Impacts of Vegetation Change in the Canadian Arctic: Local and Regional Assessments

Summary

Project Leader

Henry, Greg

The tundra across the Canadian Arctic is already reacting to climate change. Northerners and scientists are observing changes, such as shrubs getting taller and more numerous. The taller shrubs catch more snow, and change the depth and pattern of snow drifting, which could affect travel and caribou migration. Increases in the cover of shrubs will also result in more sunlight absorbed by the leaves and this will cause more warming. The warmer climate will also affect the growth and production of berry shrub species. We study these changes near Arctic communities across the North. Community members are involved in designing the studies and in conducting measurements on tundra vegetation. An important focus of the project is the measurement of changes in amounts of berries produced each year in traditional berry picking areas near the communities. Experimental studies including warming with small open-top greenhouses and altering snow deposition with snow fences have been established to determine effects on vegetation, especially berry shrubs. We also study the insects that pollinate the berry flowers, which is crucial for berry production. These studies have been incorporated into science studies in the local high schools and used to show students how traditional ecological knowledge and scientific studies can be used together. The results will be used in the communities and will contribute to national and international efforts to understand the responses of tundra ecosystems to climate variability and change.

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Publications

Articles Published in Refereed Publications

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Trant, A.J., Jacobs, J.D., and Sable, T., 2012, Teaching and Learning about Climate Change with Innu Environmental Guardians, Polar Geography, 35:3-4, 229-244, Published

Tremblay, B., Lévesque, E. and Boudreau, S., 2012, Recent expansion of erect shrubs in the Low Arctic: evidence from Eastern Nunavik, Environ. Res. Lett, v.7, no.3, 35501, Published

Other Refereed Contributions

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Harris, C., Lemire, M., M. Lucas, M. Kwan, A. Cuerrier, P. Ayotte, Y. Desjardins, A. Marette, S. Dudonné, G. Pilon, M.J. Gauthier, A. Bouchard, E. Labranche, S. Déry, M. Grey and É. Dewailly, 2013, Health benefits of wild berries, seaweeds and other plants in Nunavik, Halifax, ArcticNet Annual Scientific Meeting, 61, Published

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Specialized Publications

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Ferland, S., 2014, Étude sur la pollinisation du bleuet autour de la communauté de Baker Lake (Nunavut), mémoire de maîtrise, Université du Québec à Trois-Rivières, Accepted

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