



GWICH'IN RENEWABLE RESOURCES BOARD

news

Fall 2016



Photo credit: K. Maier, GRRB

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who we are

The **Gwich'in Renewable Resources Board (GRRB)** was established under the guidance of the Gwich'in Comprehensive Land Claim Agreement (GCLCA) to be the main instrument of wildlife, fish and forest management in the Gwich'in Settlement Area (GSA).

who we work with

The GRRB works with its co-management partners - Gwich'in Tribal Council (GTC), Government of the Northwest Territories (GNWT), Environment Canada (EC), Fisheries & Oceans Canada (DFO) - to communicate with the public and encourage conservation of renewable resources in the GSA. The GRRB works in collaboration with the four Renewable Resources Councils (RRCs) in the four communities (Inuvik, Tsiigehtchic, Fort McPherson, and Aklavik) to educate and promote sustainability of resources within the GSA.

our mission

The GRRB works in cooperation with the Gwich'in people, governments and stakeholders and in accordance with the GCLCA to effectively protect, conserve and manage renewable resources in the GSA. It will do this in a respectful, transparent and inclusive manner, using the best available scientific and traditional knowledge.

our vision

The GRRB is a model of renewable resources co-management. Working with its partners, the Board plays a leadership role in ensuring that the fish, forests and wildlife of the GSA remain healthy and sustainable.

our mandate

The GRRB is the main instrument of wildlife, fish and forest management in the GSA. The Board acts in the public interest, representing all the parties to the Gwich'in Comprehensive Land Claim Settlement – the Gwich'in, the people of the Northwest Territories, and all Canadians.



Amy Amos executive director

As the Executive Director for the GRRB, I lead a team of dedicated experts to implement the Board's decisions and responsibilities in accordance with the land claim agreement. I am committed to building strong relationships with respect, compassion and integrity.

A Nihtat Gwich'in participant, I was born in Inuvik and grew up in Halifax, Nova Scotia with my father, Wallace Thompson. My mother is Susie Thompson (Linklater/Kaye) from the Kaye & Stewart family.

2017 will be my 11th year with the GRRB. I was hired as a biologist and was promoted to Executive Director in 2009. My main job is to ensure that the Board's direction is implemented at the staff level. My job description can be broadly categorized into personnel management, financial management, Board administration and liaison activities.

Personnel management I am responsible for managing the staff of the GRRB. This is something that I take very seriously, as I believe a positive work environment and

good teamwork are the foundations of a successful workplace. We have a very talented and dedicated staff support team. You will see the evidence of their hard work in their updates throughout this newsletter.

In November, we said farewell to Kris Maier, our Fisheries Biologist for the past seven years. Kris and his family have moved to British Columbia. We are in the recruitment process for this position and hope to welcome a new staff member in the new year.

Kaytlin Cooper's term as our Species at Risk Biologist has been extended until March 31, 2017 and we continue to seek permanent job security for this position. Our goal is to secure permanent funding through the new Implementation Plan that should hopefully be in place by April 2017.

Summer Student Johnny Charlie and Technician Trainee Jordan Norman-Goose, completed their summer employment contracts. **Their reports can be found on Pages 21 and 22.**

A contract is in place for the development of our Conservation Calendar for 2017. Look for this to be released in January - stop by the GRRB office and pick up a copy.

Financial management I am responsible for ensuring that the Board's finances are managed appropriately. Finances continue to be managed successfully and within budgets. We meet all our financial reporting deadlines and have managed to secure outside funds to help us deliver additional projects and programs that support the Board's mandate.

The Finance Committee is operational and meets quarterly. At

the last meeting (October 2016), the Board received an updated financial report for April through September and approved the mid-year variance report.

To help manage the budget better, I added the 2016-17 budget into the accounting system so that internal expenditures could be tracked.

Board administration I am responsible for the coordination of all Board meetings and for following up on Board actions and motions.

Since our last newsletter, the Board held quarterly teleconferences on May 17, July 27, and November 1, 2016 and a face-to-face Board meeting on October 5-6, 2016 in Tsiigehtchic. The Finance Committee meets after each financial quarter, then the GRRB meets. That way, any major financial matters can be flagged during the GRRB call without needing to go into the same level of detail as the Committee. This newsletter highlights some of the outcomes from these meetings.

The recently-approved Safety Policy is being implemented. Staff took supervisory safety training in November and the next step is for staff to work together on the Job Risk Analysis document. The Operational Procedures Manual is under review by the Policy Committee.

Liaison activities Over the summer months, I attended each RRC meeting. To promote the GRRB's summer programs and encourage education, I visited each school in the GSA. I also attended a TRRC meeting regarding responsible harvesting concerns, and a meeting in Fort McPherson regarding the draft Yukon Grizzly Bear Management Plan. ...continued on next page

I remain involved with the following committees:

- *Wildlife Act* Working Group
- Conference of Management Authorities (CMA)
- Species At Risk Stewardship Committee
- Arctic Borderlands Ecological Knowledge Society
- Advisory Committee for the Cooperation for Wildlife Management (ACCWM)
- Integrated Fisheries Management Plan (IFMP) Steering Committee
- NWT Board Forum
- GTC Mentorship Program
- NWT Initiating Group (Canadian Mountain Network)
 - looking for input into priority research themes.

Liaison activities We all have a role to play in helping to work together better. I attend meetings to help deliver the Board's messages, and we communicate these messages through other venues, such as: this newsletter, our annual Conservation Calendar, our website and our Facebook page.

I hope you enjoy our newsletter!

Eugene Pascal board chairperson

I continue to participate in meetings and calls on a variety of subjects. Notable since the last newsletter were the Species at Risk GNWT CMA meeting, the Rat River Working Group meeting with DFO, a meeting of the ACCWM and a Species at Risk AANDC meeting.

In mid-October, I participated in the WMAC (NWT) community tour relating to Cape Bathurst and Bluenose West caribou herds and the draft action plans associated with their management. I also attended the CMA teleconference on October 20, the Wildlife Act (Section 15) meeting in Yellowknife October 25-26, and the GRRB teleconference on November 1. I co-chaired the ACCWM meeting November 29 - December 1 in Inuvik with the WMAC (NWT) chair.

