
MINUTES OF THE MEETING STEERING COMMITTEE (SC)

Meeting No^o 72
Monday, November 24, 2025
 10:00 AM to 12:30 AM
 Videoconference – TEAMS

Present:	Daniel Brosseau Marc Dunn Luc Duquette Jean-Philippe Gilbert John Lameboy Josée Lefebvre Geraldine Mark Graeme Morin Mimie Neacappo John Lameboy Manon Sorais Ernie Rabbitskin Robbie Tapiatic Cassandra Weapenicappo	Hydro-Québec Niskamoon Corporation Hydro-Québec Hydro-Québec Cree Nation of Chisasibi Canadian Wildlife Service Cree Nation of Wemindji Cree nation Government Niskamoon Corporation Cree Nation of Chisasibi Eeyou marine region wildlife board Niskamoon Corporation Cree Nation of Chisasibi Cree Nation of Eastmain
Guest:	Jens Ehn Manuelle Landry- Cuerrier Frederic LeTourneux Mary O'Connor Mila Oser (Secretary) Dante Torrio	University of Manitoba University of Manitoba McGill University UBC Hydro-Québec CERRI
Absent:	Felix Boulanger Ernest Moses Roderick Pachano	Hydro-Québec Cree Nation of Waskaganish Cree Nation of Chisasibi

MEETING CHAIR AND SECRETARY

Luc Duquette chaired the meeting, and Mila Oser acted as the meeting secretary.

PROPOSED AGENDA

1. Approval of the Agenda
2. Review and approval of the minutes from the following meetings:
3. Eelgrass update
4. Water quality sampling / ice
5. Coastal biodiversity
6. Update CHCRP consortium

- Timeline
 - Landscape Change project
 - 7. Miscellaneous
 - 8. Summary and Next Steps
 - 9. Next Meeting
-

1. Approval of the Agenda

The Chair reviewed the agenda, and no additional points were proposed. Thus, the agenda was approved as presented. However, due to time constraints, the Minutes were not reviewed and the meeting started with the presentation # 4 “*Water quality sampling/ice*”.

2. Approval of the minutes from the previous meetings

The minutes were not reviewed and their approval postponed to a next meeting.

3. Eelgrass update

Mary O'Connor (**Dr. O'Connor**) delivered a presentation "*Fieldwork Report: CHCRP Eelgrass Team*" and a copy of the presentation and document is appended to these minutes for reference.

Dr. O'Connor presented an update on the eelgrass component of the Coastal Ecosystems Project, conducted under the Alliance grant in close collaboration with other teams at shared field sites. She explained that following rapid mobilization and team hiring, a full field season was completed in summer 2025. The team presented a conceptual model showing how eelgrass decline is driven by sediment resuspension and reduced light availability and noted that a one-page survey was piloted in 2025 to document meadow conditions, with plans to refine this tool for 2026, potentially by developing it into a mobile application.

She emphasized that engagement remains a central focus of the project, noting ongoing collaboration with CTA-EMR local officers, Parks Canada, and community partners, the preparation of an activity report for project partners, and strong interest in youth engagement, with discussions underway to support youth participation in eelgrass monitoring and field activities.

To test whether physical stabilization could improve conditions for eelgrass growth, the team conducted a pilot experiment at two shallow sites in Wemindji using artificial seagrass units installed and monitored by snorkeling, alongside paired control plots instrumented with sediment traps, light sensors, flow meters, and cameras. Preliminary results showed increased sediment settling and improved light conditions within the units, indicating that they functioned as intended, although eelgrass growth did not differ from control plots over the study period; data analysis is ongoing to determine next steps for 2026.

Dr. O'Connor also reported on a pilot transplant experiment in which eight eelgrass transplants placed at the margins of existing meadows all survived and showed new growth, demonstrating that the transplant method was viable. She further described continued monitoring across multiple regions,

including standard surveys, documentation of eelgrass absence, and collection of samples from 26 sites for genomic analysis to assess potential adaptation to salinity differences, with results pending.

In addition, she highlighted efforts to develop accessible monitoring approaches that do not require entering the water, including a one-page survey piloted in 2025 and plans to refine this approach for 2026, potentially through a mobile application.

Dr. O'Connor confirmed that the team will proceed with hiring one youth intern in collaboration with EMRWB and Niskamoon to support fieldwork and receive scientific training. The target group will be a university student or an advanced high school student with an interest in science and potential career development. Melanie Leblanc (**Mrs. Leblanc**) will continue supporting coordination, including complementary youth engagement activities such as school-based sessions or a day camp, building on Phase 1 experience.

The team will continue knowledge-sharing and outreach activities, including dissemination of the online story map, and the use of personalized newsletters shared with participating land users.

Over the winter, data analysis will continue. A literature review focused on algae associated with eelgrass and community-partnered monitoring programs to inform next steps prior to the 2026 field season.

For summer 2026, the team agreed to prioritize investigation of algae observed at multiple sites. Planned work includes algal removal experiments, comparative monitoring of eelgrass growth and environmental conditions, and continued testing of transplant methods. These efforts may be combined to better understand the ecological role of algae and its relationship to eelgrass health.

Additional next steps for 2026 include refining monitoring methods that are both scientifically robust and accessible to communities, examining potential impacts of changing salinity regimes using existing mooring data, expanding youth engagement initiatives, and completing the manuscript related to the initial transplant experiment.

4. Water quality sampling / ice

Jens Ehn (**Mr. Ehn**) delivered a presentation titled "*Eeyou Driven Costal Wildlife Monitoring*", and a copy of the presentation and document is appended to these minutes for reference.

Mr. Jens Ehn presented the results of the coastal water-quality and ice-monitoring program. He explained that measurements of suspended particulate matter (SPM) showed no relationship with salinity, indicating that the particles are primarily re-suspended from the seabed by wind-driven or current-driven processes rather than transported directly from rivers. During the discussion, a participant asked whether the team had any way to determine the origin of the SPM. Mr. Ehn explained that the current dataset cannot distinguish particle sources and that only a future program involving sediment tracers or isotopic analyses could clarify this question. He added that no tracer studies are presently underway, though a colleague is examining carbon-chemistry parameters.

Mr. Duquette asked for confirmation of the acronym SST, and Mr. Ehn clarified that it refers to "Sea-Surface Temperature". He then presented satellite imagery showing that the "landfast ice" (LFI) zone in 2024 was abnormally narrow as a result of warmer conditions. He summarized long-term SST trends from 1982 to 2021 and noted that a major shift occurred in 1998, when temperatures and interannual variability increased significantly, affecting ice-breakup timing.

Mr. Ehn then described the 2025 field program, which included under-ice water sampling, sediment grabs, and the deployment of moorings equipped with turbidity sensors and light sensors measuring "Photosynthetically Active Radiation" (PAR) at eelgrass sites including Ch. 33, Ch. 34, VC-11, VC-12, and VC-14. Mr. Dunn asked why PAR values remained low in late July and August even when turbidity was low and questioned what might be blocking the light. Mr. Ehn explained that PAR is influenced not only by turbidity but also by cloud cover, dissolved yellow matter, surface films, and solar-angle effects. He added that the full interpretation will depend on an analysis of the ratio between upper and lower PAR sensors once data processing is completed. Mr. Dunn followed with a second question about why these light-limitation patterns persisted during calm periods. Mr. Ehn reiterated that multiple environmental factors independent of turbidity determine light penetration through the water column.

Mrs. Lemieux then asked whether the selected water-quality sampling sites were located directly on eelgrass beds and whether this data would support the eelgrass team's work. Mr. Ehn confirmed that the sampling sites were chosen collaboratively for that purpose and that the two-level sensor deployments were specifically designed to characterize the light environment used by eelgrass. Mr. Ehn added that he would verify the order of the videos and confirm site exposure based on field notes.

Mr. Ehn also presented trail-camera observations documenting melt onset, ice movement, and the arrival of sediment-laden offshore floes. Underwater GoPro footage showed clear differences in eelgrass density across sampling sites. He concluded by outlining planned monitoring activities, including the refinement of turbidity sensors equipped with mechanical wipers, continued winter operation of trail cameras, installation of a weather station to correlate water-column variability with

wind patterns, expanded mapping of eelgrass beds using unmanned aerial vehicles (UAVs), and continued bathymetric and ice-event observations throughout the annual cycle.

5. Coastal biodiversity

Frederic LeTourneux (**Mr. LeTourneux**)- instead of Manuelle Landry- Guerrier delivered a presentation titled "*Eeyou – driven Coastal Wildlife Monitoring*," and a copy of the presentation and document is appended to these minutes for reference.

Mr. LeTourneux presented an update on the Coastal Wildlife Monitoring Project and explained that the research aims to understand why some geese still migrate along the coast despite their long term decline. Determining where these coastal birds breed, how healthy they are, which habitats they rely on, how many remain in the region, and whether their numbers are changing could provide insights to preserve those that are still currently migrating on the coast and help guide habitat enhancement and restoration efforts

He described how the project is being co-developed with Cree land users and relies on several tools, including the reporting of harvested banded geese, body-condition measurements collected during the spring goose hunt, year-round trail cameras and audio recorders deployed across the coast, and drone-based surveys tested in southern Quebec, which showed that geese experience minimal disturbance when drones fly at higher altitudes and quickly resume normal behaviour once the flight is over.

During the discussion, Robbie Tapiatic (**Mr. Tapiatic**) stressed that youth hunters must be included in the investigation because they are using new and effective calling methods that feed many families, and he emphasized that their perspectives should be considered alongside those of Elders; Mr. LeTourneux agreed and confirmed that both groups would be consulted.

Leadership also reminded the team that all activities require ongoing consent from tallymen, and Mr. LeTourneux affirmed that this is why the team makes repeated community visits and adjusts its work according to guidance received. John Lameboy (**Mr. Lameboy**) asked whether body-condition measurements would also be gathered in the fall to capture seasonal differences, and Mr. LeTourneux replied that the spring data are most relevant for reproduction but that fall monitoring could be added if communities find it useful.

Dante Torrio (**Mr. Torrio**) asked whether the research team planned to capture and band geese themselves, and Mr. LeTourneux explained that, at this stage, banding is not planned due to concerns about capturing live birds and because banding already occurs in Nunavik and the U.S., though future banding could be considered with community support. Manon Sorais (**Mrs. Sorais**) added that previous fall capture attempts were extremely challenging. Mr. LeTourneux explained that most band recoveries indicate Atlantic Flyway origins, including birds banded in the U.S. and Nunavik, with very few originating from western James Bay, and that some origins remain unknown because many regions do have no active banding program. Several tallymen expressed interest in the drone-disturbance findings

and volunteered their traplines for further testing, and Mr. LeTourneux confirmed that any drone work would proceed cautiously and only with willing participants.

6. Update CHCRP consortium

- Timeline
- Landscape Change project

Mrs. Leblanc explained that the Landscape Change Project, the third major component of the CHCRP Consortium, is led by Dr. Paul del Giorgio from UQAM and is designed to study how changes on the land—such as mining, forest fires, or other disturbances—affect the water quality of rivers and how these changes move downstream to influence coastal environments.

She noted that this project is currently behind schedule compared to the coastal ecosystem and wildlife projects, and that Dr. del Giorgio intends to submit the project's NSERC Alliance grant application in January. Because of the delay, he now plans to propose a shorter research program over three years instead of the originally anticipated five.

Mrs. Leblanc indicated that, if the application is approved and the research agreement is signed within the normal review timeline, the project would likely become operational in 2027 and conclude in 2029 or 2030. She also clarified that the project has not yet begun scientific activities and therefore has no preliminary results to present at this stage.

Mr. Dunn commented that he prefers the presentation format used during the meeting, encouraging researchers to present preliminary results in a clearer way to help guide decision-making. He suggested that future research presentations provide clearer interpretation of preliminary results, with reduced reliance on raw figures, and asked Mrs. Leblanc to communicate this expectation to all research teams.

7. Miscellaneous

N/A

8. Summary and Next Steps

The Steering Committee will continue overseeing the timelines of the three major research components—including preparation for the Landscape Change project—and expects future presentations to address follow-ups raised during the meeting, such as clarifying eelgrass site exposures, algae implications, and strengthening band-reporting participation.

9. Next Meeting

The Committee agreed that the next meeting will be scheduled once Mrs. Leblanc confirms that researchers have new material to present.

ADJOURNMENT OF THE MEETING

Considering that all items on the agenda were addressed, the meeting is adjourned at 12:15 PM.

The meeting secretary,

Mila Oser

Mila Oser

The meeting Chair,

Luc Duquette

Luc Duquette

*Waachiyaah from the Eelgrass Team and **THANK YOU** for a great summer of research in Wemindji!*

Our main questions this summer:

1. How are eelgrass meadows doing around Wemindji?
2. Can fake eelgrass clear up water to help real eelgrass grow?
3. Can James Bay eelgrass be transplanted for restoration?



What we did in Wemindji this summer

Measured the health of 9 eelgrass meadows

Installed artificial eelgrass to learn how eelgrass clears up the water

Test-transplanted 180 eelgrass shoots

What we're doing now in the lab

Processing eelgrass and water samples

Analyzing data from our artificial eelgrass and transplant experiments

Planning for next year's research



◀ Add us on
Facebook!

See where we
went! (Storymap) ▶



Thank you to Geraldine and George for organizing, to the Cree Trappers' Association for hosting us, and to Rene, George, Henry, Ernie, and Leonard for being part of the field research! We couldn't have done any of this work without you, and are looking forward to seeing you next summer!



Eeyou-driven Coastal Wildlife Monitoring

CHCRP phase II: Wildlife Monitoring

Project updates

CHCRP Steering Committee

November 2025

Frédéric LeTourneux, Manuelle Landry-
Cuerrier, Samantha Delisle, Allyson
Menzies, Murray Humphries





**Northern Wildlife
Knowledges Lab**

WWALK Research Lab
Weaving Wildlife and Land-based Knowledges



Murray Humphries
Professor



Frederic LeTourneau
Post-doc



Manuelle Landry-Cuerrier
Coordinator



Allyson Menzies
Professor



Shelby Bohn
Post-doc



Samantha Delisle
MSc student



Sahana Dunkley
BSc student

EYYOU-DRIVEN WILDLIFE MONITORING IN COASTAL EYYOU ISTCHEE



COASTAL HABITAT
COMPREHENSIVE
RESEARCH PROJECT



RESEARCH

How are risk & other wildlife changing? Why?

How can Eeyou Knowledge and Western Science be woven to better understand changes in wildlife?

MONITORING

Eeyouch and scientists are working together to monitor:

- Goose health, abundance, distribution, and behaviour
- Changes in other wildlife

TO PRESERVE NISK & OTHER WILDLIFE FOR THE FUTURE

ACTION PLAN

Learn about wildlife location, timing, abundance, and health by using non-invasive tools like drones, harvest measurements, cameras, sound recorders, etc.

Support local Eeyou capacity by:

- Co-developing monitoring protocols
- Sharing knowledge & provide training opportunities
- Involving youth

CONNECT WITH US!

Project coordinator:
manuelle.landry-cuerrier@mcgill.ca
Project leader:
frederic.letourneux@mcgill.ca
eeyoucoastalhabitat.ca

Facebook



Co-develop monitoring tools & approaches aligned with Eeyou values and in support of Eeyou decision-making about wildlife.

