CELEBRATING 50 YEARS OF RESEARCH 1964-2014

Inuvik Research Laboratory

Aurora Research Institute ● 191 Mackenzie Road ● Inuvik, NT

CELEBRATING 50 YEARS IN INUVIK

Message from the President

Jane Aryckuk
Aurora College President

In recent years, topics such as climate change, the quest for new oil and gas resources, and changes in biological diversity have made the global community aware of the extensive scientific research taking place in the Arctic. What most people – even within our own territory – do not realize is that the Beaufort Delta region has been a site of ground breaking research in a number of disciplines for decades.

The Western Arctic Research Centre (WARC) is a fundamental component of Aurora College, providing invaluable learning opportunities for students and faculty. Furthermore, the research licensed, supported, and conducted by WARC adds to the store of global knowledge and provides new ideas, methods, techniques and innovation across a wide range of discipline that are critical to the economic and social development of society.

Since the Inuvik Research Centre/Western Arctic Research Centre has been a part of the Inuvik landscape for 50 years, it's important that NWT residents know the scope of research and work being done through the facility. The intent of this publication is to provide a brief overview of the types of research that are being undertaken, to highlight a few of the people behind the research, and to outline some of the roles of the Aurora Research Institute.

On the following pages, we have shared how: findings from research done in the Western Arctic have contributed greatly to international understanding of climate change; organizations such as the Gwich'in Social and Cultural Institute have used research in Traditional Knowledge to ensure local place names reflect Indigenous history; tests on a solid form of natural gas, known as hydrates, may lead to a potential new energy source and future economic opportunities; and how archeological digs are uncovering the rich and sophisticated history of the Inuvialuit peoples who have called the Mackenzie Delta home for centuries.

It is impossible to capture 50 years of work by thousands of individuals and organizations in just a few pages. We hope this synopsis will shine a light on some of the ground-breaking, significant research taking place in our communities and our regions. I hope you enjoy this publication and that it inspires you to learn more about the role of the Aurora Research Institute and about the hundreds of research projects that take place in and around the NWT each year. For more information, visit ***www.nwtresearch.com.*** ⬣

Message from the Aurora College's Board of Governors

Sydney O'Sullivan
Board of Governors Chairperson, Aurora College

As the Chair of the Board of Governors of Aurora College, I am pleased to be celebrating 50 years of research in Inuvik with the Western Arctic Research Centre. From the beginning, the Western Arctic Research Centre, formerly known as the Inuvik Research Centre, has played a key role in advancing scientific research within the Northwest Territories. The Research Centre has also developed a prominent place in Aurora College, since the two were merged in 1995.

On behalf of the Aurora College Board of Governors, congratulations on 50 years of research in Inuvik!

For 50 years, the Centre has attracted academic, industry, government and other scientists and researchers from across Canada and around the globe to observe, record and study the region. Decades of data collection and observation have helped shape an international understanding of the Arctic and have contributed to knowledge on a number of topics, ranging from the social and health sciences to the biological and physical sciences.

Over the years, the Inuvik Research Centre has worked in collaboration with community organizations such as the Gwich'in Tribal Council and the Inuvialuit Regional Corporation to connect researchers to communities within the Beaufort Delta. This has been crucial to the advancement of scientific research in the region. The scope and success of much of this research would not have been possible without the support and active involvement of the Inuvialuit and Gwich'in peoples of the region. Community members have provided critical support to many research programs, working alongside southern researchers, acting as guards, guides, and teachers. The interface between Traditional Knowledge and Western science has grown as a result of these close working relationships.

In addition, the Research Centre's historical importance to the community of Inuvik cannot be understated. Its role as movie theatre, town hall and meeting place throughout the years underscores one of Aurora College's core beliefs that the primary purpose of our programs, courses and facilities is to meet the needs of our communities and the people of the Northwest Territories. The Inuvik Research Centre/Western Arctic Research Centre has assisted and continues to assist us in achieving this goal and to provide an essential service to the Beaufort Delta region.