I remain active on the following Committees and Working Groups:

- *Wildlife Act* Working Group
- CMA
- ACCWM



- Rat River Working Group (Chair)
- West Side Working Group (Observer)
- Aboriginal and Northern Development Canada (AANDC)

I continue to work with Amy to give advice to the Board and staff when needed. I want to thank Amy and the staff for their work to support the Board and also for supporting me in my role as Chairperson.



Photo credit: GRRB

GRRB Board appointments

Eugene Pascal
Chairperson (GRRB)



Order in Council
appointments

Nominating
Agency

Federal
government

Territorial
government

TBA
Member (GTC)

Vacant
since
October 19,
2016

TBA
Member (GTC)

Vacant
since
September
15, 2016

TBA
Member (GTC)

Vacant
since June
15, 2010

Burt Hunt
Member (DFO)



Doug Doan
Member (EC/CWS)



Jozef Carnogursky
Member (GNWT)



TBD
Alternate (GTC)

Vacant
since
October 19,
2016

TBD
Alternate (GTC)

Vacant
since
October 19,
2016

Sarah Jerome
Alternate (GTC)



Ron Allen
Alternate (DFO)



TBA
Alternate (EC/CWS)

Vacant
since May
13, 2013

Tracy Davison
Alternate (GNWT)



board member updates

Our Board members have been busy this period! Here is a summary of some of the meetings that they have attended, committees they have been involved in, and training courses they have undertaken:

Committees/Working Groups:

- Safety Policy Development Committee
- Signing Authority Committee
- Wildlife Studies Fund Committee
- Species at Risk Committee (SARC)
- Advisory Committee for Cooperation on Wildlife Management
- NWT Board Forum
- IFMP Steering Committee

- Policy Committee (working on the GRRB Policy Manual)
- Operating Procedures Review

Meetings/Training:

- May 13 – Request for Proposals Review for Office Space
- May 17 – GRRB Teleconference
- June 7 – IFMP Steering Committee
- July – Meetings with lawyer to discuss HR Policies
- July 25 – Finance Committee
- July 27 – GRRB Teleconference
- July 27 – Species at Risk meeting, AANDC
- August 15 – *Wildlife Act* Working Group planning meeting
- October 5-6 – GRRB Fall Board Meeting, Tsiigehtchic

- November 1 – GRRB Teleconference
- November 4 – Conference of Management Authorities (CMA) call to discuss including Porcupine Caribou Management Board (PCMB) in future Porcupine Caribou herd dialogue
- November 14-17 – SARC ([see page 9 for details](#))
- November 17 – Joint CMA/ SARC meeting on lesser-known species assessments
- November 23-24 – Meeting with senior DFO managers, Winnipeg
- November 29 – ACCWM annual status meeting
- November 29 - December 1 – NWT Board Forum, Norman Wells



Photo credits this page: GRRB



October Board Meeting

The GRRB held its fall face-to-face meeting in Tsiigehtchic on October 5-6, 2016. At this Board meeting, Day One of the agenda included: Board, staff and agency updates (provided throughout this newsletter); a Board review of the *Species at Risk (NWT) Act* process, and review and approval of the NWT Amphibian Management Plan and NWT Boreal Caribou Recovery Strategy; a presentation and discussion on changes to the

Fisheries Act; and discussion around the caribou herds.

Day Two of the meeting began with a discussion on changes to moose regulations under the *NWT Wildlife Act*, followed by a summary of the Grizzly Bear Management Agreement and a Board discussion on bear management. There was an open discussion with the Renewable Resources Councils (RRCs). The public portion of the meeting finished with review and approval of GRRB interim research priorities.



Photo credits this page: GRRB

GNWT Environment & Natural Resources Regional Wildlife Update

Marsha Branigan, ENR

Staffing and Operations The warehouse has been demolished. The plan is to build a new warehouse and lab that will house the Wildlife Management (WM) and Fisheries Management (FM) divisions. Field operations and the Superintendent will remain in the forestry building.

WM is fully staffed and has hired a summer student – Kayla Hansen-Craik. Starting this fall, WM will have two staff on maternity leave.

Research and Monitoring Programs

Barren-Ground Caribou Body condition sampling continues with a \$50 payment for all samples. As part of the monitoring program for the Tuktoyaktuk Peninsula (TP) and Cape Bathurst (CB) barren-ground caribou herds, recruitment surveys were conducted April 5 and 6, 2016. A total of 1,937 caribou in 32 groups

were classified. Group sizes ranged from 3 to 337 caribou. The number of calves per 100 cows was 54.5 ± 1.8 (Standard Error) for the CB herd and TP herd. This year's recruitment rate is high and indicates that winter conditions were good for the herds. A collar pick-up was conducted in August 2106 Inuvik north up to the Tuktoyaktuk peninsula. The next photo survey is planned for July 2018.

Staff participated in the Sahtu Renewable Resources Board and Wek'èezhìi Renewable Resources Board hearings for the Bluenose-East caribou herd. ENR has been involved on the working group to develop action plans for the Bluenose-East, Bluenose-West and Cape Bathurst herds led by the ACCWM. Those plans were presented at the Déline meeting at the end of July to the ACCWM and forwarded to the member boards for support to formally submit to the governments.

Range maps created in the past for the caribou herds have only used collar data from cow caribou. Now that we have a few years of data from the GPS/sat collars deployed

on bulls, we are analyzing collar data to look at different seasonal range use by cows and bulls.

ENR will be participating in a tour in the ISR about the Taking Care of Caribou action plans with the Wildlife Management Advisory Council (NWT) and the Inuvialuit Game Council.

Moose The Inuvik Hunters and Trappers Committee (HTC) has requested a moose survey for the delta. ENR met with the HTC in March and needs to have further discussions about area to be included such as interest from other communities. The idea would be a spring survey.

