



Government of  
Northwest Territories



Northwest Territory  
**Métis Nation**

## **Environmental Monitoring Results and Wildlife Workshop: North and South Slave Regions**



Summary Report  
Thebacha (Fort Smith), NT  
January 16-18<sup>th</sup>, 2024

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## Executive Summary

The *Environmental Monitoring Results and Wildlife Workshop: North and South Slave Regions* was held in Thebacha (Fort Smith), NT on January 16-18<sup>th</sup>, 2024. The event was co-hosted by the Government of the Northwest Territories Department of Environment and Climate Change (GNWT-ECC) South Slave Region **Wildlife Research and Monitoring** and **NWT Cumulative Impact Monitoring Program** (NWT CIMP) and the **Northwest Territory Métis Nation** (NWTMN).

The objectives of the workshop were to:

- Bring together researchers, community members and northern decision-makers to **share results** of environmental research and monitoring related to caribou, water and fish in the North and South Slave regions.
- Provide a **forum for discussion** between researchers, community members and northern decision-makers. Feedback from these discussions will be used to **improve related projects and programs**.
- Increase the **inclusion of local and Traditional Knowledge** and priorities into wildlife research, monitoring, and management programs.

The workshop provided the opportunity to present results and updates on monitoring and research conducted in the North and South Slave regions. It focused primarily on current NWT CIMP-supported projects centered on caribou, water, and fish, as well as various regional wildlife-related programs.

Twenty-five presentations were given by researchers and resource staff. Small, interactive break-out groups (Talking Circles) were held to generate discussion and information. Key topics included: changes in water, ways to improve collaboration, impacts of fires to wildlife and habitat, increasing land-user knowledge and participation in wildlife monitoring, and strategies to co-exist with wildlife.

Seventy-three people (Appendix B) participated in the workshop, including community members, researchers and northern decision-makers. Students from Aurora College's Environment and Natural Resources Technology Program had the opportunity to share various research posters on Day 2. This allowed an interactive session between the students and workshop participants. It generated great interest, feedback and enthusiasm!

## Background

The *Environmental Monitoring Results and Wildlife Workshop: North and South Slave Regions* was held in Thebacha (Fort Smith), NT on January 16-18<sup>th</sup>, 2024. The event was co-hosted by the Government of the Northwest Territories Department of Environment and Climate Change (GNWT-ECC) South Slave Region **Wildlife Research and Monitoring** and **NWT Cumulative Impact Monitoring Program** (NWT CIMP) and the **Northwest Territory Métis Nation** (NWTMN). This was the eleventh annual and eighth regional results workshop supported by NWT CIMP and the seventh wildlife workshop for the South Slave Region.

NWT CIMP-funded results workshops are held annually in the NWT to provide environmental monitoring results to key audiences (Indigenous governments, community members, co-management boards, government departments and academia) and to provide information for informed decision-making. These workshops provide opportunities to network, strengthen ties between communities, discuss program results and to understand cumulative impacts in regions of the NWT.

Wildlife workshops hosted by GNWT-ECC South Slave Region have been held bi-annually and are guided by similar principles – information sharing, networking, open discussion, and program priority-setting.

This workshop provided the opportunity to combine workshops. It focused primarily on current NWT CIMP-supported projects centered on caribou, water, and fish as well as various regional wildlife-related programs. The objectives of the workshop were to:

- Bring together researchers, community members and northern decision-makers to **share results** of environmental research and monitoring related to caribou, water and fish in the North and South Slave regions.
- Provide a **forum for discussion** between researchers, community members and northern decision-makers. Feedback from these discussions to be used to **improve related projects and programs**.
- Increase **the inclusion of local and Traditional Knowledge** and priorities into wildlife research, monitoring, and management programs.

Twenty-five presentations were given by researchers and resource staff. Small, interactive break-out groups (Talking Circles) were held to generate discussion and information. Key topics included: changes in water, ways to improve collaboration, impacts of fires to wildlife and habitat, increasing land-user knowledge and participation in wildlife monitoring, and strategies to co-exist with wildlife.

Seventy-three people (Appendix B) participated in the workshop. GNWT-ECC provided funding for North and South Slave regional community representatives to attend the workshop promoting information sharing with community members and decision-makers. Each invited Indigenous Government/Indigenous Organization identified attendees and administered their travel arrangements.

During an extended lunch on Day 2, students from Aurora College's Environment and Natural Resources Technology program shared various research posters. This allowed an interactive session between the students and workshop participants and generated great interest, feedback and enthusiasm!

A questionnaire was given to each participant to obtain feedback on the presenters, usefulness of the material, the balance between presentations, questions and discussion, and how well the objectives were fulfilled. The quality and relevance of the workshop and its presenters were evaluated by participants using a short survey. The majority of feedback was very positive and expectations for the workshop were met. This information is shared with presenters to help improve their future communications with communities and decision-makers.

During the evening of Day 1, workshop participants and the public had the opportunity to gather and watch a few short videos highlighting various NWT environmental monitoring and research. All NWT CIMP videos are available at [www.nwtcimp.ca](http://www.nwtcimp.ca).



***I hope everyone will  
listen and learn from  
each other at this  
workshop.***

Ashley McLaren

## Presentations

A total of twenty-five (25) presentations were given over the three-day workshop. An additional presentation by Deninu K'ue First Nation titled *Boreal Caribou Habitat Enhancement* was not presented due to weather/travel cancellations, however it is included below. The following section provides the title of the presentation, a link to its location on the NWT Discovery Portal, and a summary of the discussion that followed the presentation, if applicable.

### Day 1 - Tuesday January 16th, 2024

#### **Presentation #1 - About the NWT Cumulative Impact Monitoring Program (NWT CIMP) & Results Information** - Lorraine Brekke, NWT CIMP (GNWT-ECC)

Available at: <https://nwt.discoveryportal.enr.gov.nt.ca/geoportal/documents/1%20-%20Brekke%20-%20CIMP%20overview%20-%20results%20workshop%20-%20north%20south%20slave%20-%20jan%202024.pdf>

#### Summary of Discussion

- Q: How is funding distributed to each valued component (caribou, water and fish)?
  - It depends on the proposals received each year. Proposals must align to NWT CIMP's priorities as outlined in the [Monitoring Blueprints](#). Traditional Knowledge and Science are considered equal in the program as reflected in the Funding Guides.

#### **Presentation #2 - Recovery of the mine-impacted landscape in the Yellowknife region (CIMP227)** - Mike Palmer, Aurora Research Institute - North Slave Research Centre

Available at: <https://nwt.discoveryportal.enr.gov.nt.ca/geoportal/documents/2%20-%20ARI%20-%20North%20Slave%20Research%20Centre%20-%20CIMP227.pdf>

#### Summary of Discussion

- Q: Has any work been done on caribou or fish regarding levels of arsenic?
  - Yes, there has been work done on fish in Yellowknife Bay. Fish can metabolize arsenic and are safe to eat.
- Q: In addition to Giant Mine, do the distances of arsenic decline from source apply to Con Mine?

- A slightly different process was used at Con for extracting gold. However, the pattern between the mines' impacts and distance are similar. We don't see the concentration of arsenic as high near Con Mine (the source could be either Giant Mine or Con Mine, as they are 4 km apart).
- (Comment): Back in the 1970's, Giant Mine poured tailings into Back Bay, but arsenic was also transported by truck down the highway.
  - There is a legacy of moving arsenic around, such as tailings in Back Bay and transporting it down highways. We need to be aware of the variety of sources.
- Q: Is there a concrete example of remediation? What can be done? What conversations are happening?
  - There aren't any concrete actions happening right now, however there are some important conversations happening. Remediation is happening all the time – the key is knowing where sources of arsenic are.
  - We need a good characterization both on and off the mine site of where the contaminant sources are.
- Q: Where is the information available?
  - Project results (and data) are available through the [NWT Discovery Portal](#). We are also interested in building a story map (website and plain language).



