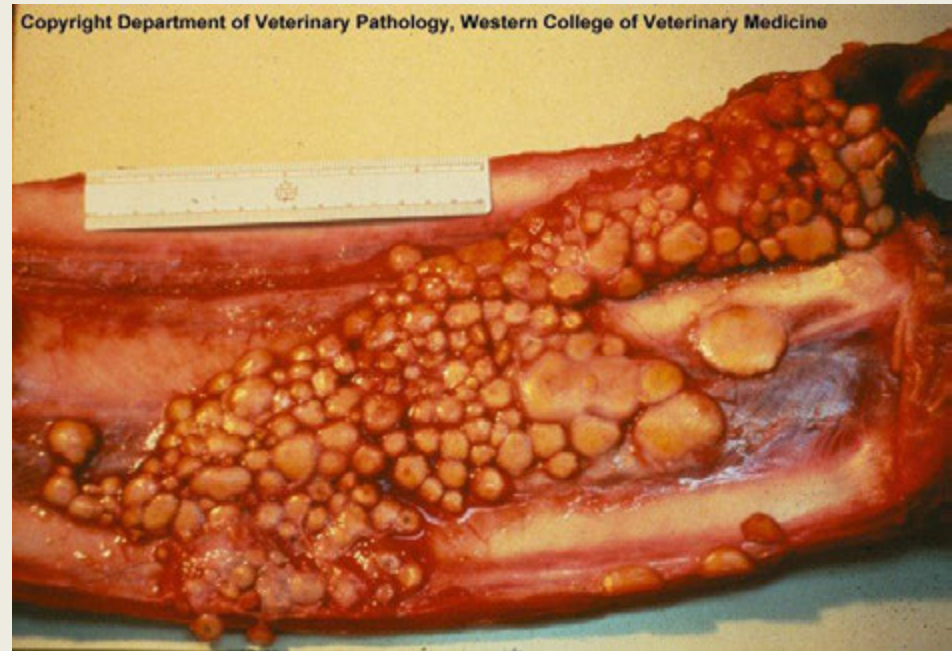


Diseases

- Bovine Tuberculosis
 - Caused by a species of bacteria, *Mycobacterium bovis*
 - Can be spread through inhalation, ingestion or on contact
- Brucellosis
 - Caused by a species of bacteria, *Brucella abortus*
 - Spread by ingestion of contaminated material

How does TB look?

- TB usually affects the lungs – difficulty breathing, coughing and discharge
- Tubercles will form on the lungs, ribs, or other organs like liver, kidneys, spleen, windpipe, lymph nodes



Bovine TB



How does Brucellosis look?

- Can attack the reproductive organs causing abortion, infertility or infection in females and swelling in males
- Also invades joints, causing swelling (hygromas)



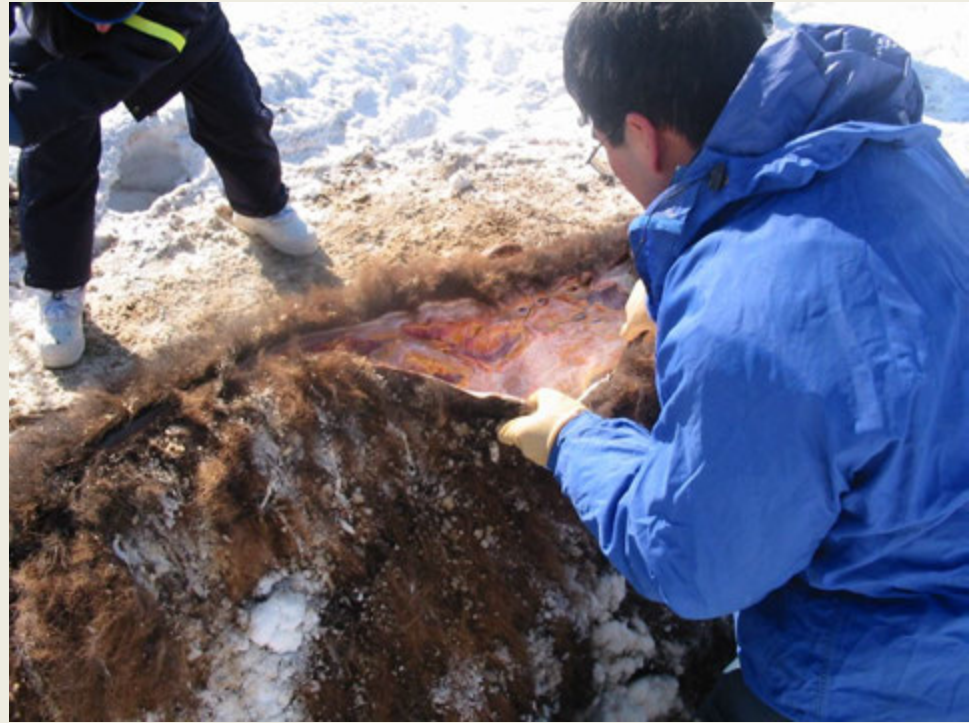
Can I get these diseases?

- Both of these diseases can be transmitted to humans, but if you know the risks and protect yourself with simple practices you will be safe



Protect Yourself

- Wear gloves
- Wash hands, clothes and knives when done
- Do not handle infected parts
- Cook meat thoroughly
- Do not feed infected meat to your dogs

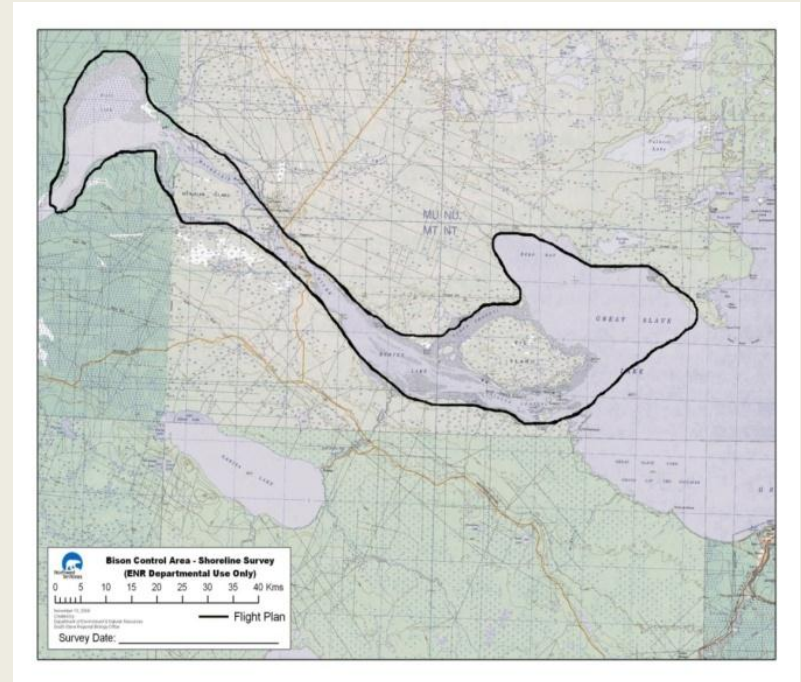


History of the BCA

- Created in 1987
- To protect the Mackenzie and Nahanni bison herds from both bovine tuberculosis and brucellosis
- Since 1993, the BCA program has been jointly funded by both the Department of Environment and Natural Resources and Parks Canada
- Flying alone costs over \$70,000!

BCA Responsibilities

- Coordinate surveys
- Fly surveys
- Write yearly reports
- Track reports
- Any media productions
- Community consultation



Informing the Public

- Public Meetings
- Hunter & Trapper Meetings
- Posters & Brochures
- Radio & Television Ads, Facebook
- Road Signs
- Website
- Toll – Free Line



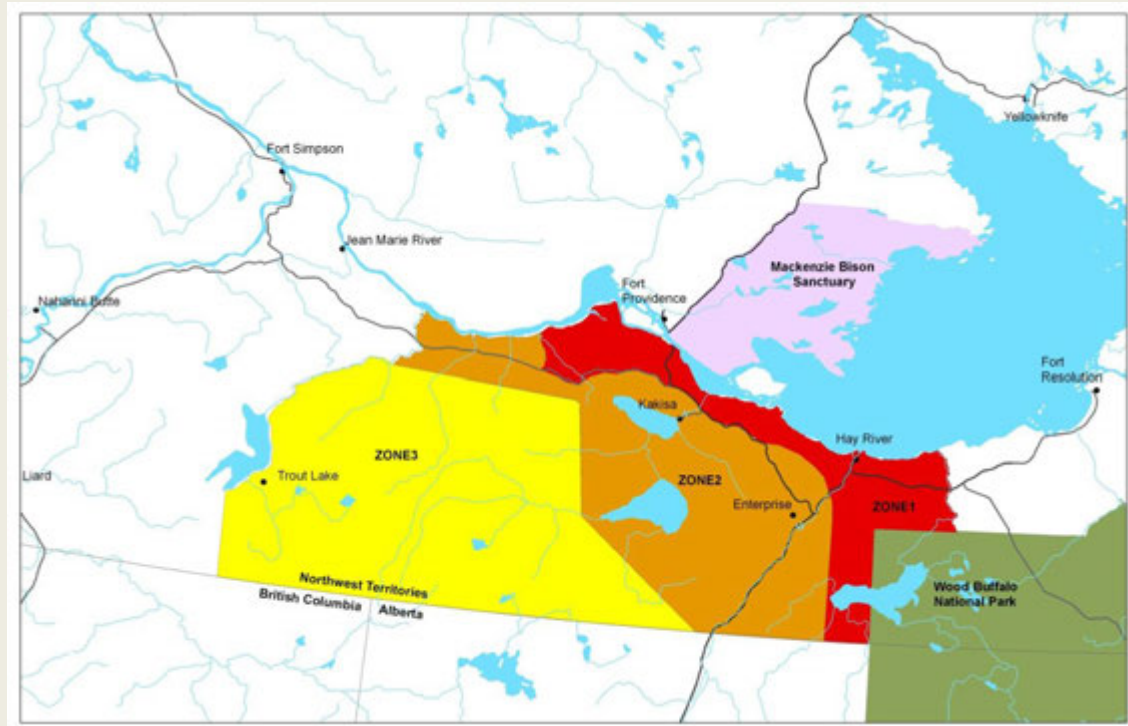
Patrolling the BCA

- To make sure there are no bison in the BCA, we fly patrols of the area
- We also rely on the public to notify us if they see any bison



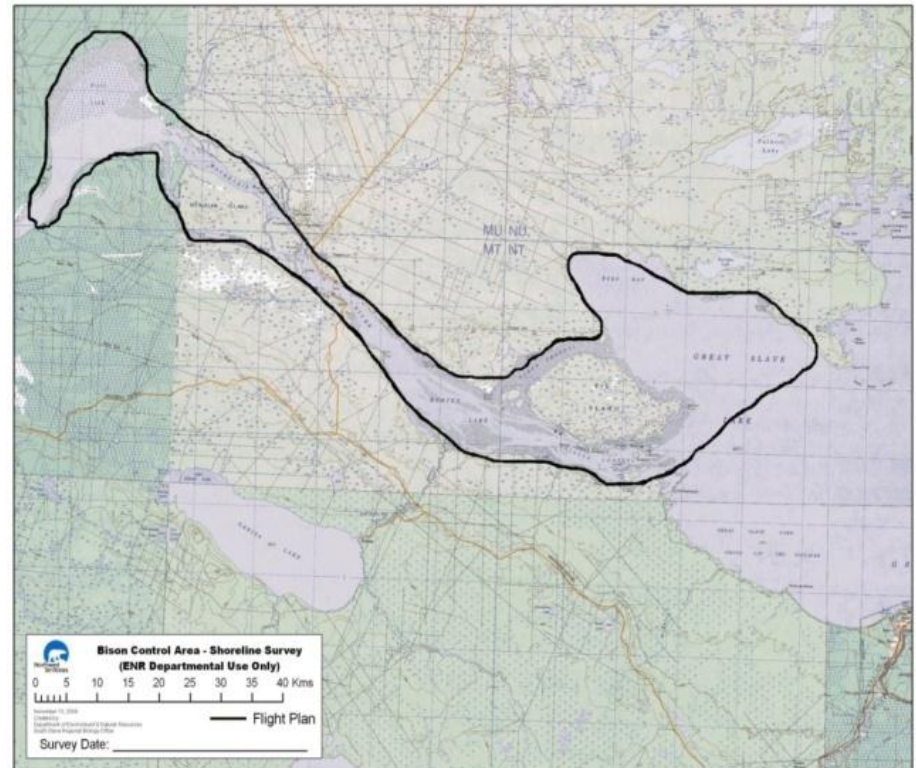
BCA Zones

- In order to focus our efforts where bison would most likely be the BCA is split into 3 zones



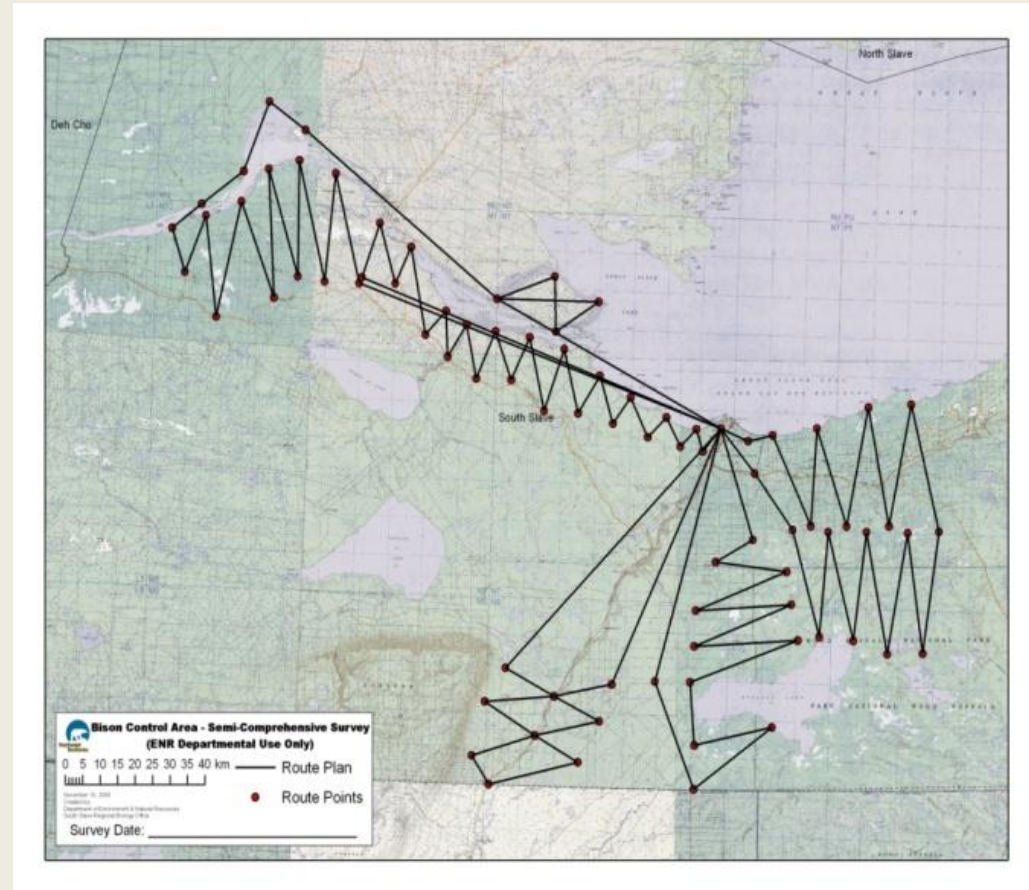
Shoreline Patrols

- Once a week
 - December – March
- Flown by observers from Fort Providence
- Mills Lake to Slave Point
- All large mammals are recorded



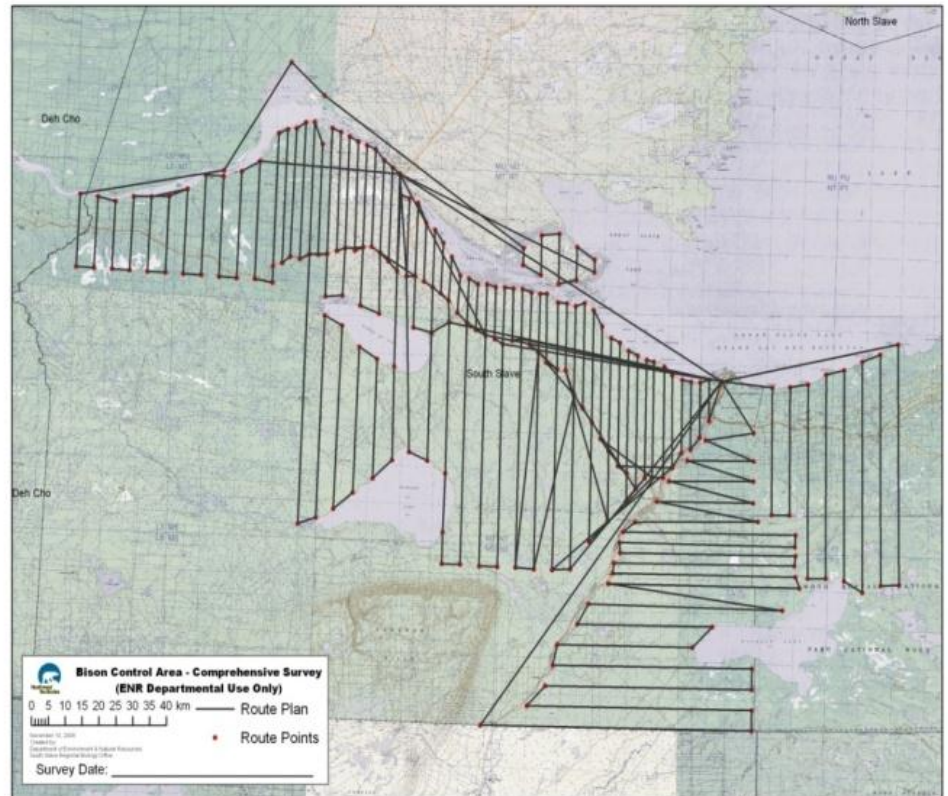
Semi-Comp Survey

- 3-4 days
- Mid-February
- Zone 1
- If any tracks are seen they are followed



Comp Survey

- 7-8 days
- Late March
- Zone 1 and 2
- More detailed
- Look at likely habitat and terrain



Bison Found in the BCA

- Any signs or reported sightings of bison within the BCA are investigated
- These bison are quickly removed and tested for disease



<http://www.daylife.com/photo/08qG8B90VgaEA>

Bison Found in the BCA

- Under NWT legislation resident hunters may shoot a bison in the BCA at any time of the year, but they must report their kill to an ENR officer ASAP



Thank You!



South Slave Region Moose Program

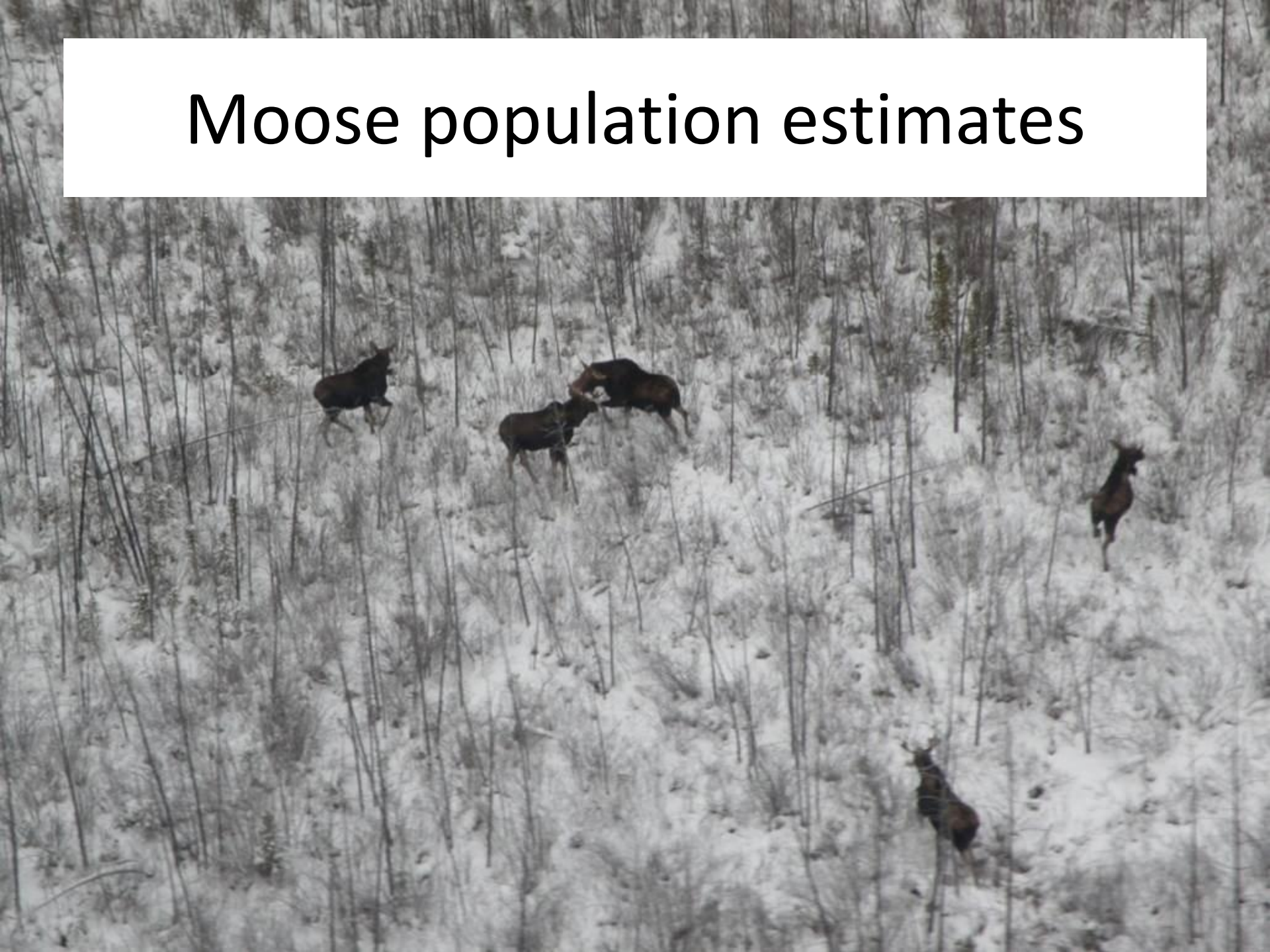
2013 Regional Wildlife Workshop

October 29, 2013

Allicia Kelly, Wildlife Biologist

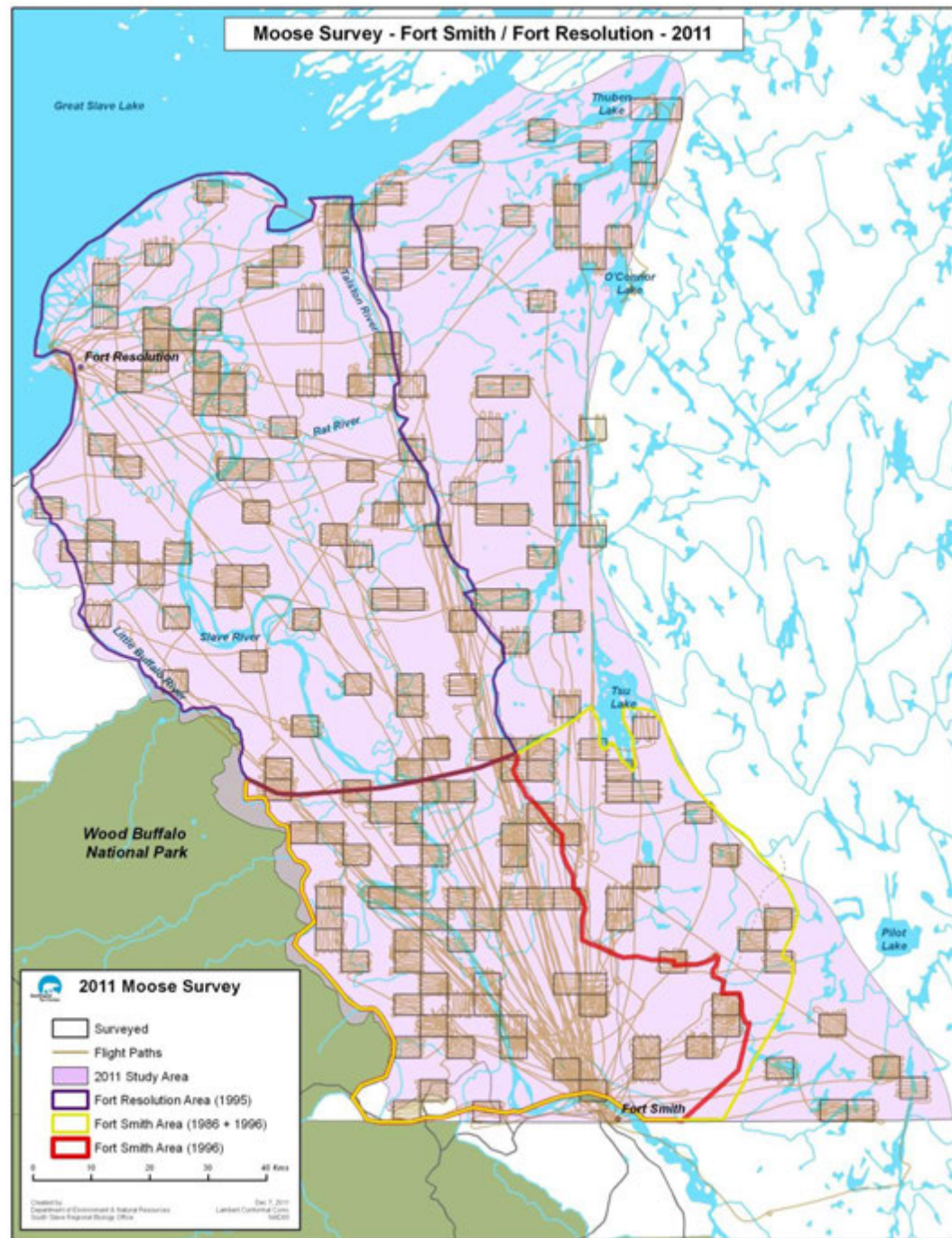


Moose population estimates





Geospatial survey method,
used across NWT and Alaska





2009 Buffalo Lake



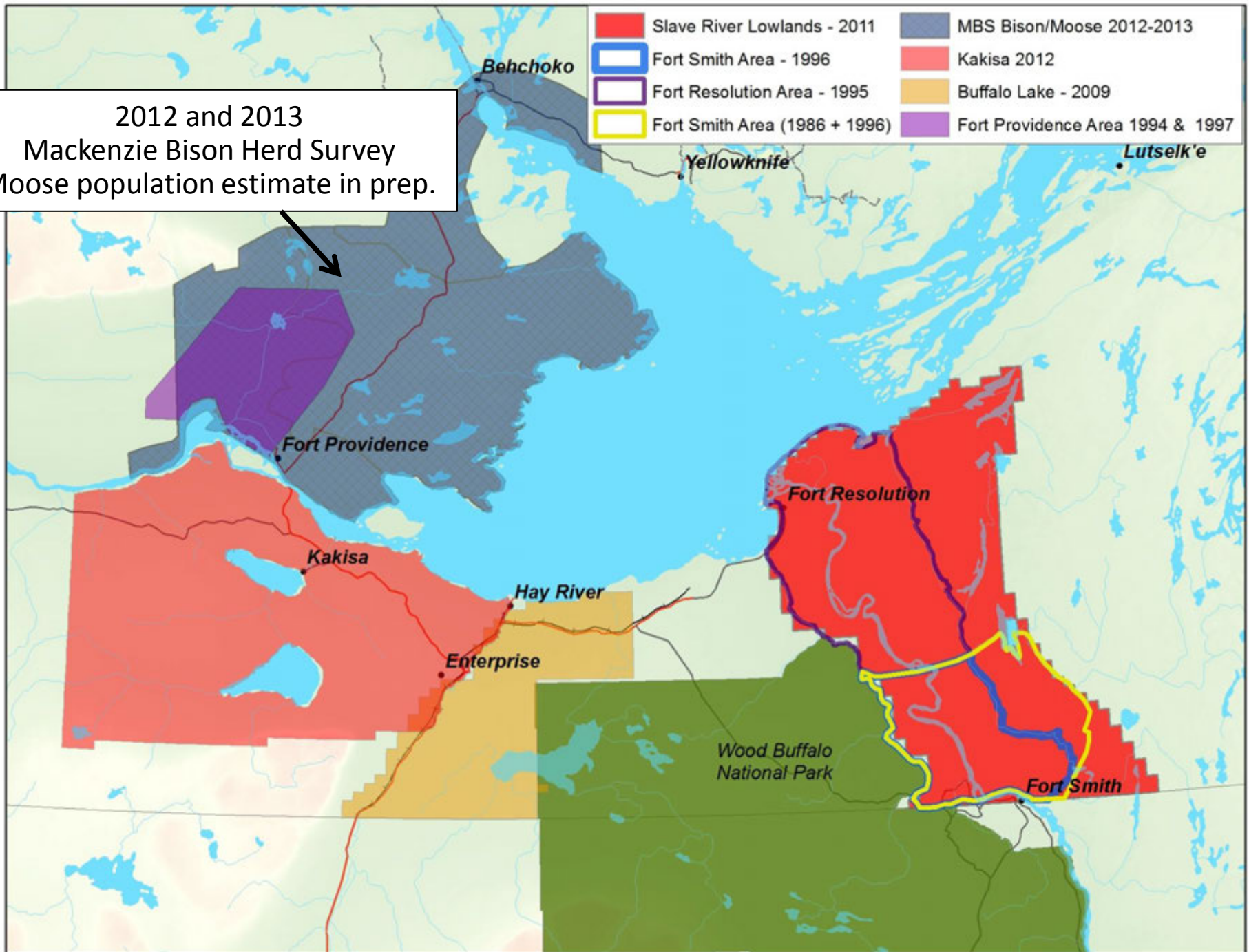
2012 Kakisa & Tathlina Lakes

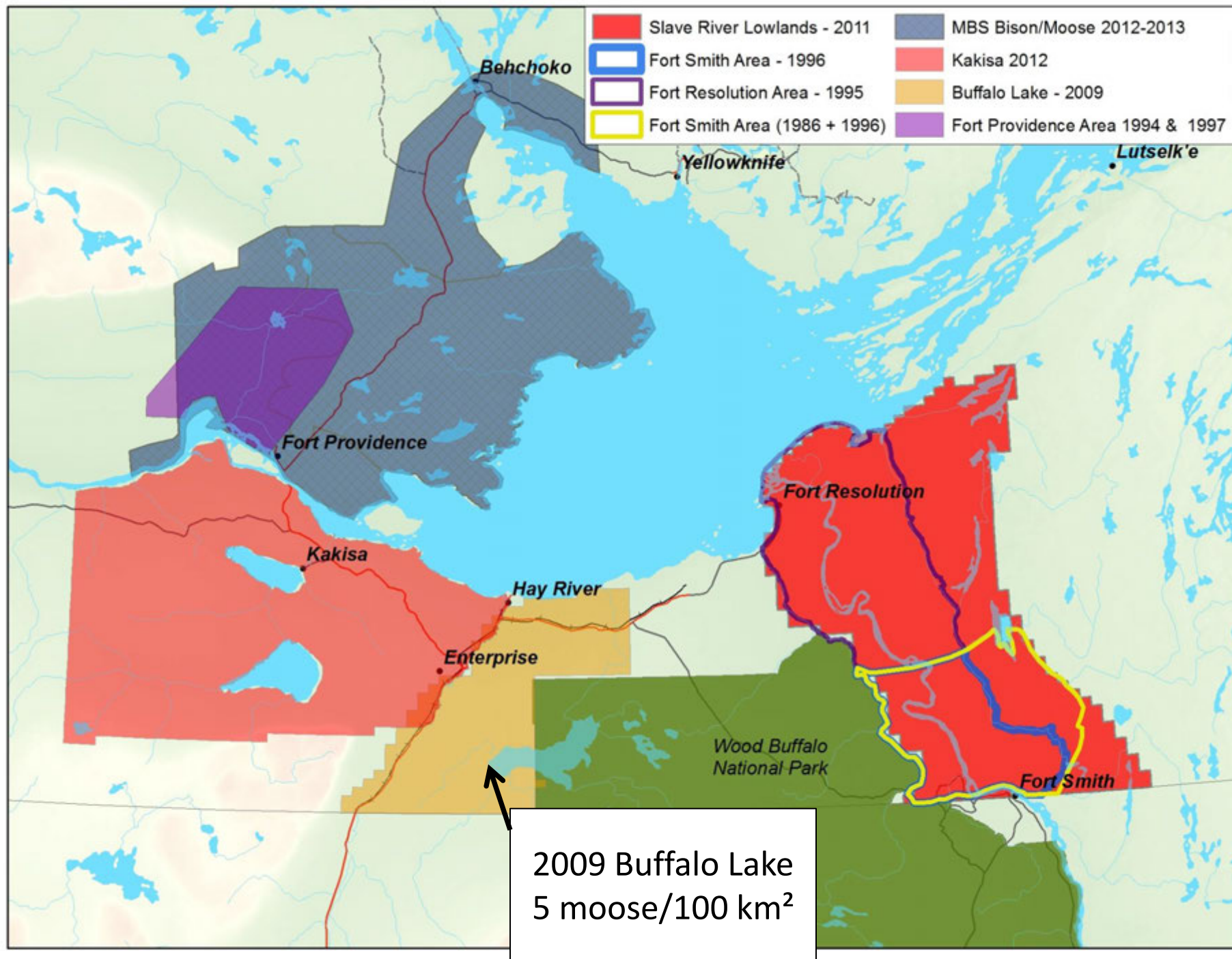


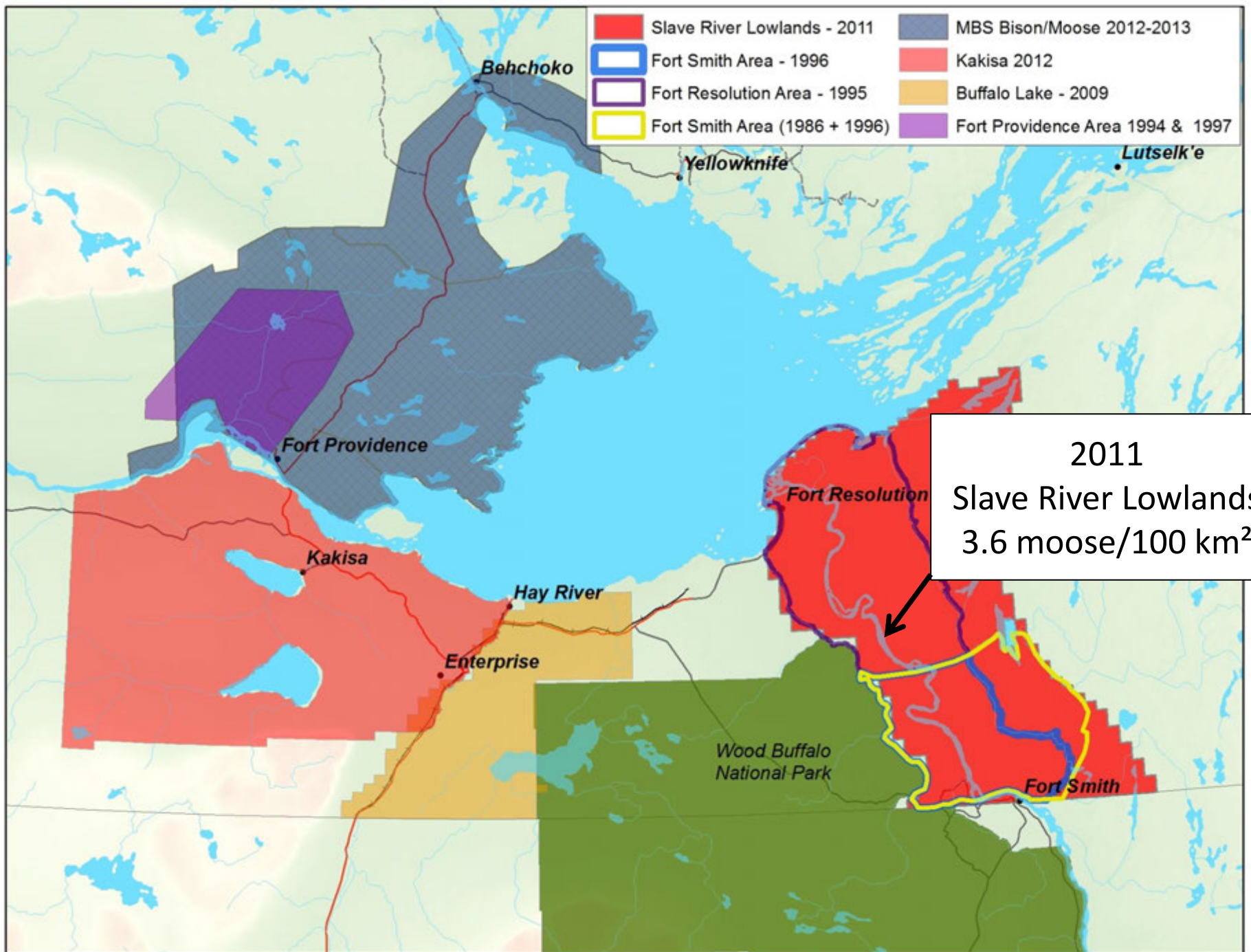


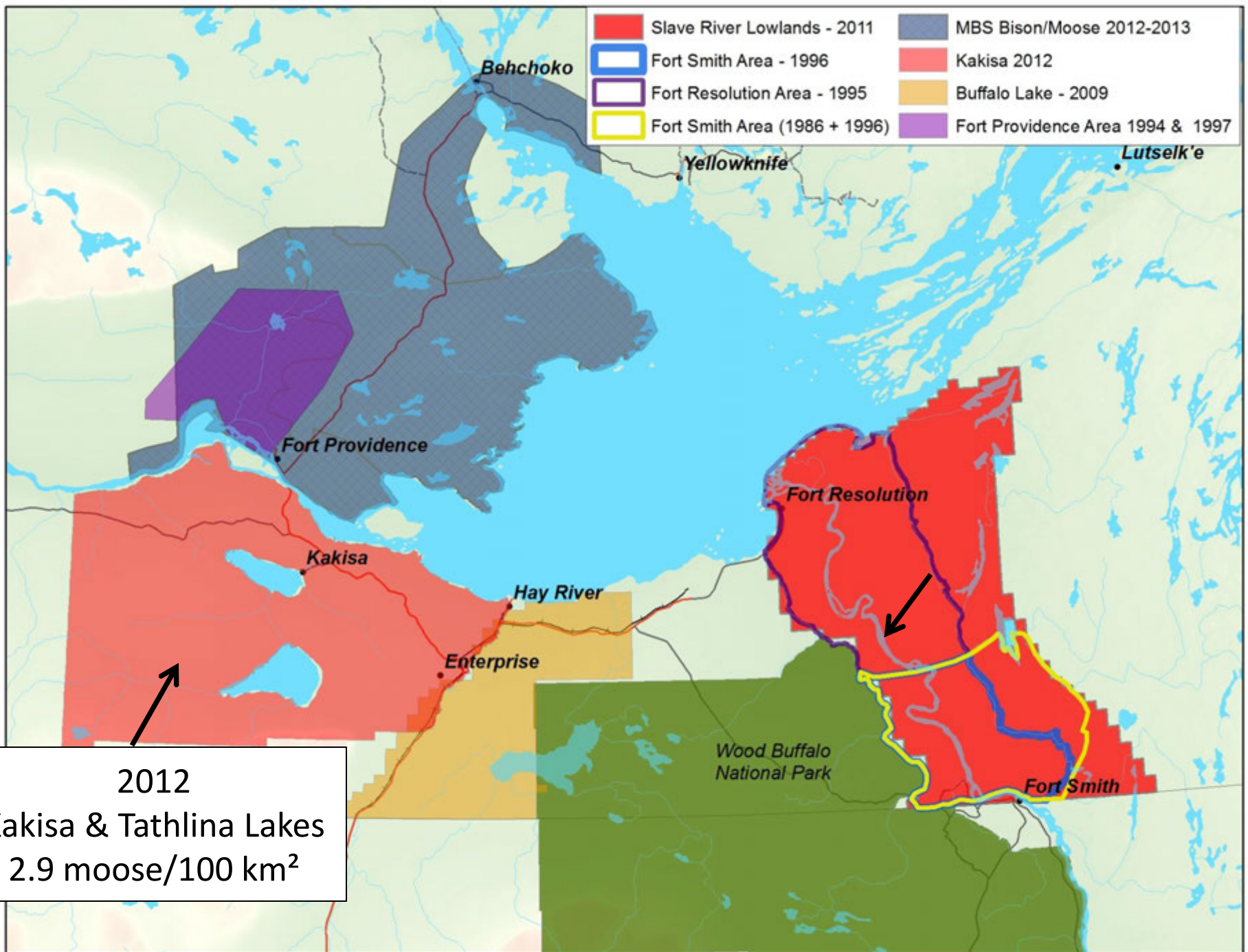
**Fort Smith &
Fort Resolution
2011 Slave
River Lowlands**

2012 and 2013
Mackenzie Bison Herd Survey
Moose population estimate in prep.







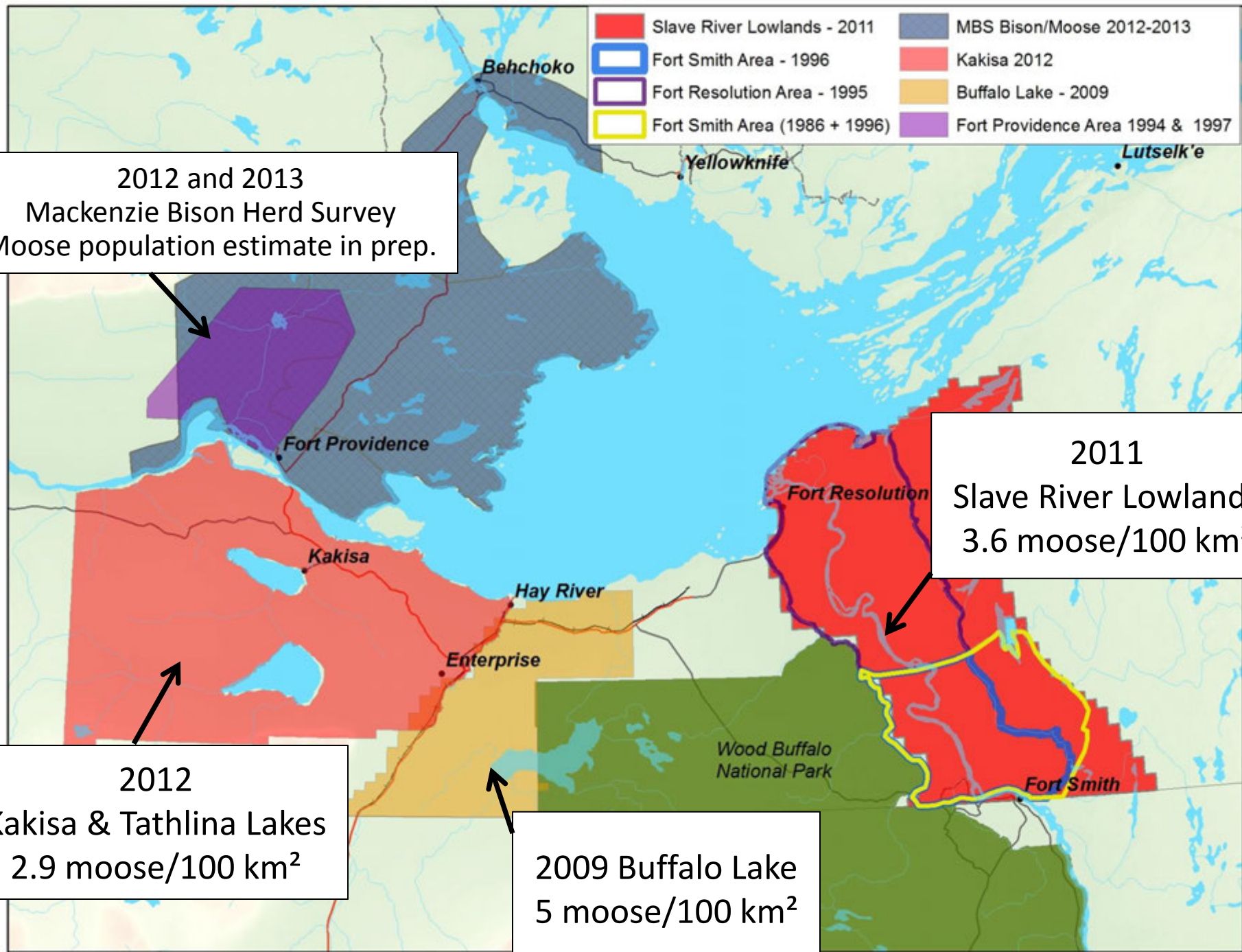


2012 and 2013
Mackenzie Bison Herd Survey
Moose population estimate in prep.

2012
Kakisa & Tathlina Lakes
2.9 moose/100 km²

2009 Buffalo Lake
5 moose/100 km²

2011
Slave River Lowlands
3.6 moose/100 km²



Moose health

- Hunters provide information and samples
 - document levels of parasites, diseases and contaminants in moose
 - learn about the age and sex of the moose harvest



2013-2014

South Slave Region Moose Health Study



**IF YOU HUNT MOOSE YOU CAN HELP US LEARN
MORE ABOUT THE HEALTH OF MOOSE IN OUR REGION**

Pick up a sampling kit (checklist and bags) at your
local ENR office or Band/Council office

What is a full sample set? (1) Kidney plus fat (2) piece of liver
(3) piece of muscle (4) handful of poop (5) bottom front teeth
(6) lower back leg bone with marrow (7) completed data sheet

**There is \$50 for hunters who
provide a complete, valid set of
samples and data sheet**



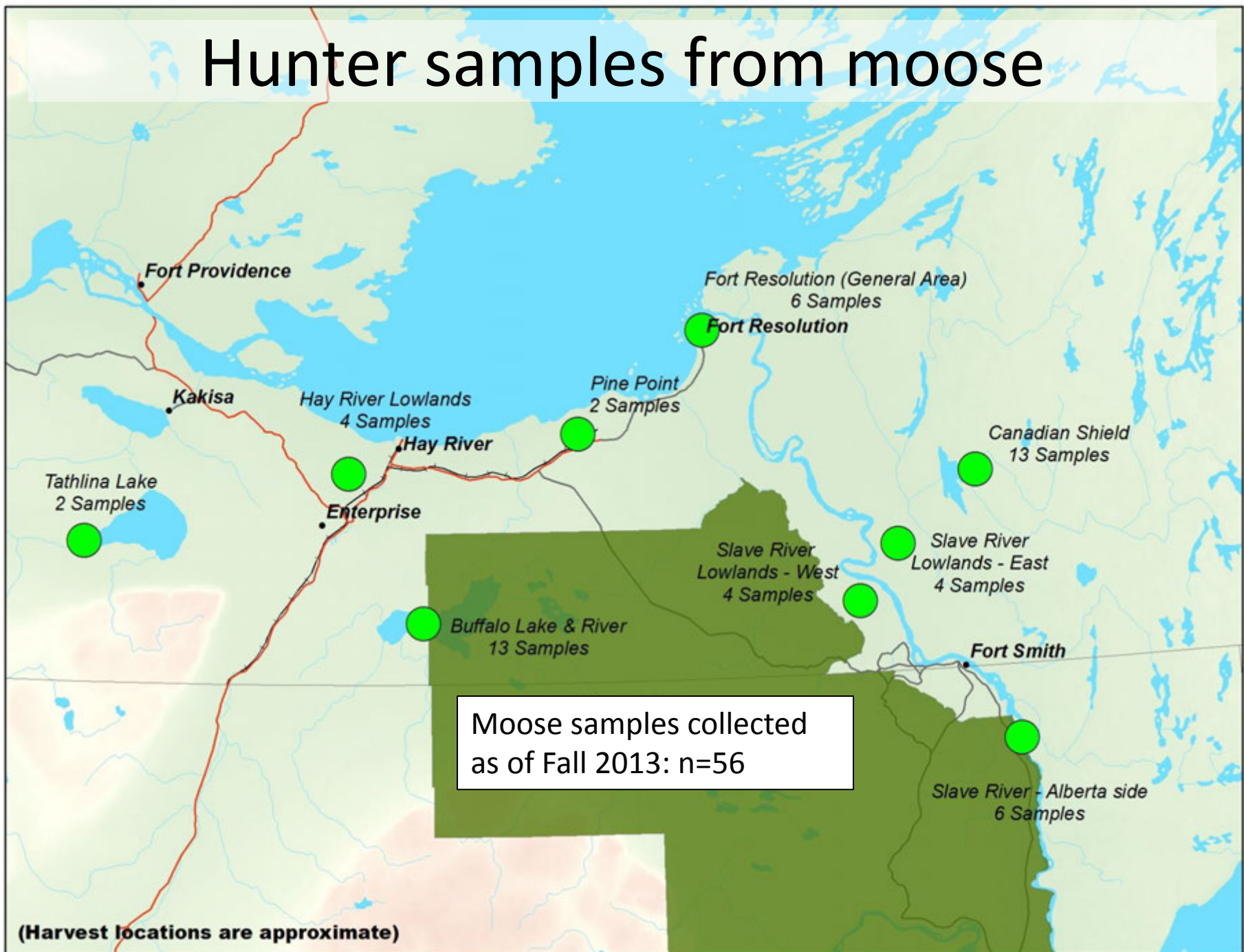
Northwest Territories Environment and Natural Resources

ALL samples are needed to receive payment.

Samples must stay frozen and safe from scavengers!

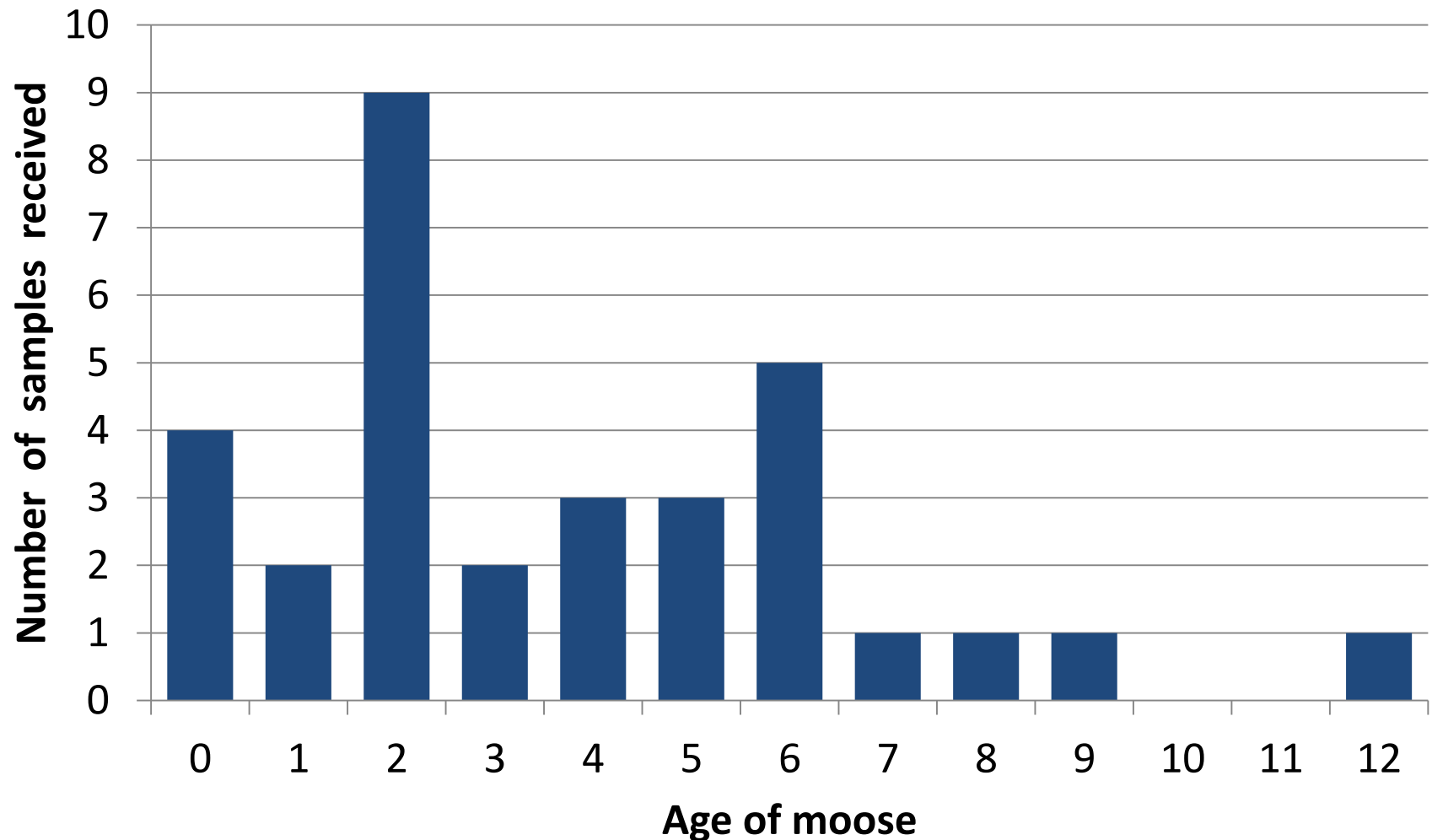
YOUR PARTICIPATION IS GREATLY APPRECIATED!

Hunter samples from moose

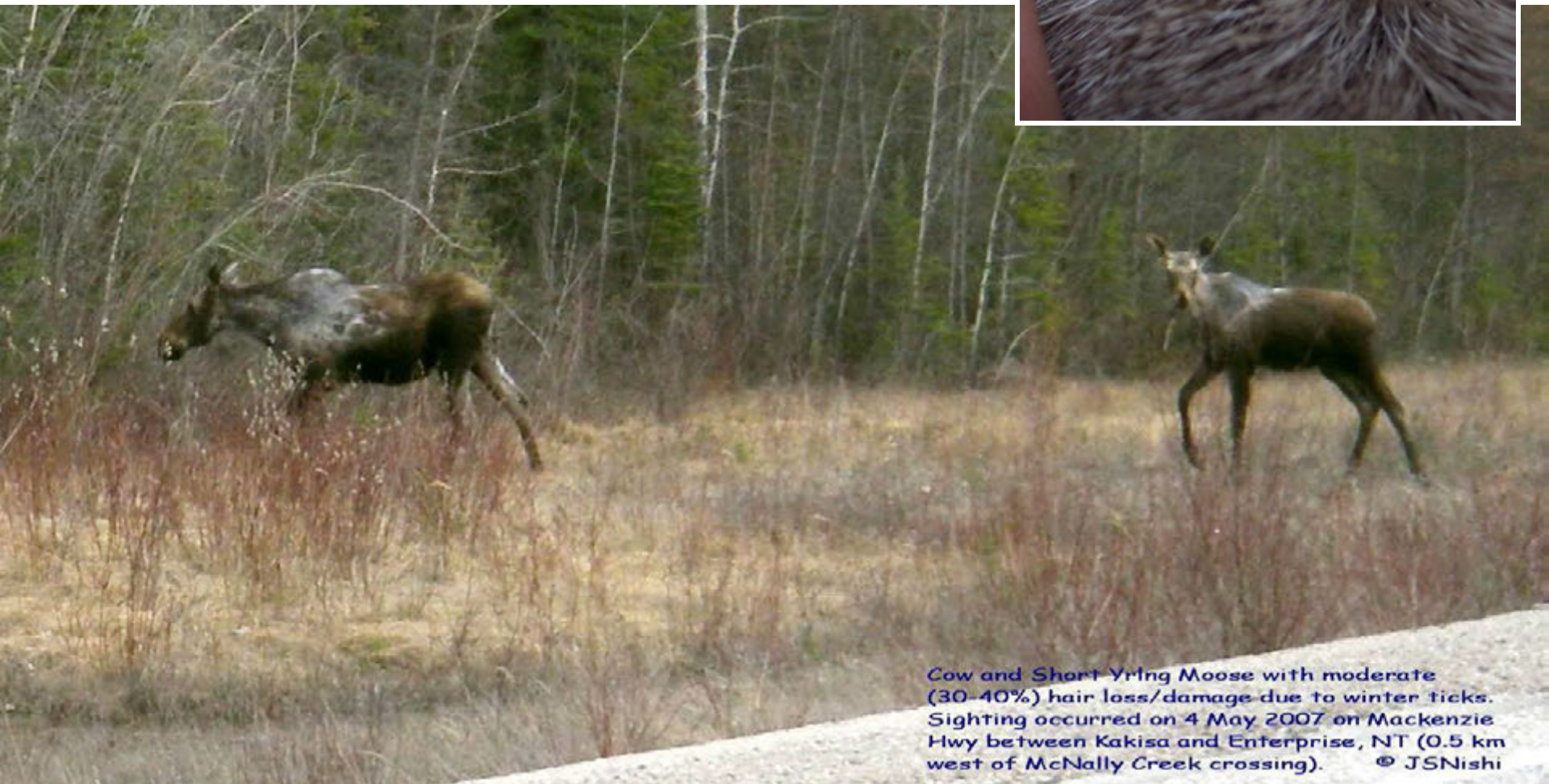


How old were the harvested moose?

