

## Herbivory Network—Newsletter November 2016

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### Late greetings from the HN meeting in Reykjavik

We had a great meeting in Reykjavik, 15–17 September. The agenda of the meeting was to launch new collaborative projects, to strengthen the ongoing ones and to form strategies for steering and research collaboration within the network. All those were scheduled for an intensive one-and-a-half-day with, of course, some Icelandic fun in between.

During the meeting, the following projects were initiated or further planned:

- **An assessment on the functional diversity of herbivore assemblages across the Arctic** led by James Speed. This work follows from the Barrio *et al.* (2016) data material and aims to summarize the functional groups and phylogenetic diversity of arctic herbivores.
- **A systematic review on the effects of herbivores on tundra soils** led by the soil working group (Maria Väisänen, Guillermo Bueno, Maria Tuomi and Francis Brearley). This work will revise the current knowledge on the impacts of herbivores on tundra soils through literature searches. A report of this workshop will be soon uploaded to the HN website.
- **Identification of data gaps in tundra herbivory research** led by Eeva Soininen, James Speed and Jennifer Forbey. Eeva and James are developing a systematic protocol that aims to create a systematic map of the conducted herbivory research. Jennifer will lead a review on what kinds of paradigms have been prominent in herbivory research for the last decades.
- **The assessment on the effects of historical grazing within tundra sites** led by Martin Mörsdorf. In the workshop discussion on the methods in defining historical grazing effects within tundra study sites was initiated, which could be developed into a protocol during the next meetings.

At the end of the meeting we concluded that the Herbivory Network should continue to be an open, active network where members are encouraged to take active roles in developing new initiatives—and use the opportunities of the network. We aim to make clearer who the contact persons and responsible members are for particular activities such as publications, protocols, meetings and organizational tasks.

A long report on the specific details will be made available soon on the website.



Participants of the HN meeting 2016 in Reykjavik, Iceland

## Picking up the plums from previous HN meetings

To show you that HN has not just been for fun, the first two papers initiated by HN are out now and many more are under preparation!

The starting group of HN published a paper on the aims and goals of the Herbivory Network in a special issue of Polar Science. The paper "***Herbivory Network: An international, collaborative effort to study herbivory in Arctic and alpine ecosystems***" summarizes the need for herbivory studies and presents the trial protocols designed by HN.

Isabel has also been leading the work on the drivers behind herbivory diversity in the Arctic. This paper came recently out in Global Ecology and Biogeography with the title "***Biotic interactions mediate patterns of herbivore diversity in the Arctic***". This work collected information on the distribution of all 73 vertebrate herbivore species in the Arctic, and showed that herbivore diversity in the Arctic is higher in areas with greater plant productivity and with higher diversity of predators. The interactions between plants, herbivores and predators were shown to occur over large spatial scales across the Arctic in ecosystems where patterns of biodiversity were supposed to be affected mainly by temperature variation.

Also initiated in Trondheim, in late 2014, Virve Ravolainen is leading the writing of a paper on "***How to formalize the use of expert knowledge in making study designs for plant-herbivore interactions***". The proposed approach combines different information layers of abiotic conditions, vegetation and grazing patterns as a possible way to overcome context dependencies of the various spatial scales in assessing vegetation and herbivory feeding patterns. Virve is also working on a methodological paper to define "***What is an efficient design for pellet counts of vertebrate herbivores***".

Also the **three protocols**, developed by the members of HN, are being worked on. Preliminary results from the protocol to assess herbivory within the ITEX network were gathered and an updated version of the protocol was released in summer 2016. Sarah Rheubottom is working on the data from the invertebrate herbivory protocol to assess background invertebrate damage around the Arctic. The newest protocol, launched by the soil working group, was tested this summer and a refined version will be out before the summer.

## New Web Page coming soon

We are renovating the HN website (<http://herbivory.biology.ualberta.ca>). This (tremendous) task is being led by Katie Christie. The website will continue be hosted by the University of Alberta, as kindly offered by Dave Hik. We aim to clearly identify contact persons for the ongoing projects and highlight the past and future projects of HN. We also aim to improve the sharing of information on the specific projects, facilitate joining the network and try to be interactive by asking for feedback on e.g. the protocols. Stay tuned for the updated website!

## The next meetings in Prague, Victoria and Yamal

In the meeting we decided to have a general meeting every second year. However, on top of that, we will keep more frequent working meetings related to on-going papers and protocols. We will try to have these meetings back-to-back with larger conferences or other meetings that many of the involved HN members will attend.

The next **general meeting** will be held in **Yamal during fall 2018**, and the local host will be Alexander Sokolov. The plan is that the meeting will span several days, with time for HN members to present their work.

An opportunity for a **working meeting** in the nearest future could be organized in parallel to the Arctic Science Summit Week in **Prague in the beginning of April 2017** (<http://www.assw2017.eu/>). The local host will be Petr Macek. We intend to have 1–2 day workshops for the groups to work on specific projects (the ongoing initiatives are summarized on the first page of the Newsletter).

As well, we are trying to organize a **session and HN side-meeting** during the annual conference of the Canadian Society for Ecology and Evolution in Victoria BC, next May 7-11 2017 (<http://www.csee2017.ca/>).

The members of HN are actively seeking for funding opportunities for the meetings. If you have any suggestions, we are eager to hear them!



*Sasha and the new symbol of HN meetings.*

## Other announcements

- Postdoc position in Tromsø: there is an opening for a 3-yr postdoc position available in Tromsø, to work with the ECOGEN project. The main goal of this project is to develop high taxonomic resolution ancient environmental DNA methods in order to evaluate how drivers of change (human, climate, biota) have affected species persistence and ecosystem state shifts in arctic-alpine biomes. Deadline for applications is Nov 20, 2016. For more information please contact Kari Anne Bråthen ([kari.brathen@uit.no](mailto:kari.brathen@uit.no)). <https://www.jobbnorge.no/en/available-jobs/job/129852/postdoctoral-fellow-in-biotic-interactions-at-the-faculty-of-biosciences-fishery-and-economics>
- Jennifer Forbey is recruiting a PhD student to work in her lab at Boise State University on a project that integrates physiology, chemistry, pharmacology and behavior to assess molecular and behavioral responses of animals to stress (food and fear). The project could focus on either conservation and management of wildlife or biomedicine depending on the interests and expertise of the student. For further information please contact Jen ([jenniferforbey@boisestate.edu](mailto:jenniferforbey@boisestate.edu)).

**Full references to recent HN papers:**

Isabel C Barrio, David S Hik, Ingibjörg Svala Jónsdóttir, C Guillermo Bueno, Martin A Mörsdorf and Virve T Ravolainen (2016) Herbivory Network: an international, collaborative effort to study herbivory in Arctic and alpine environments. *Polar Science*, 10: 297–302.

Isabel C Barrio, C Guillermo Bueno, Maite Gartzia, Eeva M Soininen, Katie S Christie, James D M Speed, Virve T Ravolainen, Bruce C Forbes, Gilles Gauthier, Tim Horstkotte, Katrine S Hoset, Toke T Høye, Ingibjörg Svala Jónsdóttir, Esther Lévesque, Martin A Mörsdorf, Johan Olofsson, Philip A Wookey and David S Hik (2016) Biotic interactions mediate patterns of herbivore diversity in the Arctic. *Global Ecology and Biogeography*, 25: 1108–1118.