



# NWT CUMULATIVE IMPACT MONITORING PROGRAM

## 2025-2026 Results Workshop Summary Report

Yellowknife, NWT December 9-10<sup>th</sup>, 2025

# PROGRAMME DE SURVEILLANCE DES EFFETS CUMULATIFS DES TNO

## Rapport sommaire sur les résultats de l'atelier 2025-2026

Yellowknife (TNO), les 9 et 10 décembre 2025

If you would like this information in another official language, call us.  
English

Si vous voulez ces informations dans une autre langue officielle, contactez-nous.  
French

Kīspin ki nitawihīn ē nīhiyawihk ōma ācimōwin, tipwāsinān.  
Cree

Tłı̨chǫ yati k'èè. Dı wegodı newo dè, gots'o gonede.  
Tłı̨chǫ

ʔerihɬ'is Dëne Sųłiné yati t'a huts'elkér xa beyáyatı theʔa ʔat'e, nuwe ts'ën yólti.  
Chipewyan

Edi gondı dehgáh got'je zhatié k'ée edatl'eh enahddhé nide naxets'é edahfí.  
South Slavey

K'ákshó got'ıne xədə k'é hederı ɂedıhtı'lé yeriniwé nídé dúle.  
North Slavey

Jii gwandak izhii ginjik vat'atr'ijahch'uu zhit yinohthan ji', diits'at ginohkhii.  
Gwich'in

Uvanittuaq ilitchurisukupku Inuvialuktun, ququaqluta.  
Inuvialuktun

Hapkua titiqqat pijumagupkit Inuinnaqtun, uvaptinnut hivajarlutit.  
Inuinnaqtun

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French:  
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# Summary

The Government of the Northwest Territories Department of Environment and Climate Change (GNWT-ECC) **NWT Cumulative Impact Monitoring Program (NWT CIMP) Results Workshop** was held in Yellowknife, NT December 9-10<sup>th</sup>, 2025.

The objectives of the workshop were to:

- Bring together researchers, community members, and NWT decision-makers to share results of environmental monitoring related to caribou, water, and fish.
- Provide a forum for discussion between researchers, communities and northern decision-makers. Feedback from these discussions can improve related projects and programs.

The workshop provided the opportunity to present results and updates on current NWT CIMP-supported monitoring and research conducted throughout the NWT. These projects focused primarily on current NWT CIMP priorities of **caribou, water, and fish**. For the caribou results, all seven projects of the *Collaborative Barren-ground Caribou Initiative* (CBGCI) were presented.

Fifteen presentations were given by researchers and resource staff. Small, interactive breakout groups (Talking Circles) were held to generate discussion and information related to the Collective Barren-ground Caribou Initiative project presentations. The Talking Circles provided an opportunity for participants to discuss themes heard from the caribou presentations and important input for consideration in the synthesis reporting.

Despite the heat not working at our venue on Day 1 (brrr!), ninety-seven people (Appendix B) participated throughout the workshop, including community members, researchers and key northern decision-makers.



# Résumé

Les 9 et 10 décembre 2025, le ministère de l'Environnement et du Changement climatique du gouvernement des Territoires du Nord-Ouest a organisé à Yellowknife un atelier sur les résultats du **Programme de surveillance des effets cumulatifs des TNO (PSECTNO)**.

Les objectifs étaient les suivants :

- Réunir des chercheurs, des représentants communautaires et des décideurs ténois pour leur faire part des résultats des différents projets de surveillance environnementale en lien avec la protection du caribou, des eaux et des poissons;
- Offrir une tribune de discussion à ces participants, leurs remarques pouvant aider à améliorer les projets et les programmes afférant au PSECTNO.

L'atelier a été l'occasion de faire le point sur les efforts de surveillance et de recherche menés dans le cadre de l'actuel PSECTNO, lesquels sont principalement axés sur trois priorités du programme, à savoir **le caribou, l'eau et les poissons**.

Les chercheurs et le personnel responsable des ressources ont livré 15 présentations, notamment sur le caribou et sur les sept projets issus de l'initiative conjointe sur le caribou de la toundra. De petits cercles de discussion ont été formés afin que les participants puissent échanger de façon interactive et instructive sur les présentations liées à cette initiative, leur permettant ainsi de débattre des thèmes du caribou et des informations importantes pour la production du rapport de synthèse.

Malgré la coupure de chauffage survenue lors de la première journée de ce rendez-vous, nous avons recensé 97 participants (voir Annexe B) représentant aussi bien les collectivités que la recherche et la sphère décisionnelle dans le Nord.



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# Background

The NWT Cumulative Impact Monitoring Program (NWT CIMP) Results Workshop was held in Yellowknife, NT on December 9-10<sup>th</sup>, 2025. NWT CIMP Results Workshops are held annually to provide environmental monitoring results to key audiences (Indigenous governments, community members, co-management boards, government departments, and academia). These workshops provide opportunities to network, strengthen ties between communities, discuss program results and to understand cumulative impacts in the NWT.

Current NWT CIMP supported monitoring and research projects conducted throughout the NWT shared results and updates. These projects focused primarily on current NWT CIMP priorities of caribou, water, and fish. For the caribou results, all seven projects of the *Collaborative Barren-ground Caribou Initiative* (CBGCI) were presented. The CBGCI was a directed funding opportunity to help better understand what the drivers of changing caribou populations are and what the future holds. The CBGCI was a joint funding collaboration from 2023-2026 between Polar Knowledge Canada and NWT CIMP.

The objectives of the workshop were to:

- Bring together researchers, community members, and NWT decision-makers to share results of environmental monitoring related to caribou, water, and fish.
- Provide a forum for discussion between researchers, communities and northern decision-makers. Feedback from these discussions can improve related projects and programs.

Fifteen presentations were given by researchers and resource staff. Small, interactive breakout groups (Talking Circles) were held to generate discussion and information related to the CBGCI project presentations. The Talking Circles provided an opportunity for participants to discuss themes heard from the caribou presentations and provide input for consideration in the synthesis reporting.

Ninety-seven (97) people participated in the workshop including community members, researchers and northern decision-makers (Appendix B). NWT CIMP provided funding for regional community representatives to attend the workshop as a way to promote information sharing among community members and decision-makers. Each invited Indigenous Government/Indigenous Organization identified attendees and administered their travel arrangements.