To be accomplished as part of secured NSERC Alliance - MITACS over the next 5 years through the work of **4 MSc** and **2 PhD** students, as well as **3 PDFs**, around **four interconnected themes**



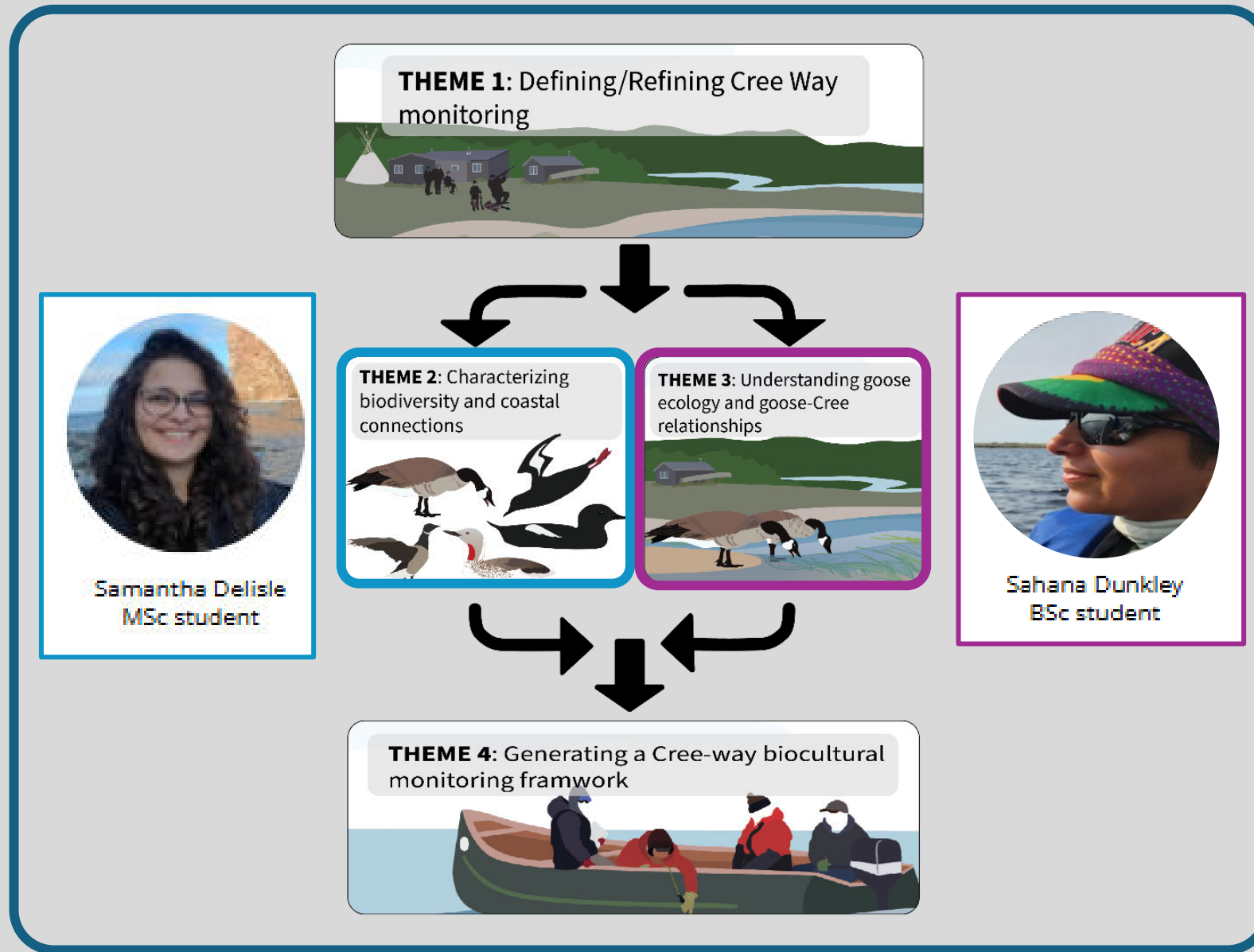
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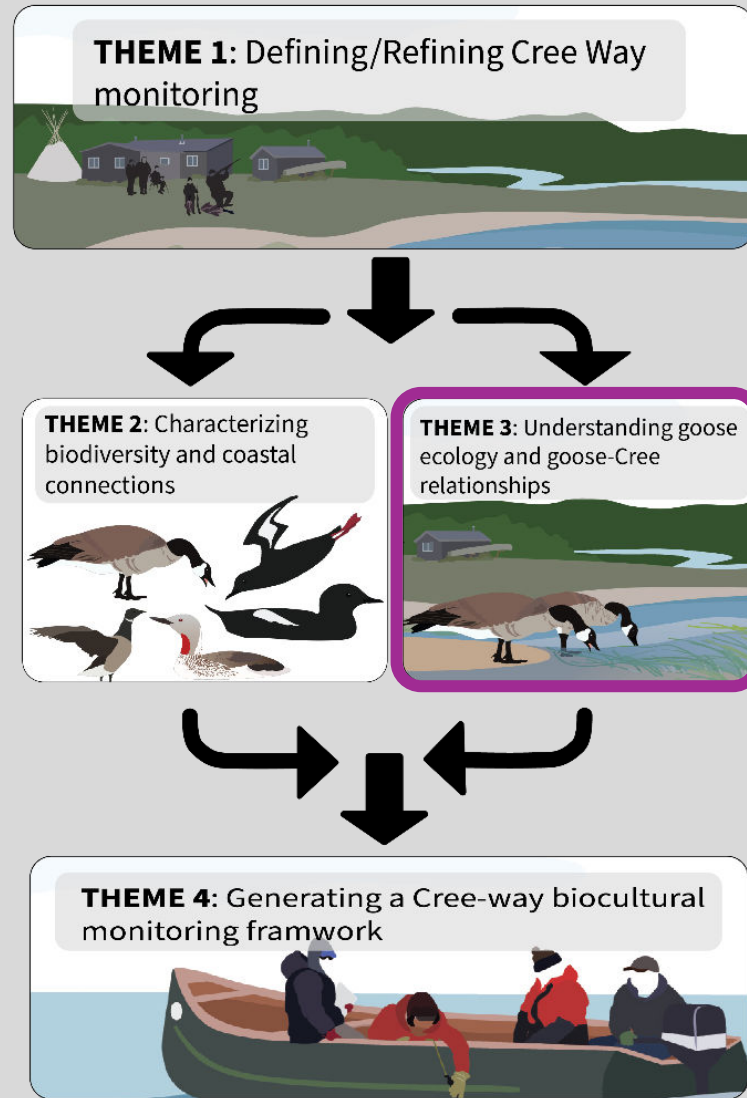


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mitacs





What we know so far about Nisk



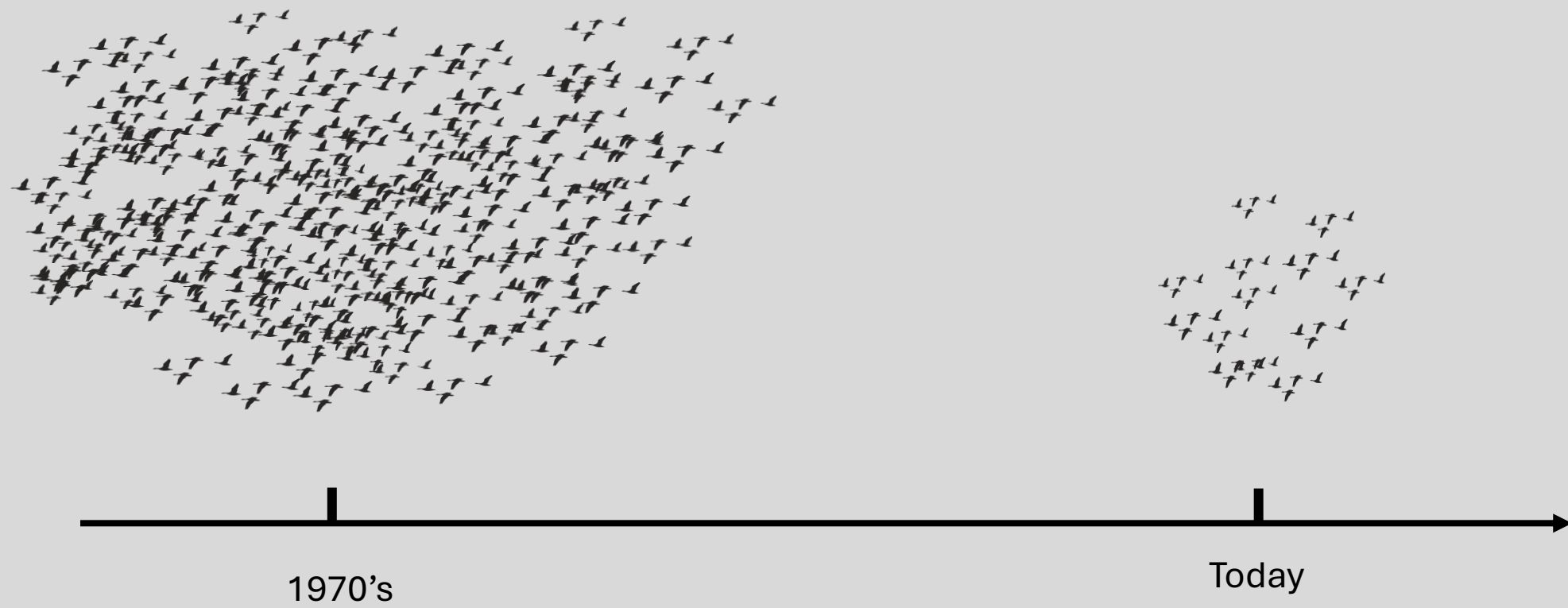
Jean-François Giroux



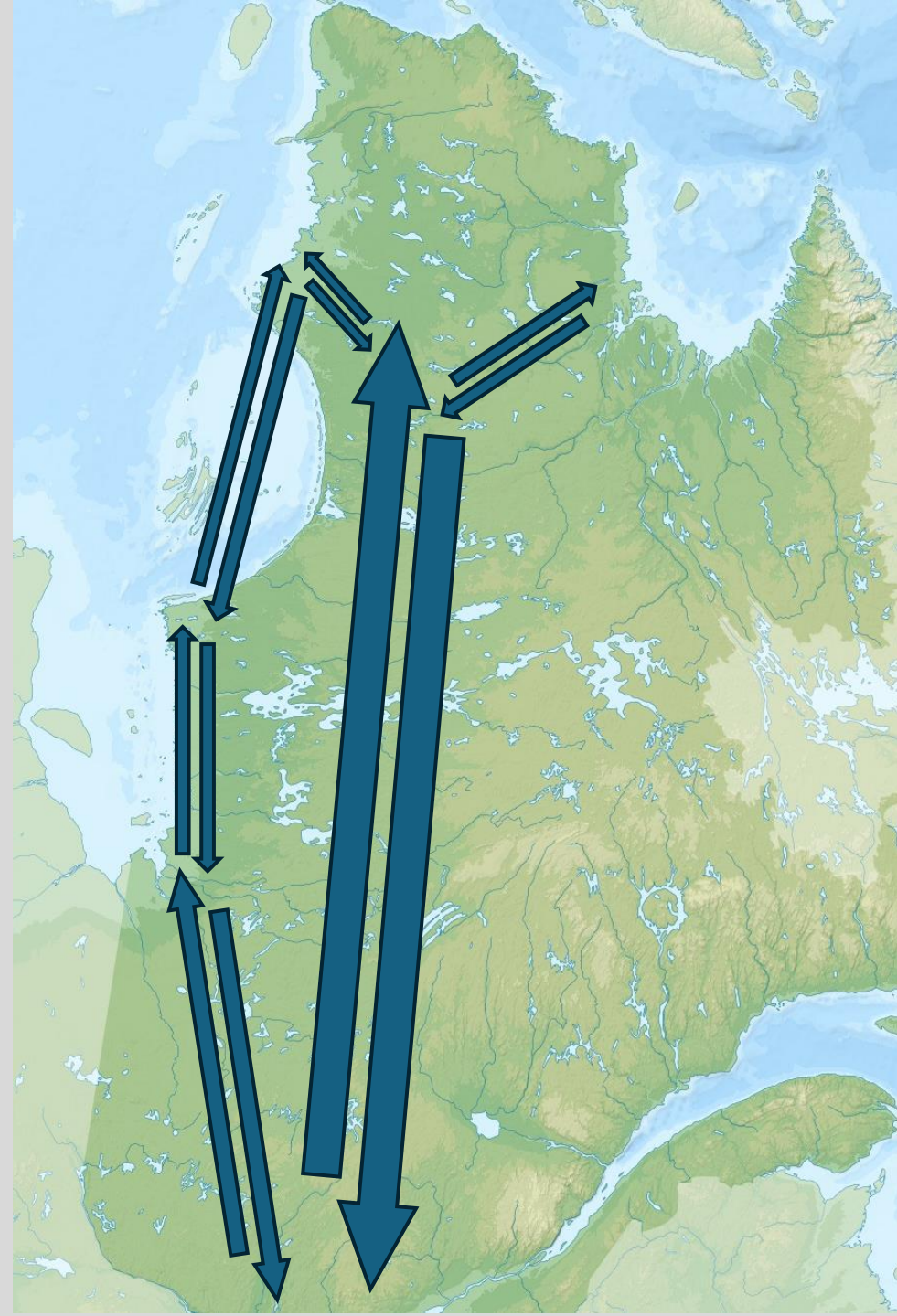
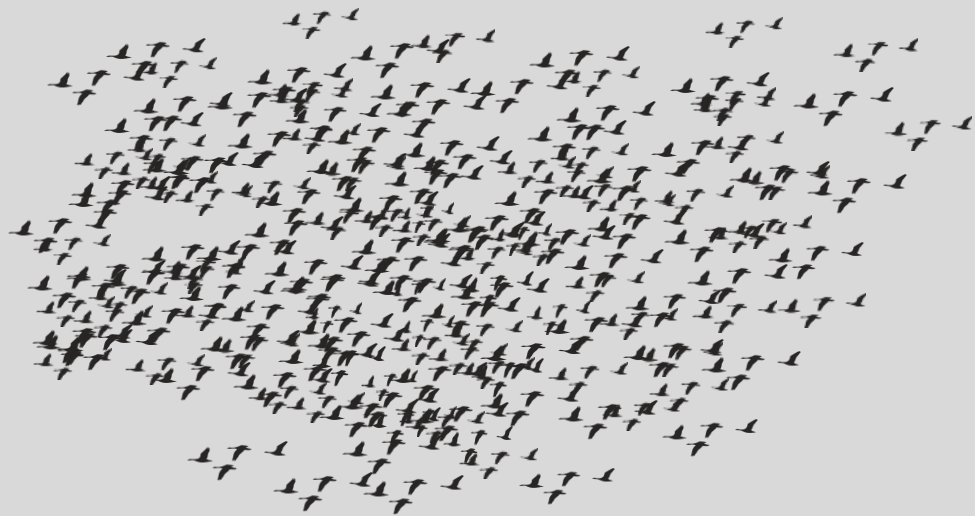
Manon Sorais

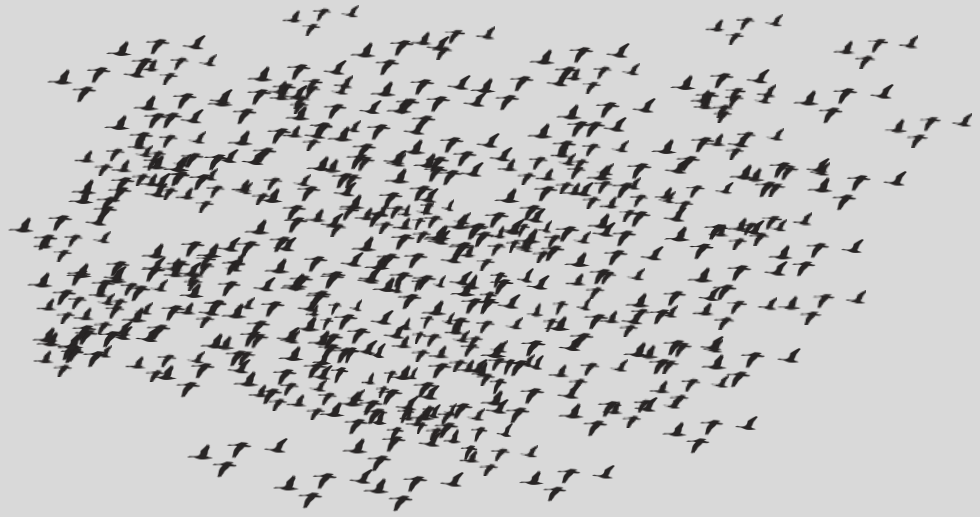


Julian Idrobo



Thousands and thousands





Will there be risk to harvest in the future?



**Why are they still here?
What is keeping them here?**



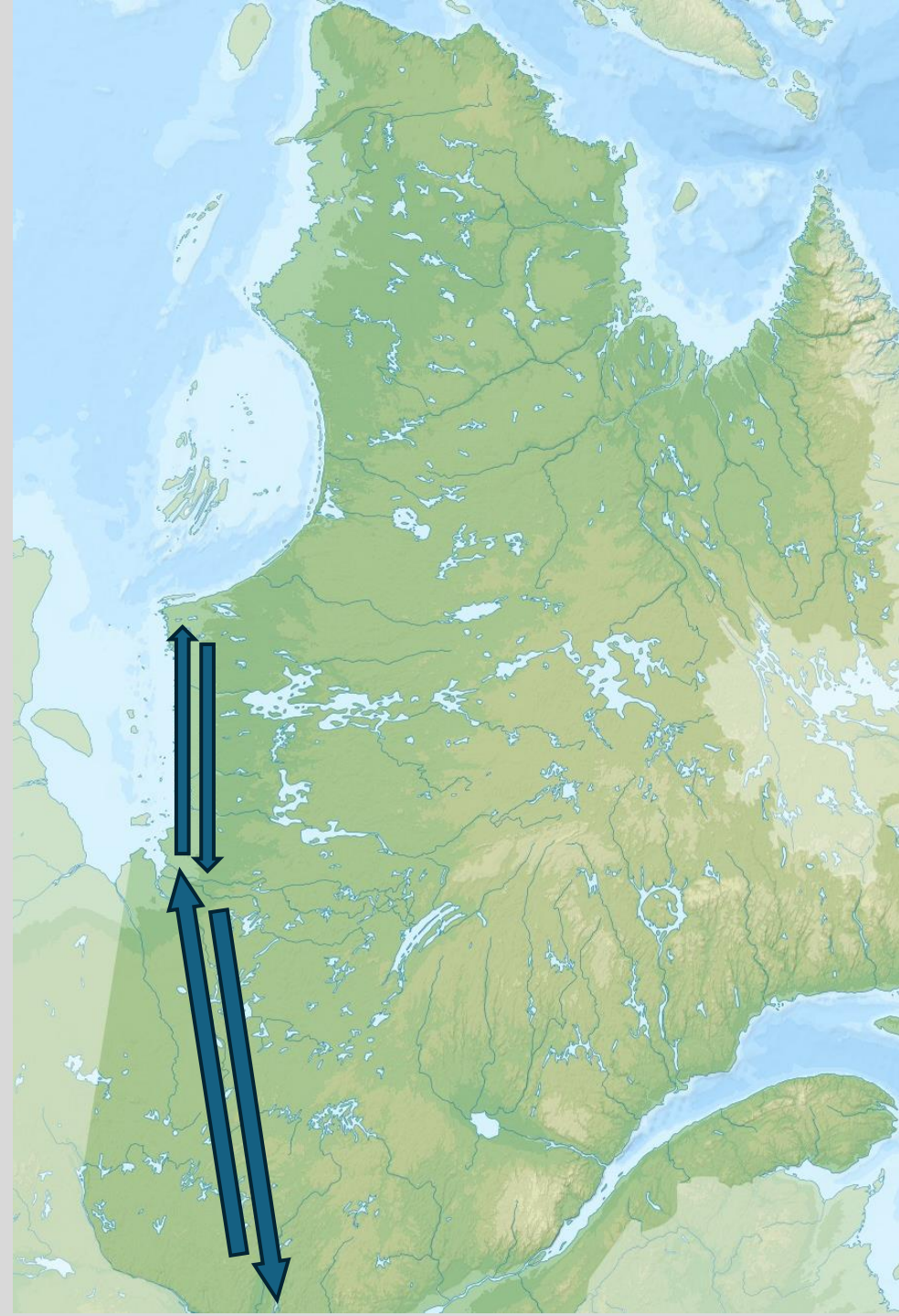


Where do they breed?

