# Herbivory Network - Newsletter December 2014

## Newsletter Contents



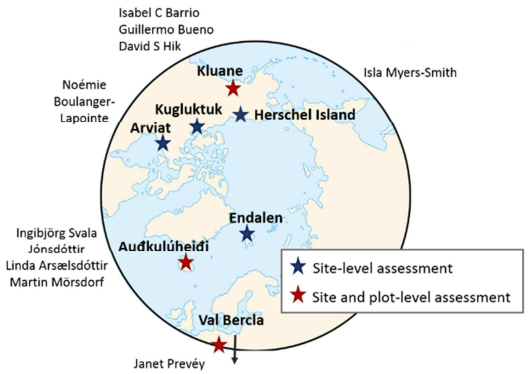
### 1. Welcome to the 2nd Herbivory Newsletter: What has happened after Helsinki??

Dear Herbivory Network members!

The 2nd edition of our newsletter will give you a brief overview of what happened since our workshop during the ASSW in April 2014. The workshop highlighted the need for standardized protocols which enable us to assess herbivory within a range of study sites throughout the Arctic. HN members developed a first trial of such a protocol for ITEX sites, which has been implemented within several sites this summer. In addition, the Network hosted a meeting in the beginning of December to develop a more general version of the protocol that could guide researchers to assess herbivory within their study sites throughout the Arctic tundra. The Herbivory Network also hosted a session at the Arctic Biodiversity Congress in Trondheim where a selection of speakers presented their experience in assessing herbivory within their research. Our ideas for a standardized sampling protocol were also presented as a poster contribution at the Arctic Change Conference in Ottawa this month.

The take home message from all these activities is that researchers from different places in the Arctic require a standardized way of assessing herbivory as soon as possible. Even though the task is challenging, the HN brought several studies on the way that are ready to become public during the next year!

### 2. Implementation of the ITEX herbivory protocol during summer 2014




The trial version of the ITEX herbivory protocol (http://herbivory.biology.ualberta.ca/herbivory/protocol/ ) has been applied within several field sites this summer. The relative herbivore activity was assessed on “site-level” scale within study sites in Canada, Iceland, Switzerland and Svalbard. In addition, three of these sites conducted the “plot-level assessment”, measuring herbivore activity within and outside open top chambers. Read about first experiences with the ITEX herbivory protocol on our

homepage and feel free to implement it in your ITEX site (http://herbivory.biology.ualberta.ca/category/itex-protocol/)!

**3. Herbivory Network meeting and conference session at ABC in Trondheim, December 2014**

The Herbivory Network hosted a meeting in Trondheim on December 1, prior to the Arctic Biodiversity Congress. The initiative was led by Virve Ravolainen and Eeva Soininen. The aim of this meeting was to develop a conceptual model to assess herbivory in a standardized way throughout the Arctic tundra. The group decided that the protocol should be based on the main research questions that were developed during the workshop in Helsinki:

- **QUESTION 1.** How do herbivores modulate the responses of tundra vegetation to environmental change?
- **QUESTION 2.** How do herbivores affect tundra vegetation? What causes temporal and spatial variation in the outcomes of plant-herbivore interactions?

The conceptual model will be further developed and submitted to a scientific journal in the first half of 2015. Soil processes that are affected by herbivory were also discussed, and some participants within the HN will work on a separate soil protocol which could become a sister publication. This effort will be led by Maria Väisänen, Maria Tuomi and Guillermo Bueno.

In addition, the Herbivory Network hosted a session at the Arctic Biodiversity Congress in Trondheim, on December 2. Four invited speakers, Ken Abraham (Trent University, Canada), Kari Anne Bråthen (University of Tromsø, Norway), Toke Høye (Aarhus University, Denmark) and Jason Taylor (U.S. National Park Service) presented their experience from a number of studies and monitoring programs, and pointed out their needs toward a standardized protocol to assess herbivory throughout the Arctic.

The session ended with the impression that there is a strong need for immediate implementation of standardized herbivory assessments for ongoing and future studies throughout the Arctic.

**4. Presenting our ideas at the Arctic Change conference in Ottawa, December 2014**

Isabel Barrio and David Hik represented the HN at the Arctic Change conference in Ottawa, 8-12 December, with a poster titled “Role of herbivory in northern and alpine environments: towards a common approach” (see below). The HN emphasized once more the need for a standardized way of assessing herbivory in these ecosystems. Isabel also attended and made a brief presentation at the Canadian Arctic Terrestrial Biodiversity Monitoring Network Meeting, organized by Marlene Doyle from the Terrestrial Steering Group of the Circumpolar Biodiversity Monitoring Plan.

ARCTIC CHANGE 2014
8-12 DECEMBER - OTTAWA CONVENTION CENTRE - OTTAWA, CANADA

HERBIVORY NETWORK
STUDYING HERBIVORY IN ARCTIC AND ALPINE ECOSYSTEMS

# Role of herbivory in northern and alpine environments: towards a common approach

Virve RAVOLAINEN[1], Eeva SOININEN[2], C Guillermo BUENO[3], David S HIK[3], Ingibjörg S JÓNSDÓTTIR[4,5], Martin MÖRSDORF[2,4,5], Isabel C BARRIO[3]

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## why?

- **Plant-herbivore interactions** are central to the functioning of tundra ecosystems
- Outcomes of these interactions **vary regionally**

We need a **common approach** to assess how and why the role of herbivory varies at **global scales**!

## what?

A **common approach** that:

- ✓ Enables comparisons within and between regions, and among species
- ✓ Is applicable to Arctic and alpine tundra
- ✓ Uses state-of-the art ecological sampling methods
- ✓ Connects with complementary initiatives (e.g. ITEX, GLORIA, etc)

## how?

- Using well-replicated **study designs** to match **scales of processes** in herbivores and plants
- Selecting **prioritized questions** for cross-site comparisons
- **Synthesizing** information and experience available to identify strengths and weaknesses in our knowledge
- Establishing guidelines for **coordinated studies** at **long-term observation** sites

## about us

HERBIVORY NETWORK
STUDYING HERBIVORY IN ARCTIC AND ALPINE ECOSYSTEMS

*The Network presently has more than 100 members from 11 countries, committed to developing coordinated research efforts to improve understanding of herbivory in Arctic and alpine environments.*

*The Network welcomes new participants sharing these interests.*

http://herbivory.biology.ualberta.ca

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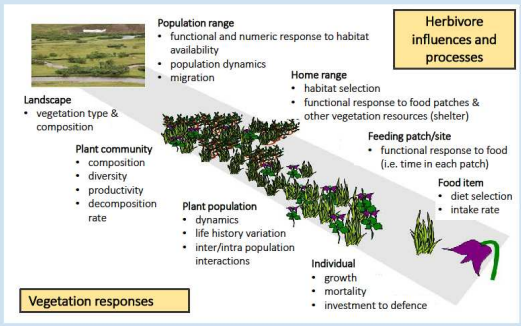
## main challenges

Plant-herbivore interactions occur at different **temporal and spatial scales**



**5. What comes next?**

Many things have been brought up during this year and 2015 will wait with further tasks for our group. We are working on several manuscripts that will be submitted to scientific journals and the first versions of a general protocol to assess Tundra Herbivory will become available to potential users. Another goal of the HN is to strengthen the collaboration with other initiatives, such as ITEX, GLORIA and CBMP.

You will be kept updated about all ongoing activities via our homepage or our newsletters.

Until then, the HN wishes all of you a good start into 2015!