Grizzly Bears ENR recently met with GRRB to discuss grizzly bear management. The WM division is working on a new form to help ensure that adequate information is collected for all human-bear occurrences, including those that result in deterrent actions or the death of a bear. ENR has agreed that it will continue to abide by the Management agreement signed in 2002.

...continued on next page



Photo credit: K. Maier, GRRB

A recent publication by Corey Smereka looks at den selection by barren-ground grizzly bears, Mackenzie Delta, NWT.

Wolf Harvest Monitoring The program continued this year with sample payment still at \$200, for the entire Inuvik region. Full carcasses are no longer being accepted. Kits request skull, fat, hair/skin and femur. This will allow us to continue to monitor the harvest. Samples are being sent out for various analysis including stable isotopes, stomach contents, and age.

Wolverine Carcass Collection This program began in earnest in 04/05 and continued in the 14/15 season with a switch to skulls only. Payment will be \$50. Samples are being sent out for various analysis.

Muskrats/Otters ENR continues to participate in the study GRRB is supporting with Jeremy Brammer. We are collecting carcasses from HTC's and assisted in the necropsy this spring.

Wildlife Research Permits

Inuvik Region

- WL007378 – GRRB - Amy Amos - Assessing muskrat history, health, and predation in the Mackenzie Delta.
- WL500423 – ENR/YG - Muskox Ecology West of the Mackenzie Delta
- WL500441 – Ducks Unlimited - Ulukhaktok Spring Eider Survey and Contaminants Analysis.
- WL500442 – CWS - Western Arctic Snow Goose Management.

NWT

- WL500393 – ENR - Brett Elkin - Wildlife Health & Disease.

Other Items Porcupine Caribou

The 2013 census results were released in March with an estimated



Photo credit: J. Boxwell, GRRB

population size of 197,000 animals, an increase from the 2010 estimate. No survey was conducted in 2015 due to overlap with adjacent herds. No survey happened in 2016.

The February 2016 Annual Harvest meeting was held in Dawson City. At this meeting, the Parties conducted an administrative review of the implementation plan. The PCMB release recommendations to the Parties to keep the herd in the green zone.

The Chair position is up for renewal and the Board sent letters asking the Parties if they support the reappointment of Joe Tetlich. ENR supported the reappointment.

Inuvik-Tuktoyaktuk Highway (ITH) WEMP

The ITH Corridor working group meeting was held on June 15. Genny Michiel, ENR reported on the projects at the meeting. A fall bear denning survey was conducted but found no active dens or material sources, so no spring survey was conducted. Harvest data for wolf and wolverine are being compiled for a long term look at how the highway may affect harvest patterns for these species. ENR continues

to work with the Department of Transportation (DOT) to improve WM reporting processes and will provide an update on last winter's observations.

The DNA results from two seasons of the grizzly bear DNA hair snag program are being analyzed by a consultant. An RSF analysis is also underway on baseline caribou collar data.

ENR is working with DOT on the Wildlife Protection Plan for the operations phase of the highway.

ENR is undergoing a review of performance of satellite/GPS component and release mechanisms for collars deployed on animals within the Inuvik region.

Wildlife Handling and Collaring Workshop

This workshop took place on February 17 and 19, 2013 in Inuvik. A proceeding for the workshop that includes all the break-out group discussions, copies of presentations and discussions is outstanding. WMAC (NS) organized an initial draft, ENR provided comments and revisions are underway.

DFO - Conservation and Protection in the GSA

Gerald Fillatre, DFO

Summary To date, the DFO Conservation & Protection Program (C&P) has completed six patrols in the Gwich'in Settlement Area (GSA) this fiscal year and has responded to one occurrence that took place. The following is the breakdown of time spent on GSA activities:

- Total number of days spent in the GSA on patrols and responding to occurrences: **26 officer days**
- Estimated total number of days spent working on GSA patrols and occurrences : **26 officer days**

GSA occurrences include illegal sale complaints in Inuvik/Aklavik/Fort McPherson.

GSA Patrol Summary Mackenzie Delta Subsistence & Commercial Fisheries - Fishery Officers have conducted one patrol in the Mackenzie Delta in the GSA to monitor/enforce subsistence and commercial fisheries.

Airport Lake – Lake Trout Sport Fishery – Fishery Officers have conducted one patrol to enforce the Lake Trout sport fishery.

Dempster Highway Patrols – Fishery Officers have conducted four vehicle patrols of the Dempster Highway. These patrols included:

- A check of fiber optic line stream crossings for sedimentation, habitat damage, serious harm to fish as a result of construction
- Sport fishing checks at Campbell Creek, Campbell Lake and other water bodies along the Highway

- A check of DOT Ferry Operations at Tsiigehtchic and Fort McPherson
- A check of a site previously known for fish passage issues

Expectations for 2016-17 C&P will continue to respond to all occurrences forwarded to DFO as they arise in the GSA. C&P also plans to attend the regional RRC meeting in January. We look forward to any comments the GRRB may have in regards to priorities which will help us develop our operational plan for the remainder of the 2016/2017 fiscal year.

GRRB appointments to the Species at Risk Committee (SARC)

The GRRB appoints a member and an alternate to the Species at Risk Committee (SARC). These are five-year appointments. The current appointments end in 2020.

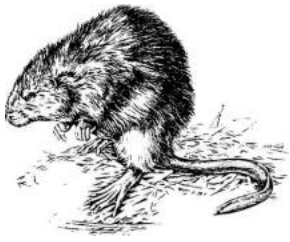
Once the GRRB appoints a member, that member no longer represents the GRRB. Each member is appointed to the Committee on the basis of their traditional knowledge or scientific knowledge of species in the NWT.

James Firth is our member. Cindy Allen is our alternate.



Photo credit: A. Amos

TRAPPERS!



The RRC/ENR will pay \$20 for muskrat carcasses without fur, and \$25 for fox, mink, and otter carcasses without fur.

We want fox, mink, and otter that died quickly so they have full stomachs. We will pay an extra \$25 if we find their stomachs are full!

THERE IS A **LIMIT TO THE NUMBERS OF EACH SPECIES WE NEED.**

Visit RRC/ENR office for details.