Are these geese healthy?

**When are they here, and in which
habitats?**

How many are still here?



Eeyou-way and Knowledge

- Being on the land
- Hunting
- Observing



Eeyou-way and Knowledge

- Being on the land
- Hunting
- Observing
- Engagement and participation of elders, active land users, and youth
- Documenting Eeyou Knowledge and observations
- Knowledge sharing



**What tools can be used to
monitor Nisk?**

Bands from harvested geese

- Where they breed
- Where they spend the winter
- What group they belong to (short necks, long necks)

RAFFLE FOR EYYOU HUNTERS FROM WASKAGANISH, EASTMAIN, WEMINDJI, CHISASIBI, AND WHAPMAGOOSTUI



WIN \$500 - One draw per community this winter
For reporting leg bands from harvested geese

HOW TO PARTICIPATE

-Option A:

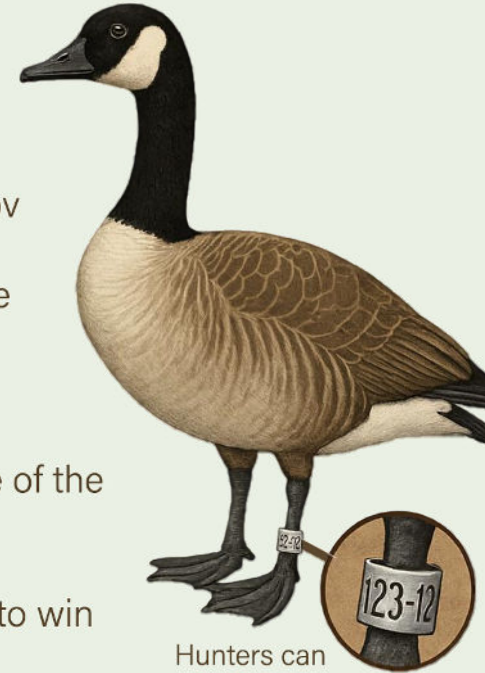
- Step 1: Submit leg band number to www.reportband.gov
- Step 2: Get certificate
- Step 3: Send copy of certificate to one of the contacts

OR

-Option B: Get in touch with one of the contacts for assistance

1 leg band reported = 1 chance to win

Hunters can
keep the bands



CONTACTS



EeyouCoastalHabitats



eeyou.chcrp@gmail.com



Your
CTA-EMR
Local
Officer

Body condition (how fat geese are):

- Good indicator of population health
 - Environmental conditions during migration
 - Reproduction
-
- How does it change between years?
 - Is it different between the coast and inland?

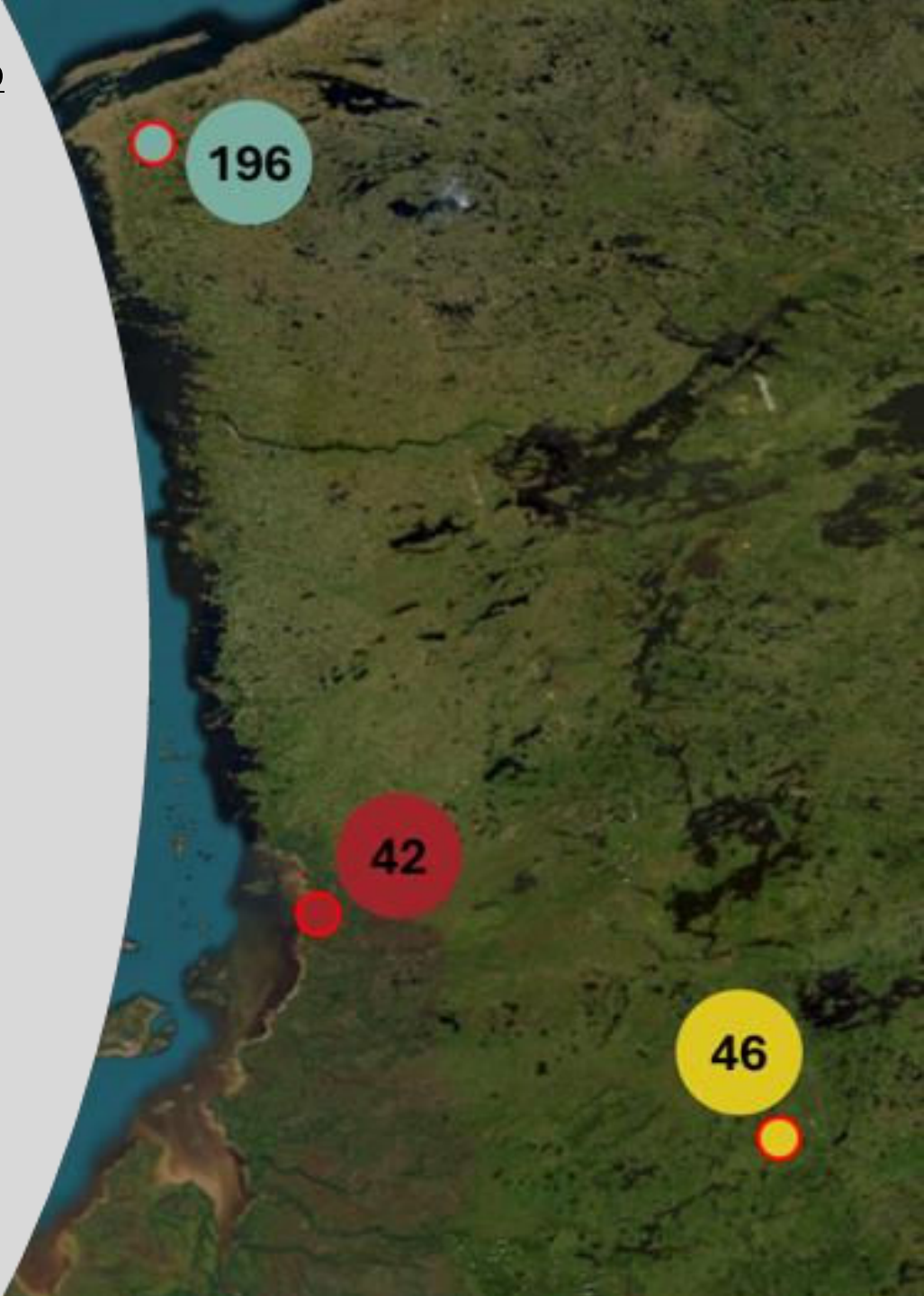
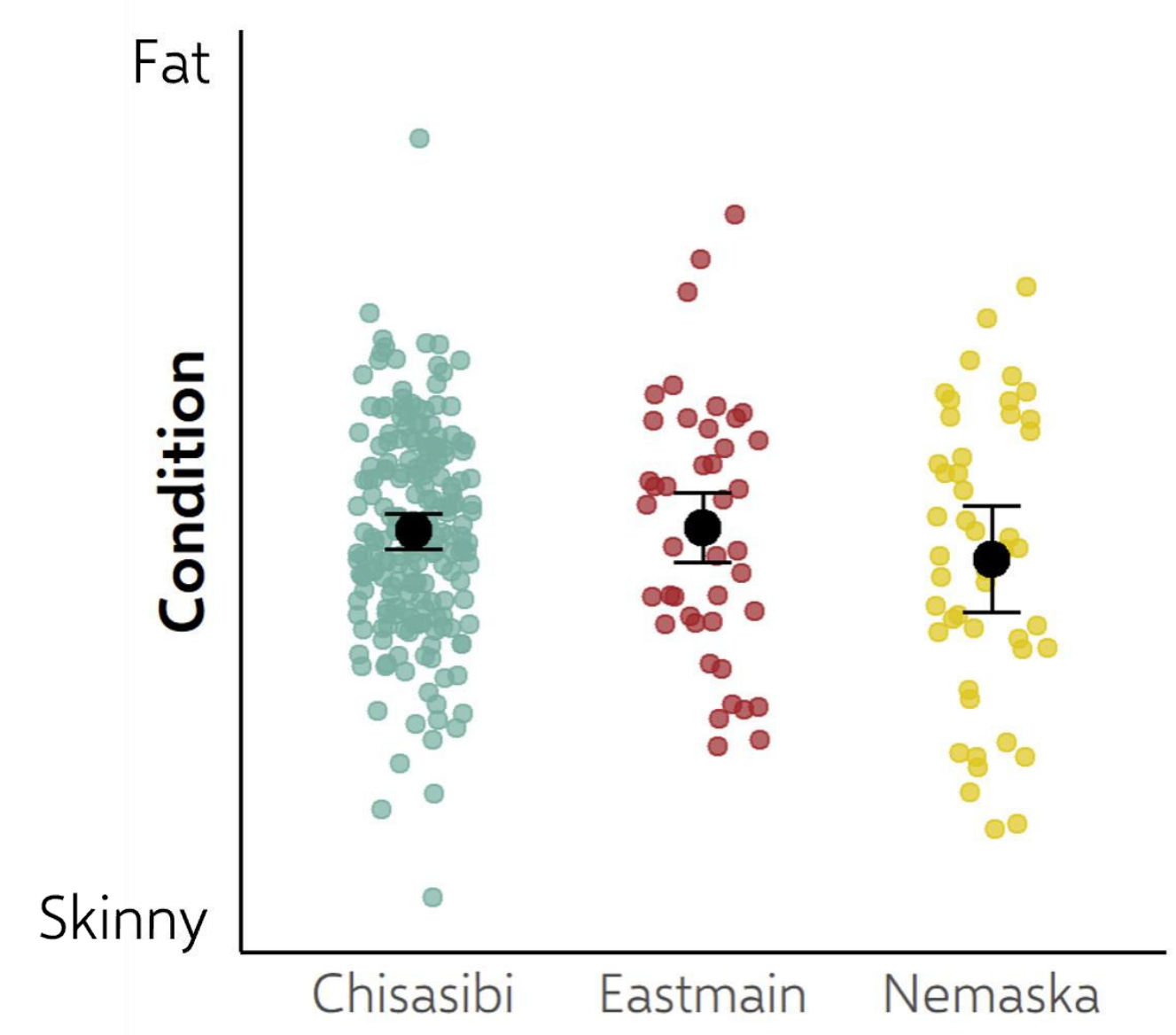


Body condition of harvested geese: Spring hunt 2025

- Training workshop with CTA and 8 hunters from 2 traplines (Eastmain)
- 1 researcher with a family in Nemaska
- 1 researcher with a family in Seal River (Chisasibi)

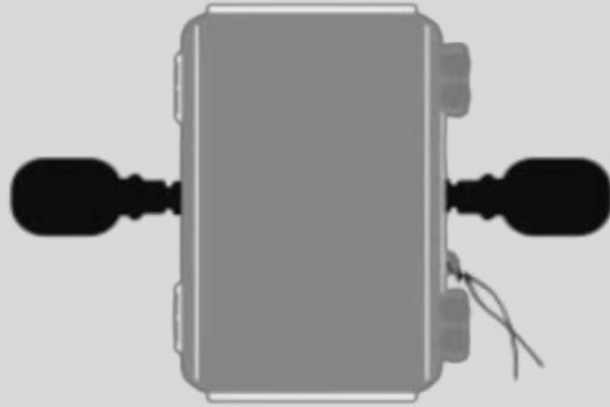


Body condition of harvested geese: Spring hunt 2025



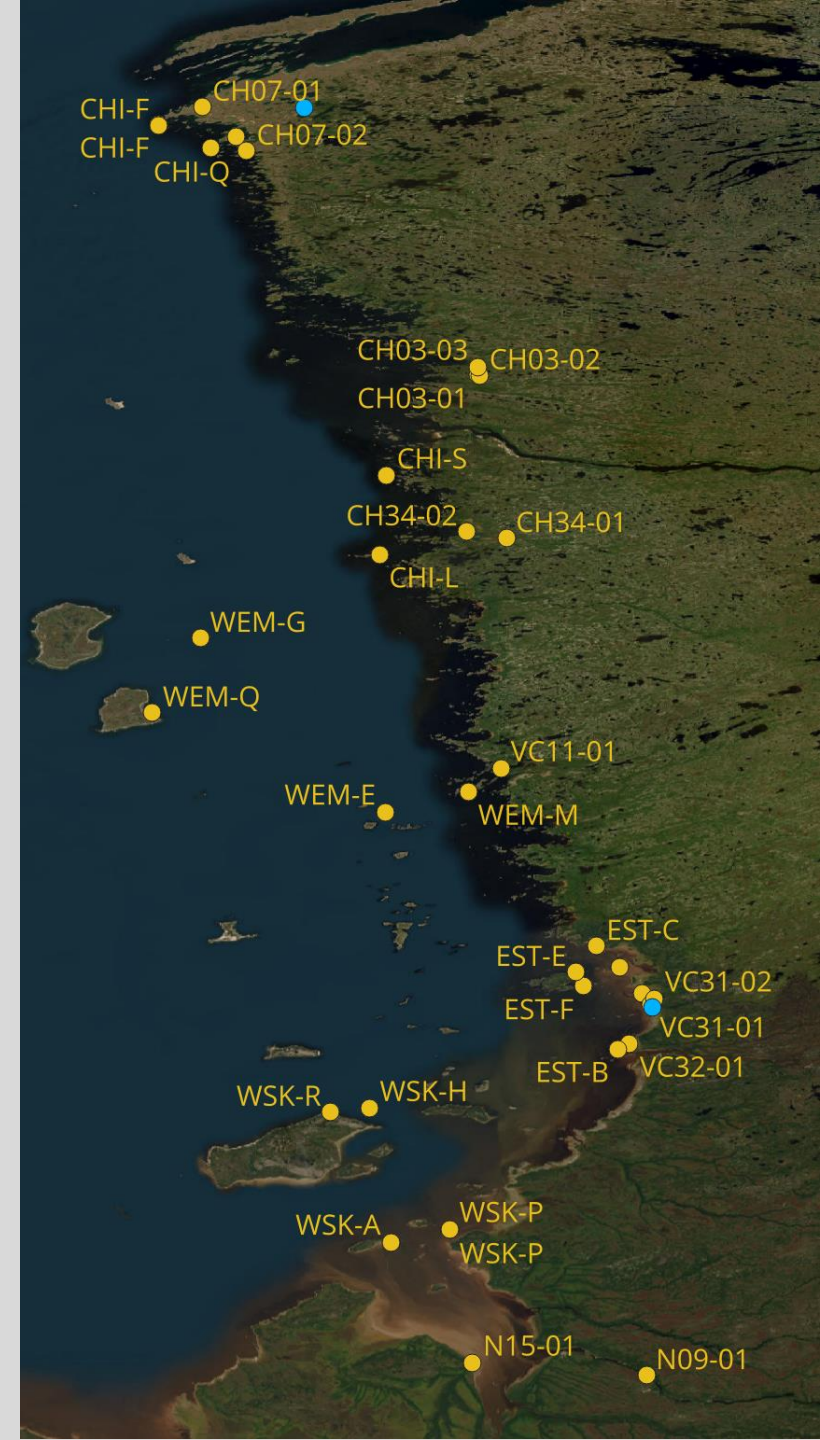
Camera trap & sound recorder sampling stations

- When and where are geese and other wildlife?



2024 & 2025:

- 30 stations year-round
- In collaboration with Polar Bear Ecology project



Announcement

Polar Bear Ecology Project & Eeyou Coastal Habitat Project

Eeyou organizations and land users have partnered with university researchers to monitor wildlife changes along the coast. In an effort to understand where and when species are present, field teams have set up camera traps, and sound recorders (also called ARUs) that will remain out on the land year-round. Here is what they look like:

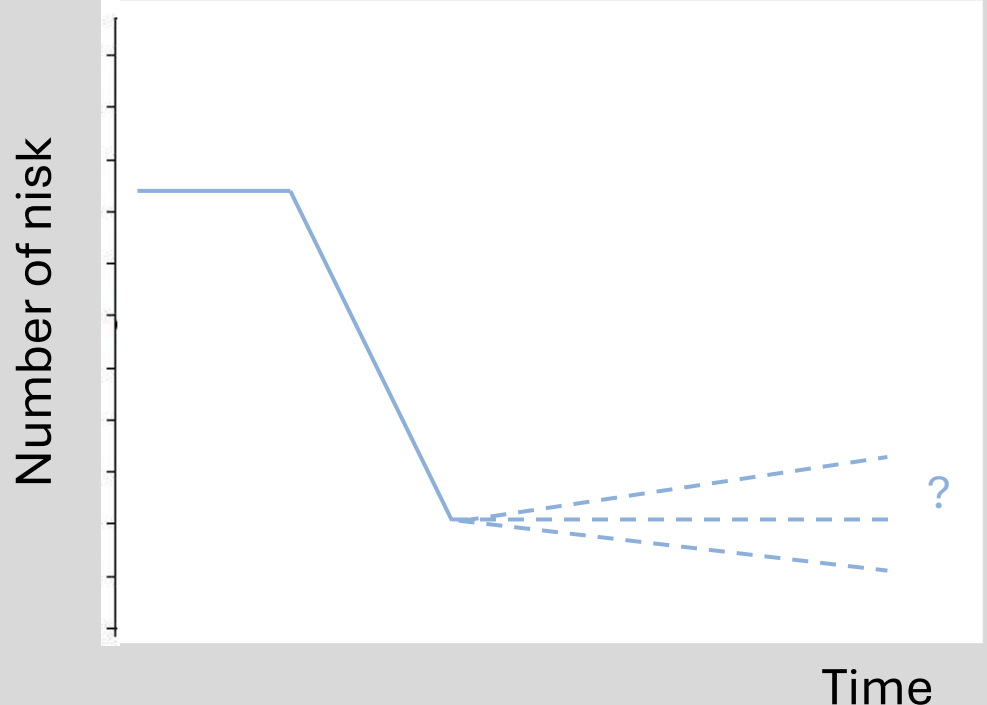


We are asking the public to not disturb these stations. If you have any concerns, questions, or have noticed damages to the equipment, please inform your local CTA officer. Thanks for your help!