**Presentation #3 - GNWT Water Quality Research and Monitoring in the South Slave Region -**  
Chris Cunada, GNWT-ECC

Available at: [https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/3%20-%20GNWT%20Water%20Research%20and%20Monitoring%20Programs%20in%20South%20Slave%20\(GNWT-Canuda\).pdf](https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/3%20-%20GNWT%20Water%20Research%20and%20Monitoring%20Programs%20in%20South%20Slave%20(GNWT-Canuda).pdf)

Summary of Discussion

- What are some special considerations or challenges in monitoring benthic invertebrates (aquatic bugs) in the Slave River?
  - Rocks are places for aquatic bugs to hide and live comfortably. Sandy bottoms are favourable for worms and flies. In the Slave River where it is sandy, we find more pollution-tolerant aquatic bugs, such as worms and flies.
  - We need to sample more places to get better representation of species in the Slave River. Comparing impacted sites to reference streams using the CABiN protocol doesn't work for large rivers. We can't compare the Slave River to other rivers, so we compare it to itself.
  
- Q: When establishing baseline conditions, are you considering baseline to be the point when the sampling program started or pre-industrial conditions?
  - Ideally, we would have pre-industrial data, but that's not always possible. There are some studies on large-bodied fish in Slave River from the 1970's-90's but they didn't look at habitat.
  - We are limited to creating a new baseline as more of a reference dataset.
  
- Q: Did anything change in the water quality, aquatic bugs, or fish due to the wildfires?
  - We are still waiting for the analyses results from the lab. Unfortunately, not as much sampling was done as planned as no monitoring activities were done during the evacuation.
  
- Q: During the 7 years sampling on the Slave River and 5 years on the Hay River, did you see a dramatic change in plants, aquatic bugs, fish?
  - We found that aquatic bugs are very sensitive to changes in flow. Aquatic bugs differ in years of high/low flow. We need to know what drives these changes.
  - Fish are sensitive to changes in flow too – during low flow, livers are bigger in small-bodied fish than in high flows.



- Q: Are the results of this program cross-referenced with results from other programs like the Northern Contaminants Program (NCP)?
  - Yes - we are combining data with Environment and Climate Change Canada (ECCC), and we have access to oil sands water and fish data too.



**Presentation #4 - Murky waters: Impacts of disturbances on the mobilization and downstream delivery of mercury and methylmercury (CIMP223)** - David Olefeldt, University of Alberta

Available at: [https://nwtDiscoveryportal.enr.gov.nt.ca/geoportal/documents/4%20-%20CIMP233%20-%20Murky%20waters%20\(UoA-Olefeldt\).pdf](https://nwtDiscoveryportal.enr.gov.nt.ca/geoportal/documents/4%20-%20CIMP233%20-%20Murky%20waters%20(UoA-Olefeldt).pdf)

#### Summary of Discussion

- Q: Has any work on the Athabasca River been done? This is key since the Hay and Slave Rivers come through the oil sands developments. And is the water safe to drink?
  - In the Athabasca River, there has been work done on hydrocarbons (PAHs), but not in the Hay River as far as the researcher knows (doesn't study hydrocarbons from oil sands). Below is a link to one PAH study in the Athabasca, but there are several.
    - <https://www.sciencedirect.com/science/article/pii/S0048969717314559>
  - Regarding levels of methylmercury (MeHg) in water, yes, it is safe to drink.
  - Hydrocarbons have been sampled and we are waiting for the results.
  - We don't expect to see that oil and gas development is influencing MeHg concentrations.

- Q: What are you expecting to find regarding impacts of fire?
  - Short-term – more about nutrients. Phosphorus is more available for transport, so there will likely be an increase in algal blooms, eutrophication.
  - Long-term - burnt peat plateaus thaw permafrost much faster (become heat sinks releasing MeHg downstream). Permafrost thaw is also leading to loss of peat plateaus and converting them into bogs and fens.
  
- Q: How long for the system to reach equilibrium when plateaus thaw?
  - No answer available. It could be a pulse or persistent production of MeHg. In the site studied, we see a more persistent production of MeHg, rather than pulse. Small increases in mercury can fuel MeHg for a long time.
  
- Q: Is MeHg going back to sediments or demethylating into the water column?
  - Some MeHg can also be converted into gaseous mercury and leave aquatic ecosystems to the atmosphere.
  - There are also beaver ponds to consider - long established versus new ponds that may act as sinks.
  
- Q: What is the acceptable level for humans and animals?
  - Water quality guideline for MeHg is 1ppt (part per trillion) for long term exposure. Most beaver ponds we sampled were below 1pp trillion.
  - All rivers sampled were below 1pp trillion.



**Regarding levels of methylmercury  
in water... yes, it is safe to drink.**

David Olefeldt

*David Olefeldt presents his project results.*

**Presentation #5 - Fort Smith Métis Council Ecotoxicology and Monitoring of Cumulative Effects on the Slave River (CIMP232)** - Jon MacDonald, Fort Smith Métis Council

Available at: <https://youtu.be/POYgW4Lh098>

Summary of Discussion

- *None as this was a video presentation.*

**Presentation #6 - Smith's Landing First Nation Fish Camp**

Available at: <https://vimeo.com/565123820>

Summary of Discussion

- *None as this was a video presentation.*

**Presentation #7 - Boreal caribou habitat enhancement (CIMP234)** - Marc d'Entremont (for Deninu K'ue First Nation)

Not presented but is available at:

[https://nwt.discoveryportal.enr.gov.nt.ca/geoportal/documents/7%20-%20CIMP234%20Boreal%20caribou%20habitat%20enhancement%20\(DKFN-dEntremont\).pdf](https://nwt.discoveryportal.enr.gov.nt.ca/geoportal/documents/7%20-%20CIMP234%20Boreal%20caribou%20habitat%20enhancement%20(DKFN-dEntremont).pdf)

**Presentation #8 - Identifying habitats that influence body condition and fitness of boreal caribou in the southern NT (CIMP205)** - Allicia Kelly, GNWT-ECC

Available at: [https://nwt.discoveryportal.enr.gov.nt.ca/geoportal/documents/2023-24%20-%20DELIVERABLE%20-%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024%20-%20AKelly\(CIMP205\).pdf](https://nwt.discoveryportal.enr.gov.nt.ca/geoportal/documents/2023-24%20-%20DELIVERABLE%20-%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024%20-%20AKelly(CIMP205).pdf)

Summary of Discussion

- Q: Related to who can use the results, who do you mean by 'decision-makers' – GNWT, Indigenous Governments or the public?
  - Hopefully all governments and decision-makers can use this information - the results could be incorporated into the next version of the Boreal Caribou Range Plan, as well as future environmental assessments.

- The field guide that is being developed could assist several user groups in better understanding how different types of habitats provide nutritional resources (food!) for boreal caribou.
- Q: What about in the next 10-30 years? Why do places that are 10-30 years post-fire show good nutrition, but caribou seem to avoid those habitats?
  - Information on nutrition doesn't necessarily fully explain why caribou are using or avoiding certain habitats. Knowing that the nutrition in these areas is good for caribou is helpful, but there could be other reasons like predation risk or human disturbance that influence whether caribou will use an area.
  - One idea for areas that are 10-30 years post-fire is that the dead standing trees fall over, making it too hard for the caribou to move through the area. Another idea is that there may be more moose and more wolves attracted to these areas when the vegetation has regenerated 10-30 years post-fire, that make it less attractive overall to caribou.

**Presentation #9 - *Can caribou co-exist with human development in northern Canada? Forecasting anthropogenic disturbance and land use changes using resource potential mapping to improve caribou future forecasts (CIMP220)*** - Eliot McIntire, University of British Columbia

Available at: [https://nwt.discoveryportal.enr.gov.nt.ca/geoportal/documents/9%20-%20UBC%20McIntire\(CIMP220\).pdf](https://nwt.discoveryportal.enr.gov.nt.ca/geoportal/documents/9%20-%20UBC%20McIntire(CIMP220).pdf)

Summary of Discussion

- (Comment): We have seen a decrease across many species (migratory birds, moose, caribou, etc). Road networks are restricting several migratory habitats. We need to co-exist with these animals.
- (Comment): We are concerned about development. Caribou may be on a trend to extinction. We can't keep development going without involvement of Indigenous people. We need to work with one another. We need to be able to coexist with wildlife into the future.