HTC members go to ENR, RRC members go to RRC.

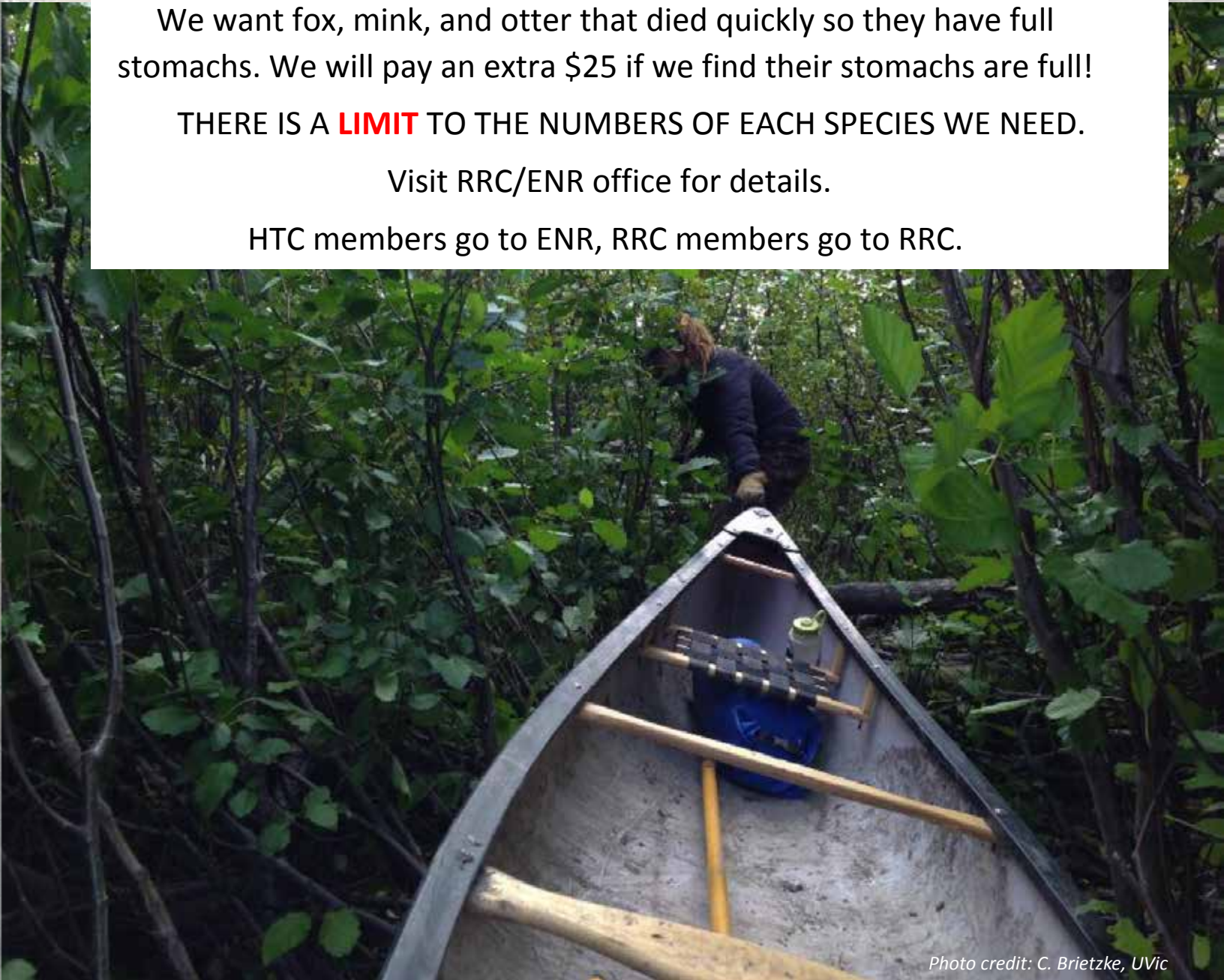


Photo credit: C. Brietzke, UVic

Project Update: Mackenzie Delta Muskrat Monitoring & Research

Chanda Brietzke, University of Victoria
Jeremy Brammer, McGill University

2015 - 2018 Research Plan Winter carcass collection program

The questions we are trying to answer are:

- Where are muskrats bigger? Fatter?
- Where do we find muskrats with parasites? Contaminants?
- Where are muskrats related to each other?
- How much are predators eating muskrats?

In 2015/16, we collected 138 muskrats, 50 foxes, 54 mink and 31 otters. The animals have been processed, but we do not have any results yet. Our main problem with the predator carcasses from 2015 is that most had fully digested all the food in their stomach, suggesting they had been alive in their trap for some time. We need foxes, mink, and otters that died quickly so we can see what they have been eating.

This year, we have circulated a poster for carcass collection (see page 10). In total we have budget for 50 muskrats and 60 predators (either fox, mink, or otter, but preferably a mix) from each RRC

and the Aklavik and Inuvik HTC's. Predator payments will work like fur advances. Trappers get a \$25 advance when they bring in the predator carcass. If the predator has a full stomach when we open it up in the lab, the trapper will receive an additional \$25 for that carcass.

Spring aerial push-up and lake habitat surveys

With these data, we hope to answer the following questions:

- How are muskrats doing?
- Where are there more muskrats?
- Why are there more muskrats in some lakes?
- How do lakes now compare to lakes in the 1970s?

Very few lakes had push-ups in 2015: 94 lakes without, 35 lakes with. The results from 2016 are not yet available. Preliminary results of lake habitat surveys indicate that push-up presence is affected by lake perimeter, food availability and lake sediment composition.

Local knowledge interviews

Questions we asked during our interviews included:

- Why are muskrats important for you? Food? Fur? Culture?
- Have you seen changes in muskrat populations?
- What makes a good muskrat lake? Has this changed?
- Do other animals affect muskrats?
- What's changed for muskrats in the past 20 years?

Possible causes of declines include: changing lake conditions (breaking out, draining); changes in water levels and flooding pattern of the river; increasing overflow; interactions with otters (predation) and beavers; reduced harvesting pressure; and climate change in general. There seem to be more

muskrats down below Aklavik.