ON BEHALF OF THE AURORA COLLEGE BOARD OF GOVERNORS, CONGRATULATIONS ON 50 YEARS OF RESEARCH IN INUVIK! ⬣

The Government of the Northwest Territories merged the Inuvik Research Centre with Aurora College in 1995, creating the Aurora Research Institute (ARI). Its mandate is to:

Improve the quality of life for NWT residents by applying scientific, technological and indigenous knowledge to solve northern problems and advance social and economic goals.

ARI has grown to encompass three locations: Western Arctic Research Centre in Inuvik, North Slave Research Centre in Yellowknife and South Slave Research Centre in Fort Smith.

The key roles of the Aurora Research Institute across the NWT are:

1. Licensing and conducting research in NWT (physical, social, biological sciences and Traditional Knowledge);
2. Promoting communication between researchers and the communities in which they work;
3. Promoting public awareness of the importance of science, technology and indigenous knowledge;
4. Fostering a scientific community within the NWT that recognizes and uses the Traditional Knowledge of northern Aboriginal peoples;
5. Supporting and conducting research and technological developments that contribute to the social, cultural and economic prosperity of the people of the NWT; and
6. Making scientific and Indigenous Knowledge available to the people of the NWT.

LOOKING BACK...

The history of Inuvik Research Laboratory

Jolie Gareis
Manager Western Arctic Research Centre, Aurora Research Institute

The Inuvik Scientific Research Laboratory, commonly referred to as "the Lab" by local residents, first opened its doors in 1964. The Lab's first staff members came from southern Canada, drawn by the challenge of running a fully-equipped research facility in a small, isolated Arctic settlement. Similar to many contemporary federal facilities in the north, the Lab was a pre-fabricated building constructed out of materials that were shipped in from the south. The first station manager, Richard (Dick) Hill, was responsible for maintaining all of the Lab's facilities, including the chemistry labs, deep freeze, darkroom (for on-site developing of film and aerial photos), and research library. By all accounts, the Lab was remarkably well-equipped for the time, with state-of the-art amenities that quickly drew researchers from universities, government departments, and industry.

Over the past 50 years, the Inuvik Lab has served as the home base for innumerable research projects that investigated the physical, biological, and social environments of Inuvik and the surrounding western Arctic. Growth in research activity was immediate and rapid; the Lab supported more than one hundred researchers working on dozens of projects during its first year of operation. Less than a decade later, during the 1971/72 fiscal year, over 250 researchers traveled to the Lab to work on more than a hundred projects. In spite of some temporary declines in research activity corresponding to declines in federal research funding, our numbers have stayed high over the past half-century, with more than 96 researchers traveling to Inuvik to work out of our facility in 2013.

The rapid growth in research activity during the early years of the Lab gave rise to some interesting challenges. For example, when they weren't in the field running their research programs, visiting researchers needed a place to sleep and live in Inuvik. The Lab found a creative solution to this problem; several surplus trailers were purchased and parked in the yard behind the building. They were used as bunks and living space for many years, until demand for accommodations was too high and the trailers were replaced with a set of row houses located on a residential Inuvik street, just a few blocks away from the main facility.

The Lab quickly became a community hub and an active part of town life. During the mid-1960s, when there were no TVs or theatres in Inuvik, the Lab sponsored movie nights on Friday evenings. Many National Film Board movies and other features were shown to community members in the second floor conference room. The Lab was also the venue for some of the first Inuvik town hall sessions, where the development of other town facilities, such as the library and arena, were proposed and discussed. In keeping with this, we continue to maintain strong ties with Inuvik residents by hosting public research lectures and facilitating science outreach activities for children and youth. We hope that these events both raise awareness of northern science and research taking place in our region, and make science more accessible to members of our local community.

We continue to strive to support research and discovery in the western Arctic, to help answer northern research questions and set northern priorities, and to communicate research results to northern residents.

After 20 years, the Lab became part of the Government of the Northwest Territories and changed its name to the Science Institute of the Northwest Territories (SINT). Just a decade later, in 1995, SINT merged with Aurora College and became the Aurora Research Institute, the research division of the territorial college. We remain part of the college to this day, with the mandate to improve the quality of life for all NWT residents by applying scientific, technological and indigenous knowledge to solve northern problems and advance social and economic goals.

