

RESEARCH & INNOVATION
**EXPLORING
THE NORTH**





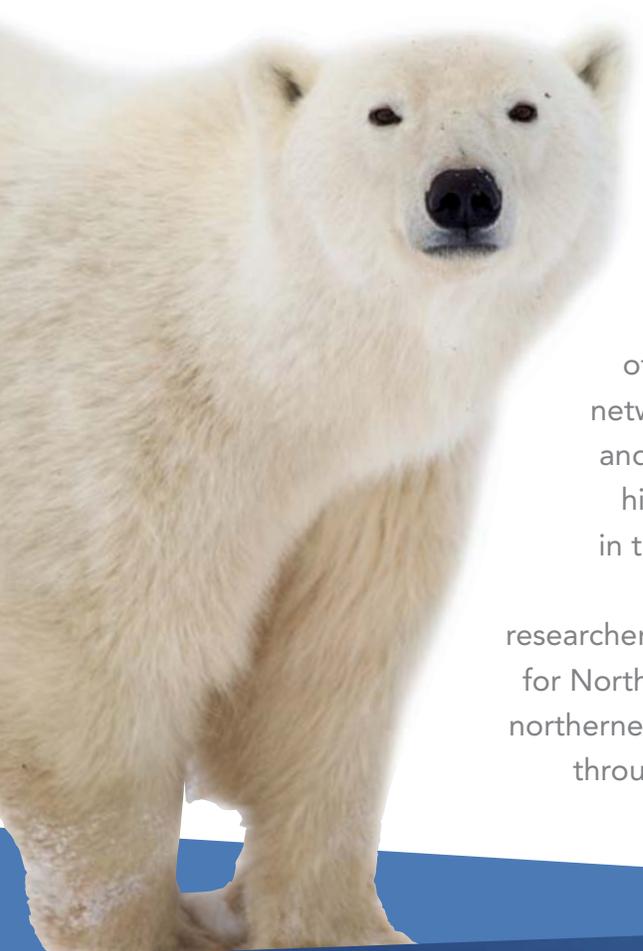
Lakehead University's
identity is firmly
rooted in the lands
of the north.

CREATING THE FUTURE NOW

Drawing on a wide range of interdisciplinary expertise, Lakehead researchers are delving into questions around climate change, social development, tourism, species management, and environmental remediation in the north. This work has already led to over

70 books, papers, and
research reports,
and supports both
undergraduate and
graduate level studies.

Lakehead's Centre for Northern Studies is a key member of the University of the Arctic – an international network of universities, colleges, and organizations committed to higher education and research in the north. Through this broad international collaboration, researchers and students at the Centre for Northern Studies are empowering northerners and northern communities through advocacy, education, and shared knowledge.



ARCTIC ecosystems

Canada's Arctic region is a crucible for global climate change. The relatively low diversity of Arctic ecosystems, and limited human activity, simplify study of the severe impacts of a warming planet.

Finding better ways to anticipate these impacts is part of the research being led by Lakehead University's Dr. Douglas Morris. A Professor of evolutionary and conservation ecology, Dr. Morris also holds a Lakehead University Research Chair in Northern Studies. His pioneering work on habitat selection is allowing him to peer into the ecological and evolutionary future of the planet.

Dr. Morris and his team developed mathematical models called "Isodar Theory" to link habitat, and habitat change, with population densities of focal species. Using this approach, Dr. Morris uses the population densities of Arctic mammals to measure impacts of climate change. New developments to the theory promise an ability to actually predict how evolution in a rapidly changing planet will modify these species in the future.

The team at Lakehead University is part of a large international initiative known as Arctic WOLVES (Arctic Wildlife Observatories Linking Vulnerable EcoSystems). By integrating similar studies from across the circumpolar north, researchers expect to improve their understanding of the impacts of global warming. This work is funded by the Natural Sciences and Engineering Research Council of Canada (NSERC).

Dr. Douglas Morris
*Department of Biology,
Lakehead University Northern Studies Research Chair*

Internationally known as one of Canada's main centres for northern studies, the Centre for Northern Studies at Lakehead is making significant contributions to an array of northern-based research efforts.

ENVIRONMENTAL impact

Environmental impact on human activity is felt everywhere, even on the greatest of the Great Lakes: Lake Superior. In the mid-1980s an international effort to clean up the 15 most polluted locations on Lake Superior began. Twenty-five years later, researchers at Lakehead University are assessing the state of some of these Areas of Concern (AOC).

Dr. Robert Stewart of Lakehead University's Department of Geography is leading a team of environmental researchers. With the recovery process spanning a quarter century, the challenge is both scientific and historic. It also involves matching the needs and desires of the affected communities.

Lakehead's researchers are applying adaptive management techniques and an ecosystem approach, to understand whether an AOC is showing signs of recovery. By matching historic data with current information, this work can help lead to an eventual delisting of these AOCs.

This work is being funded through the Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem (Ontario Ministry of the Environment and Environment Canada).