-We know the age of 32 of the 56 sampled moose so far:



Winter tick



Cow and Short Yearling Moose with moderate (30-40%) hair loss/damage due to winter ticks. Sighting occurred on 4 May 2007 on Mackenzie Hwy between Kakisa and Enterprise, NT (0.5 km west of McNally Creek crossing). © JSNishi

What have we learned?

- Moose population abundance –new & updated
- Moose health



What don't we know?

- “How many moose should there be?”
- How many moose can the land support (moose food supply)?



What don't we know?

- Harvest – how much of the population is harvested?
- Other predators



- Are people comfortable with the state of knowledge for moose?
- Do we need to know more?



Thank you



Predators



Wolf Carcass Collection

Objectives (North Slave/ BG):

- 1. Compare reproductive patterns of female wolves during caribou population change**
- 2. Determine nutritional condition of male & female wolves**
- 3. Determine diet & food linkages of migratory wolves**

Wolf Carcass Collections North Slave Region

1987/88 - 1989/90

- Single trapper collaboration

2003/04 - 2006/07

- Single trapper collaboration

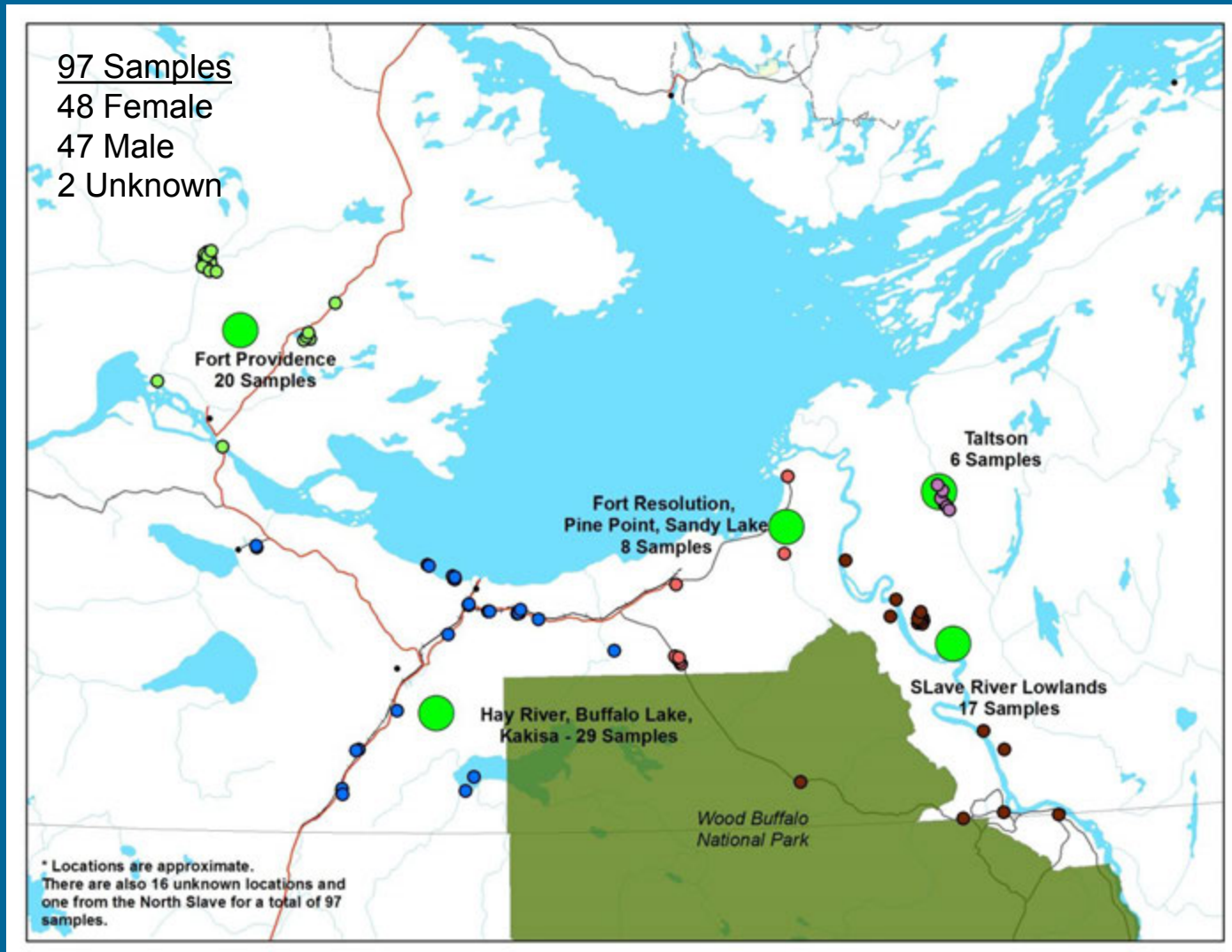
2007/08 - 2009/10

- NSR-wide carcass collection

2010/11 - 2012/13

- NWT-wide wolf carcass collection

Wolf Carcass Collections



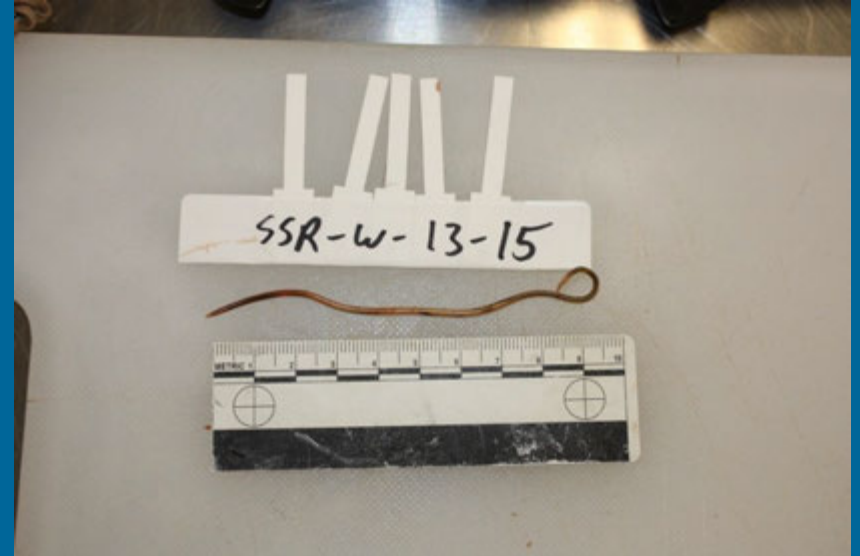
What we collect



What we collect



Parasites



Stomach Contents



Education



Study Status

1. **No further collections (for wolf or wolverine) in the South Slave.**
2. **Processing and analysis of samples to continue.**

Black Bear Sampling

BLACK BEAR BIOLOGICAL DATA FORM

Collect data and samples from all dispatched bears

Date: _____

Location: _____

Sex: ☐ Male ☐ Female

Age (approx): ☐ Cub ☐ Young Adult ☐ Adult ☐ Old Adult

Measurements (see diagram/explanations on reverse):

A) Contour Length:	cm / in	
B) Straight Line Length:	cm / in	
C) Chest Girth	cm / in	
D) Neck Girth	cm / in	
E) Height At Shoulder	cm / in	
Actual Carcass Weight:	kg / lb	
To calculate weight from above measurements use centimetres in the formula: $Weight = 0.2647(A) + 0.0956(E) + 0.7702(D) - 1.5124(C) + 0.0145(C^2)$		

Samples (freeze): Tongue ☐ 1 Tooth (p1) ☐ Tip of ear ☐

Take two p1 teeth if possible ☐ 1 2nd p1 Tooth ☐

(p1 is the first premolar tooth behind the canines)

NOTES:



Black Bear Sampling

1. **Body Measurements / Weight Index**
2. **Tip of ear – DNA**
3. **Tongue – Trichenella**

Questions?



NWT SMALL MAMMALS AND HARE SURVEYS

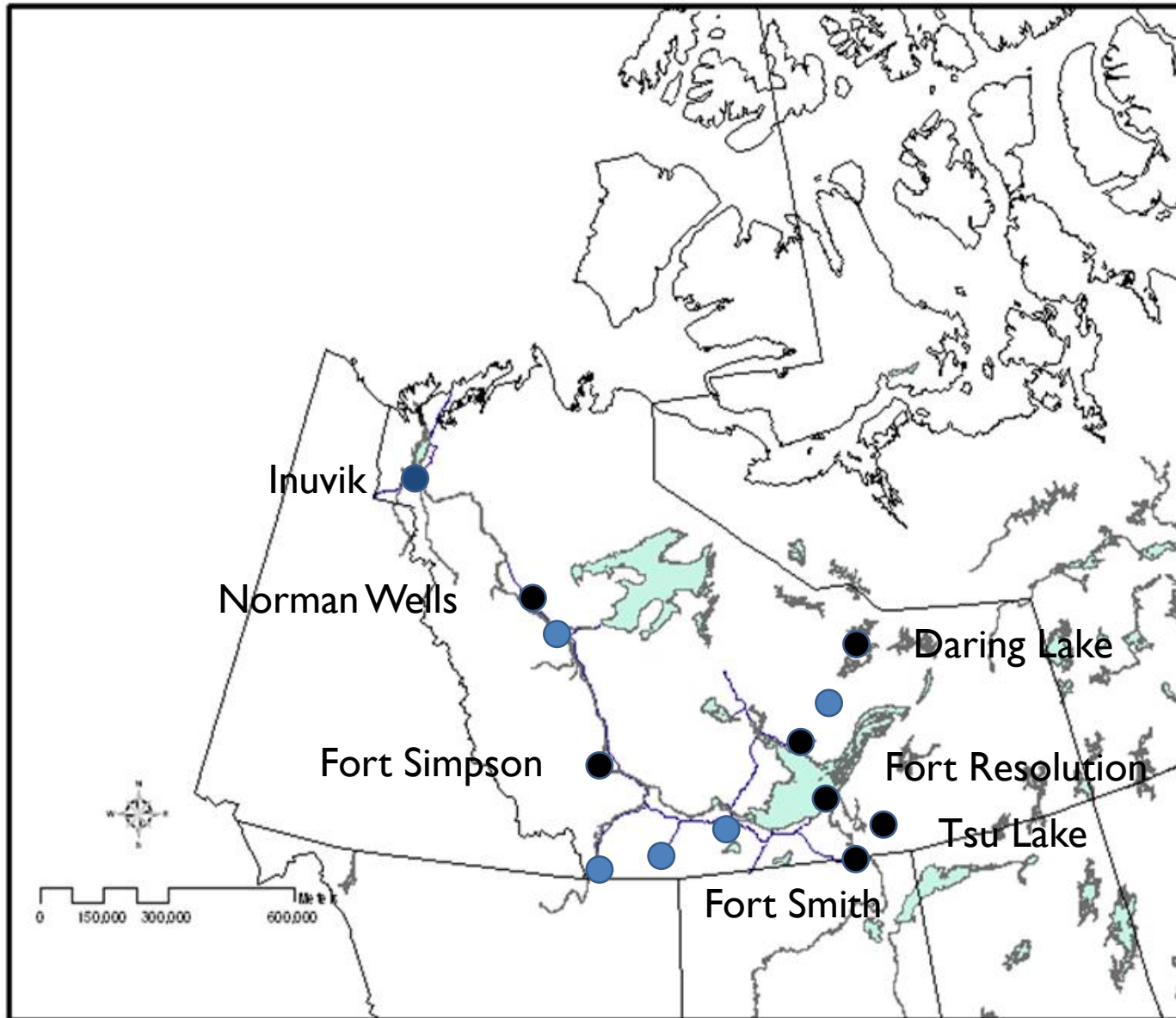
South Slave Wildlife Workshop

Fort Smith

29-31 October 2013

Karl Cox and Suzanne Carrière

Small mammal abundance indices in the NWT 2013



500 trap-nights (2 transects of 50 traps for 5 nights)

August

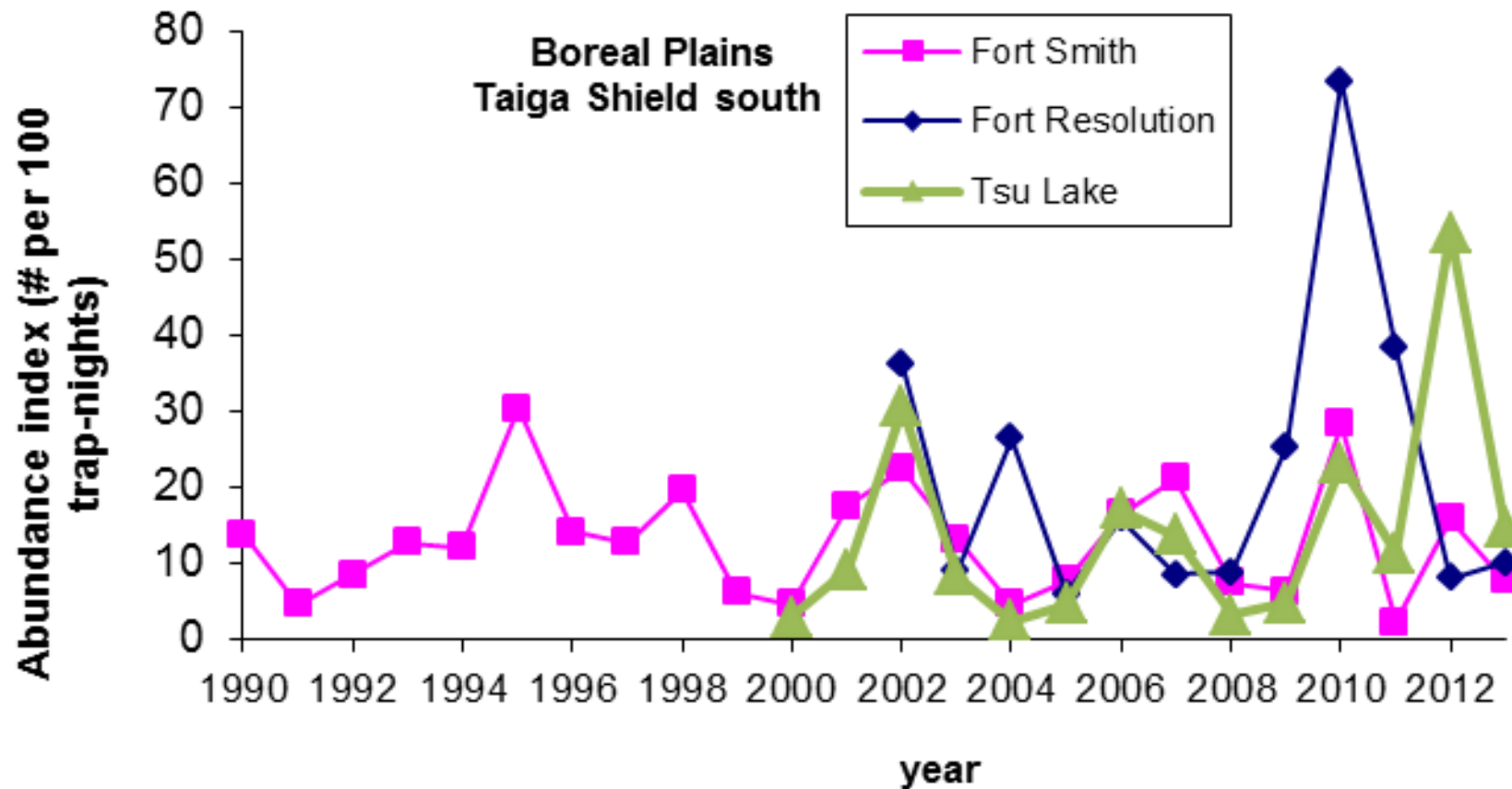
TOTAL = 14 hrs per year

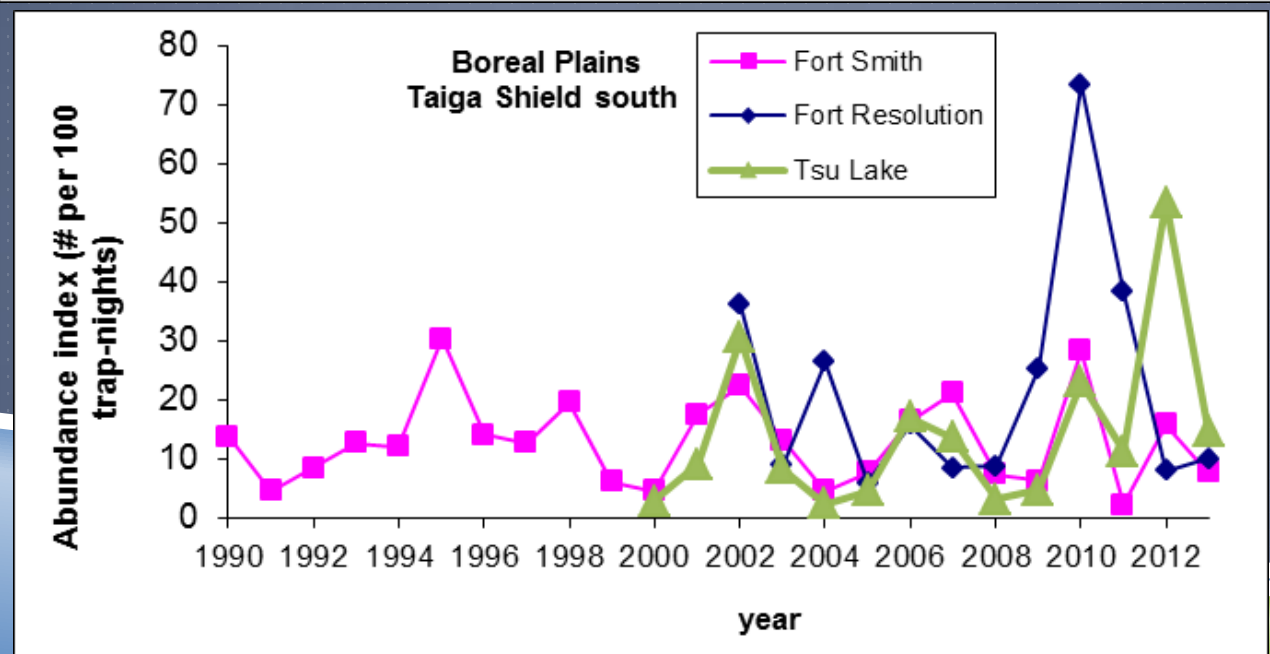
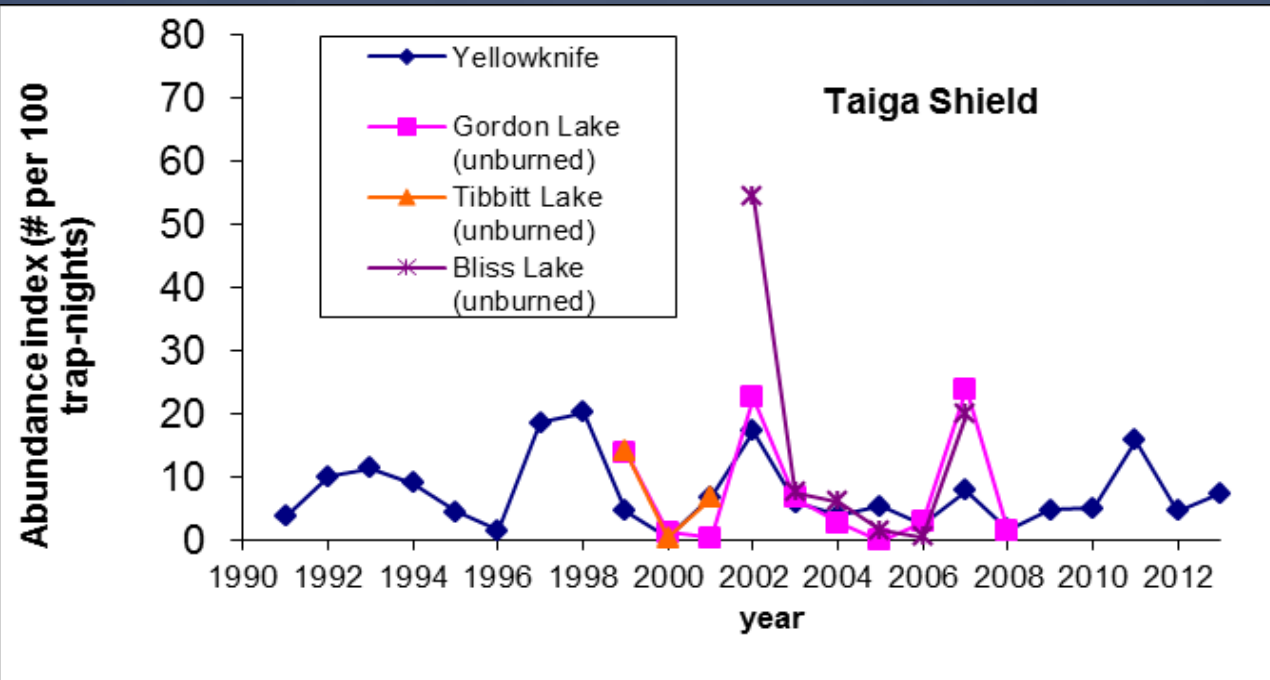
All go to Museums – mostly Alaska – used in other studies.

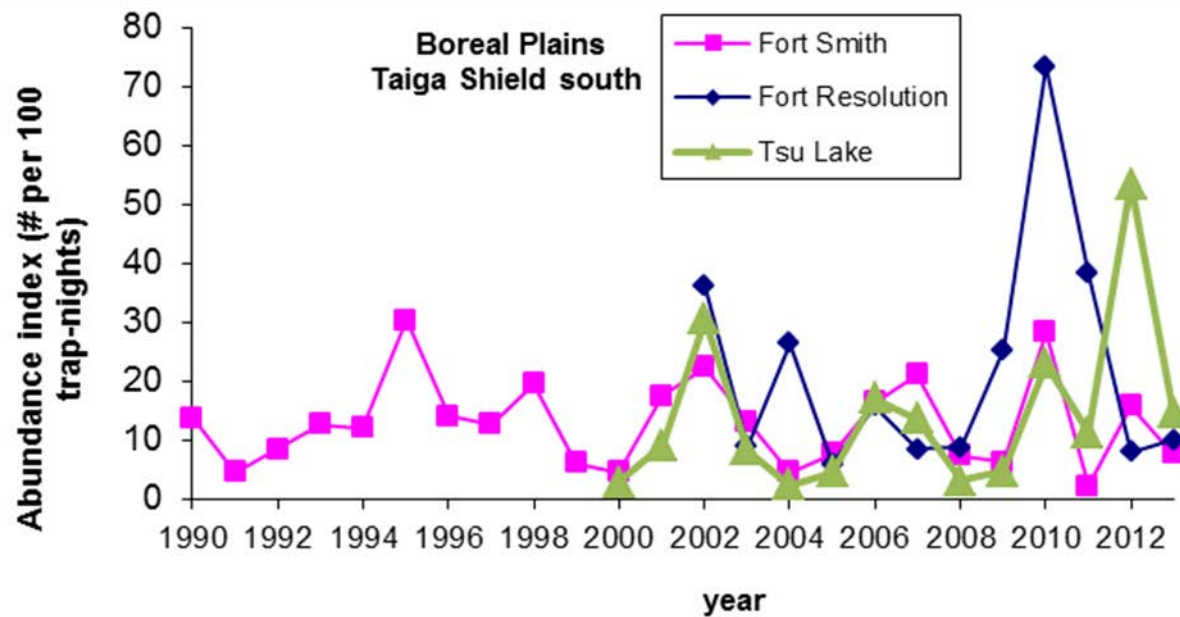
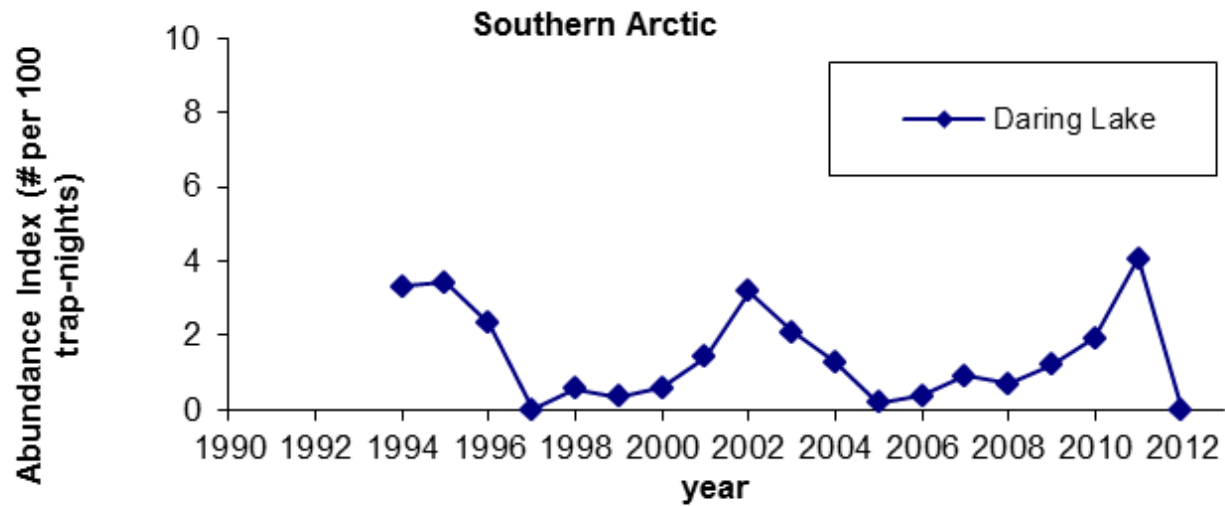


Sahtu does live trapping

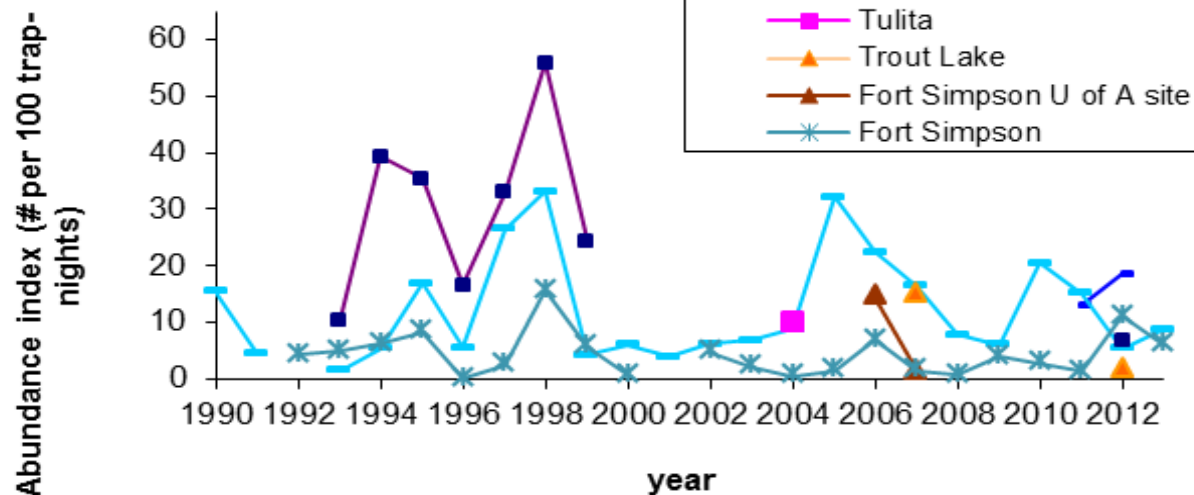
REGIONAL DATA



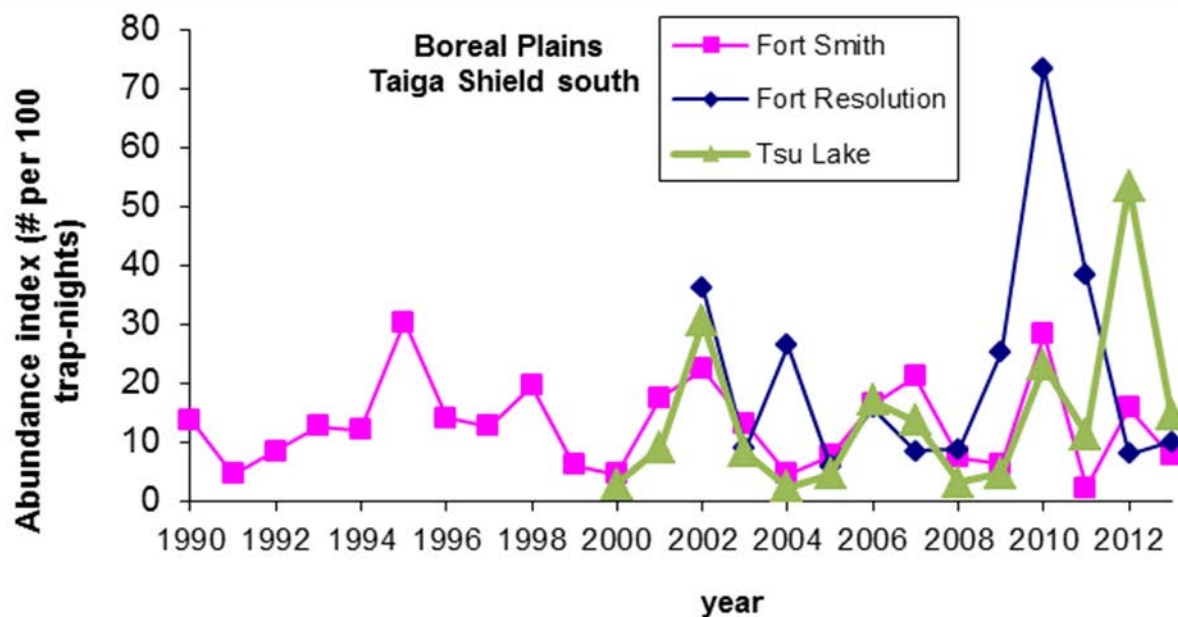




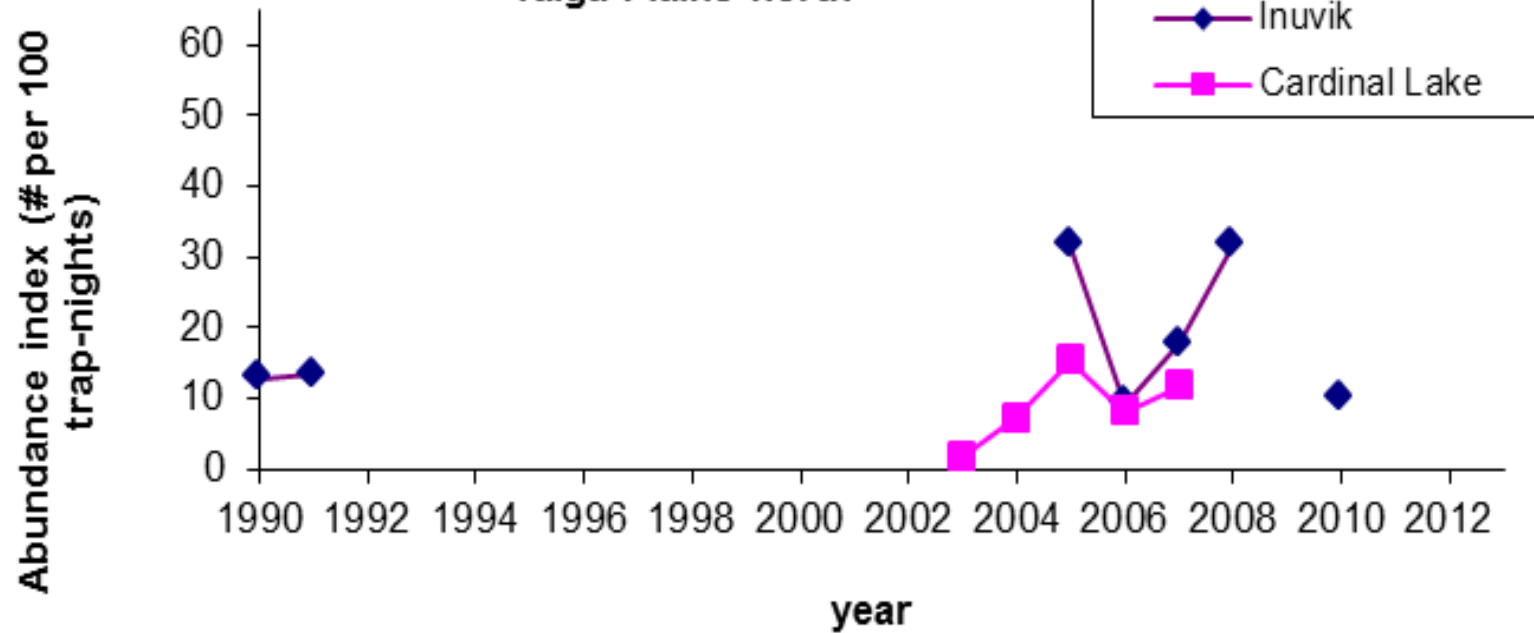
Taiga Plains central-south



Boreal Plains Taiga Shield south

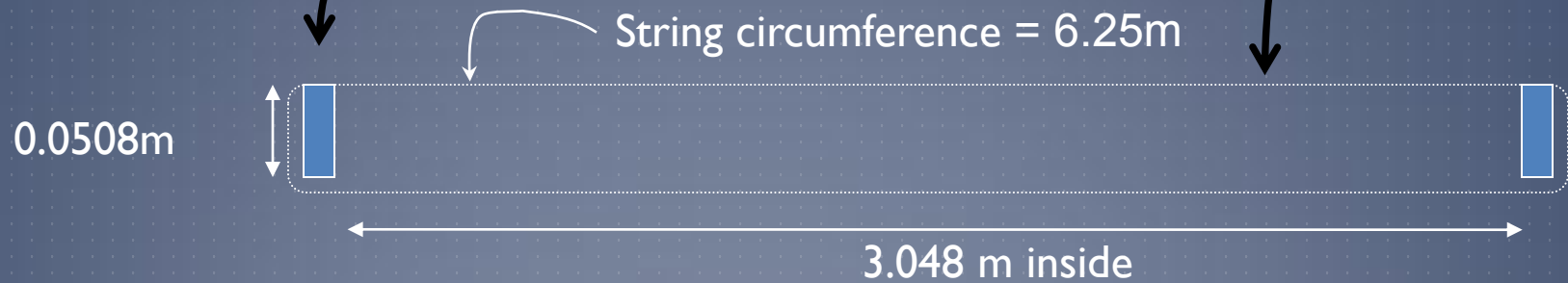
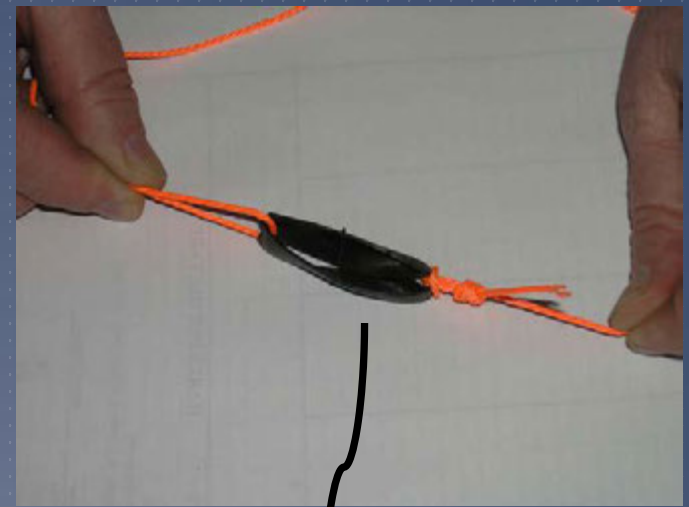


Taiga Plains north



Kluane Boreal Forest Ecosystem Project Community Ecological Monitoring Program





Each of the 80 plots are 2 inch by 10 feet
Put a peg in the ground than use the rope to position the
second peg.
Leave the pegs permanently, flag the location of each plot

4 transects of 80 plots

Time: 1 day per year

June



HARE DENSITY STUDY
Four transects w/ 20 quadrats each.



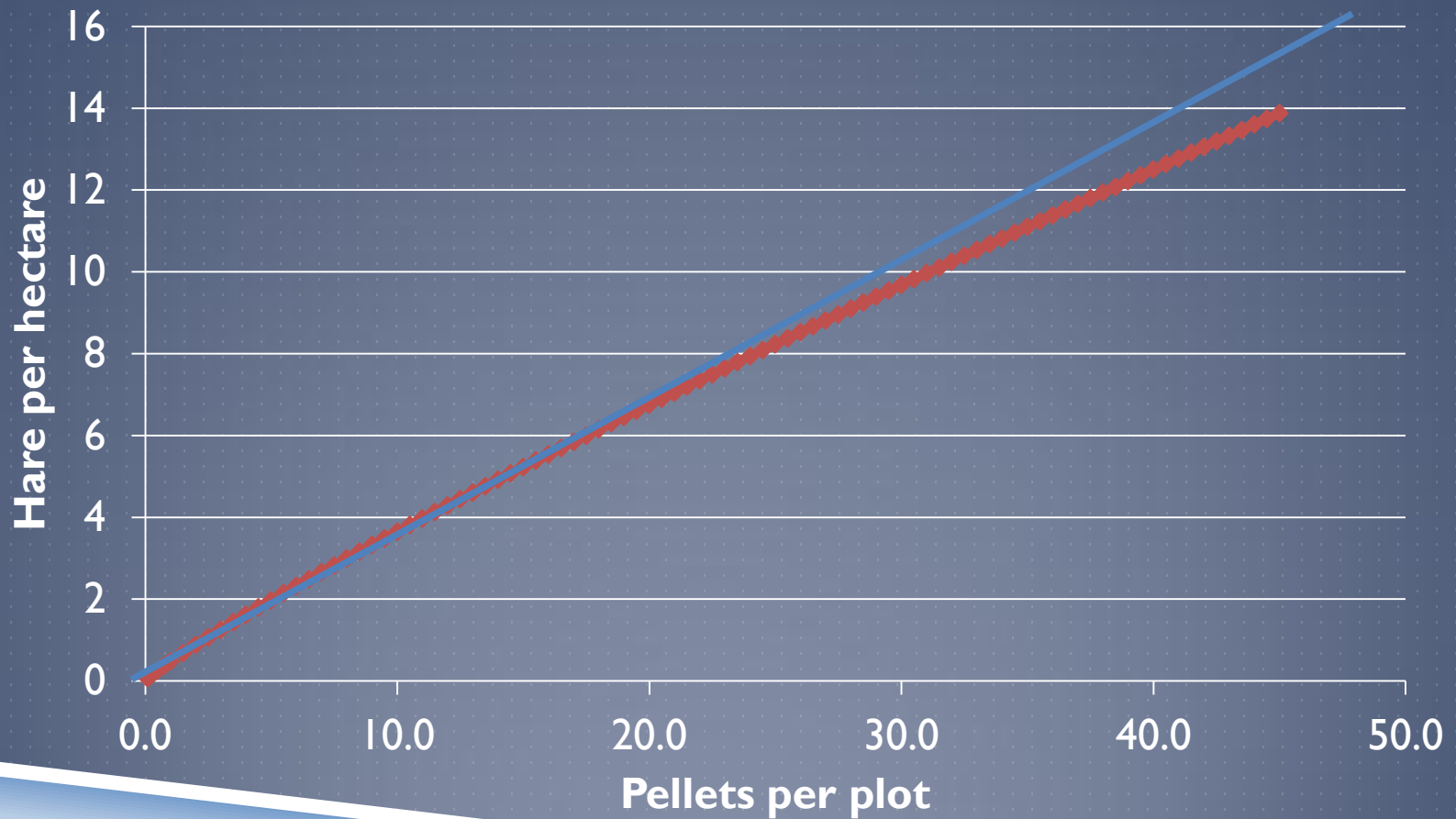


Count then
Remove the pellets each year



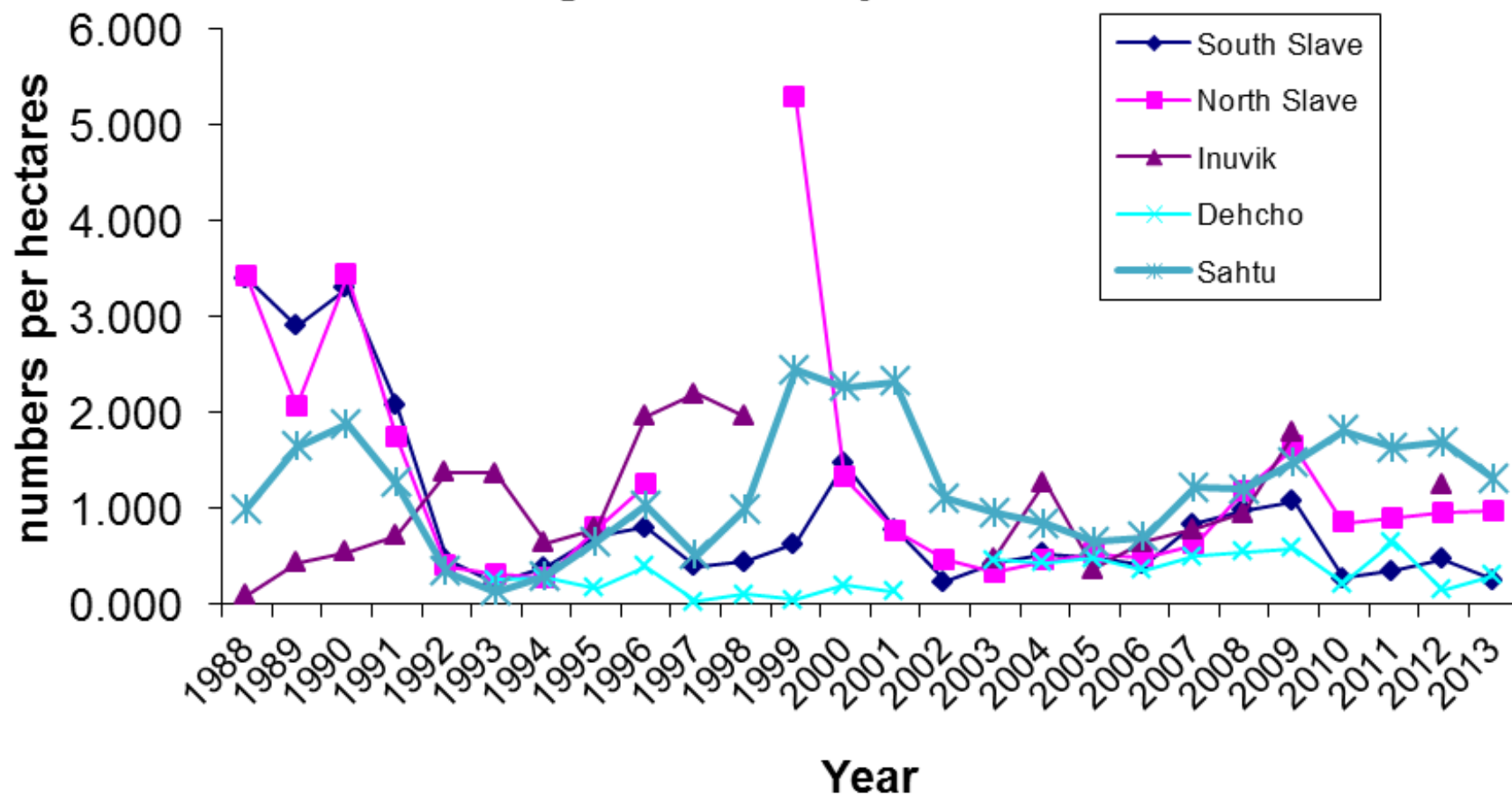
KREBS – KLUANE, YUKON

Krebs 200 I



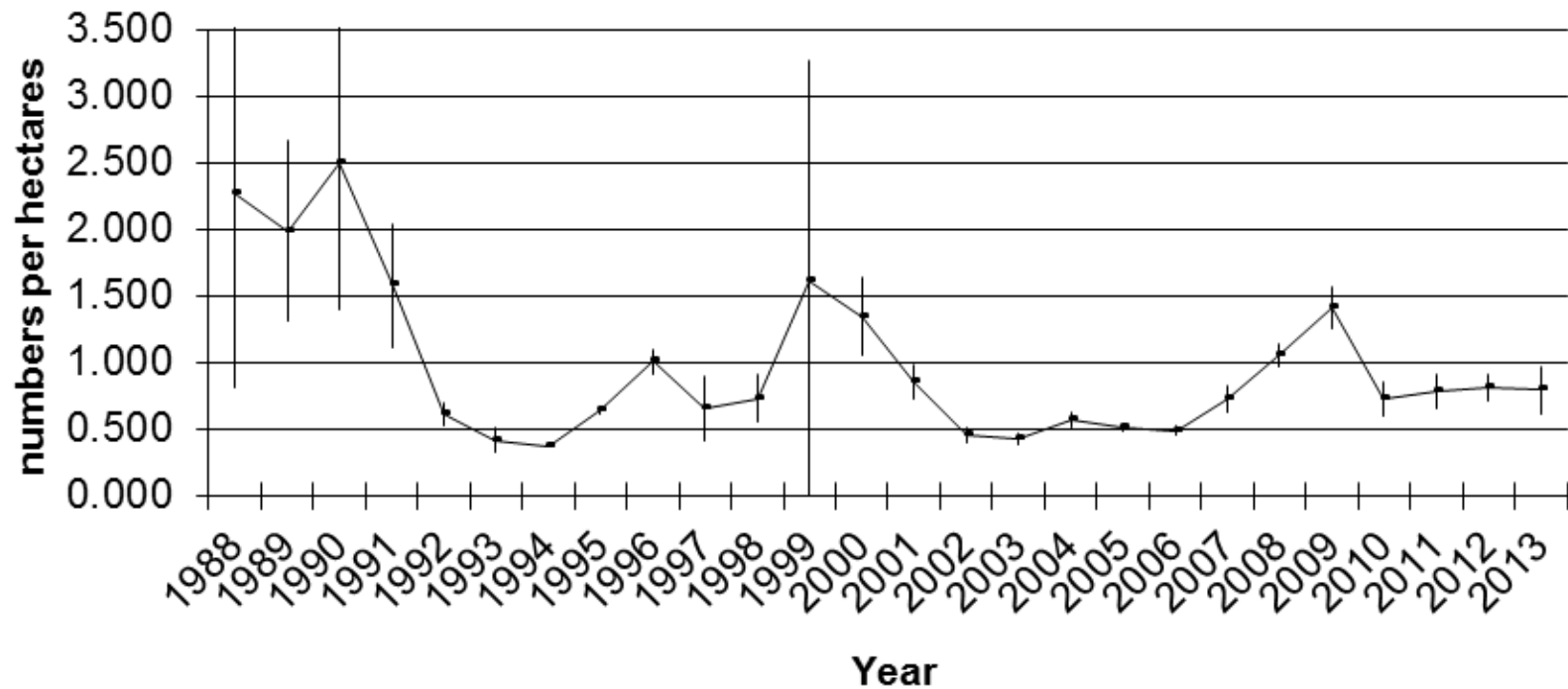
SNOWSHOE HARE

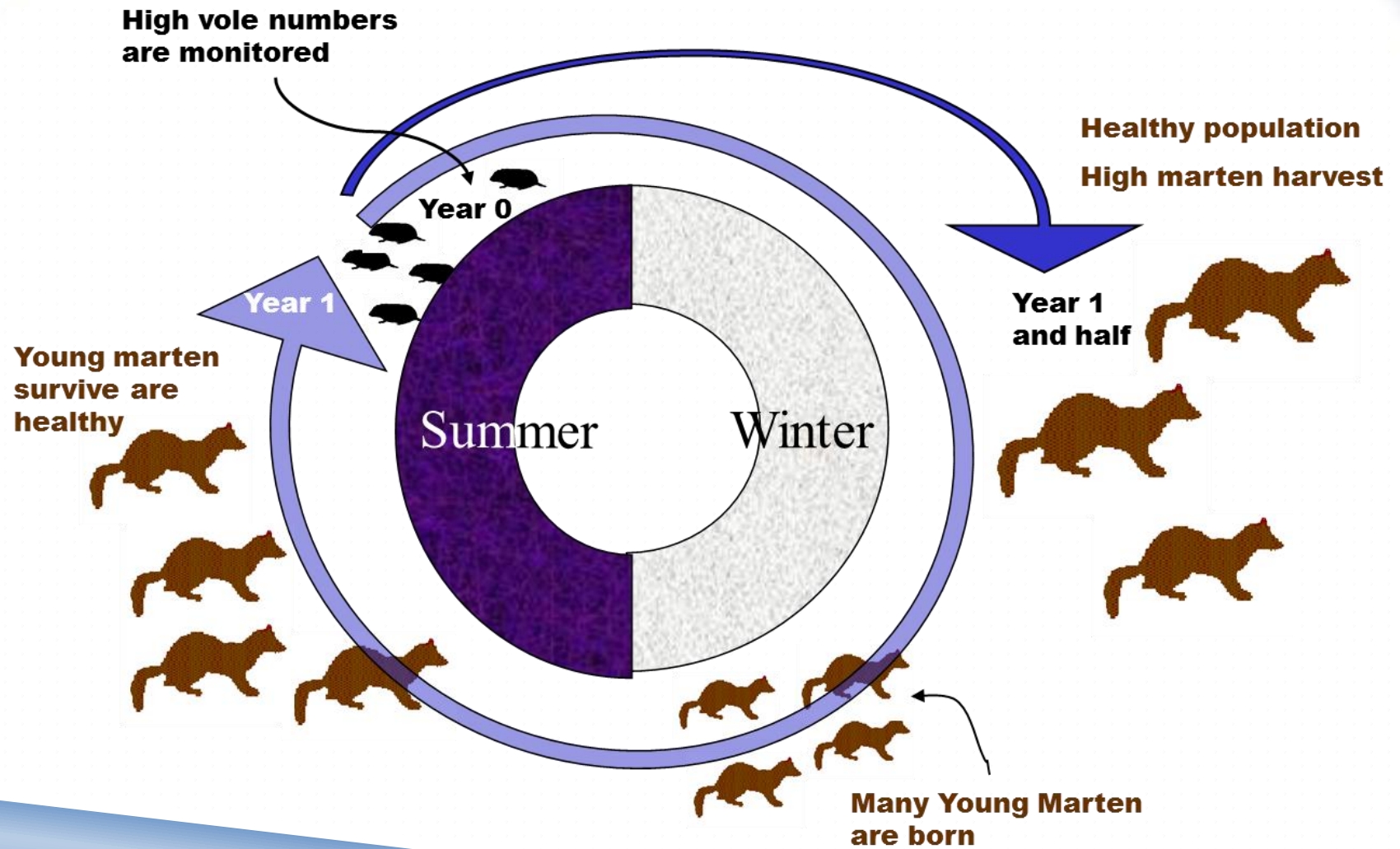
Average hare density in the NWT



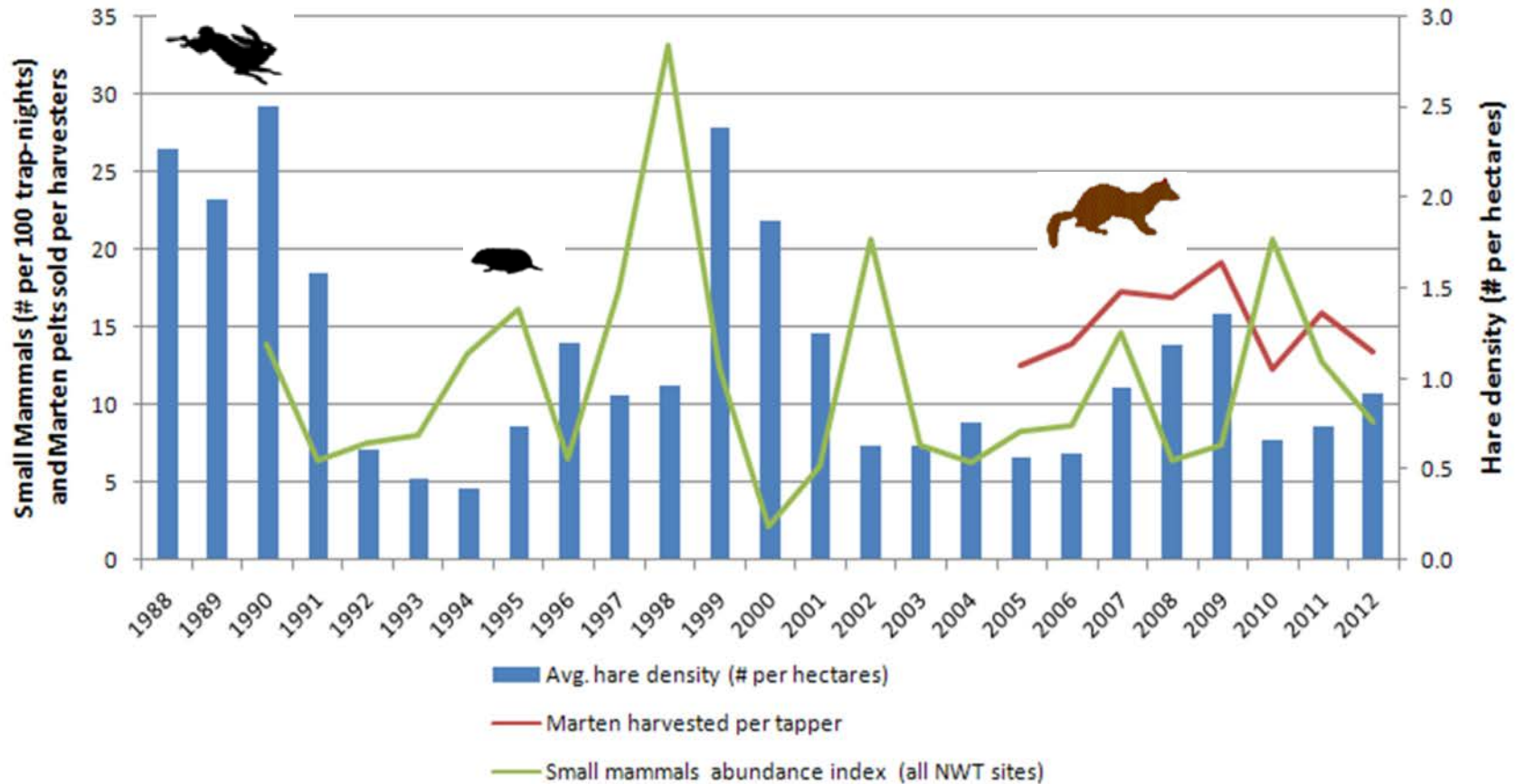
SNOWSHOE HARE

Average hare density in the NWT





MARTEN HARVESTED



YOUR INPUT

- ▶ Traditional knowledge
- ▶ New locations
- ▶ Observations
- ▶ Ideas



▶ WildlifeOBS@gov.nt.ca



GENUINE MACKENZIE VALLEY FUR (GMVF)

Program & Services

GMVF Strategy

Role of Government

**“To directly support and maintain trapping
as a viable activity within the traditional
economy”**

Stabilize NWT fur industry



GMVF Strategy

OBJECTIVES

- Increase returns\$ to trappers
- Increase fur production
- Increase number of trappers
 - Encourage youth participation
- Update trapper skills
- Be market responsive and market driven

NWT FUR BRAND



GMVF Fur Marketing Service

Guaranteed Fur Advance – (\$1.5mil)

- Revolving fund
- Advance recovered after each sale

Program Operating Grant – (\$610K)

Fur Advance Shortfalls – fur that sells for less than the advance covered by Grant

- **Prime Fur Bonus**
Paid out after each sale
- **Fall Grubstake**
Paid out annually
- **Shipping**
- **Handling & Drumming**
- **Auction House Commissions**



GMVF Fur Marketing Service

Standards

All NWT Fur marketed under the GMVF brand must be:

- **Prime Fur**
- **Well Handled**
- **Humanely trapped in compliance with the Agreement on International Humane Trapping Standards (AIHTS)**



GMVF Fur Marketing Service Administration

- GNWT – Fur Harvest financial database
- All proceeds after each sale are directed to GNWT for payment to trappers
- Trappers operate **debt free within the program**
- All trappers are treated equally
- All fur treated equally and fairly



GMVF Fur Marketing Service

Shipping & Commissions

- GNWT covers all expenses associated with shipping, processing and sales commissions.
- NWT fur is shipped to FHA and sold in exclusive GMVF lots.