Local CTA officer: George Natawapineskum
Contact email: gnatawapineskum@ctaoffice.ca

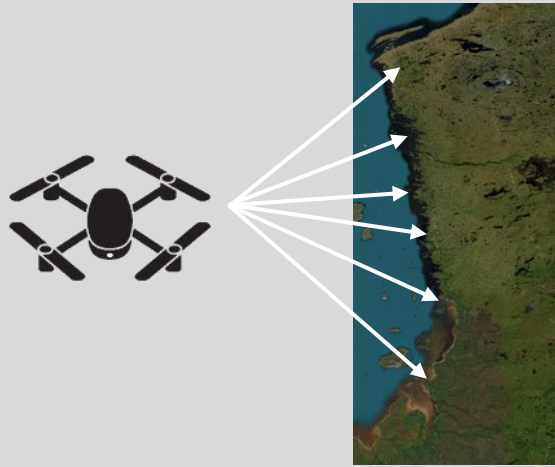


How many nisk ?

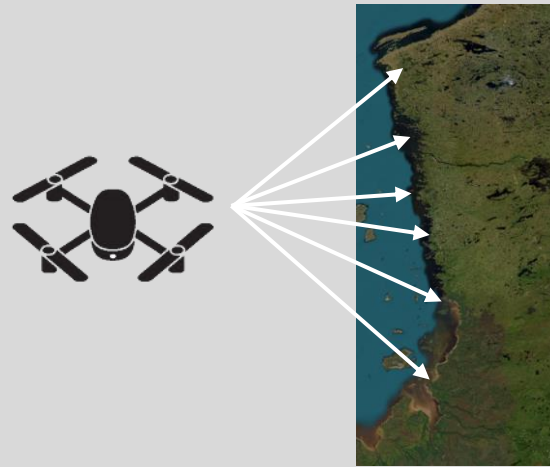


How many?:

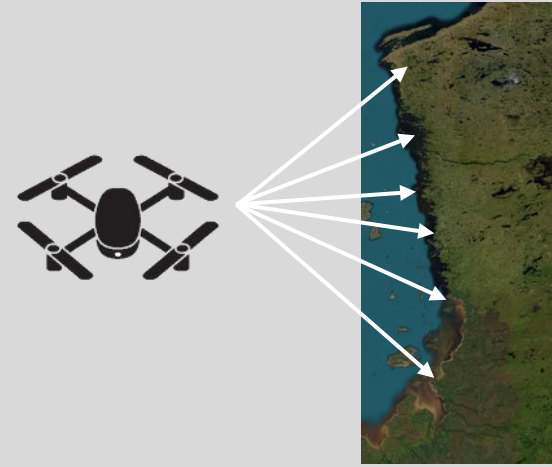
Drone surveys to monitor geese abundance



Year 1



Year 2



Year 3...

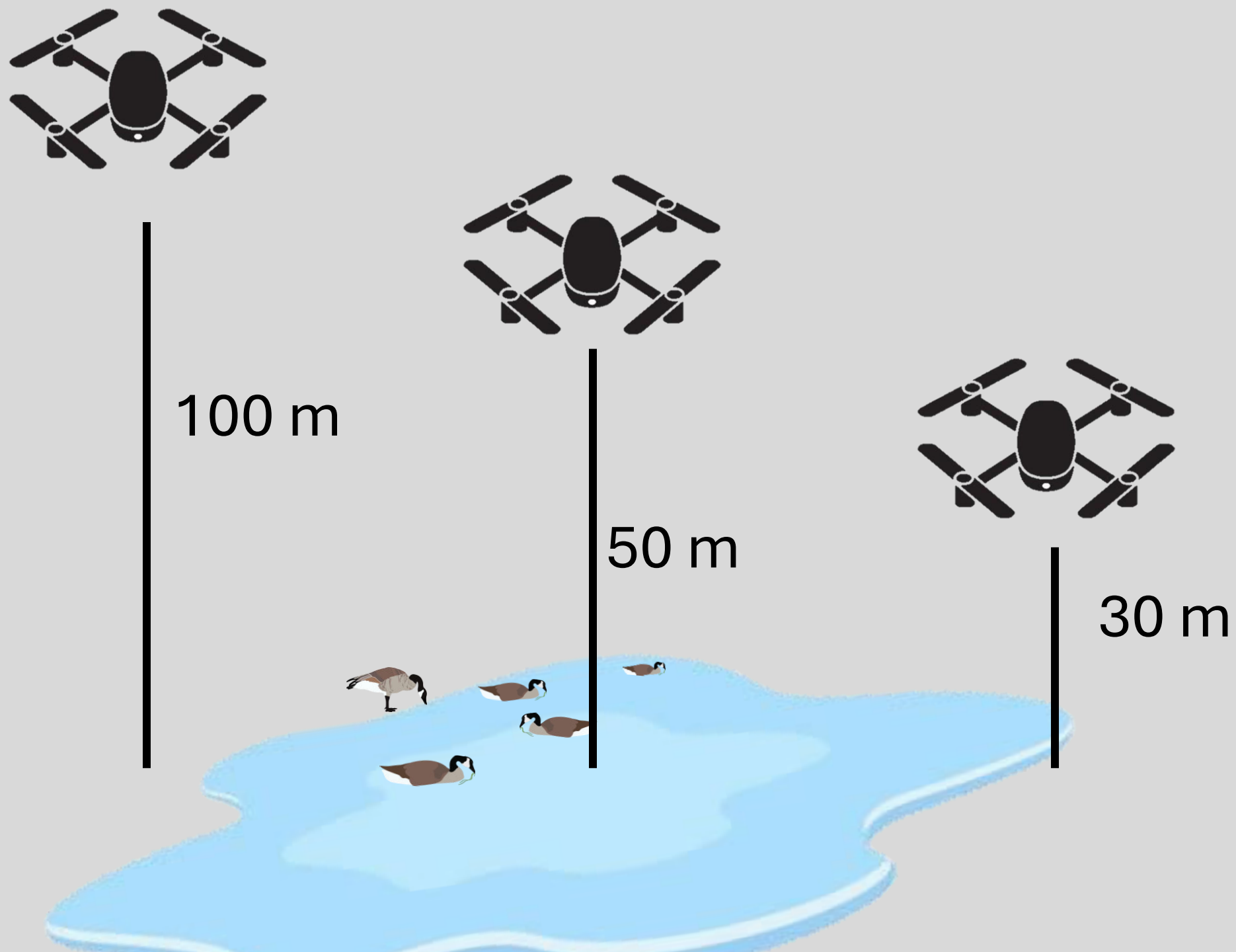
- Identify places known to have geese and where drones surveys could be done
- Fly over those areas to count geese over many years
- Understand if numbers are changing through time

Drone survey tests in the south



Spring 2025







Before

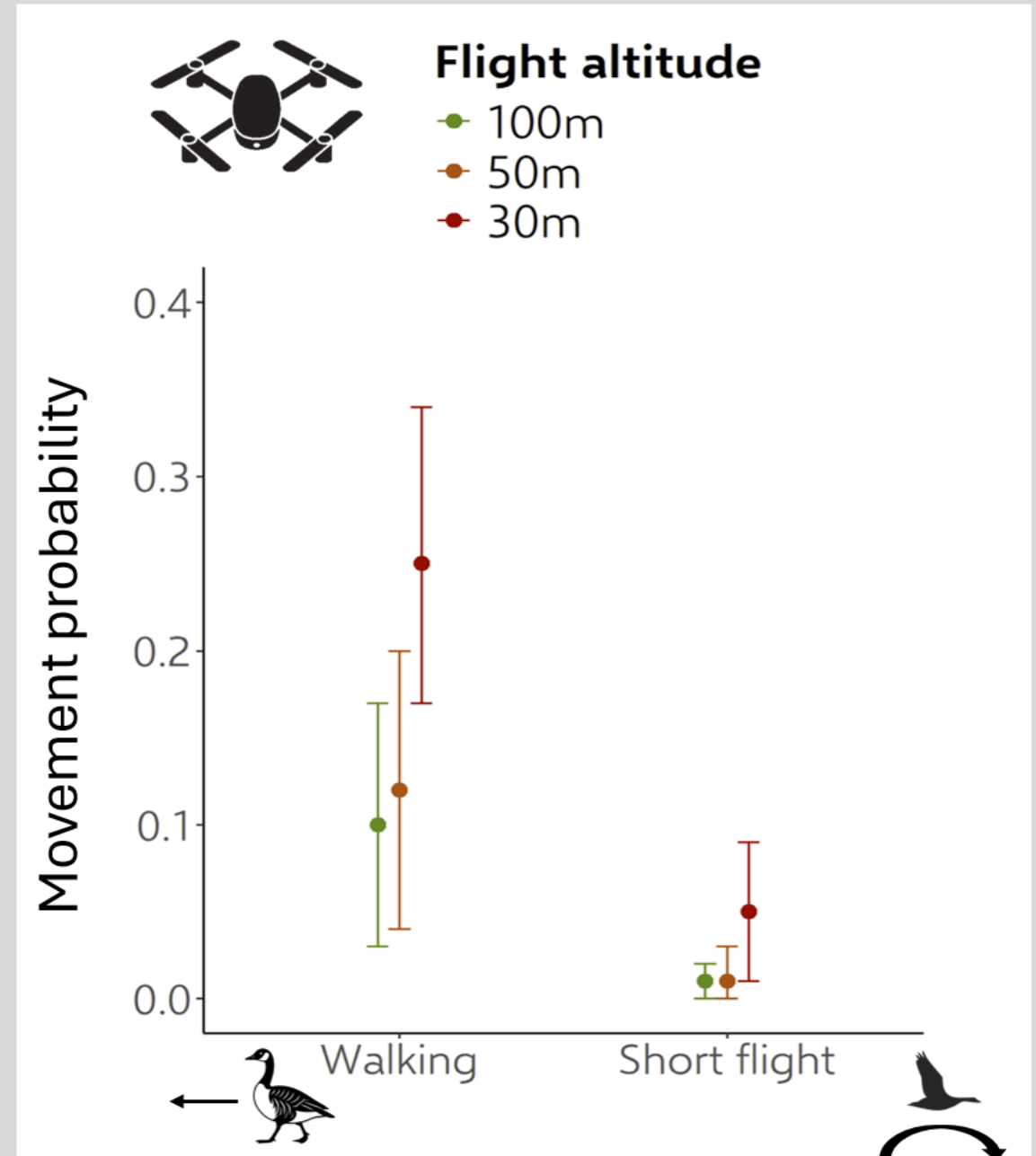
During

After



How geese reacted when the drone was flying?

- No entire group disturbance
- Only walking and short flights
- Lowest chance of movement when flying 100m high



Proportion of birds disturbed



Proportion of birds disturbed

1.00
0.75
0.50
0.25
0.00

pre-flight

flight
(100m)

flight
(50m)

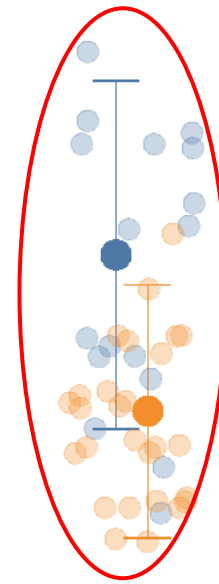
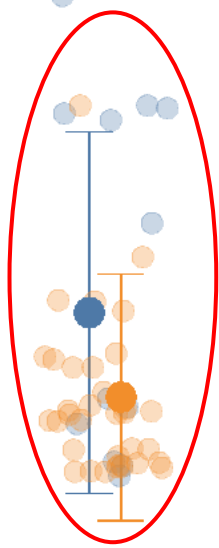
flight
(30m)

5' post-flight

Survey phase

Habitat

- Protected wetland
- Agricultural field



Proportion of birds disturbed

1.00
0.75
0.50
0.25
0.00

pre-flight

flight
(100m)

flight
(50m)

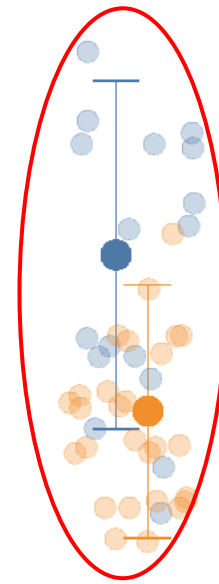
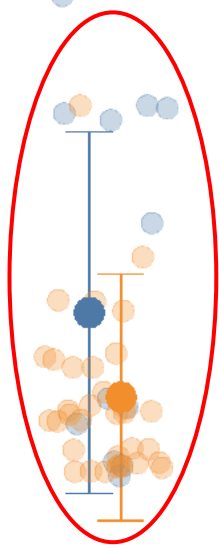
flight
(30m)

5' post-flight

Survey phase

Habitat

- Protected wetland
- Agricultural field



Consultations and knowledge sharing - Drone

Chisasibi

- 1 presentation, 5 participants, 3 traplines (Sep 2025)

Waskaganish

- 1 presentation and consultation with 8 participants from 7 traplines (Sep 2025)



Other knowledge sharing activities

Chisasibi

- 4 consultations, 5 participants, 4 traplines (Jul-Aug 2024)
- *Planned visit (Jan-Feb 2026)*

Wemindji

- *Planned visit (Jan-Feb 2026)*

Eastmain

- 5 consultations, 4 participants, 5 traplines (Jul-Aug 2024)
- 1 open house, 10 participants (Jul 2025)
- *Planned visit (Jan-Feb 2026)*





Eeyou knowledge

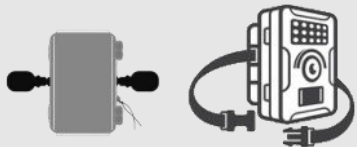
1. Band reporting:
Where are they from?



2. Harvest measurements:
Are they healthy?



3. Recorders, Cameras:
When are they here? What habitats do they use?

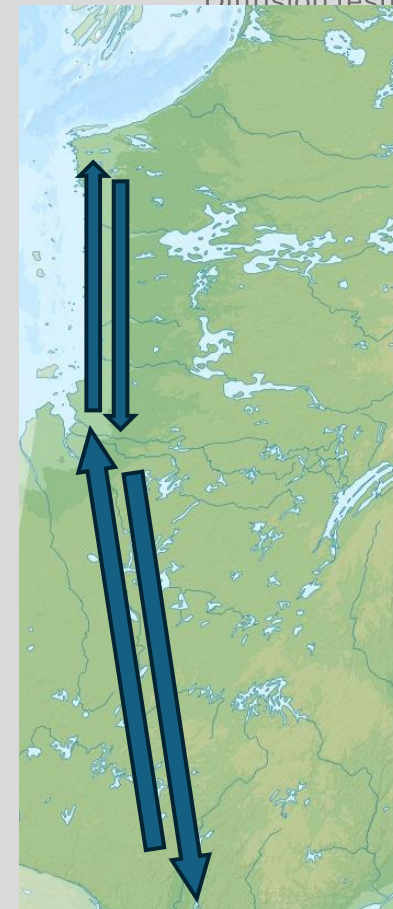


4. Drones:
Are numbers changing?



What is keeping them here?

Knowledge to help Eeyou decision-making
regarding risk & other wildlife





Thank you!



McGill



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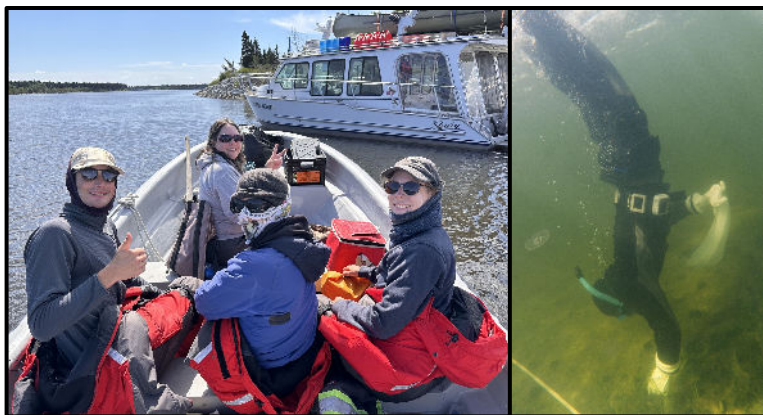
FALL 2025 EELGRASS / SHIKAAPAASHKWH RESEARCH UPDATE FROM THE CHCRP COASTAL TEAM- CHISASIBI



*Waachiyaah from the Eelgrass Team and **THANK YOU** for a great summer of research in Chisasibi!*

Our main question this summer:

“How is eelgrass recovering around Chisasibi?”