As has been the practice for several years, participants were asked to fill out a short evaluation form each day to provide feedback on each of the presentations, as well as the balance

between presentations, questions and discussion, and how well the objectives were fulfilled. On the final day, participants were also asked to provide feedback on the overall quality and relevance of the workshop and its presenters. This year, the feedback received was generally very positive and participants indicated that expectations for the workshop were met. In particular, the Panel Discussion on Collaborative Research Perspectives was well-received, along with our closing prayer conducted by a youth! Feedback is also shared with presenters to help improve their future communications with communities and decision-makers.

## Presentations

Fifteen (15) presentations were given over the two-day workshop. The following section provides the title of each 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 December 9<sup>th</sup>, 2025

#### ***Presentation #1 - About the NWT Cumulative Impact Monitoring Program (NWT CIMP) and the Collaborative Barren-Ground Caribou Initiative*** - Lorraine Brekke (GNWT- ECC, NWT CIMP)

Available at: [https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/2025-2026%20-%20CIMP%20Overview%20and%20Collaborative%20Barrenground%20Caribou%20Initiative%20\(CBGCI\)%20-%20NWT%20CIMP%20Results%20Workshop%20Presentation%20-%20Dec%202025%20-%20Brekke.pdf](https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/2025-2026%20-%20CIMP%20Overview%20and%20Collaborative%20Barrenground%20Caribou%20Initiative%20(CBGCI)%20-%20NWT%20CIMP%20Results%20Workshop%20Presentation%20-%20Dec%202025%20-%20Brekke.pdf)

#### Summary of Discussion

- No questions or comments.

#### ***Presentation #2 - Ekwò Nàxoèhdee K'e: Being Caribou Guardians with 'Boots on the Ground' (CIMP94-BG)*** - Petter Jacobsen & Janelle Nitsiza (*Tłı̨chǫ Government*)

Available at: <https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/2025-2026%20-%20Ekwò%20Naxoehdee%20Ke%20-%20Being%20Caribou%20Guardians%20with%20Boots%20on%20the%20Ground%20-%20NWT%20CIMP%20Results%20Workshop%20Presentation%20-%20Dec%202025%20-%20CIMP94.pdf>

#### Summary of Discussion

- Q: Insect avoidance behaviour has changed, what has changed specifically?
  - During our 2016-18 fieldtrips, the weather was very hot and dry. Elders and Inuit say there used to be snow in the summer on the side of the slopes and caribou used to go to the snow to cool down and escape insects. There isn't

that refuge anymore so they go to the shorelines or the middle of the lake instead.

- We also see them running in circles to get away from mosquitos or go into water up to their belly. This is a new behavior compared to going to higher north facing slopes.
- During 2018-2020, it was cooler and windy and the caribou were less harassed by insects; it fluctuates.



Petter Jacobsen and Janelle Nitsiza (Tłı̨chǫ Government) shared their project findings

### **Presentation #3 - Collaborative Forecasting Landscape Change and Population Dynamics of Barren-ground Caribou (CIMP207-BG) - Thom Stubbs (Headwater Group) for Wek'eezhii Renewable Resources Board**

Available at: <https://nwtdiscoverypotal.enr.gov.nt.ca/geoportaldocuments/2025-2026%20-%20Collaborative%20Forecasting%20Landscape%20Change%20and%20Population%20Dynamics%20of%20Barrenground%20Caribou%20-%20NWT%20CIMP%20Results%20Workshop%20Presentation%20-%20Dec%202025%20-%20CIMP207.pdf>

#### **Summary of Discussion**

- *(Participant Comment):* In the Inuvialuit Settlement Region, there are three zones, but the Inuvik-Tuk Highway is a no hunting zone. Caribou are starting to come back but the Hunter and Trapper Committees (HTCs) are opposing harvest and would prefer a no-hunting zone. The Wildlife Management Advisory Committee (WMAC) is respecting the no-hunting going forward. An option for a no- hunting period for specific times of the year—comes from the HTCs, not the government. Wasn't very popular, but it came into place after a lot of that education.
  - *(Response):* The work we did with WMAC was basic and used hypothetical questions, such as “what if we change the harvest level?”. This presentation was about the potential uses of this tool, not necessarily how it has been used to date.

**Presentation #4 – Contaminants and Caribou Epigenetics and Genomic Health (CIMP240-BG) -**

Eric Wootton for Rowan Barrett (*McGill University*)

Available at: <https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/2025-2026%20-%20Contaminants%20and%20Caribou%20Epigenetics%20and%20Genomic%20Health%20-%20NWT%20CIMP%20Results%20Workshop%20Presentation%20-%20Dec%202025%20-%20CIMP240.pdf>

**Summary of Discussion**

- Q: Caribou that are coming from the Canadian Shield vs areas with more permafrost. Do you think that permafrost thaw might mobilize differences?
  - Absolutely, we haven't explored that yet. Most analyses removed the location effect because we're controlling for differences in geology that we know make a big difference for the amount of each element you have in your body. That is going to be a big impact, and is worth looking at. It's likely a contributor to the herd specific differences.
- Q: Please elaborate on the Porcupine caribou inbreeding level? You mentioned structure within the population?
  - The apparent inbreeding signal could be real, or it could be an artifact. If the herd is actually made up of two or more groups that don't mix much, our statistics can mistake that separation for inbreeding. We're working to tease those apart.

**Presentation #5 – Investigating the Cumulative Impacts of Disturbance to Barren-ground Caribou on the Tibbitt to Contwoyto Winter Road- A Guardian-led Initiative (CIMP243-BG) -**

Orna Phelan & Wayne Mercredi (*North Slave Métis Alliance*)

Available at: <https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/2025-2026%20-%20Investigating%20the%20Cumulative%20Impacts%20of%20Disturbance%20to%20Barrenground%20Caribou%20on%20he%20Tibbitt%20to%20Contwoyto%20Winter%20Road%20-%20NWT%20CIMP%20Results%20Workshop%20Presentation%20-%20Dec%202025%20-%20CIMP243%20-NSMA.pdf>

**Summary of Discussion**

- No time for questions.



Wayne Mercredi and Orna Phelan (North Slave Métis Alliance) sharing their project results

**Presentation #6: Comparative Analysis of Factors Affecting Caribou Survival Patterns (CIMP241-BG)** - Chloe Beaupre (State University of New York)

Available at: <https://nwtdiscoverypotal.enr.gov.nt.ca/geoportaldocuments/2025-2026%20-%20Comparative%20Analysis%20of%20Factors%20Affecting%20Caribou%20Survival%20Patterns%20-%20NWT%20CIMP%20Results%20Workshop%20Presentation%20-%20Dec%202025%20-%20CIMP241.pdf>

**Summary of Discussion**

- No questions or comments.

