



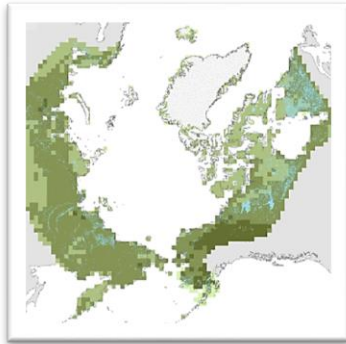
Herbivory Network - Newsletter January 2016

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1. Time flies – an overview of 2015!

It's been a long while since our last newsletter – see? We promised not to fill your inbox! But many exciting things have happened over this last year. The HN had its first birthday in April, we had a busy summer counting poo and chewed leaves, we toured the world attending conferences in Japan, Iceland, Sweden, Scotland, and Canada, and Dr. Martin Mörsdorf, member of the steering group, defended his PhD last December.

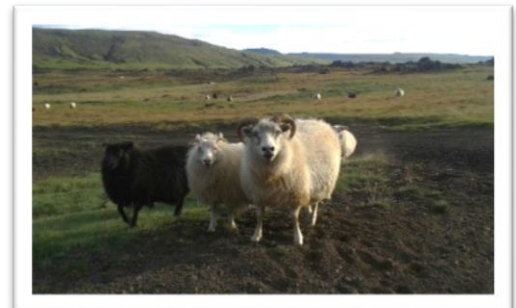


Map of vertebrate herbivore diversity in the Arctic. Darker colours indicate higher species richness. [Map: Maite Gartzia]

These activities largely contributed to projects that we started the previous year and some new initiatives. For example, some of us have been working on an analysis of **patterns of herbivore diversity** and their drivers in the Arctic. Interestingly, we found that the species richness of vertebrate herbivores (birds and mammals) in the Arctic is strongly and positively linked to primary productivity and the species richness of predators. When analysed separately, the richness of bird and mammal herbivores was also related to the distance from the coast: bird species richness was higher in coastal areas, and mammal richness was higher further inland. Our results suggest that biotic interactions, with either higher or lower trophic levels (or both) can drive patterns of species richness of herbivores at a biome-wide scale. The manuscript has been submitted and is now under review – fingers crossed!

We also attended the **ITEX conference** in Uppsala last September, where we had a small [workshop](#) on the impacts of herbivory, both by vertebrates and invertebrates, within experimental warming manipulations, led by Johan Olofsson, Ingibjörg Svala Jónsdóttir and Isabel C Barrio. 16 participants attended the workshop, and we had very interesting discussions on the limitations of current approaches and potential solutions that could be implemented. We hope to have a summary of the workshop in the near future.

In Iceland we had the chance to organize a [scientific session and a roundtable discussion](#) on **sheep grazing in Iceland** during the conference of the [Icelandic Biological Society](#). Sheep grazing is a hot topic in Iceland, but surprisingly, there is relatively little published research on the ecological impacts in tundra rangelands. Most studies have been presented in conferences and meetings or published in reports. We are starting a review project to dig out



information from the grey literature. This project is led by Bryndís Marteinsdóttir, Isabel C Barrio and Ingibjörg Svala Jónsdóttir.

2. Invertebrate herbivores in the Arctic are a hot topic

In summer 2015 we collected samples at 22 sites across the Arctic, using a [common protocol](#) to measure background invertebrate herbivory in the tundra. Thank you so much for all the time spent collecting and pressing leaves! This study will contribute a basic understanding of the occurrence and intensity of invertebrate herbivory at different tundra sites, and will help develop a more general protocol to measure invertebrate herbivory in tundra.



Sarah Rheubottom will be working on the background herbivory project for her MSc at the University of Alberta. Welcome Sarah!

We are very happy to welcome Sarah Rheubottom, a new MSc student at the University of Alberta, who joined the team in January 2016. Sarah will be working on the background herbivory project. She will be presenting a poster on her project at the Oikos meeting in Turku – don't miss out!

And Arctic invertebrates are a hot topic indeed! HN members Ashley Asmus and Toke Høye are organizing a symposium entitled 'Arctic plant-insect interactions' during the [International Congress of Entomology \(ICE\)](#), hosted by the Entomological Society of America (ESA) next September in Orlando, Florida, and [NeAT](#). The symposium's talks will cover a variety of emerging topics in Arctic plant-insect interactions, including herbivore outbreaks, linkages between aquatic insects and terrestrial plants, mosquito ecology, and butterfly conservation. This session will be a great opportunity for any arctic entomologist to help develop future collaborations and international monitoring projects. Stay tuned!

3. Work in progress

During the first years of herbivory networking we have quickly realized that one of our goals, to write common protocols for use in multi-site comparisons is actually a major undertaking. Currently we are working on two manuscripts that talk about methods, at somewhat different levels. One paper discusses the step of making study designs that target herbivory and the other aims at improving field measurements of herbivore abundance.

"Making study designs that target herbivory" The Herbivory Network hosted a workshop at the Arctic Biodiversity Congress in late 2014, where we discussed a procedure that would help in making study designs that target an important ecological interaction; herbivory. The idea is to present a set of questions that will serve as guidance in how to use expert knowledge when designing studies within the broad topic of herbivory. This manuscript is alive and kicking, and we aim at finalizing it in 2016.

"Poo counts" As a first step in developing common methods for measuring vertebrate herbivore loads in tundra, we collected data for a method study on pellet count. We will compare different ways of counting pellets in the field, and relate them to other available information on herbivore abundance. The goal is to better understand what we actually measure when counting pellets, and whether the method seems consistent between ecosystems. A very nice dataset is being finalized for analysis as we speak, from the Canadian, Nordic, and Russian Arctic, including most of the common large vertebrate herbivores. Should anyone have data to hand in, or other kind of contribution to this work, now is the time! Please contact Virve Ravolainen.

4. What's next?



In the immediate future, some of us will be attending the [Nordic Oikos meeting](#) in Turku (Feb 2-4, 2016). We are planning on having an **HN informal lunch get-together** on the first day of the conference, Tuesday (Feb 2, 12.00-13.30). If you are planning on attending the conference, or you will be in Turku anyway, please join us!

NordGen – the Nordic Genetic Resource Center and the Soil Conservation Service of Iceland are organizing the conference [Grazing in a changing Nordic region](#) in Iceland in September (12-15). We are planning on having a **general meeting of the Herbivory Network** right after, on **September 15-16**.

Progress on ongoing activities and news will be announced via our homepage and our newsletters. If you have any content that you would like profiled on our website, or any news you want to share with the group, please send it along. Until then, the HN wishes all of you a great 2016!