**We have co-existed with the animals for generations. We have an understanding of how animals behave and where they go.**

Freddie Throassie, Athabasca Dënesuliné

**Presentation #10 - *Understanding Food Security in the Northern Boreal Forest – A Multi-Species Program in Collaboration with Laval University*** - Alicia Kelly, GNWT-ECC

Available at: [https://nwtDiscoveryportal.enr.gov.nt.ca/geoportal/documents/10%20-%20GNWT\\_ECC%20Food%20Security%20-%20Alicia%20Kelly.pdf](https://nwtDiscoveryportal.enr.gov.nt.ca/geoportal/documents/10%20-%20GNWT_ECC%20Food%20Security%20-%20Alicia%20Kelly.pdf)

Summary of Discussion

- Q: Are collared animals near communities and roads or are they out in the bush – do they act differently?
  - There are collared animals located in areas near roads and collared animals that never encounter roads because they live far away from roads. We do see some differences in behaviour – for example, collared bison that are near roads use the roads more than expected.
  - Boreal caribou tend to avoid roads, for example they avoid being very close to Highway 3 and rarely cross it.
  - We also see boreal caribou change their behavior near roads. Near Whati along the new Tłıchq all-season road, the caribou move faster when they are closer to the road, including when they cross the road, than when they are farther away from the road.

**EVENING VIDEO NIGHT:**

From 7:00-8:00 pm, workshop participants and the public had the opportunity to gather and watch a few short videos highlighting various NWT environmental monitoring and research. All NWT CIMP videos are available at [www.nwtcimp.ca](http://www.nwtcimp.ca).

**Day 2 - Wednesday January 17<sup>th</sup>, 2024**

**Presentation #11 - *Boreal Caribou Program Update*** - Ashley McLaren, GNWT-ECC

Available at:

[https://nwtDiscoveryportal.enr.gov.nt.ca/geoportal/documents/Boreal%20Caribou%20Program%20Update%20\(McLaren-ECC\)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop.pdf](https://nwtDiscoveryportal.enr.gov.nt.ca/geoportal/documents/Boreal%20Caribou%20Program%20Update%20(McLaren-ECC)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop.pdf)

Summary of Discussion

- Q: When working with communities, what is the level of involvement? Are they hired helpers or analyzing and writing up data/results?)
  - Currently, our involvement with communities is for planning collar deployments (where the collars should go, deployment field trips, etc.) and program review for permits. For data write up, we don't have any involvement yet, but I'd really like to hear more ideas on how that could happen and to analyze the data together.
  
- Q: How long do collars stay on the caribou and how many are collared right now?
  - Collars remain on the caribou for 4.5 years. There is a pre-programmed time when a dropping mechanism is activated – usually in the summer. If the caribou survives 4.5 years, it then drops off. If a collar stops moving (caribou stops moving), an email alert is sent after 6 hours of no activity.
  - In the South Slave region, there are approximately 70 cows and 10 bulls that are collared. We also work with other regions that have collaring programs, such as Dehcho and North Slave, to share information and not duplicate deployments.
  
- (Comment): We have concerns about boreal caribou harvest and people not respecting caribou and the land. We have lived here for generations and rely on these animals. We want others to respect caribou.
  - We are all here because we care about the animals and the environment – we value working together and we value the work of KFN and others to monitor boreal caribou on the landscape. We too would love to see harvest monitoring programs expanded to other areas.
  
- Q: The collars look too big and heavy - could they be lighter and smaller? It's okay in the winter when the caribou has longer hair, but in the summer, it wears down the hair and skin that bugs can access. Can you put a tag on the antler or ear instead of using a collar?
  - Wearing a collar isn't a natural thing for a caribou. We hope that with advanced technology, the collars will continue to get lighter and smaller. We would like to get to a point where we can monitor populations without collars at all or use other monitoring techniques like transmitter tags, while still being able to collect the necessary information (e.g., survival rates).
  - It was noted that ECC has recaptured caribou that have had collars and no excessive hair wear or infection underneath the collars was seen.



**Presentation #12 - Southern NWT Boreal Caribou Range Planning - Kathy Unger, GNWT-ECC**

Available at: <https://youtu.be/NYeau812Nc4>

Summary of Discussion

- *None as this was a video presentation.*



*Aurora College students share their poster projects with workshop participants.*

**Presentation #13 - 2023 Wildfire Season Overview** - Gord Seymour and Heather Beck, GNWT-ECC

Available at: [https://nwtDiscoveryportal.enr.gov.nt.ca/geoportaldocuments/3%20-%202023-24%20-%20Wildfire%20Season%20Overview%20\(Allaire-ECC\)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024.pdf](https://nwtDiscoveryportal.enr.gov.nt.ca/geoportaldocuments/3%20-%202023-24%20-%20Wildfire%20Season%20Overview%20(Allaire-ECC)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024.pdf)

Summary of Discussion

- Q: How did you come to the predicted number?
  - There is a formula to determine the drought code. The forecasted Drought Codes (DC) were calculated by using the 2023 DCs taken from our auto weather stations (October 31<sup>st</sup>) and the average snow water equivalency (SWE) for our weather stations. These numbers were processed via a spreadsheet created to calculate start-up DC. Once we have the results from our snow surveys, which will be conducted at the end of March, we will recalculate the start-up DC for spring 2024.
  
- Q: Why is the trend of fires being fought decreasing?
  - There are many reasons why a fire is or is not fought including location. Fires closest to communities were attacked right away, but due to drought-like conditions, it spread incredibly fast.
  - In the past, we had more fire crews and rotary-wings on contract to fight fires. We also fought more fires away from our communities. Our priority is our communities.
  
- Q: People were so unprepared this summer as it happened fast. What will happen differently for next time?
  - One thing is that GNWT is arranging for crews to start in April (usually May) since the fire season started so early. While some crews will be starting earlier, some crews will be starting later, in order to have longer coverage for the fire season.
  - As a result of overwinter fires still burning, we're planning to conduct aerial infrared scanning over the large fires we had in 2023 once the snow is melted.
  - The good news is that not all the areas are burnt with various burn intensity.
  - Caribou collar data shows that they can adapt and move away from the fire and survive.



**Presentation #14 - *Wildlife Health Program and Discussion*** - Naima Jutha, GNWT-ECC

Available at: [https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/4%20-%202023-24%20-%20Wildlife%20Health%20Program%20Update%20\(Jutha-ECC\)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024.pdf](https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/4%20-%202023-24%20-%20Wildlife%20Health%20Program%20Update%20(Jutha-ECC)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024.pdf)

Summary of Discussion

- Naima showed the contents of a sample kit and discussed the importance of involving communities, harvesters and Traditional Knowledge.

**Presentation #15 - *Bison Monitoring Update*** - Terry Armstrong, GNWT-ECC

Available at: [https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/5%20-%202023-24%20-%20Bison%20Monitoring%20Update%20\(Armstrong-ECC\)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024.pdf](https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/5%20-%202023-24%20-%20Bison%20Monitoring%20Update%20(Armstrong-ECC)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024.pdf)

Summary of Discussion

- (Comment): It was noted that bison are now in the Whati area so the Mackenzie population range map should be updated.
- Q: How is total allowable harvest calculated and monitored?
  - It is calculated based on the population size and trend from the most recent estimate, using a matrix in the management plan. Harvest reporting is mandatory.



**Presentation #16 - *Slave River Lowlands Anthrax Outbreak* - Liam Case, GNWT-ECC**

Available at: [https://nwtDiscoveryportal.enr.gov.nt.ca/geoportal/documents/6%20-%202023-24%20-%20Slave%20River%20Lowlands%20Anthrax%20Outbreak%20\(Case-ECC\)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024.pdf](https://nwtDiscoveryportal.enr.gov.nt.ca/geoportal/documents/6%20-%202023-24%20-%20Slave%20River%20Lowlands%20Anthrax%20Outbreak%20(Case-ECC)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024.pdf)

Summary of Discussion

- Q: What is the threshold for an anthrax outbreak?
  - Any amount (even one) is deemed an outbreak and carcasses are considered and treated as such.
  
- Does wildfire affect anthrax and were soil samples taken after a burn?
  - Wildfires typically do not heat mineral soil enough to destroy anthrax spores. No soil samples were taken in 2023. It was noted that some soil sampling was done in 2012 during the outbreak in the Mackenzie population.
  
- Q: How often does anthrax come around?
  - Not fully known but they are irregular and infrequent. One theory is that anthrax outbreaks occur during dry periods, following wet periods (there is no standard cycle).