What we did in Chisasibi this summer

Monitored the health of 15 eelgrass meadows

Measured eelgrass responses to light to see if the plants are limited by low light levels

What we're doing now in the lab

Processing eelgrass and water samples we collected this summer

Analyzing the data from the monitoring sites

Planning for next year's research



◀ Add us on
Facebook!

See where
we went!
(Storymap) ▶



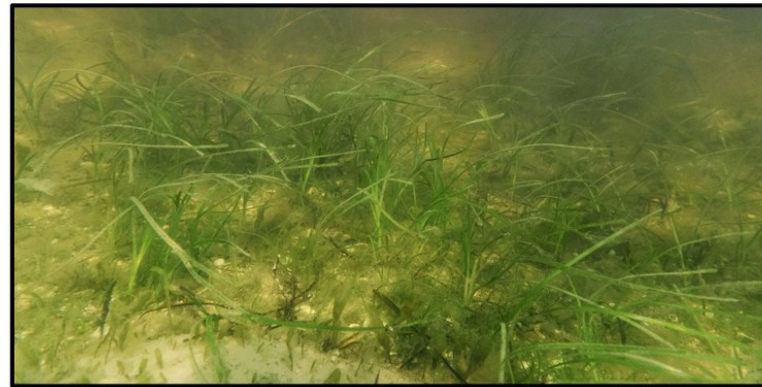
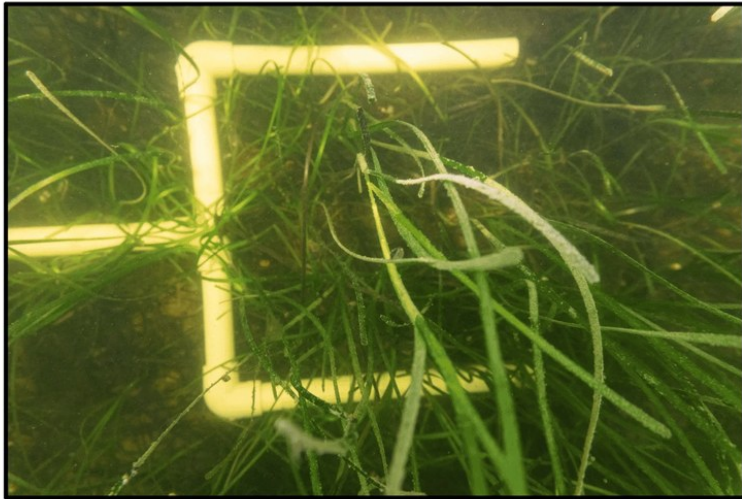
Thank you to Lawrence, Mimie, Reggie, Reggie Jr., John B., John S., Darson, Charles, Samuel, Howard, Merlin, and Davis for contributing to the research! We look forward to seeing you next summer!



*Waachiyaah from the Eelgrass Team and **THANK YOU** for a great summer of research in Eastmain!*

Our main question this summer:

“How is eelgrass recovering around Eastmain?”



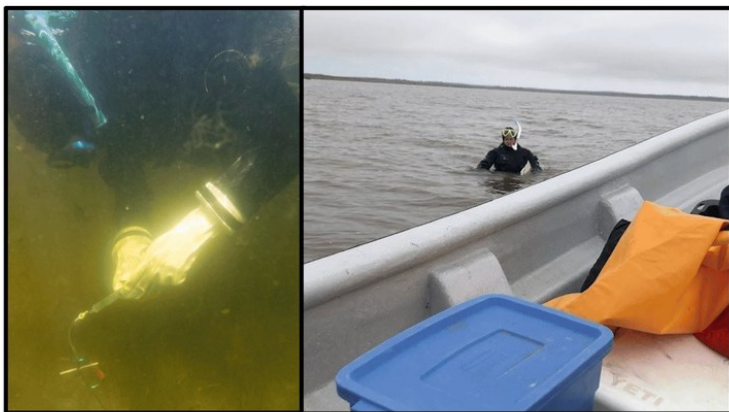
What we did in Eastmain this summer
Monitored the health of 7 eelgrass meadows

What we're doing now in the lab

Processing eelgrass and water samples
we collected this summer

Analyzing the data from the monitoring
sites

Planning for next year's research



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***Thank you to the Cree
Nation of Eastmain for
hosting us in your building,
and thank you Wilfred for
contributing to the field
research! We look forward
to seeing you next
summer!***





FIELDWORK REPORT: CHCRP EELGRASS TEAM

PREPARED BY CAROLINE FINK-MERCIER
REVIEWED BY THE 2025 FIELDWORK TEAM

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CHCRP 2025 FIELDWORK REPORT

1. EELGRASS TEAM MEMBERS

Alexi Ebersole (MSc Student)

Caroline Fink-Mercier (Field coordinator)

Daniela Walch (PhD) – *for bathymetry project, but provided support for the eelgrass team fieldwork*

Fanny Noisette (PI)

John Merlo-Coyne (PhD Student)

Lauriane Belles-Iles (MSc Student)

Mary O'Connor (PI)

Nicole Knight (Post doc)

This report summarizes fieldwork objectives and activities during the summer 2025. A special thanks to the Niskamoon local officer Geraldine Mark for helping to coordinate the days out on the bay with the land users, and CTA-EMR officer George for his implication. We would like to thank all the participating land users for the knowledge they shared and for the guidance on the bay, including Lawrence Napash, Howard Bobbish, Charles House, Samuel House, John Sam, Reggie Scippio, Mimie Neaccapo, Henry Stewart, Rene Atsynia, Leonard Asquabaneskum, Ernie Hughboy, George Natawapineskum, Wilfred Cheezo, Harold Whiskeychan and Brandon Whiskeychan (Table 1). The repeated visits to the same traplines with the same tallymen in Wemindji and Eastmain and the overnight at Seal River were instrumental to building deeper relationships with some land users and developing our understanding of the territory.

Table 1. Table of participating land users

Date	Site	Crew
06/07/2025	VC12	Leonard Asquabaneskum, David-John Pashagumskum, Corey Asquabaneskum
07/07/2025	VC14	Leonard Asquabaneskum
08/07/2025	VC12	Leonard Asquabaneskum
09/07/2025	VC14	Leonard Asquabaneskum

10/07/2025	VC17 and VC13	Ernie Hughboy, George Natawapineskum, Leonard Asquabaneskum
12/07/2025	VC12	Leonard Asquabaneskum
12/07/2025	CH33	John Sam
15/07/2025	CH33	John Sam
16/07/2025	CH34	Lawrence Napash, Charles House, Samuel House, Howard Bobbish
17/07/2025	CH03	Lawrence Napash
17/07/2025	CH07	Mimie Neacappo, Reggie Scipio, Reggie Scipio Jr., John Bobbish, Darson Sam
21/07/2025	VC12	Henry Stewart
21/07/2025	CH38	Lawrence Napash, Howard Bobbish, Merlin Kanatewat, Davis Kanatewat
24/07/2025	VC14	Henry Stewart
24/07/2025	R2	Harold Whiskeychan, Brandon Whiskeychan
25/07/2025	R2	Harold Whiskeychan, Brandon Whiskeychan
27/07/2025	VC11	Rene Atsynia
28/07/2025	Offshore islands	George Natawapineskum, Henry Stewart, Ernie Hughboy
29/07/2025	VC11	Rene Atsynia
31/07/2025	VC32	Wilfred Cheezo
01/08/2025	VC15 and VC30	Wilfred Cheezo
03/08/2025	RE3A and VC31	Wilfred Cheezo

2. SUMMARY

The fieldwork was conducted in Chisasibi, Wemindji, Eastmain and Waskaganish between July 4th and August 5th 2025 (Table 2), with the first week of fieldwork coordinated in parallel to the bathymetry project activities. The team conducted experiments in Wemindji (field objective 1), surveyed sites in all 4 coastal communities to continue to deepen our understanding of spatial and temporal eelgrass dynamics (field objective 2), and searched for offshore eelgrass sources that could have survived the decline (field objective 3). A total of 48 visits to sites were made over the summer (Figure 1, table 2).

The Niskamoon local officer Geraldine Mark played a crucial role in coordinating the activities in Wemindji, especially considering the logistical details of having multiple teams simultaneously working in this community (eelgrass team, bathymetry team, and polar bear team). Direct communication with the Polar bear team (EMR-CTA-McGill project) was also maintained to share resources. The team developed a deeper relationship with George Natawapineskum (EMR-CTA officer) who also helped with the coordination and repeatedly showed interest in working together to develop outreach activities and training for the youth. Fieldwork in Eastmain was facilitated by Cassandra Weapinicappo who made sure that the land users and infrastructure were ready to accommodate us in Eastmain, while the trips to the traplines in Chisasibi and Waskaganish were organized by communicating directly with land users. In Waskaganish, the Eeyou Marine Region staff emphasized their interest in working together and granted access to their laboratory and office.

3. FIELD OBJECTIVES

OBJECTIVE 1: TO CONDUCT EXPERIMENTS TO EVALUATE POTENTIAL FOR RESTORATION AT TWO KEY SITES IN WEMINDJI

- i. The team deployed an artificial seagrass units (ASUs) experiment (Nicole Knight's Postdoc project – Alliance activity 4.1 on sediment stabilization experiment) in VC12 and VC14 for a period of ~ two weeks to test if we could replicate feedbacks between eelgrass, sediment and light that facilitate eelgrass growth. These sites were selected for their contrasting bottom sediment grain size, and their potential to be revisited according to proximity to the community and relationship with land users. HOBO loggers, sediment traps, tilt meters, PAR sensor, GoPro cameras and dissolution blocks were deployed to measure respectively light and temperature variations, sediment resuspension, direction and speed of current, irradiance received at the top and bottom of the eelgrass, general look of the experiment set up, and differences in hydrodynamics regimes (Figure 1 and 2). Control plots were sampled at initial conditions, and both controls and treatments were sampled at the final time point after 15 (VC12-00) and 17 (VC14-02) days of deployment. Samples taken are detailed in Table 3. Initial findings suggest that deploying artificial eelgrass did not increase eelgrass growth rates despite increasing light availability in the water column.

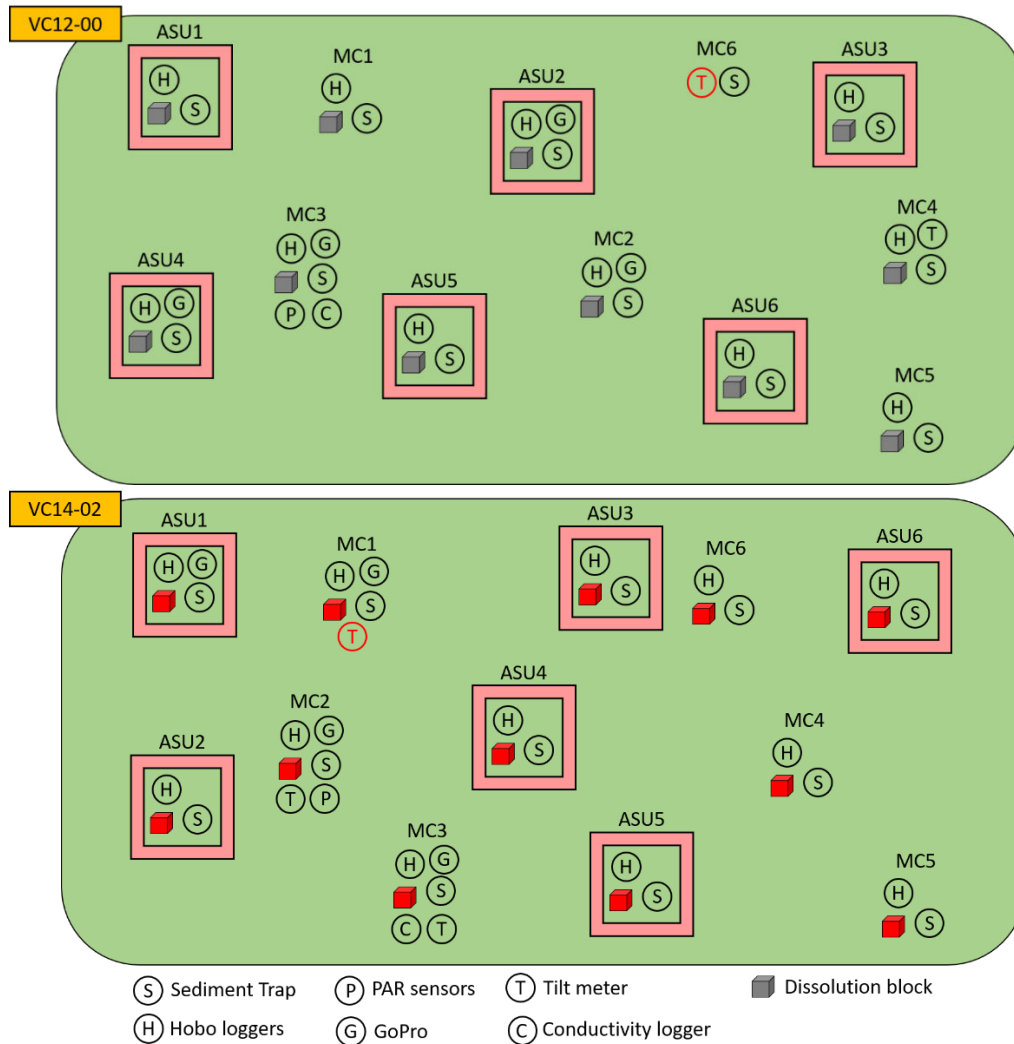


Figure 1. ASU experiment design. Treatments were located randomly in the meadows, at least 5 meters apart. The location of treatments on this figure is therefore not representative of the exact location in the field, but rather shows that the treatments were not deployed in a systematic design due to high meadow patchiness. Elements in red indicate malfunctioning instruments

- ii. In parallel, the team deployed a transplant experiment (Alexi Ebersole's MSc. Project – Alliance activity 4.3 on experimental transplant) at these same sites (VC12-00 and VC14-02) for a period of ~ two weeks to evaluate the potential of transplantation as a restoration method. Eelgrass was collected, bundled, tied to metal washers and transplanted within the same meadow at three subsites randomly distributed. Shoots morphometrics were measured on the field at initial and final conditions; environmental conditions were recorded over the deployment period and photosynthetic performance measured at the end of the experiment on transplanted shoots.

OBJECTIVE 2: TO SURVEY SITES

- i. For monitoring - The team visited key sites that have been visited twice or more during the previous years and/or are of particular interest to land users for long term monitoring (Alliance activity 2.1 on seasonal dynamics in biology and ecology of eelgrass) (Figure 3). At each site, the team collected eelgrass at six quadrats by snorkeling or SCUBA to measure eelgrass biomass, density and morphometrics (leaf and rhizome), took underwater photos of eelgrass, collect water samples to measure nutrients, suspended particulate matter (SPM) and colored dissolved organic matter (CDOM), took water parameters measurements using a multiparameter probe (YSI/CTD) and collected surface sediment and pore water (Table 3). Photophysiology measurements to evaluate photosynthetic performance were also made at some sites. In contrast to previous years, only 1 type of protocol ("survey protocol") was used no matter the sampling method (snorkeling or SCUBA). This change was made to make sure that biomass and density measurements are made at all sites. A questionnaire about meadow health was also filled by the research team and with volunteer land users as a first step in exploring long-term monitoring tools (John Melo-Coyne's Ph.D. project - Alliance Activity 5.1 on co-developing protocols).
- ii. For the genetic study – The team sampled eelgrass to test for genetic differences in eelgrass exposed to high- and low-salinity regimes all along Eeyou Istchee coastline (Raisa Ramdeen's PhD project – Alliance activity 3.3 on Adaptation and acclimation capacity). We collected shoots from pairs of "high salinity" and "low salinity" sites that were geographically close (generally at the trapline level). Because we don't have detailed year-round salinity data, we assigned high and low salinity designations based on proximity to rivers and direction of the plume. This design would enable to disentangle the bay wide salinity gradient effect (low salinity in the south and in the la Grande River plume) from the effect that could be attributed to a genetic adaptation to salinity. As the salinity conditions are largely influenced by tide, more information should be gathered to attribute these salinity categories to the sampled sites.

OBJECTIVE 3: TO SEARCH FOR OFFSHORE EELGRASS SOURCES

For some time, the team has considered the possibility that eelgrass further offshore survived the declines that occurred along the coast in the late 1990s. This summer, we began searching for surviving eelgrass populations without success. We visited islands in the Old Factory region (Figure 3, second panel from left) with Henry Stewart, George Natawapineskum, Ernie Hughboy and the McGill polar bear researchers. We did not find eelgrass, including at a site where Henry says it persisted until ~2009. The polar bear team also kept an eye out for eelgrass on their visits to the Twin Islands but did not observe any. Asking land users if they observed offshore eelgrass didn't result in any promising leads. The team therefore does not recommend to spend more time searching for offshore eelgrass considering the absence of leads and the logistical and budget constraints.