There used to be people "all over" the Delta. Muskrats were an important source of food for people and for dogs. People learned everything out on the land. Muskrats were an important source of income in the 1900s, but wage work has become much more common since the 1980s. Fur prices declined, the cost of trapping increased, and populations decreased. The general consensus among our interviewees is that trapping is "not worth it!"

However, muskrats are still very important for food and for maintaining traditions on the land. Many people miss living a traditional lifestyle, where harvesting rats was an important seasonal component. Time on the land in the springtime is "therapeutic," and people want to be out harvesting muskrats in this time. There is continuity in being out on the land, in muskrat harvesting and use, and in traditional knowledge being shared. These are all very important and meaningful to people.

Winter push-up surveys The winter push-up surveys are commencing. We have selected five lakes that were surveyed in the 1960s (Jackfish Creek). We will stake push-ups, mark them with the GPS, and check if they are open or frozen. The snow and ice depth will also be recorded.

What's next? To continue with this project, the following activities are being planned or will continue:

- Winter carcass collection program (ongoing)
- Spring aerial pushup survey
- Winter pushup surveys
- Live trapping
- Data analysis
- Results reporting
- Involvement of local youth and land users



Photo credit: C. Brietzke, UVic



Photo credits this page: C. Brietzke, University of Victoria



Photo credit: Jen Lam

Kristen Callaghan wildlife biologist since February 2008

Management Planning

Cape Bathurst, Bluenose-West, Bluenose-East Caribou Herds

As a member of the Advisory Committee for Cooperation on Wildlife Management (ACCWM) Working Group, I continue to participate in teleconferences and have been helping developing Action Plans. The Working Group submitted the draft Action Plans for review on July 21, 2016.

Grizzly Bear Management

Presently, some of my work focuses on bear observation and highway traveller/hunter safety. I revised a Bear Safety poster ([see a draft version on page 20](#)) and a Highway Bear Observation Form and distributed both around the GSA - to RRCs, government offices, tourism locations and public locations like post offices, gas stations and campgrounds. I also created a written summary of the Bear Safety video for all GRRB staff to access.

Caribou Management The GRRB distributed 1,000 of our Let the

Leaders Pass bumper stickers throughout the GSA this summer, to help convey this important message before fall caribou hunting began.

Dall's Sheep Management

The ERRRC held a discussion on community monitoring of Dall's sheep and the use of remote cameras.

I have been doing work planning for a management plan review with all of the RRCs.

Research

Hare Pellet Counts This fieldwork took place July 25 - 26, 2016 in the Inuvik region. The survey indicates that hare numbers were up slightly from 2015.

Small Mammal Survey Fieldwork took place from August 15 - 20, 2016, with corresponding laboratory analysis commencing August 23 and completed August 26. The trapping index was up quite a bit from last year, with more voles and shrews captured compared to 2015.

In September, I compiled a Shrew Identification Key for the Inuvik region.

Dall's Sheep Monitoring: Remote Camera Pilot Project This project is not quite complete. I prepared the equipment and obtained land access permissions to reinstall the cameras. Unfortunately, funding for a flight to reinstall the cameras this summer fell through.

Moose Harvest I prepared a review and a summary report of historical moose harvest and population surveys in the GSA. These data were presented for discussion at the October Fall Board Meeting in Tsiigehtchic.

Liaison I continue to be in contact with GRRB partners and RRCs about wildlife research and management issues, as well as with other affiliated organizations and individuals. In addition to those already described, some of the recent activities and communications I've had since our last newsletter are:

Muskox Collaring I acted as a liaison for M. Suitor for Wildlife Studies Fund (WSF) funds to support collar purchase and GPS fees to support this project.

Moose Reports I conducted library searches, retrieval and scanning for ENR biologist Angus Smith, of Yellowknife, by request.

Grizzly Bear Harvest Reporting

Working with J. Pongracz of ENR, I reviewed and revised bear tag use tables.

Fort McPherson Caribou

Workshop Though I was unable to attend, I assisted via the preparation of educational posters on caribou eyes and caribou parasites and developed GRRB brochures. The caribou eyes poster is shown on the next page!

Did you know... Caribou Nose bot fly adults look like bees. Adult bot flies don't eat. They just need to find each other, and females need to find caribou. Their antennae are sensitive to the smell of caribou urine and pheromones given off by caribou feet. Flies can track caribou for more than 30 miles following these smells.

Caribou may panic and show avoidance behaviour when bot flies approach!

Cool facts about caribou eyes!

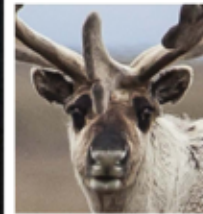


Photo: Bob Wick, BLM

Eye cups of caribou taken from the winter (blue at left) and in summer (gold at right). Photo: Glen Jeffery

Did you know that caribou eyes are different colours in the winter than in the summer?

A reflective layer (the tapetum lucidum) behind their central retinas at the back of their eyes changes colour from **blue in the winter** to **gold in the summer**.

This colour change is associated with their eyes being more sensitive to light in the winter darkness and less sensitive to light in the 24 hours of light in the summer. This adaptation also helps them to better see predators in the winter than they otherwise could.

How does this work? Collagen (protein) fibres in the tapetum lucidum are closer together in the winter in caribou. This means that light is better able to scatter through their eye nerve cells (photo receptors) so their brains can use as much information from incoming light as possible in the winter darkness. In the summer, their pupils are not dilated so much and the pressure in their eyeballs is lower. Scientists think that this helps the collagen fibres spread out and results in more light being reflected out of the eyes in the summer time when it is very bright out.

Scientists from the Biotechnology and Biological Sciences Research Council (BBSRC) funded team from UCL (University College London), and the University of Tromsø, Norway published their discovery in 2013 when they studied *Rangifer tarandus* (caribou/reindeer). This is the first time someone documented a seasonal change in the eye structure of an animal this way. Their paper is available for free online.