GMVF Fur Marketing Service

Fur Advance (\$900k revolving fund)

Species	Fur Advance	Prime Fur Bonus	Total Payment
Bear, black	\$100	\$50	\$150
Bear, grizzly	\$500	\$450	\$950
Bear, polar	\$1,750	\$450	\$2,200
Beaver	\$25	\$25	\$50
Coyote	\$25	\$10	\$35
Fisher	\$35	\$15	\$50
Fox, cross/red/silver	\$30	\$15	\$45
Fox, white	\$35	\$15	\$50
Lynx	\$80	\$25	\$105
Marten	\$65	\$25	\$90
Mink	\$25	\$10	\$35
Muskrat	\$5	\$1	\$6
Otter	\$50	\$10	\$60
Squirrel	\$2	\$1	\$3
Seal, all	\$55	\$25	\$80
Weasel	\$4	\$1	\$5
Wolf	\$400	\$50	\$450
Wolverine	\$200	\$100	\$300



GMVF Fur Marketing Service

Prime Fur Bonus

- Increase the production of prime fur
- Increase the number of trappers
(targeting youth and inactive trappers)
- Improve data collection (bears & wolverine)
- All NWT furbearing species are eligible

- Market (auction price) drives the bonus
- Bonus is calculated & paid after each sale



GMVF Fur Marketing Service

Prime Fur Bonus

Species	Fur Advance	Prime Fur Bonus	Total Payment
Bear, black	\$100	\$50	\$150
Bear, grizzly	\$500	\$450	\$950
Bear, polar	\$1,750	\$450	\$2,200
Beaver	\$25	\$25	\$50
Coyote	\$25	\$10	\$35
Fisher	\$35	\$15	\$50
Fox, cross/red/silver	\$30	\$15	\$45
Fox, white	\$35	\$15	\$50
Lynx	\$80	\$25	\$105
Marten	\$65	\$25	\$90
Mink	\$25	\$10	\$35
Muskrat	\$5	\$1	\$6
Otter	\$50	\$10	\$60
Squirrel	\$2	\$1	\$3
Seal, all	\$55	\$25	\$80
Weasel	\$4	\$1	\$5
Wolf	\$400	\$50	\$450
Wolverine	\$200	\$100	\$300



GMVF Fur Marketing Service

Grubstake Program

- Increase individual harvest
 - Increase number of trappers, targeting youth
-
- Receive \$5 per pelt harvested from previous season
 - Minimum of 20 pelts to qualify
 - Maximum payout of \$2000
 - Includes all furbearers
 - Annual payment in Fall to assist in startup costs



GMVF Fur Marketing Service

Grubstake Program

Pelts Harvested	\$5 per Pelt
0 - 19	\$0
20 (pelt min)	\$100
40	\$200
80	\$400
100	\$500
200	\$1000
400	\$2000



GMVF Marketing & Promoting

\$50K

- GMVF Trappers Newsletter (quarterly)
- GMVF Training Manuals, AIHTS compliant
- GMVF Trappers Calendar
- GMVF Pelt Handing & Grading Poster & DVD's
- GMVF-AIHTS certified trap guide
- Strong industry partnership - Fur Harvesters Auction
- Cooperation & Partnerships:
 - **“Northern Canadian Wild Fur Collection”**
 - Territorial Governments (Nunavut & Yukon)
 - Local Aboriginal Governments
 - Private sector



GMVF Support Programming



GNWT Program Delivery

- Support to Traditional Crafts
- Take a Kid Trapping
- Take a Kid Harvesting
- Pelt Handling Workshops with FHA
 - Industry Information Sessions
- Trap Handling Workshops
- Trappers Recognition Program



GMVF Support Programming

Support to Traditional Crafts

Hide Procurement Program (2009)

- Operate on a cost neutral basis
- Assist traditional craft producers with a source for moose and caribou hides at reasonable prices

Seal and Beaver Procurement Programs

- Offset the negative impacts of the ban on imports of seal pelts and products into the European Union
- Process and return NWT beaver and seal for resale

Details	Seals	Beaver
Inventory	469	439
Cost	\$43,250	\$26,810
Retail (cost recovery)	\$45,150	\$30,410
Average price per pelt	\$96.27	\$69.27
Leverage(1:4) **	\$180,600	\$121,640

**Based on conservative evaluation of production costs (crafts)
Total estimated benefit to craft sector was **\$302,240**



GMVF Support Programming

Take a Kid Trapping & Harvesting (2002)

\$450K

Introduced to encourage NWT youth of all ages to participate in trapping and on the land traditional life skills.

Funding Agencies

- GNWT Departments in partnership with:
- Agriculture Canada – Growing Forward 2 Initiative

Delivery Agencies (3rd party)

- Regional school boards & community schools
- Aboriginal organizations.

Results

- 50 projects and 2000 participants annually



GMVF Support Programming

Take a Kid Trapping



GMVF Support Programming

Pelt Handling & Trap Setting Workshops



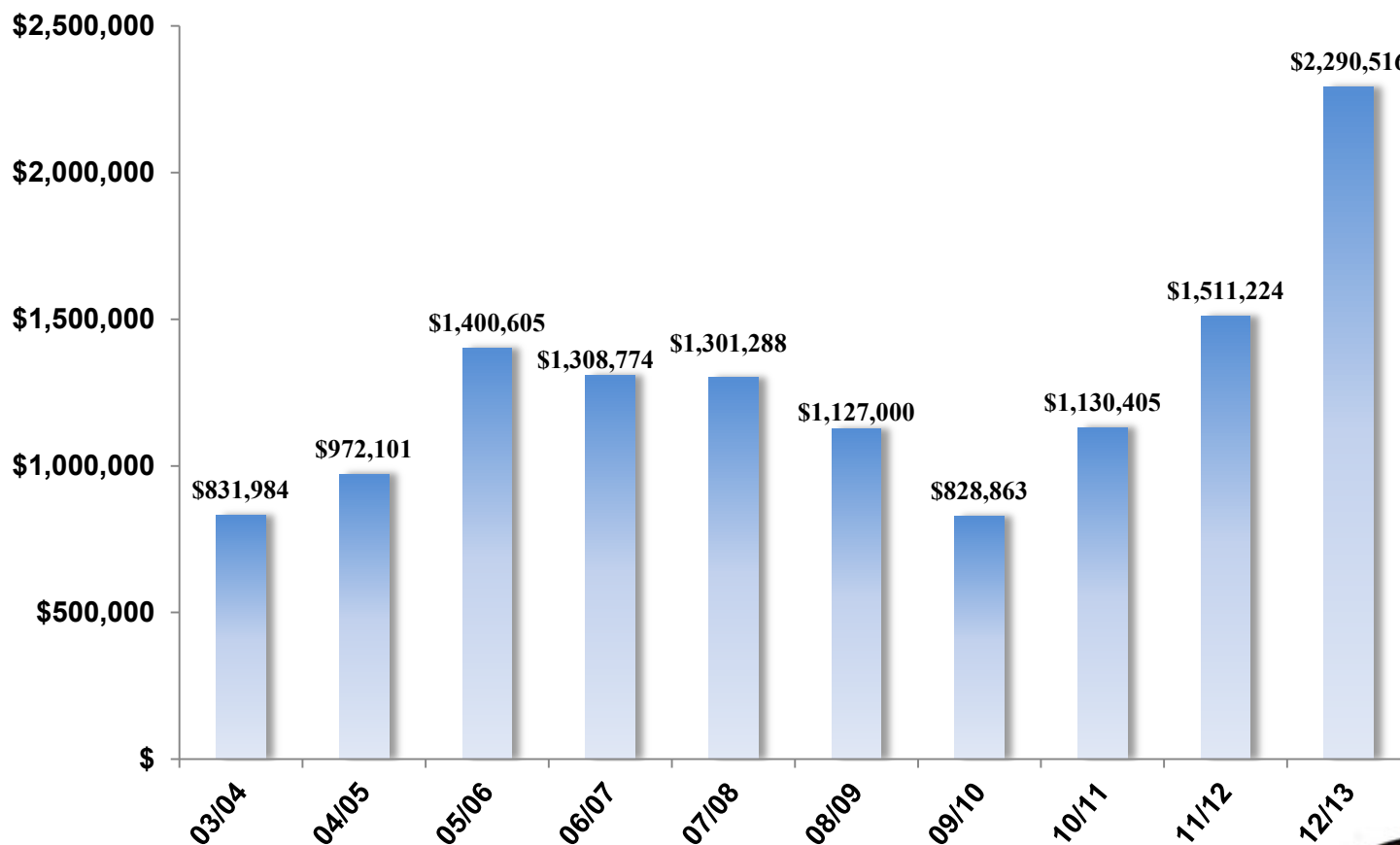
GMVF Support Programming

Trappers Recognition Program



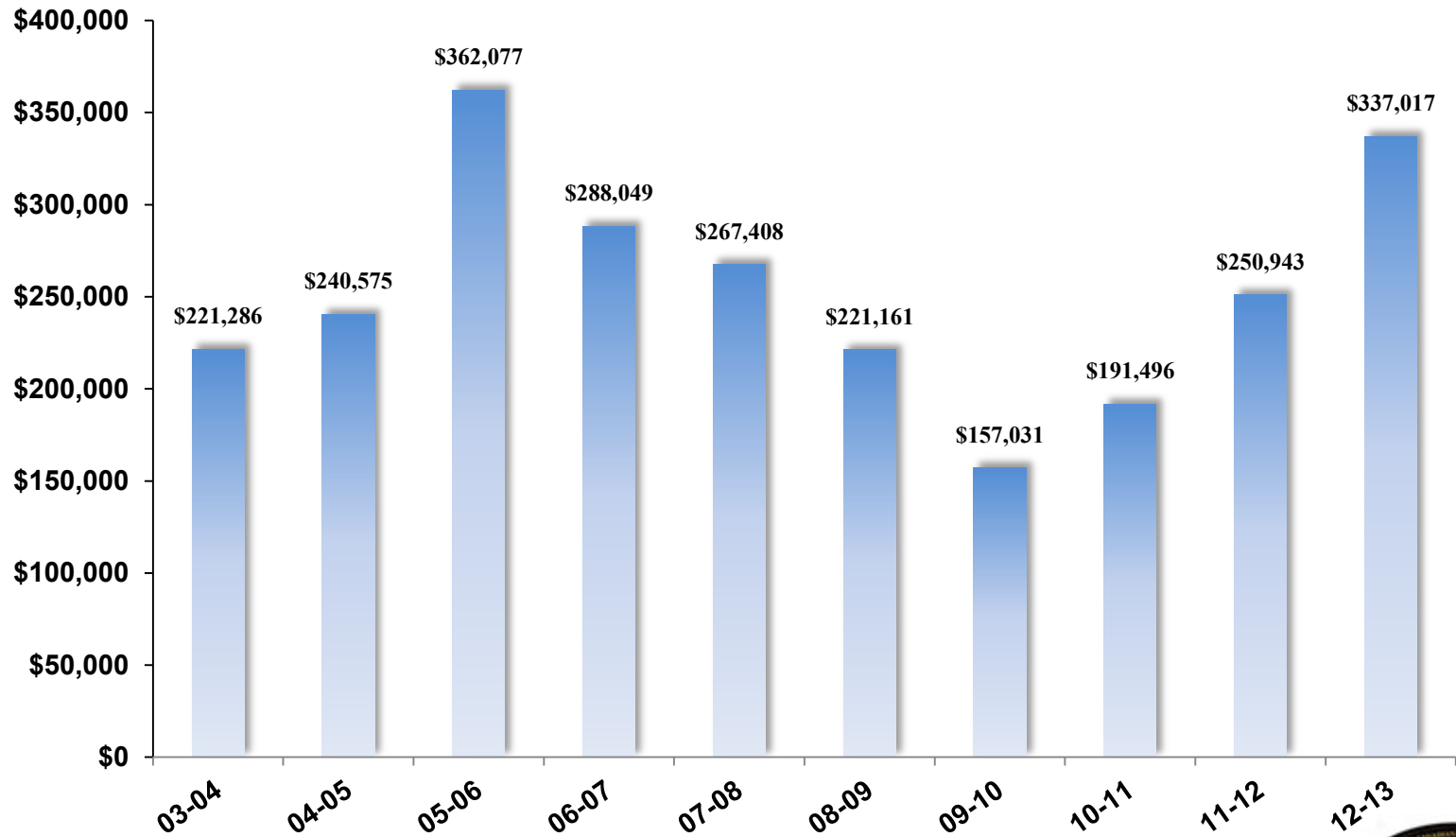
STATISTICS

NWT Fur Sales -10 Years



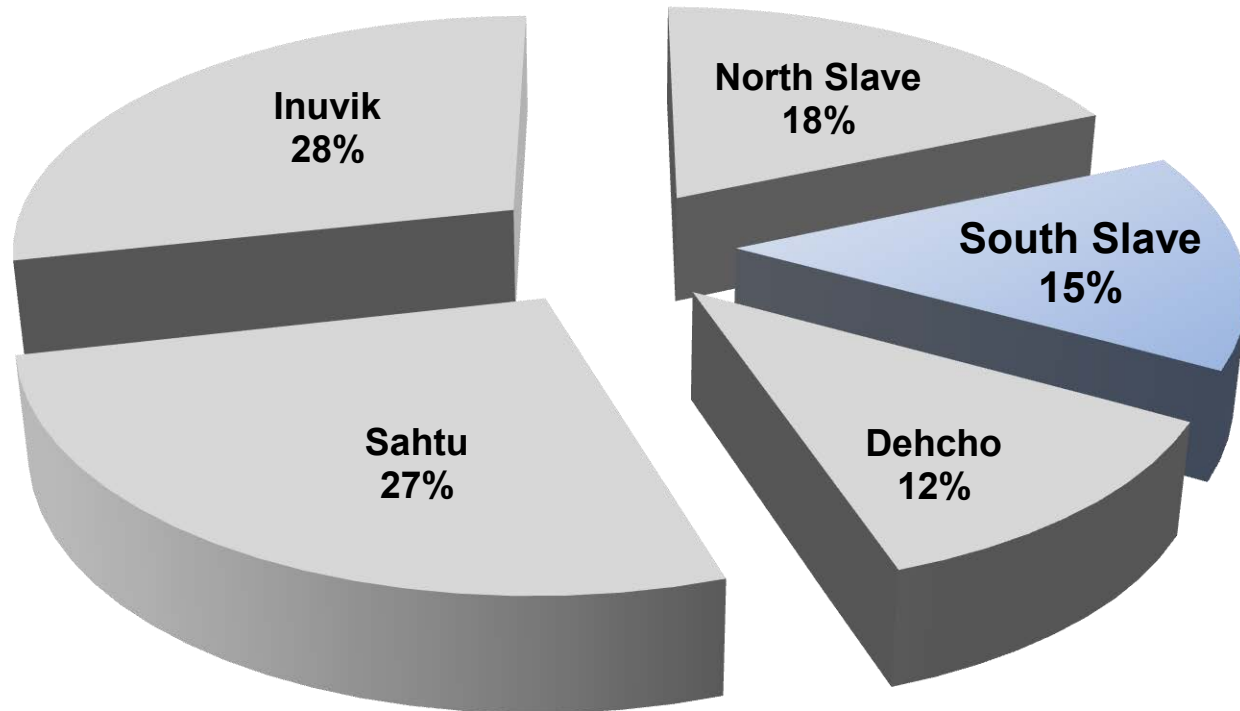
STATISTICS

South Slave Fur Sale\$



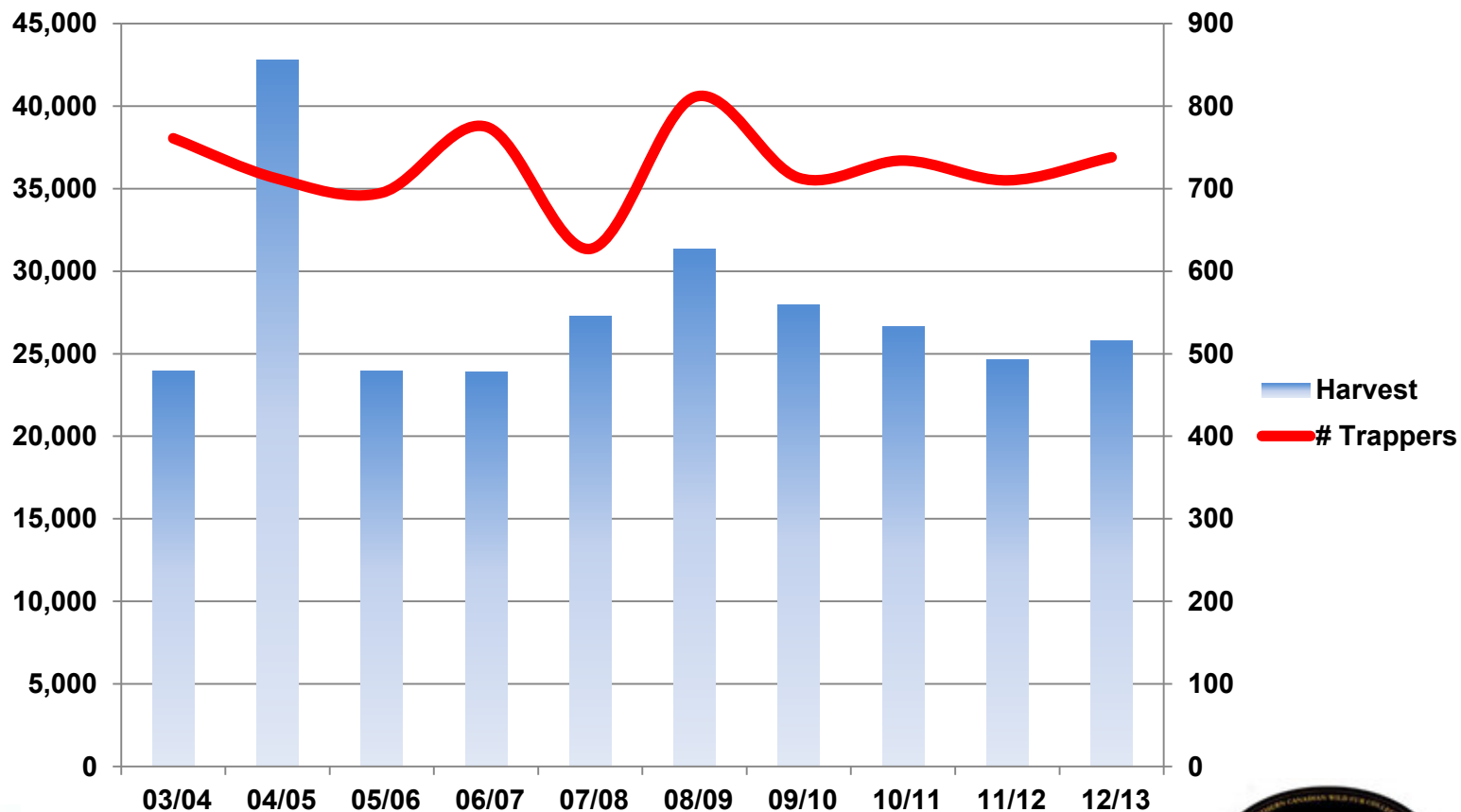
STATISTICS

2012-13 NWT Fur Sales



STATISTICS

NWT Production

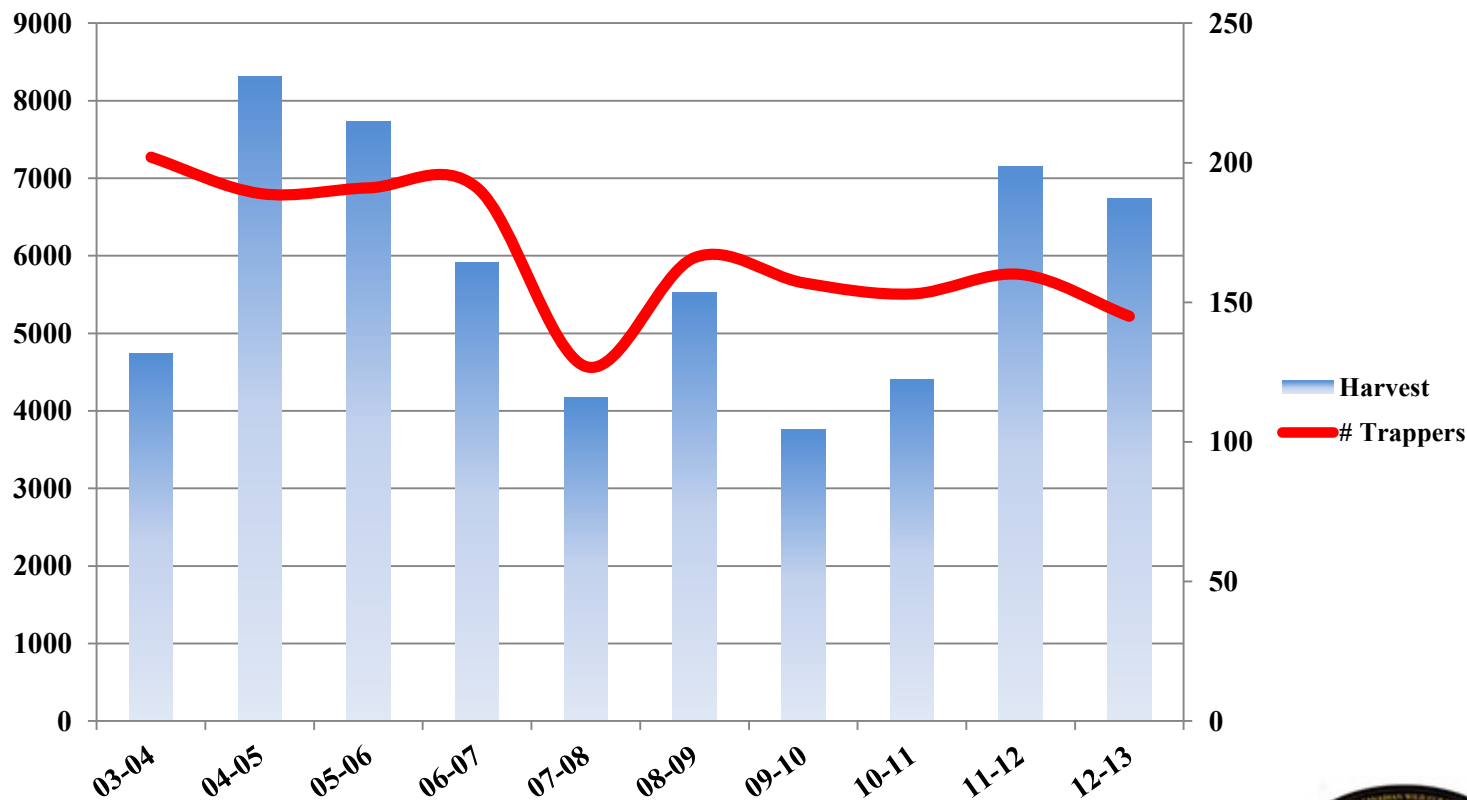


10 yr. average per NWT trapper - 38 pelts



STATISTICS

South Slave Production

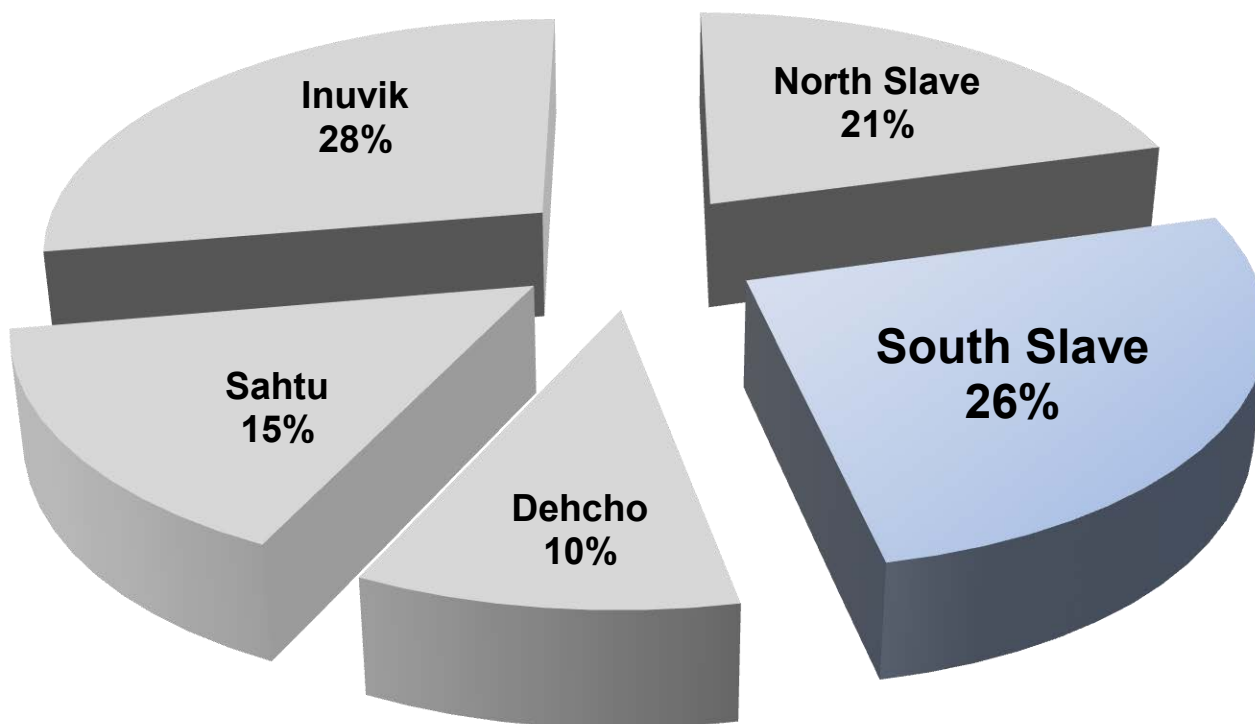


10 yr. average per trapper - 35 pelts



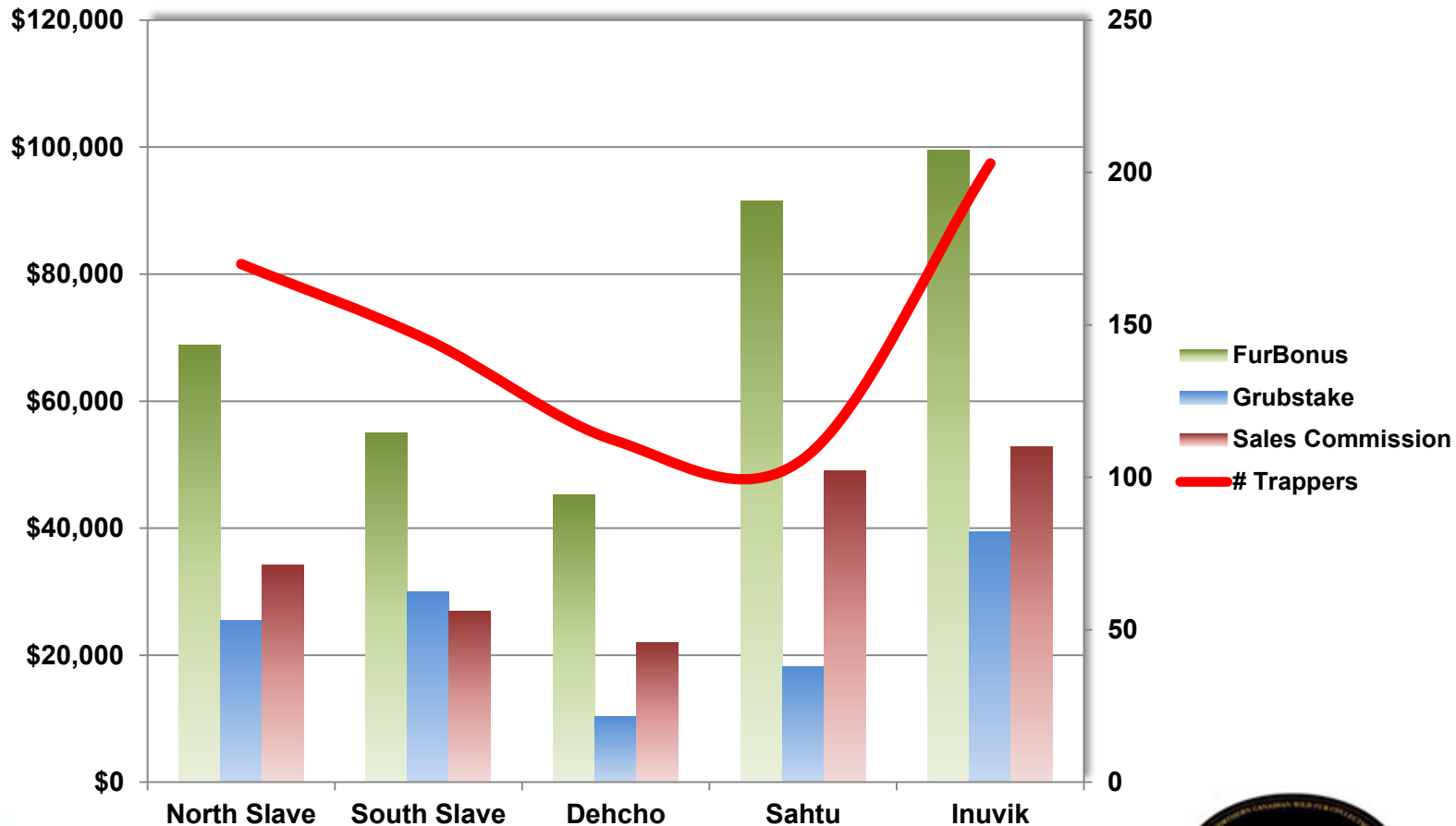
STATISTICS

2012-13 Regional Harvest/Sold



STATISTICS

GMVF Regional Program Support

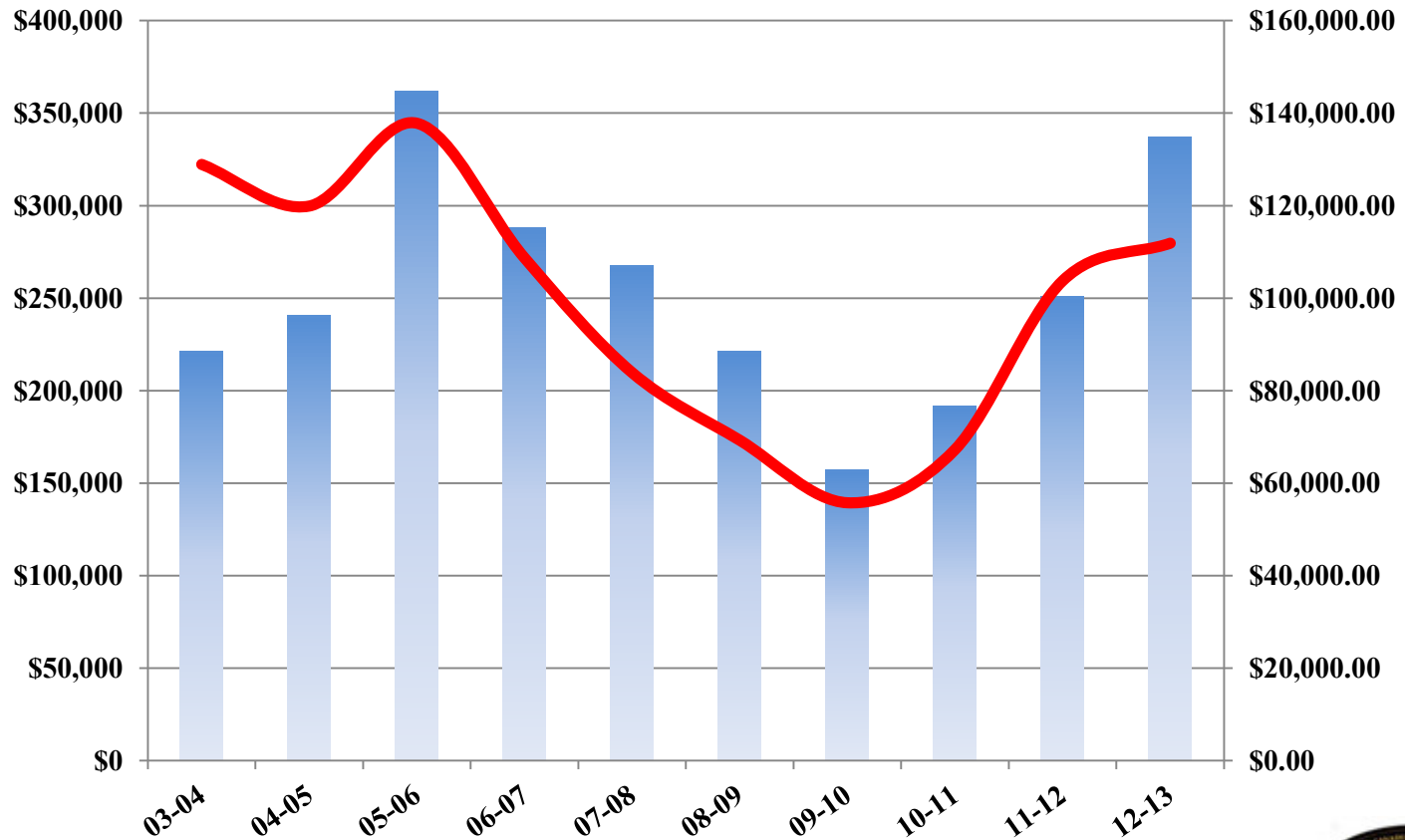


Average Support per NWT trapper: \$908



STATISTICS

GMVF South Slave Support

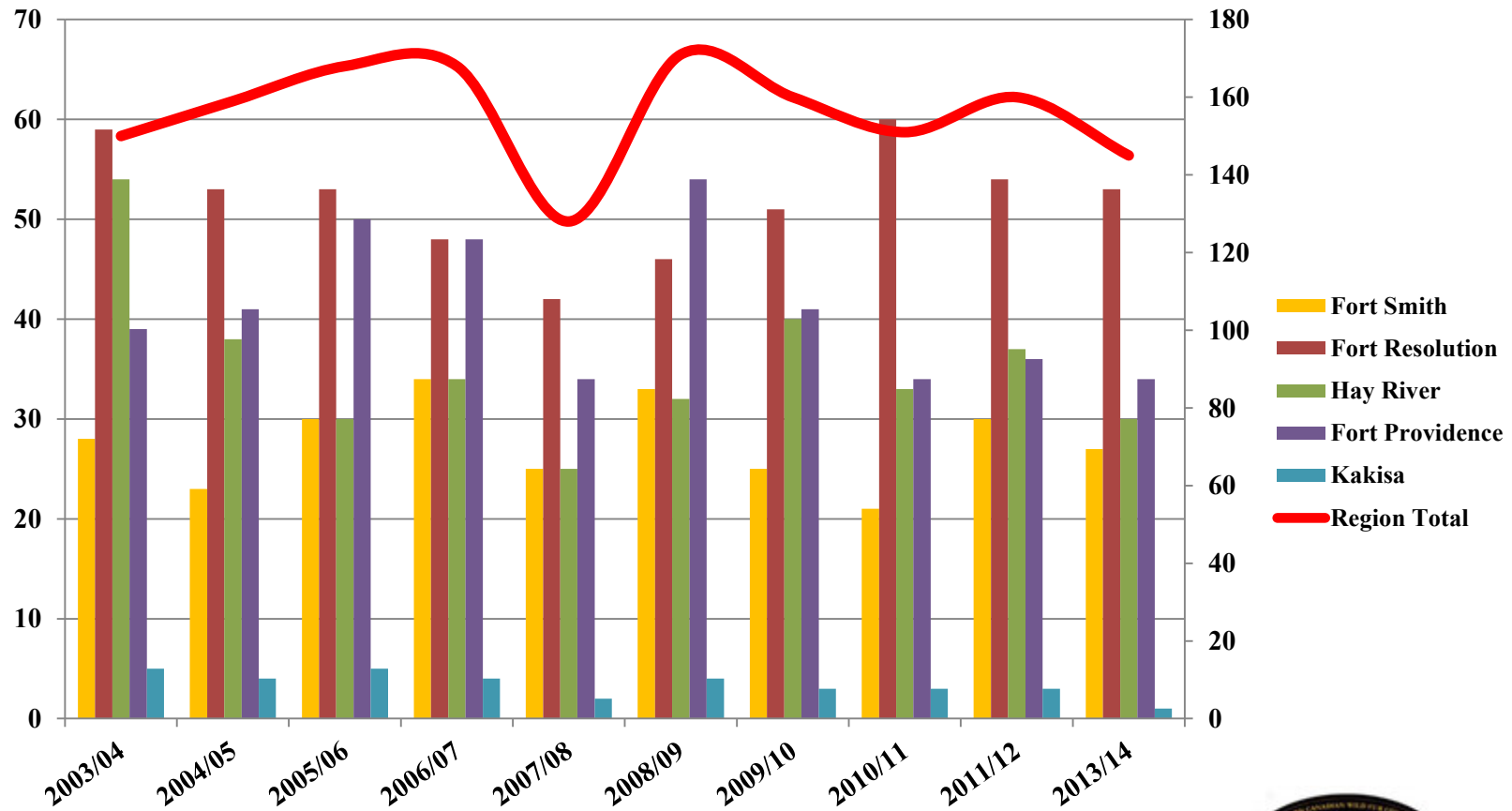


Average Support per trapper:\$587



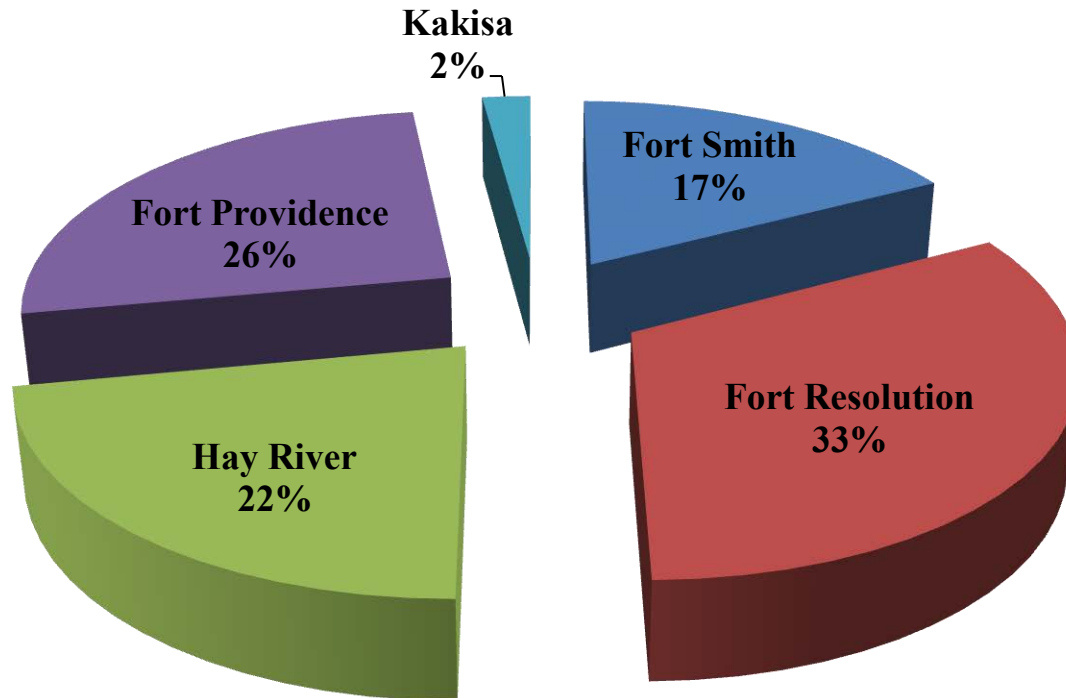
STATISTICS

South Slave Trapper Participation Trend



STATISTICS

Trapper Participation – 10 Yrs.



STATISTICS

2012/13 Summary

Region	Total Fur Sale	Volume Sold	# Trappers	FurBonus	Grubstake	Direct \$ to NWT Trappers
North Slave	\$426,581.75	5,326	170	68,813	\$25,515	\$520,909.75
South Slave	\$337,016.61	6,743	145	54,960	\$29,950	\$421,926.61
Dehcho	\$275,250.88	2,614	112	45,231	\$10,380	\$330,861.88
Sahtu	\$613,452.56	3,944	106	91,534	\$18,185	\$723,171.56
Inuvik	\$659,332.41	7,147	203	99,485	\$39,410	\$798,227.41
Total	\$2,311,634.21	25,774	736	360,023	\$123,440	\$2,795,097.21

Community	Trappers	Harvest/Sold	Sold\$
Ft. Smith	27	422	\$35,413
Ft. Resolution	53	4,957	\$188,193
Ft. Providence	34	804	\$62,314
Hay River	30	546	\$48,831
Kakisa	1	14	\$2,265





Beverly and Qamanirjuaq Caribou

**Presentation from the
BQ Caribou
Management Board**

October 2013



What is the BQ Caribou Management Board (BQCMB)?

- 1) Co-management advisory board**
 - established more than 25 years ago (in 1982).**

- 2) Cooperative partnership**
 - communities and governments.**



What is the BQCMB?

- Not government
- Not a decision making board
- Not established through land claims



What Does the BQCMB Do and Why?

BQCMB Goal:

Caribou for the future!



**BQCMB - established more than
25 years ago (in 1982)**



Who is the Caribou Management Board (BQCMB)?





Chair :
Earl Evans



Vice-chair:
Daryll Hedman

Vice-chair:
Tim Trottier



**Secretary
-treasurer:**
Ross Thompson

Beverly and Qamanirjuaq Caribou

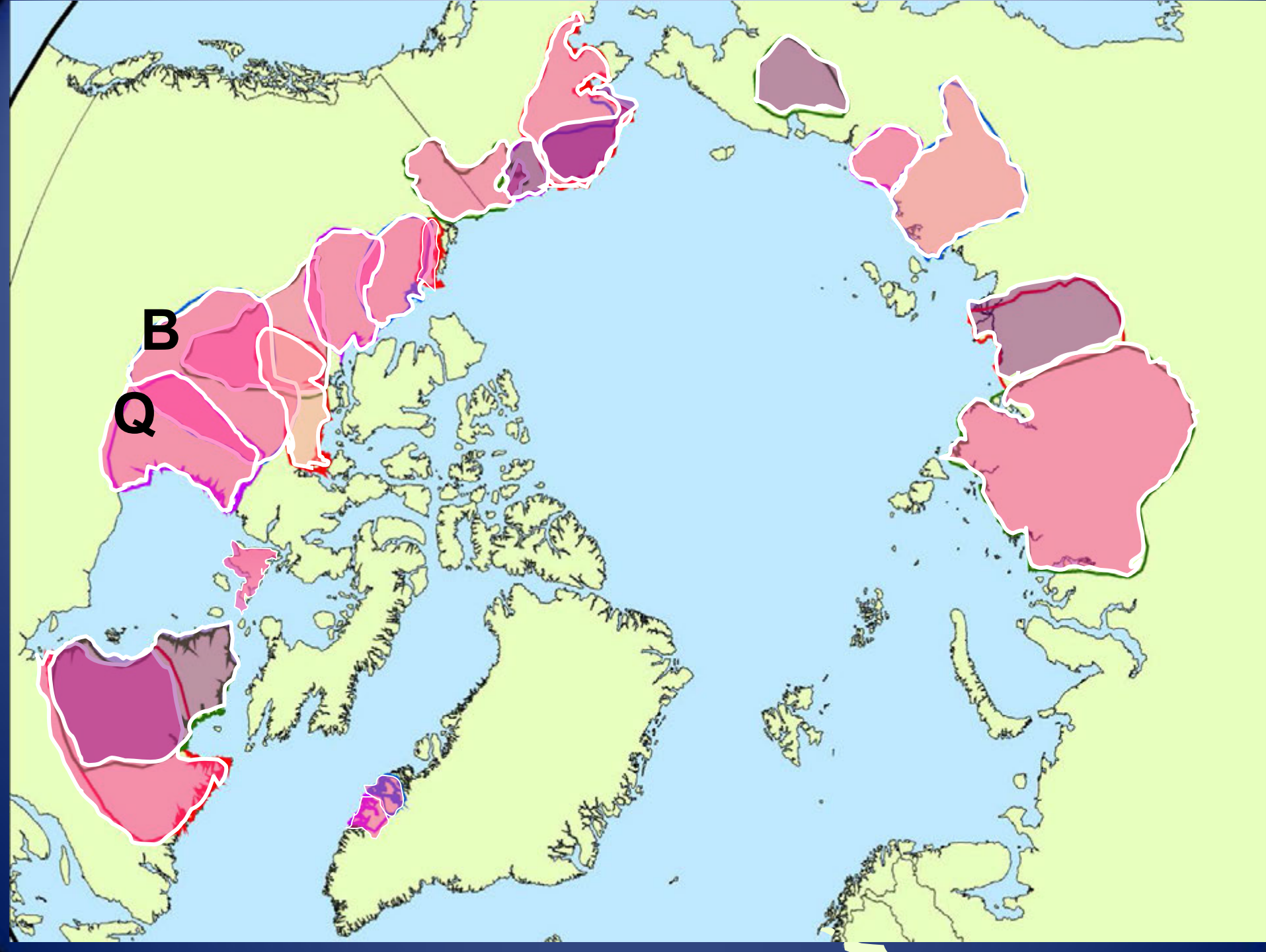


Annual Harvest and Economic Value: Beverly and Qamanirjuaq Caribou

No. caribou
harvested
(2005-06
estimate):
14,080

Net economic
value :
\$20 million





Many things are affecting caribou





How can we help declining caribou herds?

- 1) Protect important habitats.
- 2) Protect caribou from disturbance, habitat loss
- 3) Take no more caribou than you need.
- 4) Prevent wastage when hunting.
- 5) Harvest bulls instead of cows when possible.
- 6) Encourage traditional harvest of predators.

BQCMB Caribou Workshop

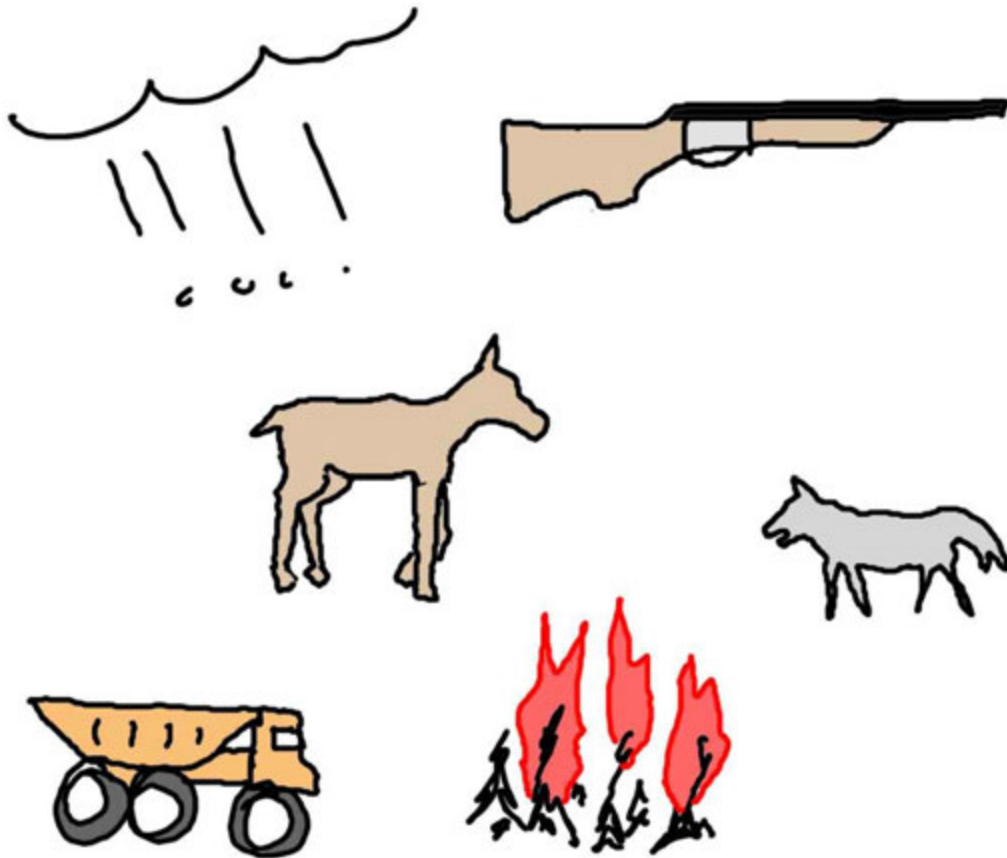
23-25 February 2010

Photo by David Veira



Workshop brought together elders, hunters and others

What is causing caribou to decline?



News from the BQCMB Caribou Workshop, February 23 - 25, 2010



Here, people from Saskatchewan and Manitoba talk about things affecting caribou today, as part of smaller group discussions at the BQCMB Caribou Workshop

Most caribou herds around the world are shrinking

What is happening to barren-ground caribou these days?

Most herds around the world are decreasing in size. Here in Canada, the Beverly caribou herd is very small now. Nobody knows how big it is.

Surveys that the Northwest Territories (NWT) government did on the Beverly calving ground in 2007, 2008 and 2009 found fewer and fewer animals there during the June calving period. Nobody knows why the Beverly herd has declined

so much, but a combination of natural and human-caused factors is the likely cause.

And while the neighbouring Qamanirjuaq herd is still plentiful, results from a 2008 Nunavut government population survey show that this herd is also shrinking.

"We have to *do* something about it," BQCMB chairman Albert Thorassie has said about the need to help people work together to aid the caribou. "We have to get everybody together on one side."

Workshop brought together elders, hunters and others

The BQCMB hosted a Caribou Workshop in Saskatoon February 23 to 25, 2010. The Workshop was held to find ways to help the ailing Beverly caribou herd to rebuild, and to try to stop the Qamanirjuaq population from going through a major decline as well.

More than 75 elders, hunters and others

from Saskatchewan, NWT, Manitoba, Nunavut, Alberta, Yukon, British Columbia and Ontario came to the Caribou Workshop because of their concern for caribou. They want to help make sure that the herds are strong and healthy in the future. They took the first step toward achieving that by sharing their valuable knowledge about caribou.

What is the BQCMB?



The Beverly and Qamanirjuaq Caribou Management Board (BQCMB) is an Aboriginal-led co-management board of hunters, biologists, and land and wildlife managers. It has advised governments, communities and others since 1982 on ways to safeguard the Beverly and Qamanirjuaq barren-ground caribou herds of northern Canada.



BQCMB member Earl Evans of Fort Smith, NWT describes the Beverly and Qamanirjuaq herds

***We all need to
work together to address
these issues***





BQCMB

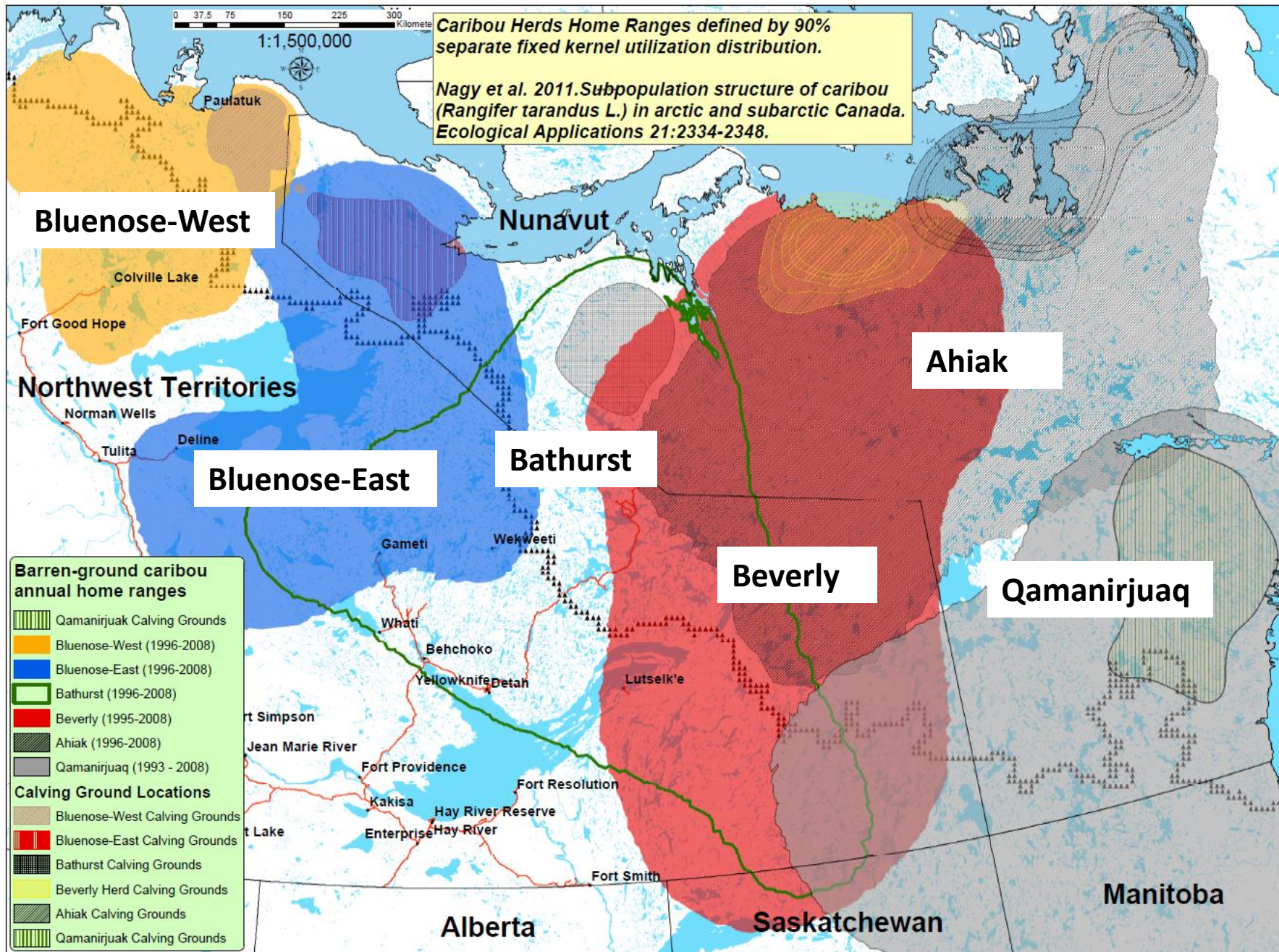
www.arctic-caribou.com

*Thank
you*

Barren-ground caribou







2011 Beverly and Ahlak Population Survey

**Calving Ground Abundance Estimates of the Beverly and
Eastern Kitikmeot Subpopulations of Barren-Ground Caribou
(*Rangifer tarandus groenlandicus*) – June 2011**

**GOVERNMENT OF NUNAVUT
DEPARTMENT OF ENVIRONMENT**

TECHNICAL SUMMARY

**To Be Replaced By:
Technical Report Series – No: 03-2012**

Mitch Campbell

Department of Environment, Nunavut Wildlife Service, Arviat, NU

John Boulanger

Integrated Ecological Research, Nelson, BC

David S. Lee

Nunavut Tunngavik Inc., Rankin Inlet, NU

Mathieu Dumond

Department of Environment, Nunavut Wildlife Service, Kugluktuk, NU

&

Justin McPherson

Casiys Consulting Ltd., Saanichton, BC

17th December 2012



This survey report is available on the
GN website by navigating to:

[http://env.gov.nu.ca/programareas/
wildlife/researchreports](http://env.gov.nu.ca/programareas/wildlife/researchreports)

Or direct link at:

[http://env.gov.nu.ca/sites/default/fil
es/bev_ek_survey_summary_report
_dec_17_2012.pdf](http://env.gov.nu.ca/sites/default/files/bev_ek_survey_summary_report_dec_17_2012.pdf)

2011 Beverly and Ahlak Population Survey

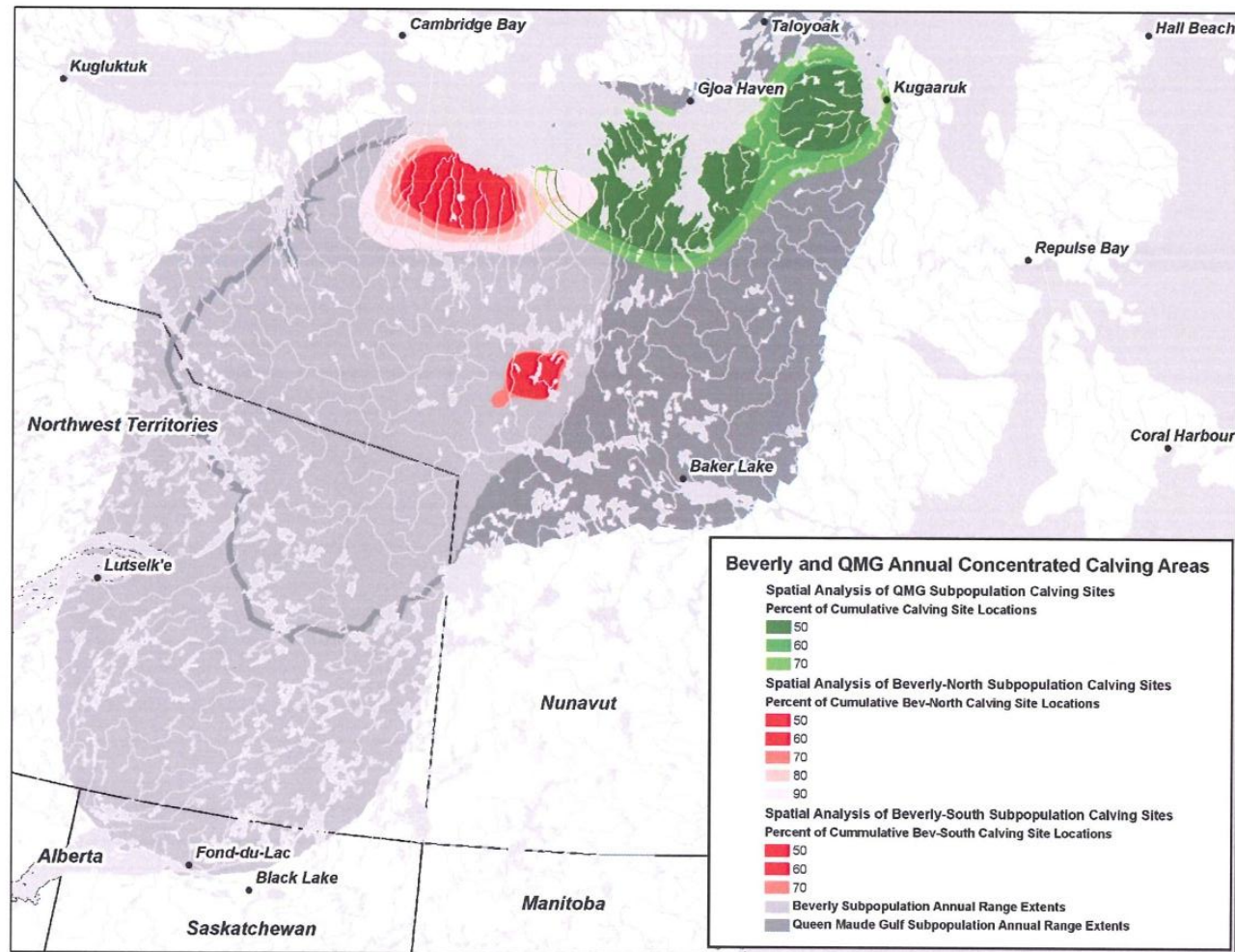
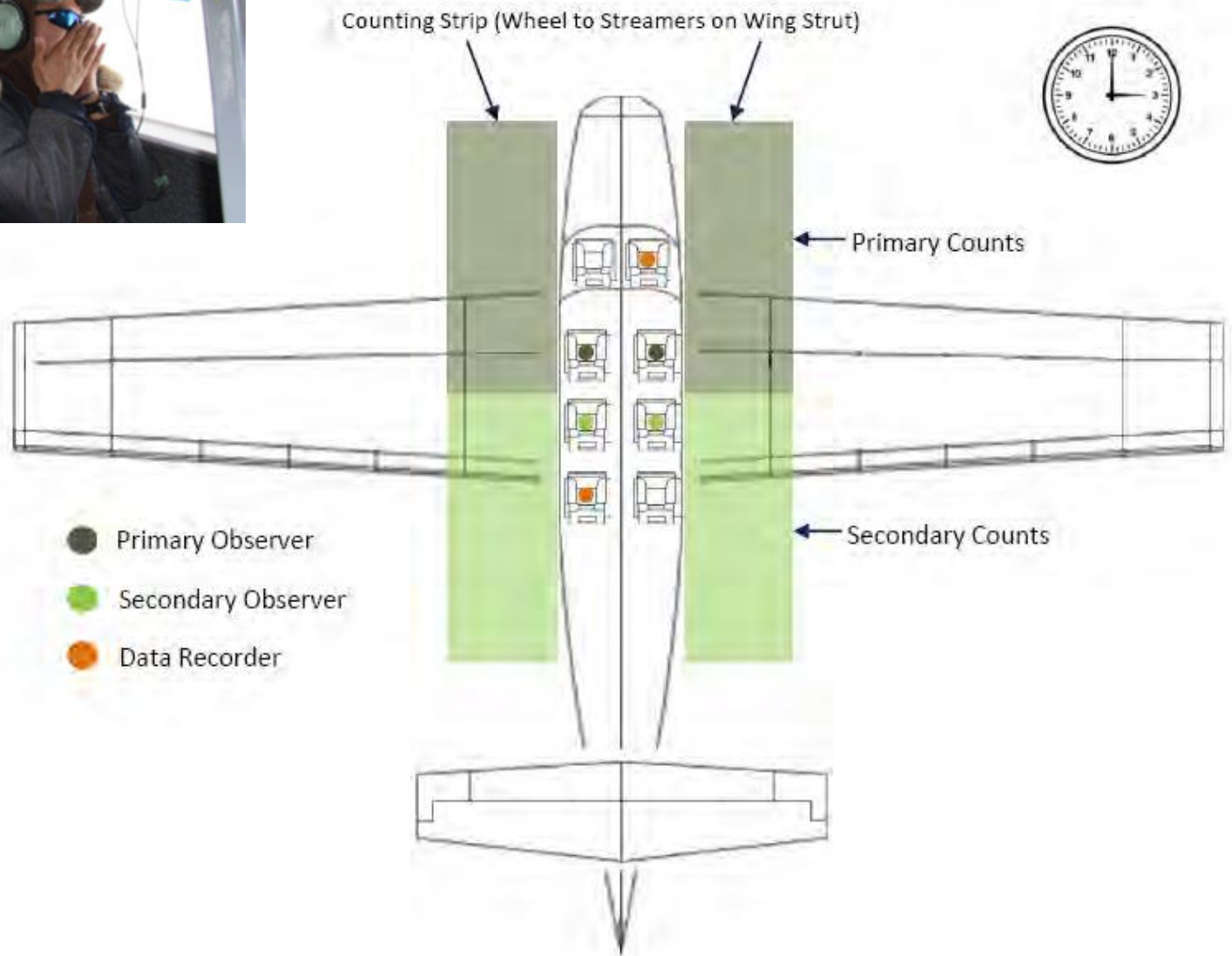


Figure 3

The annual concentrated calving areas of the Beverly and Queen Maud Gulf barren-ground caribou subpopulations based on a multi year fuzzy cluster analysis of barren-ground caribou collar locations and associated spatial analysis of indicated (Via significant changes in movement rates) calving sites (After Nagy et al, 2011).