As the years passed, the Lab began to show not only its age, but the inevitable wear and tear that comes from decades of hard use. In 2009, staff and local stakeholders collaborated on a proposal to the Government of Canada's Arctic Research Infrastructure Fund, a stimulus package that recognized the need to replace Canada's aging Arctic research facilities. The proposal was successful, and in 2011, the original Lab was torn down and replaced with the Western Arctic Research Centre (WARC). The new building is roughly the same size as the old Lab, but was specifically designed to meet the needs of both the research and local communities. This included three specialized labs, expanded staging and storage areas for field equipment, first-rate communications infrastructure, and classroom and lecture space. These enhancements have kept WARC and the Aurora Research Institute on the front line of Arctic research.

In spite of the many changes the Lab has experienced over the years, the goals of the facility and its staff have remained the same. We continue to strive to support research and discovery in the western Arctic, to help answer northern research questions and set northern priorities, and to communicate research results to northern residents. We all look forward to many more years of research in Inuvik. ⬣

Everyone is invited to celebrate the 50th with us!

November 17 12 - 5PM & 7-9PM **Open house at the Western Arctic Research Centre**
Including talks by Dr. John England and Alestine Andre and tours of WARC.

November 19 6-10PM **Community celebration at the Midnight Sun Recreation Complex**
Dinner will be provided

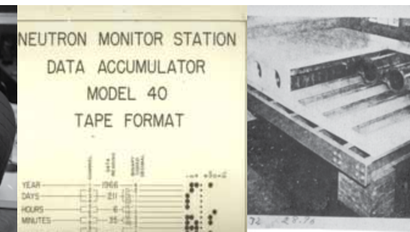
Check on nwtresearch.com for a complete schedule of events

The Lab on Mackenzie Road

Celebrating 50 years in pictures

1964-2014

Photos, unless otherwise stated, are from the Aurora Research Institute's archives



THE MACKENZIE RIVER DELTA

Searching for Inuvialuit history before it's too late

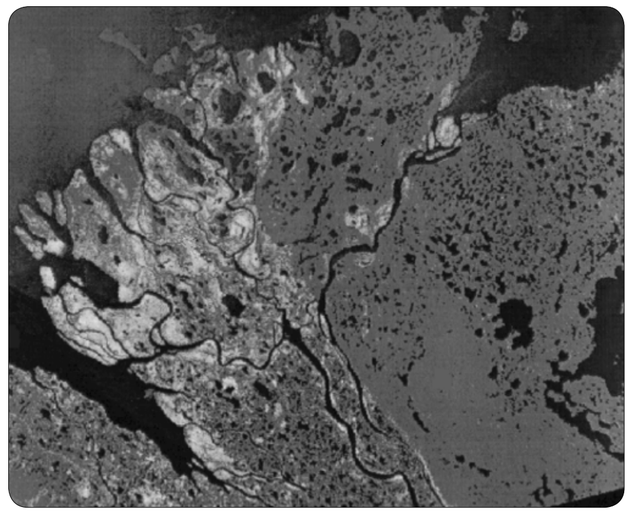
Max Friesen
University of Toronto

The Northwestern corner of Canada, centred on the Delta of the Mackenzie River, has been home to Inuvialuit for many centuries. Elders' oral histories, as well as the accounts of explorers and missionaries, tell us that in the 19th century Inuvialuit were the most populous and complex society in all of arctic Canada. They lived in large driftwood-framed pit houses in the winter, made elaborate and finely crafted tools and clothing, and were organized into several regional groups. Inuvialuit groups hunted, fished, and gathered a wide variety of different foods, including caribou, seals, bowhead whales, and several fish species. However, the largest and wealthiest groups lived on the East Channel of the Mackenzie River, in the area around present-day Tuktoyaktuk. They were drawn here each summer by the migration of thousands of beluga whales, which could be hunted in large numbers, providing a bounty of high quality food that could be stored for the winter.

