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HERBIVORY NETWORK: AN INTERNATIONAL, COLLABORATIVE EFFORT TO STUDY HERBIVORY IN NORTHERN AND ALPINE ENVIRONMENTS

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The Herbivory Network (<http://herbivory.biology.ualberta.ca>) is a recent initiative that brings together researchers from Arctic and alpine regions to investigate the role of herbivores in these changing ecosystems. Plant-herbivore interactions are central to the functioning of tundra ecosystems, through their effects on biodiversity, energy flows and nutrient cycling. However, the outcomes of plant-herbivore interactions vary over space and time, leading to different impacts of herbivory at different sites and times. The causes of this variation are not well resolved but are presumably related to ecosystem-specific conditions, such as human management, variations in geological substrate, productivity or diversity among others. To accurately forecast the responses of tundra ecosystems to ongoing environmental changes we need to understand the drivers of the spatial and temporal variation that influence the outcomes of plant-herbivore interactions. Effectively addressing these questions at a global scale requires coordinated research efforts. The Herbivory Network tries to cover this gap, by fostering collaborations within and across disciplines and facilitating multi-site comparisons through the use of common experimental protocols. One of the priorities of the Herbivory Network is to integrate observation sites, methodologies, and metrics used in previous work, to develop a set of common protocols and design a geographically-balanced, coordinated and sustainable distributed experiment. Coordinated experiments and standardized data collection for long-term observations can help address these questions, but require careful planning and coordination. The implementation of these collaborative research efforts will improve our understanding of traditional human-managed systems that encompass significant portions of the sub-Arctic and alpine areas worldwide. Understanding the sensitivity of these systems to ongoing environmental changes will guide appropriate adaptive strategies to preserve their natural values and related ecosystem services.