**Presentation #7A - Tracking Change Together: Advancing Community-Based Monitoring for Caribou (CIMP239-BG)** - Susan Kutz (University of Calgary) & Tyra Akeeagok (Kugluktuk youth)

Available at: <https://nwtdiscoverypotal.enr.gov.nt.ca/geoportaldocuments/2025-2026%20-%20Tracking%20Change%20Together%20-%20Advancing%20Community-Based%20Monitoring%20for%20Caribou%20-%20NWT%20CIMP%20Results%20Workshop%20Presentation%20-%20Dec%202025%20-%20CIMP239%20Kutz.pdf>

**Summary of Discussion**

- Q: How much do you think the filaria worms are having a population level impact?
  - Harvesters are describing very intense immune responses, which is energetically costly. This is an energetic drain and causes scar tissue in the abdominal cavity. At the population level, it probably comes through on condition, pregnancy rates, and survival. We anticipate that the worms have been out there at a low level and the warm summers are causing outbreaks due to climate change.
- Q: Selenium has a lot of implications for reproduction; do you see hoof rot?
  - No, not in the samples we've received. We've established benchmarks of hair trace element levels, like selenium, where certain levels may indicate a decreasing, stable or increasing population. There is not enough data for caribou yet, but we are working towards it. With selenium deficiency, we see

muscle disease and weakness in cattle, particularly in calves. Weak calves are more likely to die due to predation or weather.



*Susan Kutz (University of Calgary) and Kugluktuk's youth Tyra Akeeagok sharing their project results and experiences.*

***Presentation #7B – Investigating Pestivirus Infections in Barren-ground and Dolphin Union Caribou: Strain Identification and Diagnostic Test Refinement (CIMP239-BG)*** - Frank Van de Meer & Jessie Olson (University of Calgary)

Available at: <https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/2025-2026%20-%20Tracking%20Change%20Together%20-%20Advancing%20Community-Based%20Monitoring%20for%20Caribou%20-%20NWT%20CIMP%20Results%20Workshop%20Presentation%20-%20Dec%202025%20-%20CIMP239%20Van%20de%20Meer.pdf>

**Summary of Discussion**

- No time for questions.

***Presentation #8: Using Animal-borne Sensors and Acoustic Recording Units to Monitor Caribou Behavior, Insect Harassment and Sound Disturbance (CIMP242-BG)*** - Megan Perra (State University of New York)

Available at: <https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/2025-2026%20-%20Using%20Animal-borne%20Sensors%20and%20Acoustic%20Recording%20Units%20to%20Monitor%20Caribou%20Behaviour%2C%20Insect%20Harassment%20and%20Sound%20Disturbance%20-%20NWT%20CIMP%20Results%20Workshop%20Presentation%20-%20Dec%202025%20-%20CIMP242.pdf>

**Summary of Discussion**

- No time for questions.

## Day 2: Wednesday December 10<sup>th</sup>, 2025

**Presentation #9 - Aquatic Ecosystems in the Rádeyílkóé (Fort Good Hope) Area as Indicators of Environmental Change: A Community-based Monitoring Project (CIMP215)** - Alizée Le Moigne for Jérôme Comte (*Institut national de la recherche scientifique*)

Available at: <https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/2025-2026%20-Aquatic%20Ecosystems%20in%20the%20Fort%20Good%20Hope%20Area%20as%20Indicators%20of%20Environmental%20Change%20-%20NWT%20CIMP%20Results%20Workshop%20Presentation%20-%20Dec%202025%20-%20CIMP215.pdf>

### Summary of Discussion

- Q: All your information is from summer sampling – did you do any winter sampling? Anything in the lake over the winter could have been washed out with freshet. Many fish are in the lake all winter and then migrate.
  - We did just summer sampling once a year. Fish are known to bioaccumulate. We would also be interested in also having winter data. The Guardians are now trained in sampling, so if they have a concern, they could do water sampling at any time of year and send the samples to us for analysis.
- Q: Were any of the lakes sampled downstream of community activities, such as sewage or landfill?
  - Not to my knowledge – the focus was on lakes in the Protected Area that is located on the other side of the Mackenzie River from the community and some lakes on the same side, but not impacted by sewage nor landfill.
    - (*Follow-up comment*): For decision-makers, it would be very useful to have sampling of lakes that are downstream of community activities.

**Presentation #10 - Ecotoxicology and Monitoring of Cumulative Effects on the Slave River (CIMP232)** - Ryan & Zayn Pischinger (*Fort Smith Métis Council*) & Chris Cunada (*GNWT-ECC, Water Monitoring and Stewardship*)

Available at: <https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/2025-2026%20-Ecotoxicology%20and%20Monitoring%20of%20Cumulative%20Effects%20on%20the%20Slave%20River-%20NWT%20CIMP%20Results%20Workshop%20Presentation%20-%20Dec%202025%20-%20CIMP232.pdf>

### Summary of Discussion

- Q: Where did you sample downstream of the sewage outflow? When the criteria for a water license are set, there is consideration of the mixing zone and river discharge. Have you considered samples both inside and outside the mixing zone?

- Samples were collected 3 meters from the output. Slave River is challenging because it is large and fast so 'local' samples are hard to collect.
- Q: Now that sampling is done, are there plans to present the results back to the community?
  - Yes – results will be presented back to the community, including a newsletter.



