



SENTINEL NORTH RESEARCH CHAIR ON THE IMPACT OF ANIMAL MIGRATIONS ON ARCTIC ECOSYSTEMS

Faculty of Science and Engineering

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MISSION

Understand Arctic ecosystem's complex interconnections by including the connections created by animals migrating between the North and other parts of the globe.

This research program will study the food webs that migratory birds are part of in order to better understand and predict ecosystem responses to global changes. It will also examine the consequences of new interconnections created by migratory movements.

CHAIR CREATED ON: August 28, 2019

BACKGROUND

The complex issues of the changing North have attracted the interest of a number of research teams. Some are specifically exploring the impact of animal migrations on local ecosystems and populations.

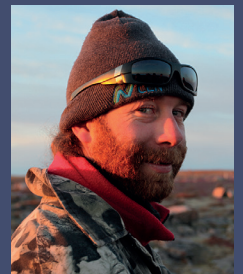
Animal migration is one of the most striking forms of adaptation to environmental changes. Although a major concern in biodiversity management and conservation, the extent to which different species can adjust their migrations in response to man-made environmental changes remains poorly understood. The underlying scientific challenge is to understand the causes of the migratory process and its consequences on the ecosystem.

The work of this Chair has a direct impact on northern populations, which depend on migratory animals and the services provided by their ecosystems.

This project is part of Sentinel North, a transdisciplinary program at Université Laval that strives to better understand the northern environment and study its effects on human beings and their health.

CHAIRHOLDER

Pierre Legagneux earned his master's in population and ecosystem biology from Université de Caen Normandie and a DEA and doctorate in ecology, energetics, and behaviour from Université de Strasbourg. After postdoctoral fellowships in biology at Université Laval and Université du Québec à Rimouski, he was hired as a researcher at Centre d'études biologiques de Chizé – CNRS, where he developed collaborations between France and Canada. Pierre joined Université Laval's Faculty of Science and Engineering in January 2019 as a professor in the Department of Biology. He is a member of the Centre for Northern Studies (CEN) and the Quebec Centre for Biodiversity Science.



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OBJECTIVES

- > Measure physiological, behavioural, and demographic responses of migratory birds to different stressors encountered during their annual cycle
- > Establish dynamic seasonal models of energy transfers between different biomes
- > Examine the potential transport of contaminants carried by migratory animals between the United States, Québec, and the High Arctic
- > Measure the effect of different factors on arctic ecosystems that influence the way of life of local populations
- > Develop integrated systems for monitoring arctic biodiversity that directly involve northern communities

PARTNER

Funded by the Canada First Research Excellence Fund, Sentinel North allows Université Laval to draw on over a half-century of northern and optics/photonics research to develop innovative new technology and improve our understanding of the northern environment and its effect on human beings and their health. This new Chair is part of the major transdisciplinary research program at Sentinel North whose mission includes training the next generation of researchers that will help address some of the complex challenges facing the changing North.



BENEFITS

Migratory animals are an important resource for northern communities. Ecosystem monitoring paired with a demographic study of the populations residing along their migration routes will allow us to determine the size of the populations and predict potential shifts related to when the animals arrive. In addition, an analysis of existing and emerging contaminants will allow us to document the risk of exposure in these communities.

The Sentinel North Research Chair on the Impact of Animal Migrations on Arctic Ecosystems will further strengthen the Sentinel North program's current leadership in northern research through its partnerships with other interdisciplinary initiatives currently underway at Université Laval and in Canada. It will also give Sentinel North an extraordinary opportunity to share its biology expertise at home and abroad.



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INFORMATION

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