The region's past is an important part of the history of northern Canada; however the early part of that history, particularly before 1900, is poorly known. It is also under direct threat – the warming climate is melting the permafrost and increasing the erosion of coastal sites, causing them to disappear at an alarming rate. Since the 1980s, archaeologists, in collaboration with Inuvialuit communities and cultural organizations, have been hard at work trying to preserve and understand this vital history.

On the Mackenzie's East Channel is a series of sites which, together, form the richest continuous archaeological record in the entire Canadian Arctic. The most ancient Inuvialuit site is called Cache Point, and dates to about 1300 AD. This site is marked by small rectangular houses, each holding a single family. Even at this early time, Inuvialuit activities clearly revolved around the all-important beluga whale hunt, with thousands of beluga bones recovered from the site.

After about 1400 AD, silting in the Mackenzie River led to beluga whales moving farther downstream. Cache Point was abandoned and new sites were occupied, two of which are particularly important. First is Kitigaaryuit (formerly called Kittigazuit). Kitigaaryuit was the centre of the Inuvialuit beluga hunt in the late 19th century, and rich oral histories describe an annual cycle of hunting and fishing, as well social events such as festivals. Kitigaaryuit is now a National Historic Site due to its importance.



The Mackenzie Delta across the seasons.

Across the river from Kitigaaryuit is a second, even larger ancient settlement known as Kuukpak (meaning "big river"). This site originally held at least 40 houses, most of which were enormous cross-shaped houses, called cruciform houses. These houses had a deep entrance tunnel in front to trap cold air. The tunnel led to a main room with three alcoves extending to the rear and each side. Each house would have held at least 15, and in some cases as many as 30, people.

As with so many other sites in the region, Kuukpak is eroding severely, and its beaches are littered with artifacts and beluga bones from houses that are being destroyed by wave action. As a result, the site is the location of a new archaeology project, jointly organized by the University of Toronto and the Inuvialuit Cultural Resource Centre. In 2014, a particularly successful field season saw the excavation of the best-preserved cruciform house ever encountered, allowing a new understanding of how ancient Inuvialuit families lived. In the summer of 2015 our team will return to the region, to continue our quest to understand, and preserve, early Inuvialuit history.

The cruciform house at Kuukpak. Letitia Pokiak, in foreground, is kneeling on the rear bench. Behind her is the main floor area with the two side benches. **(Photo Credit: Max Friesen)**

An Arctic keystone ecosystem

Lance Lesack
Simon Fraser University

The Mackenzie River Delta is a vast area of complex aquatic habitat, equal to a third of Switzerland. It extends 200 kilometers upstream from the coast and contains 45,000 lakes. Located on the eastern edge of the Delta, the Aurora Research Institute has been headquarters over the past 50 years for numerous scientists trying to understand the nature and importance of this complex system.

Mackenzie Delta

The parable of "The blind men and the elephant" is a useful way to think about the investigations on the Delta. As the story goes: "several blind came upon an elephant in their travels. Not knowing what the elephant looked like, they each began to touch its body. After feeling only the leg of the elephant, one man proclaimed that the elephant was shaped like a pillar. Another who touched the tail said, 'No, it is like a rope.' Similarly, the man who touched the trunk, the tusk, the ear, or the belly each described the elephant differently. A man who could see explained to them, 'All of you are right. The elephant has all these features, but each of you are touching only one part of the elephant." In learning about the Mackenzie Delta, the system is so vast, we can study only one part at a time. We start out "blind" prior to accumulating needed data, and we benefit from talking to people who can see the "whole beast".

As Chris Burn described in another article, more than 50 years ago and armed with only a canoe and scientific passion, Ross Mackay made remarkable initial progress in piecing together an understanding of the Mackenzie Delta that many scientists who came after have benefitted from.

Today we continue to study parts of the Delta because we still don't have a complete understanding of all the ways that it connects between other parts of the Arctic environment. The emerging picture of the Delta, based on many investigations, including an International Polar Study of 2007-2009 and other on-going work, is that of a globally important Arctic ecosystem.