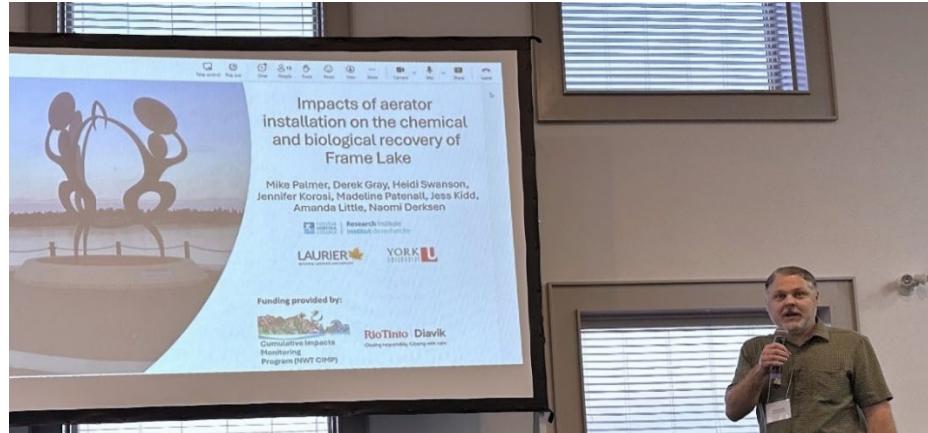
Zyan Pischinger (FSMC youth) describes monitoring site locations, alongside his proud father Ryan, and Chris Cunada (GNWT-ECC)

**Presentation #11 – Impacts of Aerator Installation on the Chemical and Biological Recovery of Frame Lake (CIMP237)** - Derek Gray (Wilfrid Laurier University) for Mike Palmer (Aurora Research Institute)

Available at: <https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/2025-2026%20-%20Impacts%20of%20Aerator%20Installation%20on%20the%20Chemical%20and%20Biological%20Recovery%20of%20Frame%20Lake%20-%20NWT%20CIMP%20Results%20Workshop%20Presentation%20-%20Dec%202025%20-%20CIMP237.pdf>

**Summary of Discussion**

- Q: Are DFO or Diavik considering adding more aerators?
  - It's possible that Diavik may be considering this. The sediment uses the oxygen, so we need to figure out how much is needed. A WLU student is doing a project to figure out how much oxygen would be needed.
- Q: If we don't change anything from what is being done now, do you anticipate any changes in the lake this year?
  - So far, we have not seen any improvement. Diavik is talking to the manufacturer of the aerator to see if more oxygen could be added.
  - Over many, many years the amount of waste on the bottom of the lake can be degraded so that not as much oxygen is needed. Once we have the calculation on how much oxygen is needed, we may be able to estimate how long it will take to see a difference.



Derek Gray (WLU) engages the audience sharing local project results

**Presentation #12 - Lake Ice Processes - Fundamental for Assessing Ice Road Climate Risks and Vulnerability Under Current and Future Warming (CIMP238)** - Homa Kheyrollah Pour (Wilfrid Laurier University)

Available at: <https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/2025-2026%20-%20Lake%20Ice%20Processes%20-%20Fundamental%20for%20Assessing%20Ice%20Road%20Climate%20Risks%20and%20Vulnerability%20Under%20Current%20and%20Future%20Warming%20-%20NWT%20CIMP%20Results%20Workshop%20Presentation%20-%20Dec%202025%20-%20CIMP238.pdf>

**Summary of Discussion**

- No time for questions.

**Presentation #13 - Cumulative Impacts of Landscape Characteristics, and Natural and Human Disturbances on Lake Water Quality and Benthic Macroinvertebrate Community Structure in the Yampa River Watershed** - Krista Chin (GNWT- ECC, NWT CIMP)

Available at: <https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/2025-2026%20-%20Cumulative%20impacts%20of%20landscape%20characteristics%20and%20natural%20and%20human%20disturbances%20on%20aquatic%20health%20in%20the%20Yampa%20River%20watershed%20-%20NWT%20CIMP%20Results%20Workshop%20Presentation%20-%20Dec%202025%20-%20Chin.pdf>

**Summary of Discussion**

- Q: How did you access the information to get all of the landscape and lake characteristic information (e.g. landscape cover, flushing index)?
  - We used GIS information that is freely available to anyone.

**Presentation #14 - Cyanobacteria Blooms in Great Slave Lake: Observations from Traditional, Local, and Scientific Knowledge** - Jeffrey Cederwall (Canadian Water Agency)

Available at: <https://nwtdiscoveryportal.enr.gov.nt.ca/geoportaldocuments/14%20-%20Cederwall%20-%20GSL%20Cyanobacteria%20Blooms.pdf>

**Summary of Discussion**

- Q: Since people can report what they see, can they also collect samples?
  - Not yet, but that is the hope for the future. Currently, if you have water quality concerns, including suspected cyanobacteria blooms, you can contact GNWT (Water Monitoring and Stewardship). For the future, we also hope to prepare and distribute community sampling kits to local Guardians to conduct sampling when they observe it.
- Q: Alberta has different legislation than we do, so when they release treated water (sewage), are we going to see more blooms in the NWT in the future?
  - If there was a very large increase in nutrients, it could be a factor. However, the Slave River naturally brings in a huge amount of sediment-bond nutrients annually due to its size and rate of flow. In general, if there are more accessible nutrients available, it can increase algae growth.
- Q: How do public notices and advice fit into this program?
  - GNWT issued press releases in 2023 and 2024 when cyanobacteria blooms were observed close to the City of Yellowknife, and several stories were released by the media. When a suspected bloom was reported, the GNWT took samples and publicly shared results through the media (results showed there was cyanobacteria, but no toxins).
  - Based on past sampling and knowledge, the dominant cyanobacteria in Great Slave Lake are unlikely to produce high levels of toxins but like others, do possess the ability to potentially produce toxins in the future. More research and monitoring are still needed. If you observe a suspected cyanobacteria bloom in Great Slave Lake or another waterbody a precautionary approach is always recommended; where you assume toxins could be present and make choices like obtain your drinking water from elsewhere and communicate your observations to others.



Jeffrey Cederwall (CWA) shares information on cyanobacteria blooms in Great Slave Lake

### **Presentation #15 - Regulating Projects Near Water in the North: Fish and Fish Habitat Protection Program** - Holly Simpson (Department of Fisheries and Oceans)

Available at: [https://nwtdiscoveryportal.enr.gov.nt.ca/geoportal/documents/2025-2026%20-20Regulating%20Projects%20Near%20Water%20in%20the%20North%20-20NWT%20CIMP%20Results%20Workshop%20Presentation%20-%20Dec%202025%20-%20DFO%20\(Simpson\).pdf](https://nwtdiscoveryportal.enr.gov.nt.ca/geoportal/documents/2025-2026%20-20Regulating%20Projects%20Near%20Water%20in%20the%20North%20-20NWT%20CIMP%20Results%20Workshop%20Presentation%20-%20Dec%202025%20-%20DFO%20(Simpson).pdf)