2011 Beverly and Ahiak Population Survey





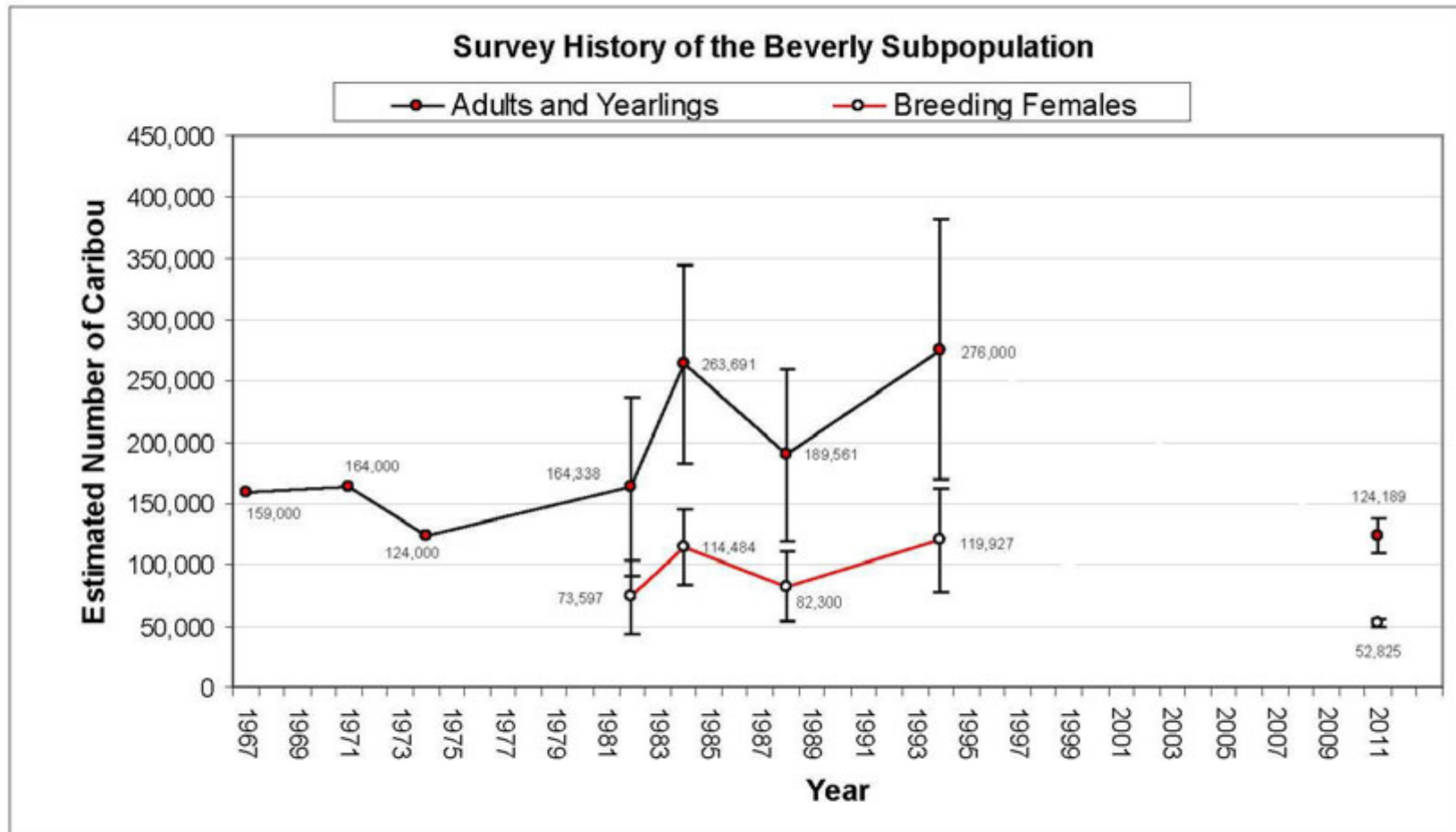
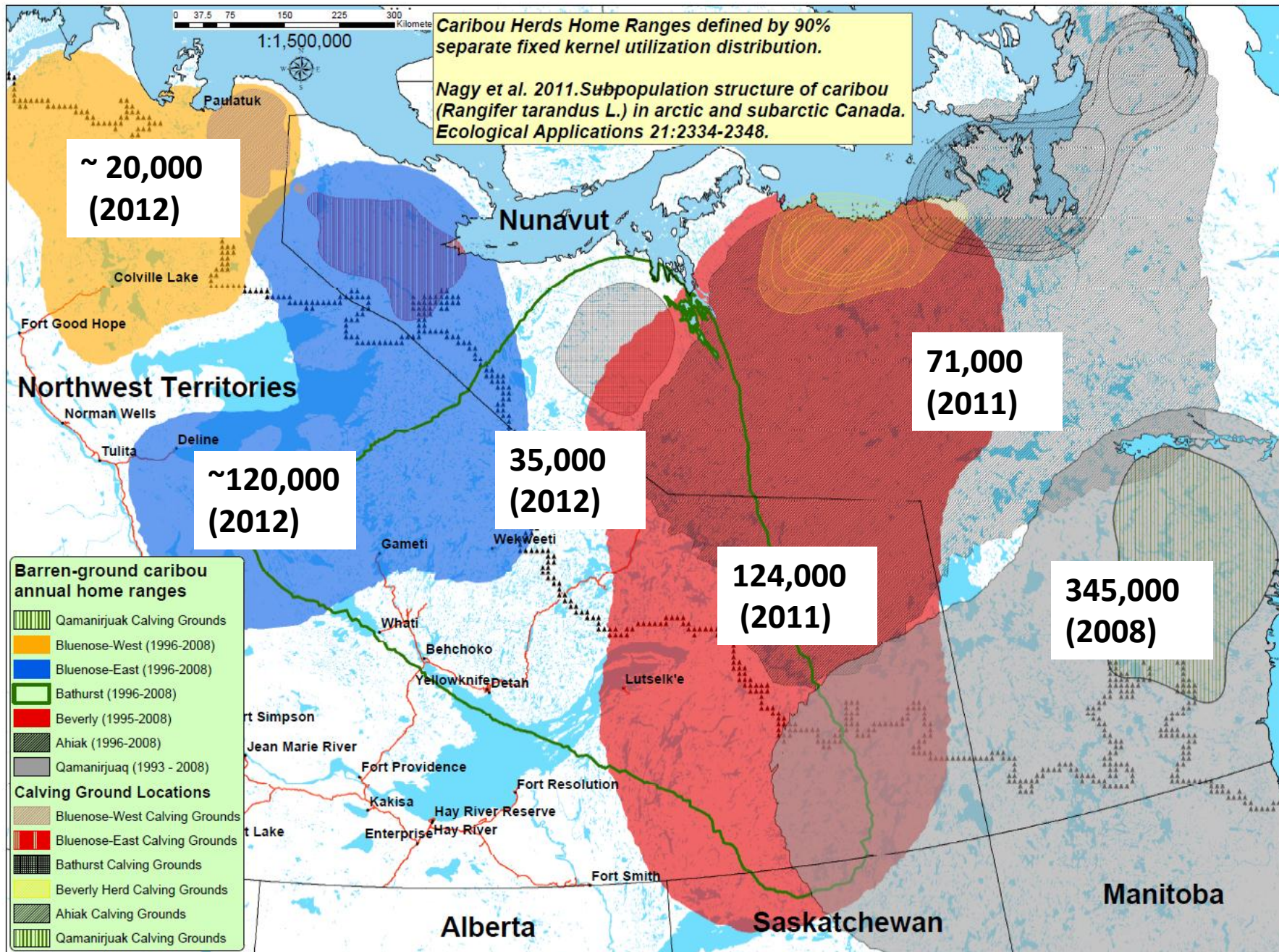


Figure 34 Survey histories of abundance estimates of adults and yearlings (1+ years of age) and breeding females for the Beverly subpopulation of taiga wintering mainland migratory barren-ground caribou on their southern annual concentrated calving area (1967 to 1994) and on their northern annual concentrated calving area (this report). Error bars indicate Standard Error of estimates.



Late winter recruitment surveys



Date	# Caribou classified	# Groups	Cow:Calf Ratio
24-27 March 2008	11,163	296	48.2 calves:100 cows (SE=1.7)
29 March - 3 April 2009	6,502	189	31.0 calves:100 cows (SE=1.4)
5-8 April 2010	8,255	402	55.9 calves:100 cows (SE=2.0)
5-9 April 2011	7,304		57 calves: 100 cows



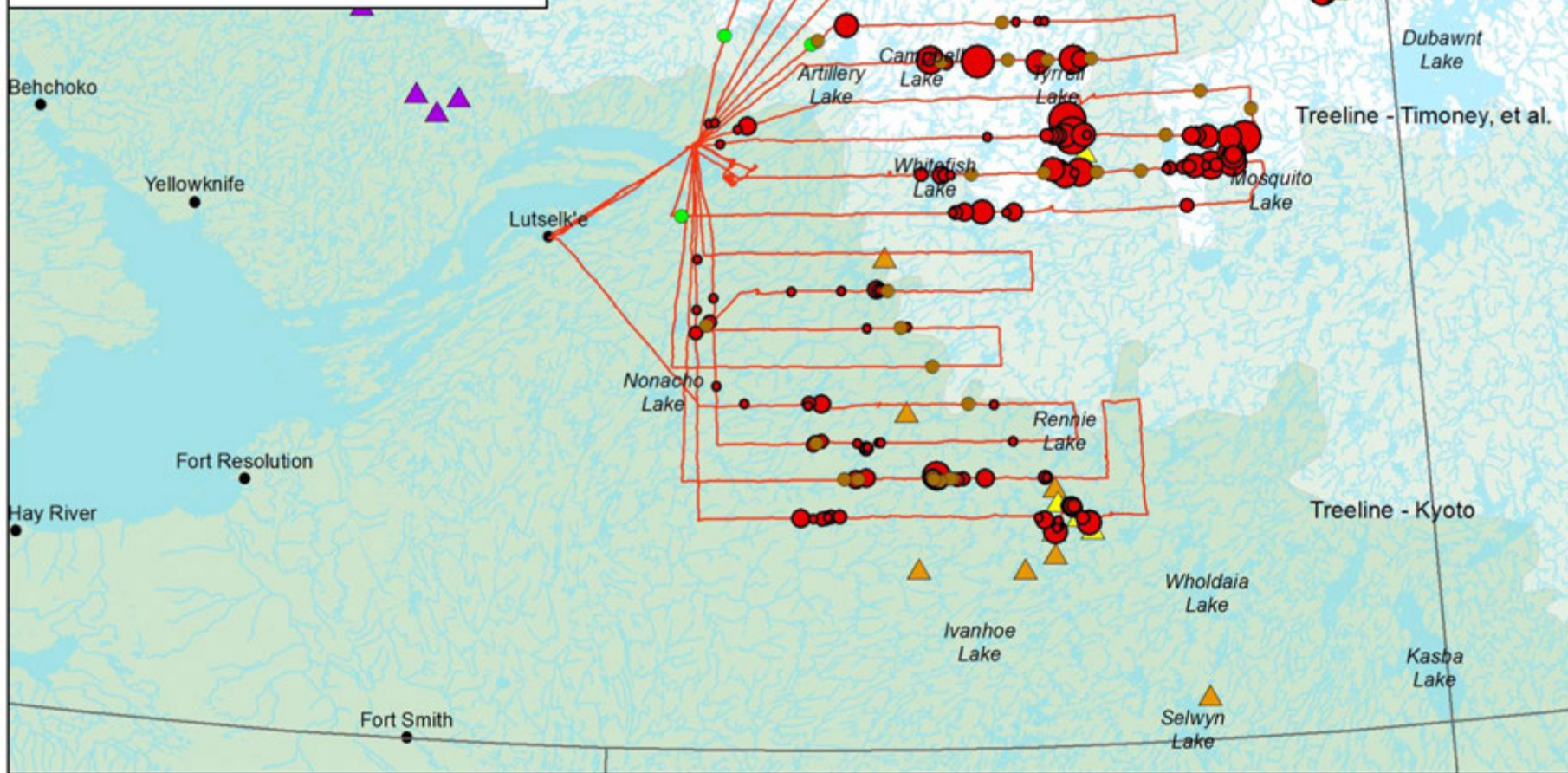
2013 Barren Ground Caribou

Winter distribution

Number of Caribou



0 50 100 150 Km



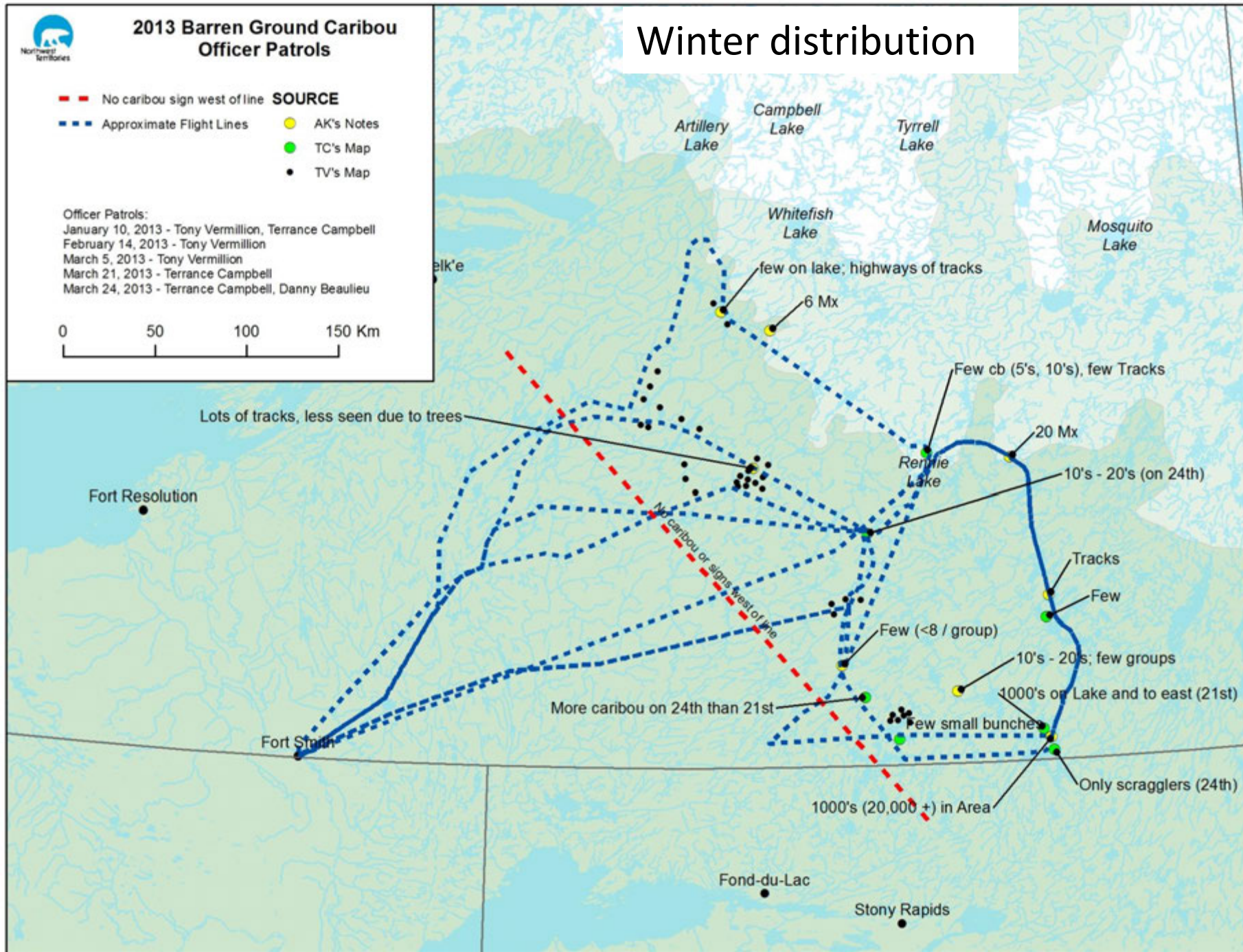


2013 Barren Ground Caribou Officer Patrols

- No caribou sign west of line
— Approximate Flight Lines
- SOURCE**
- AK's Notes
 - TC's Map
 - TV's Map

Officer Patrols:
January 10, 2013 - Tony Vermillion, Terrance Campbell
February 14, 2013 - Tony Vermillion
March 5, 2013 - Tony Vermillion
March 21, 2013 - Terrance Campbell
March 24, 2013 - Terrance Campbell, Danny Beaulieu

0 50 100 150 Km



Winter distribution

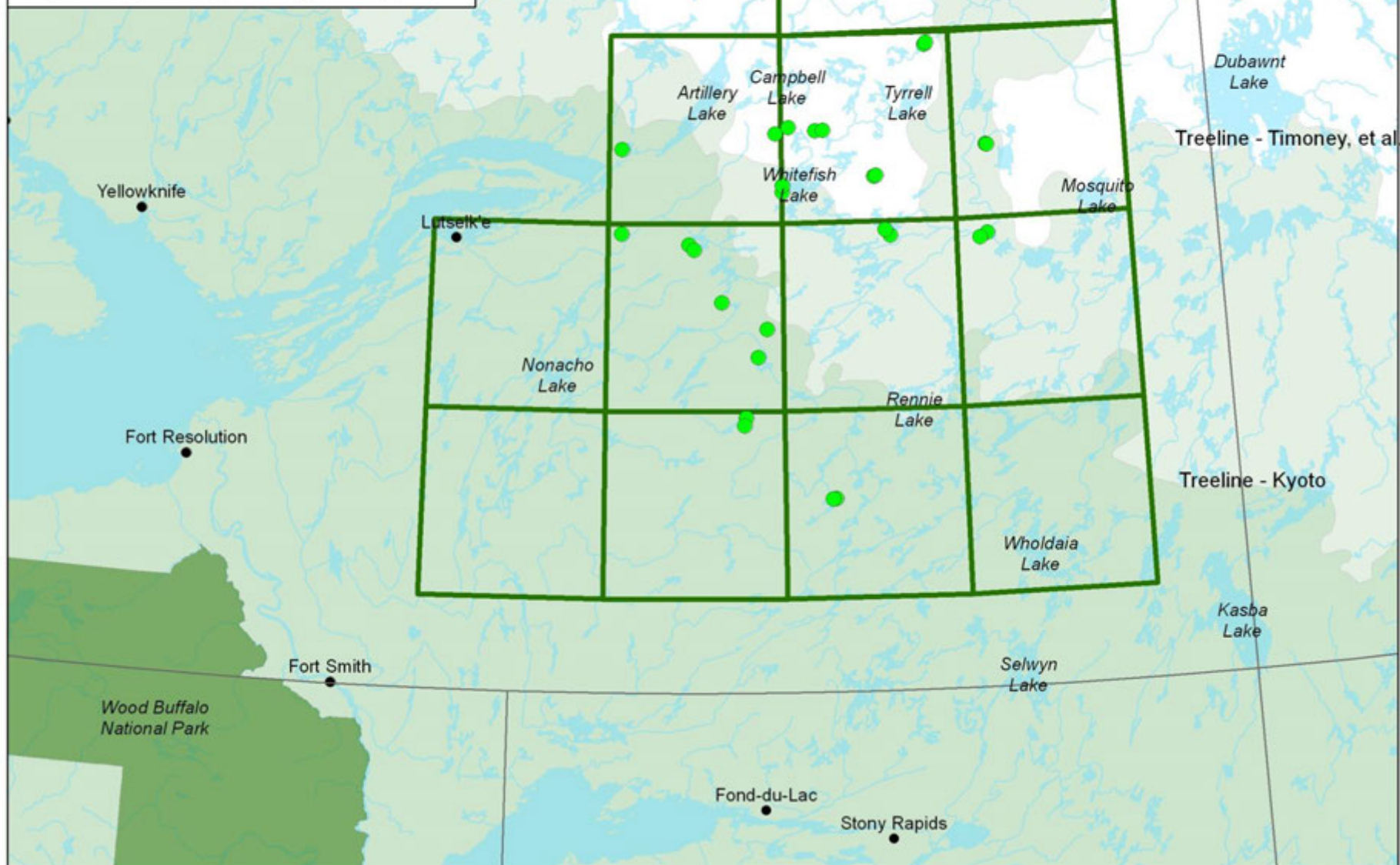


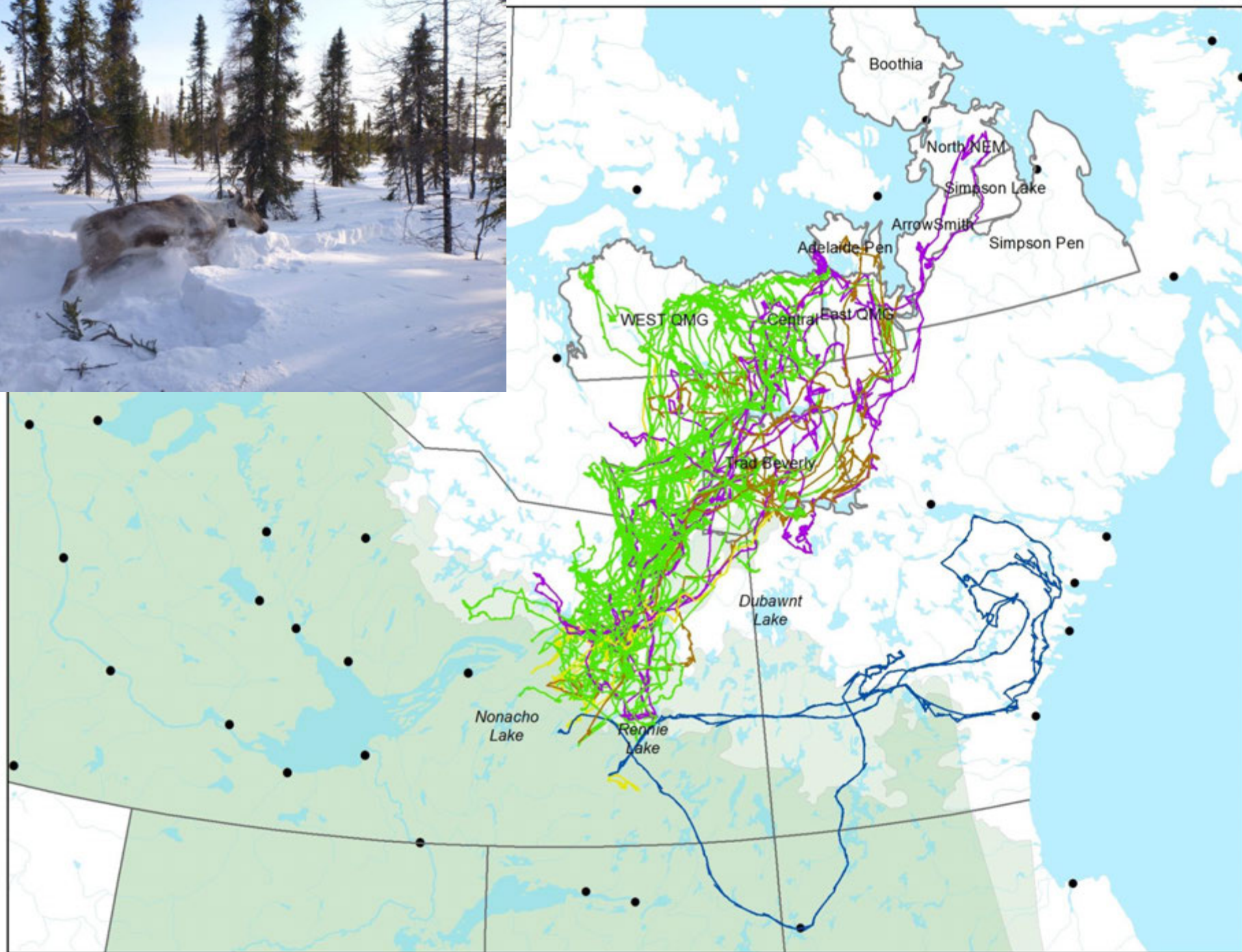
2012 Barren Ground Caribou Collar Deployments

● 2012 Deployment Locations

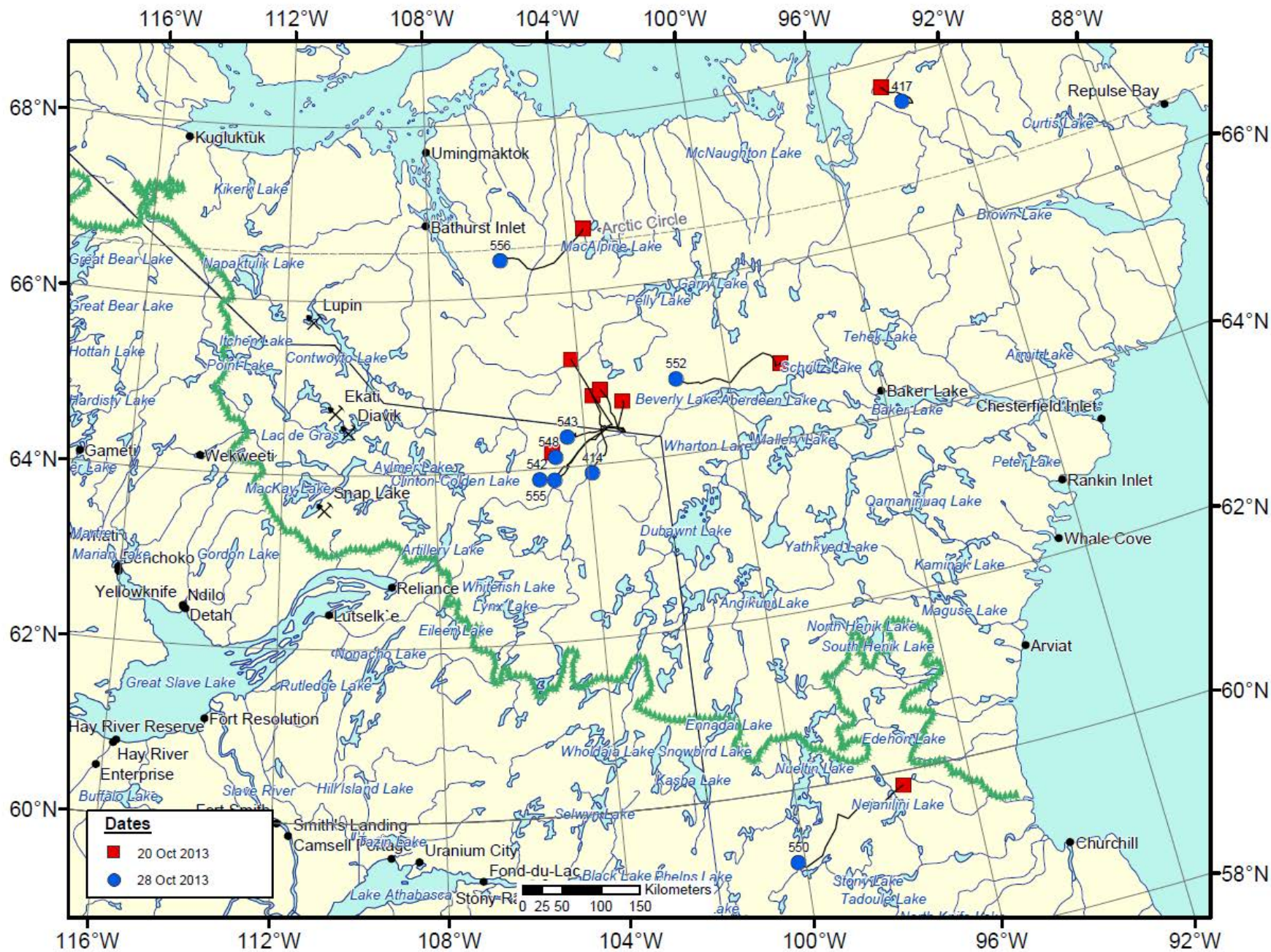
Study Area

0 50 100 150 200 Km

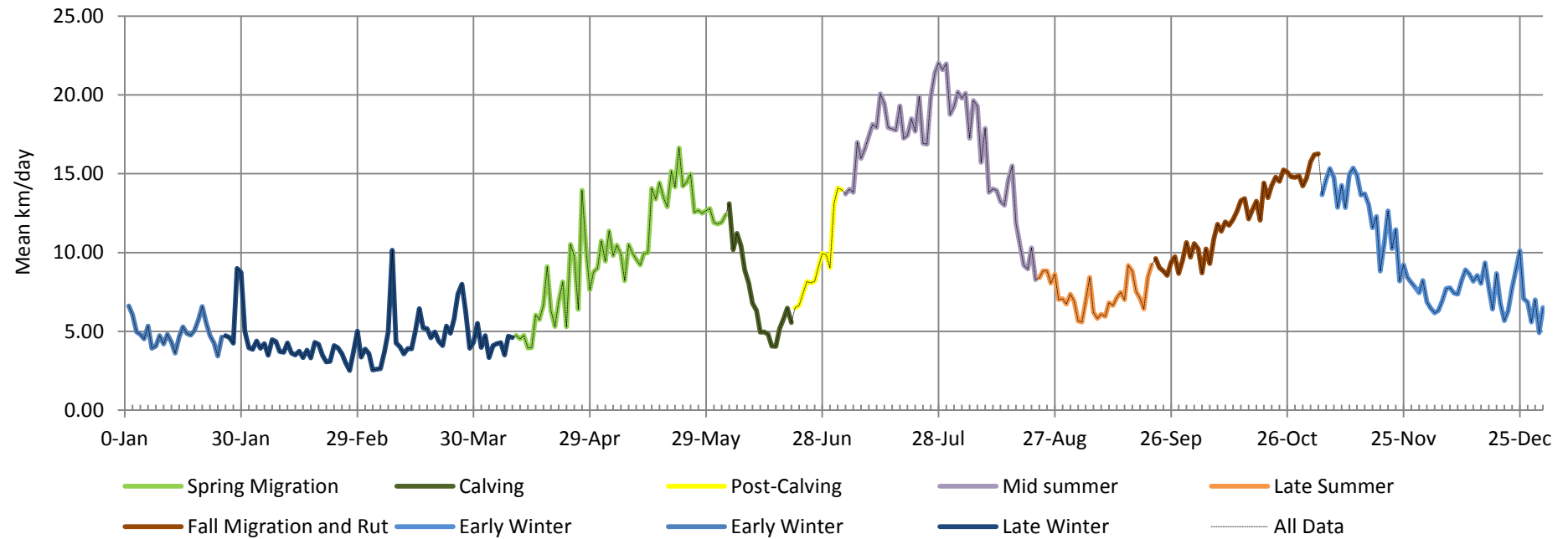




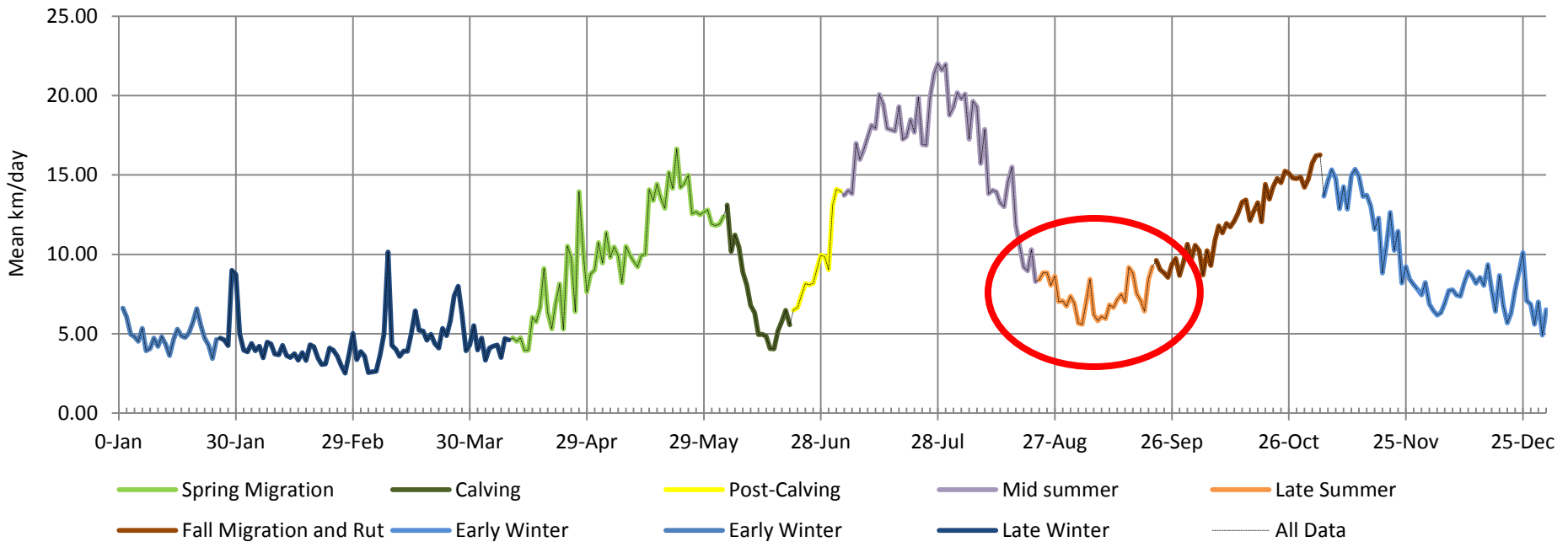
28 Oct 2013, Movements of barren-ground caribou cows collared primarily on winter ranges of Beverly & adjacent herds.



One Year in the Life of a Barren-ground Caribou



One Year in the Life of a Barren-ground Caribou

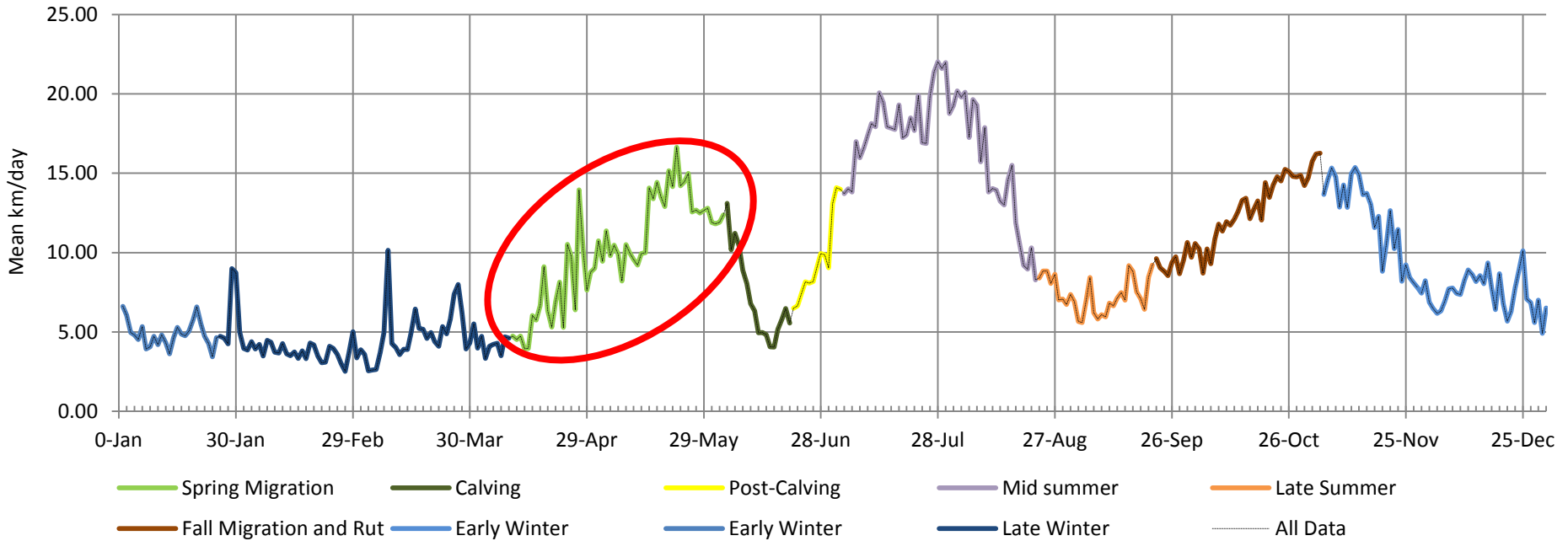


Mapping “Late Summer” habitat:

- know where to protect habitat
- guidelines for development
- monitor habitat quality



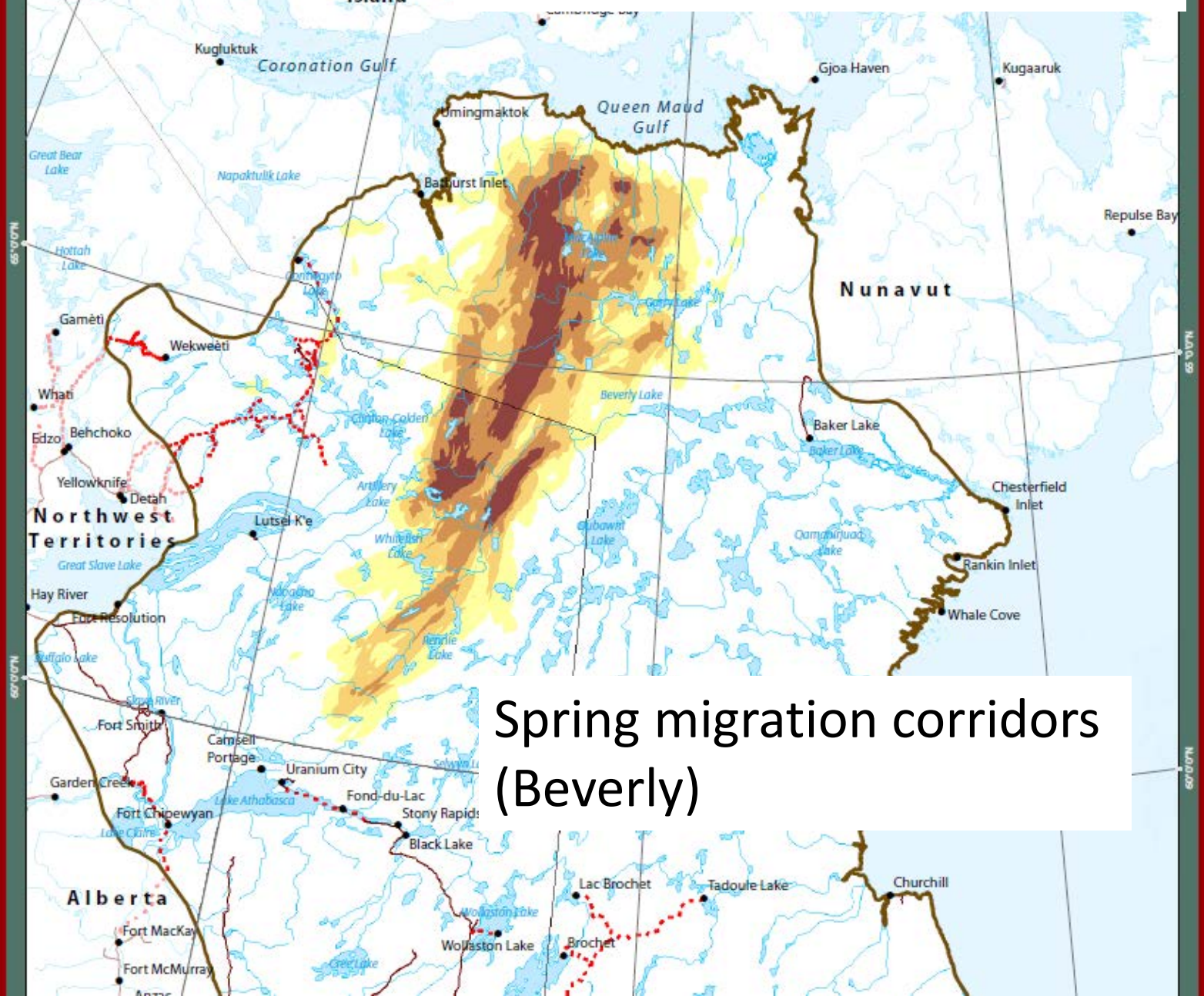
One Year in the Life of a Barren-ground Caribou



Map atlas project (GWNT and GN)

Example: Spring migration corridors

Map atlas project (GWNT and GN)

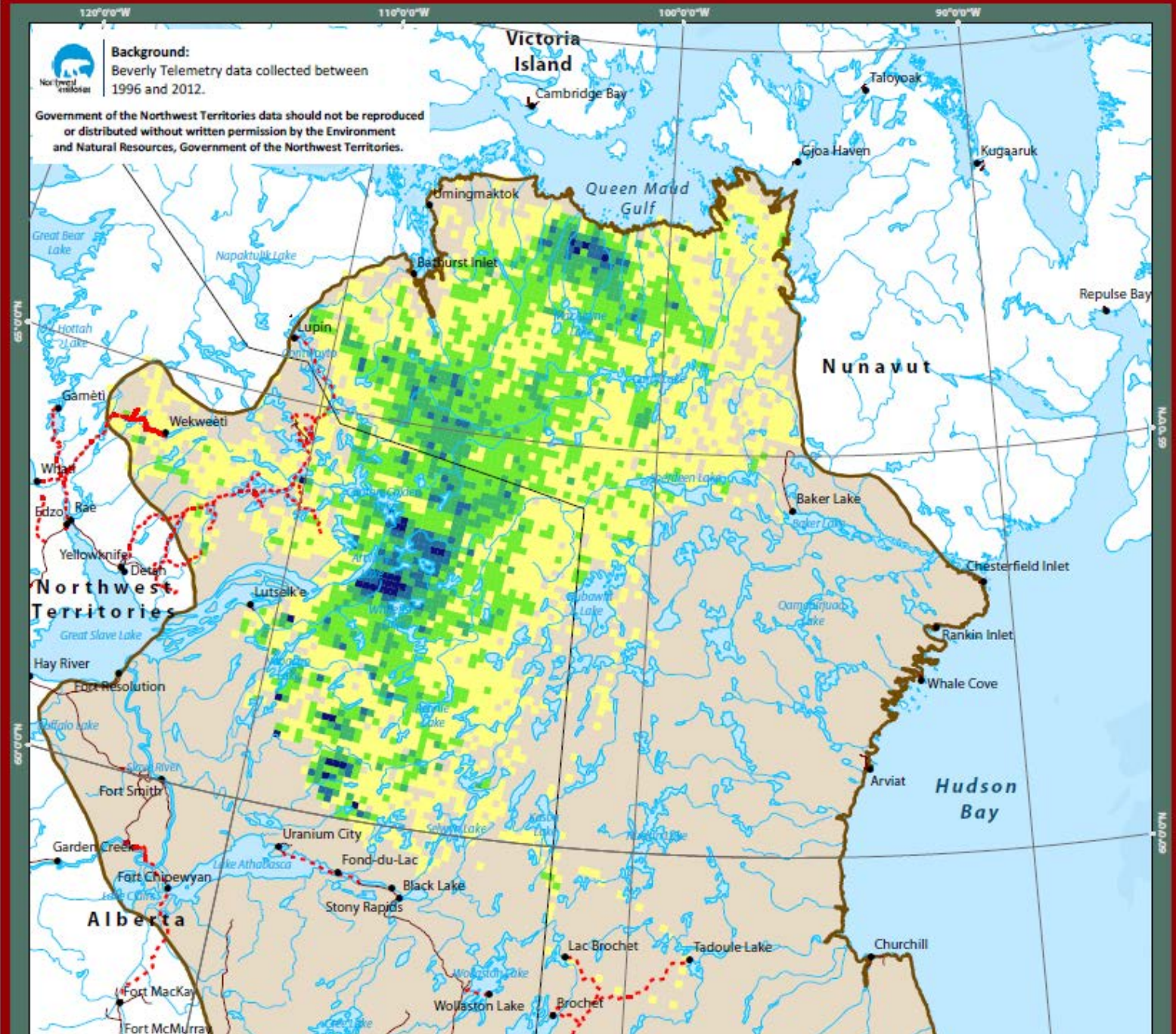


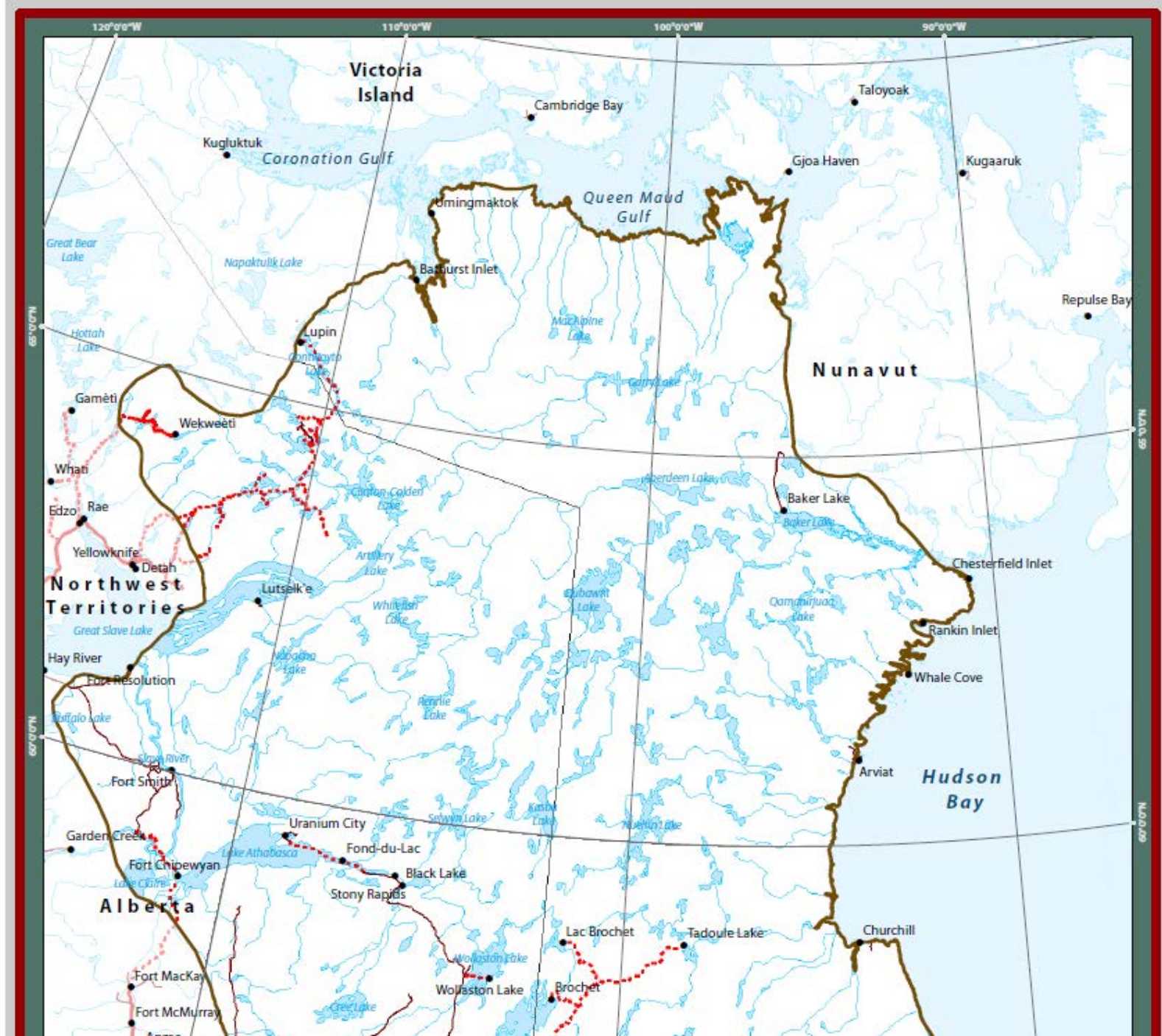
Spring migration corridors
(Beverly)

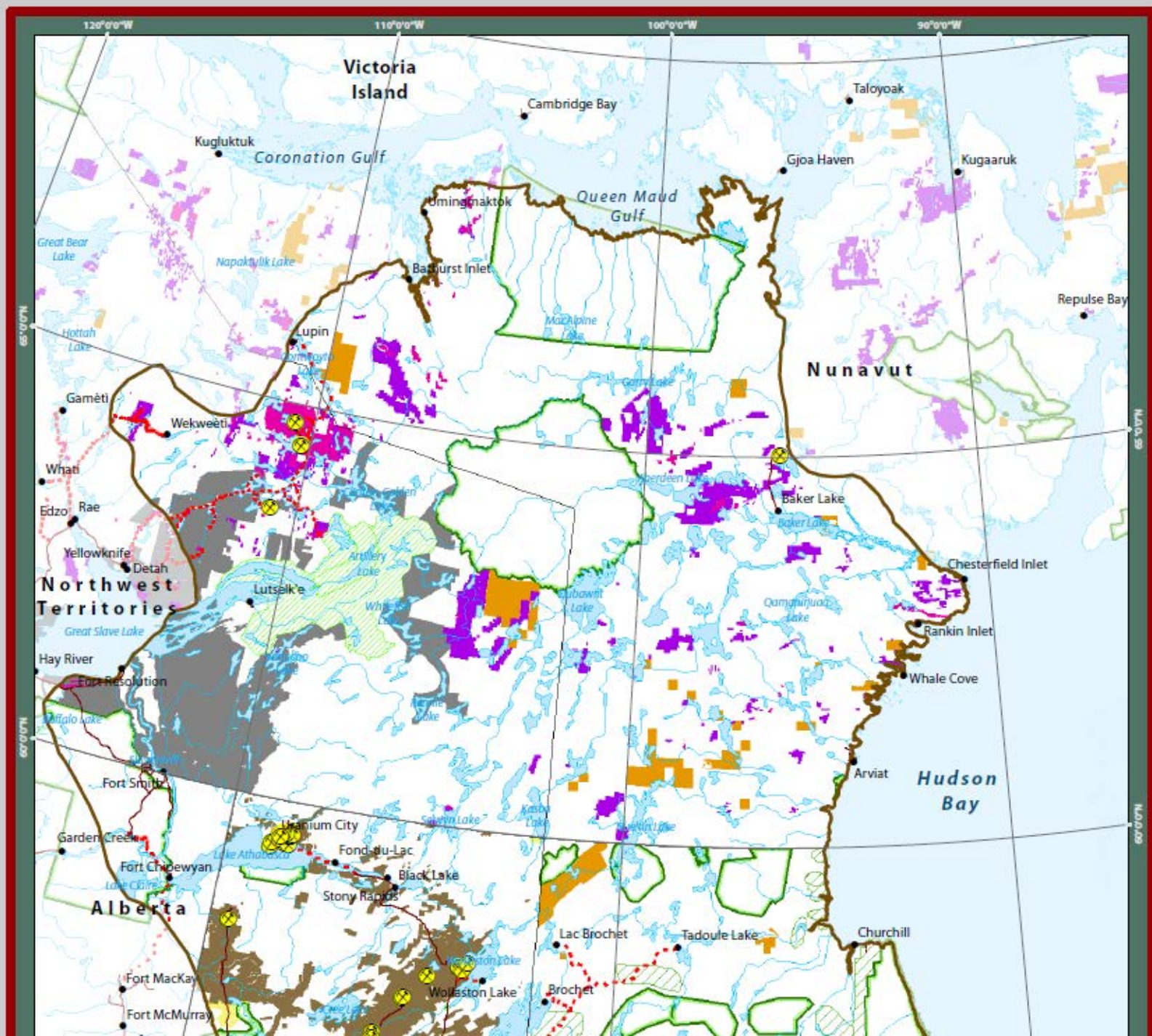


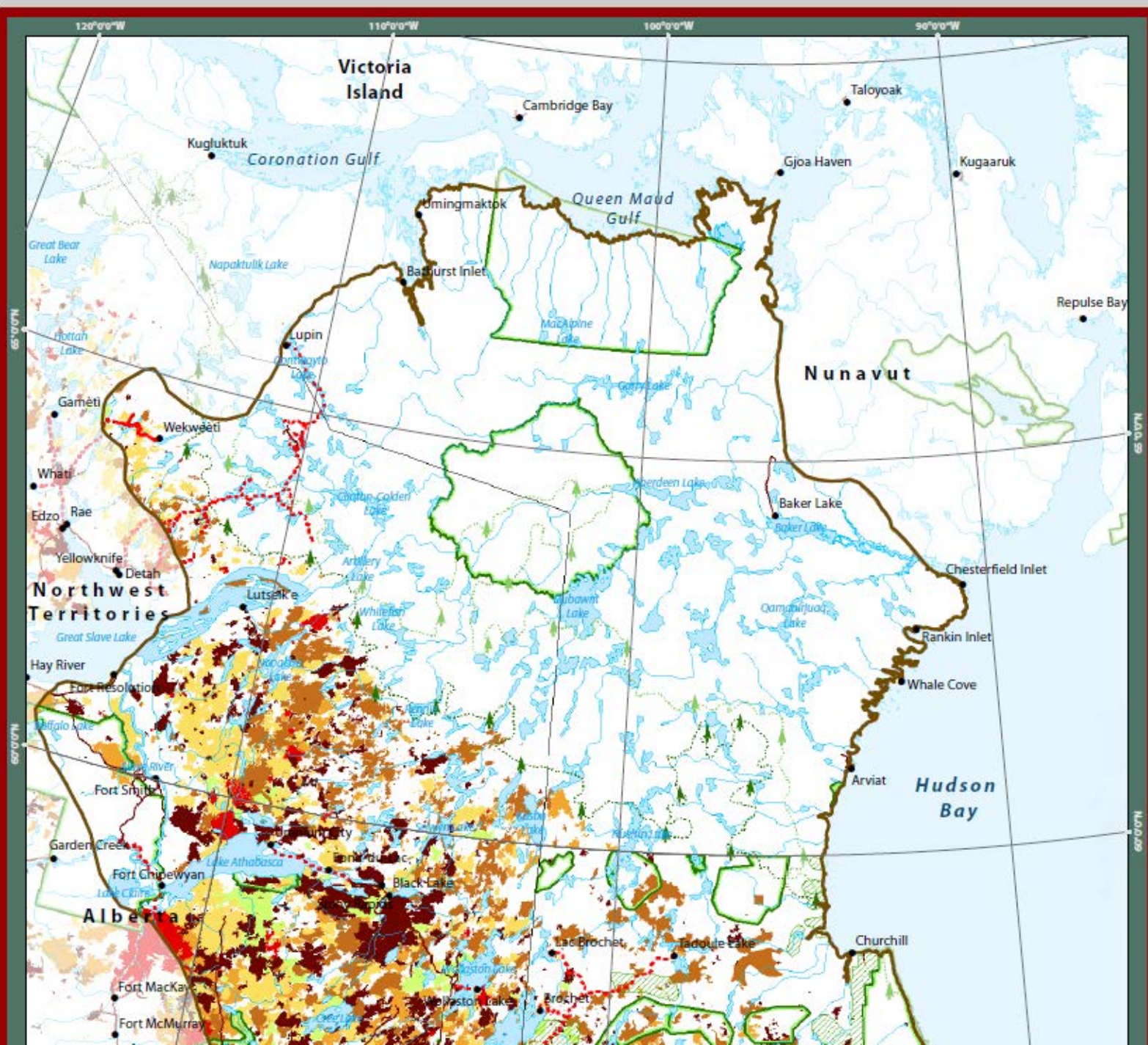
Background:
Beverly Telemetry data collected between
1996 and 2012.