- We hope that by incinerating the carcasses, that outbreaks are reduced.
- Q: After last summer's wildfire, will anthrax still be around?
  - Yes, we know that there are anthrax spores in the soil so we predict there will be more outbreaks in the future.
- Q: Do you treat bison carcasses (burn them) even if the field test is negative?
  - Once we get one lab-confirmed positive case, we assume all other carcasses in the area are positive for anthrax even if a field test shows a negative result (field tests are not 100% accurate for various reasons), so we treat them the same way through incineration.

**Presentation #17 - NWT Biodiversity Project and Use of Environmental Sensors** - Brad Woodworth, GNWT-ECC

Available at: [https://nwt.discoveryportal.enr.gov.nt.ca/geoportal/documents/7%20-%202023-24%20-%20NWT%20Biodiversity%20Project%20Update%20\(Woodworth%20-%20ECC\)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024%20-%20Jan%202024.pdf](https://nwt.discoveryportal.enr.gov.nt.ca/geoportal/documents/7%20-%202023-24%20-%20NWT%20Biodiversity%20Project%20Update%20(Woodworth%20-%20ECC)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024%20-%20Jan%202024.pdf)

#### Summary of Discussion

- Q: How is an area prioritized and are you considering studying the south-east NWT?
  - We have adopted ECC's NWT-wide sampling design for migratory birds. We then work with partners/communities to modify the design based on local species and areas of interest.
  - Yes, we are hoping to do work further east of Fort Smith and throughout the NWT to continue to fill in data gaps and partner with communities on wildlife monitoring initiatives.
- (Comment): Metis guardian programs have people willing to help with this monitoring project. Should also involve Elders interacting with youth so that they can learn.
- Q: How late in the season did you collect bald eagle information?
  - Cameras are put out for a full year, so we collect a full year's worth of data.

- (Comment): There have been observations of bald eagle in December in Fort Chipewyan and recent winter sightings of bald eagles near Fort Smith (stealing bait from snare traps). Eagle should not be this far north at this time of year.
- (Comment): White-tailed deer have been seen along Slave River and Moose Lakes (3 does and 2 bucks were spotted on the highway outside of Fort Smith).

**Presentation #18 - *Muskox: History and East Arm Population Surveys* - Ashley McLaren, GNWT-ECC**

Available at: [https://nwt.discoveryportal.enr.gov.nt.ca/geoportal/documents/8%20-%202023-24%20-%20Muskoxen%20History%20and%20East%20Arm%20Population%20Surveys%20\(Adamczewski%20-%20ECC\)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024.pdf](https://nwt.discoveryportal.enr.gov.nt.ca/geoportal/documents/8%20-%202023-24%20-%20Muskoxen%20History%20and%20East%20Arm%20Population%20Surveys%20(Adamczewski%20-%20ECC)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024.pdf)

#### Summary of Discussion

- none



## Day 3 - Thursday January 18<sup>th</sup>, 2024

### **Presentation #19 - *Bison and Whooping Crane Monitoring in Wood Buffalo National Park* - Jenna Rabley, Parks Canada-Wood Buffalo National Park**

Available at: [https://nwt.discoveryportal.enr.gov.nt.ca/geoportal/documents/2%20-%202023-24%20-%20Wood%20Bison%20Conservation%20and%20Management%20in%20Wood%20Buffalo%20National%20Park%20\(Rabley%20-%20PC\)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024%20-%20Jan%202024.pdf%20-%20J.Rabley.pdf](https://nwt.discoveryportal.enr.gov.nt.ca/geoportal/documents/2%20-%202023-24%20-%20Wood%20Bison%20Conservation%20and%20Management%20in%20Wood%20Buffalo%20National%20Park%20(Rabley%20-%20PC)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024%20-%20Jan%202024.pdf%20-%20J.Rabley.pdf)

#### Summary of Discussion

- Q: If 105 bison were collared and 44 are still being tracked, what happened to the remaining 61 bison?
  - Collars usually can stay on for about 2 years, but bison are very hard on them.
  - We have been collaring these bison since 2018 - reasons include mortality or the collars being ripped off or fallen off.
  
- Q: Many Elders are against collaring animals. Do you consider the age of the animal when collaring?
  - Yes, collaring is based on age. Adults (bulls and cows) are collared only (no yearlings). They usually come off by 2 years or can be removed.
  
- Q: What population numbers are needed for whooping cranes to be removed from the endangered species list?
  - Need at least 1000 whooping cranes. Right now, we're around 536. The long-term trend is looking good but there is still work to do.
  
- Q: What is Wood Buffalo National Park's (WBNP) whooping crane education program like for the public?
  - There is always room for improvement. We encourage all observations to be reported so Parks staff can include them on a tracking sheet.
  
- (Comment): Should do more than put up posters.
  
- Q: Are there consistent areas within WBNP that experience anthrax outbreaks?

- Yes, we monitor and do see bison in consistent areas and we monitor those sites, as well as past sites where bison have died. Anthrax is spread through a spore making it difficult to predict where an outbreak will occur.
- Q: Is GNWT-ECC seeing the same thing outside the Park?
  - Yes, the outbreak area this past summer has experienced outbreaks in the past. It seems to be consistent in certain areas.
- Q: If anthrax is located in certain areas all the time, can areas be fenced off?
  - Anthrax is a natural phenomenon and there needs to be a balance between management and letting processes naturally occur.
  - Significant resources are needed for fencing. Most of these areas are sandy, making it difficult to build and maintain fencing.
  - Some of these areas have important plants like sweet grass which is important to bison. If they were fenced off, it could negatively impact the herd.
  - We need to understand more about anthrax to help protect the bison.
  - Building a fence can also negatively impact the movement of other species such as moose.
- (Comment): We need to work with and include local and Traditional Knowledge with science. Government can't keep using the excuse that everything costs money. We understand anthrax too – there is a lot of knowledge on our side of the table that we need to share and include in public education.

**Presentation #20 - *American White Pelicans: Slave River Colony* - John McKinnon, GNWT-ECC**

Available at: [https://nwtDiscoveryportal.enr.gov.nt.ca/geoportaldocuments/3%20-%202023-24%20-%20Slave%20River%20Pelican%20Survey%20\(McKinnon-ECC\)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024%20-%20Jan%202024.pdf](https://nwtDiscoveryportal.enr.gov.nt.ca/geoportaldocuments/3%20-%202023-24%20-%20Slave%20River%20Pelican%20Survey%20(McKinnon-ECC)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024%20-%20Jan%202024.pdf)

Summary of Discussion

- Q: Is this a unique colony that nests along a river?
  - Yes – they are the only colony known to nest on islands in a river in North America. All other colonies nest on islands in lakes or ponds.
  - During the 1974 survey, some adults were observed with leg bands, yet banding has never happened here at the Slave River Colony. This indicates that some of

the pelicans nesting at the Slave River Colony were born and banded elsewhere, at a southern pelican colony.

- (Comment): More pelicans are being seen in Kakisa (between 100-200) and Fort Resolution. It isn't known if they are nesting, but fisherman think they are eating larger fish than the smaller ones - usually 4-5 fish each day/bird.

**Presentation #21 - *Migratory Birds*** - Samuel Haché, Canadian Wildlife Service (ECCC)

Available at: [https://nwt.discoveryportal.enr.gov.nt.ca/geoportal/documents/4%20-%202023-24%20-%20Migratory%20Birds%20\(Hache-CWS\)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024.pdf](https://nwt.discoveryportal.enr.gov.nt.ca/geoportal/documents/4%20-%202023-24%20-%20Migratory%20Birds%20(Hache-CWS)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024.pdf)

Summary of Discussion

- Q: What about pine grosbeaks?
  - The species is doing well but is not particularly common. Its presence is tied to conifers and productive cone years.
- Q: Acoustic data collection is new and has exciting applications. Are you working with communities and Elders by playing sounds for them to identify species or shifts in timing?
  - Right now, just sharing the quantity of data is difficult. We took recordings to culture camps and played recordings from the mountains which reminded Elders of their youth. The best way to engage differs from community to community.
- Q: Has Eric Reed (ECCC, Population Management Biologist) done any work on waterfowl to determine why they haven't returned to staging areas this past spring?
  - Can't speak for Eric but knows he is interested in hearing about it. There is an absence and mismatch in the timing of birds.