#### **Summary of Discussion**

- Q: Under the Fisheries Act, how is 'fish' defined? Does it include marine mammals? Are otters defined as fish or wildlife? With the increased beaver activity in the Gwich'in Settlement Area, what are impacts to fish and their habitat? If someone removes a beaver dam, are they removing fish habitat?
  - Marine mammals are also fish under the Act. (*GNWT confirmed that otters are furbearers so they are wildlife and not a marine mammal*). To clarify further, under the Act "fish" includes: a) parts of fish, b) shellfish, crustaceans, marine animals and any parts of shellfish, crustaceans or marine animals, and c) the eggs, sperm, spawn, larvae, spat and juvenile stages of fish, shellfish, crustaceans and marine animals.
  - DFO hears many concerns regarding beavers. They do create some fish habitat, but they can also block culverts. There is a code of practice regarding the removal of the dams. However, since it is not a man-made issue, DFO currently does not consider beaver dams a harmful alteration, destruction or disruption (HADD) under the *Fisheries Act*.
  - DFO is working with Guardians and always trying to get more people out and are aware of the concerns.
- Q: What and how does DFO work with GNWT to deal with what is happening on Inuvik-Tuk Highway (ITH) (e.g. blocked culverts, permafrost thaws, etc.)? There are also impacts from the highways due to dust and plastics. Beaver is also an invasive

species in the ISR and they are overpopulated. Industry may block a stream, but so can a beaver. If it's a beaver that has blocked a stream, what does DFO do?

- There is a Working Group for the ITH so we can work together to come to solutions for the problems you mentioned. For some problems, we rely on the GNWT (as the ITH Proponent) to address. For other issues, DFO is working with the local Guardians/Monitors and the GNWT to determine how to address them.
- If a stream or culvert is blocked by a Proponent, it is the Proponent's responsibility to address it. However, for the beavers, it's unclear who needs to address it; we are working on figuring that out. Additionally, Environment and Climate Change Canada (ECCC) can be contacted for a permit to harvest beavers.
- Dust control and plastics is under the mandate of Environment and Climate Change Canada.
- Q: Regarding engagement and participation, have there been attempts to contact and work with the community (Fort Smith) to go out and do the research together?
  - DFO FFHPP is trying to visit and work with communities as much as possible, but there are only 14 staff to cover Northwest Territories and Nunavut. DFO will continue to try to contact more often with on-site visits in the area. Collaboration is what we are working toward and to get everyone involved. We will take this back with us and work on improving how we do this.
  - DFO FFHPP is a regulatory body and no longer does research on its own.



# Talking Circles - Breakout Group Discussions

Following the CBGCI project presentations on Day 1, interactive and smaller-group discussions (Talking Circles) were held to promote dialogue and gather feedback and observations based on presented projects. The Talking Circles are idea generating exercises and did not focus on building consensus. The ideas shared in this summary represent the contributions of all participants, and do not necessarily reflect the opinions of GNWT and NWT CIMP. Feedback on projects was taken by the CBGCI researchers and will be used to inform synthesized reporting and future monitoring and research efforts.

Below is a summary of the six Talking Circle groups. All groups were asked the same two questions, followed by two specific questions based on the group category:

- Boards/Regulatory Perspective (2 groups)
- Community/Indigenous Guardians Perspective (3 groups)
- Research Practitioner Perspective (1 group)

## Talking Circle Summary of Key Points Overall by Question

### QUESTIONS FOR ALL GROUPS:

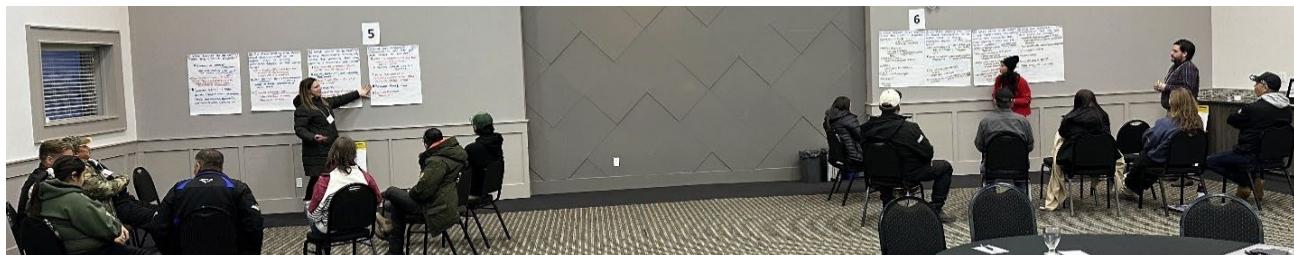
#### ***1) What themes do you see across the Collaborative Barren Ground Caribou Initiative projects?***

- Roads/access and associated direct/indirect effects (barriers, traffic, safety, harvesting access).
- Caribou health and stress (insects/parasites/disease; comorbidities; nutrition).
- Climate/environmental change (weather shifts, fire/smoke, precipitation/snow, permafrost-related change).
- “Constant change / caribou surprise us”.
- Importance of Traditional and local knowledge, and community involvement (with repeated calls for stronger Indigenous-led approaches).
- Youth/elder involvement, community-based monitoring, and links between caribou well-being and community well-being/food security.

#### ***2) Is there anything else we should know/consider as we explore what is driving population trends of barren-ground caribou herds in the NWT?***

- Diet/forage quality and vegetation/lichen dynamics (including calving ground considerations).

- Movement/range shifts, mixing/overlap, and changing calving-ground reliability—plus the “why” behind shifts in population.
- Predation (including predators beyond wolves) and the framing of top-down vs bottom-up drivers.
- Additional stressors: contaminants, air quality/dust, disease/viruses, invasive species, industrial legacies.
- Need for better harvest data and long-term monitoring that matches relationship-building and capacity realities.
- Spring/fall monitoring gap
- Need to address how to interpret/respond when Traditional Knowledge and scientific perspectives differ.



#### **QUESTIONS FOR BOARDS/REGULATORY PERSPECTIVE GROUPS (2) ONLY:**

##### **3) *What specific decisions could this information help inform?***

- Project design and environmental assessment/regulatory review, including mitigation requirements.
- Road development, traffic/ice-road restrictions, and access management.
- Harvest management and clarifying/defining wastage.
- Monitoring priorities (including Guardian monitoring and collaring strategies).
- Mine closure, reclamation, and legacy management.

##### **4) *How can we best provide the synthesized information for you to access and use?***

- Provide layered products: concise key messages/themes plus technical reports (peer-reviewed and/or grey literature).
- Use accessible formats: plain language, visuals/photos, stories/‘wow’ moments, radio/podcasts, translated audio/video, hard copy and digital.
- Create an easy access pathway: a single portal, clear points of contact, author accessibility.
- Build trust and usability through consistent in-person engagement, repeated reporting back, and Indigenous input into reporting.