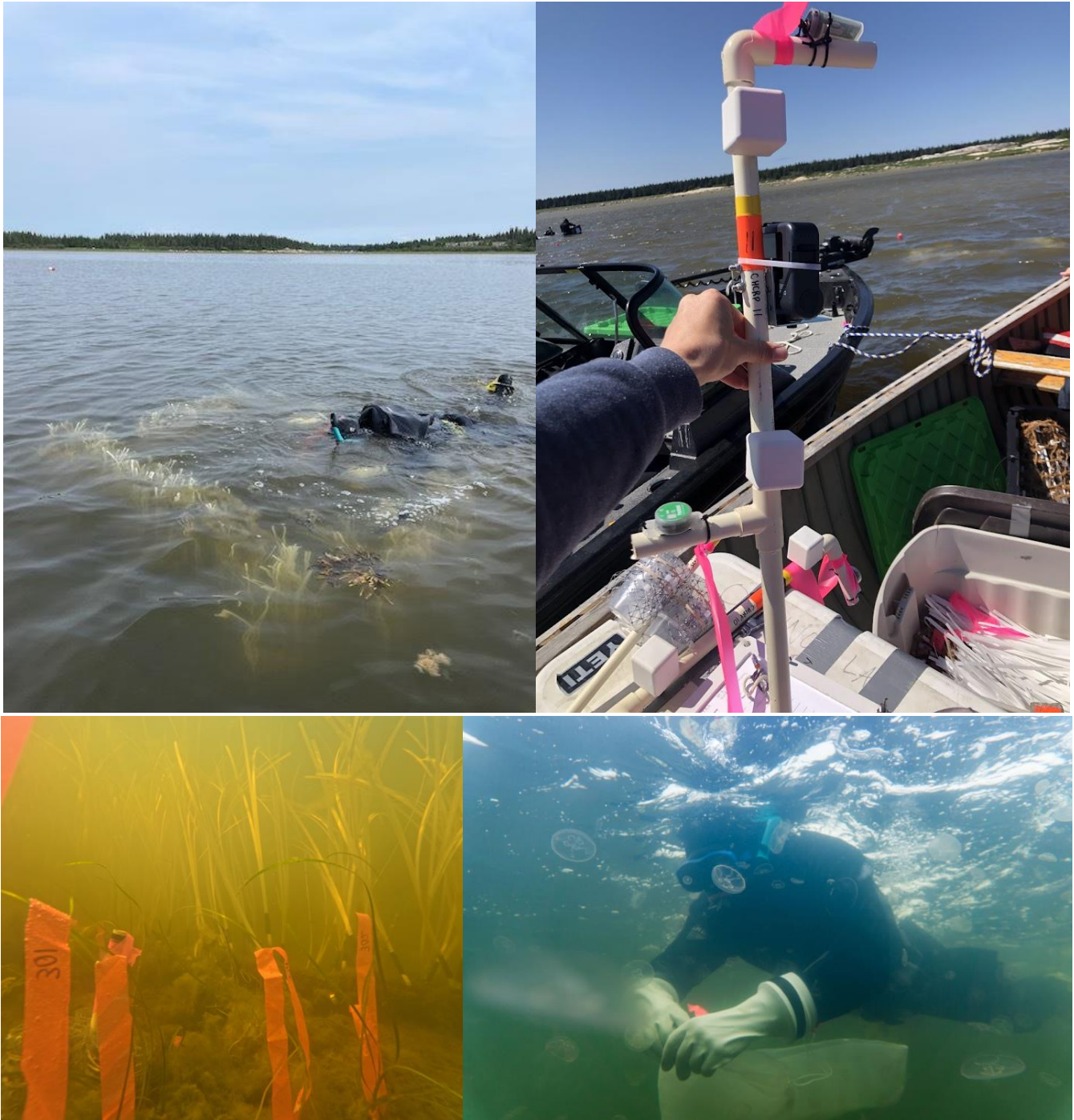


Figure 2. The team deploying the ASUs (top left), mounting of the light and temperature HOBO loggers, dissolutions block and GoPro cameras in the ASU experiment (top right), tagged shoots inside an ASU plot (bottom left, photo taken from the experiment GoPro), snorkeler collecting eelgrass shoots in CH07 (bottom right, credit Alexi Ebersole).

4. SAMPLING ACTIVITIES

The calendar below (Table 2) details the activities and the team composition throughout the field campaign. Table 3 reports the samples and observations taken at all the locations visited.

Table 2. Calendar of activities. CFM= Caroline Fink-Mercier, NK= Nicole Knight, AE= Alexi Ebersole, JMC= John Merlo Coyne, MO= Mary O'Connor, DW= Daniela Walch, FN= Fanny Noisette, LBI= Lauriane Belles-Isles, ZZK= Zou Zou Kuzyk, ML= Melanie Leblanc, AG= Alessia Guzzi, KG= Kaushik Gupta.

Date	Schedule	Research Team
July 3	Travel Rimouski – Québec city - Chibougamau	CFM, NK, AE, JMC, (DW – bathymetry)
July 4	Travel Chibougamau – Wemindji – Cree café in the evening	CFM, NK, AE, JMC, (DW – bathymetry), MO, ZZK, ML
July 5	Lab day – Preparation for experiment deployments	CFM, NK, AE, JMC, (DW – bathymetry), MO, ZZK
July 6	Wemindji – Setting up experiments at VC12-00	CFM, NK, AE, JMC, MO, (DW + ZZK -bathymetry)
July 7	Wemindji – Setting up experiment at VC14-02	CFM, NK, AE, JMC, (DW – bathymetry)
July 8	Wemindji – Sampling for initial conditions at VC12-00	CFM, NK, AE, JMC, MO
July 9	Wemindji – Sampling for initial conditions and pricking shoots for growth at VC14-02	CFM, NK, AE, JMC, MO, (DW – bathymetry VC11)
July 10	Wemindji – Sampling sites in VC17 and VC13	CFM, NK, AE, JMC, MO, (DW – bathymetry VC12)
July 11	Wemindji – Finish lab processing and entering data Travel Wemindji – Chisasibi (John and Mary) and meeting with Chief daisy House (also with Zou Zou and Melanie). Tentative daytrip to CH07 on July 12 (cancelled)	Wemindji: CFM, NK, AE Chisasibi: JMC, MO
July 12	Wemindji – Pricking shoots for growth and replacing dissolution blocks at VC12-00	Wemindji: CFM, NK, AE

	Chisasibi – Sampling sites in CH33	Chisasibi: JMC, MO, ZZK, ML, AG, KG
July 13	Travel Wemindji – Chisasibi (note: Big storm) Arrival of Fanny and Lauriane	CFM, NK, AE, JMC, MO, FN, LBI, ZZK, ML
July 14	Chisasibi – Tentative to sample in CH33 (cancelled due to fog and wind)	CFM, NK, AE, JMC, MO, FN, LBI
July 15	Chisasibi – Sampling site in CH33	CFM, NK, AE, JMC, MO, FN, LBI
July 16	Chisasibi – Sampling sites in CH34	CFM, NK, AE, JMC, FN, LBI
July 17	Chisasibi – Sampling in CH03 and CH07	CH07: CFM, AE, JMC, CH03: NK, FN, LBI
July 18	Chisasibi – Sampling and travelling back from CH07	CFM, NK, AE, JMC, FN, LBI
July 19	Travel Chisasibi – Wemindji (Alexi, Nicole, Lauriane) Chisasibi – Tentative to leaving for overnight in CH38 (cancelled)	Wemindji: NK, AE, LBI Chisasibi: CFM, FN, JMC
July 20	Chisasibi - Tentative to leaving for overnight in CH38 (delayed to PM and then cancelled) Wemindji – Lab set up and preparation for experiment retrieval	Wemindji: NK, AE, LBI Chisasibi: CFM, FN, JMC
July 21	Chisasibi – Day trip to CH38 Wemindji – Sampling for final conditions at VC12-00 and dismantling experiment. Retrieval of bathymetry tide gauge mooring. Retrival off Zou Zou's mooring by error	Wemindji: NK, AE, LBI Chisasibi: CFM, FN, JMC
July 22	Wemindji – Processing of VC12-00 experiment samples in the lab Chisasibi – Finish sample processing of CH38 and travel Chisasibi - Waskaganish	Wemindji: NK, AE, LBI Waskaganish: CFM, FN, JMC
July 23	Wemindji – Processing of VC12-00 experiment samples in the lab Waskaganish – Set up laboratory and meeting with Harold Whiskeychan	Wemindji: NK, AE, LBI Waskaganish: CFM, FN, JMC

July 24	Wemindji – Sampling for final conditions at VC14-02 and dismantling experiment Waskaganish – Sampling in R02 (Boatswain Bay)	Wemindji: NK, AE, LBI Waskaganish: CFM, FN, JMC
July 25	Wemindji – Processing of VC14-02 experiment samples in the lab Waskaganish – Sampling in R02 (Boatswain Bay)	Wemindji: NK, AE, LBI Waskaganish: CFM, FN, JMC
July 26	Wemindji – Processing of VC14-02 experiment samples in the lab. Travel Waskaganish – Wemindji Lauriane and Fanny travel to Quebec city	NK, AE, CFM, JMC
July 27	Wemindji – Sampling at VC11-01, installing ARU for wildlife team and redeploying Zou Zou's mooring at VC12-00	NK, AE, CFM, JMC
July 28	Wemindji – Exploring offshore islands with the Polar Bear team	NK, AE, CFM, JMC
July 29	Wemindji – Sampling in VC11 and entering data	NK, AE, CFM, JMC
July 30	Travel Wemindji - Eastmain	NK, AE, CFM, JMC
July 31	Eastmain – Sampling in VC32	NK, AE, CFM, JMC
August 1	Eastmain – Sampling in VC30 and VC15 and lab Open House	NK, AE, CFM, JMC
August 2	Eastmain – Tentative to go out sampling (cancelled). Finish sample processing and entering data	NK, AE, CFM, JMC
August 3	Eastmain – Entering data (mostly day off)	NK, AE, CFM, JMC
August 4	Eastmain – Sampling in RE3A (new trapline in Eastmain) and VC31	NK, AE, CFM, JMC
August 5	Travel Eastmain - Chibougamau	NK, AE, CFM, JMC
August 6	Travel Chibougamau – Québec city – Rimouski (or Vancouver)	NK, AE, CFM, JMC

Table 3. Summary of samples and observations taken at each site. Chl a= Chlorophyll a, SPM= Suspended particulate matter, Growth= growth measurements, Morp= morphometry, Biom= Biomass, Rhiz= Rhizome morphology and sugars, Water col. Nut= Water column nutrients, Pore water nut= Pore water nutrients, Sed. Hard= Sediment hardness, Sed. Core= sediment core (* indicate that sediment sulfide samples were also taken), Leaf phys= Leaf physiology (carbon, nitrogen and chlorophyll a content), Dens= Density, Quad pic= Quadrat picture, Quest.= Questionnaire, Photo phys= photophysiology (PAM fluorometry). Algal mats and invertebrate samples for identification not shown (very few samples).

Date	Site	Lat.	Long.	P/A	Chl a	SPM	Growth	Morph	Biom	Rhiz	Water col. Nut.	Pore water nut.	CDOM	YSI	Sed. Hard.	Sed. core	Leaf phys.	Dens	Quad pic	Quest.	Gen.	Photo phys
06/07/2025	VC12-00	52.864	- 78.839	1	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
07/07/2025	VC14-02	52.572	- 78.749	1	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
08/07/2025	VC12-00	52.864	- 78.839	1	yes	yes	no	yes	no	yes	yes	Not good	yes	yes	no	yes*	yes	yes	yes	no	yes	no
09/07/2025	VC14-02	52.572	- 78.749	1	yes	yes	pricked	yes	no	yes	yes	Not good	yes	yes	no	yes*	yes	yes	yes	no	?	no
10/07/2025	Annie's Eel	52.967	- 78.900	NA	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
10/07/2025	Red Peat 1st.	52.860	- 78.858	NA	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
10/07/2025	VC17-00	52.652	- 78.770	1	yes	yes	no	yes	yes	yes	yes	Not good	yes	yes	no	yes*	yes	yes	yes	yes	yes	no
10/07/2025	VC17-06	52.680	- 78.759	1	yes	yes	no	yes	yes	yes	yes	Not good	yes	yes	yes	yes	yes	yes	yes	yes	yes	no
10/07/2025	VC13-01	52.722	- 78.805	1	yes	yes	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no
12/07/2025	VC12-00	52.864	- 78.839	1	no	no	pricked	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
12/07/2025	CH33-01	52.732	- 79.055	0	no	no	no	no	no	no	no	no	no	no	no	yes	no	no	yes	no	no	no

12/07/2025	CH33-04	53.721	- 79.055	1	Alessia took	Alessia took	no	yes	no	yes	no	no	no	Alessia cast	no	no	no	no	yes	no	yes	no
12/07/2025	CH33-08	53.730	- 79.067	1	no	no	no	yes	no	no	no	no	no	no	no	box grab	no	no	yes	no	yes	no
15/07/2025	CH33-00	53.726	- 79.055	1	yes	yes	no	yes	yes	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	yes	yes
16/07/2025	CH34-00	53.575	- 78.986	1	yes	yes	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
16/07/2025	CH34-03	53.572	- 78.970	1	no	no	no	yes	no	yes	no	no	NA	yes	no	NA	yes	no	no	no	yes	no
16/07/2025	CH34-04	53.530	- 79.058	1	no	no	no	yes	no	yes	no	yes	NA	yes	no	NA	yes	no	no	no	yes	no
17/07/2025	CH03-01	53.949	- 79.105	0	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
17/07/2025	CH03-05	53.939	- 79.057	1	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no	no
17/07/2025	CH03-00	53.947	- 79.080	1	yes	yes	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	yes
17/07/2025	CH07-00	54.615	- 79.664	1	no	yes	no	yes	no	yes	yes	no	yes	cast	no	yes*	yes	no	yes	no	yes	no
17/07/2025	CH07-04	54.532	- 79.565	1	no	yes	no	yes	no	yes	yes	yes	yes	cast	no	yes	yes	no	yes	no	yes	no
18/07/2025	CH07-05	54.510	- 79.528	1	no	yes	no	yes	no	yes	no	no	no	cast	no	no	yes	no	yes	no	yes	yes
21/07/2025	VC12-00	52.864	- 78.839	1	yes	no	collected	yes	no	yes	yes	yes	no	yes	no	yes	yes	yes	no	no	no	yes
21/07/2025	CH38-00	53.201	- 78.920	1	yes	yes	no	yes	yes	yes	yes	yes	yes	cast	yes	yes	yes	yes	yes	yes	yes	no
21/07/2025	CH38-06	53.276	- 78.959	1	yes	yes	no	yes	yes	yes	yes	yes	yes	cast	yes	yes	yes	yes	yes	no	yes	no
24/07/2025	VC14-02	52.572	- 78.749	1	yes	yes	collected	yes	no	yes	yes	yes	no	yes	no	yes	yes	yes	no	no	no	yes
24/07/2025	R2-00	51.871	- 78.900	1	yes	yes	no	yes	yes	yes	yes	yes	yes	cast	yes	yes	yes	yes	yes	no	yes	no

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De : [Melanie Leblanc](#)
À : [Geraldine Mark](#); [Ernie Rabbitskin](#); [Lemieux, Marie-Eve \[2\]](#); [Stephanie Varty](#); [Duquette, Luc](#); [James Bobbish](#); [Shirley Chiskamish](#); josee.lefebvre@canada.ca; [Lefebvre, Josee \(ECCC\)](#); [Cassandra Weapenicappo](#); [Mimie Neacappo](#); [Marc Dunn](#); [John Lameboy](#); graeme.morin@cngov.ca; [Gilbert, Jean-Philippe](#); [Felix Boulanger](#); [Ernest Moses](#); [Manon Sorais](#); [Brosseau, Daniel \[4\]](#); [Robbie Tapiatic](#); [Roderick Pachano](#)
Cc : [Daisy House](#); [Dante Torio](#); [Oser, Mila](#)
Objet : Fieldwork reports and eelgrass team story map
Date : 24 novembre 2025 15:11:56
Pièces jointes : [Fieldwork Report 2025_CHCRP Eelgrass Team.pdf](#)
[Summer Field Report 2025 CHCRP Water Quality .pdf](#)

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Hello everyone,

Following up on today's steering committee meeting, please find attached the fieldwork reports from Mary's team and from Zou Zou and Jens's team.

Here is also the link to the eelgrass team's StoryMap, which provides an overview of the work they completed this summer: [EELGRASS TEAM MAP STORY](#)

Please let me know if you have any questions.

Mélanie

--

Mélanie LeBlanc, Ph.D.