*Thebacha MLA and Environment and Climate Change Minister Jay MacDonald addresses participants.*

**Presentation #22 - A Problem We Don't Want: Wild Pigs in the NWT - Rob Gau, GNWT-ECC**

Available at: [https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/5%20-%202023-24%20-%20Wild%20Pigs%20in%20the%20NWT%20\(Gau-ECC\)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024.pdf](https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/5%20-%202023-24%20-%20Wild%20Pigs%20in%20the%20NWT%20(Gau-ECC)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024.pdf)

**Summary of Discussion**

- Q: If wild boars are so invasive and problematic, why are they allowed to be farmed in Alberta and Canada?
  - The agriculture rules in Alberta have different levels, depending on sizes and types of farms and are sometimes lacking for smaller livestock. There is no federal legislation for hobby farms and no reporting of the number of pigs.



- Pigs can escape, cause problems and right now, there is no full prohibition. Genetically pigs are the same species (pink pigs and boars are the same). If one gets shut down, then that would mean shutting down the whole industry.
- Q: What's in a response kit?
  - With an established and coordinated pig response, we need to eradicate the problem in consultation with communities and harvesters.
  - Options include online surveys, cameras along the borders, keep talking and spreading the word.

**Presentation #23 - *Species at Risk in the Southern NWT*** - Joanna Wilson, GNWT-ECC

Available at: [https://nwtdiscoverypportal.enr.gov.nt.ca/geoportaldocuments/6%20-%202023-24%20-%20Species%20at%20Risk%20in%20the%20Southern%20NWT%20\(Wilson-ECC\)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024%20-%20Jan%202024.pdf.pdf](https://nwtdiscoverypportal.enr.gov.nt.ca/geoportaldocuments/6%20-%202023-24%20-%20Species%20at%20Risk%20in%20the%20Southern%20NWT%20(Wilson-ECC)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024%20-%20Jan%202024.pdf.pdf)

Summary of Discussion

- Q: Is there a study on the snake population, including the red-sided garter snake?
  - There was a researcher in 1980s conducting snake monitoring and the GNWT is currently working with that same researcher (Karl Larsen) to initiate a red-sided garter snake study near Fort Smith this summer to assess impacts from the 2023 fire season on the local snake population.
  - Parks Canada does not have a snake monitoring program, but a team does emergence counts of them at their hibernacula near Salt River and the escarpment.
- Q: How close is the white-nose syndrome to NWT?
  - White-nose syndrome is caused by a fungus, so monitoring bats and the environment is important. White-nose syndrome started in New York and has spread. Monitoring is done annually. The fungus has not been detected in the NWT yet, but it has been detected in southern BC, Alberta and mid-Saskatchewan.

**Presentation #24 - Barren-ground Caribou: Populations Survey Results** - Brad Woodworth, GNWT-ECC

Available at: [https://nwtDiscoveryportal.enr.gov.nt.ca/geoportaldocuments/7%20-%202023-24%20-%20Barren%20ground%20Caribou%20Populations%20Survey%20Results%20\(Woodworth-ECC\)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024%20-%20Jan%202024.pdf](https://nwtDiscoveryportal.enr.gov.nt.ca/geoportaldocuments/7%20-%202023-24%20-%20Barren%20ground%20Caribou%20Populations%20Survey%20Results%20(Woodworth-ECC)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024%20-%20Jan%202024.pdf)

Summary of Discussion

- Q: What are the possible reasons for these trends?
  - Caribou populations undergo natural cycles in numbers and each of the nine herds that occur partially or entirely in the NWT experiences different conditions throughout their annual cycle. Common drivers of change and trends include climate change, habitat changes, human disturbances, predators, and harvest.

**Eating harvested meat is my land medicine.**

**I live for the land.**

Henry McKay

**Presentation #25 - Moose Survey Planning and Results** - Ashley McLaren, GNWT-ECC

Available at: [https://nwtDiscoveryportal.enr.gov.nt.ca/geoportaldocuments/8%20-%202023-24%20-%20South%20Slave%20Region%20Moose%20Survey%20Planning%20and%20Results%20Update%20\(McLaren-ECC\)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024.pdf](https://nwtDiscoveryportal.enr.gov.nt.ca/geoportaldocuments/8%20-%202023-24%20-%20South%20Slave%20Region%20Moose%20Survey%20Planning%20and%20Results%20Update%20(McLaren-ECC)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024.pdf)

Summary of Discussion

- Q: Are there plans to include more community-based monitoring instead of just aerial surveys?
  - Yes, as discussed in the Talking Circles, we want to explore this further.

- Q: When counting during surveys, how do you take into account the moose moving between survey blocks to avoid counting the same moose twice?
  - We plan our survey so that we fly groups of blocks on the same day to avoid counting a moose more than once. This prevents us from revisiting the same area multiple times and possibly counting the same moose more than once.
  
- (Comment): There should be a limit to how many moose people can harvest as there are many cases where multiple moose are harvested per family. We have seen a decline in moose numbers and the fires will be a big impact. We need to share the message among community members to only take what you need and to report wasted meat.
  
- Q: Why does GNWT not restrict cow moose harvest like in Alberta, so hunters shoot only bulls?
  - Currently, resident harvesters can get 1 adult tag, and are not limited to bulls, but messaging on harvesting bulls over cows is shared with the public. ECC Wildlife Officers are listening to this feedback here at the workshop.

**Presentation #26 - *Communities and Wildlife Conflicts: Black Bears*** - Ramsey Cook and Liam Case, GNWT-ECC

Available at: [https://nwtDiscoveryportal.enr.gov.nt.ca/geoportaldocuments/9%20-%202023-24%20-%20Communities%20and%20Wildlife%20Conflicts%20with%20Black%20Bears%20\(Cook%20%26%20Case-ECC\)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024.pdf](https://nwtDiscoveryportal.enr.gov.nt.ca/geoportaldocuments/9%20-%202023-24%20-%20Communities%20and%20Wildlife%20Conflicts%20with%20Black%20Bears%20(Cook%20%26%20Case-ECC)%20Presentation%20at%20North%20and%20South%20Slave%20Results%20Workshop%20-%20Jan%202024.pdf)

#### Summary of Discussion

- Q: If a private citizen dispatches a bear and reports it, are samples taken?
  - Yes
  
- Q: Are relocated bears sampled?
  - No, we can't do it safely without tranquilizing them.
  
- (Comment): Could possibly take hair samples from bears that are relocated.
  
- Q: What about paying (compensation) for the hides?

- GNWT has no incentives for black bear hides. The fur program pays \$150 for a hide.
- (Comment): Relocating bears doesn't work as they always come back. A caught bear should be a dead bear.
  - When a bear doesn't go into the traps, they are euthanized at the Officer's discretion. Typically, when they get into garbage, they are dispatched.



*Many thanks to NSixty Trading Company for the delicious catering!*



*Participants viewed many posters.*

## Talking Circles - Break out Group Discussions

Throughout the workshop, interactive and smaller-group discussions (Talking Circles) were held to generate understanding of monitoring concepts and gather feedback based on presented projects. The following section summarizes these discussions. The ideas of all workshop participants are represented, and do not necessarily reflect the opinions of GNWT and NWT CIMP. Feedback on projects was taken by researchers who were present at the workshop and will be used to inform their future monitoring and research efforts.