This vast lake-rich delta, along with several other large deltas, appears to function as a biological hotspot in the circumpolar Arctic. It is more productive and higher in biodiversity than otherwise would be expected at such an Arctic location. The ecosystem itself supports large communities of fish, water fowl, shore-birds, and fur-bearing animals utilized by communities located around the delta. Less understood, however, is the importance and nature of the delta as the connection between the river and the Arctic Ocean. The Mackenzie is the fourth largest of the great Arctic rivers with its delta being the second largest in the circumpolar Arctic. It delivers nutrients from the continent to coastal ocean ecosystems, and creates warm freshwater plumes that affect ice cover, waves, and weather patterns for hundreds of kilometres offshore. Peak annual river levels replenish and sustain waters in the lake-rich delta. Such water passage through the delta modifies the nature of the water released to the ocean. Waters released from the delta fuel the productivity of the Beaufort shelf, including the unusual semi-freshwater body of Lake Mackenzie within the shelf waters. With the position of the delta between the continent and the ocean, and its multiple functions, it serves as a keystone ecosystem that influences surrounding ecosystems. River flows and ice breakup in the delta influence a multitude of interacting biological processes and aquatic resources.

Recent results have revealed that temperatures, water levels, and snow depths have changed since 1960, all of which affect the behavior of the Delta. The future challenge is thus to not only obtain a more complete understanding of how the delta functions, but also to understand how this may change with the strongly changing climate through this region. One could say we are yet again blind, studying an elephant that is changing with each passing year.

INUVIK RESEARCH CENTRE

International Polar Year

Alana Mero
Past NWT Northern IPY Coordinator

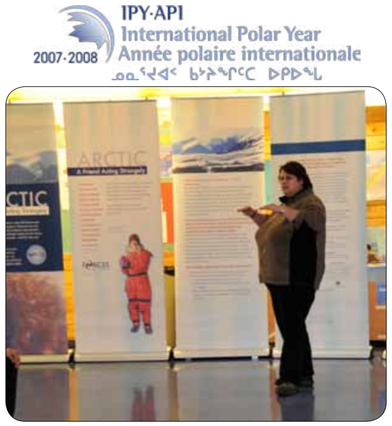
In 1881-1884, researchers from more than 11 nations turned their focus to the Arctic and Antarctic polar regions and worked in a spirit of collaboration and scientific research to better understand the polar world. This first such effort of its kind came to be known as the International Polar Year, or IPY. This year of research was such a success that 50 and then 75 years later, the international research community refocused their attentions again on these polar regions as part of the second and third IPY research initiatives. The fourth and largest research effort took place in 2007-2008. This fourth IPY research year saw thousands of researchers from more than 60 nations around the globe focused their attention back on both the northern and southern polar regions to study these dynamic and important regions.

The NWT is one of the few areas in the world to have participated in all 4 International Polar Years, and it stands ready to contribute to the next.

The NWT has played an important role in polar science since the first International Polar Year, when a group of scientists established a research station to observe the weather near present-day Behchoko. The fourth IPY focused on studying climate change and the health and well-being of northern people. The key goal in Canada was to involve the people of the north in all aspects of research, maximizing northern involvement. In 2007, the Aurora Research Institute became the NWT host institution for IPY Northern coordination. Along with host institution in the Yukon, Nunavut and Nunavik (northern Québec), research was coordinated across Canada to better understand our Arctic home. Projects ranged from local projects to international ventures, with NWT residents participating as researchers, research assistants, field and wildlife monitors and research subjects.

The inclusion of Traditional Knowledge was encouraged in all research projects. Northerners contributed Traditional Knowledge to studies such as the Inuit Health Survey, Circumpolar Flaw Lead Study, Northwest Territories Ice Patch Study and Arctic Peoples, Culture, Resilience and Caribou, providing a broader perspective than science alone.

All in all, during the IPY more than 100 researchers were supported through ARI. The interest in all this research lead to many articles in the NWT in newspapers, magazines and websites seen around the world.



Alana Mero at an IPY school presentation.