## QUESTIONS FOR COMMUNITY/INDIGENOUS GUARDIANS PERSPECTIVE GROUPS (3) ONLY:

### **3) What advice do you have to help researchers meaningfully involve the community level when capacity and resources are limited?**

- Start with Indigenous governments/leaders and community priorities; engage before/during/after in plain language.
- Invest in youth and schools; include Elders; mentorship/liaison roles.
- Use multiple engagement channels (in-person when possible; online/paper when not).
- Plan for translators early and often; build reciprocity and local capacity/training.
- Be accessible and interesting; audio/radio delivery; catchy/short/'wow' moments.

### **4) What does respectful collaboration look like—and what should be avoided?**

- Respect Traditional Knowledge through agreements, proper attribution, shared interpretation, data sovereignty, and shared credit.
- Follow local processes and Indigenous laws; create two-way relationships and safe spaces.
- Avoid token or last-minute engagement ("we're coming up now"), extractive practices, or by-passing meaningful permissions.



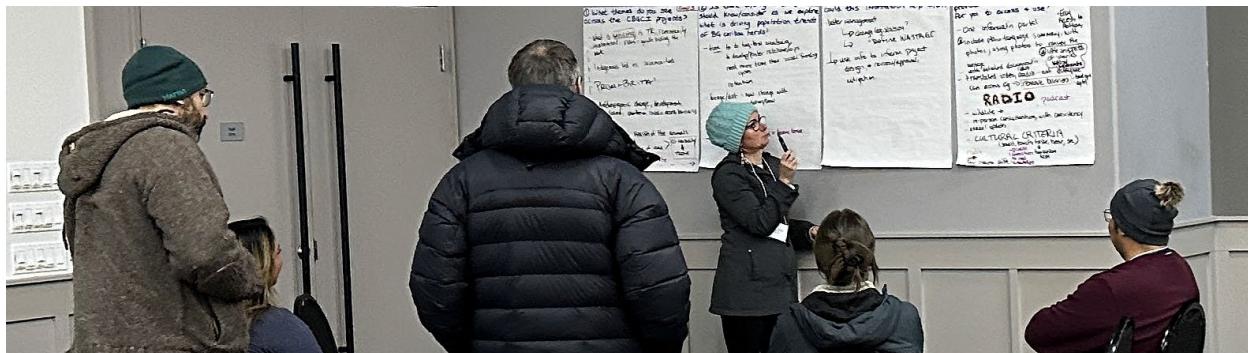
## QUESTIONS FOR RESEARCH PRACTITIONER PERSPECTIVE GROUP (1) ONLY:

**3) What advice do you have to help researchers report science and Traditional Knowledge perspectives collectively?**

- Co-present with community/Guardians; include stories and examples; prioritize visuals and plain language.
- Use Indigenous languages and careful messaging; avoid jargon and overloading detail.
- Include relevant grey literature/Traditional Knowledge sources appropriately within reporting.

**4) Based on your own experiences with other large collaborations and synthesizing results, what worked well? What didn't?**

- What works well: strong facilitation, clear context-setting and partner homework, timelines, focus on big picture, visual synthesis tools (graphic recording/storyboarding).
- What doesn't: losing focus, weak coordination, and approaches that don't invest enough time in relationships and shared understanding.



# Video Presentation

Workshop participants enjoyed two NWT CIMP project results videos titled:

1. [CIMP243-BG](#) – North Slave Métis Alliance Winter Road Monitoring Program, North Slave Métis Alliance
2. [CIMP238](#) - Guardians of Great Slave Lake: Laurier ice safety research, Wilfrid Laurier University. These short videos highlight various NWT environmental monitoring and research initiatives. These and more NWT CIMP videos are available on our website. Check it out!

# Panel Discussion: Collaborative Research Perspectives



*NWT CIMP Project Panelists included the Project Lead and a Community youth/member: (L-R): CIMP94-BG - Janelle Nitsiza and Petter Jacobsen (TG), CIMP238 – Chase Lockhart (LKDFN) and Homa Kheyrollah Pour (WLU), CIMP239-BG – Tyra Akeeagok (Kugluktuk), and Olivia Hee (University of Calgary), CIMP243-BG Lexi Mercredi and Orna Phelan (NSMA), CIMP232 – Ryan and Zayn Pischinger (FSMC).*

A panel made up of five research ‘pairs’, each including a researcher (NWT CIMP Project Lead) and a community youth/member, were asked a variety of questions about working together. Questions ranged from how they got involved, successes of their collaborations, and lessons learned. Below is a summary of key messages:

- **Q (For Project Leads): *How does involving community members and youth in the research make it better?***
  - Goal is to get the youth involved early so they become passionate to keep projects going for years to come. The best people to do work in a community are the people from that community.
  - It takes complementary sets of skills to be able to run a program from everyone involved. Involving community members is not optional, it is a necessity.
  - Sampling is driven by the community and harvesters and all results are shared with community first before sharing more broadly. Also, it makes it more fun!
  - Elders guide how to monitor and that including involving youth. Include them early so the project becomes theirs and they take responsibly for it.
- **Q: *Key things you've learned that really work well or things that you've tried that didn't work – share lessons learned.***
  - Spend more time in communities than what it takes to do the sampling and visit all the people you should chat with (builds a trusting relationship).

- Each community is not the same – learn each community’s traditions, cultures and ways they do monitoring and research.
- Do what people are good at and base the project on that. Ask questions. Ask what they want to monitor because that is what they have always done and include that in the methodology.



- **Q (For Project Leads):** *If you went back to the beginning of your project, knowing what you know now, is there anything you would do or set up differently?*
  - Try to maintain a degree of flexibility in your interest and research questions and priorities. Answer questions for people, not just for your own interests.
  - Spend more time in the community first in the planning stages.
  - Spend more time on the land is key - the more time on the land, the better the project.
- **Audience Comment:** Up in the ISR we had youth involved, but then no one wanted the jobs. A lot of people wanted to do the job, but didn't want to be called a youth. So now we label them all as future leaders and we get a lot of applicants now.
- **Q (For Youth):** *What makes a good mentor?*
  - Someone who can take questions. Being a leader, being present in all aspects and guiding us through fears.
  - Being very open and teach us each step of the research.
  - Being a friend and being able to talk to your mentor about more than the field work.
- **Q (For Youth):** *As a researcher, sometimes it's hard to recruit youth. Is there anything researchers could do to make it easier for youth to get involved in projects?*
  - Visit the schools as many youth don't know these things are going on and would want to be involved.
  - Provide hands-on experience, not just observing.
- **Audience Comment:** Suggestion to organize a NWT-wide Guardian's gathering to share knowledge and experiences.