### 1. What are the changes you are seeing in water?

- Widespread and extreme changes in water levels (flood to drought, bigger swings)
  - When high, must go elsewhere to capture fish (mouth of river)
  - Less snow
  - Extreme historical low water levels all year
  - Extreme flooding (e.g. Hay River)
  - Late freezing/high overflow = unpredictable
  - Spring water sites are not there anymore
  - River channels are changing
  - Fish habitats are changing
  - Less water is affecting fish (sucker fish in Salt River, trout, whitefish in Lutsel K'e)
- Temperature changes with water levels
  - Warmer lakes and lower levels change fish texture (darker & smaller)
  - Spring water is not cool anymore

- Chum salmon now on Mackenzie River, Great Slave Lake, Taltson, and Slave Rivers
- Water colour is changing (darker brown from sediment)
- More debris (logs)
- People are uncomfortable drinking water (or melted snow/ice) from the land (tastes different) so are carrying their own water when trapping
- Impacts to access (ferries, roads, barges)
- Need to include Traditional Knowledge (TK) (for sharing information, use in decision-making)
- Impact to way of living
- Impacts to wildlife, migratory birds, etc.
- Impacts from wildfires (temperature, addition of ash, eroding banks, fewer trees/roots)
- Impact from Alberta & BC dams (high/low flows)
- Landscape is drier (no/few berries, no food for animals)
- More foam in Slave River (darker in colour between Fort Smith and Lang Island near Fort Resolution)
- More freezing rain/drizzle in winter
- More muskrat (Kakisa & Taltson) – response to high water/flooding a few years ago
- Fish getting caught behind beaver dams after spring flooding in Kakisa area
- PCBs (hydrocarbons) are increasing in NSMA area (Memorial University is sampling water around Yellowknife)
- Concern of high contaminants (mercury) in water, birds & muskrat around YK
- Fish near Lutsel K'e better/firmer than around Yellowknife
- More dogface salmon
- Inconnu fall run is moving to later (from Oct 14 to Oct 22-24) by Fort Resolution, and number of fish caught is half
- Slave River slowing down so brown water doesn't extend as far into Great Slave Lake
- Kakisa River is frozen to bottom this year (fish are trapped so unsure of impact to them and spawning)
- Less spruce trees, less permafrost
- Migratory birds/waterfowl are being affected
- Changes in vegetation (more invasive plants) around lakes and rivers
- More rust along riverbanks
- Water is our life – should be #1 priority

## 2. What are the opportunities for future coordination among partners?

- Key to collaboration is understanding who is doing what, sharing information instead of reinventing the wheel. Need more and better communication. More community updates.
  - More access to information using different/creative platforms (Facebook, TikTok, Instagram) or boardgames/videogames
  - Less radio
  - More short videos/commercials
- Engagement needs honoraria but the will to engage must come from the heart (should be there/participate because you WANT to, not because of money)
- Should be informed when dams open (BC-AB-NWT) as impacts Indigenous Governments and Indigenous Organizations (IGIO), government, lodge owners
- Lots of data exists, but we need more analysis to answer the 'so what'
  - Requires capacity
  - Need to share data and communicate results
  - Need to include how the information is making changes in decision-making
- Should examine a change in industrial procedures (cumulative impacts of several developments is important)
- There are many broken promises over the years, so we need change/action before it is too late. (Where is the NWT Water Summit Declaration at currently?)
- Need a coordinated Great Slave Lake system to share information widely (can list observations from land users, emergency changes etc.)
- Water quantity is important to understand (need more monitoring of ice depths)
- Ensure that instrumented sites talk to each other and share information (should be standardized). Community-based monitoring of water levels is low cost and provides useful information.
- Use an App to shares observations and knowledge (automatic distribution). Important not to discontinue stream gauges
- Mackenzie DataStream
- More opportunities for funding directly to First Nations
- Need easy-to-read maps and interactive maps
  - Include other programs (what is being collected, where, what it means)
  - Need interpretation of data
- Development pressure can help people to work together (work together to LEARN, rather than be in opposition)
- The Guardians Program is a good example of collaboration (e.g. Barren ground Caribou Coalition)

- Invite commercial fishers to meetings about water and fish
- Educate local people to monitor – need more community-led monitoring, Guardian programs
- Develop programs to work side-by-side
- Combine TK and science (bring youth to meetings)
- Transboundary Agreements
- Creating, maintaining, advertising data-sharing systems (include user uploading)
- Being aware of diverse funding
- Decision-makers should identify opportunities and priorities
- Fostering projects that are helpful
- Fostering meaningful relationship with communities
- Close the loop so outputs are brought back to communities
- Close the loop with understandable actions
- Building, creating, enriching relationships/partnerships is expensive and takes time
- Cross-cultural/cross-agency workshops (learning, teaching, sharing)
- Expansion of community-based/led monitoring projects
- Shared/open databases that are accessible (upload and download)

***We need ACTION that comes from monitoring information. The Land is the Boss.***

Danny Beck





### 3. How will the past summer's fires affect wildlife and habitat in the coming years (pros and cons)?

- Vegetation regeneration depends on severity of burn (some areas will grow quickly while others won't)
- Fire season is not over - still burning underground. Muskeg was burning a couple of feet (important area for medicine)
- Predators being pushed into town or close to
  - Overall, increased wildlife activity coming into town
  - Habitat fragmentations due to wildfires
  - Animals being pushed out of natural ranges
  - Loss of shrubs causes moose to other areas
- Shifts in vegetation communities
  - Climate change and loss of water has affected berry production
  - Fires could either create meadows (benefits moose, bison, bears) and space for vegetation growth or destroy seed bed
- There will be a lot of 'winners' and 'losers' – some species will benefit (moose like fresh & tender growth, as do caribou) while others will be negatively impacted (picky eaters will struggle more).
- Amount of rain received the following year is crucial for vegetation regeneration
- What vegetation comes back fastest?
- What animals utilize the new vegetation?
- How long until food sources for big game come back?
- Where do the bison go during/after fires?
- When/where do birds come back? (Succession of bird species?)
- Monitor where animals are and their movements before next fire (may help us predict/see fire before it happens)
- Concern that muskox are moving further south (seen in Fort Chipewyan last fall)
- Huge concern that barren ground caribou are declining
- Fire impacts food source, animal movements for a long time (animals know when a fire is coming so they move first)
- Natural re-growth process (e.g. berries, pine trees, morel mushrooms)
- Fire won't return to same spots
- More fires to still come
- Dry ground/climate affects habitat negatively (less abundant)
- Less shelter for wildlife (less protection from predators)
- Landscape change

- Short-term - wildlife will be ok as they are adaptive to wildfires
- Medium-term – bison use habitat and bears adapt well post-fire
- Good food for wildlife after fire – new grasses and young plants
- Smoke during the fires is hard on songbirds
- Drought conditions means fewer insects which is hard for species that eat them (songbirds, bats)
- Tree re-growth – impacted from climate change
  - Different species
  - Forests have more advantage
  - Deep, severe fires reduce seeds available, so could see changes in forest structure (and species too)
- Runoff in spring carrying ash could affect fish and aquatic ecosystems
- Lichen loss (buffalo grass will grow first – takes about 80 years for lichen to return)
- Lost boundaries – the areas being used by animals may change
- Different species mingling
- More animals in towns
- Good for buffalo, moose
- Less fuel for fire next season
- Burned vegetation will allow new growth (new species, invasive species)
- Changes to the type of wildlife that uses the habitat
- Less tree production = more wind and maybe more mortalities
- Until deadfall, burned forests are good for avoiding production
- How will predator-prey interactions change post-fire?
- Post-fire flush of food
- Ungulate species competition could change and influence predator-prey relationships
- Increased stress on animals
- Effects on fish/water from runoff
- Massive loss of animal life (snakes, small mammals, birds)
- Effects of smoke on animal health
- Very few insects for birds to eat
- Hydrophobic soils (more drought effects, drier soil, increased runoff & flooding)
- Green grass in post-fire areas (more deer habitat)



#### 4. What information should we be gathering on wildfire effects on wildlife and habitat?

- Do more workshops and break-out group discussions with community members to determine what questions should be asked in monitoring programs. But also what, when, how and to keep people more involved in each portion of the project (need more information going out).
- Be there in-person with knowledge holders and have more detailed conversations (1-2 days solely to talk about fire, wildlife or topics important to people)
- Should have a holistic approach (don't study one part but rather the whole picture)
- Find a cost-effective way to monitor as much as possible
- Managing people from outside areas or the south to harvest plants that grow post-fire (like mushrooms)
- Invite the youth (ages 15-30) to listen and share their knowledge
- Go out on the land and monitor burned sites (what is growing back and how quickly?)
- Monitor wildlife populations (different species) by using game cameras, ariel surveys, drones
- Track harvesting levels
- Time-lapse monitoring of vegetation (put in context with environmental factors)
- Migratory birds – look at changes in timing/pattern

- Small mammals - can help see what is happening to furbearers like marten
- How will the ash layer affect the soil and regeneration?
- Need to monitor lichen, berries, fish movement, permafrost and migratory birds
- Good to have collar data on pre-fire habitat use
- Habitat change predictions
- Incorporate forecasting into range planning
- Population surveys in wildfire areas

## 5. If you had all the resources required, what wildlife monitoring programs would you want to develop within your community?