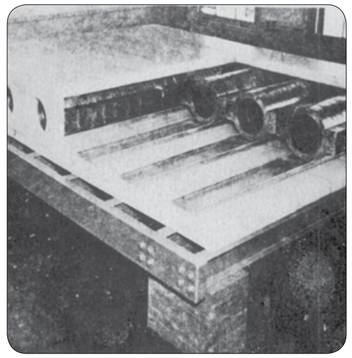
The IPY program also focused on building northern research capacity. A total of 447 northerners received training under 54 IPY training projects. Participants learned skills ranging from researching and conducting interviews to Search and Rescue, Fire Arms Safety and First Aid. It was an opportunity to advance the logistical support of researchers in the NWT. Projects were carried out to help improve communications and safety equipment necessary to conduct fieldwork.

By the end of the fourth IPY, over 4,000 Northerners took part in presentations, workshops and conferences. Presentations were made in 23 communities and more than 30 schools. IPY conferences with NWT involvement took place in Ottawa, Montreal and Norway. The research year wrapped up in the NWT with a results-based conference held in the Sir Alexander Mackenzie School gym. Participants attended from across the NWT and engaged with researchers from the NWT, Canada and beyond as they shared the findings of IPY and learned how they apply locally and internationally.

The NWT is one of the few areas in the world to have participated in all four IPYs, and it stands ready to contribute to the next. ⬣

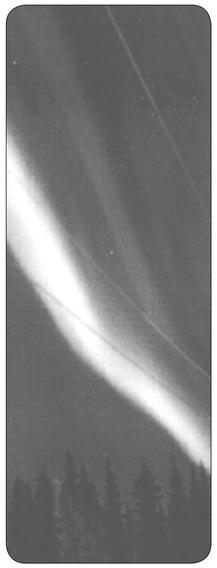
50 years of listening

Ashley Mercer
Manager North Slave Research Centre, Aurora Research Institute


Original installation schematics for the Cosmic Ray Detectors

Over the past half century, the Aurora Research Institute has been involved in research of all types, but the longest standing research partnership has sat quietly for 50 years in an odd shaped building next to the Western Arctic Research Centre in Inuvik. Inside this circular building sits twenty tons (about 20,000 kg) of lead and electrical equipment, laid out in three plastic (polyethylene to be precise) boxes. If you did not know better, you would think these boxes were just large storage containers, but in fact they contain sensitive instruments that measure the number of high-energy particles impacting Earth from space – also known as cosmic rays.

Run by the Bartol Institute at the University of Delaware, the Cosmic Ray Detectors have been monitoring particles from space since 1964. The Earth is showered by rays from the sun and other celestial events like supernova explosions all the time. Much of this activity is reflected back into space or sent towards the poles because of the Earth's magnetic field. Inuvik's high latitude is perfect for measuring space rays that reach the earth's surface. The Cosmic Ray Detectors track particles called neutrons, which are produced when high-energy rays interact with our atmosphere.



As Northerners, we do not need such monitors to know that cosmic rays are overhead, we can see them every time the northern lights (or *aurora borealis*) dance. We also know that the northern lights can vary in colour and intensity, which depends on the amount of cosmic rays hitting the atmosphere. The long-term monitoring of these rays has allowed researchers to track these changes and better understand how our sun and galaxy behave. The data has also been used to identify times of high cosmic activity to help protect satellites, large computers and electricity transformers, which can be damaged by these particles.

The instruments in Inuvik are now part of an international network of 11 Cosmic Ray Detectors in both the northern and southern polar regions. Where once a technician would come in every day to record readings and mail them researchers in Delaware, today daily readings are available for the entire network via computer in real-time. So next time you see the northern lights dance, check out ***neutronm.bartol.udel.edu/*** to see what our Cosmic Ray Detectors are recording. ⬣

In the field
Aurora Research Institute


Aurora Research Institute staff and summer students doing fieldwork across the NWT.