- **Q: Final thoughts and advice for researchers wanting to involve youth?**
  - When starting a research project, involve community members, especially future leaders from the start.
  - Give youth ownership of their idea and provide true opportunities to get them involved.
  - Get out of the office and go on the land. Spend time in the community.
  - Safety first, have the right equipment and training, but also the mentors, collaborators and Elders to help keep culture and traditions alive.
  - If struggling to get youth involved, advertise in the right people. There are so many youths that want to be involved. Go to grandparents and ask them about their grandkids.
  - Drop the formality and rigidity. The best relationships are the ones that have become friendships. Talk with people as friends, not like colleagues.
  - Have fun, don't stop asking questions and enjoy it!

## Posted General Questions

- How do we give caribou a voice?
- How do we give water a voice?
- If caribou are impacted by road development and cannot cross, how do we grant them access? It's their RIGHT! Do we shut down vehicles when observed? Do we develop roads to allow them to pass?



# Workshop Closing Prayer

By Tyra Akeeagok, Grade 11

“Mahsi cho, Quyannamik, Quana, and Thank you to everyone who gathered here with open minds and open hearts. As we close this workshop, I want to honour our elders, who carry the stories, the memories, and the strength of our people. Their words, patience, and lived experience remind us that the land is our first teacher, and that everything we do, from researching to monitoring to decision making, must begin with respect for the land, the water, and those who came before us. Their presence, whether through stories, teachings, or quiet guidance, grounds us in who we are and why this work matters. I’m also grateful for the scientists, researchers, monitors, and knowledge holders who shared what they’ve learned here this week. The respect for both science and traditional knowledge has been clear in every conversation. When these two ways of knowing walk side by side, like two travelers moving along the same trail, they give us a deeper understanding of the land, the water, the animals, and the changes happening around us. Each perspective fills in pieces the other cannot, and together they help us protect what we care about. This workshop has shown how powerful it is when northern voices, elders, future leaders, and researchers sit together and learn from one another. The discussions, the questions, and the laughter all show the strength of our communities. These days remind us that caring for the North is not the job of one person or one group, but it’s something we do by supporting each other, sharing what we know, and staying open to learning more. Our connections, our conversations, and our willingness to listen show the strength of our communities. As we head back to our homes, I hope we carry the spirit of these days with us, the respect we showed one another, the curiosity that guided our conversations, and the shared responsibility we have to protect the land that has always protected us. Let the land guide our travels home safely, and let the knowledge we gathered here continue to shape the choices we make in our communities, just as the land shapes our footsteps. Thank you, and safe travels to everyone.”



*Kugluktuk youth Tyra Akeeagok (left) delivers a powerful closing prayer, supported by Lexi Mercredi (NSMA).*

# Appendix A: Final Agenda



## NWT CIMP RESULTS WORKSHOP

*December 9-10<sup>th</sup>, 2025*

*Chateau Nova Hotel – Caribou Room (3<sup>rd</sup> floor)*

*4571 – 48<sup>th</sup> Street, Yellowknife, NT*

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*The Government of the Northwest Territories Department of Environment and Climate Change (GNWT-ECC) **NWT Cumulative Impact Monitoring Program (NWT CIMP)** is hosting its annual monitoring and research results workshop. Thank you for joining us!*

### OBJECTIVES:

The workshop objectives are to:

- Bring together researchers, community members, and NWT decision-makers to share results of environmental monitoring related to **caribou, water, and fish**; and
- Provide a **forum for discussion** between researchers, communities and northern decision-makers. Feedback from these discussions can **improve related projects and programs**.

## FINAL AGENDA

*Tuesday, December 9<sup>th</sup> - DAY 1*

Time	Activity	Lead
8:30 am	Arrival, Coffee and Connecting (light breakfast provided) Registration	

9:00 – 9:20	Welcome, Opening Prayer, and Introductions <ul style="list-style-type: none"> <li>• Opening remarks</li> <li>• Agenda review</li> </ul>	Facilitator ( <i>Roxane Poulin</i> )
9:20 – 9:45	• <u><i>Presentation #1 - About the NWT Cumulative Impact Monitoring Program (NWT CIMP) and the Collaborative Barren-Ground Caribou Initiative</i></u>	Lorraine Brekke ( <i>GNWT-ECC, NWT CIMP</i> )
9:45 - 10:35	<b>Caribou Projects: Collaborative Barren-Ground Caribou Initiative (CBGCI)</b> <ul style="list-style-type: none"> <li>• <u><i>Presentation #2 - Ekwò Nàxoèhdee K'e: Being Caribou Guardians with 'Boots on the Ground' (CIMP94-BG)</i></u></li> <li>• <u><i>Presentation #3 - Collaborative Forecasting Landscape Change and Population Dynamics of Barren-ground Caribou (CIMP207-BG)</i></u></li> </ul>	Petter Jacobsen & Janelle Nitsiza ( <i>Tłı̨chǫ Government</i> )  Thom Stubbs ( <i>Headwater Group</i> ) for Jody Pellissey ( <i>Wek'eezhii Renewable Resources Board</i> )
10:35 – 10:45	<b>BREAK</b>	
10:45 – 12:00	<ul style="list-style-type: none"> <li>• <u><i>Presentation #4 – Contaminants and Caribou Epigenetics and Genomic Health (CIMP240-BG)</i></u></li> <li>• <u><i>Presentation #5 – Investigating the Cumulative Impacts of Disturbance to Barren-ground Caribou on the Tibbitt to Contwoyto Winter Road- A Guardian-led Initiative (CIMP243-BG)</i></u></li> <li>• <u><i>Presentation #6: Comparative Analysis of Factors Affecting Caribou Survival Patterns (CIMP241-BG)</i></u></li> </ul>	Eric Wootton ( <i>McGill University</i> )  Orna Phelan & Wayne Mercredi ( <i>North Slave Métis Alliance</i> )  Chloe Beaupre ( <i>State University of New York</i> )
12:00 – 1:00	<b>LUNCH</b> (provided in meeting space)	
1:00 – 2:15	<ul style="list-style-type: none"> <li>• <u><i>Presentation #7A - Tracking Change Together: Advancing Community-Based Monitoring for Caribou (CIMP239-BG)</i></u></li> <li>• <u><i>Presentation #7B – Investigating Pestivirus Infections in Barren-ground and Dolphin Union Caribou: Strain Identification and Diagnostic Test Refinement(CIMP239-BG)</i></u></li> </ul>	Susan Kutz & Olivia Hee ( <i>University of Calgary</i> )  Frank Van de Meer & Jessie Olson ( <i>University of Calgary</i> )