Government of the Northwest Territories data should not be reproduced
or distributed without written permission by the Environment
and Natural Resources, Government of the Northwest Territories.









Thank You





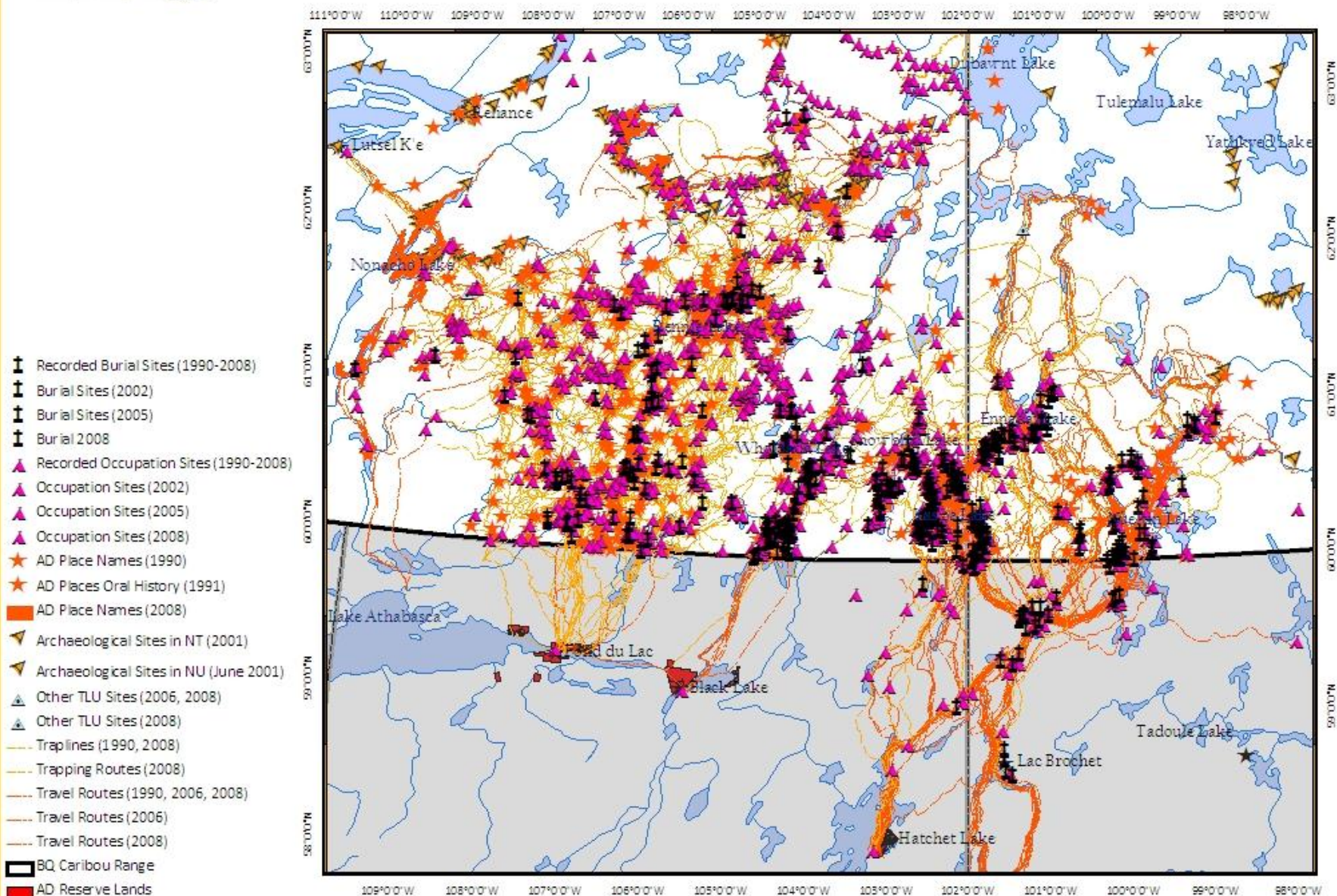
JOINT CARIBOU MONITORING PROJECT:

ATHABASCA COMMUNITY-BASED MONITORING

South Slave Regional Wildlife Workshop
Fort Smith, NWT 29-31 October 2013



Athabasca Denesuline Land Resource Data, North of 60



This information was created solely for a specific purpose within the Athabasca Denesuline First Nations. Its use by anyone else or for any other purpose may not be appropriate. It is entirely the responsibility of any other user to determine its suitability and any errors or omissions. For data details and citations please refer to the data dictionary. PACTeam Canada Inc & Prince Albert Grand Council. UTM NAD 83 zone 13. March 2009.



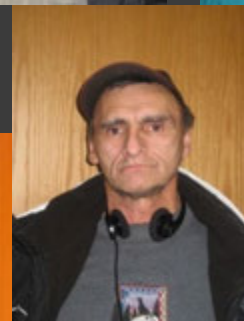
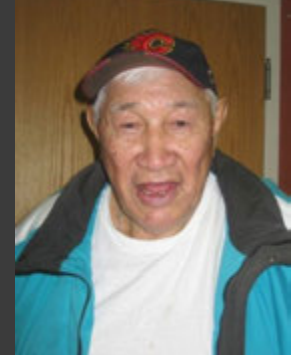
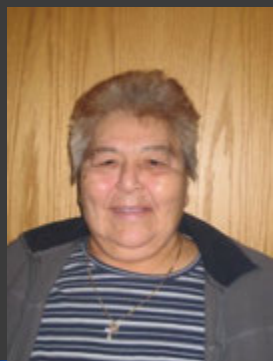
Caribou Project

- ◎ Partnership

- Athabasca Communities
- Government of NWT
- Province of Saskatchewan (2009-2011)

- ◎ Began in 2009





Priorities - caribou

- ◉ Education and Awareness
- ◉ Monitoring
- ◉ Information sharing/consultation
- ◉ Management
- ◉ Harvest Data Collection



Education & Awareness



- Youth involvement
- Development of Athabasca Denesuline Youth and Elder Cultural Camp: Caribou

Culture Camp: Caribou

- Cochrane River Camp
(March 20-25th, 2011)
- Black Lake – 2012
 - Blizzard
- Fond du Lac – 2013
 - March 10-15th, 2013
- Fall tundra hunt – 2013
(postponed)
- Hatchet Lake -2013



Anatomy & Language











Elder Knowledge

- ⦿ Partnered with Steve Kasstan – Simon Fraser University
- ⦿ Wholdaia Lake, NWT
- ⦿ Past caribou crossing
- ⦿ Important hunting area
- ⦿ Dene respect for caribou
 - Physically
 - Culturally
 - Spiritually



Elder knowledge

- ⦿ Recorded Dene caribou stories
- ⦿ Dene laws
- ⦿ Traditional Ecological Knowledge



Caribou Monitoring



GNWT

University of Calgary

2012-13 hunts: 54 samples

Management

- Internal capacity development
 - Participate in:
 - BQCMB meetings (observer)
 - Caribou Management workshops
 - Review of project proposals for impact on caribou
 - Based on Interim Measures Agreement
 - e.g. Kiggavik Uranium Mine Proposal



Information sharing/Consultation

- Community Visits (2-4 times/year)
 - Denesuline First Nations
 - **Fond du Lac**
 - **Black Lake**
 - **Hatchet Lake**



Hunter Harvest Data Study

- ◉ Need to collect long-term, continuous record of harvest levels for each community
- ◉ Need to determine “basic needs level” of AD
 - Protect harvesting traditions/culture
 - Protect land



Harvest Data Study

⦿ Data collected:

- Species
- Number
- Male/female
- Date
- Area on map
- observations

Harvest Data Study

- ⦿ Data remains the ownership of the communities, held for them in confidence
- ⦿ Database will be developed and maintained
- ⦿ *Data Confidentiality Policy* developed to protect data and hunters

Harvest Data Study

- Completed for the 2012-13 winter season
- Will continue collection this fall/winter for caribou hunts



Contact: Tina Giroux

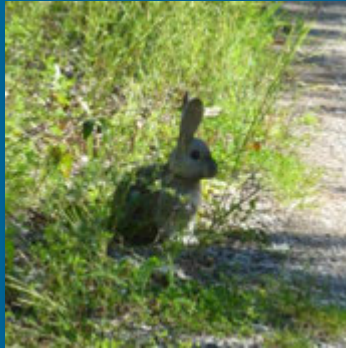
Office: (306) 765-2560 Email: tgiroux@adnlc.ca

South Slave Wildlife Monitoring



Hare & Small Mammals

- Fort Smith, Fort Resolution – Long Term
- Kakisa – New Lines
- Fort Providence - YK
- Territory wide sampling
- Long term data
- Can be linked to furbearer cycles and trapper success.



Mosquitoes

- Two Sample Sites in Fort Smith
- Sampled every two weeks
- Species and disease testing



Pelicans

- Large Colony on Slave River
- Noted on Mackenzie River
- Large groups seen near Big Island
- Also seen on Tathlina Lake

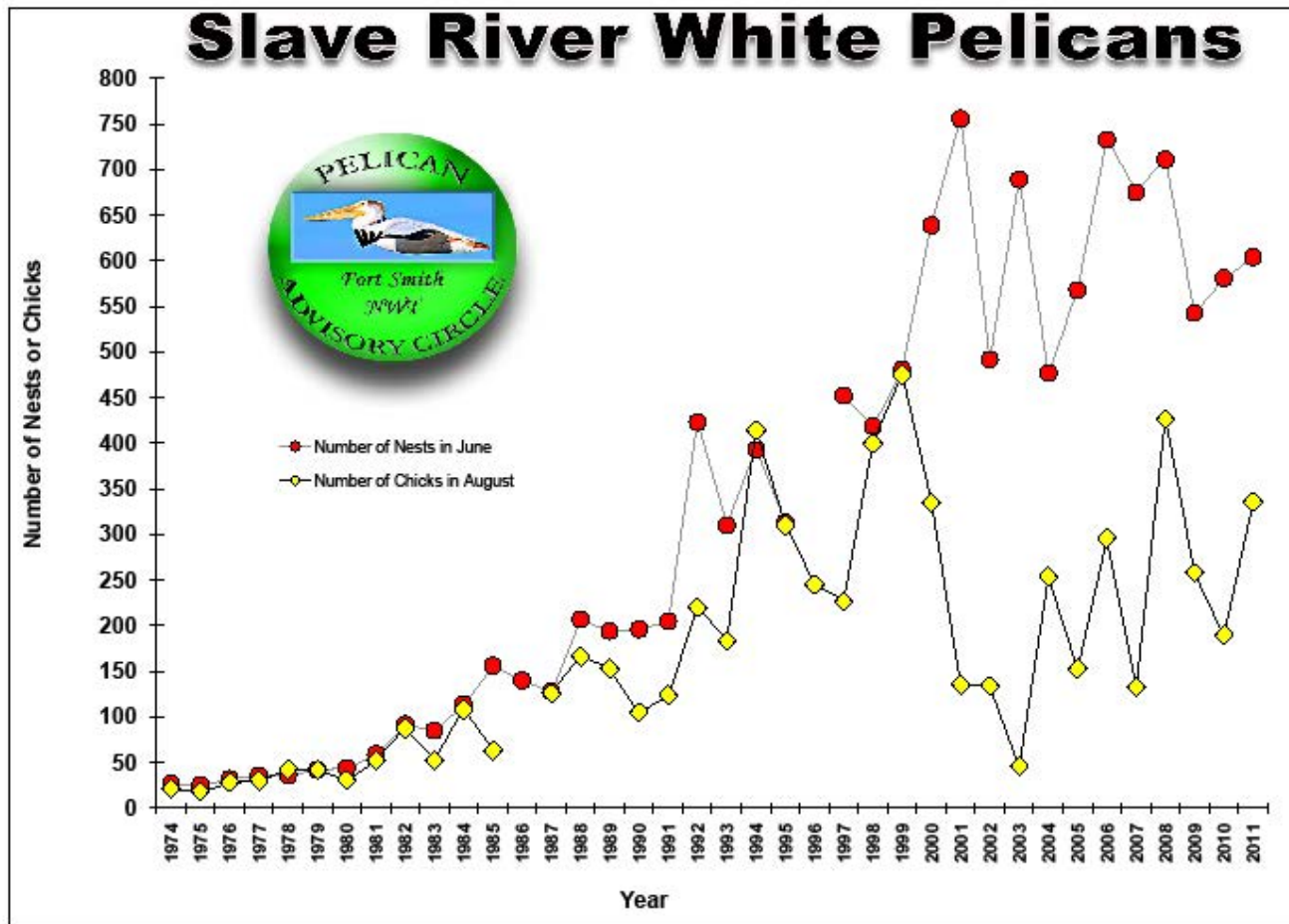


Pelicans

- ENR / Parks Canada / Pelican Advisory Circle
- Conduct 3 surveys each year to monitor population and productivity
- Sample & Carcass Collections



Pelicans



Range Expansion of Wildlife Species:

- Study & document range changes
- New parasites / diseases
- Predator/Prey Relationships
- Food/environment effects
- Local information critical



Disease Surveillance: Existing Diseases & Parasites

Tularemia



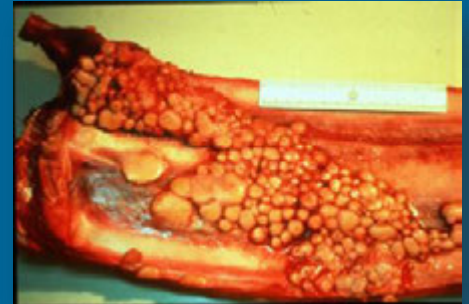
Sarcocystis



Winter Ticks



Tuberculosis



Anthrax



Hantavirus



Brucellosis



Surveillance for Existing / New Diseases



Canadian
Cooperative Wildlife
Health Centre



Centre Canadien
Coopératif de la Santé
de la Faune



- Diagnostic Services
- Chytrid Fungus
- Ranavirus
- White Nose Syndrome
- West Nile Virus
- Avian Influenza

Hunter Reports & Samples

A form titled "HUNTER REPORT FORM" with various fields for reporting a hunt. The form includes sections for "HUNTER INFORMATION", "HUNT INFORMATION", "ANIMAL INFORMATION", and "ANALYSIS INFORMATION". It also has a section for "ANALYST INFORMATION" and a "REMARKS" section at the bottom.

**Provides important information
on types & distribution of disease**

Collecting Samples

- Call ENR office – If possible we can come sample.
- If in the field – you can collect samples yourself.
 - Avoid contact with blood/fluids
 - Use gloves
 - For small animals we can take the entire carcass (double bag in garbage bags, be careful of claws/beaks/etc.).
 - Samples should be clearly labeled. The more information the better.

Collecting Samples

- Information to Collect:
 - ✓ Hunter/Collector
 - ✓ Date
 - ✓ Location (GPS preferred)
 - ✓ Species
 - ✓ Description
 - ✓ Relevant Samples
 - ✓ Photos
 - ✓ Any other information

Questions?



Bat Research in the South Slave Region



Laura Kaupas
University of Calgary
MSc. Student

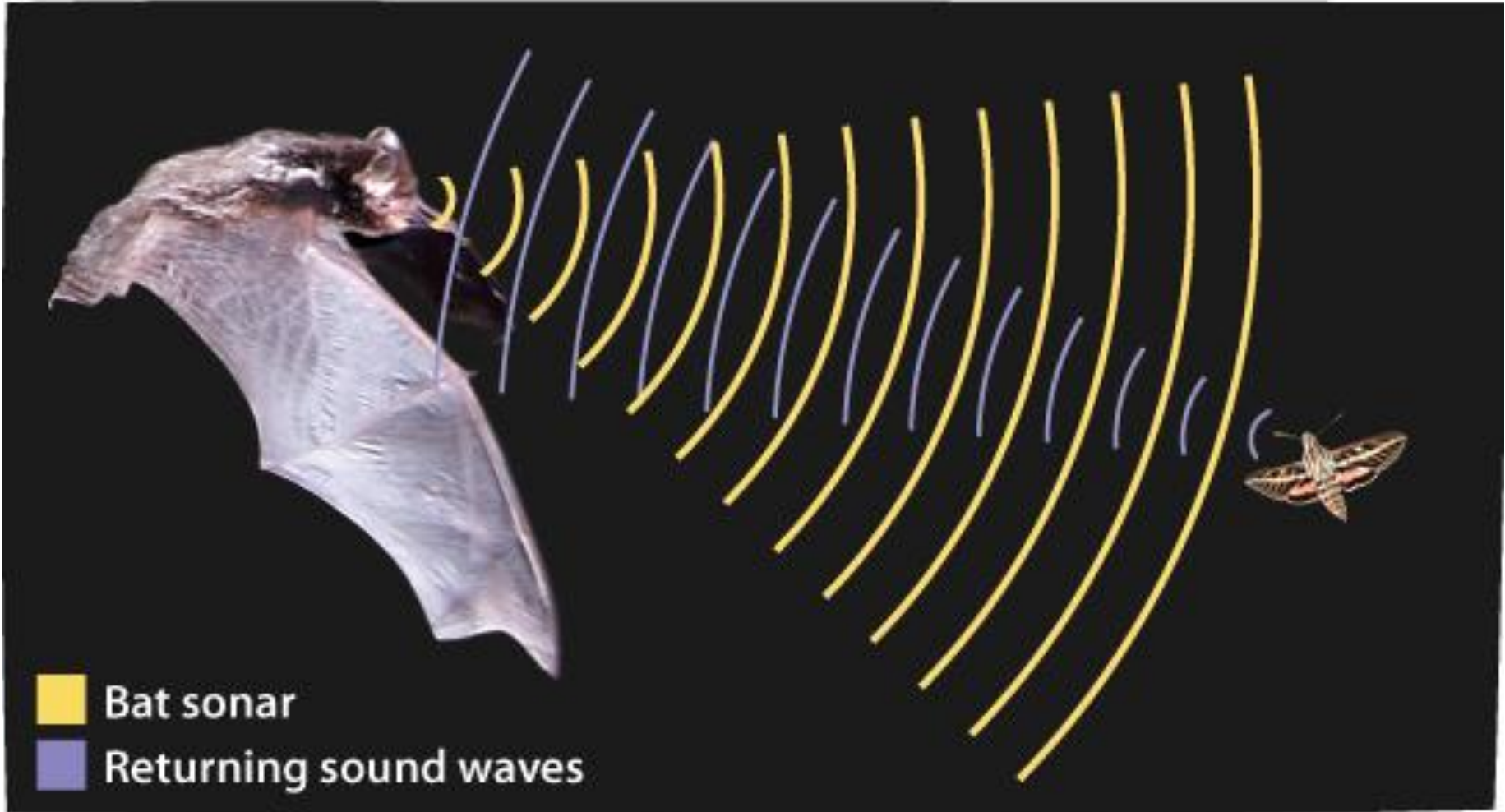


UNIVERSITY OF
CALGARY

Bats - A Quick Background!



Echolocation



Bats in the South Slave Region



little brown bat



big brown bat



Northern long-eared bat

Suspected - Migratory



silver-haired
bat



hoary bat



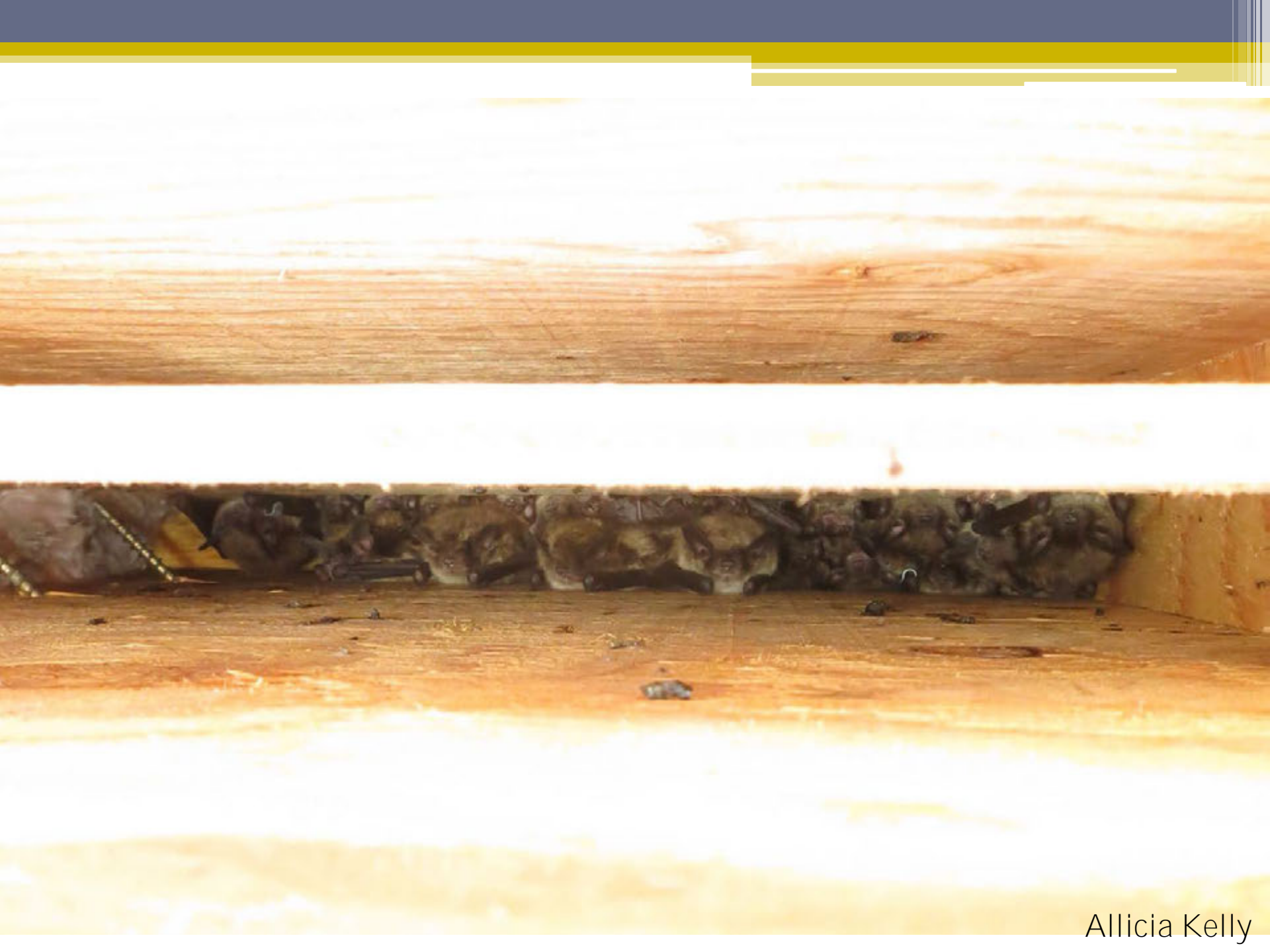
red bat

We have learned:

1. Roosting habitat
2. Reproductive timing/rates
3. Foraging behaviour

Summer/Winter Roosting Habitat





Reproductive Timing

- Give birth later in South Slave Region
 - 75 days pregnancy vs. 50-60 days in south
- Pups start flying later
 - time constraint before hibernation!
- Pups developing at same rate as in south
 - Mothers in good shape

Reproductive Rates

- Reproductive rate significantly lower in the South Slave Region than further south
 - 75-79% vs. 87-99%
- Lady Evelyn Falls in particular has low reproductive rate (49%)
- Have caught 1 female three years in a row now
 - Gave birth 1/3 years

Foraging Behaviour

- Short nights and short warm season
 - Are there more insects/are bats more efficient at foraging?
- The rate that bats catch insects in the South Slave Region is higher than further south

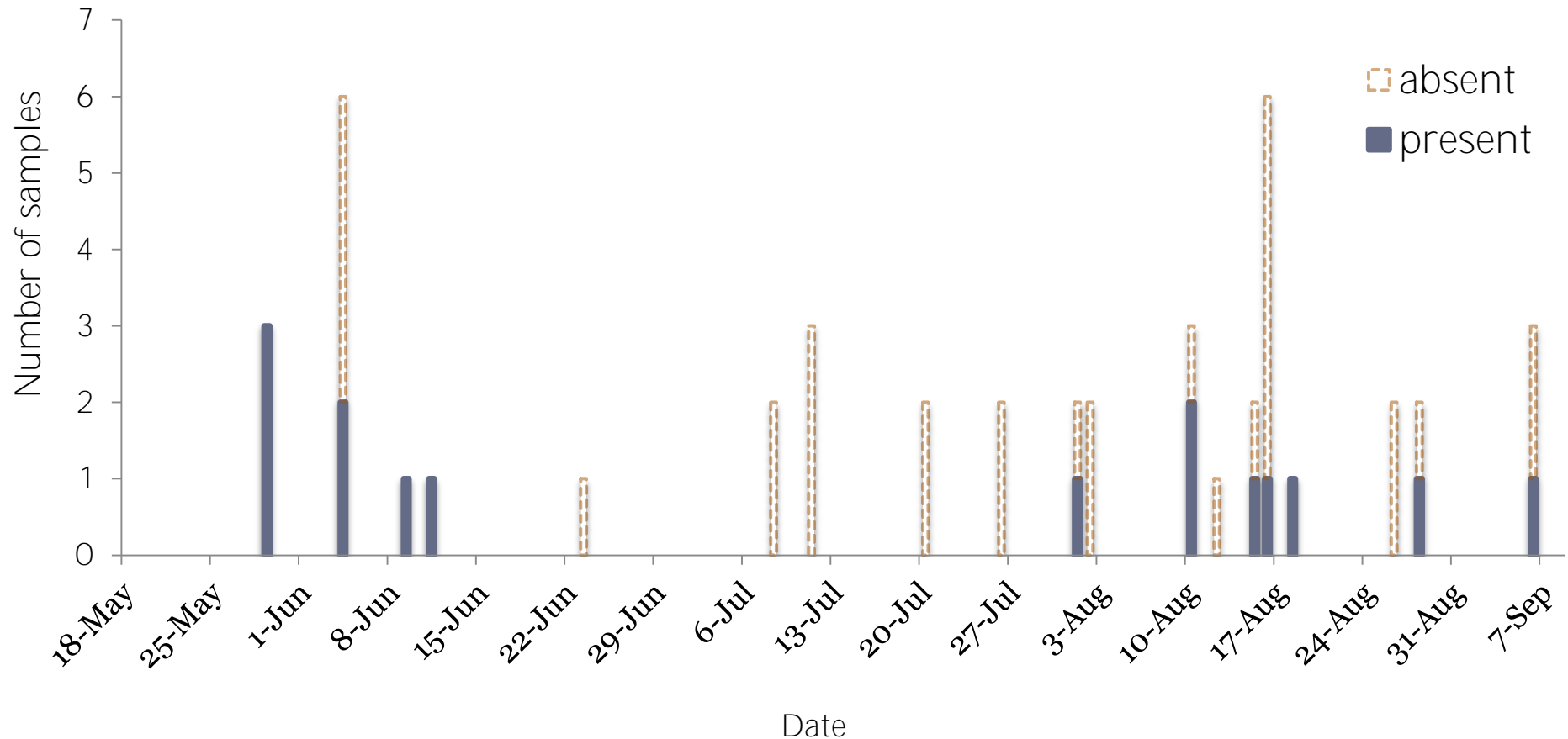


Foraging Behaviour

- Cold temperatures early and late in active season
 - What are they eating?

Foraging Behaviour

- Cold temperatures early and late in active season
 - What are they eating? Spiders!



What's next?

1. Life history of NWT bats
2. Northern long-eared bat
3. More survey information

Life History

- Continue to monitor the little brown bat populations
 - Build long term data set
- If reproductive rate lower
 - Do they live longer to compensate for this?
 - For all bats species in the region

Northern long-eared bat



- Tree roosting species
- Very little known
- Where are they roosting?
- Seasonal timings
- Foraging behaviour

Preliminary Data - Roosts



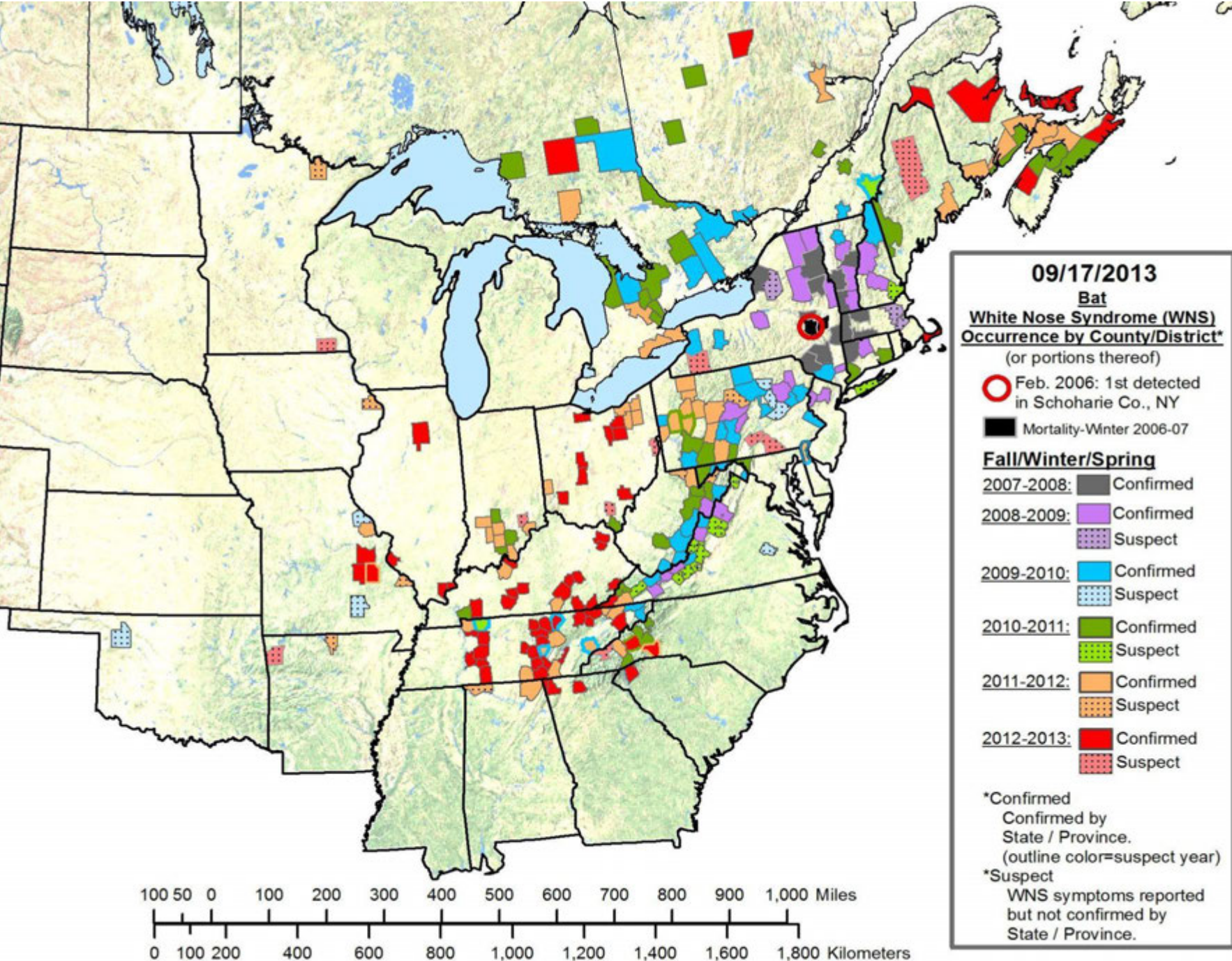
Surveying - Migratory Species

- Targeted netting
- Detectors
- What species?
- Passing through the area or spending the summer here?

White Nose Syndrome-

Pseudogymnoascus destructans





Map by: Cal Butchkoski, PA Game Commission

Summary

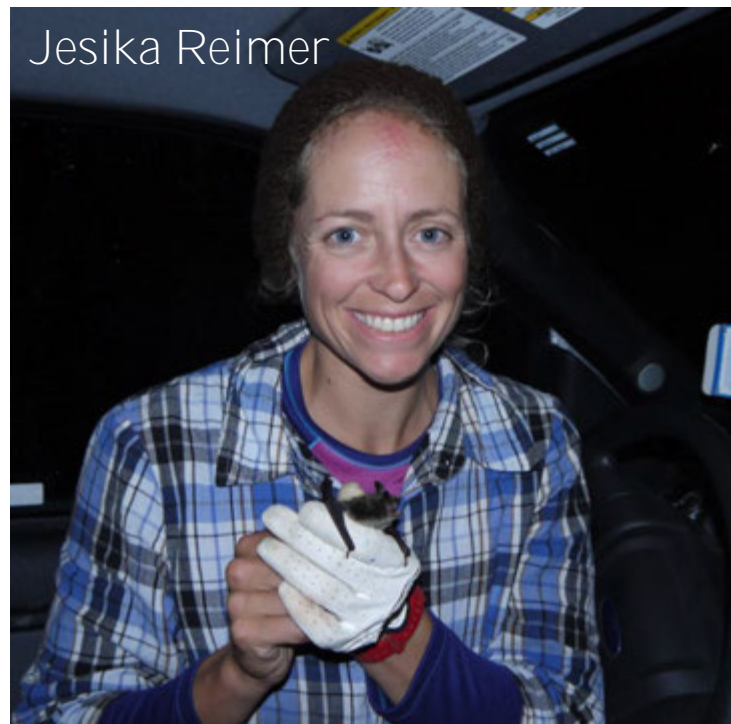
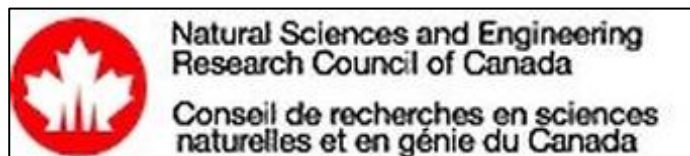
We have learned:

- Summer/winter roosting
- Reproductive timing/rates
- Foraging behaviour

Future research:

- Life history of NWT bats
- Northern long-eared bat
- More survey information
 - migratory species

Thank you!





Environment
Canada

Environnement
Canada

Canada

Whooping crane monitoring and research



Klaus Nigge

**3rd Biannual South Slave Regional
Wildlife Workshop
Fort Smith, NWT**

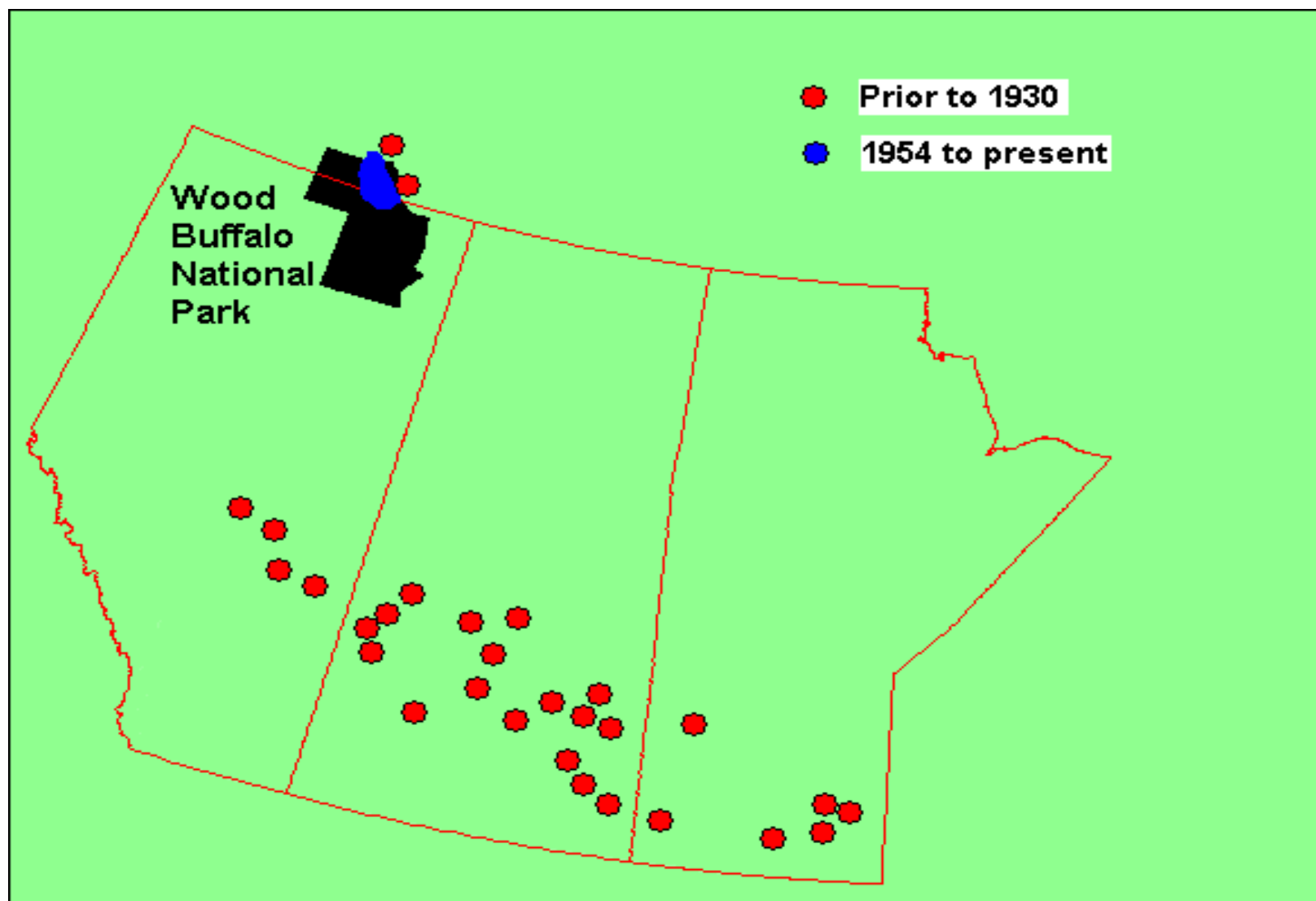
**Mark Bidwell
Canadian Wildlife Service
30 October 2013**



Whooping Cranes

- Tallest North American bird (5 feet tall, wingspan 7.5 feet)
- “Why are they called whooping cranes anyway?”
- One of the rarest bird species in the world (Endangered)
- Never very abundant (10,000)
- Generalists / specialists
- Only one population left, “Aransas-Wood Buffalo”





What do we know and what don't we know about Whooping Cranes?

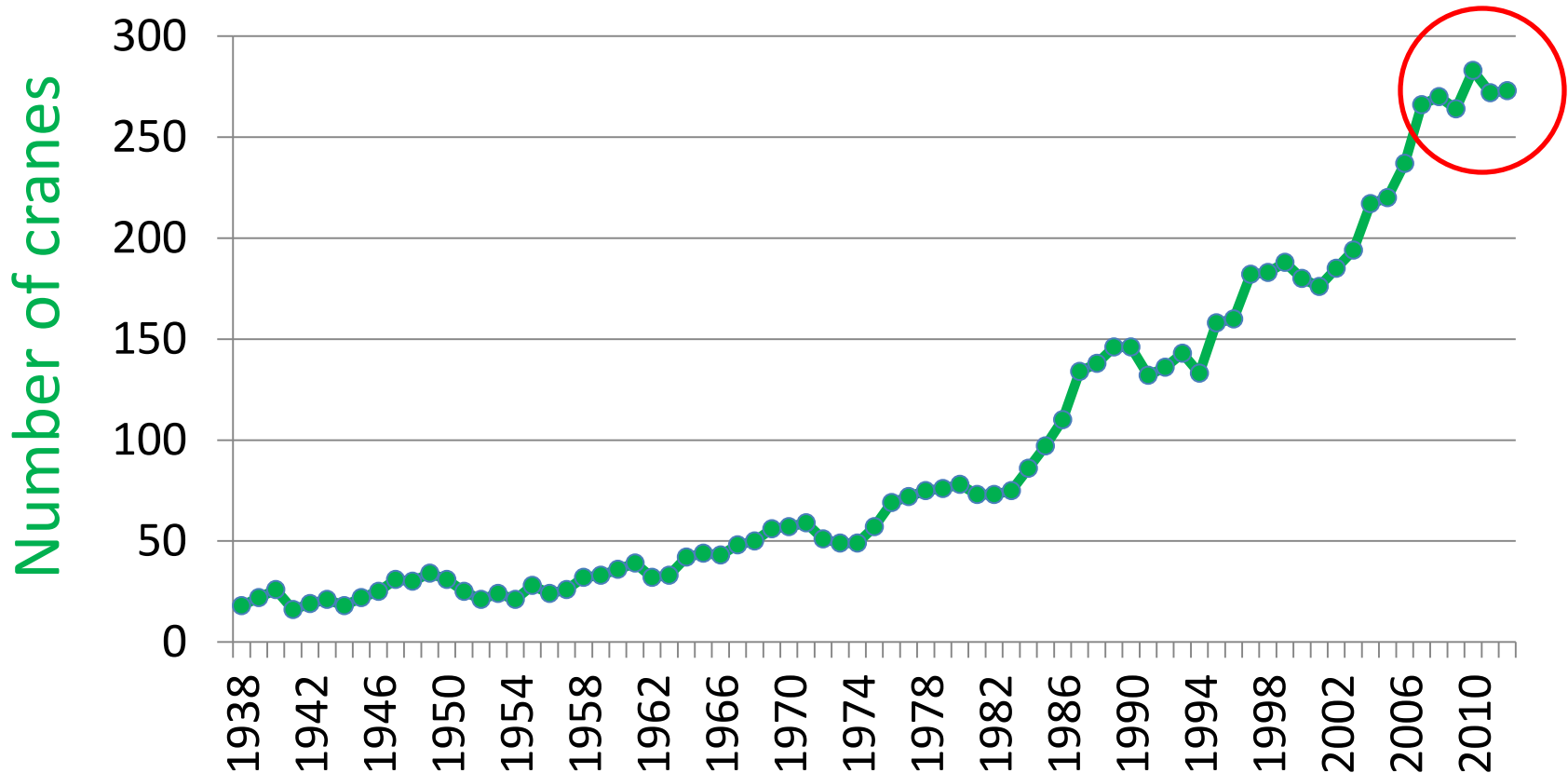
1. Population, breeding
2. Range, range expansion
3. Migration, threats



1. Population, breeding biology

- Population monitoring
 - How many cranes are there?
 - People want to know

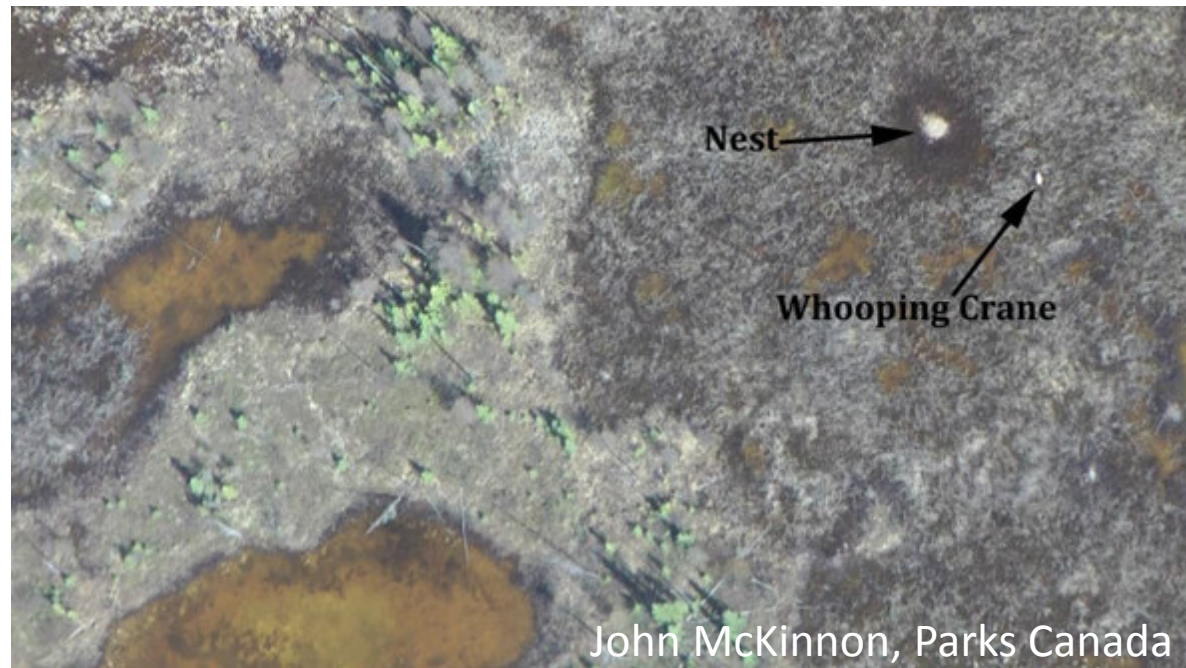
How many are there?



Counts are done in Texas during the breeding season when the cranes are concentrated in a smaller area and easier to count (Aransas National Wildlife Refuge is about 2/3 the size of Edmonton, WBNP is bigger than Switzerland).

2. Population, breeding biology cont'd

- Population monitoring
 - How many nests are there?
 - How successful are they at **making more** cranes during the breeding season?



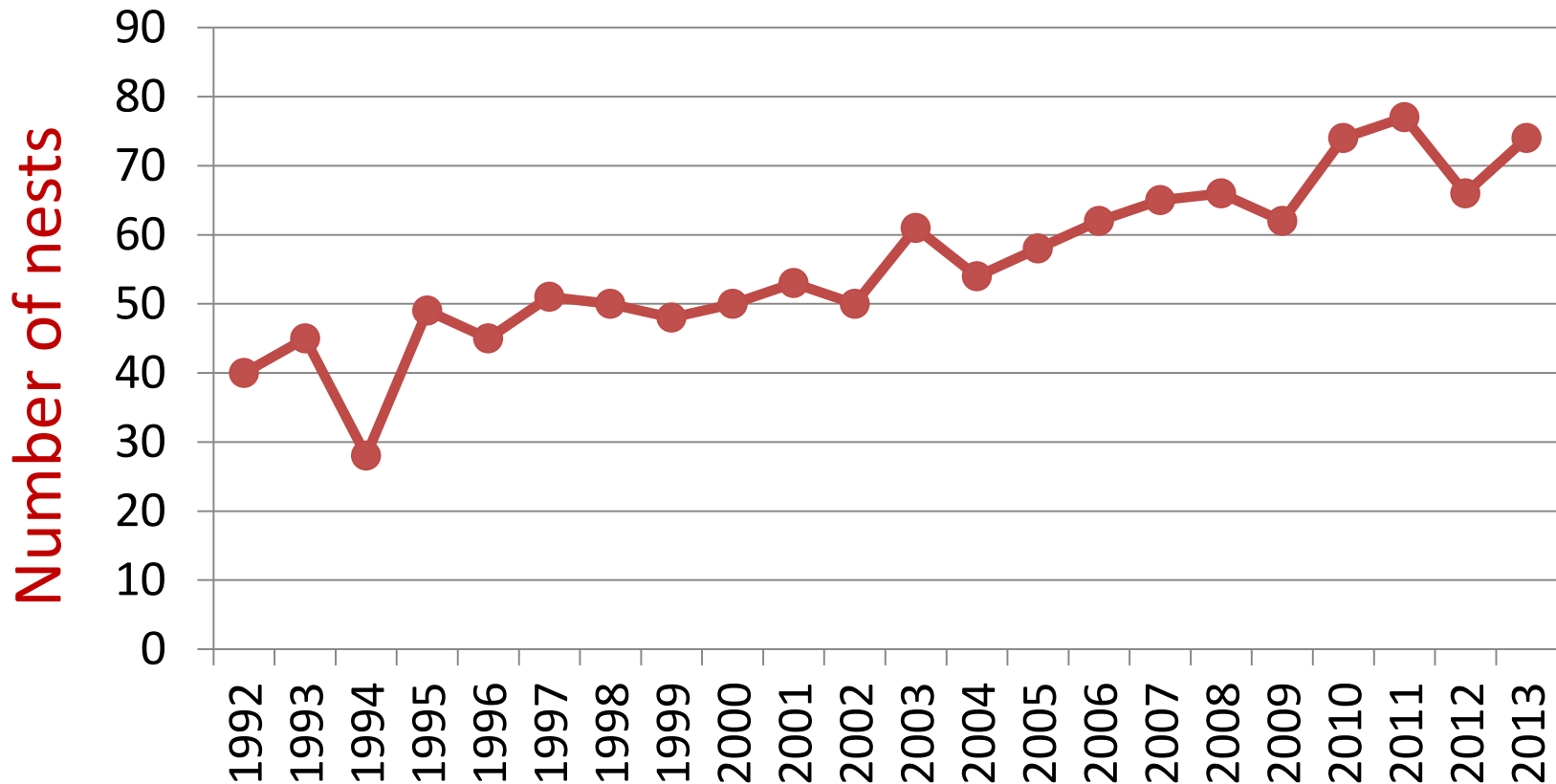


Marty Folk, Florida Fish & Wildlife



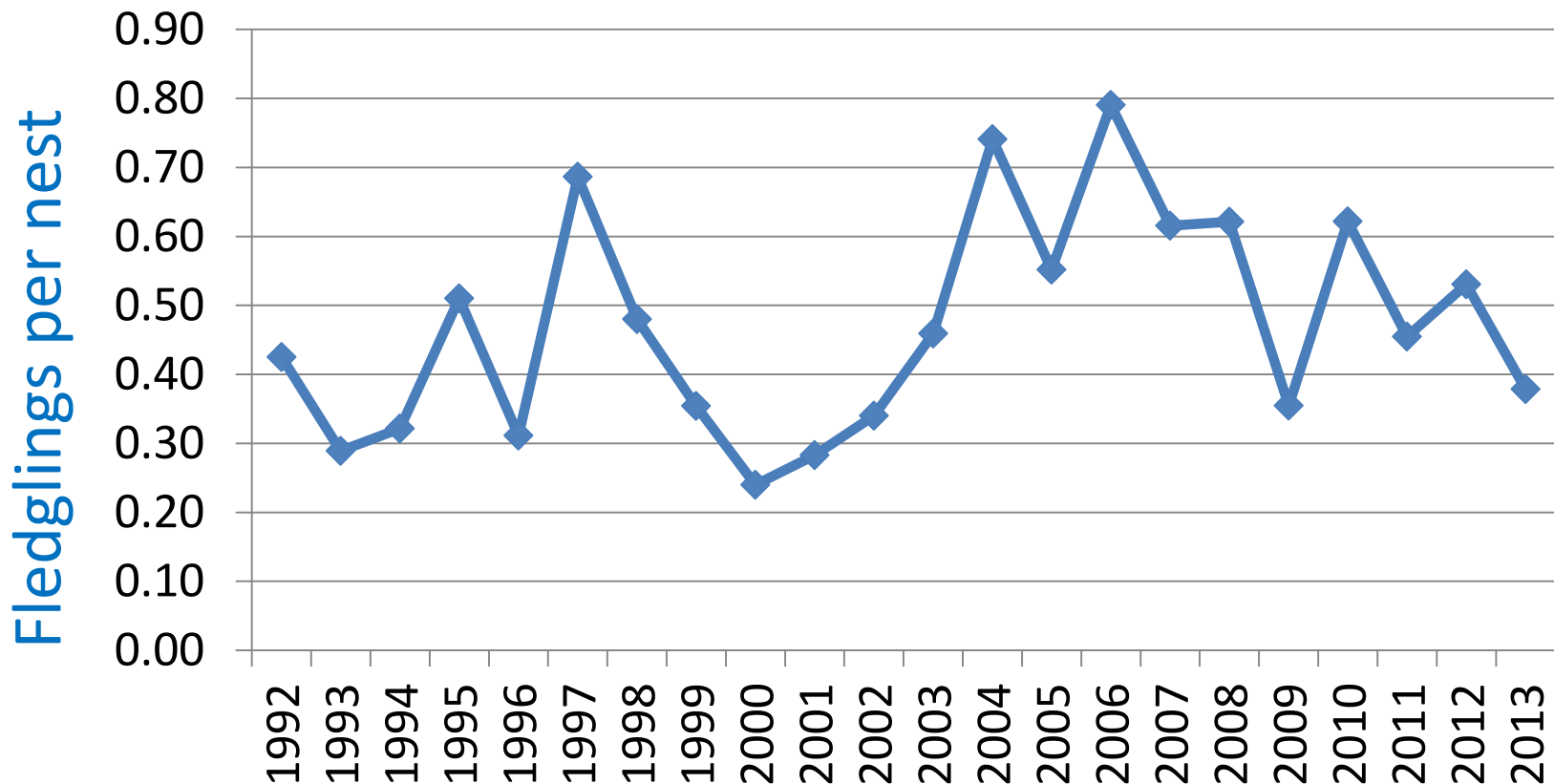
John McKinnon, Parks Canada

How many nests are there?