Dr. Robert Stewart
Department of Geography



THE SOCIAL economy

Activities that are neither state nor profit-driven – play a large role in Canada's north. In the face of significant change going on in the arctic regions, researchers at Lakehead University are working to understand how this third sector of the economy operates, and how it can be supported.

Dr. Chris Southcott is a Lakehead sociology professor and Research Director of the Social Economy Research Network of Northern Canada. His team of investigators are charting the current state of the north's social economy, from the Yukon all the way to northern Labrador.



Using survey tools and community presentations, the network will map the existing social economy of the north, and investigate the varying levels of development in different regions. Researchers plan to look at everything from the impact of mining, to the role that Inuit land claims organizations play.

The ultimate goal is to develop a set of tools and best practices that can be used to enhance communities across the north. This research is supported by the Social Sciences and Humanities Research Council of Canada (SSHRC).

Dr. Chris Southcott
Department of Sociology



NORTHERN tourism

Climate change, and the vagaries of global economics and security, are having far-reaching impacts on tourism in Canada's north. Communities who rely on tourism are facing uncertain futures, and those who have recently invested in the industry are concerned.

Understanding how these changing forces intersect in Canada's north is the task of Dr. Margaret Johnston and her team of Lakehead University researchers. By looking at climate change, tourism trends, community resilience, and community adaptation, researchers are identifying ways to minimize negative outcomes, while taking advantage of new opportunities.

Communities involved in the research are on Baffin Island, in northern Quebec (Nunavik), and northern Labrador (Nunatsiavut). The work focuses on two growing forms of tourism: expedition cruising and terrestrial wildlife.

Using a multi-year case study approach, researchers will learn how best to deal with the complex dynamics of climate change, intermingled with individual communities' tourism goals.

This work is funded by the Social Sciences and Humanities Research Council of Canada (SSHRC).

Dr. Margaret Johnston
School of Outdoor Recreation, Parks and Tourism



CLIMATE change

Northern Ontario is home to the world's most southerly population of polar bears. Living along the southern shore of Hudson Bay and the northern stretches of James Bay, they coexist with the region's Indigenous People, the Northern Cree First Nations.

Understanding how climate change is affecting these southern polar bears, and how that in turn is altering their interactions with humans, is the goal of Lakehead University researchers Dr. Martha Dowsley and Dr. Harvey Lemelin. The two are leading a team that is using traditional knowledge, and community engagement, as a starting point for understanding this complex relationship.

One of the early findings of this research is that, contrary to common belief, the southern Hudson Bay polar bears fish and hunt on land. In addition, according to the people of Washeo/Fort Severn First Nation and the Weenusk First Nation at Peawanuck, numbers of bears appear to be stable.

By accessing the traditional knowledge of the Northern Cree, the research team is learning how these First Nations People have managed and coexisted with polar bears for centuries. This data will help build a base for future management that can include increased tourism and support as the impacts of climate change become more pronounced.

This research is supported by the Social Sciences and Humanities Research Council of Canada (SSHRC) and Environment Canada.

Dr. Martha Dowsley
Department of Geography

Dr. Harvey Lemelin
School of Outdoor Recreation, Parks and Tourism

Interdisciplinary collaboration is a cornerstone of Lakehead University's northern research efforts. Centres of Excellence bring together diverse experts, enabling them to delve into the complex realities of life in the north.

LAKEHEAD UNIVERSITY'S northern centres of excellence

Centre of Excellence for Children and Adolescents with Special Needs (CECASN)



Lakehead University leads a consortium of four universities (Lakehead University, Memorial University, University of Northern British Columbia, and Mount Saint Vincent University), and the Government of Nunavut, researching issues around children and adolescents with special needs in rural and northern Canada. The goal is to transfer knowledge to those who are making a difference in the lives of these children. Most of CECASN's research is community-based, and focuses on northern and Aboriginal children.

Centre for Northern Studies



The Centre for Northern Studies brings a focus to Lakehead University's diverse range of northern-based research endeavours. Through its various programs, it supports interdisciplinary northern research, as well as both undergraduate and graduate education. Through the Northern Studies Resource Centre, researchers access an extensive collection of northern-based monographs, newspapers, serial publications, government documents, research reports, conference proceedings, cartographic material, and microforms.

Centre for Rural & Northern Health Research (CRaNHR)



The Centre for Rural and Northern Health Research (CRaNHR) coordinates and supports research around issues affecting health care in rural and northern communities. Investigators from various faculties at Lakehead University and the health care community study the organization, delivery, and effectiveness of rural and northern health services, as well as various health workforce issues.

The Centre for Education & Research on Aging & Health (CERAH)



Through collaboration between professionals, educators, researchers, students, caregivers, and older adults, CERAH is working to better understand the process of aging. Through CERAH, Lakehead's researchers focus on issues such as palliative care in First Nations communities, the role of hospice volunteers, and rural women's perspectives on aging. Ultimately, CERAH's mission is to advance health and social care for an aging population and to promote the health and well-being of older people.