Research Wildlife Biologist/Chercheuse-Biologiste de la faune



Niskamoon Corporation

Tel.: 506-686-3103

Eeyou Coastal Habitat Comprehensive Research Project

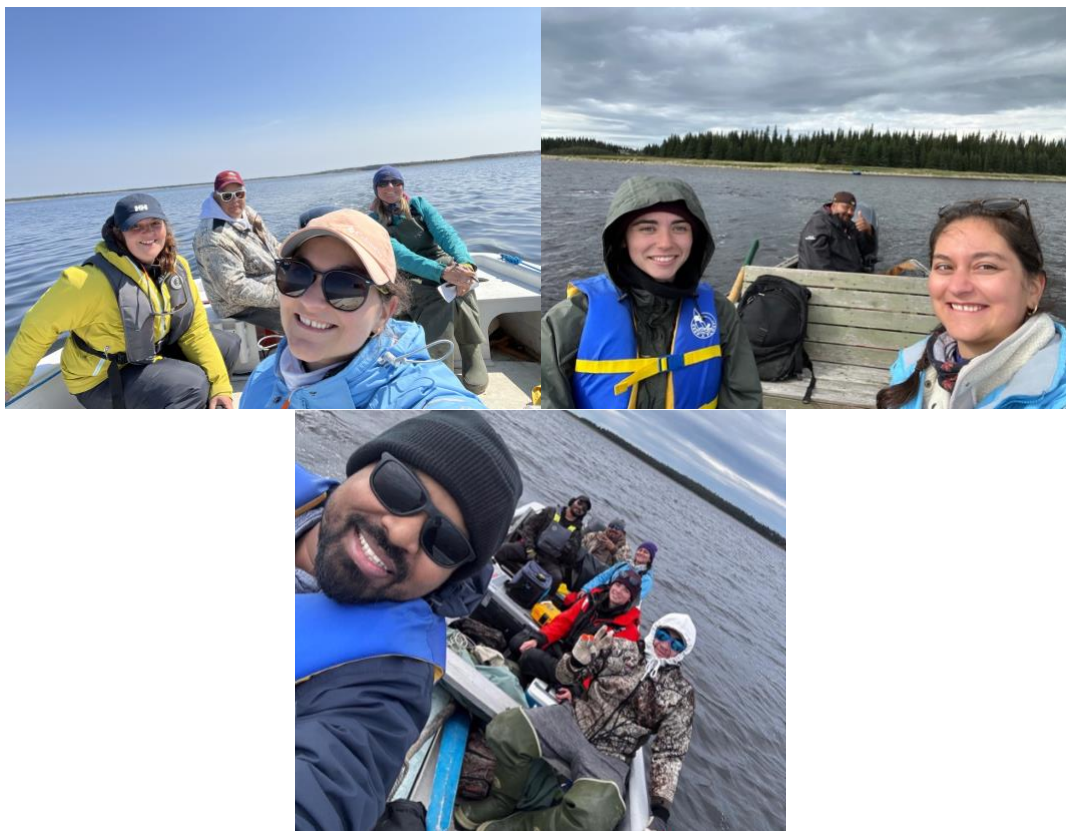
<https://eeyoucoastalhabitat.ca/>

Eeyou Comprehensive Research Program on Coastal Habitat (CHCRP) Phase - II

University of Manitoba

Field Report

Summer 2025



Prepared by: Alessia Guzzi and Kaushik Gupta

Pls: Drs. Zou Zou Kuzyk and Jens Ehn

October 2025

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Introduction

The Eeyou Coastal Habitat Comprehensive Research Project (CHCRP) Phase 2 is a Cree-driven project that takes place along the coast of Eeyou Istchee (eastern James Bay) from Rupert Bay to Cape Jones and involves the Cree Nations of Chisasibi, Wemindji, Eastmain, and Waskaganish. This Phase of the project started in 2024, with different teams collaborating and studying the various aspects of the eelgrass ecosystem. Among them, the coastal oceanography team focuses on understanding the eelgrass biophysical environment of Eeyou Istchee and investigating the impact of climate change and industrial activities of this ecosystem, with an aim to provide decision-support tools related to its conservation and possible restoration for Eeyou coastal communities and the regional Cree Nation Government. The approach involves seasonal field campaigns, the collection of samples, and the deployment of sensors to study changes and their seasonality, as well as the interpretation of new physical oceanographic and climate observations of the Eeyou Istchee eelgrass physical environment in close partnership with Cree land users and knowledge holders. This report has been prepared to provide information about the University of Manitoba (UM) team's work in summer 2025.

Personnel

Three trips took place between July and September 2025 with a number of personnel. Table 1 details the dates of each trip including travel time, personnel and their positions at UM. Table 2 details the specific dates of field days and the land users that took the UM team members out to the noted trapline and assisted in research operations.

Table 1. University of Manitoba personnel that participated in each of the three field trips from July to September, 2025

Trip Dates	Personnel from University of Manitoba (UM)
July 4 – July 15	Dr. Zou Zou Kuzyk (UM Principle Investigator)
July 6 – July 15	Alessia Guzzi (Research Technician/Project Coordinator), Kaushik Gupta (PhD Student)
August 16 – Sept 1	Alessia Guzzi, Kaushik Gupta, Yudhistir Reddy (Technician), Cassidy Warnett (Undergraduate Student)
Sept 16 – Sept 23	Kaushik Gupta

Table 2. Details of when the UM team visited specific traplines, and the participating land users.

Date	Trapline	Land Users
July 9, 2025	CH33	John Sam
July 10, 2025	CH34	Charles House, Donovan House
July 12, 2025	CH33	John Sam
August 19, 2025	CH34	Charles House, Donovan House
August 22, 2025	CH33	John Sam
August 25, 2025	VC14	Melvin Kakabat, Henry Stewart
August 28, 2025	VC11	Melvin Kakabat, Calvin Kakabat, Rene Atsynia
August 29, 2025	VC12	Melvin Kakabat, Ernie Hughboy

Purpose and Objectives

The purpose of the fieldwork that took place between July and September was to support the objectives of the second phase of the Eeyou Coastal Habitat Comprehensive Research Project (CHCRP). The main objective of this summer's work was to collect data to better understand the physical and biogeochemical habitat conditions of different eelgrass beds, with varying health and extent, across the traplines of CH33, CH34, VC11, VC12, and VC14.

The first trip that took place between July 4 and July 14, 2025 began with Zou Zou Kuzyk attending discussions with Eeyou land users in Wemindji, QC, and on July 7th was joined by Alessia Guzzi and Kaushik Gupta in Chisasibi, QC. The objectives of this trip were as follows:

- Participate in the Cree Café hosted in Wemindji (Zou Zou Kuzyk)
- To deploy the moorings that were originally planned to be deployed in winter.
- Conduct bathymetric surveys in CH33 and CH34 traplines.
- Retrieve cameras deployed during the winter in CH33 and CH34.
- Collect water samples, sediment samples and CTD profiles, to assess the habitat properties of eelgrass beds, and other locations such as the La Grande River.

The second trip took place between August 16 and September 1, 2025 with a four-person team. The above objectives were generally maintained, however the specific objectives for the August trip were as follows:

- Moorings that had been deployed in July were planned to be turned over.
 - This would include mooring retrieval, data downloaded from instruments, reprogrammed and rebuilt, and then redeployed.
- Cameras and thermal (IR) sensors were planned to be installed to capture the location of each mooring.
- Continue the bathymetric survey work to cover the rest of CH33 and CH34.

- Collect water samples, sediment samples and CTD profiles, to assess the habitat properties of eelgrass beds, and other locations such as the La Grande River.
- Record underwater GoPro videos of each sampling location.

The third trip was an additional trip that was initially not planned but occurred from September 16 – 23. Kaushik Gupta travelled to Chisasibi to join Melanie Leblanc (Niskamoon) and Matthew Longchap (Niskamoon) with the objective of testing Niskamoon’s newly purchased drone equipment and train users on how to begin using drones. A second objective was to install a camera and thermal (IR) sensor on Fort George Island to have a view of the La Grande River.

Daily Activities

Table 3 includes a simplified daily log of activities for the first two trips in July and August 2025.

Table 3. Details of daily activities for each day during July and August trips.

Date	Activities
Trip 1	
July 4 – 6	Zou Zou in Wemindji to take part in Cree Café
July 7	Kaushik and Alessia arrive in Chisasibi, join Zou Zou
July 8	Sampling and lab prep at Niskamoon. Bathymetry equipment training with CERRI team members in the afternoon.
July 9	Field day in CH33
July 10	Field day in CH34
July 11	Worked from Niskamoon office
July 12	Field day in CH33
July 13	Worked from Niskamoon office, cleaned up and packed equipment.
July 14-15	Travelled Chisasibi to Montreal, Montreal to Winnipeg
Trip 2	
August 16	Team flew from Winnipeg to Ottawa, and drove from Ottawa to Val D’Or
August 17	Team drove from Val D’Or to Chisasibi, unpacked equipment
August 18	Prepped for field work next day
August 19	Field day in CH34
August 20	Worked from Niskamoon office, collected water sample from LG barge dock
August 21	Worked from Niskamoon office
August 22	Field day in CH33
August 23	Worked from Niskamoon office, cleaned and packed all supplies.

August 24	Drove from Chisasibi to Wemindji and prepared for field.
August 25	Field day in VC14
August 26	Worked from the hotel, weather day (winds too high), collected a water sample from the shore of the Maquatua River.
August 27	Worked from the hotel, weather day (winds too high)
August 28	Field day in VC11
August 29	Field day in VC12, met with Geraldine to drop off equipment that was going to be left in Wemindji with the intention to be driven back to Chisasibi.
August 30	Drove from Wemindji to Val D'Or
August 31	Drove from Val D'Or to Montreal
September 1	Flew from Montreal to Winnipeg, dropped off samples at the University for proper preservation.

Field Methods and Activities

During the first trip, the UM team only conducted work in CH33 and CH34 traplines. Zou Zou Kuzyk, Melanie Leblanc (Niskamoon), Alessia Guzzi, and Kaushik Gupta traveled to the traplines in one boat, and conducted all work either from the boat or the shore.

During the second trip, the UM team conducted work from one boat in Chisasibi in CH33 and CH34, with Alessia and Cassidy conducting water and sediment sampling related operations on the boat, while Kaushik and Yudhistir retrieving the mooring by boat and conducting mooring-related operations on a nearby island. In Wemindji two boats were available on all field days and thus one boat had Alessia and Cassidy for water and sediment related operations, and the other boat had Kaushik and Yudhistir for the mooring-related operations.

The following sections detail the methods of each field operation completed by the UM team during the trips.

Sampling Stations

Sampling station locations were determined with a number of criteria in mind, including, in no particular order: 1) being previously visited sites, including Hydro Québec previous monitoring sites; 2) noted priority sites by the eelgrass team; 3) known locations where eelgrass was present in the past or present; or 4) suggested locations by land users while the team was on the water. Additionally, sites during the July trip in CH33 were chosen while conducting bathymetry surveys and identifying areas that looked like eelgrass/vegetation was present on the bathymetry equipment. Stations where water samples, sediment samples, CTD casts, and GoPro underwater videos were collected/recorded, were led by Zou Zou Kuzyk and Alessia Guzzi in July, and Alessia Guzzi and Cassidy Warnett in August.

Figure 3 shows locations where all the above operations were completed in each trapline of focus.

Water Sampling and CTD Deployments

At each sampling location (Table 4, and Figure 3), the Castaway CTD was first deployed to record the depth, temperature, salinity and conductivity profiles, as well as the GPS coordinates for the location. In addition to the GPS coordinates recorded on the Castaway, a waypoint was recorded on a Garmin InReach at most locations. In some cases, only a Castaway CTD was deployed. At each station, a Secchi disc was used to measure the clarity of the water by deploying it over the side of the boat that was not shaded, and a measurement of depth was recorded based on when the Secchi disc was not visible (without sunglasses).

Bulk water samples were collected in opaque acid washed 500 mL Nalgene bottles (for organic properties), and opaque rinsed 1L Nalgene bottles (for suspended particulate matter). Samples were collected and processed back at the clean lab set up in town. The lab trailer outside the Niskamoon office in Chisasibi was utilised for this purpose, and a clean lab setup in the Maquatua Inn was where samples were processed in Wemindji.

Bulk water samples were sub-sampled and filtered according to preservation methods for the following properties:

- Conductivity
- Oxygen Isotope Ratio ($\delta^{18}\text{O}$)
- Coloured dissolved organic matter (CDOM)
- Dissolved organic carbon (DOC)
- $\delta^{13}\text{C}$ – DOC (stable isotope)
- Suspended particulate matter (SPM)
- Nutrients (nitrite, nitrate, phosphate, silicate)

Table 4. Stations visited in July and August. Details about time, location and bottom depth are included.

Station Location or Trapline	Station ID	Date (mm/dd/yyyy)	Time (EDT)	Latitude	Longitude	Bottom Depth (m)
CH33	CH25_003	7/9/2025	8:40	53.7268	-79.0530	1.93
CH33	CH25_004	7/9/2025	9:59	53.7315	-79.0621	1.17
CH33	CH25_005	7/9/2025	11:25	53.7268	-79.0686	1.26
CH33	CH25_006	7/9/2025	12:29	53.7307	-79.0753	0.91
CH33	CH25_007	7/9/2025	13:26	53.7222	-79.0836	3.7
CH33	CH25_008	7/9/2025	14:55	53.7126	-79.0987	2.56
CH34	CH25_009	7/10/2025	12:05	53.5762	-78.9873	0.99
CH34	CH25_010	7/10/2025	13:20	53.5796	-78.9856	1.48
CH34	CH25_011	7/10/2025	14:00	53.5776	-78.9987	1.97

LG Barge Dock	CH25_012	7/10/2025	17:00	53.8210	-78.9865	2.34
CH33	CH25_013	7/12/2025	9:01	53.7213	-79.0543	1.42
CH33	CH25_014	7/12/2025	10:09	53.7313	-79.0555	1.35
CH33	CH25_015	7/12/2025	10:48	53.7302	-79.0662	2.03
CH33	CH25_016	7/12/2025	11:06	53.7302	-79.0769	2.1
LG Barge Dock	CH25_017	7/12/2025	12:33	53.8211	-78.9866	4.57
CH34	CH25_018	8/19/2025	11:59	53.5844	-78.9793	0.78
CH34	CH25_019	8/19/2025	13:05	53.5757	-78.9871	0.7
CH34	CH25_020	8/19/2025	13:34	53.5623	-78.9808	1.13
CH34	CH25_021	8/19/2025	15:57	53.5787	-78.9961	3.25
CH34	CH25_022	8/19/2025	16:25	53.5656	-79.0375	6.31
LG Barge Dock	CH25_023	8/20/2025	15:03	53.8211	-78.9865	2.65
CH33	CH25_024	8/22/2025	9:13	53.7211	-79.0545	1.23
CH33	CH25_025	8/22/2025	9:33	53.7313	-79.0524	1.59
CH33	CH25_026	8/22/2025	10:01	53.7305	-79.0753	1.96
VC14	WM25_004	8/25/2025	12:49	52.5723	-78.7477	0.59
VC14	WM25_005	8/25/2025	13:16	52.5791	-78.7476	1.6
VC14	WM25_006	8/25/2025	13:53	52.5935	-78.7461	1.44
VC14	WM25_007	8/25/2025	14:13	52.6032	-78.7472	1.2
VC14	WM25_008	8/25/2025	14:46	52.6030	-78.7318	0.85
Maquatua River	WM25_009	8/26/2025	11:30	52.9980	-78.8124	na
VC11	WM25_010	8/28/2025	10:48	52.9721	-78.9058	0.57
VC11	WM25_011	8/28/2025	11:23	52.9683	-78.9392	1.48
VC11	WM25_012	8/28/2025	12:13	52.9914	-78.9230	1.81
VC11	WM25_013	8/28/2025	13:13	52.9846	-78.9229	0.76
VC11	WM25_014	8/28/2025	13:47	52.9843	-78.9012	1.29
VC12	WM25_015	8/29/2025	11:36	52.8760	-78.8760	0.93
VC12	WM25_016	8/29/2025	12:10	52.8613	-78.8422	1.16
VC12	WM25_017	8/29/2025	12:44	52.8632	-78.8451	1.38
VC12	WM25_018	8/29/2025	13:09	52.8601	-78.8588	1.27

Underwater Videos

During the July trip, the UM team went out with Melanie Leblanc, who was taking underwater videos with a GoPro. This was continued on during the August trip as well. These videos provide visual context to where water and sediment samples are taken, as well as may provide context to results such as SPM.

The protocol developed for this work included:

- 1) Attach GoPro to an extendable pole (Figure 1)
- 2) When at a site begin by taking a photo on a phone that is equipped to record GPS coordinates with each photo.

- a. It is best for this specific objective (to capture what the bottom looks like under the water at a specific station), to have the boat anchored.
- 3) Place the camera under the water and move it around the area with the camera facing the bottom. The time the camera is under the water is upwards of 30 seconds.

Upon downloading videos from the GoPro, the UM team discovered that a majority of the videos did not have time/date stamps. This may have been the version of GoPro they had and/or the way it was set up. This meant the locations had to be matched to sampling locations by going through the video files. In Wemindji, Cassidy Warnett began saying the station name at the beginning of each video which was helpful in identifying most of the videos. This should be added to the protocol in the future, or saying the date and time, so it can be matched to the photo taken.

