

2.1 Changing Food Diversity, Wildlife Patterns and Exploitation

Summary

Project Leader(s)

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Effects of climate change on the phenology of populations, the distribution of species, and the food web dynamics of wildlife communities are now apparent. Yet, as Arctic climate continues to warm up, our capacity to measure and predict the responses of biological systems and their cascading effects through food webs, and ultimately their effects on humans, is very limited. We are lacking baseline data on natural systems and are faced with complex interactions among wildlife and humans. Our objectives are first to assess the effects of climate change on wildlife (through effects on the phenology and distribution of species, and the food web dynamics of wildlife terrestrial communities) and then to assess the effects of changing wildlife patterns on the diet and health of humans. (1) Compare and integrate traditional and scientific indicators of change in wildlife populations. This part of the project will concentrate on wildlife species of interest to local communities, such as large mammals, furbearers, and migratory birds; (2) Determine climate change impacts on traditional and recreational fishing. This part of the project will place emphasis on Arctic Char, Atlantic Salmon and Lake Trout, and will establish a network of information exchange with northern communities and northern outfitters who are centrally involved in the recreational fishing industry. (3) Evaluate the potential for changes in the nutritional properties of northern wildlife and implications of a changing climate for the health of northern communities

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Partners

Sea Duck Joint Venture
A.D. Latornell Endowment Fund

Government of Canada Program for International Polar Year
Cree Nation of Wemindji
Wemindji Cree Hunters' and Trappers' Association
Université du Québec à Rimouski
McGill University
Memorial University of Newfoundland
Centre d'études nordiques
Nunavut Wildlife Research Trust
Makivik Corporation
Indian and Northern Affairs Canada - Northern Scientific Training Program
Environment Canada - Canadian Wildlife Service - Northern Conservation Division
Parks Canada - Nunavut Field Unit
Natural Resources Canada - Polar Continental Shelf Project
Environment Canada - Canadian Wildlife Service - Quebec Region
Fonds québécois de recherche sur la nature et les technologies
Environment Canada - Northern Ecosystem Initiative

Publications

Articles Published in Refereed Publications

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Smith, P. A., 2005, ArcticNet Students Participate in International Climate Change Field Course, 2005 ArcticNet Annual Conference Proceedings, 14, Published

Gruyer, N., Gauthier, G. and Berteaux, D. , 2006, Étude comparative de la démographie de deux espèces de lemmings, 31e colloque annuel de la Société québécoise pour l'étude biologique du comportement, 32, Published

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- Morrisette, M., Bêty, J., Gauthier, G. , 2006, Climate and trophic interactions affect the reproductive success of an arctic-nesting bird, 2006 ArcticNet Annual Conference Proceedings, 1, Published
- Graham-Sauvé, M., Bêty, J., Gauthier, G. , 2006, Effects of climate and trophic interactions on the grazing pressure exerted by an herbivore bird on arctic plants , 2006 ArcticNet Annual Conference Proceedings, 1, Published
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- Morrisette, M., Bêty, J., Gauthier, G., 2006, Effet du climat et des interactions trophiques sur la productivité de la Grande Oie des neiges , 31e congrès annuel de la Société québécoise pour l'étude biologique du comportement , 1, Published
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- Gilchrist, H. G., A. J. Gaston, and M. L. Mallory. , 2006, fluctuations and influences of changing sea ice conditions on marine birds breeding in the Canadian Arctic, NSERC workshop on climate change and effects on birds. Simon Fraser University, Vancouver BC, 1, Accepted
- Gilchrist, H. G., 2006, Avian Cholera infecting Northern Common Eider Ducks breeding in Nunavut, Canada: Conservation implications of a growing epidemic, Canadian Wildlife Service Seabird Group Annual Meeting, Ottawa ON, 1, Accepted
- Marcoux, M., Auger-Méthé, M. and Humphries, m., 2006, INFLUENCES OF TIDES ON NARWHAL MOVEMENT AND GROUP SIZE, 2006 ArcticNet Annual Conference Proceedings, 74, Accepted
- Berteaux, D., 2006, Predicting effects of climate change on arctic wildlife: from theory to practice, NSERC/NSF/ESF Workshop - Climate and birds, Vancouver, 1, Accepted
- Berteaux, D., 2006, Effets des changements climatiques sur la composante animale des écosystèmes forestiers, Université du Québec en Abitibi Témiscamingue (invited seminar), 1, Accepted
- Giroux, M.-A., Lecomte, N., Berteaux, D., Bêty, J. and Gauthier, G., 2006, Comment le comportement animal peut construire le méta-écosystème: cas des oies et des renards sur l'île Bylot dans l'Arctique canadien, 31e colloque annuel de la Société québécoise pour l'étude biologique du comportement, 1, Accepted
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- Gilchrist, H. G. , 2007, The winter ecology of eider ducks in the Canadian Arctic, Wildlife Week, Ottawa Library Talk Program, 1, Accepted
- Gilchrist, H. G. , 2007, The effects of climate change on marine birds in the Canadian Arctic, Museum of Nature, Ottawa, 1, Accepted
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- Doiron, M., Gauthier, G. and Lévesque, E., 2007, Impacts of climate change on plant-herbivore interactions in the High Arctic, 2007, ArcticNet Annual Conference Proceedings, 2, Published
- Duchesne, D., Gauthier, G. and Berteaux, D., 2007, Characterization of the winter environment of lemmings in relation to the snow cover in the Arctic, 2007, ArcticNet Annual Conference Proceedings, 43, Published
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- Descamps, S., Gilchrist, G., Reed, E., Bêty, J. and Buttler, I., 2007, Importance of hunting pressure in Greenland on common eider demography at East Bay, Southampton Island, Nunavut, 2007 ArcticNet Annual Conference Proceedings, p. 41, Published
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- McKinnon, L., Bêty, J. and Gauthier, G., 2007, Arctic insectivores: potential effects of climate change via direct and indirect trophic interactions, 2007 ArcticNet Annual Conference Proceedings, p.9, Published
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Cameron, C., Berteaux, D. and Dufresne, F., 2008, Infidélité chez le renard arctique : des femelles comblées, 28e congrès annuel du Centre d'Études Nordiques, , Published

Berteaux, D., 2008, Le renard arctique: un exemple concret de la modification de l'écosystème nordique, Francvert, v.5, no.1, online at: <http://www.francvert.org/pages/51dossierlerenardarctique.asp>, Published

Specialized Publications

Berteaux, D., and Giroux, J.-F., 2004, Population study of arctic and red fox on Bylot Island (Nunavut) in 2004: A summary report, Annual Report, 1-4, Published

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