

Herbivory Network meeting at the Canadian High Arctic Research Station

The Herbivory Network 2023 meeting took place in Cambridge Bay, June 13-16, 2023. The aim of the meeting was to advance and discuss ongoing projects and start new collaborations that will contribute to a better understanding of the effects of herbivores on arctic ecosystems. The meeting included an open public lecture and a short field visit. Eleven researchers from five Arctic countries participated in person in the meeting, and online access was provided to other participants to some of the discussion sessions. The meeting was hosted at the [Canadian High Arctic Research Station \(CHARS\)](#), a leading research facility run by Polar Knowledge Canada (POLAR) in the community of Cambridge Bay, Nunavut. Meeting participants also had the chance to visit the research station and the share about various (contrasting) field contexts stimulated by the direct field experience of the High Arctic tundra



Participants to the Herbivory Network meeting at the Canadian High Arctic research station in Cambridge Bay included, from left to right, Nicolas Lecomte (Université de Moncton), Noémie Boulanger-Lapointe (University of Victoria), Laura Barbero Palacios (Agricultural University of Iceland), Esther Lévesque (UQTR), Isabel Barrio (Agricultural University of Iceland), Tiina Kolari (University of Eastern Finland), David Hik, Polar Knowledge Canada and Simon Fraser University, Cléa Frapin (Université de Moncton), Stefaniya Kamenova (University of Oslo), Katrine Raundrup (Greenland Institute of Natural Resources), Mathilde Defourneaux (Agricultural University of Iceland). Online participants included Cole Brachmann (Gothenburg University), Guillermo Bueno (Pyrenean Institute of Ecology), Amanda Koltz (University of Texas) and James Speed (Norwegian University of Science and Technology).

Meeting agenda

During this Herbivory Network meeting a strong emphasis was placed on presentations by participants on their current research projects. As well, a field session included the demonstration of an observational protocol for data collection. We also had a brainstorming session on the potential contribution of Herbivory Network researchers to the ICARP IV process and an open public lecture attended by community members in Cambridge Bay.



Monday June 12, 2023 – arrival of participants to Cambridge Bay

Tuesday June 13, 2023

8:30-10:00 Presentations by participants on ongoing research projects and initiatives (*online access* to other participants)

10:30-12:00 Presentations by participants (cont.)

13:00-15:00 Coordinated protocols to assess the effects of herbivore diversity on tundra

15:30-17:00 POLAR Knowledge Canada and tour of CHARS

19:00-20:00 Open public lecture: *Greener Arctic: more shrubs, less berries?*
By Prof. Esther Lévesque, Université du Québec à Trois-Rivières

Wednesday June 14, 2023

8:30-16:00 Coordinated protocols (cont.): implementation in the field

16:00-17:00 Presentations by participants (cont.)

Thursday June 15, 2023

8:30-15:30 Presentations by participants (cont.)

16:00-18:00 Brainstorming session on contribution of HN to the ICARP IV process

Friday June 16, 2023

8:30-10:00 Future collaboration within the network (*online access* to other participants)

10:30-12:00 Closing remarks and conclusions

Activities during the meeting

- **Presentations by participants:** during the meeting participants were encouraged to give a short presentation about their ongoing research, ideas for future collaboration or anything they wished to share with the network. Presentations from in-person and online participants covered topics including updates from the HN Soil Working Group, research on aapa mires, a systematic review on the effects of herbivore diversity on tundra ecosystems, trophic food webs across the Arctic, or the effects of fertilization and goose grazing exclusion on permafrost, among others.
- **Coordinated protocols to assess the effects of herbivore diversity on tundra:** within the IRF-funded project TUNDRASalad that aims at investigating the effects of herbivore diversity on tundra ecosystems, we have designed an experimental and an observational protocol for data collection across tundra sites (<https://herbivory.lbhi.is/tundra-exclosure-network-texnet/>). WP leader Elina Kaarlejärvi successfully secured funding from INTERACT Transnational and Remote Access to implement the observational protocol in Cambridge Bay and other INTERACT stations across the Arctic. Data collection during the meeting was not possible because it was too early in the season, but we demonstrated the use of the protocol so that meeting participants can then implement the protocol at their study sites in summer 2023 or 2024. The demonstration included a visit to the field with discussions on the ground.
- **Brainstorming session on contribution of HN to the ICARP IV process:** the Fourth International Conference on Arctic Research Planning (ICARP IV; <https://icarp.iasc.info/>) lasting from 2022 until 2026 is a planning

process that will engage Arctic researchers, Indigenous Peoples, policy makers, residents and stakeholders from around the world to collegially discuss the state of Arctic science, and the place the Arctic occupies in global affairs and systems. During the HN meeting participants unanimously acknowledged the significance and timeliness of the ICARP IV process and expressed their eagerness to contribute using a horizon scanning approach to identify research priorities in Arctic herbivory for the next decade. An online survey was developed and will be distributed to Herbivory Network members and to other interested researchers. The survey responses will be compiled and organised into thematic categories by a core working group. Subsequently, an in-person workshop is scheduled for 2024 to further refine the emerging themes and determine key action points. We anticipate that this collaborative process will be beneficial to ICARP's objectives while fostering the generation of new knowledge in the field of Arctic herbivory.

- **Public lecture:** Prof. Esther Lévesque from the Université du Québec à Trois-Rivières, gave a talk titled “*Greener Arctic: more shrubs, less berries?*” where she presented her work with local communities in the Canadian Arctic. Community members in Cambridge Bay attended the meeting and discussed their knowledge on berries in the region.

Background about Herbivory Network

The Herbivory Network (HN) is a collaborative research initiative (<http://herbivory.lbhi.is>). Since its establishment in 2014, the HN has worked towards addressing the role of herbivory in Arctic and alpine ecosystems and developing new approaches to harmonise research efforts. The goal of HN is to foster collaborations within and across disciplines, facilitate multi-site comparisons, and work towards understanding the complexity and variability of responses of tundra ecosystems to herbivory.

Funding and support

Funding to organize the meeting was provided by the Terrestrial Working Group of IASC, supporting especially the participation of early career scientists. Transnational Access from INTERACT allowed researchers to participate in the meeting to demonstrate the implementation of the field protocol that will be used by researchers at their own field sites. Polar Knowledge Canada provided in-kind support, including accommodation, access to meeting facilities and logistics support. The Herbivory Network is a UArctic Thematic Network. Many of the discussions held during the meeting contribute to the TUNDRAsalad project (grant nr. 217754), funded by the Icelandic Research Fund.