Over the threshold: The early years of the Inuvik Research Laboratory

Andrew Stuhl
Bucknell University

In 1964, the Department of Northern Affairs and National Resources opened Canada's first scientific station in the western arctic, the Inuvik Research Laboratory. Located across the street from the residential schools, and with the Delta as its backyard, the Laboratory was positioned purposefully. Officials in Ottawa hoped that scientists could use the building and its equipment to improve northern social life and tease out the secrets of Arctic nature, especially oil and gas deposits. Like the new town in which it sat, the Laboratory was a southern and colonial experiment, one that represented a governmental attempt to "modernize" the North and shuttle its resources elsewhere. What folks in the nation's capital could not have predicted, though, was the result of this experiment. By the end of the decade, local residents and scientists would use the Laboratory to marshal research in support of northerners' interests, forever changing the ways science, the North, and the federal government interacted with one another.

For the past seven years, I've researched the history of Arctic science, including the role and impact of the Laboratory in Canada. The colonialist overtones of Ottawa's original intentions with the Lab can be seen on the dusty pages of the historical records - many of them stored in the Laboratory today - and in the memories of folks I've spoken to about this chapter of the Arctic's past. Yet, there is another important story here. That same little blue box on Mackenzie Road intended to perpetuate federal control over arctic people and land quickly became a central site of anti-colonial activism.

Daily activities in the Laboratory forged new partnerships between northern residents and scientists. By 1968, the director of the laboratory, Dick Hill, had teamed with Delta residents - including Elijah Menarik and Victor Allen—to turn the building into something like a community college. Forming a group called the Mackenzie Institute, they occupied the building when the academics were away, opening its library, offices, and classrooms to the public. While the Mackenzie Institute was housed in the Laboratory, it had no financial affiliation with government and fully oriented itself "towards local people…for their own benefit." In 1969, Hill, Allen, Menarik and others scheduled programs on business management, training for northern research opportunities, and even a crash course on government itself. In doing so, they transformed a space designed to be a hub for government-led northern development into a space for community education, exchange, and organizing.

Twelve months later, following the Prudhoe Bay strike in Alaska, oil companies descended on the Delta like mosquitoes in July, ramping up surveying and drilling operations to a frenetic pace. Now, the Laboratory hosted not just summer visits from academics, but also long-term stays from hordes of industry scientists. These industry representatives shared the Laboratory with Mackenzie Institute members, and often shared conversation and tea, too. During a period of haphazard seismic testing, where traplines were destroyed and fish habitat disrupted, the Mackenzie Institute played a critical role as mediator. Mackenzie Institute members collected local observations of industry activities and sent them to Ottawa. At the same time, they collected new research finds and agendas from industry scientists and distributed them to northerners. In an Inuvik Drum from the period, Rose Mary Thrasher wrote that the Mackenzie Institute was working through radio reports, TV broadcasts, group discussions, and individual interviews to stay on top of the oil industry and the government, so that Delta residents could be "more involved in the 'action.'" The "action" here, like with the original programming of the Mackenzie Institute, was about keeping industry honest in its dealings with the environment, holding government accountable for regulating industry, and carving out a space for northerners at the decision-making table.

When the government of Canada built the Inuvik Research Laboratory in 1964, it sought desperately to bring the south to the north. Science would be their vehicle. Yet after 1964, and especially after 1969, northerners and scientists laboured together to alter the flow of knowledge and power in Canada. They used science - and the space of the Inuvik Research Laboratory - to ensure that northern lands would be governed intelligently and justly, through a process that ensured consultation of the land's rightful owners. In other words, northerners and northern-based researchers brought the north to the south. With the benefits of hindsight, we can see these events as carrying Canada over a threshold. It is one of Arctic history's greatest ironies, and triumphs, that a laboratory housed a beginning of the end of colonialism's northern experiment. ⬣

CELEBRATING 50 YEARS OF RESEARCH

1954 - 1958
Inuvik is Established

From initial surveys in 1954, to the building years that followed, Inuvik was 'designed not only as a base for development and administration, but as a centre to bring education, medical care and new opportunity to the people of the Western Arctic,' (John Diefenbaker). On July 18, 1958 Inuvik (which means 'Place of Man' in Inuvialuktun) officially began by proclamation of the 15th session of the Council of NWT.