- Berries
- Wildlife monitoring
  - Use drones to minimize the footprints
  - Migratory birds (more pelicans in Hay River/KFN and magpies)
  - Landscape
  - Game camera – game trail
  - Collaboration is essential in-person (including Elders & youth)
  - More community-based monitoring
- Guardian/Coalition supports/programs (authority? enforcement?)
- Water sampling – eDNA – list of species that use that waterbody
- Invasive species monitoring (wild boar, birds, insects, cougars)
- Impacts from climate change
- Observe & monitor populations of different species
- Traditional Knowledge studies and databases (development and use)
- Limit hunting licences (need better enforcement)
- Hunting practices (respect, take and share only what you need)
- Capacity-building
- Fish population & health (including local and commercial and more camps in spring & fall)
- Dam release information – better timing and warning/announcement
- Monitor the impacts of dam release to wildlife
- More biodiversity monitoring – use cameras
- Population to inform harvest numbers/limits/thresholds – how many are too many?
- Muskox
- Moose in South Slave

- Impacts from not harvesting barren ground caribou
- Bison harvest 'quotas'
- Status of elk and pigs
- Smaller furbearers
- Air quality monitoring
- Monitor birds – bald eagles, ducks (impacts from oil sands)
- Monitor fish – numbers & species in Great Slave Lake
- Health of wildlife and fish (contaminant levels, quality of meat using TK)
- Acoustic Recording Units (ARUs) – need capacity for data management and analysis
- Automation (photos, sound, data etc.)
- Monitor moose and caribou on all-season roads that provide increased access
- Capacity to monitor hunter, poaching/harvest monitoring by Guardians, reporting back including commercial and recreational fishing
- Respect traditional territories and educate
- Barren ground caribou (general condition, disease, parasites, contaminants)
- Water temperature
- More time with Elders on the land and include youth
- Moose (camera traps, collars, harvesting results, harvester kits for money)
- Wolves (sightings in communities, impact to moose populations)
- Sample kits for harvested bears, diseased bison
- Wolverine – how many are out there?
- Muskrats (mercury levels) and rabbits
- Beaver population and waterfowl

## 6. How should we incorporate more land user knowledge and participation into wildlife programs?

- Discuss/plan early with people in each area who have the knowledge - show up in communities and share project/information
  - Once there, you can identify land users and hear from them
  - Sharing results with community in-person (workshops, door-to-door)
  - TK can fill in knowledge gaps (you don't know what you don't know)
  - When speaking to individuals, you may learn things you weren't initially asking about but can learn more
  - Communities should help determine research priorities
- Build trust before going to communities about research topics
  - Get more Elders involved (interviews with land users too)

- Being part of the community (address the turn-over and provide more space)
  - Get out on the land with individuals
  - Long-term relationships and collaborating with individuals, Elders and youth
- Have camps which can bring Elders, youth together and build relationships
- Personal relationships are key and the effort must be made to establish these (phone calls and in-person rather than emails)
- External researchers
  - Encourage external researchers to provide short presentation (Q&A)
  - Identify community priorities and then navigate which researchers will address these priorities
  - Understand the levels and demographics of a community
  - Cultural awareness and sensitivity encouraged or required
  - Encourage them to do their homework before arriving to a community (courses about Indigenous planning)
- Should bring youth on land and to presentations (investing in the future)
- Using traditional languages for species in presentations/communication materials
- Engaging from the start to develop questions with communities
- Capacity-building
  - Set up for the community to eventually take over the program
  - Provide capacity funding/compensation
- Have community members present information alongside the researcher at workshops
- Integrate government and land users to learn together (include youth)
- More time for discussion (break-out groups)
- Be aware of the language you are using (could be triggering)
- Visuals are helpful (use Indigenous languages) and seasonal surveys
- Involve schools (can generate interest between parents and youth)
- Open sharing of information (transfer knowledge to new staff)
- Funding agreements in advance (allows for terms/conditions of doing work)
- Use of traditional protocols
- Consider impacts to people over time
- Published TK should not be applied out of area (need confirmation first)
- Be prepared, have respect, include TK and LISTEN
- Harvester's App to record observations
- Help IGIOs create their own environmental programs – build partnerships
  - Also helps government bridge to communities/TK
- Use of community liaisons
- Two-eyed seeing approach

- Include more sample kits (e.g. Moose)
- Use larger aircraft with more seats to bring more people
- Make podcasts
- For grid surveys, land users can help select high-medium-low quality habitats
- Bear predation surveys on islands in rivers
- Results and harvest reporting and feedback



## 7. What are some strategies for co-existing with wildlife (e.g. bears, bison, wolves) and preventing conflicts in communities?

- PREVENTION
  - Public education
  - Sled dogs
  - Fenced gardens
  - Control garbage and fuel
  - Control compost (bears)
  - Control dogs (wolves, bears)
  - Vaccinate pets (rabies, parvo)
- EDUCATION
  - Safety in bear country (public messaging, brochures, posters/signs, don't feed the wildlife!)
  - Public updates (social media), including municipalities
  - Municipal garbage by-laws
  - Frequent garbage pick-up
- Buffer zone around town
- Use of trail cameras around town
- Investigate and report on gunshots in town
- Market for bear meat/pelts?

- Start-up local commercial bear hunts
- Dumps/waste management
  - Ability to monitor at night?
  - Do fences work? Need to monitor
  - Waste management (separate types of attractants entering dump)
  - Composting area
  - Agriculture (chickens, cattle, grazing land)
  - Bear-proof residential garbage cans
- Highway collisions
  - Attractants on highways (salt)
  - Grazing, vegetation
  - No vegetation control means more grazing
  - Ranching technique (flagging on fence to keep wolves off pastures)
- Traditional Knowledge (e.g. moose antlers as natural deterrent), communicate with the animals
- Protect habitats outside the communities
- Respect and understanding



## Appendix A: Agenda



# AGENDA

## ENVIRONMENTAL MONITORING RESULTS AND WILDLIFE WORKSHOP

January 16-18<sup>th</sup>, 2024

*Salt River First Nation Business and Conference Center  
195 McDougal Road, Thebacha (Fort Smith), NT*

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*The Government of the Northwest Territories Department of Environment and Climate Change (GNWT-ECC) South Slave Region **Wildlife Research and Monitoring** and **NWT Cumulative Impact Monitoring Program** (NWT CIMP) and the **Northwest Territory Métis Nation** (NWTMN) are co-hosting a workshop.*

### OBJECTIVES:

The workshop objectives are to:

- Bring together researchers, community members and northern decision-makers to **share results** of environmental research and monitoring related to caribou, water and fish in the North and South Slave regions.
- Provide a **forum for discussion** between researchers, community members and northern decision-makers. Feedback from these discussions to be used to **improve related projects and programs**.
- Increase the **inclusion of local and Traditional Knowledge** and priorities into wildlife research, monitoring, and management programs.

### INFORMATION:

Copies of presentations will be provided and made available on the NWT Discovery Portal.

For additional details, contact [nwtcimp@gov.nt.ca](mailto:nwtcimp@gov.nt.ca) or 867-767-9233 ext. 53084 **OR**

[Ashley McLaren@gov.nt.ca](mailto:Ashley_McLaren@gov.nt.ca) or 867-872-6408.