About half of the population (150 currently) attempts to breed every year.

How successful are they?



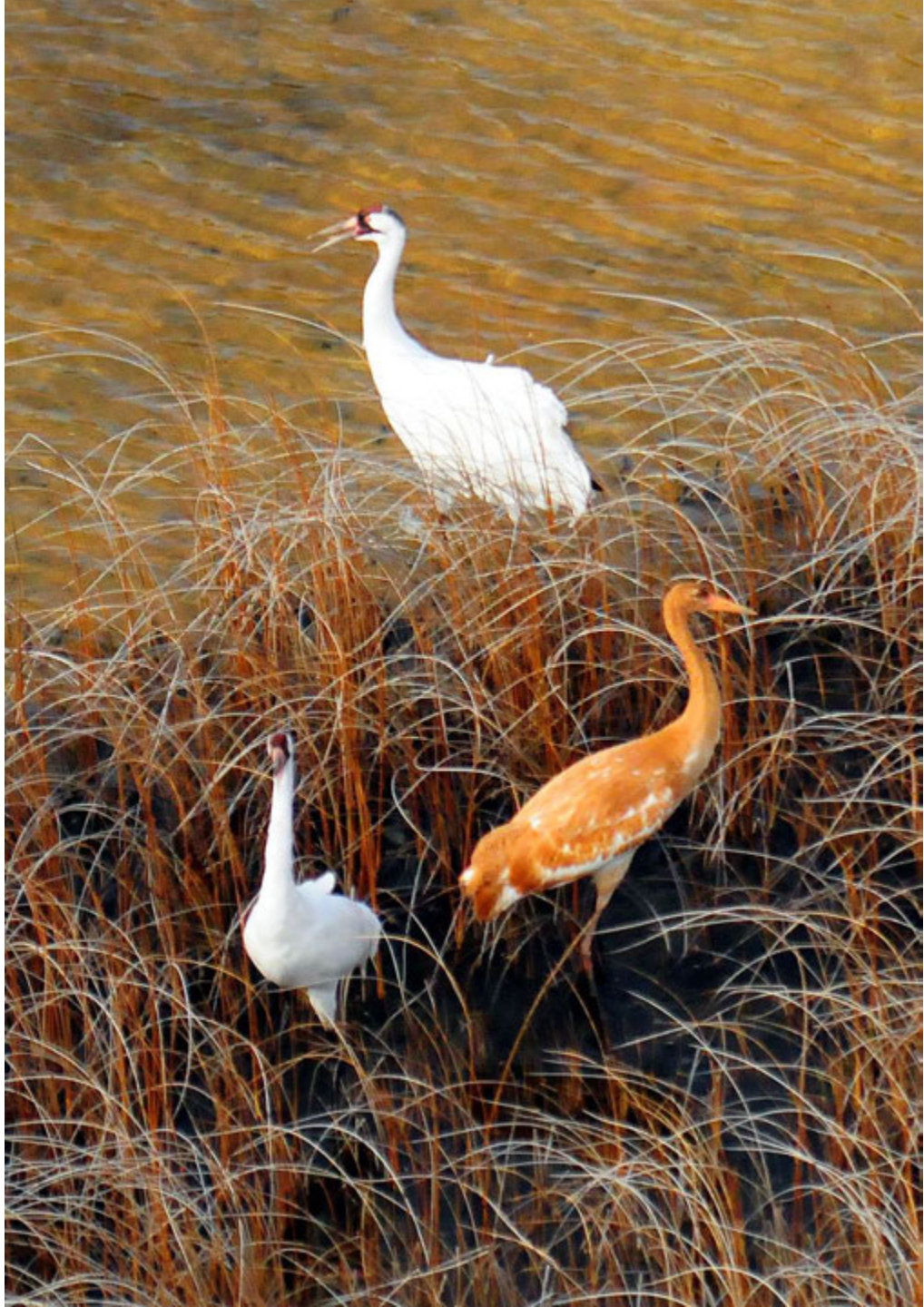
About half of the nests are successful at fledging at least one juvenile each year, but this is quite variable from year to year (20% to 80%). There is some evidence of a 10-year cycle.



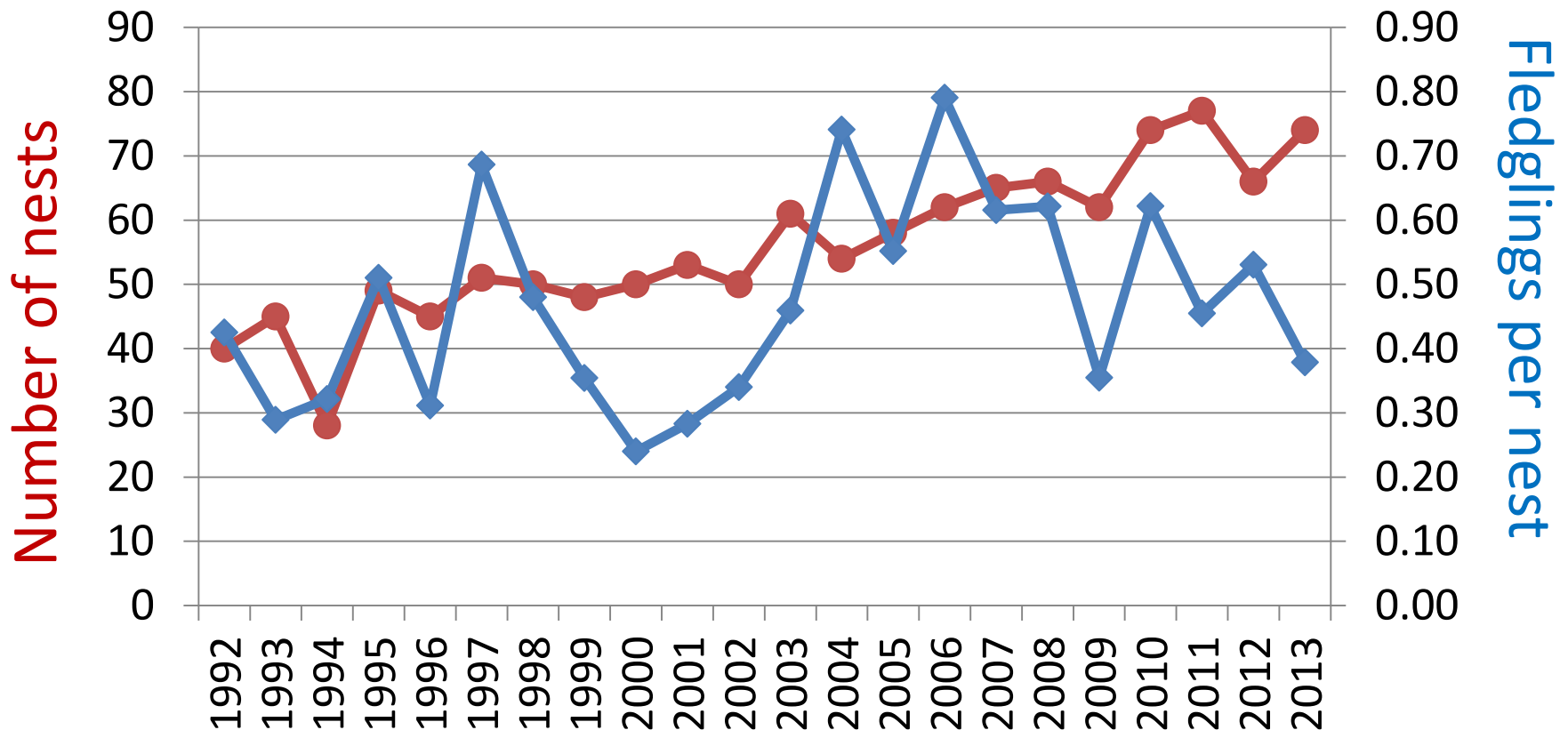
John McKinnon, Parks Canada



John McKinnon, Parks Canada



Nests & Productivity

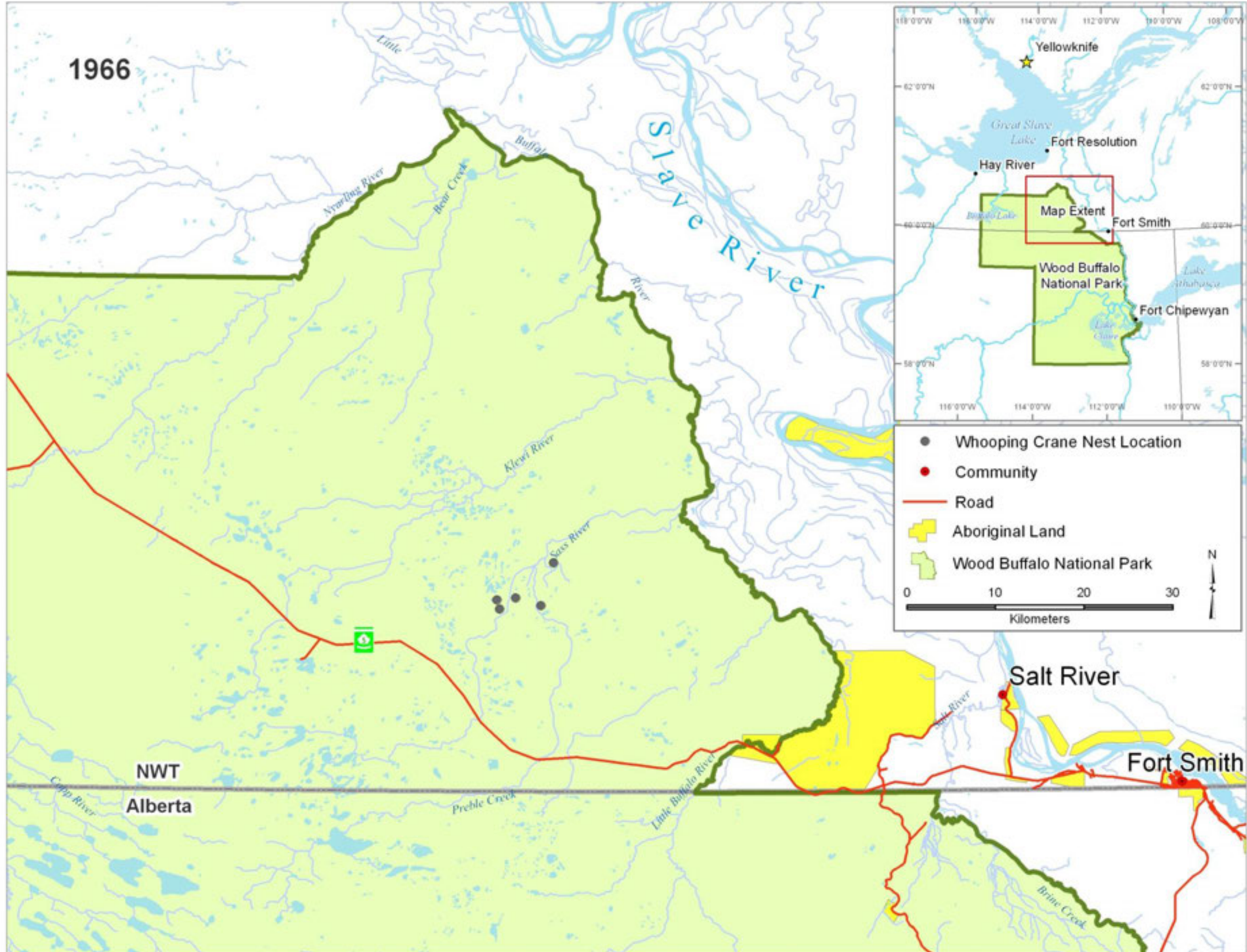


We **don't know** why nesting success is so variable (predators? climate? experience?) or what might cause the apparent 10 year cycle. Factors influencing if cranes attempt to nest don't seem to be the same ones determining nesting success.

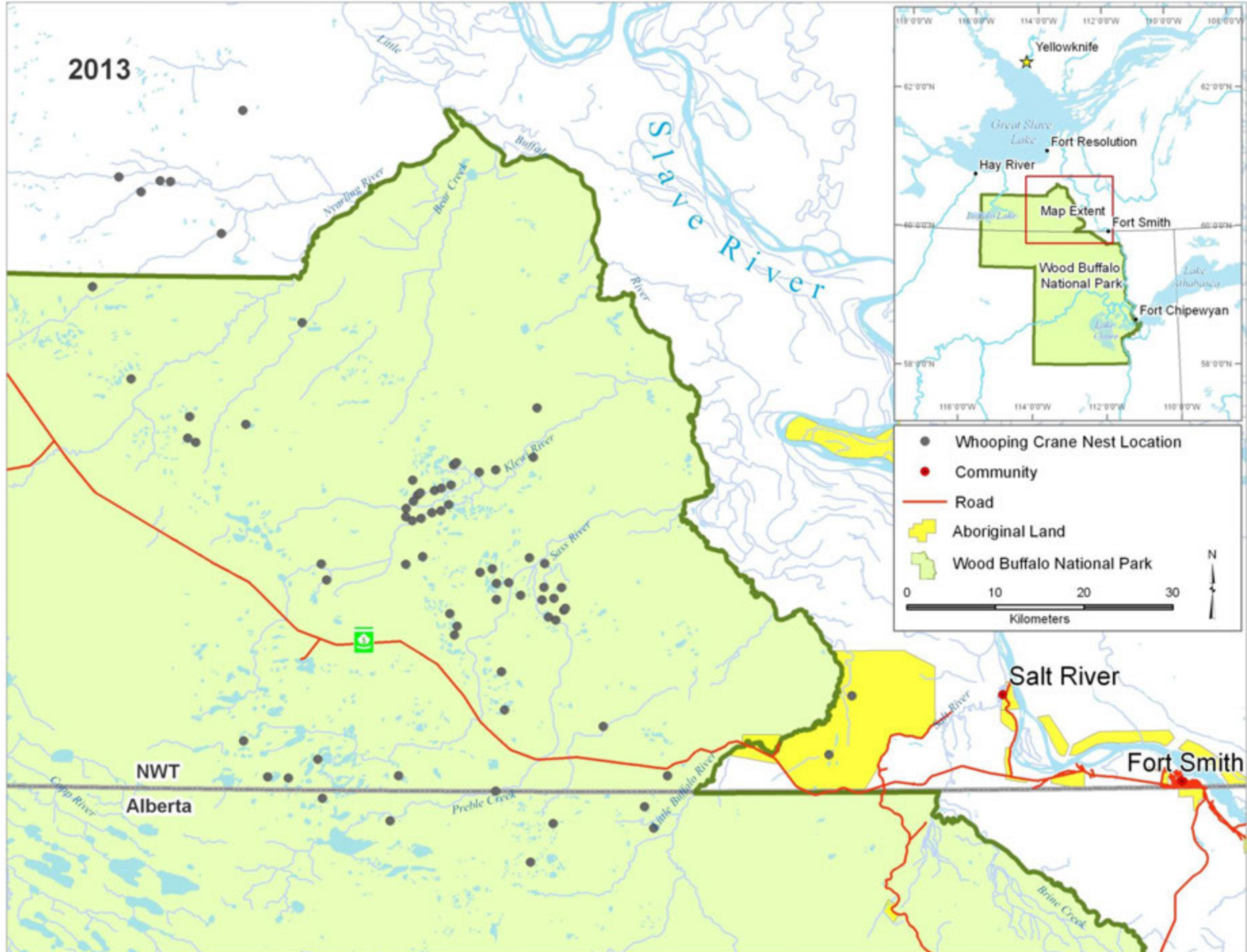
2. Range and range expansion

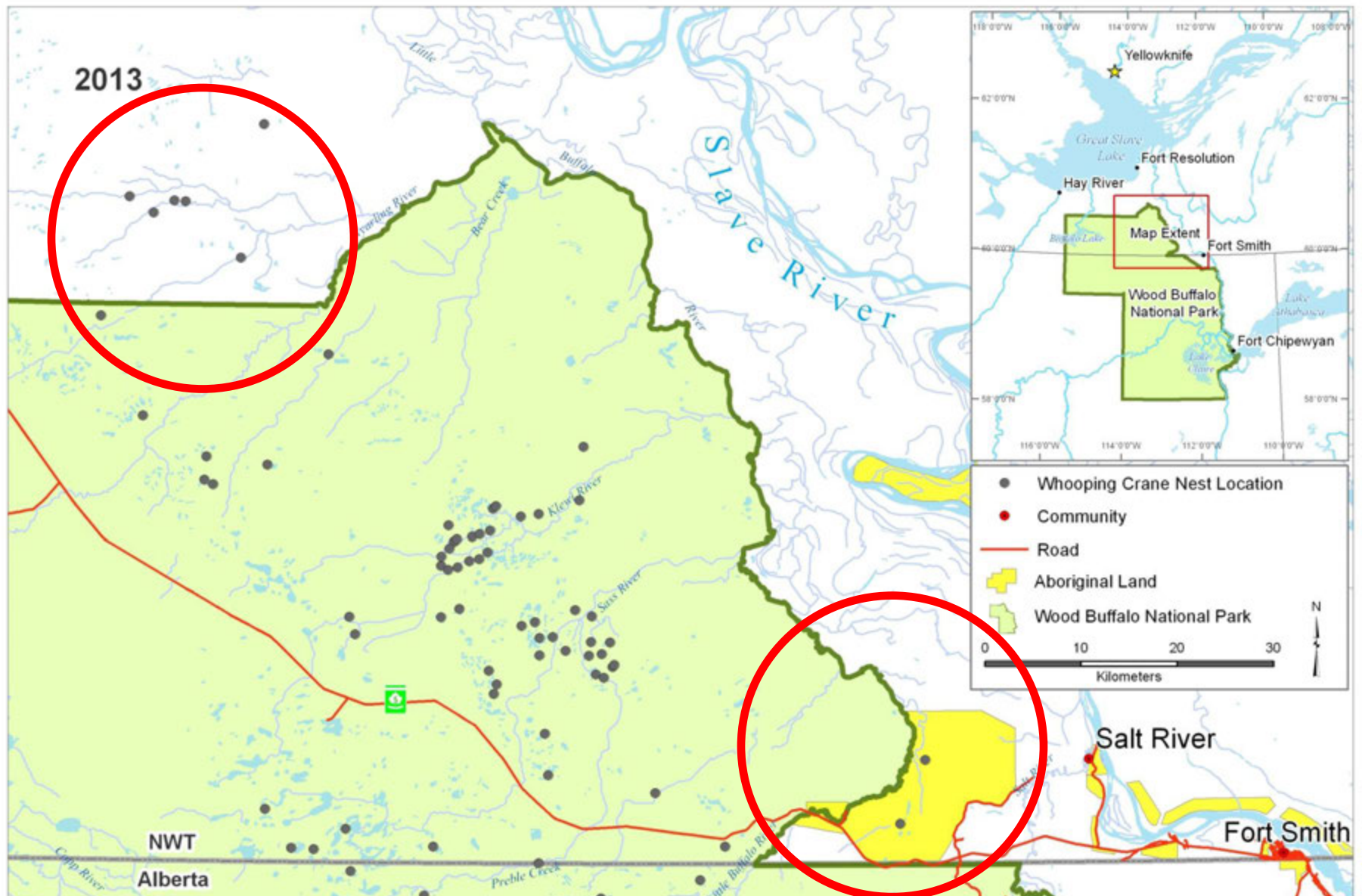
- Nesting population discovered 1950s
- First known nest outside of WBNP in 1982
 - Foxholes area, Lobstick Creek (SRFN land)
- First nest north of the park in 1998
- Historical expansion of nesting range...

1966



2013





We **don't know** why cranes are expanding outside WBNP, how they decide where to set up new territories, where cranes will continue to expand their range, or impact of nesting outside a protected area (e.g., potential for conflict with people, resource use).

2. Range and range expansion cont'd

- Recent studies have shown that whooping cranes also use many areas outside WBNP, in the South Slave Region
- Areas south, west, north of Great Slave Lake
- Use by cranes of habitat outside WBNP...

2. Range and range expansion cont'd

- Probably non-breeders (juveniles, sub-adults)
 - no evidence of nesting (yet)
 - outside WBNP and nearby areas, suitable nesting habitat is scarce, in small patches
- We **don't know** why cranes are using these areas, how important they are, how long they've been using them, if they will use other areas...
- Please report your observations!
 - ENR
 - (306) 975-5595 or whooping.crane@ec.gc.ca



3. Migration

- We know cranes migrate twice per year (fall, spring) from NWT/AB to Texas
- Migration corridor from NWT/AB over northern AB, central SK, central/southern USA
- We think migration is a risky period
 - infrastructure (e.g. power lines)
 - human contact





John McKinnon, Parks Canada



John McKinnon, Parks Canada



John McKinnon, Parks Canada



John McKinnon, Parks Canada



John McKinnon, Parks Canada



John McKinnon, Parks Canada



John McKinnon, Parks Canada



John Conkin, Canadian Wildlife Service



3. Migration cont'd

- We know more and more about timing of migration, habitats used during migration, thanks to current studies
- We still **don't know** how risky migration is for whooping cranes
 - early evidence suggests not as much as thought; mortality appears highest during breeding season
- We **don't know** whether oil sands mining poses a threat to migrating whooping cranes
- Using birds marked with satellite transmitters to answer some of these questions

What do you know?

- Do you have knowledge or stories?
- What are people doing to protect cranes?
What do you think should be done?
- Are you willing to share your knowledge?
- Ideas
 - talk to me!
 - presentations...
 - public meeting?



Thank you!



Mark Bidwell
whooping.crane@e

Monitoring Biodiversity – Eyes On Everything Living...

Suzanne Carrière
Wildlife Biologist, Biodiversity

Department of Environment and Natural Resources
Government of the Northwest Territories

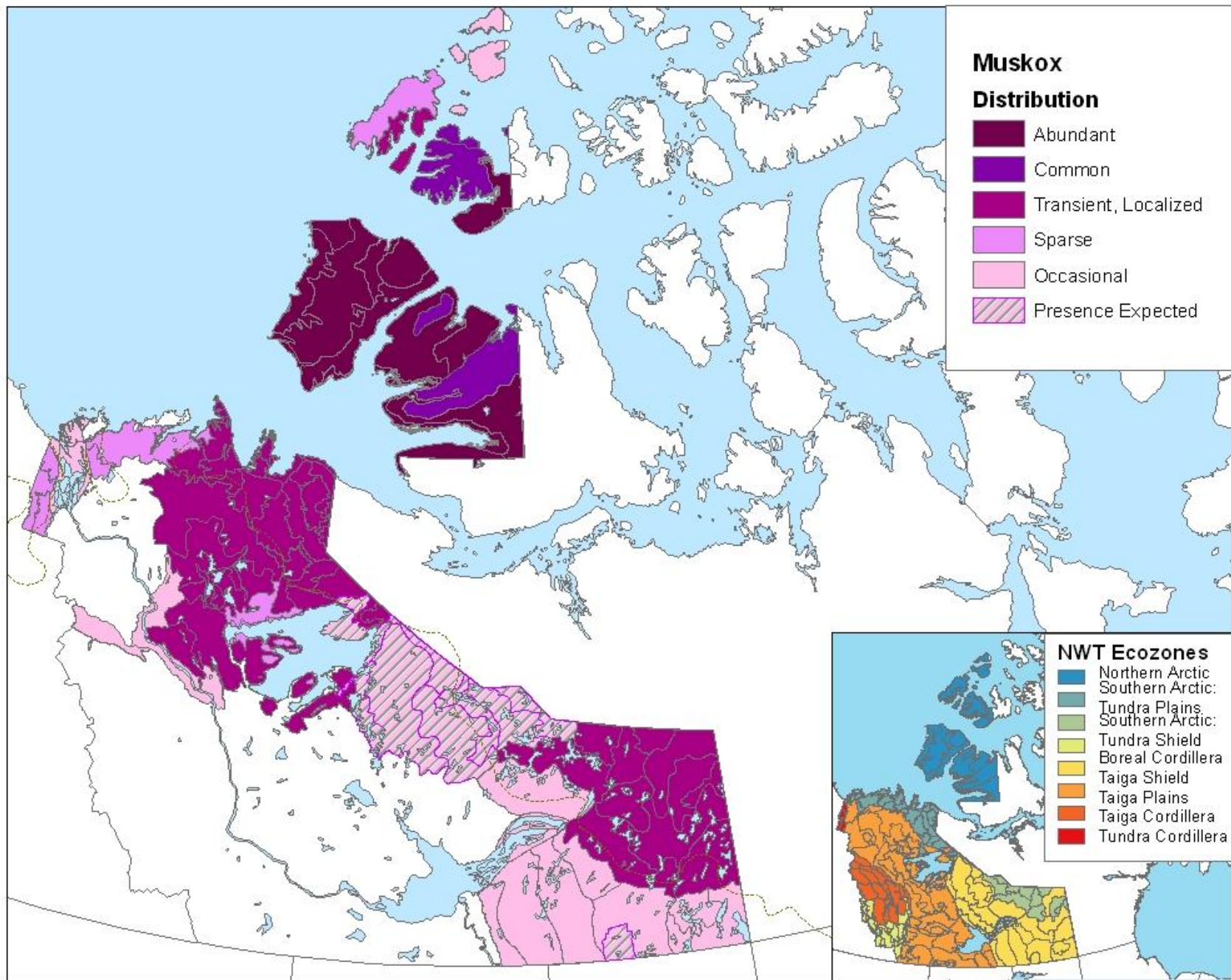


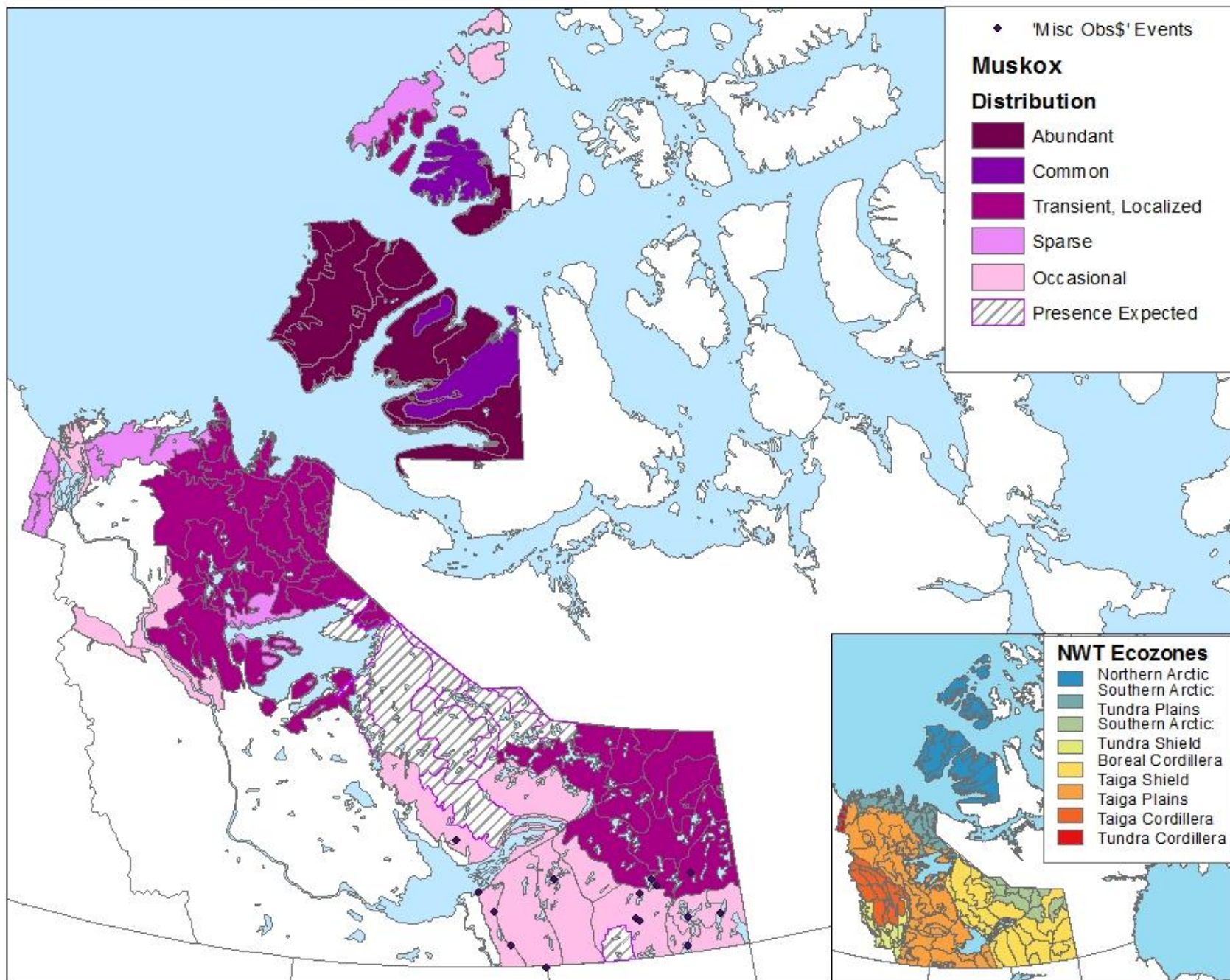
A photograph showing three people from behind, standing in a field of tall, dry grass. The person on the left is wearing a red and black jacket and a black cap, looking through binoculars. The person in the middle is wearing a yellow jacket and a black cap, looking towards the horizon. The person on the right is wearing a blue denim jacket and is holding a camera. In the background, there is a line of trees and a cloudy sky. A semi-transparent white banner with the text "Eye on Everything Living" is overlaid on the bottom half of the image.

Eye on Everything Living

© Ronnie Schaefer







Karl Cox's
camera
Near Fort Smith





Reid Hildebrandt
(Grade 11)

White-winged Dove

22 June 2013

Yellowknife



Gaby Koehler
Garter
Snake

5 July 2013

Would love the
location data



Common Red-sided Garter Snake

Legend

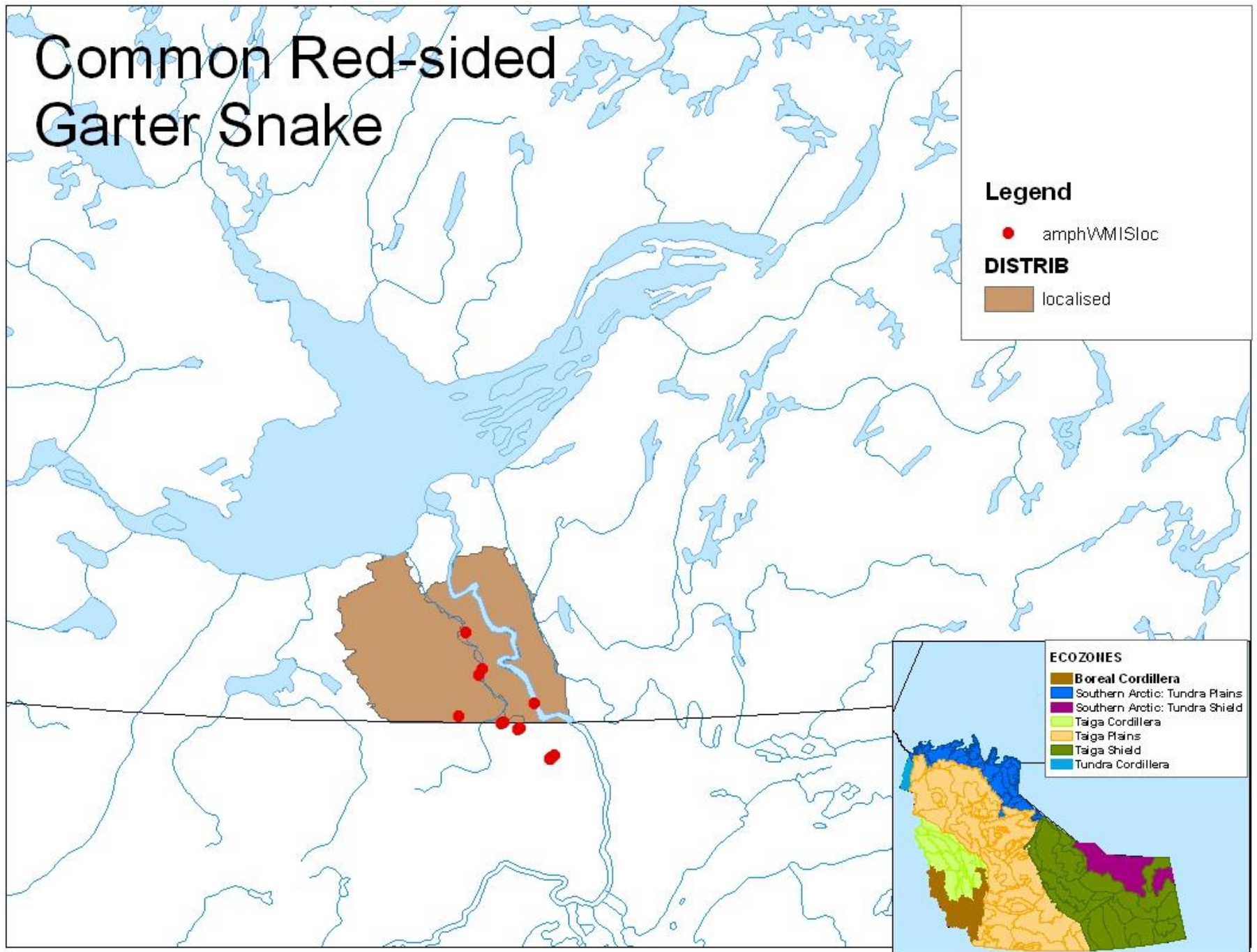
● amphWMISloc

DISTRIB

■ localised

ECOZONES

■ Boreal Cordillera
■ Southern Arctic: Tundra Plains
■ Southern Arctic: Tundra Shield
■ Taiga Cordillera
■ Taiga Plains
■ Taiga Shield
■ Tundra Cordillera



Butterflies – 97 species



Hesperiidae (Skippers)

Papilionidae (Parnassians and Swallowtails)



Pieridae (Whites and Sulphurs)

Lycaenidae (Gossamer-wing Butterflies)



Riodinidae (Metalmarks)

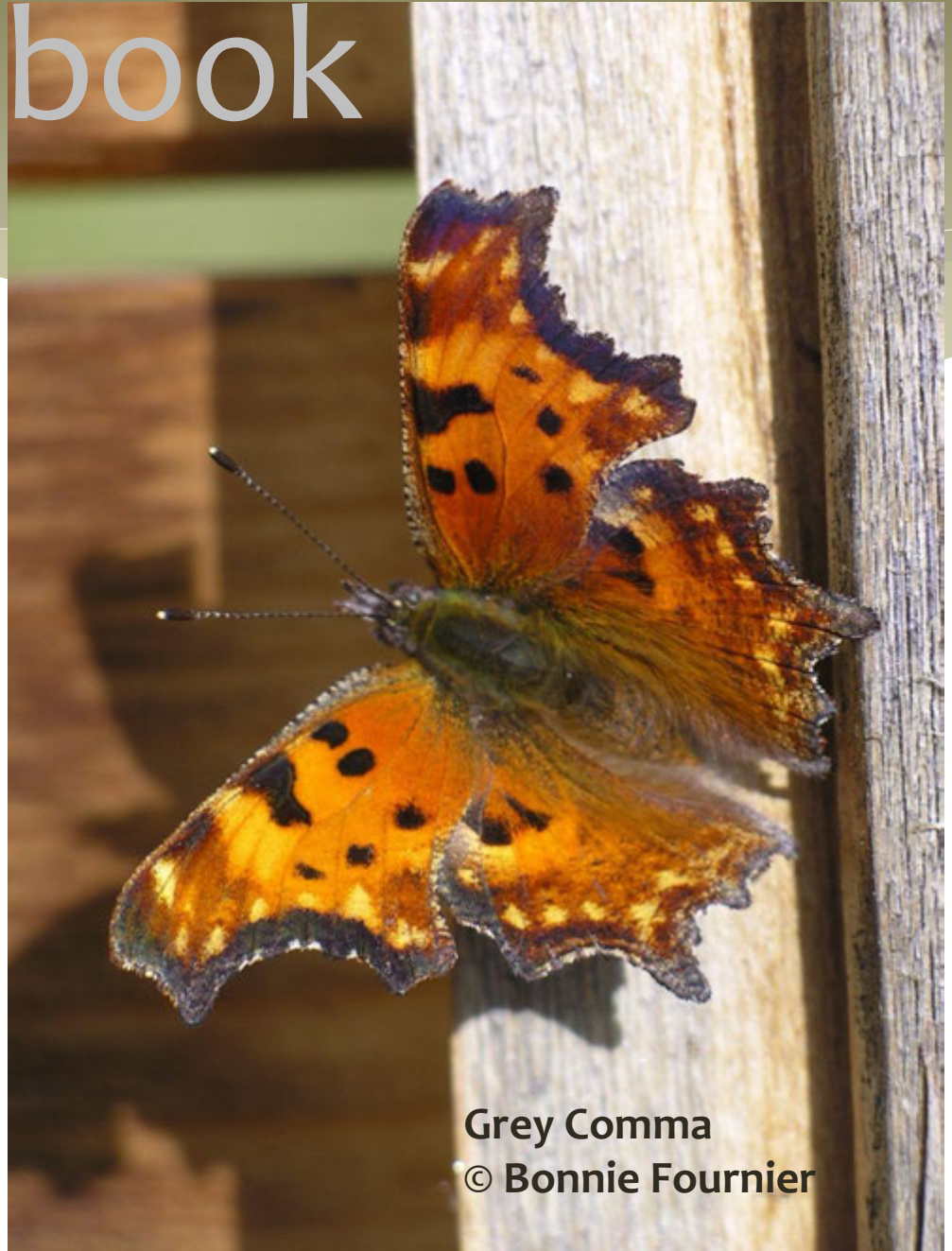


Nymphalidae (Brush-footed Butterflies)



On Facebook

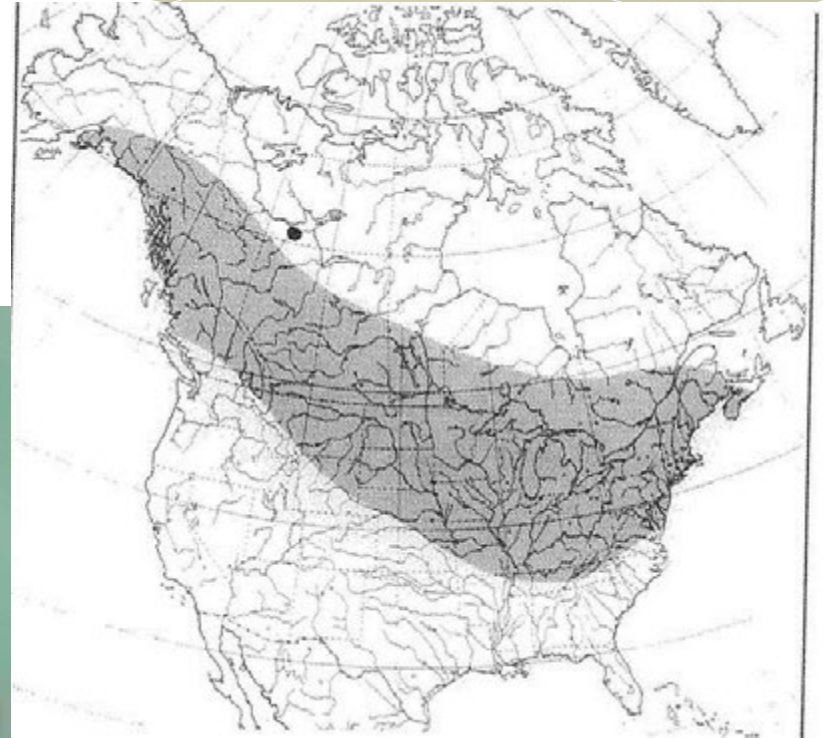
Look for **NWT** **SPECIES** *group*



Grey Comma
© Bonnie Fournier

David Johnson's photo
Eye-spotted Lady Beetle

Hay River 5 June 2013



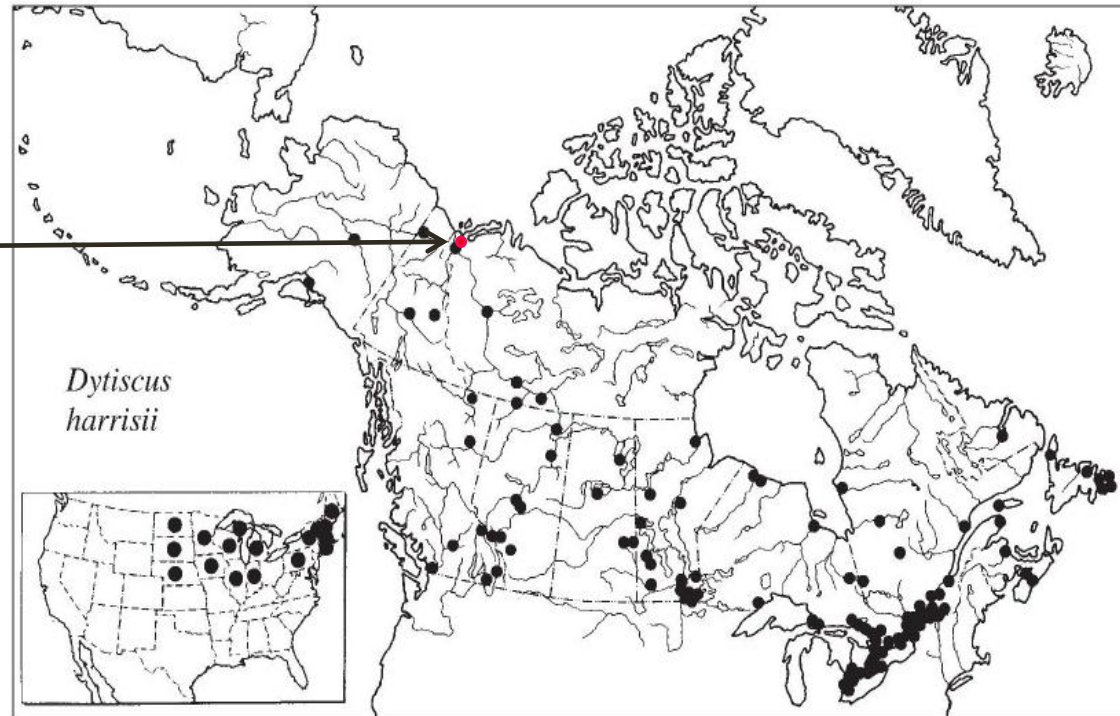
Beetles – 898 species in the NWT



From: chris menno [mailto:chrismenno@hotmail.com]
Sent: Tuesday, February 19, 2013 2:04 PM
To: DST_SSC_nwtbugs
Subject: beetle

Hi, I was wondering what kind of beetle this is. It was at my grandpas camp in the delta
N 68 40.477 W 134 19.158, it was about the size of a toonie.





Map 252. *Dytiscus harrisii* Kirby. Canadian and Alaskan collection localities and United States state records.

Dytiscus ?harrisii (famille Dytiscidae).
Probably the Harris's Dytiscid Water Beetle – One of the largest beetle in the NWT.
H Goulet, AgricultureCanada, Ottawa

From: Nic Larter
Sent: Monday, June 03, 2013 8:41 AM
To: Suzanne Carriere
Subject: big bugs

Hi Suz:

The fire crew has been seeing an abundance of these beetles. They are about 2cm long and 1cm wide dark brown. See attached photos. Any assistance in id would be great.

*Nicholas (Nic) Larter, PhD
Manager, Wildlife Research and Monitoring
PO Box 240
Ft. Simpson, NT X0E0N0*



From: Goulet, Henri [mailto:Henri.Goulet@AGR.GC.CA]

Sent: Monday, June 03, 2013 2:34 PM

To: Suzanne Carriere

Subject: RE: big beetles in the NWT

Chère Suzanne:

Vos Scarabes appartiennent au genre *Phyllophaga*. Il ne doit pas rester trop d'espèces aussi au nord. Cependant l'organe génital male doit être vérifié.

Bonne journée

Henri

Henri Goulet

Research Scientist (Entomology) | Chercheur (entomologie)

Agriculture et Agroalimentaire Canada | Agriculture and Agri-Food Canada
Ottawa

From: Suzanne Carriere

Sent: Monday, June 03, 2013 4:17 PM

To: Nic Larter; Danny Allaire

Cc: Chandra Venables; Goulet, Henri

Subject: RE: big beetles in the NWT

HI Nic and Danny

Suspected: *Phyllophaga anxia*

Any chance of sending some of these June beetles to these guys...
Some to Chandra in Alberta and some to Henri in Ottawa?

Thanks!
suzanne

Forest-Ogre June Beetle or Cranberry White Grub



From: Karl Cox

Sent: Monday, September 16,
2013 2:36 PM

To: Suzanne Carriere

Subject: Hare / Small Mammal
Transects

Hi Suzanne,

... I was quite surprised at the number of small mammals in Smith since that area burned over this year. It was still relatively productive. The ...beetle grubs in that burn are apocalyptical. Every spruce tree has a big pile of sawdust underneath. One of the traps was getting covered... (see photo).

Cheers

Karl



Cameron Falls – 5 June 2013



**SOMETIMES PHOTOS ARE NOT ENOUGH
---NEED TO COLLECT**

-----Original Message-----

From: Bruce.Bennett@gov.yk.ca
[mailto:Bruce.Bennett@gov.yk.ca]

Sent: Thursday, June 06, 2013 11:04 AM

To: Suzanne Carriere; Pete.Cott@dfo-mpo.gc.ca

Cc: Bruce.Hanna@dfo-mpo.gc.ca

Subject: RE: Cameron Falls goop...

You can send some here and we can check it for you.

Didymo has a tough feel like wool. It has very distinctive coke bottle shaped structures.

Here is some I photographed last week.

Your photo looks like Didymo.

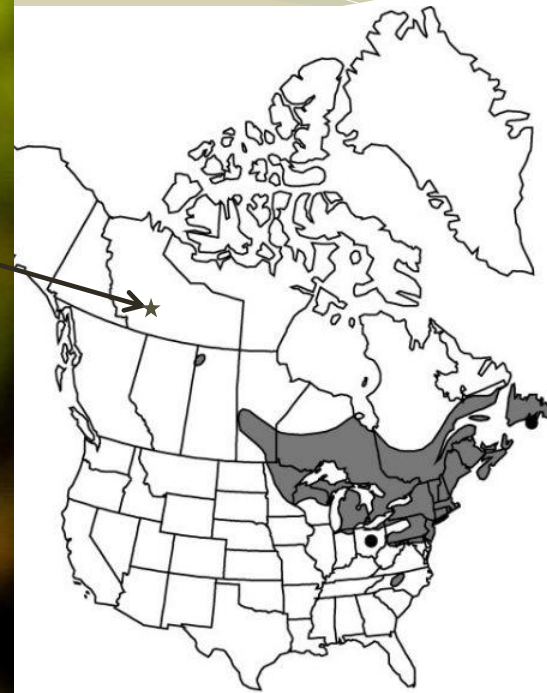




Calypso bulbosa
Calypso
Common in the NWT



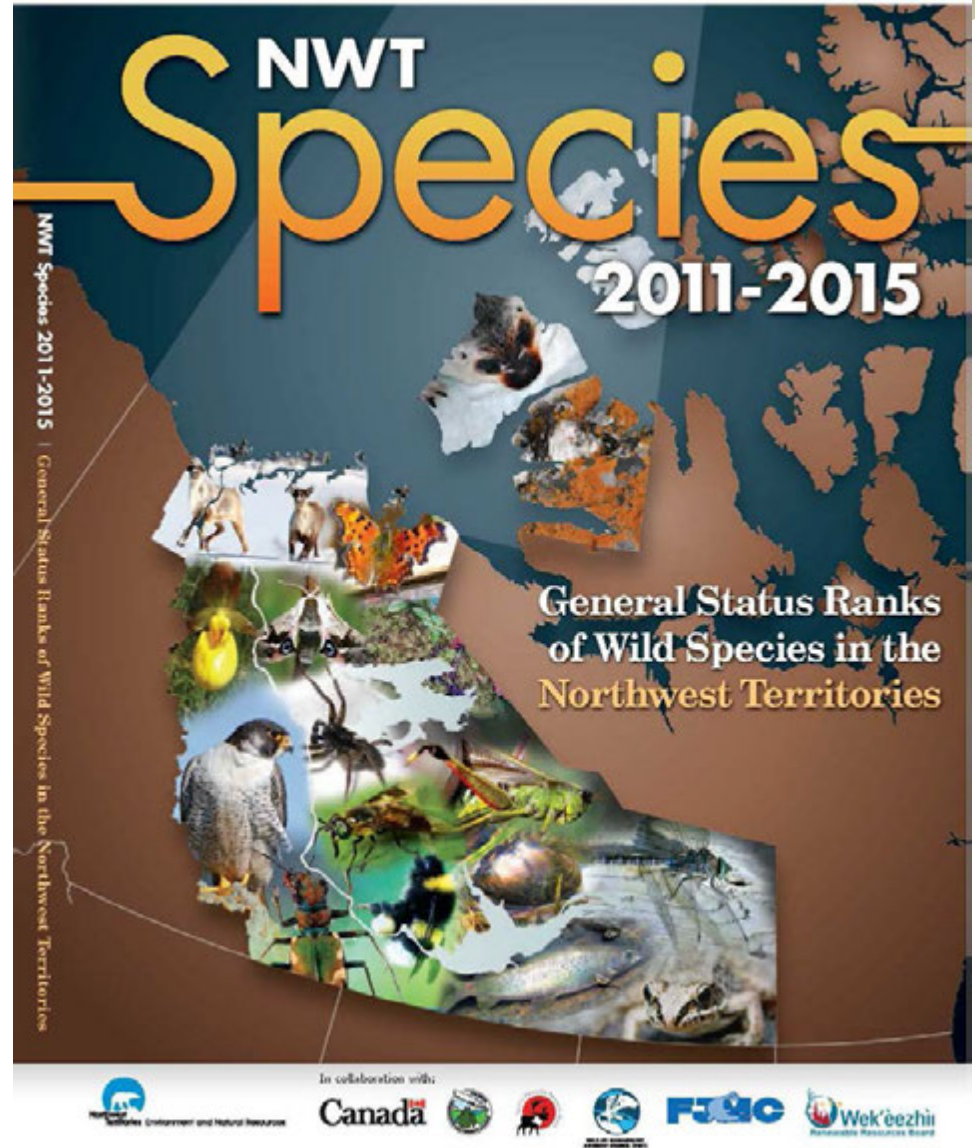
Arethusa bulbosa
Dragon's Mouth
First time recorded in the NWT – Scotty Creek - 2012



Information use

- ❖ Species lists
- ❖ Biological status
- ❖ Invasives
- ❖ Species at risk
- ❖ Monitoring

NWTBUGS@gov.nt.ca
WildlifeOBS@gov.nt.ca



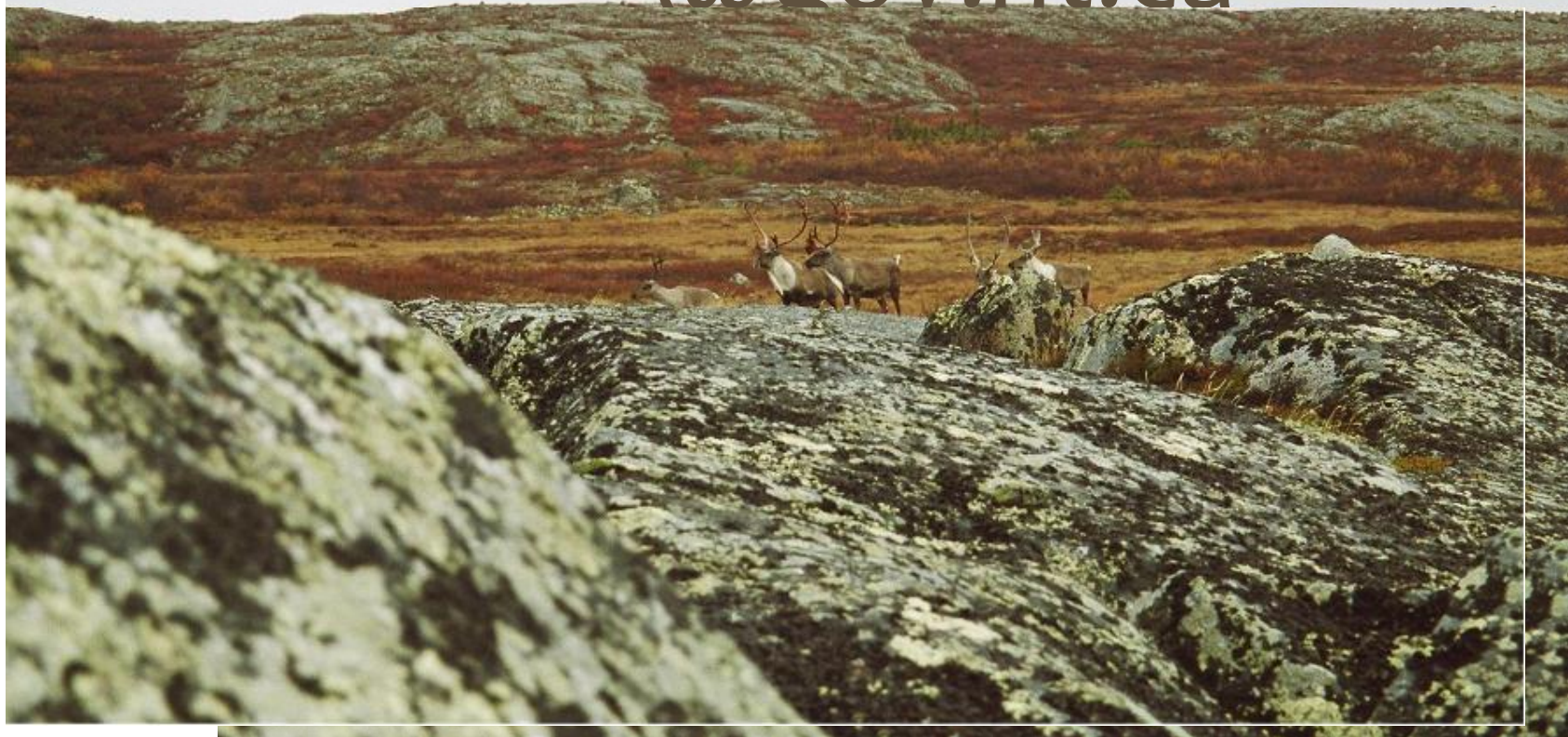
On Facebook

Look for
BIRDING
NWT
group



Thank you!