(K.-A. Stokkan, L. Folkow, J. Dukes, M. Neveu, C. Hogg, S. Siefken, S. C. Dakin, G. Jeffery. **Shifting mirrors: adaptive changes in retinal reflections to winter darkness in Arctic reindeer.** *Proceedings of the Royal Society B: Biological Sciences*, 2013; 280 (1773): 20132451 DOI: [10.1098/rspb.2013.2451](https://doi.org/10.1098/rspb.2013.2451))





Photo credit: K. Maier, GRRB

Kris Maier fisheries & forestry biologist March 2010 - November 2016

Management Planning Forest Management Plan Steering Committee Members of the Steering Committee met in September 2016.

Research Tracking Change I applied and received funding for a project that examines Traditional Knowledge and science in relation to fish camps in the GSA. I planned and ran logistics for fieldwork, and participated in the Tsiigehtchic fish camp on July 13 - 14, 2016. See Janet Boxwell's update on page 17 for more details.

Arctic Red River Headwater Lakes Assessment This initiative was cancelled due to conflicts with the Rat River program.

Rat River Juvenile Population Assessment I applied and received funding for this project from the GRRB and the Arctic Research Institute. It included consultation with the Rat River Working Group and the RRCs. I applied for and received the following permits:

- DFO License to Fish for Scientific

Purposes

- Animal Care Committee Animal Use Protocol
- ARI Research License
- GTC Land Access

Fieldwork was carried out in two phases: August 4 - 12 and September 20 - 22, 2016. We identified juvenile rearing areas in two new tributaries and re-assessed previous work. We also collected two new reference location water and benthic invertebrate samples.

Arctic Salmon eDNA Program

I integrated this project with Rat River juvenile research. I collected eDNA across the Rat River watershed to identify species present through environmental (water) DNA signatures.

Rat River Fish Hole Assessment

I aided DFO Stock Assessment Biologist Colin Gallagher in tagging anadromous Dolly Varden. As of the end of September, ~75 bar tags and 18 archival ("backpack") tags have been deployed.

Technical Advice DFO is conducting an ongoing review of the 2012-2013 changes to the *Fisheries Act*, seeking views on restoring lost protections and incorporating modern safeguards. Feedback received will inform the Government of Canada's Review of Environmental and Regulatory Processes. I have participated in the review; my comments will be submitted on behalf of the GRRB.

Liaison This June, I participated in the public meeting of the Rat River Working Group. I also attended the Tetlit RRC and Ehditit RRC meetings.

November 4, 2016 was my last day in the Fisheries Biologist role.

Thank you to everyone I have worked with during my time at the GRRB. As many of you know, I am leaving the GRRB to take a fisheries position with the Province of B.C. I have had a fantastic time with the GRRB and it has been exciting and enlightening to have spent time working with and learning from all of you. Thank you all for your time, insight and collaboration over the last six years. I wish you all well and hope that we meet again down the road.



Photo credit: K. Maier, GRRB



Photo credits this page: K. Maier, GRRB



Janet Boxwell renewable resources manager

since August 2010

Management Planning I work with our webmaster to maintain a Public Registry of all information related to public hearings, the Gwich'in Harvest Study, management plans, communication material and technical advice. I provide advice on the review of management plans, land use plans, policies and reports.

Research I coordinate GRRB research priorities in consultation with staff, RRCs and co-management partners. I maintain a research summary database that helps me monitor the progress of research priorities and report back to the communities.

Tracking Change This new pilot program partnership between the University of Alberta, University of Victoria, GTC and the RRCs is a multi-year fish camp involving youth and elders. The purpose of the program is to record traditional livelihoods and how they change

over time, aiming to incorporate TK and science into a community-based monitoring program. I help the GRRB provide logistical and scientific support. Follow-up interviews will be conducted by researchers and lessons learned will be incorporated into future programs.

Liaison Gwich'in Harvest Data Collection Study For the Harvest Monitoring Program, I provide technical support to the GTC on an ongoing basis, including developing the budget, seeking sources of funding, providing overall program coordination and support to RRCs. I also communicate with RRCs, partners and external agencies about the program.

Porcupine Caribou Management Board In addition to providing ongoing technical support to the GTC as with the above study, I provide relevant data to Porcupine Caribou Management Board Technical Committee.

Communication I consult with RRCs, government and co-management partners on a regular basis regarding research priorities, GRRB policies, and harvest studies.

Education/Youth I develop and lead environmental education youth activities on behalf of the GRRB. Nature Day was a great success, delivered to 65 students in Grades 3 and 4. I also piloted several new programs this year: *Compost Critters* with East Three Grade 2 students (in partnership with Inuvik Community Greenhouse), *Buzz on Bees* with East Three Grade 3 students (in partnership with ENR), *Pollinator Power* with Moose Kerr Grade 4 students, a caribou migration game for Grades 3 to 6 and a caribou photo survey activity for Grades 7

to 12. In August, I helped deliver Camp Kivuni's *Awesome Adventures Week* in Inuvik to 25 youth aged 9 to 12 years. I am updating the GRRB Education Unit to reflect the results of the delivery of these pilot programs, new Nature Day activities and alternate activities.

Technical Advice Regulatory Review I review regulatory and research applications in the GSA, assess possible impacts on renewable resources, and coordinate responses with the assistance of the Board, staff, and RRCs. These can be single or multi-year proposals, and range from access permits to license renewals to wildlife studies.

The Canadian Mountain Network had our initial working group teleconference on September 29, 2016 to identify priority research themes of interest to mountain communities for a proposal application process.

Other Amy and I joined the Polar Knowledge Canada (POLAR) and NASA teleconference in June to see if GRRB research priorities were aligned with POLAR planned science activities in our region. POLAR's science priorities are to obtain baseline information to prepare for northern sustainability; and to predict the impacts of changing ice, permafrost and snow on shipping, infrastructure and communities. They may be involved in our Research Priorities workshop in 2017.



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Kaytlin Cooper
species at risk biologist
since January 2015

Management Planning In my capacity as Species at Risk Biologist, I have contributed to the NWT Amphibian Management Plan and the NWT Boreal Caribou Recovery Strategy.