# AGENDA

## Tuesday, January 16<sup>th</sup> - Day 1

Time	Activity	Lead
8:30 am	Arrival, Coffee and Mingling Registration	
9:00	Welcome, Opening Prayer and Introductions <ul style="list-style-type: none"> <li>• Opening remarks by GNWT &amp; NWTMN</li> <li>• Agenda review</li> </ul>	Tim Heron (Facilitator)
9:10 – 9:30	<u>Presentation #1</u> - <i>About the NWT Cumulative Impact Monitoring Program (NWT CIMP) &amp; Results Information</i>	Lorraine Brekke (GNWT-ECC, NWT CIMP)
9:30	<b>Water-Related Projects:</b> <ul style="list-style-type: none"> <li>• <u>Presentation #2</u> - <i>Recovery of the mine-impacted landscape in the Yellowknife region (CIMP227)</i></li> <li>• <u>Presentation #3</u> - <i>GNWT Water Quality Research and Monitoring in the South Slave Region</i></li> </ul>	Mike Palmer (ARI- North Slave Research Centre)  Chris Cunada (GNWT-ECC)
10:15	<b>BREAK</b>	
10:30 – 12:00	<ul style="list-style-type: none"> <li>• <u>Presentation #4</u> - <i>Murky waters: Impacts of disturbances on the mobilization and downstream delivery of mercury and methylmercury (CIMP223)</i></li> <li>• <u>Presentation #5</u> - <i>Fort Smith Métis Council Ecotoxicology and Monitoring of Cumulative Effects on the Slave River (CIMP232)</i></li> <li>• <u>Presentation #6</u> – <i>Smith’s Landing First Nation Fish Camp Video Presentation</i> <a href="https://vimeo.com/565123820">https://vimeo.com/565123820</a></li> </ul>	David Olefeldt (University of Alberta)  Jon MacDonald (Fort Smith Métis Council)  Smith’s Landing First Nation
12:00 – 1:00	<b>LUNCH</b> (provided)	
1:00 – 2:00	<b>Talking Circle #1:</b> <ul style="list-style-type: none"> <li>• What changes are you seeing in water?</li> <li>• What are the opportunities for future coordination among partners?</li> </ul>	Facilitator
2:00	Summary of Talking Circles as a Full Group <ul style="list-style-type: none"> <li>• 3 key points from each group</li> </ul>	
2:15 – 3:00	<b>Caribou &amp; Land Use Projects:</b> <ul style="list-style-type: none"> <li>• <u>Presentation #7</u> – <i>Boreal caribou habitat</i></li> </ul>	Marc d’Entremont (for

	<p><i>enhancement (CIMP234)</i></p> <ul style="list-style-type: none"> <li>• <u>Presentation #8</u> – <i>Identifying habitats that influence body condition and fitness of boreal caribou in the southern NT (CIMP205)</i></li> </ul>	<p>Deninu K’ue First Nation)</p> <p>Allicia Kelly (GNWT – ECC)</p>
3:00	<b>BREAK</b>	
3:15 – 4:20	<p><b>Caribou &amp; Land Use Projects:</b></p> <ul style="list-style-type: none"> <li>• <u>Presentation #9</u> – <i>Can caribou co-exist with human development in northern Canada? Forecasting anthropogenic disturbance and land use changes using resource potential mapping to improve caribou future forecasts (CIMP220)</i></li> <li>• <u>Presentation # 10</u> - <i>Understanding Food Security in the Northern Boreal Forest – A Multi-Species Program in Collaboration with Laval University</i></li> </ul>	<p>Eliot McIntire (University of British Columbia)</p> <p>Allicia Kelly (GNWT – ECC)</p>
4:20 – 4:30	<b>Summary of Day 1</b>	Facilitator

## Evening Video Night!

(7:00 – 8:00 pm)

Please join us for a few short videos highlighting various NWT environmental monitoring and research! *Light snacks will be available.*

- More NWT CIMP videos are available at [www.nwtcimp.ca](http://www.nwtcimp.ca)
- Also check out “*Killer Water: The toxic legacy of Canada’s oil sands industry for Indigenous communities*” at [www.youtube.com/watch?v=GRuV6eOqp6Q](http://www.youtube.com/watch?v=GRuV6eOqp6Q)

**ALL PUBLIC WELCOME!**

# AGENDA

## Wednesday, January 17<sup>th</sup> - Day 2

Time	Activity	Lead
8:30 am	Arrival, Coffee and Mingling	
9:00	Welcome	Facilitator
	Review of Previous South Slave Region Workshops	Ashley McLaren (GNWT-ECC)
9:15	<u>Presentation # 11</u> - <i>Boreal Caribou Program Update</i>	Ashley McLaren
9:45	<u>Presentation # 12</u> - <i>Southern NWT Boreal Caribou Range Planning</i> (video)	Kathy Unger (GNWT-ECC)
10:15	<b>BREAK</b>	
10:30	<u>Presentation # 13</u> - <i>2023 Wildfire Season Review</i> (short overview)	Daniel Allaire (GNWT-ECC)
10:50	<p><b>Talking Circle #2: Wildfire—Wildlife Interactions</b></p> <ul style="list-style-type: none"> <li>How will the past summer’s fires affect wildlife and habitat in the coming years? Pros and Cons? What information should we be gathering on wildfire effects on wildlife and habitat?</li> </ul>	Facilitator
12:00 pm	<b>LUNCH</b> (provided) /Aurora College ENRTP Poster Presentations + Video	
1:30	<u>Presentation # 14</u> - <i>Wildlife Health Program and Discussion</i>	Naima Jutha (GNWT-ECC)
2:00	<u>Presentation # 15</u> - <i>Bison Monitoring Update</i>	Terry Armstrong (GNWT-ECC)
2:20	<u>Presentation # 16</u> - <i>Slave River Lowlands Anthrax Outbreak</i>	Liam Case (GNWT-ECC)
2:45	<u>Presentation # 17</u> - <i>NWT Biodiversity Project and Use of Environmental Sensors</i>	Brad Woodworth (GNWT-ECC)
3:00	<b>BREAK</b>	
3:15	<p><b>Talking Circle #3: Community-Based Wildlife Monitoring Programs</b></p> <ul style="list-style-type: none"> <li>If you had all the resources required, what wildlife monitoring programs would you want to develop within your community?</li> </ul>	Facilitator
4:15	<u>Presentation # 18</u> - <i>Muskox – History and East Arm Population Surveys</i>	Ashley McLaren
4:30	<b>Summary of Day 2</b>	Facilitator

# AGENDA

## Thursday, January 18<sup>th</sup> - Day 3

Time	Activity	Lead
8:30 am	Arrival, Coffee and Mingling	
9:00	Welcome	Facilitator
9:10	<u>Presentation # 19</u> <i>Bison and Whooping Crane Monitoring in Wood Buffalo National Park</i>	Jenna Rabley (Parks Canada-Wood Buffalo National Park)
9:30	<u>Presentation # 20</u> <i>American White Pelicans: Slave River Colony</i>	John McKinnon (GNWT-ECC)
9:45	<u>Presentation # 21</u> <i>Migratory Birds</i>	Samuel Haché (ECCC-Canadian Wildlife Service)
10:00	<b>Talking Circle #4: Land User Knowledge and Participation</b> <ul style="list-style-type: none"> <li>How should we incorporate more land user knowledge and participation into wildlife programs?</li> </ul>	Facilitator
11:00	<b>BREAK</b>	
11:15	<u>Presentation # 22</u> <i>A Problem We Don't Want: Wild Pigs in the NWT</i>	Rob Gau (GNWT-ECC)
11:30	<u>Presentation # 23</u> <i>Species at Risk in the Southern NWT</i>	Joanna Wilson (GNWT-ECC)
11:45	<u>Presentation # 24</u> <i>Barren-Ground Caribou – Population Survey Results</i>	Brad Woodworth
12:00 pm	<b>LUNCH</b> (provided)	
1:00	<u>Presentation # 25</u> <i>Moose Survey Planning and Results</i>	Ashley McLaren
1:20	<u>Presentation # 26</u> <i>Communities and Wildlife Conflicts: Black Bears</i>	Ramsey Cook and Liam Case (GNWT-ECC)
1:45	<b>Talking Circle #5: Living Among Wildlife</b> <ul style="list-style-type: none"> <li>What are some strategies for co-existing with wildlife (e.g., bears, bison, wolves) and preventing conflicts in communities?</li> </ul>	
2:45	<b>Feedback Forms and Final Door Prizes</b>	
3:00	<b>Round Table Comments and Closing Prayer</b>	Facilitator
3:00 – 4:30	Informal Discussion for those able to stay (optional) ask questions, seek feedback	All

**Masi Cho - Thank you for participating!**

## Appendix B: Attendee List

Name	Email	Organization
Allaire, Daniel	<a href="mailto:Daniel.Allaire@gov.nt.ca">Daniel.Allaire@gov.nt.ca</a>	GNWT - ECC
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