Suzanne_Carriere
@gov.nt.ca



Slave River and Delta Partnership Update including the Slave Watershed Environmental Effects Program (SWEET)

**South Slave Regional Wildlife Workshop
October 29-31, 2013
Fort Smith**

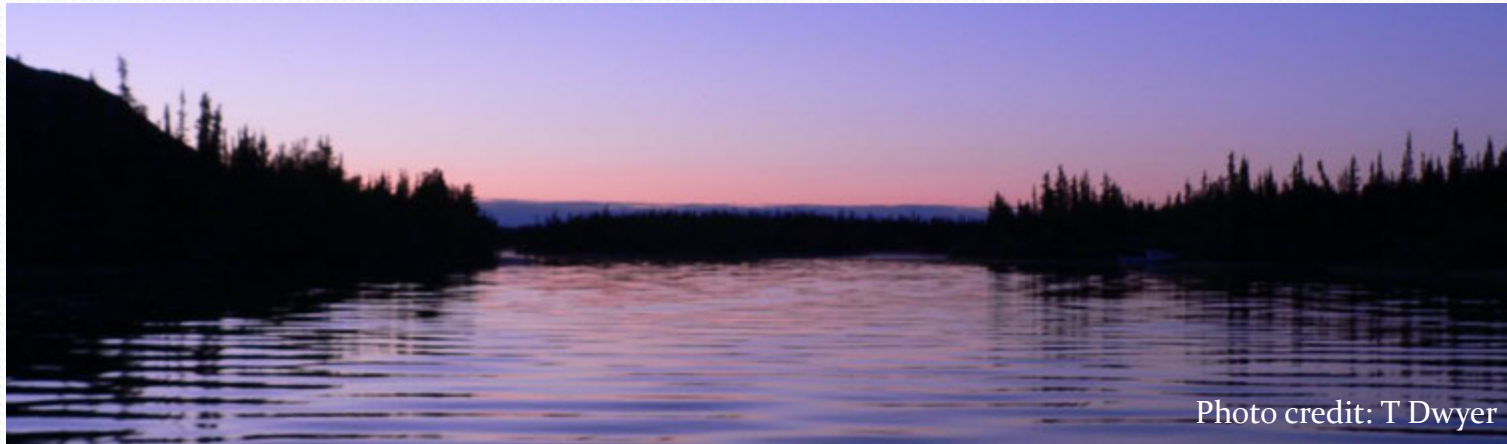
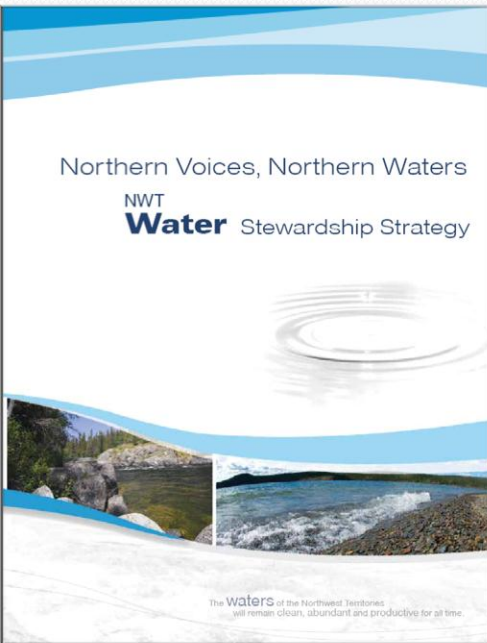


Photo credit: T Dwyer

Northern Voices, Northern Waters

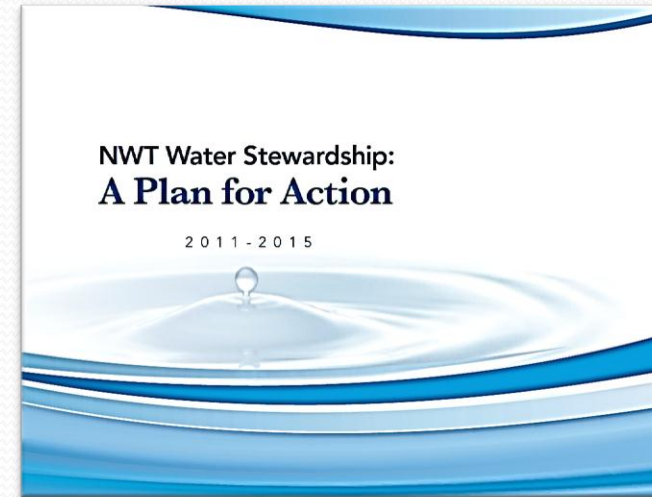
- Northerners are concerned about their water, which they use for transportation, subsistence, spiritual, cultural and economic purposes, etc.
- Collaborative efforts of Aboriginal leadership, communities, governments, regulatory boards, environmental non-government organizations and industry resulted in a draft Strategy (2009)
- Public feedback was collected and included under the guidance of the Aboriginal Steering Committee





Released in May 2010

- Vision
- Goals
- 'Keys to Success'



Released in May 2011

- 'Keys to Success' broken down into Action Items
- Deliverable dates and lead agencies for each Action Item are identified

Keys to Success

Community-Based Monitoring



- Develop community capacity to strengthen community involvement in water stewardship activities, including education, training, and research and monitoring programs.
- Develop and implement collaborative ecosystem-based research and monitoring programs.

Slave River and Delta Partnership (SRDP) Objectives

- Aquatic ecosystem health indicators workshop (Fort Smith, January 2011)
- Participants identified concerns about potential effects of upstream development (oil sands development, hydro, forestry/pulp and paper, conventional oil and gas, municipal, climate change, agriculture, historic development (old military sites, uranium mining, transportation of uranium ore) and cumulative effects)
 - Can we drink the water?
 - Can we eat the fish?
 - Is the ecosystem healthy?



Slave River and Delta Partnership (SRDP) Objectives

SRDP CIMP Project

- State of the Knowledge Report completed
 - *What we know*
- Vulnerability Assessment and Prioritization Workshop completed
 - *What we don't know*
 - *What we want to know*
 - *What we want to work on first*



Who's involved in the SRDP?

Members of:



**Northwest Territory
Métis Nation**

**Town of Fort Smith
Hamlet of Fort Resolution**

**Deninu K'ue
First Nation**

**Fort Resolution &
Fort Smith Métis Councils**



**Parks
Canada**

**Parcs
Canada**



**Environment
Canada**

**Environnement
Canada**



**Fisheries and Oceans
Canada**

**Pêches et Océans
Canada**



**Aboriginal Affairs and
Northern Development Canada**

**Affaires autochtones et
Développement du Nord Canada**



AURORA COLLEGE
YOUR CAREER STARTS HERE!

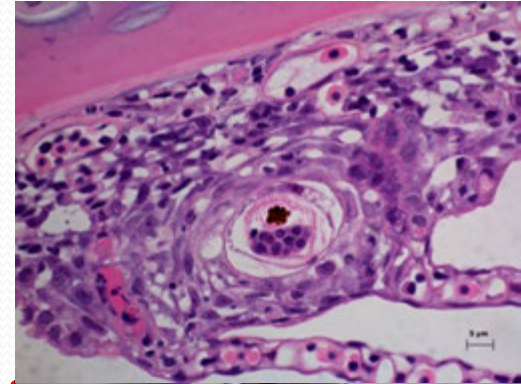


**Government of the Northwest Territories
Municipal and Community Affairs**

SRDP Projects

- Fish Health Study (University of Saskatchewan and DFO)
- Slave River Delta Lake Sediment Core Study (WLU/Waterloo)
- **Furbearer (beaver, muskrat, mink) study (CIMP)**
- **Community-based water quality monitoring**
- **Cumulative effects monitoring program - SWEEP**

** findings released to the community first*



Furbearer Study Update

Answering key community wildlife concerns/questions:

- Has increased upstream development changed contaminant levels in muskrat, mink and beaver?
- Does winter flooding along the Slave River affect muskrat and beaver populations (survival rates) along the Slave River?
- Have these populations changed since before regulation by Bennett Dam?



What the SRDP is doing

- Working with community members in Fort Smith and Fort Resolution
- Muskrat pushup and beaver house survey along Slave River and Delta (2012)
- Assessing trends in historical harvest records for several semi-aquatic furbearers for south Slave Region communities
 - Including trends pre vs. post regulation of Peace River by W.A.C. Bennett dam in BC (construction complete in 1967)
- Contaminant analysis of 30 specimens of mink, muskrat, beaver and hare

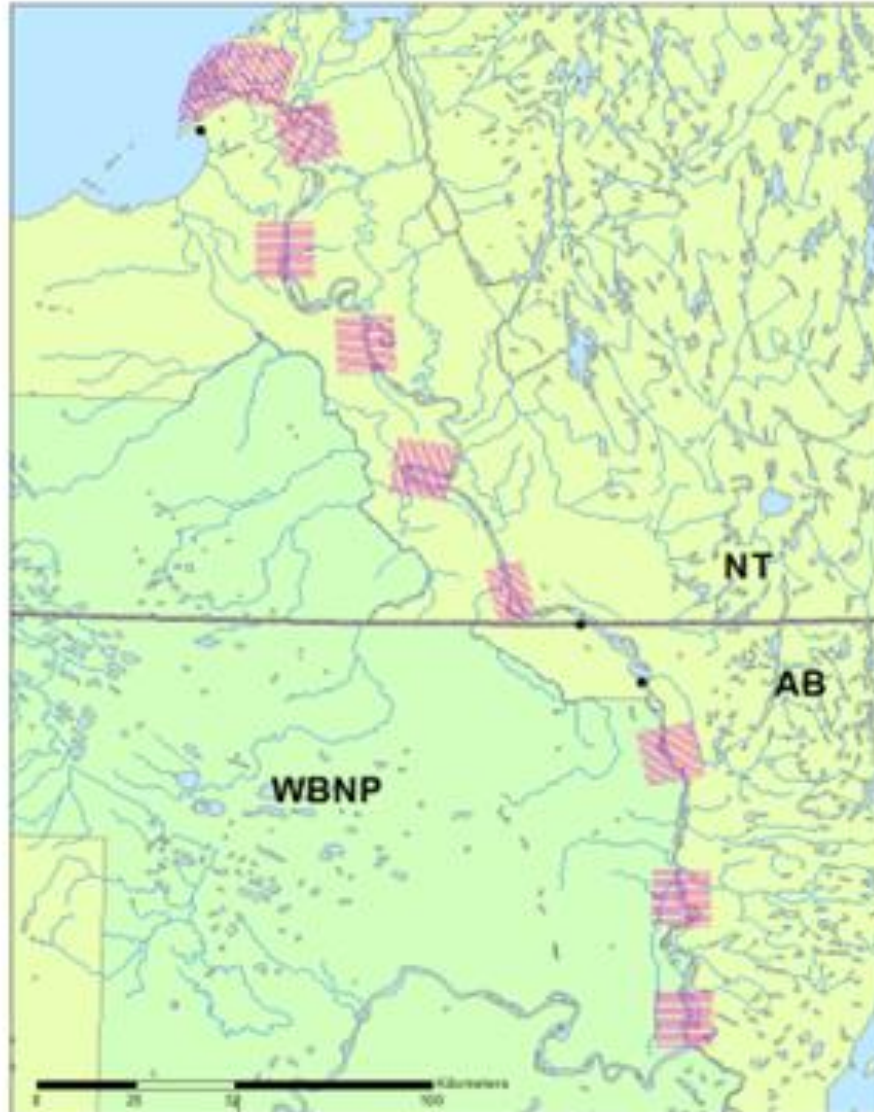


Photo: S. Douglas



Photo: NWT Archives

Aerial Survey – Collaboration with PADEMP



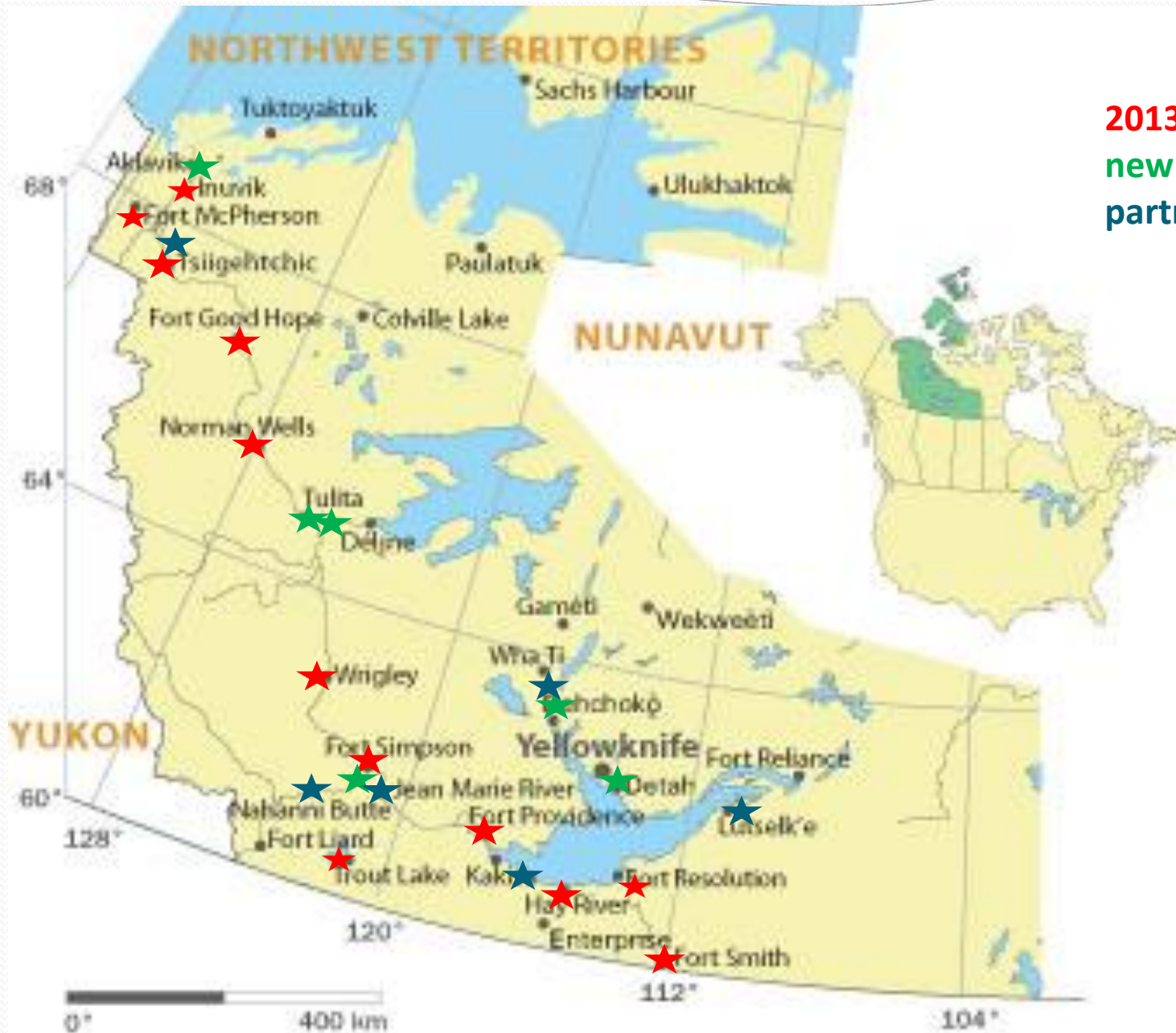
Community-based Water Quality Monitoring

Answering key community water concerns/questions:

- Has increased upstream development changed contaminant levels in water?
- Can we drink the water?
- Is the ecosystem healthy?



Places where equipment is used



Monitoring equipment that measures what is happening at the time of sampling



YSI Sonde 6600 – every 2- 4 hours

Measures: Temperature, Conductivity, pH, Oxidation/Reduction Potential (ORP), Dissolved Oxygen, Turbidity, Chlorophyll

Grab Water Samples – 3 to 5 times

Measures: Many water parameters

Taiga Laboratory, Yellowknife





Grab Water Sample Data

Basic Parameters

- Turbidity
- Total Dissolved Solids
- Total Suspended Solids
- Specific Conductivity
- pH
- Alkalinity
- Dissolved Organic Carbon
- Total Organic Carbon
- Nitrate

Ions

- Calcium
- Chloride
- Fluoride
- Magnesium

Nutrients

- Dissolved Phosphorus
- Total Phosphorus
- Dissolved Nitrogen
- Total Nitrogen
- Ammonia
- Nitrite
- Chlorophyll *a*

- Potassium
- Sodium
- Sulphate

Dissolved and Particulate Elements/Metals

- Aluminum
- Antimony
- Arsenic
- Barium
- Beryllium
- Cadmium
- Cesium
- Chromium
- Cobalt
- Copper
- Iron
- Lead
- Lithium
- Manganese
- Mercury
- Molybdenum
- Nickel
- Rubidium
- Selenium
- Silver
- Strontium
- Thallium
- Titanium
- Uranium
- Vanadium
- Zinc

Oil and Gas related chemicals

- Polycyclic Aromatic Compounds (Hydrocarbons)

Monitoring equipment that measures what is happening over a longer time period

Passive Samplers

Polyethylene Membrane Device (PMDs) – 1 month

Measures: Dissolved Polycyclic Aromatic Hydrocarbons (PACs)

University Alberta, Edmonton



Diffusion Gradient in Thin Films (DGTs) – 3 days

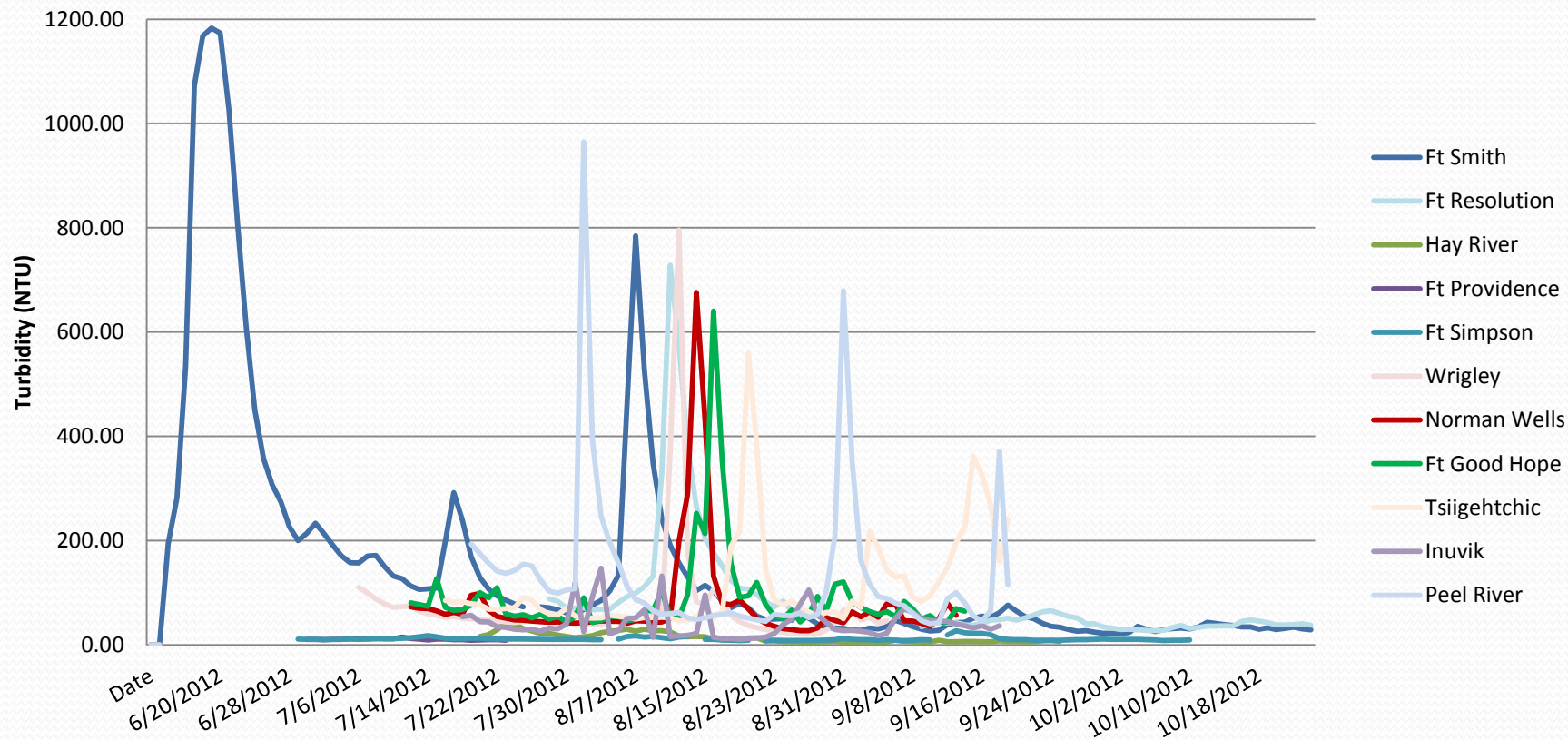
Measures: Dissolved Metals

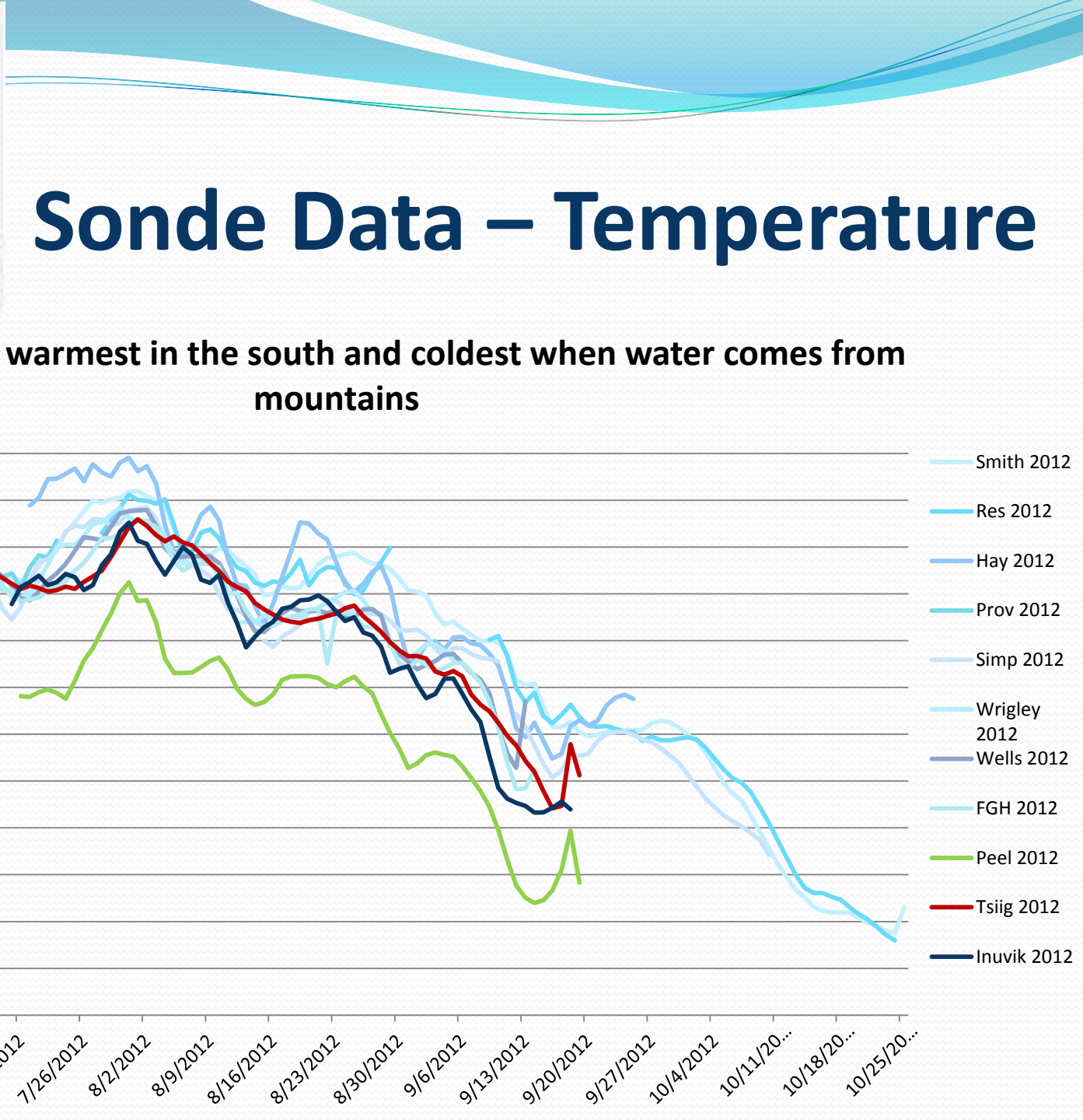
Trent University, Peterborough



Sonde Data – Turbidity

Turbidity at 11 sites across the NWT





Sonde Data – Temperature

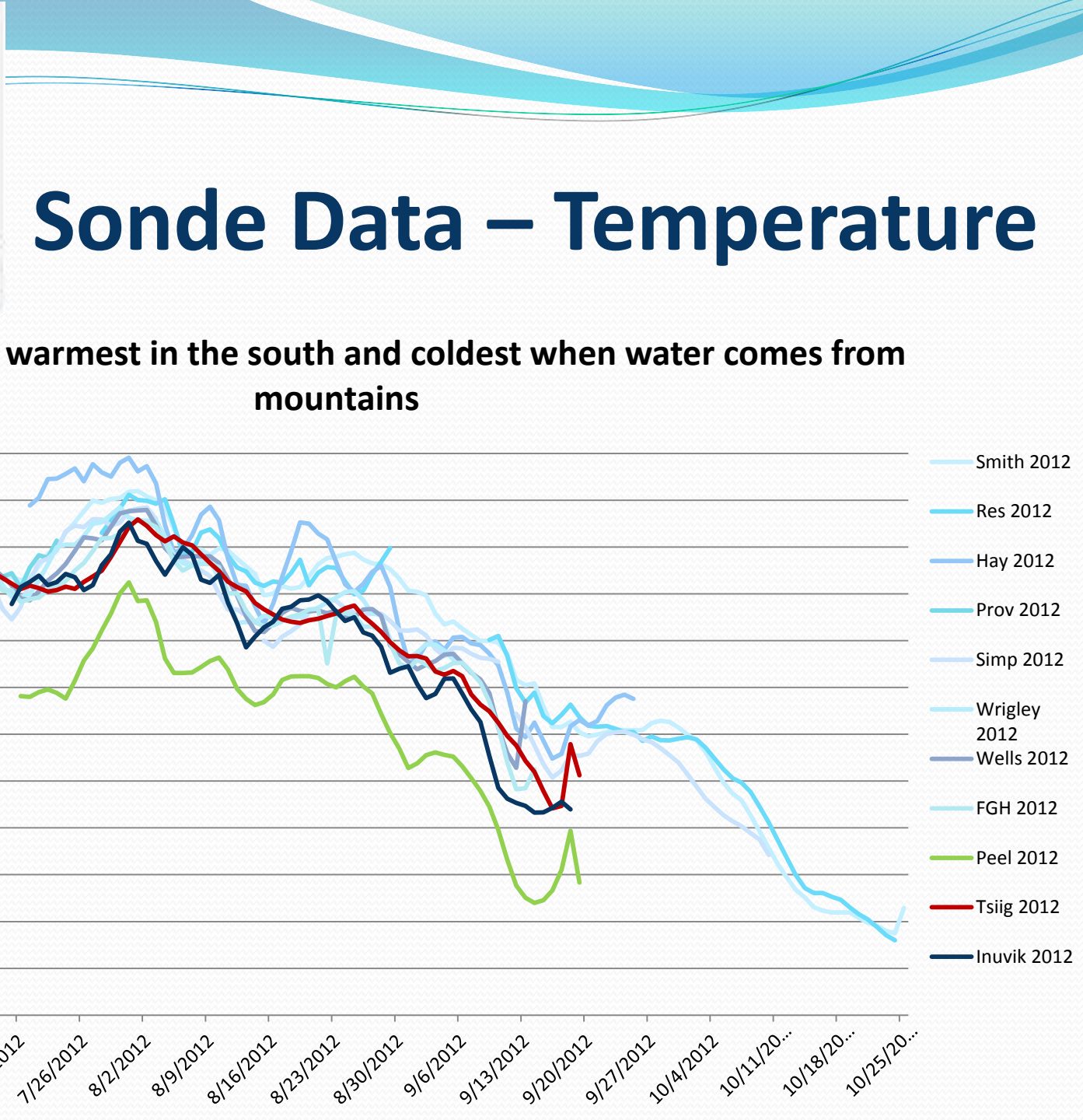
warmest in the south and coldest when water comes from mountains

The graph displays temperature data from 12 sondes over time. The x-axis represents dates from July 2012 to October 2012. The y-axis represents temperature, with horizontal grid lines indicating intervals. The data series are: Smith 2012 (light blue), Res 2012 (medium blue), Hay 2012 (dark blue), Prov 2012 (teal), Simp 2012 (light blue), Wrigley 2012 (light blue), Wells 2012 (dark blue), FGH 2012 (light blue), Peel 2012 (green), Tsiig 2012 (red), and Inuvik 2012 (dark blue). The temperatures generally decrease over the period, with a significant drop in late September/early October. The Peel 2012 data (green line) shows a sharp decline in late September, reaching the lowest point among the sondes shown.

Sonde Data – Temperature

warmest in the south and coldest when water comes from mountains

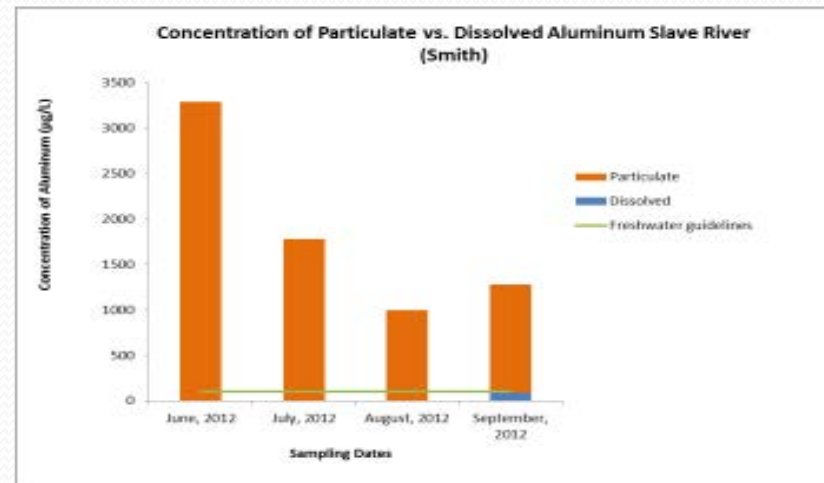
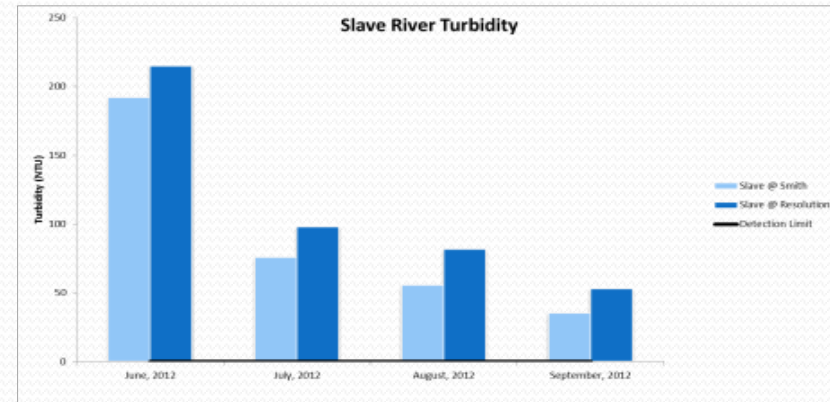
The graph displays temperature data for 12 sondes in 2012. The x-axis represents dates from July 26 to October 25, 2012. The y-axis represents temperature, with horizontal grid lines. The sondes are color-coded: Smith 2012 (light blue), Res 2012 (medium blue), Hay 2012 (dark blue), Prov 2012 (teal), Simp 2012 (light blue), Wrigley 2012 (light blue), Wells 2012 (dark blue), FGH 2012 (light blue), Peel 2012 (green), Tsiig 2012 (red), and Inuvik 2012 (dark blue). The data shows a general downward trend in temperature over the period, with a notable dip in late September. The sondes are color-coded: Smith 2012 (light blue), Res 2012 (medium blue), Hay 2012 (dark blue), Prov 2012 (teal), Simp 2012 (light blue), Wrigley 2012 (light blue), Wells 2012 (dark blue), FGH 2012 (light blue), Peel 2012 (green), Tsiig 2012 (red), and Inuvik 2012 (dark blue).





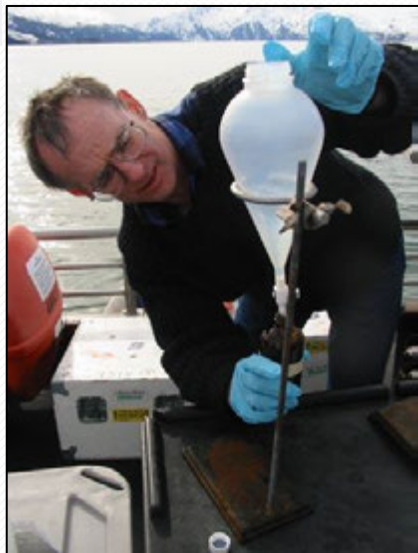
Grab Water Sample Results Highlights

- Some metals were higher than Canadian Council of Ministers of the Environment (CCME) guidelines for the protection of aquatic life in the Slave River and Delta and other northern rivers
- Generally, metals were higher than the guideline when turbidity (dirt) was high. This happens on many northern rivers that have a high sediment load (a lot of dirt in them).
 - CCME guidelines were made for southern rivers that are clearer (have a lower sediment load).
 - Dissolved metals were generally low.

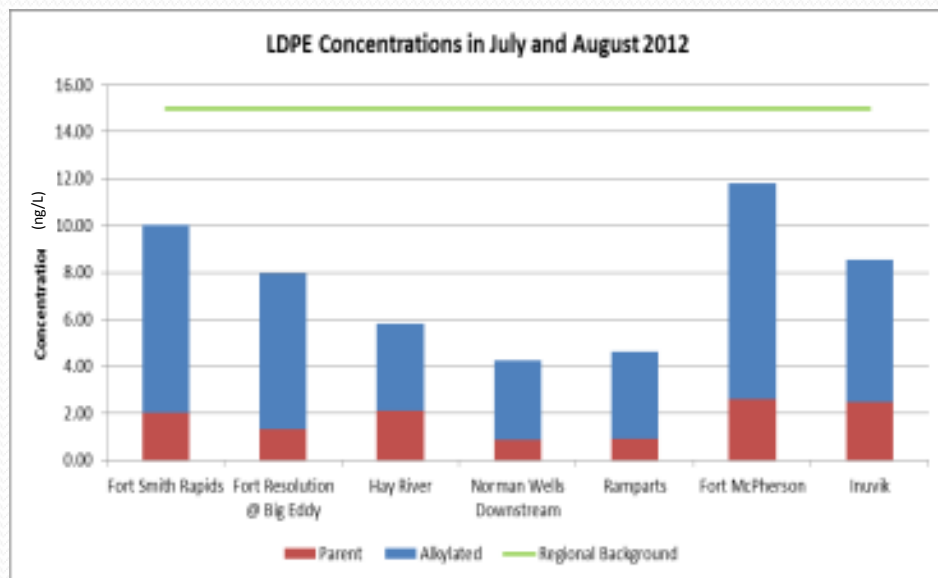




PMD Results Highlights



- Dr. Jeff Short, who has spent his career studying oil pollution and other contaminants, analyzed the PMD information.
- As expected on the Slave River and Delta, PAHs were detected but they are far lower than near oil sands development.
- At all NWT sites, including the Slave River and Delta, concentrations were well below levels that would affect fish reproduction (400-500 ng/L) and wildlife health (100 ng/L)
- Oil sands tributaries upstream of development ~9 ng/L, downstream up to 682 ng/L (average 202 ng/L); Athabasca River in summer 63-135 ng/L





DGT Results Highlights



- Dr. Celine Gueguen from Trent University is analyzing the DGTs for dissolved metals.
- She looks for the types of metals that are in forms that can be toxic.
- Overall, almost all the metals in those forms are well below guidelines for protection of aquatic life
- The Peel River has the highest metals concentrations, but these are still well below guidelines.



Expressions of qualifications for research

Research to develop regional monitoring frameworks to support cumulative effects assessment

NWT Slave River and Delta Partnership



Slave Watershed Environmental Effects Program

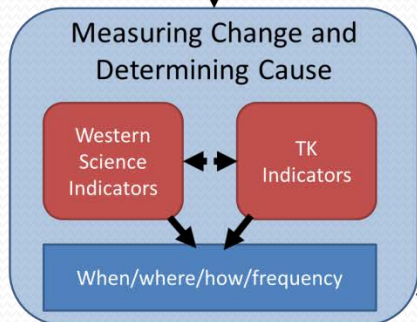
Cost effective, community-based cumulative effects monitoring program that addresses community concerns and can be implemented by other communities in the future.

SWEEP Guiding Question: Are there cumulative effects on the Slave River and Delta?

Cross-cutting questions for all areas/indicators:
Is there an effect?
What is the magnitude?
What is the cause?
How much is climate vs. other stressors?

SRDP Vulnerability Question:
Is the water safe to drink?

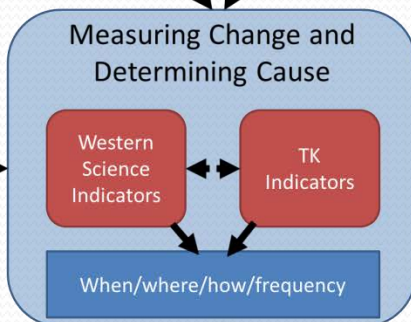
Is it safe
(contaminants)?



SRDP Vulnerability Question:
Are the fish and wildlife safe to eat?

Are they there
(populations)?

Are they safe to eat
(contaminants)?



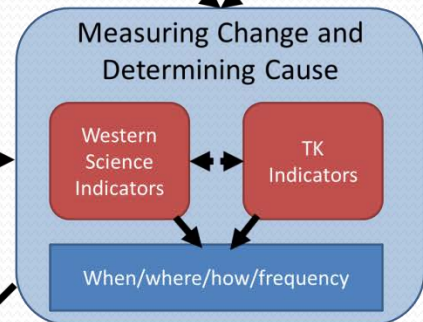
SRDP Vulnerability Question:
Is the ecosystem healthy?

Is water quantity
changing?

Is ice changing?

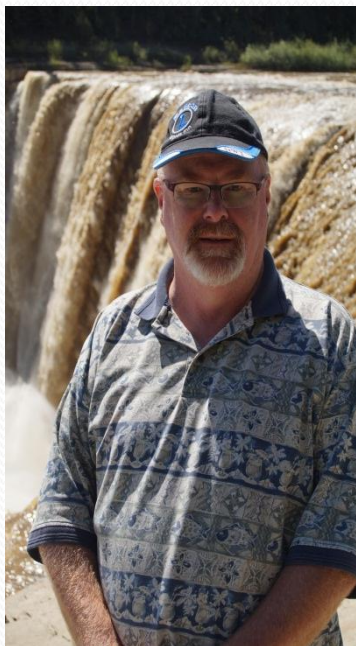
Are fish healthy?

Are people healthy and
able to do the things
they want to do?



SWEEP Goal:
Identification of indicators that can be monitored by communities to show cumulative effects long term

The University of Saskatchewan team



Paul Jones
Chemical
contaminants,
fish health



Lorne Doig
Aquatic
invertebrates,
paleolimnology



Lalita Bharadwaj
Human health,
community
engagement

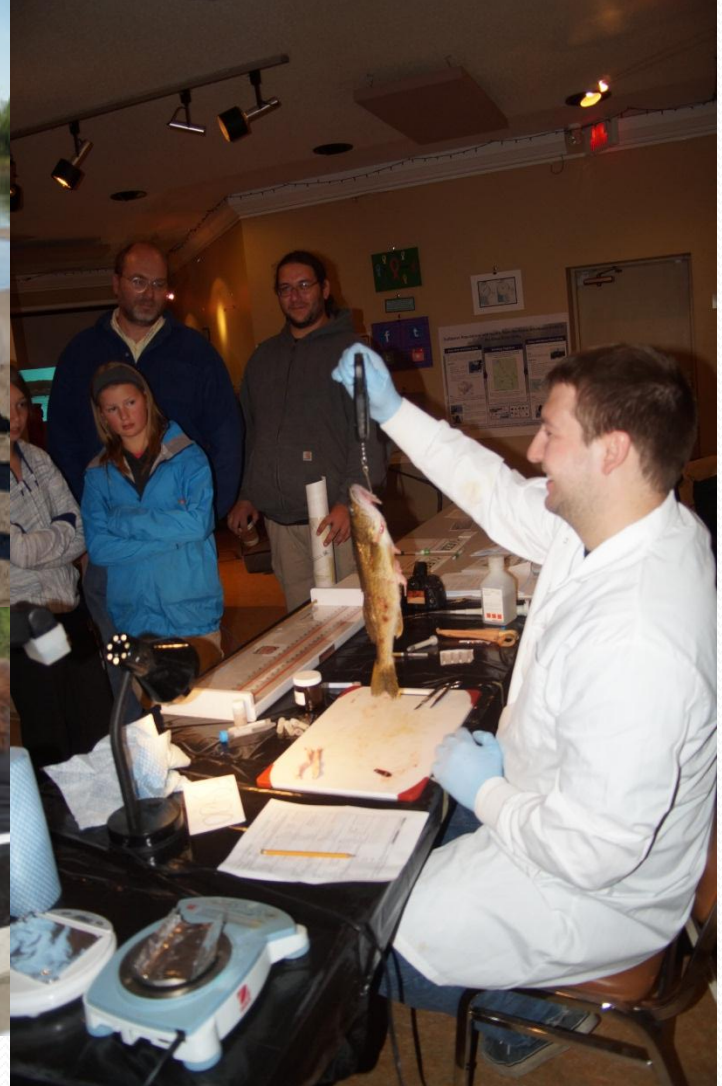


Tim Jardine
Ecology, fish
biology, food
webs



**Karl
Lindenschmidt**
Hydrology, ice
dynamics

Kick off meetings and Slave River and Delta tours (summer 2013)



SWEEP Timeline

- **Indicator workshop – July 2013:**
 - Met with community members, Elders and land users
 - Talked about *western science* and *traditional knowledge* indicators –who, where, when, how often, how much change
 - Identified communication protocols
- **Begin monitoring – summer 2013:**
 - Training and capacity building
 - Tested indicators (both western science and traditional knowledge)
- **Preliminary results workshop – winter 2014**
 - Present and discuss preliminary results
 - Revisit and revise indicators as necessary
 - Plan for 2014 field season



Erin Kelly

Manager, Watershed Programs & Partnerships

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867-930-6334

Land & Water Division

Environment & Natural Resources

Government of the Northwest Territories

For more information about the NWT Water Stewardship Strategy and the Action Plan, visit the Water Strategy website.

www.nwtwaterstewardship.ca



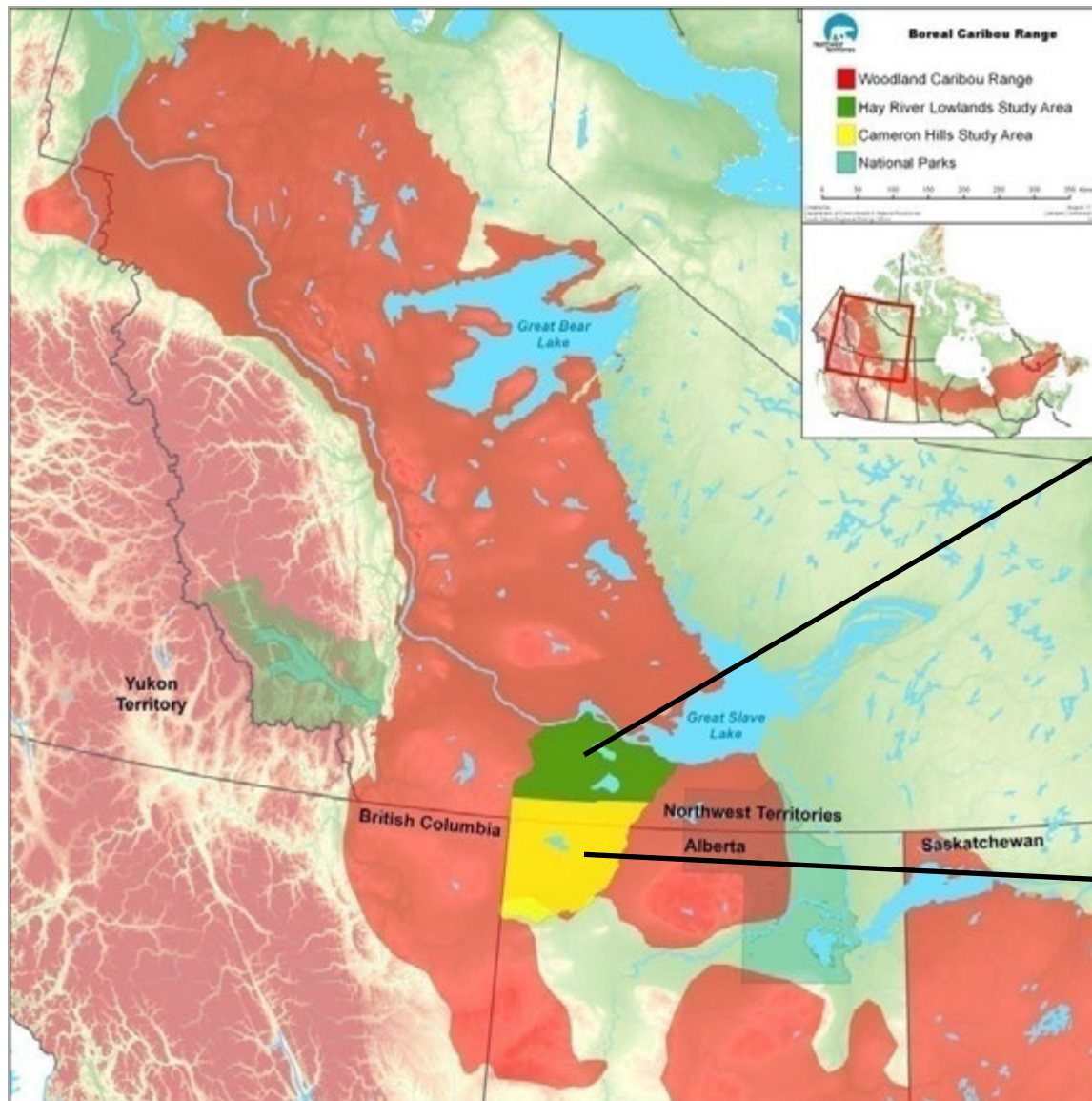
Boreal caribou

2013 South Slave Regional Wildlife Workshop
Allicia Kelly - October 31, 2013

What do we know?

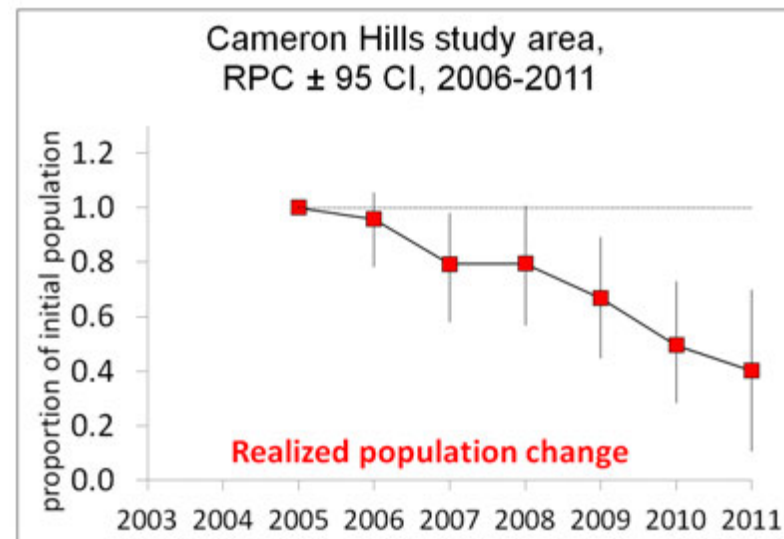
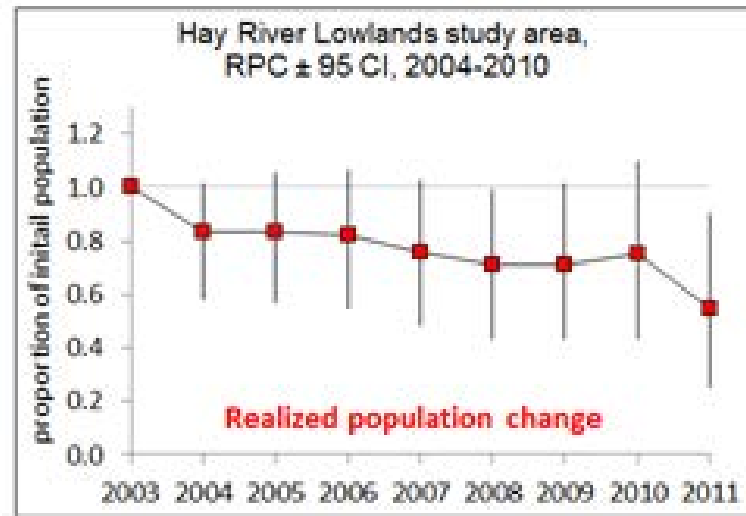
- Population trends
- Information about habitat use
- “The story in Alberta”

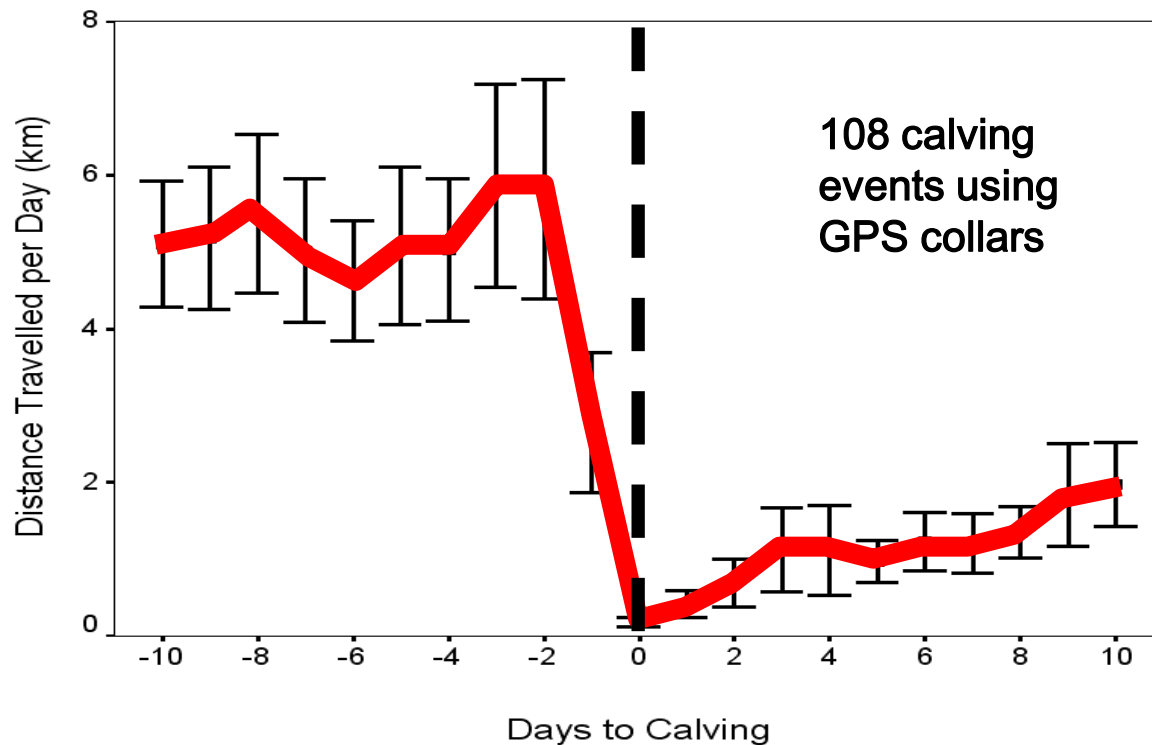
Boreal caribou monitoring program 2003-2012



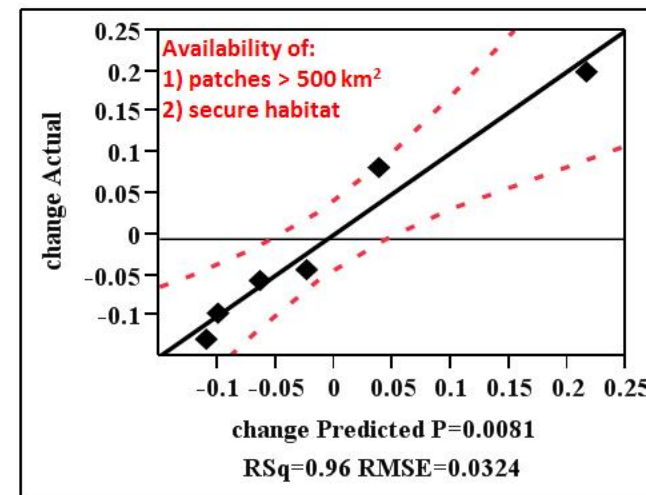
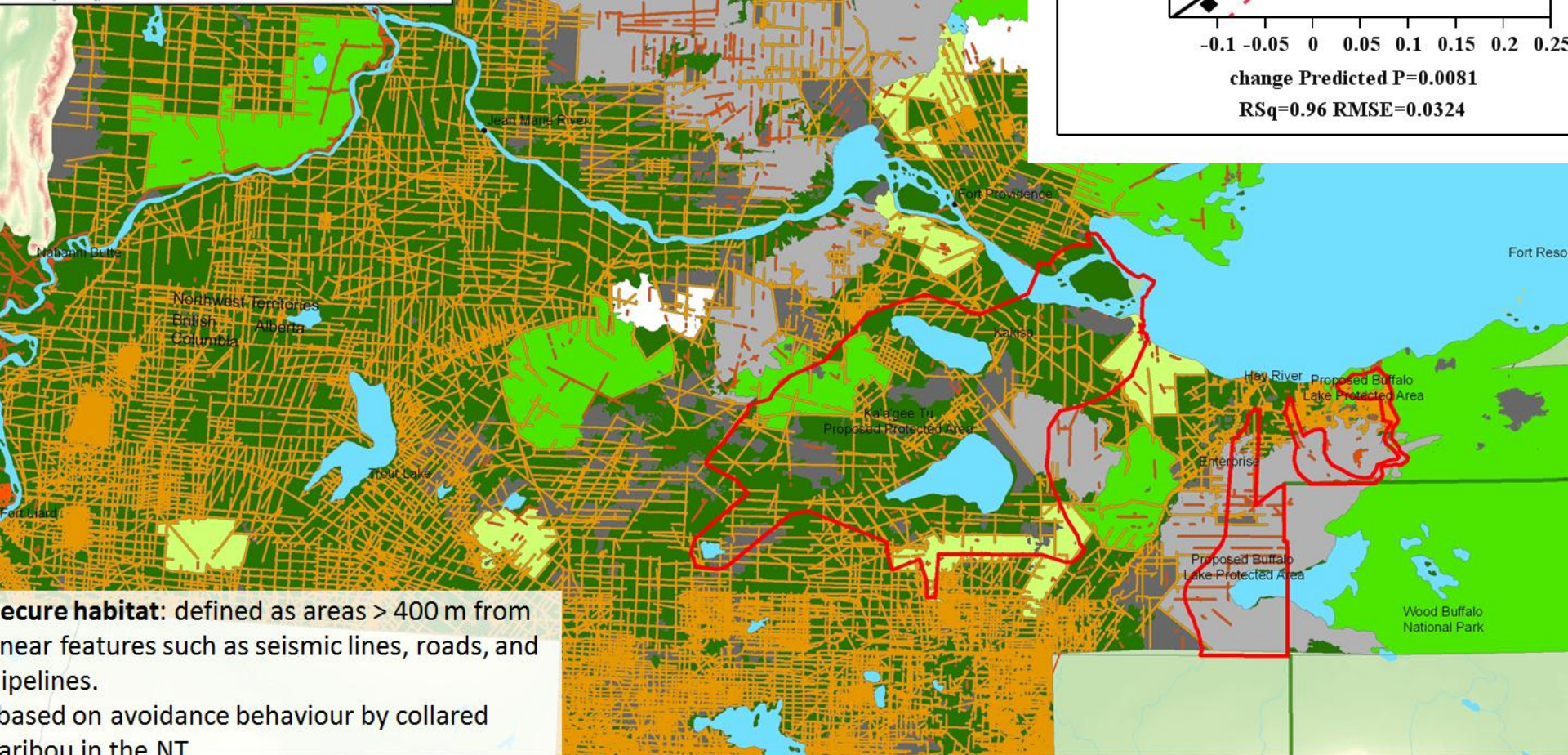
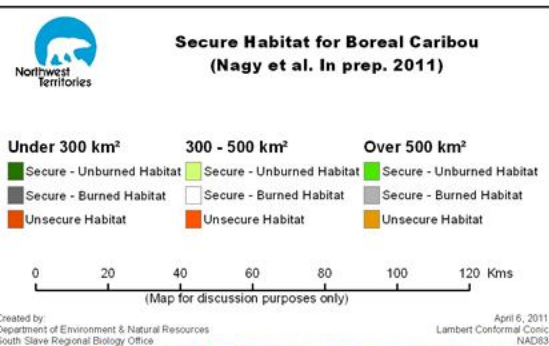
Hay River Lowlands
60 cows collared,
data 2003 -2011

Cameron Hills
51 cows collared,
data 2004-2011

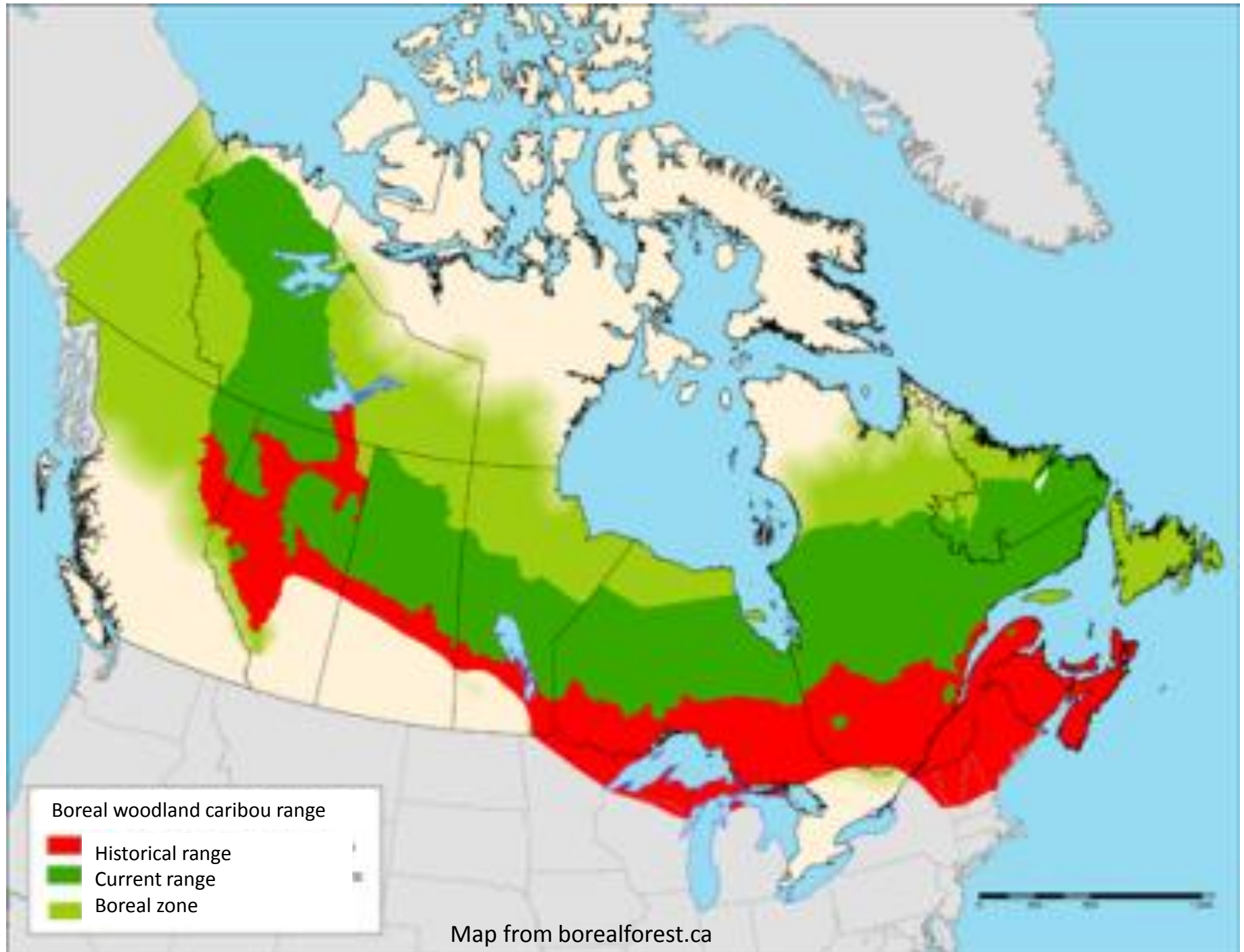


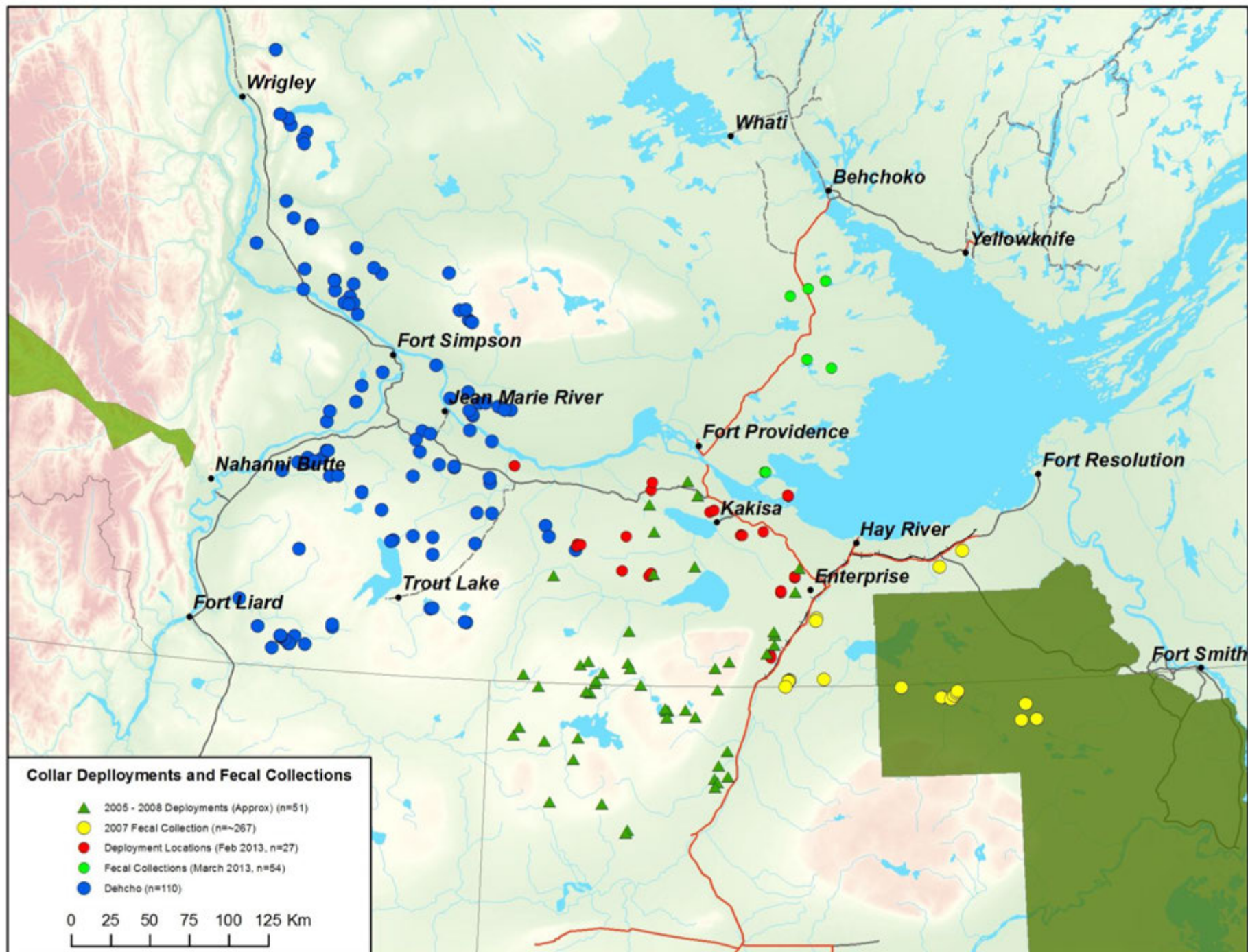


- Peak calving dates for each study area
- Seasonal activity periods throughout the year
- Calving locations



Secure habitat + LARGE patches of secure habitat \leftrightarrow higher population growth rate (λ)





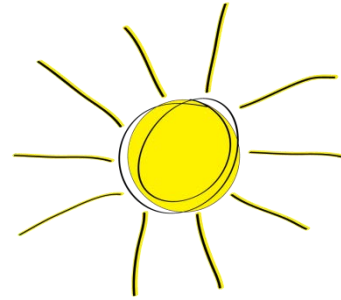
What's the story in Alberta?