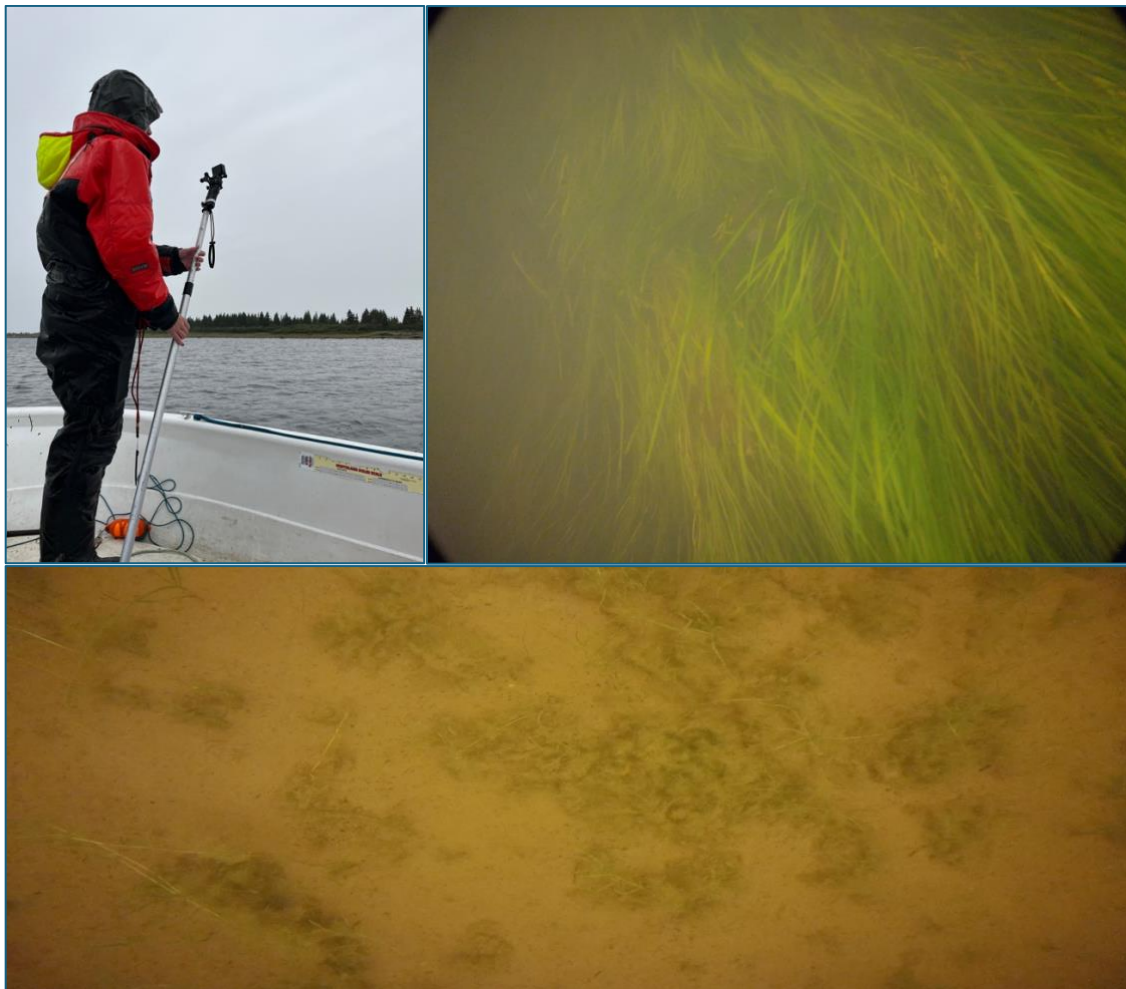


Figure 1. Top left depicts undergraduate student Cassidy Warnett with the GoPro setup about to start a video in CH33 August 2025. Top right is a screenshot of a video taken in CH34 in August (Sampling station CH25_020). Bottom is a screenshot of a video taken from VC14 in August 2025 (Sampling station WM25_006).

Sediment Sampling

At each water sampling station, the last operation performed was a sediment grab with small Ponar grab sampler, to ensure no contamination of water samples with sediment that got stirred up and resuspended in the water column.

The grab sampler was deployed from the side of the boat at each site. At some locations samples were captured with a wooden pole or oar provided by a land user, if the grab sampler was not available to be used. The objective was to collect a sample of the sediment that eelgrass was growing in, or at some stations, where it was not growing in. A large enough sample of mud was attempted to be collected, so we would be able to measure the organic carbon content (i.e., avoid sand, unless that is where the eelgrass is growing). In July the UM team also captured some eelgrass which was provided to the eelgrass team should it have been needed. July trip samples were catalogued, photographed and items found within each sample bag were recorded. Items observed within the sediment ranged from rocks, algae (various kinds of macroalgae including fucus or rockweed), eelgrass, bivalves (mussels, clams), and invertebrates. Figure 2 shows some of the material captured in the grab sample. Some stations had a very hard bottom and a sample was not able to be collected.



Figure 2. Examples of items collected from sediment grab sampler in CH33 in July 2025.

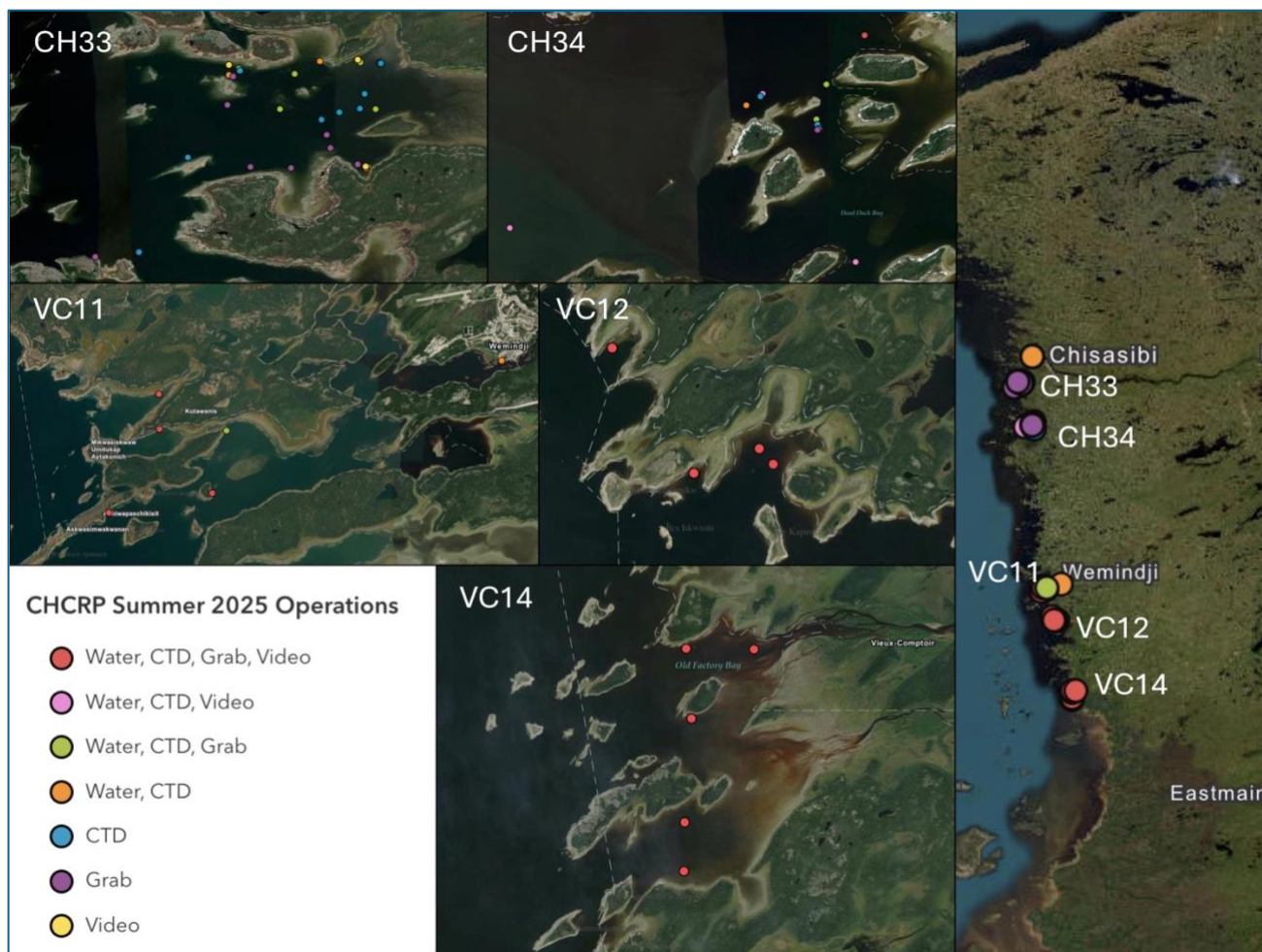


Figure 3. Locations of water and sediment sampling-related operations colour coded by operations conducted. Some operations were grouped together to avoid overlapping points where operations were conducted at the same coordinates. Water = water sample collected, CTD = Castaway CTD deployed, Grab = sediment grab was collected, Video = GoPro video was taken of sea bottom. Samples were collected in CH33, CH34, VC11, VC12, and VC14 traplines.

Mooring-Related Operations

Kaushik Gupta led mooring-related operations with support from Zou Zou Kuzyk and Alessia Guzzi in July, and support from Yudhistir Reddy in August. Table 5 lists the locations and dates of deployment of moorings, cameras and IR sensors, Figure 4 depicts the locations in each trapline.

Table 5. Locations and dates of deployment for moorings, trail cameras and IR sensors. July moorings were retrieved in August and redeployed in August at the locations indicated in the table. August moorings were deployed and will remain in the water until summer 2026.

Trapline	Date of Deployment	Latitude	Longitude	Type
CH33	09-07-2025	53.726374	-79.053991	July Mooring
CH34	10-07-2025	53.577638	-78.998285	July Mooring
VC11	09-07-2025	52.990225	-78.928588	July Mooring
VC12	08-07-2025	52.8643	-78.8392	July Mooring
VC14	08-07-2025	52.572297	-78.748888	July Mooring
CH33	22-08-2025	53.575971	-78.997018	Camera and IR Sensor
CH34	19-08-2025	53.578383	-78.996658	August Mooring
CH34	19-08-2025	53.724885	-79.053846	Camera and IR Sensor
VC11	28-08-2025	52.990216	-78.928069	August Mooring
VC11	28-08-2025	52.9924	-78.933179	Camera and IR Sensor
VC12	29-08-2025	52.856588	-78.850509	August Mooring
VC12	29-08-2025	52.855936	-78.843809	Camera and IR Sensor
VC14	25-08-2025	52.576808	-78.752326	August Mooring
VC14	25-08-2025	52.579824	-78.7548	Camera and IR Sensor
LG river bank	21-08-2025	53.791056	-78.895316	Camera and IR Sensor
CH Estuary	19-09-2025	53.826926	-79.052009	Camera and IR Sensor



Figure 4. Locations of moorings deployed in both July and August (July moorings were retrieved in August), and camera and IR sensors in CH33, CH34, VC11, VC12, and VC14.

Moorings Deployments

In July 2025, during the first summer trip, Zou Zou Kuzyk, with the help of the Eelgrass Team, deployed three of the intended winter deployment moorings in Wemindji at the eelgrass monitoring sites in VC11, VC12, and VC14. These moorings were of the same design as the ones deployed in 2024 (Figure 5). In Chisasibi, a mooring was deployed in the CH34 trapline. This mooring setup was different from the ones deployed in Wemindji, as the goal was to determine any events of stratification and to investigate if the source of high sediments in the water column was due to resuspension or carried through river water dispersion. This mooring design included mounting two sets of sensors on a pole, one at the bottom and the other set at 1m above the bottom (Figure 6). The bottom section included a CTTu, PAR, and pressure sensor units, while the top section included only CTTu and PAR units. The goal was to observe the difference in temperature, salinity, turbidity, and light available at two different depths in the water column. Apart from this, the team retrieved the cameras set up in the winter in traplines CH33 and CH34, and pictures from the camera were downloaded for further analysis.



Figure 5. Mooring with cage design. Equipped with sensors to record temperature, pressure, salinity, turbidity and light. The moorings deployed in August were not equipped with a release mechanism for the buoy. These will have to be retrieved by diving in summer 2026.



Figure 6. Mooring deployed in CH34 in July 2025. Before deployment is pictured on the left and after retrieval in August is pictured on the right.

In August 2025, during the second trip, the moorings that were deployed in July were to be retrieved and redeployed for a year-long observation in the five traplines of focus (CH33, CH34, VC11, VC12, and VC14). The team successfully retrieved all moorings, and moved to land to download the recorded data, service and refit the instruments in the cage design (same design as pictured in Figure 5). After refitting the moorings, the cameras and IR sensors were installed (see following section for more details), which informed the general area for mooring deployment, which was determined by bathymetry survey results, prior locations of moorings, and land user knowledge. Four of the five moorings were deployed in CH34, VC11, VC12, and VC14. Since the moorings are supposed to be in the water through the winter, precise estimates were made to determine a safe depth to protect the mooring from being damaged or displaced by ice. Tidal records from the July deployments were used to determine the tidal amplitude and bathymetry information to choose new locations for this year-long deployment. All four moorings were deployed at depths between 2.5 to 3.5 meters based on the tidal conditions during deployment. The team did not deploy the CH33 mooring since we did not find a location that was deep enough near the eelgrass monitoring site.

Camera and IR Sensor Deployments

Based on the photos that came from the trail cameras that were deployed in winter 2025 and retrieved in July, the team decided to replicate the experiment at all eelgrass monitoring sites, as well as the river and the estuarine zone.

For this, we installed trail cameras and Infrared Radiometers on the nearest coastline overlooking the eelgrass beds and the mooring locations (Figure 7). Apogee Infrared Radiometers (IR sensors) were a new addition to the setup; these record the surface temperature of the object it is pointed at every programmed time interval. We set-up this sensor close to the coastline, pointing the sensor towards the water. This will record the water/ice/snow surface temperatures as the seasons pass by. The IR sensors were mounted either on a U-bar post 5 ft above the ground, or attached to a tree close to the coast, tilted at an angle of 15°-20°. The trail cameras were also attached to the U-bar post or tree pointing in the direction of where the mooring was to be deployed. The cameras and IR sensors were installed prior to redeploying the moorings.

The objectives and anticipated outcomes of this setup is to capture in real-time the ice freeze-up and break-up process and events such as resuspension of sediments due to storms or high winds, all while recording surface temperature of the water/ice/snow.



Figure 7. Examples of how cameras and IR sensors were set up along the coast. Cameras and IR sensors were pointed towards the coast to capture the water/ice around where the moorings are deployed.

Data Processing

After the moorings were retrieved in August, the datasets were extracted from the instruments using the Ruskin App and RBR software; these applications are software platforms that are used to program the instruments and retrieve the collected data. These datasets were then cleaned and analyzed using MATLAB after returning to UM.

Images collected from the trail camera were manually sorted and are currently undergoing processing to create an animation of major ice events, along with ice-melt and break-up. Data from the IR sensors were downloaded as CSV files, which were cleaned and analyzed using MATLAB.

Apart from data collected from the instruments we also looked into meteorological parameters like wind speed and direction, cloud cover, and precipitation. These observations were made using 24-hour mean reanalysis products from ERA5.

Next Steps

Communication Plan

The following are pieces being created with the intention to share information with partner organizations, and community members. All pieces are aimed to be completed before the end of December 2025.

- Summer fieldwork report
- StoryMap of all 2025 fieldwork conducted in Eeyou Istchee (winter and summer work)
- StoryMap of underwater videos taken at each sampling site, with shared videos from Melanie Leblanc (Niskamoon), and will communicate further with eelgrass team.

Mooring-related Operations – Next Steps

- Moorings that were deployed this past summer will be hopefully retrieved in summer 2026.
- The mooring for CH33 that was not able to be deployed this past summer is planned to be deployed in winter 2026.
- Cameras will have their batteries and memory cards changed, and thermal (IR) sensors will have their data downloaded in winter 2026 (March/April).
- A weather station is planned to be set up in winter 2026.

Sample and Data Analysis

All water and sediment samples were brought back to the University of Manitoba. Samples were either sent to outside laboratories (specifically $\delta^{18}\text{O}$, DOC, and $\delta^{13}\text{C}$ -DOC), or stayed at UM for further analysis. Once results have been received or downloaded, the data will be further cleaned and kept with UM. Analysis is ongoing, as is the organization of results as they are received. See section above for mooring data, and photo analysis information.

Suggestions/Comments for Future Fieldwork

- Creation of an algae characterization guide to streamline descriptions made by different teams and individuals. In essence, something that would characterize what ‘filamentous’ would mean etc. This would include photos and descriptions.
- Land users, Melvin Kakabat and Calvin Kakabat suggested that we visit VC10 (their trapline) because there are eelgrass beds there as well.

Acknowledgments

The work during this winter 2025 was made possible by the support of Ernie Rabbitskin, Geraldine Mark, Melanie Leblanc, Cree tallymen, and land users who provided advice and support and worked with the research team along the coast. We particularly thank John Sam, Charles House, Donovan House, Melvin Kakabat, Calvin Kakabat, Henry Stewart, Rene Atsynia, and Ernie Hughboy for their guiding and expertise on the land.

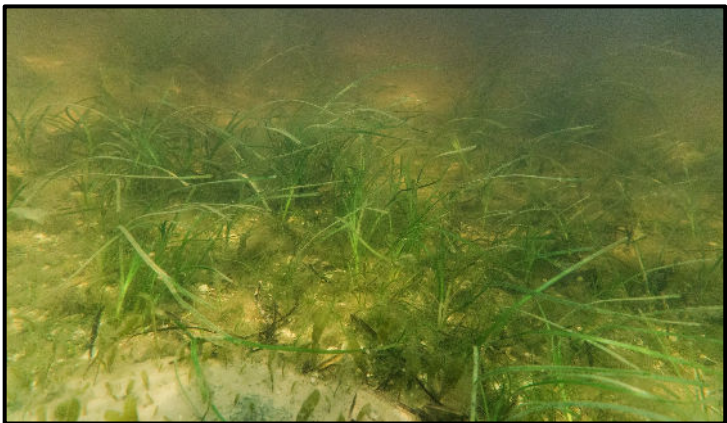
FALL 2025 EELGRASS / SHIKAAPAASHKWH RESEARCH UPDATE FROM THE CHCRP COASTAL TEAM- WASKAGANISH



*Waachiyaah from the Eelgrass Team and **THANK YOU** for a great summer of research in Waskaganish!*

Our main question this summer:

“How is eelgrass recovering around Waskaganish?”



What we did in Waskaganish this summer
Monitored the health of 7 eelgrass meadows

What we’re doing now in the lab

- Processing** eelgrass and water samples
- Analyzing** data from the monitoring sites
- Planning** for next year’s research



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Facebook!

See where
we went!
(Storymap) ▶



***Thank you to EMRWB
for hosting us, and to
Harold and Brandon for
contributing to the field
research! We look
forward to seeing you
next summer!***