Research Bats You may have seen a recent article in the Inuvik Drum (October 27, 2016) about bats in the GSA. Bats have not previously been reported in our area. The one most likely to be this far north is the Little Brown Myotis (*Myotis lucifugus*), a species that is listed as endangered under the Federal *Species at Risk Act*. If you think you have seen bats, contact me at kcooper@grrb.nt.ca with as much information as possible, including location, time, date, a description of the bat, what it was doing, and anything else relevant.

Bank Swallow Surveys I completed a 2015-16 Bank Swallow Wildlife Research Permit report and a 2015-16 Bank Swallow SAR Stewardship Program report, reporting on

survey activities and results over the past year.

Insect Traditional Knowledge Workshop I was approved for \$5,000 from the NWT SAR Stewardship Program to host an insect TK workshop. I also applied to the Aboriginal Funding for Species at Risk (AFSAR), but did not receive funds. I anticipated re-applying to both organizations for funding to host this workshop in 2017-18. However, additional funding has been provided through the Species at Risk Stewardship program and from the GRRB species at risk consultation budget, and a new budget is being worked on to hopefully allow this project to go ahead in the 2016-17 fiscal year.

I also completed an Amphibian TK Collection Report with the GSCI for the NWT Amphibian Management Plan.

Technical Advice Since our last newsletter, I have reviewed status reports for the Rusty Blackbird Draft Species Assessment (reassessment - federal), Transverse Lady Beetle Draft Species Assessment (federal), Transverse Lady Beetle six-month Species Assessment (federal), Harris's Sparrow Draft Species Assessment (federal), Grizzly Bear Draft Status Assessment (NWT), Barren-ground Caribou six-month Species Assessment (federal) and a Bats Draft Species Assessment (NWT).

I completed a review of the Short-eared Owl Proposed Management Plan (federal) and proposed listings for Red-necked Phalarope (federal) and the Yellow-banded Bumble Bee (federal). I joined the COSEWIC Threat Assessment teleconference for the proposed listing of the Rusty Blackbird (federal).

Some of my other activities are:

- *Migratory Birds Act* amendments
- Integrated Fisheries Management Plan (Dolly Varden) and SARA Management Plan format and content comparison
- Searching for Drummond Bluebell information
- Amendment of Schedule 1 on the Federal *SAR Act* - Collared Pika and Horned Grebe
- Proposed Designation of Regulatory Provisions for Purposes of Enforcement (*Canada Wildlife Act*)
- Regulations and proposed Designation of Regulatory Provisions for Purposes of Enforcement (*Migratory Birds Convention Act*, 1994) Regulations
- Clarification on Grizzly Bear mating in GSA TK for NWT status assessment
- NWT Current State of Knowledge for Species Status Reports
- CMA SARC Assessment Schedule
- CMA briefing document
- COSEWIC list of species for assessment at April meeting

I have a lot of upcoming work to do reviewing seven draft policies under the *Species at Risk Act*.

Liaison I attend RRC meetings in the communities, including the August TRRC special meeting on grizzly bears. I am also involved in meetings of the Conference of Management Authorities. A workshop is also being planned for RRC councillors, outlining the federal and territorial Species at Risk Acts, their processes, and to discuss ways to meaningfully engage the communities.

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In May, I attended the North American Caribou Workshop including Aboriginal Engagement and Knowledge in Thunder Bay,

ON. In September, I travelled to Vancouver for the Building Aboriginal Relationships in B.C. Conference.



Cheryl Greenland
office administration
and finances
since February 2009

I am a Nihitat Gwich'in participant from Inuvik. I was born and raised here in Inuvik.

I am responsible for file management, payroll, and all financial entries. I keep track of staff time records. I also cover our reception desk and maintain the front office area.

I assist with the development of the Conservation Calendar each year by providing community event dates.

I am involved in the Finance Committee Meeting and am the employee representative for the Safety Committee. I participated in Supervisor Safety Training in November in Inuvik.