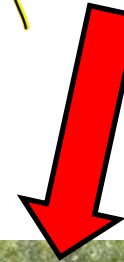
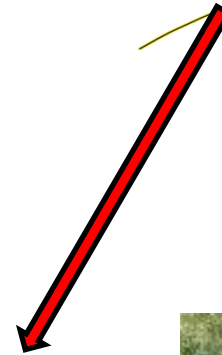
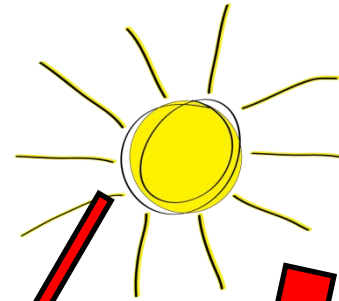
A lot of research has been
done on boreal caribou
and the system they live in

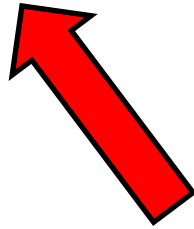
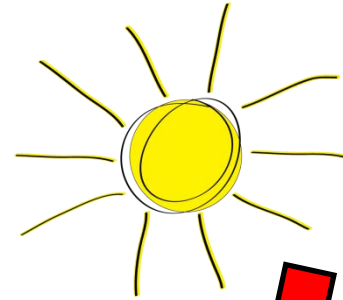


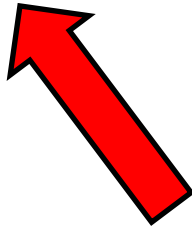
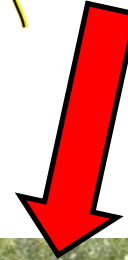
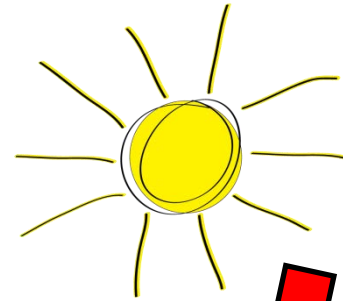
What's the story in Alberta?

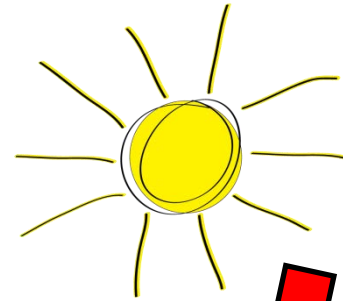
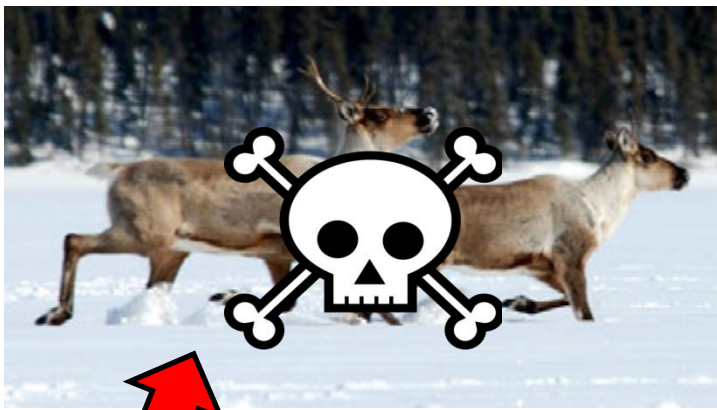
A lot of research has been
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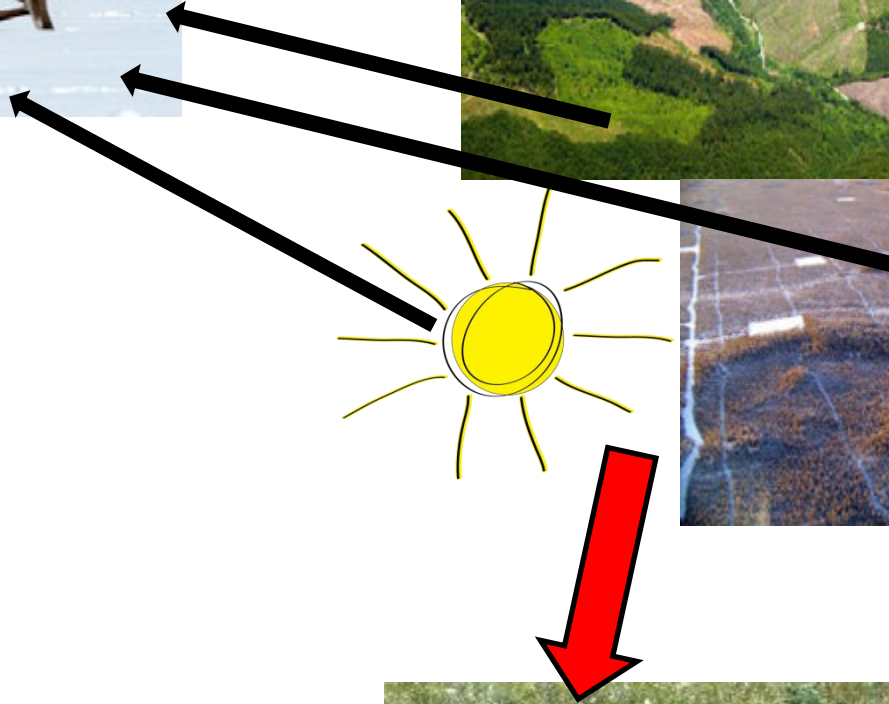
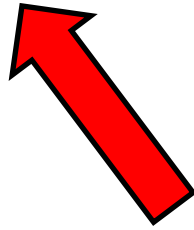
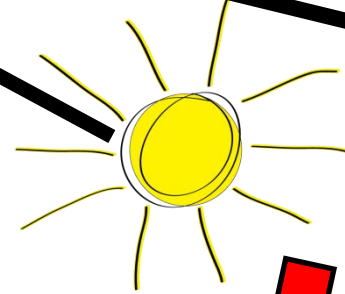
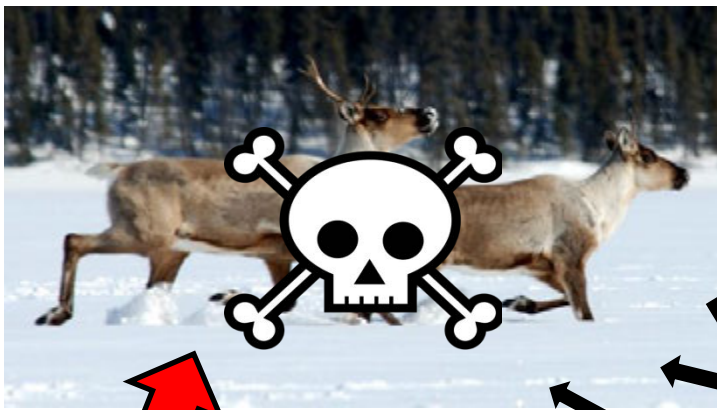












What don't we know?

Is our boreal caribou “story” the same as Alberta’s?

- How many boreal caribou are there?
- Predators: How many? What habitat do they use? What do they eat?
- Impact of non-predator stressors (e.g. weather)

How many caribou are there? Compared to northern Alberta? Northern NWT?





Predation



Winter tick



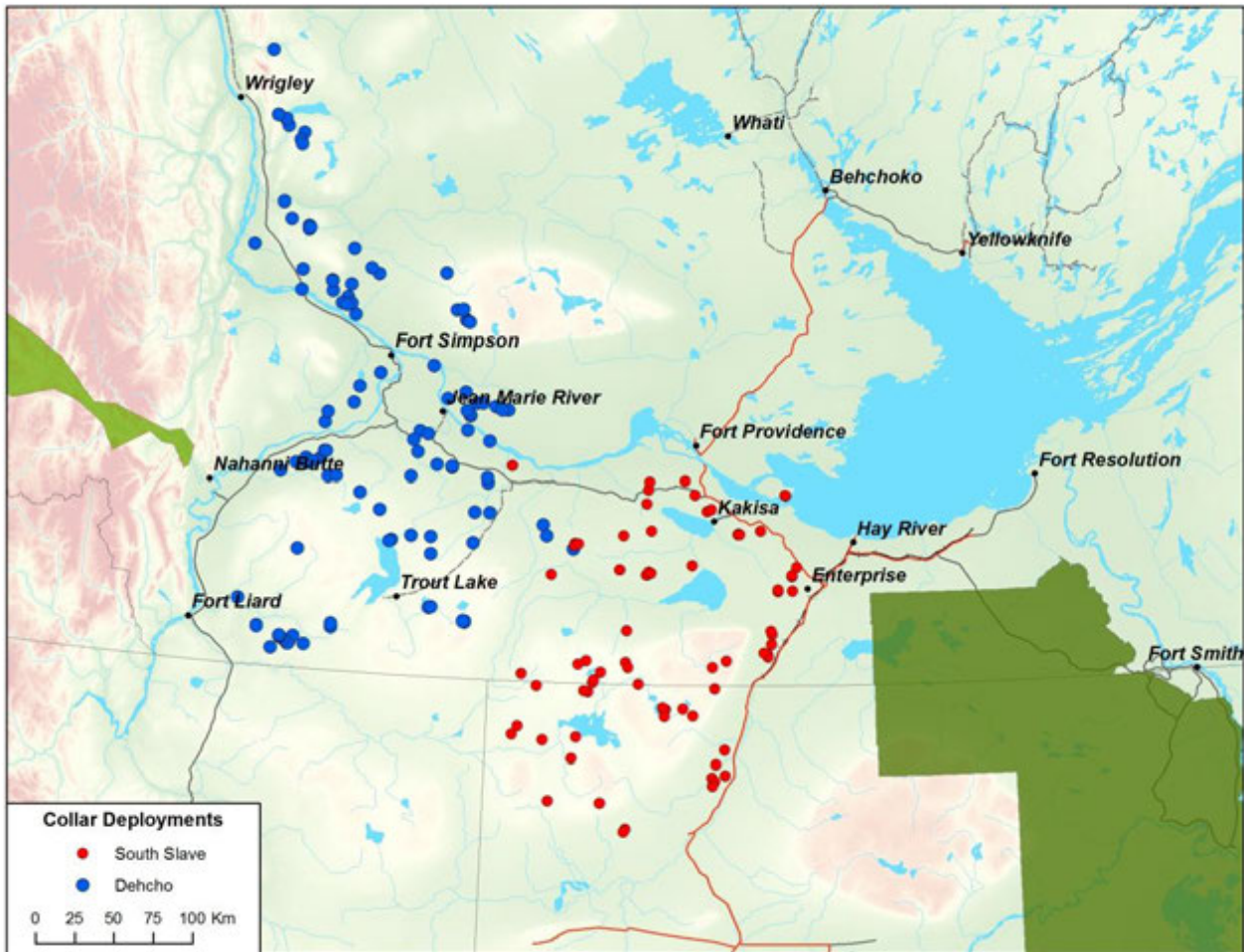
Not Predation



Many monitoring tools available

What will work best in the NWT?

Collar deployment locations- South Slave and Dehcho:



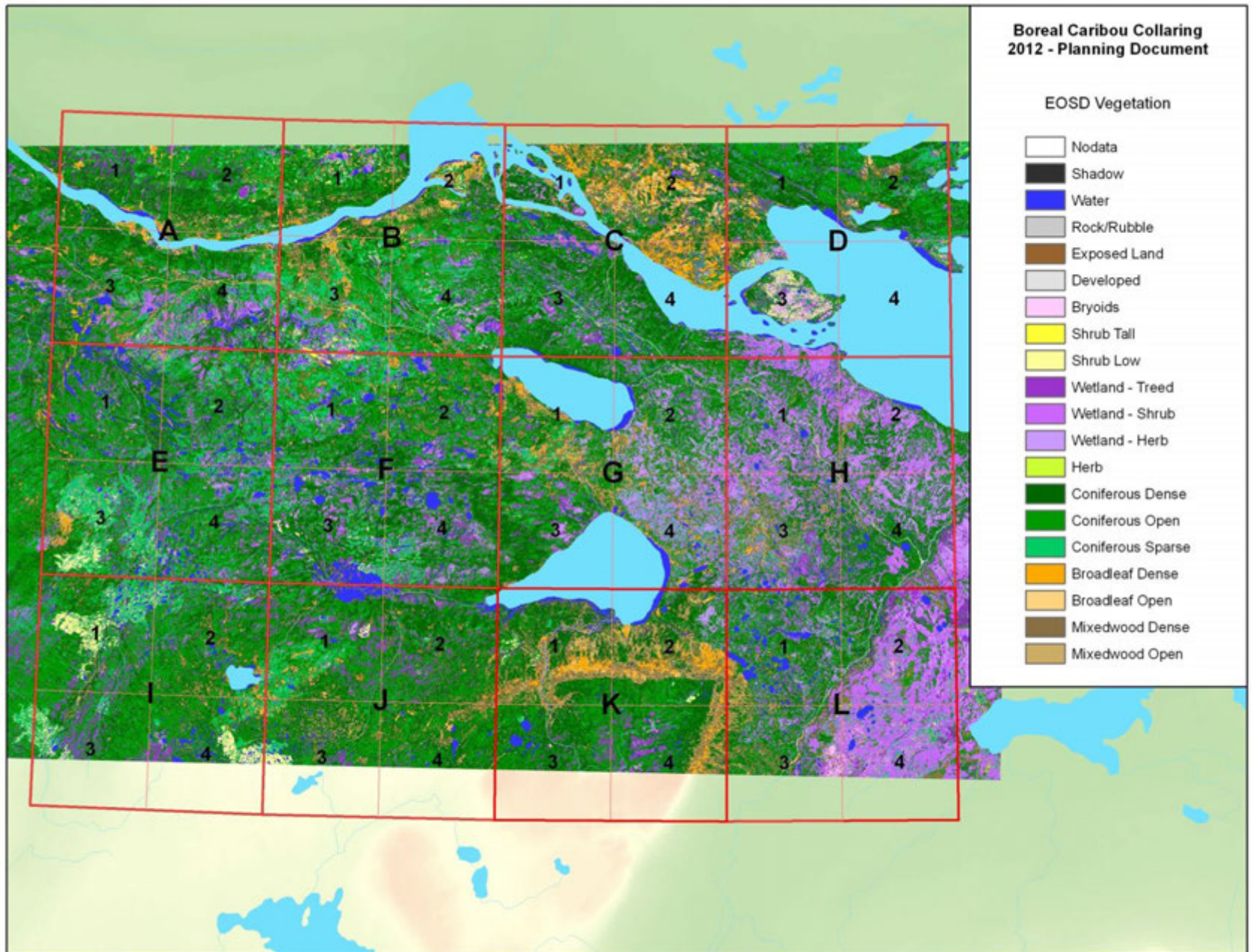
What about north of Fort Providence?



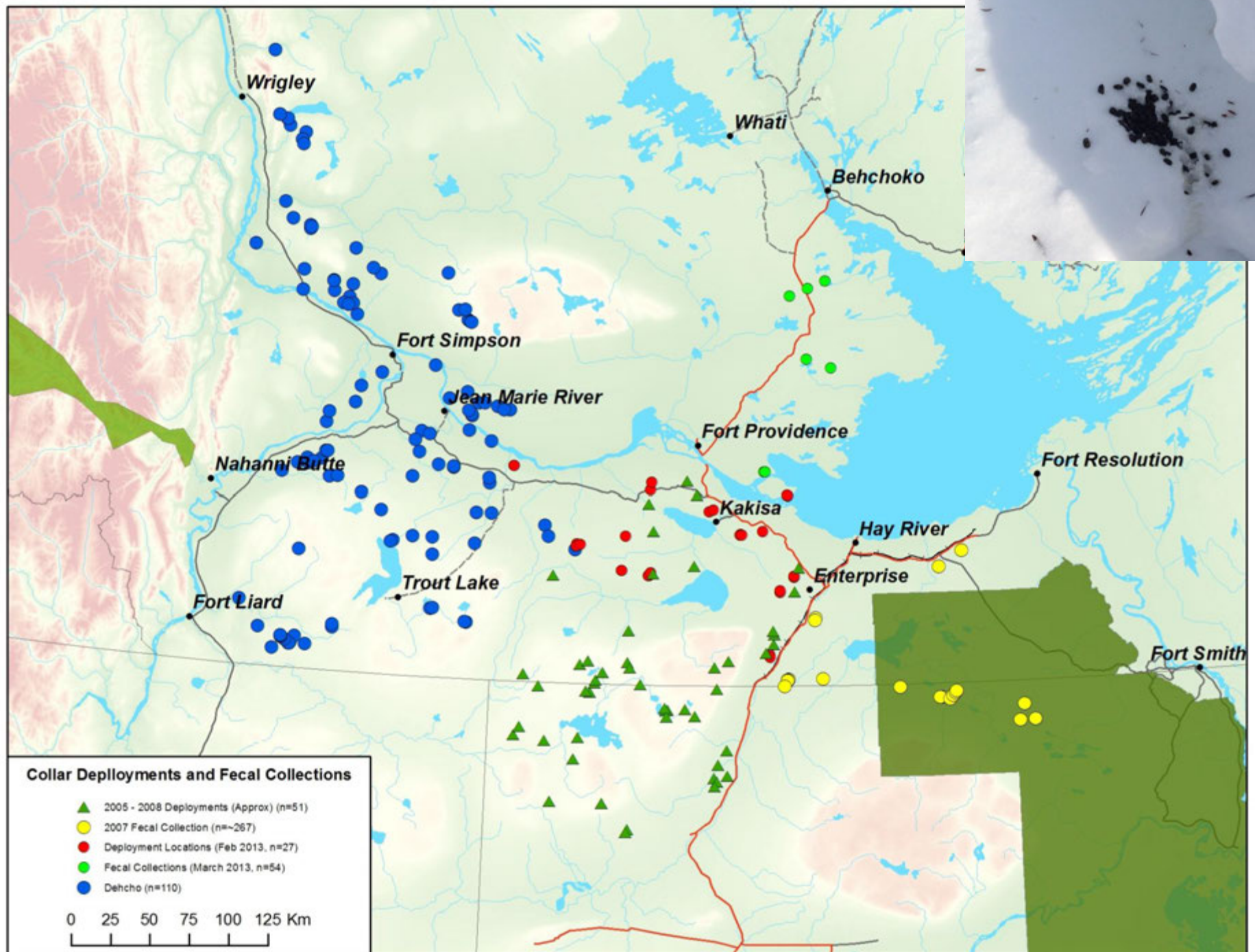
**Boreal Caribou Collaring
2012 - Planning Document**

EOSD Vegetation

- Nodata
- Shadow
- Water
- Rock/Rubble
- Exposed Land
- Developed
- Bryoids
- Shrub Tall
- Shrub Low
- Wetland - Treed
- Wetland - Shrub
- Wetland - Herb
- Herb
- Coniferous Dense
- Coniferous Open
- Coniferous Sparse
- Broadleaf Dense
- Broadleaf Open
- Mixedwood Dense
- Mixedwood Open



Enhanced Forest Inventory c2007 – updated landsat EOSD imagery





Locate track networks in aircraft and go collect poop

Scat detection dogs

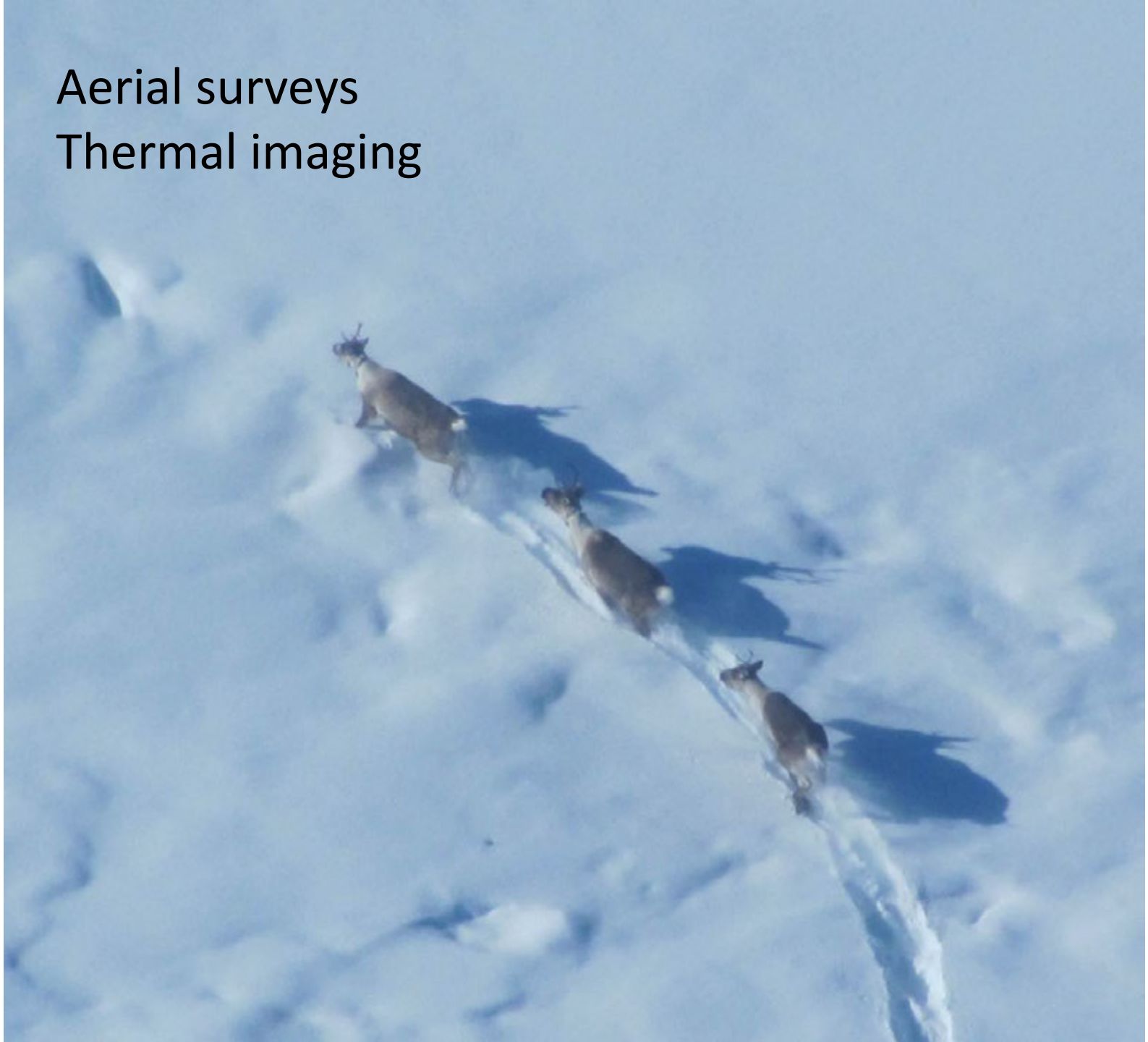
Sample at fixed locations (hair snagging)

Hunters provide samples

Collect data on multiple species at once



Aerial surveys
Thermal imaging



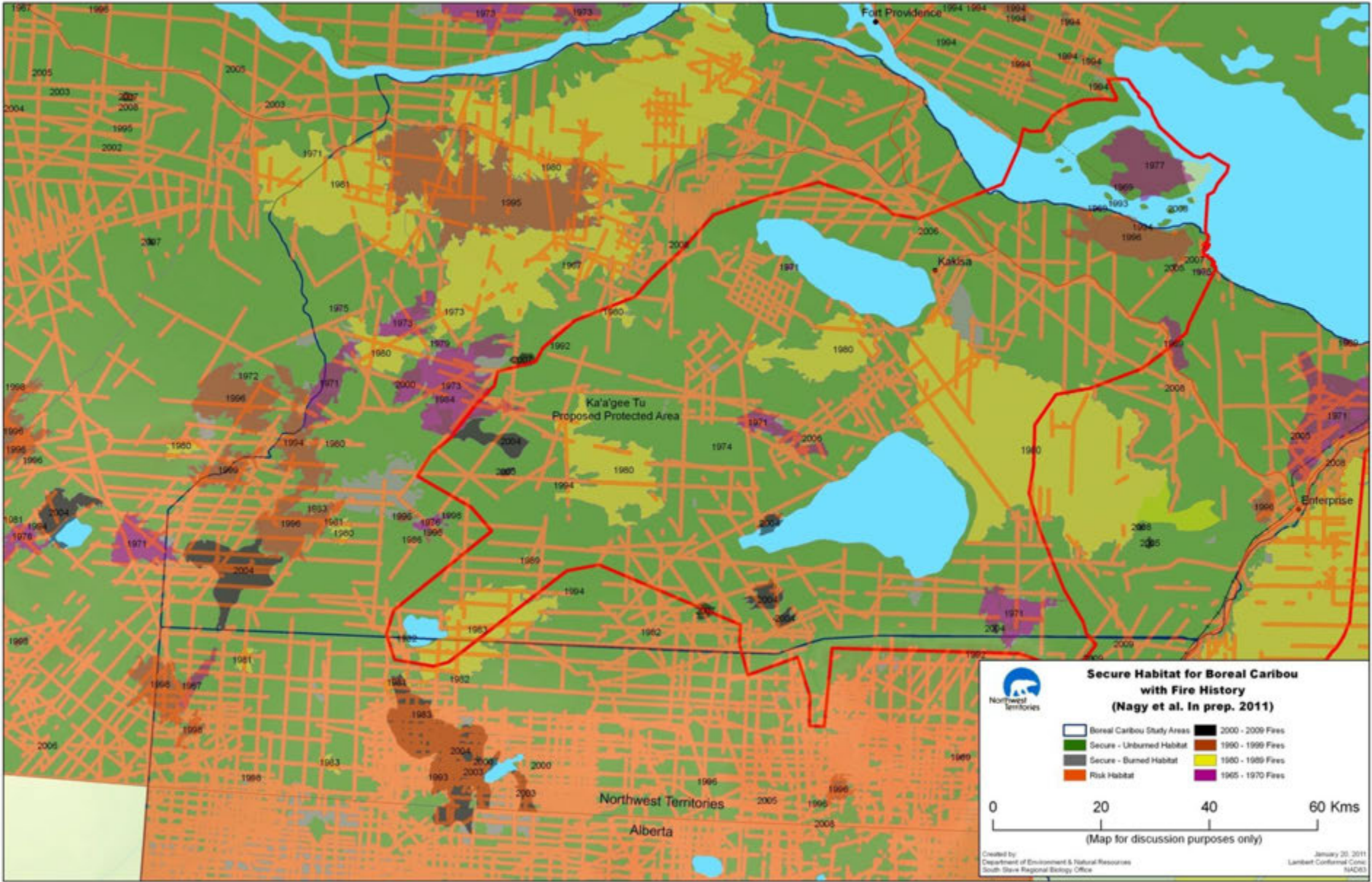
Breakout Groups

How do you think boreal caribou are doing?

- Important things I haven't mentioned?
- What about hunting?
- What research do you think would be the most useful in helping us understand the NWT story?

Thank you

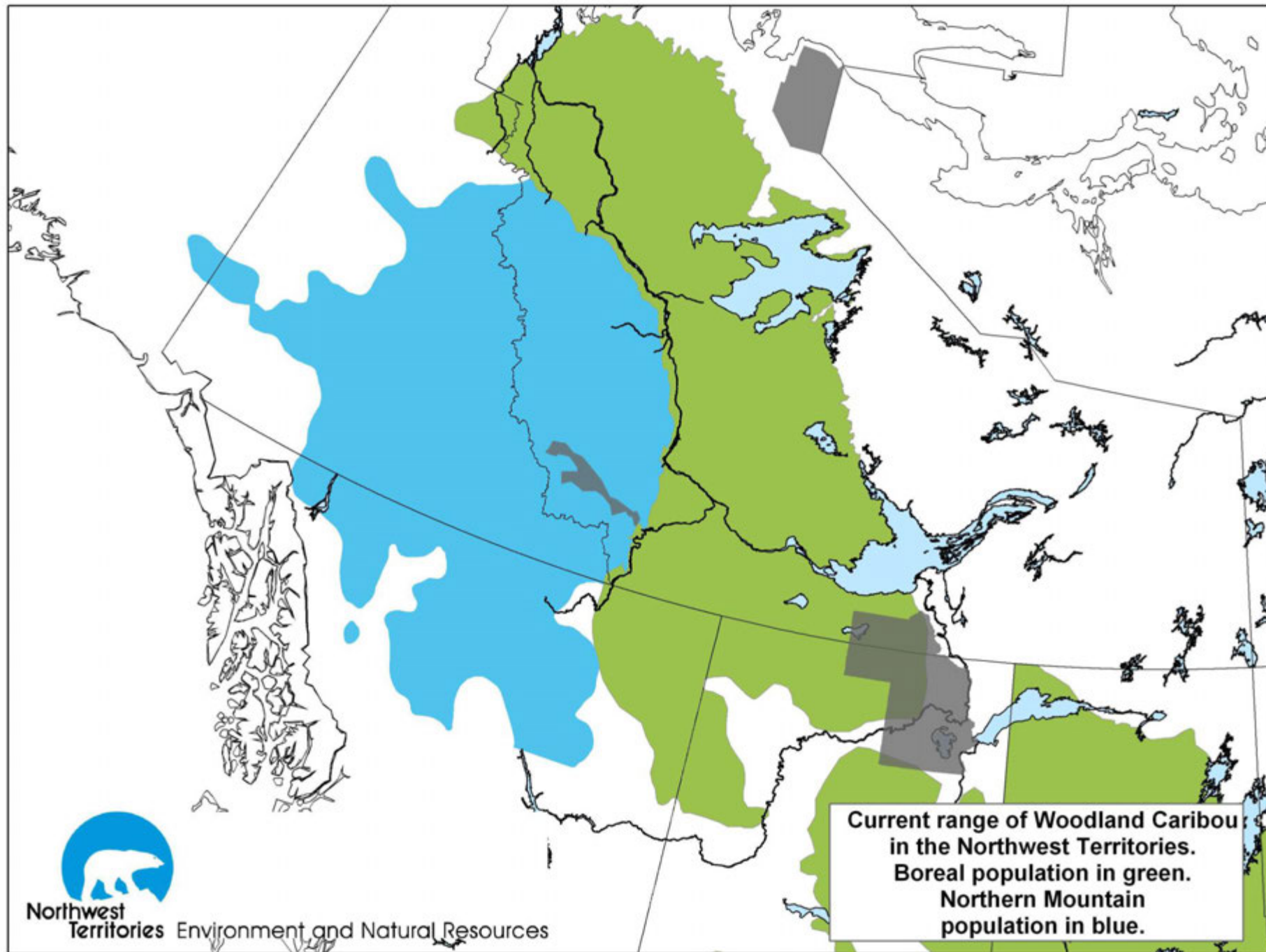




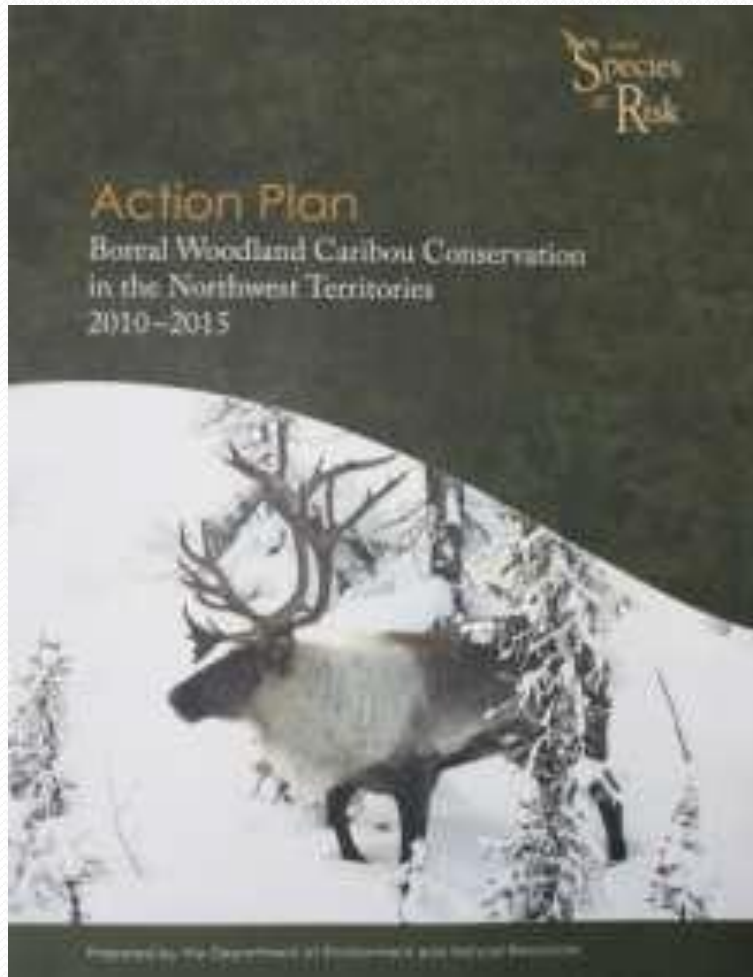
Boreal caribou range plans for the NWT



Nicole McCutchen
Wildlife Division,
ENR-GNWT
October 31, 2013



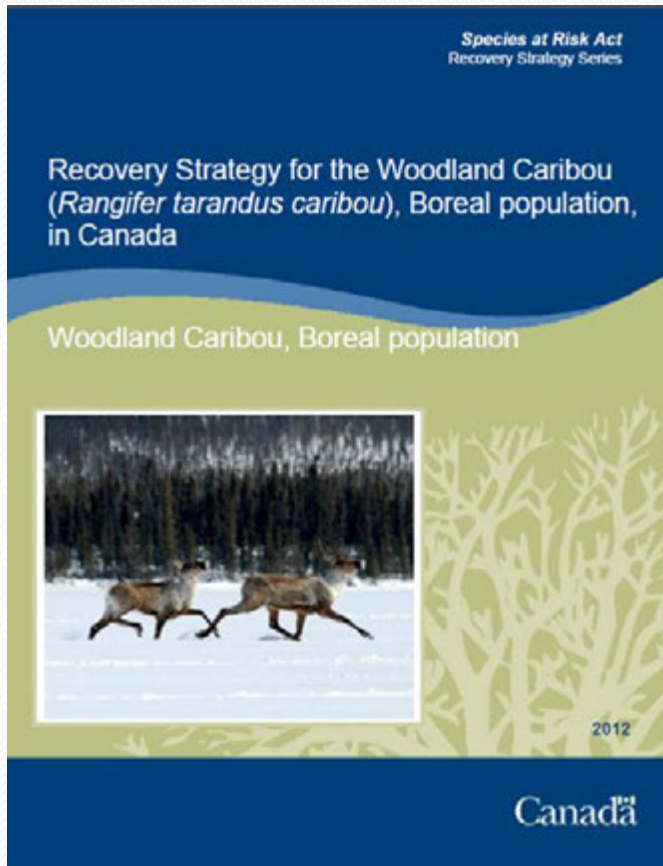
NWT Action Plan



Territories Environment and Natural Resources

- Goals
 - Prevent becoming SAR
 - Maintain current contiguous distribution – maintain connectivity
 - Manage boreal caribou and habitat

National Recovery Strategy

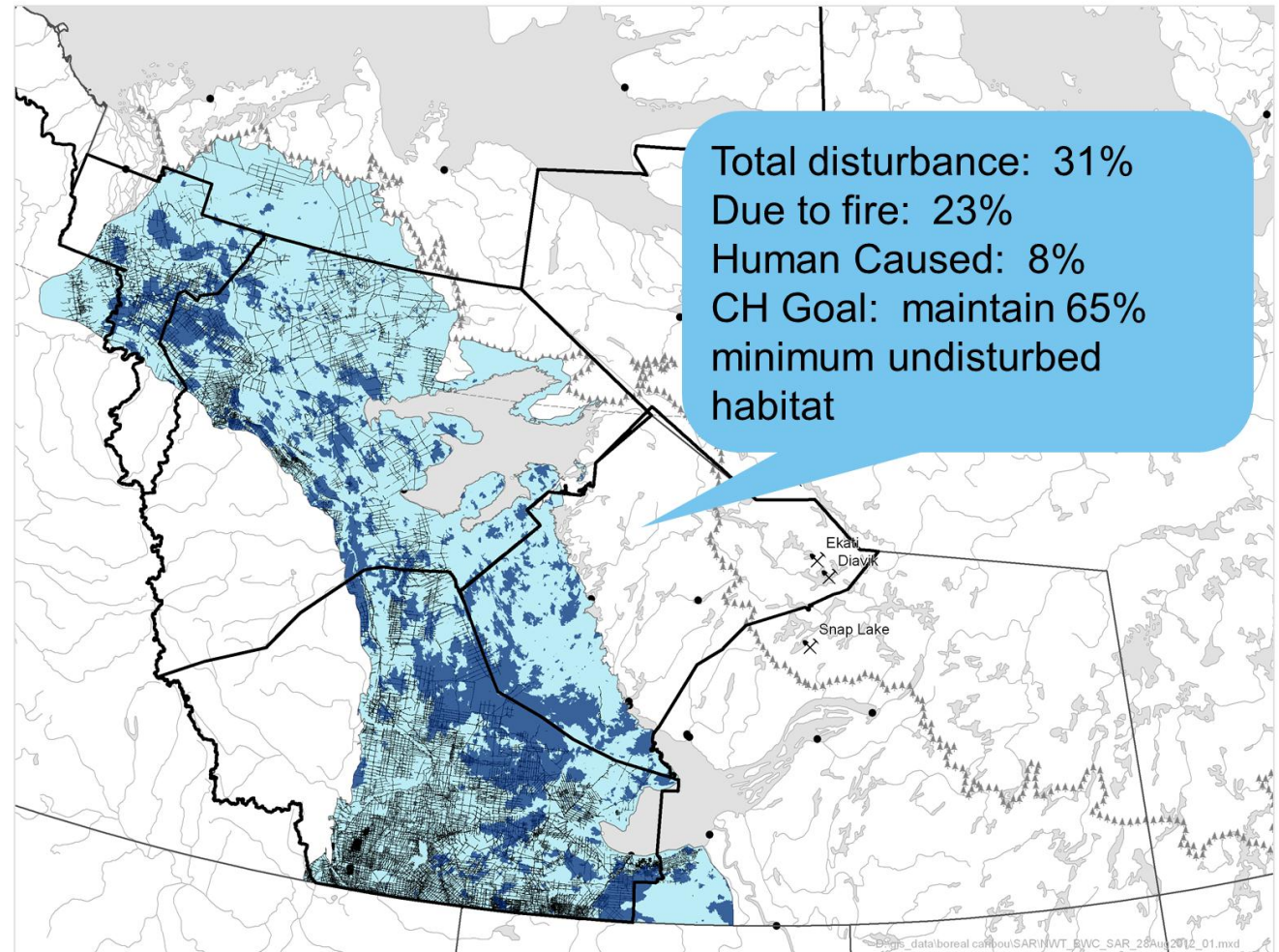


- Objectives
 - Maintain self sustaining population
 - Protect critical habitat: 65% of boreal caribou habitat must remain undisturbed – range plans
- Legally required to meet

Critical habitat

‘Undisturbed’ =

- ✓ Not burned in past 40 years
- ✓ >500m from anthropogenic footprint



Range Plan for NWT

- Required by 2017
- Meant to protect critical habitat
 - How the NWT range will be managed to maintain a minimum of 65% undisturbed habitat over time
- GNWT to lead range plan development, but in collaboration with partners

Challenging!

- Size of range (441,166 km²)
- Fire is primary disturbance
- Increasing development pressure
- Single species management (not holistic)
- Shared authority over wildlife and land



John Nagy/ENR

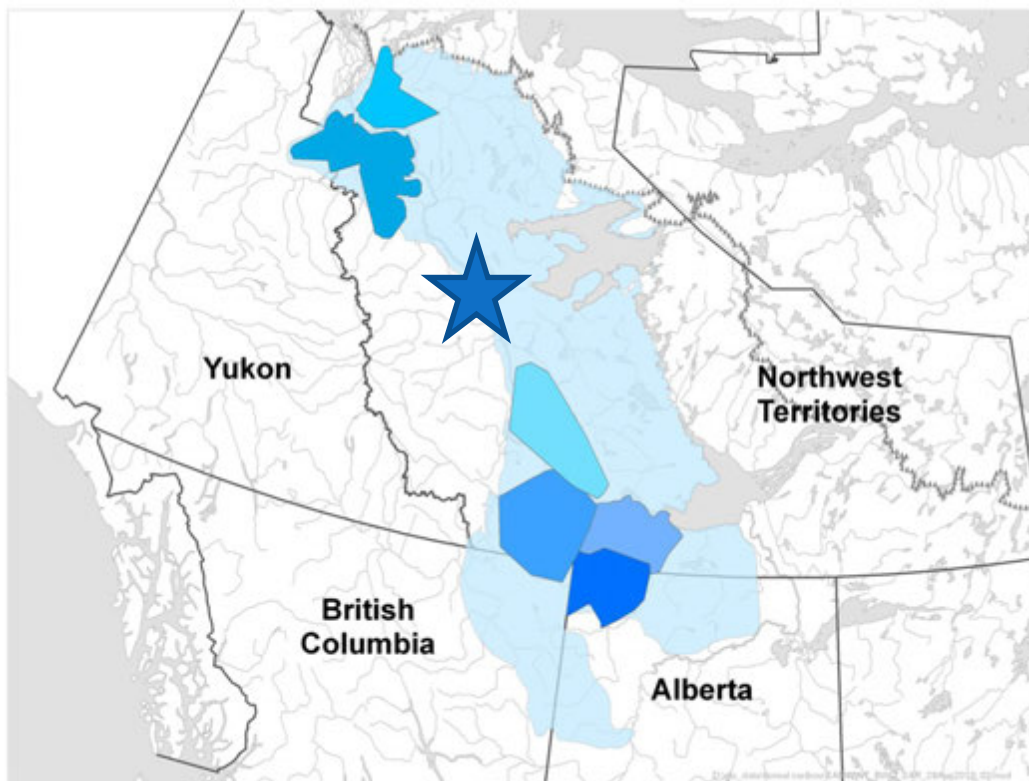
But not impossible

- Population is doing okay
- Still have large intact patches of secure habitat
- More than 65% of range undisturbed
- Range is continuous
- Means we have flexibility
 - Don't have to say no to development, fire
 - Don't require predator control

Three main pieces of a SARA compliant range plan

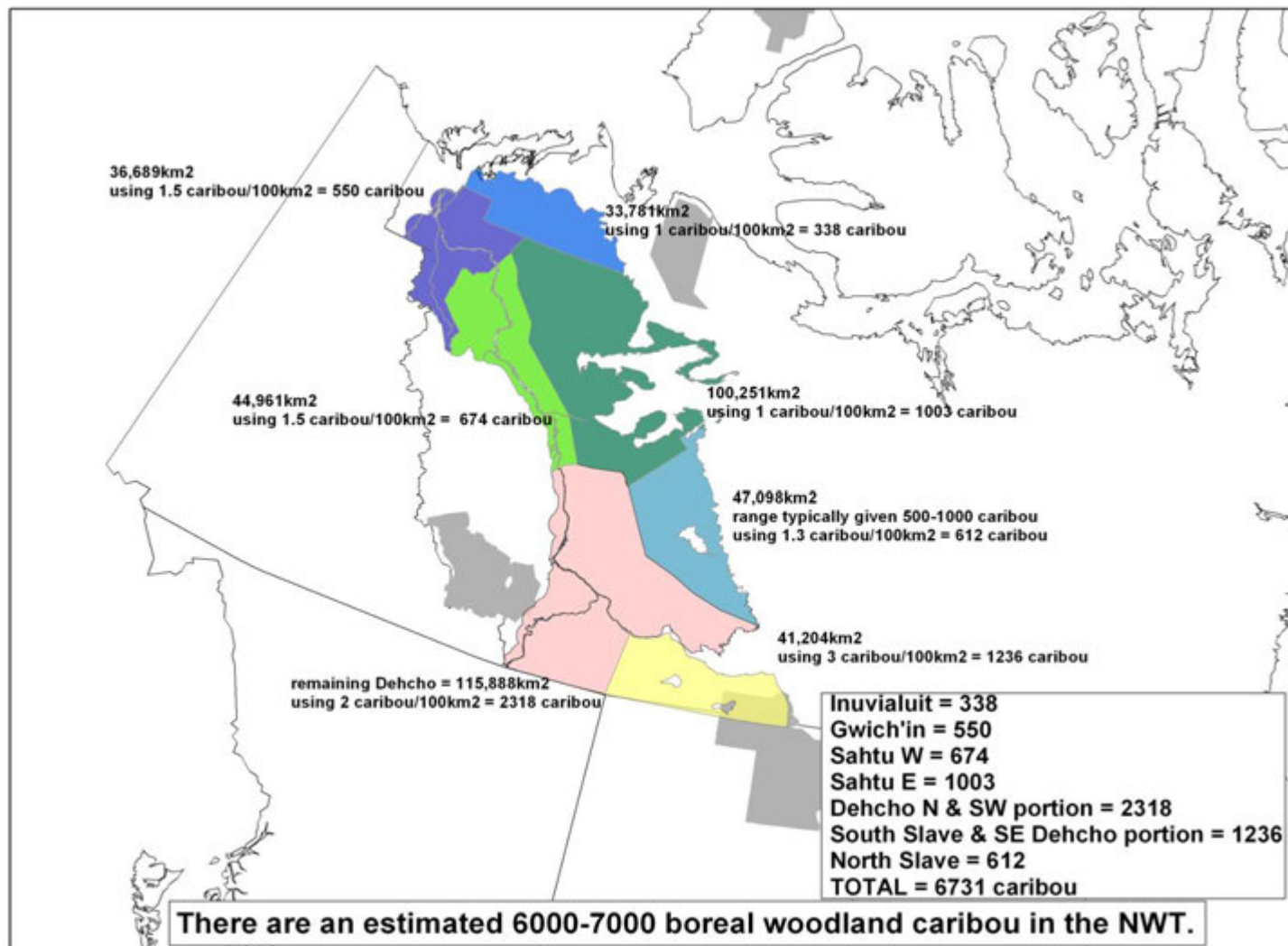
1) A method and plan for monitoring whether the NWT boreal caribou population is sustainable	Information <ul style="list-style-type: none">• ENR technical staff are exploring options for monitoring boreal caribou at multiple scales within the NWT
2) A method and plan for measuring NWT habitat disturbance on an ongoing basis	Information <ul style="list-style-type: none">• ENR technical staff are working on an approach to map and calculate disturbance over time
3) A description of how disturbance management decisions will be made in such a way that keeps the NWT range under the disturbance threshold	How Land Managers will make their decisions <ul style="list-style-type: none">• Essentially a Cumulative Effects Management Plan

1. Monitoring program



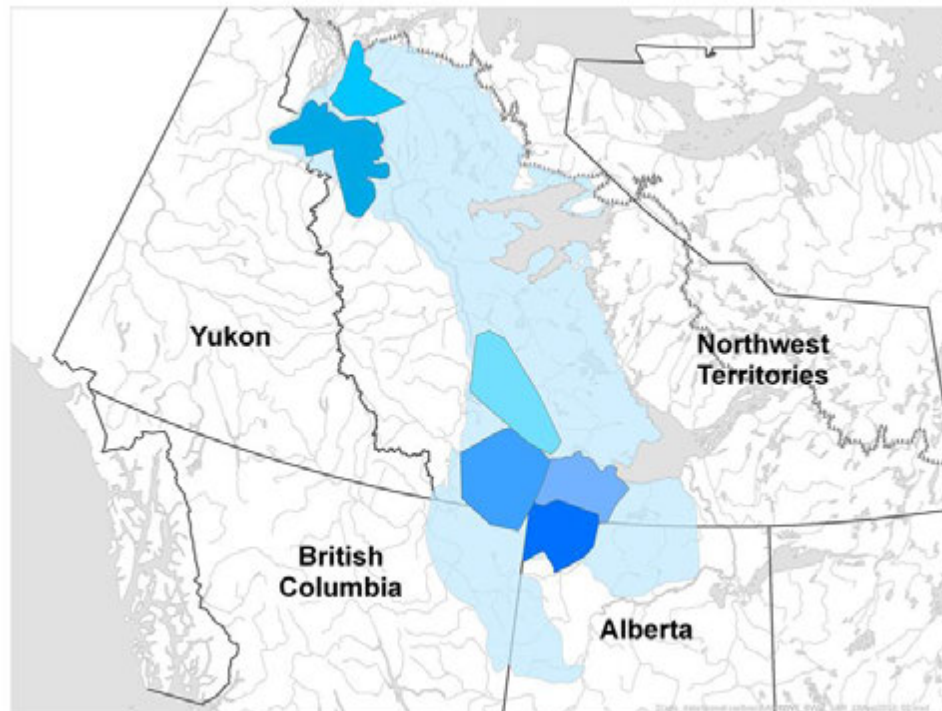
- 6 main study areas:
 - 300+ collars
 - 7 years+ data
 - 3 ongoing
- Some work in Sahtu and North Slave
 - Gaps (★)!

Trends, not counts



Program is undergoing review

- NWT wide information on population trend critical
- Need multi-scale, standardized program
 - Good information is more important than approach



2. Measuring habitat disturbance

- Land disturbance information not complete
 - Initiatives to fix this – Landscape Disturbance Inventory
- Exploring different approaches
 - Boreal caribou mapping tool used in Ontario



3. Range plans useful for decision making



- NWT wide plan
- Region specific plans
- Discussing approach with co-management partners

Uses

- Meet obligations in the recovery strategy
- Land use planning
- Fire management
- As part of a more comprehensive management plan
- Environmental Assessment – timber harvest, oil and gas development, mining
- Cumulative Effects Assessment

One example – environmental assessment

Green

- Habitat status meets requirements for caribou presence;
- approvals consider future implications to caribou population.



Yellow

- Uncertain if habitat status sufficient to sustain caribou;
- approvals may have special conditions e.g. best management practices, mitigative measures, etc.



Red

- Habitat status insufficient to sustain caribou;
- approvals must be geared towards improvements of conditions for caribou;
- Development may not be approved;
- Land use direction may be reviewed.



Future planning

- Develop research and monitoring program to test range and management plans. Multi-indicators:
 - Boreal caribou population trends
 - Disturbance metrics (fire, human)
 - Predators, other ungulates
 - Habitat
 - Harvest



Where to now?

- Have funding 😊
- Have people (sort of) 😊
- Rough outline of process
 - NWT wide guidance document – March 31st, 2014
 - Region-specific plans– next few years
 - SSR, Dehcho, Sahtu followed by Inuvik and NSR

**How do you want to be involved in
this process?**