	<ul style="list-style-type: none"> <li>• <u>Presentation #8: Using Animal-borne Sensors and Acoustic Recording Units to Monitor Caribou Behavior, Insect Harassment and Sound Disturbance (CIMP242-BG)</u></li> </ul>	Megan Perra ( <i>State University of New York</i> )
2:15 – 2:25	<b>BREAK</b>	
2:25 – 3:45	<p><b>Talking Circle #1 – Related to Caribou:</b></p> <p><b>Guiding questions for discussion (for all &amp; specific groups):</b></p> <ul style="list-style-type: none"> <li>• What themes do <u>you</u> see across the <i>Collaborative Barren Ground Caribou Initiative</i> projects?</li> <li>• Is there anything else we should know/consider as we explore what is driving population trends of barren-ground caribou herds in the NWT?</li> <li>• Other questions for specific groups determined</li> </ul>	Facilitator
3:45 – 4:15	<b>Talking Circle Recap in Plenary</b>	Facilitators
4:15 – 4:30	<b>Wrap-up and Summary of Day 1</b>	Facilitator

## FINAL AGENDA

### *Wednesday, December 10<sup>th</sup> - DAY 2*

8:30 am	Arrival, Coffee and Connecting (light breakfast provided)	
9:00 – 9:10	<p>Welcome and Opening Comments</p> <ul style="list-style-type: none"> <li>• Highlights from Day 1</li> <li>• Review of Agenda</li> </ul>	Facilitator
9:10 – 10:25	<p><b>Water Related Projects:</b></p> <ul style="list-style-type: none"> <li>• <u>Presentation #9 - Aquatic Ecosystems in the Rádeyjlkóé (Fort Good Hope) Area as Indicators of Environmental Change: A Community-based Monitoring Project (CIMP215)</u></li> <li>• <u>Presentation #10 - Ecotoxicology and Monitoring of Cumulative Effects on the Slave River (CIMP232)</u></li> </ul>	<p>Alizée Le Moigne for Jérôme Comte (<i>Institut national de la recherche scientifique</i>)</p> <p>Ryan &amp; Zayn Pischinger (<i>Fort Smith Métis</i>)</p>

	<ul style="list-style-type: none"> <li>• <u>Presentation #11 – Impacts of Aerator Installation on the Chemical and Biological Recovery of Frame Lake (CIMP237)</u></li> </ul>	<p><i>Council) and Chris Cunada (GNWT-ECC, Water Monitoring and Stewardship)</i></p> <p>Derek Gray (Wilfrid Laurier University) for Mike Palmer (Aurora Research Institute)</p>
10:25 – 10:40	<b>BREAK</b>	
10:40 – 11:30	<ul style="list-style-type: none"> <li>• <u>Presentation #12 - Lake Ice Processes - Fundamental for Assessing Ice Road Climate Risks and Vulnerability Under Current and Future Warming (CIMP238)</u></li> </ul> <p><u>Presentation #13 - Cumulative Impacts of Landscape Characteristics, and Natural and Human Disturbances on Lake Water Quality and Benthic Macroinvertebrate Community Structure in the Yamba River Watershed.</u></p>	<p>Homa Kheyrollah Pour (Wilfrid Laurier University)</p> <p>Krista Chin (GNWT- ECC, NWT CIMP)</p>
11:30 – 12:00	<ul style="list-style-type: none"> <li>• <u>Presentation #14 - Cyanobacteria Blooms in Great Slave Lake: Observations from Traditional, Local, and Scientific Knowledge</u></li> </ul>	<p>Jeffrey Cederwall (Canadian Water Agency)</p>
12:00 – 1:00	<b>LUNCH</b> (provided in meeting space)	
1:00 – 1:30	<p><b>Fisheries and Oceans Canada in the NWT</b></p> <ul style="list-style-type: none"> <li>• <u>Presentation #15 - Regulating Projects Near Water in the North</u></li> </ul>	<p>Holly Simpson (Department of Fisheries and Oceans)</p>
1:30 – 1:50	<u>Video Presentation</u> – Preview 1-2 short videos highlighting various NWT CIMP project results. More NWT CIMP videos are available on our website!	
1:50 – 2:00	<b>BREAK</b>	

2:00 – 3:00	<b>Panel Discussion: Collaborative Research Perspectives</b> <ul style="list-style-type: none"> <li>• Various CIMP Project Leads and a community youth/member are guided through questions to share their perspectives on working together</li> <li>• Question period with audience</li> </ul>	Facilitator and panelists (CIMP Projects #94, 232, 238, 239, 243)
3:00 - 3:15	<b>Wrap up, Closing Comments, Prayer and Adjourn</b>	Facilitator

#### INFORMATION:

Copies of presentation abstracts, presentations and a summary report will be available on our website. For additional details, contact [nwtcimp@gov.nt.ca](mailto:nwtcimp@gov.nt.ca) or 867-767-9233 ext. 53084.

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

## Appendix B: Attendee List

Name	Email	Organization
Adrian Nataway	<a href="mailto:communications@thaidenenene.ca">communications@thaidenenene.ca</a>	Łutsel K'e Dene First Nation Thaidene Nënë Guardian
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<b>Holly Simpson</b>	<a href="mailto:Holly.Simpson@dfo-mpo.gc.ca">Holly.Simpson@dfo-mpo.gc.ca</a>	Department of Fisheries and Oceans Canada
<b>Homa Kheyrollah Pour</b>	<a href="mailto:hpour@wlu.ca">hpour@wlu.ca</a>	Wilfrid Laurier University
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<b>James Hodson</b>	<a href="mailto:James_Hodson@gov.nt.ca">James_Hodson@gov.nt.ca</a>	GNWT Environment and Climate Change
<b>Jane Fitzgerald</b>	<a href="mailto:Jane_Fitzgerald@gov.nt.ca">Jane_Fitzgerald@gov.nt.ca</a>	GNWT Environment and Climate Change
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