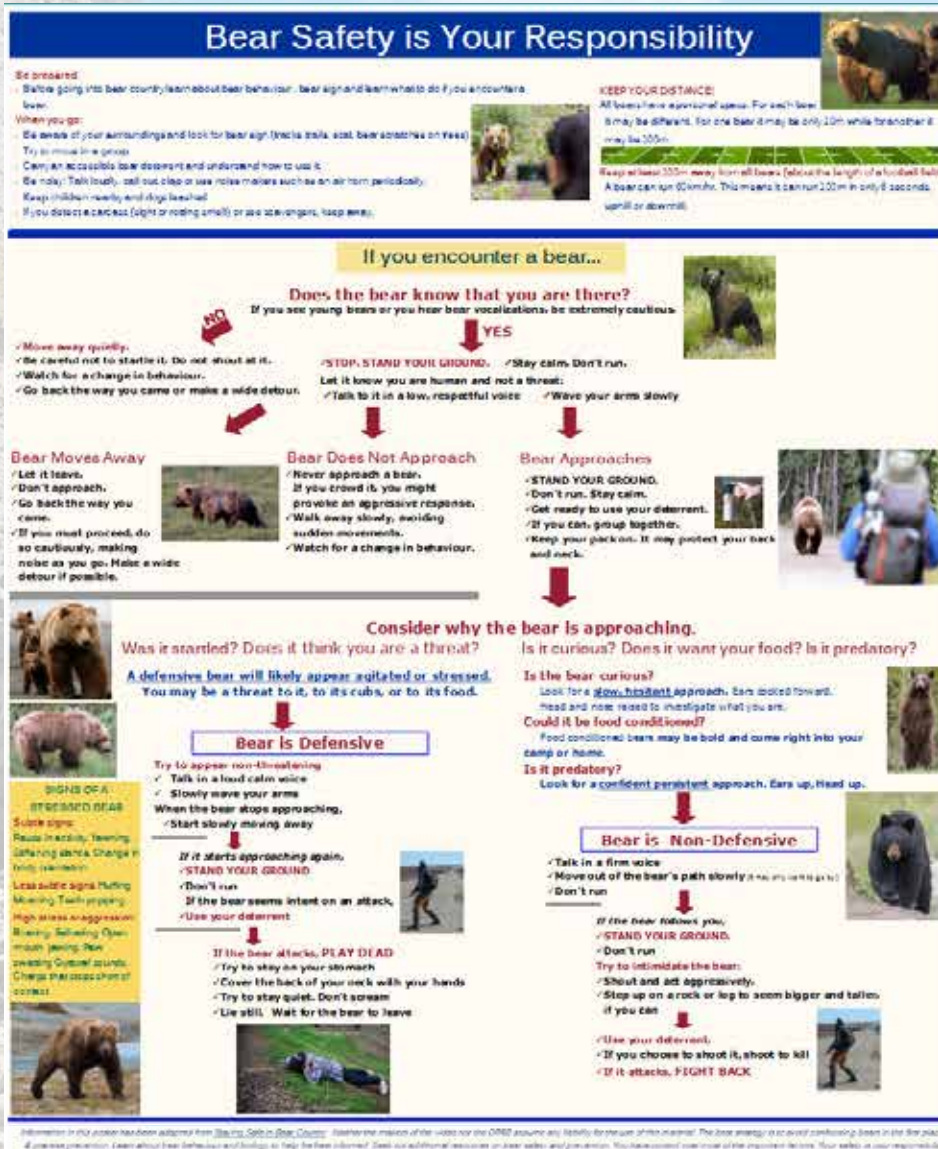


Photo credit: J. Boxwell, GRRB

Jordan Norman-Goose

technician trainee

July and August 2016

I was born and raised in Inuvik. I recently graduated from the East 3 secondary school and am going to be taking the Environment & Natural Resources Tech program this fall here in Inuvik. I plan to expand my knowledge about plants, animals, and how the land works.

My main priority this summer was to assist the staff with research and management projects in the office and within the GSA. I assisted the RRCs with community-based research projects and helped address priorities established by the Board. I also participated in education projects and programs, helped maintain inventory of GRRB equipment, and assisted staff and biologists with fieldwork, among other office work in my free time.

It was an awesome summer here at the GRRB with the staff. I did a lot of travelling to fish camps and assisted



Photo credit: K. Maier, GRRB

biologists with their projects. I learned a lot of new things and skills, and gained a lot of experience while working here this summer.

While working with the GRRB, I had different tasks to complete. Throughout the summer, these were the different tasks I was given:

- Bank swallow surveys in Tsiigehtchic and on the Mackenzie river; data entry
- Hare pellet count in Inuvik
- Making bear survey posters to distribute to communities along the Dempster highway
- Small mammal trapping
- Assisting with educational programs with youth camps
- Rat River Project (electrofishing and fish sampling)
- Office work (file management, library database, etc.)

Working here at the GRRB this summer, I have gained better computer skills. I improved my knowledge of Microsoft Office programs like Word, Excel, and Outlook.

This summer was filled with awesome and exciting experiences. I am thankful that the GRRB hired me and gave me the opportunity to experience this field of work.

My favorite part of the summer was the Rat River project. Traveling out there with a helicopter was fun, getting to see all the sights, and the view was awesome!

I thank the staff at the GRRB for hiring me this summer and for the work I have experienced in my time here!



Photo credit: K. Callaghan, GRRB

Johnny Charlie Jr. summer student July - August 2016

My name is Johnny Charlie Jr. I was born in Inuvik, NT but was raised in Fort McPherson. I moved back to Inuvik in 2013 for the remainder of my high school years - I've recently graduated from CJS. I applied to the GRRB for a position of a summer student, knowing I'd get the experience I needed to get into courses in post-secondary to get a job like this in the future.

Over the summer I've learned a lot like measuring voles, analyzing fish, and also small mammal trapping. I've been to places on a helicopter that are practically unreachable on foot. I've been to McPherson for meetings and canoe activities. I've been to fish camps and met some great people. I counted hare pallets for new information over the years, shredded paper, collected library database entries. I know that I'll use all these things I learned in the future.

My Work Plan included all the activities I completed here:

- Safety video with Amy
- TRRC community meeting/Fort McPherson with Amy
- Bear poster with Kristen
- Hare pellet counting with Kristen
- Tracking Change - Fish Camps: with Kris, Janet and Chanda
- ARI seed planting with Janet
- Developing a poster with Kristen
- Let the Leaders pass bumper stickers with Kristen
- Rat River Habitat Assessment with Kris
- Small mammal trapping with Kristen
- Harvest study data entry with Janet
- Library database entry with Kristen
- File management with Cheryl
- Reception duties with Cheryl
- File shredder with Cheryl
- Canoe activity/WWF with Colleen



Probably the best experience I had was traveling to Rat River, despite encountering a bear. I give big thanks to the video and the people here that helped me to know what to do when that happens.

My favorite activities were the fish camps on the rivers. I really enjoyed going out on the land and meeting people like John and Sarah Jerome, and learning the lifestyles of other people who make a living setting nets for fish. I've noticed that they all cut their fish differently from the way I learned cutting fish growing up, which I found interesting.

I've really enjoyed working here over the summer and I give big thanks to my boss Amy Amos and the GRRB staff for choosing me for this job. I know I'll understand my schooling by learning all these things I've done here.



Photo credit: K. Callaghan, GRRB

GET IN TOUCH!

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upcoming events

ArcticNet Conference

December 5 - 9
Winnipeg, MB

Regional RRC Meeting

January (TBD)
Aklavik, NT

Conference of Management

Authorities Face-to-Face Meeting

January 24 -26
Yellowknife, NT

Porcupine Caribou Management

Board Meeting

February 14 - 15
Inuvik, NT

GRRB Winter Board Meeting

February 21 - 23
Inuvik, NT



Photo credit: GRRB



Please call your RRC for monthly meeting times:

Ehdiitat RRC (Aklavik)
867-978-2336

Tetlit RRC (Fort McPherson)
867-952-2330

Gwichya RRC (Tsiigehtchic)
867-953-3608

Nihtat RRC (Inuvik)
867-777-6650