1959
Sir Alexander Mackenzie School Opens

A much larger school was built and opened in Inuvik. It was first called the Inuvik Federal School, and later renamed Sir Alexander Mackenzie School (SAMS). Hostel accommodation was built to house students from neighboring communities, and adult courses were offered as well.

1962 - 1964
Construction and Opening of the Scientific Research Laboratory in Inuvik

The Department of Northern Affairs and National Resources, Government of Canada, developed the research laboratory in Inuvik. It was built over two years, and opened in early 1964. The Scientific Research Laboratory came to be known as the Inuvik Research Lab - or just the Lab.

1970
Oil Discovered at Atkinson Point

Oil is discovered at Atkinson Point (near Tuktoyaktuk). Natural Gas is found the following year within the Mackenzie Delta. Several discoveries follow over the years, both on- and off-shore.

1964 - Present
Bartol Neutron Monitoring Project

The very first research project started less than a month after the research centre opened, and has been continuously gathering data ever since. The Bartol Neutron Monitors measure the number of high energy particles - cosmic rays - impacting the earth's surface.

July 7, 1970
The Royal Visit

Queen Elizabeth and the Royal Family came to Inuvik for an official state visit. The occasion was marked by a luncheon and a tour. During the tour, the Queen visited the research institute and learned about local research projects.

1974
NWT Scientists Act

The NWT Scientists Act was implemented, along with the associated administrative regulations. From this point on, all research taking place in the NWT went through a review process before being licensed. Several amendments were made to the Act over the years.

1978 - Present
Illisarvik

Illisarvik is an Inuvialuit word that means 'place of learning'. On 13 August 1978, Dr. J Ross Mackay and his colleagues drained a lake on Richards Island, and field studies have been conducted there ever since. The researchers study the growth of permafrost in the drained lake bed, as well as how ground temperature, vegetation cover, and water content change as permafrost slowly forms. The project has now been running continuously since 1978, making Illisarvik the longest-running field experiment in northern Canada.

1979
Dempster Highway Opens

Much of the Dempster follows an old dog sled trail from Dawson City to Fort McPherson. It's named after RCMP Inspector John Duncan Dempster, who frequently patroled the route by dog sled. No other road in Canada extends as far north as the Dempster; it connects Inuvik to southern Canada year-round except for the break up period each spring and the freeze up period each fall.

1984
Becoming part of the GNWT

The research center was transferred from the federal government to the Government of the Northwest Territories. At this time, the name was changed to the Science Institute of the Northwest Territories (SINT). The Inuvik Research Centre was one of three regional SINT offices; the other two were located in Igloolik and Iqaluit.

1985 - 1994
Northern Oil and Gas Action Plan Archaeology Project

The goal of the NOGAP Archaeology Project was to inventory and assess archaeological sites in areas which could eventually be involved in oil and gas exploration and transportation: specifically, the Beaufort Sea, the Mackenzie Valley, and Lancaster Sound. During the second half of the project (1990-1994), the work shifted to the testing and excavation of particular sites, and the analysis and publication of these results.

1994
The Aurora Research Institute Becomes Part of Aurora College

The western office of the Science Institute of the Northwest Territories (SINT), located in Inuvik, merged with Aurora College and changed its name to the Aurora Research Institute (ARI). This marked the beginning of a significant shift in the research centre's focus and operations, toward more community-driven research programs and partnerships.

1995
Another Merger for SINT

The eastern offices of the Science Institute of the Northwest Territories (SINT), located in Igloolik and Iqaluit, merged with Arctic College (now Aurora College in the NWT and Arctic College in Nunavut).

1998
Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans

The three councils governing Canadian research in health, natural sciences and engineering, and social sciences and humanities, together developed the Tri-Council Policy Statement for Ethical Conduct for Research Involving Humans. As a result, ARI requires research involving humans to be reviewed by a research ethics board before an NWT Research Licence is issued.

2001
Gwich'in Ethnobotany Book Published

The Gwich'in Social and Cultural Institute, in partnership with the Aurora Research Institute, worked with Gwich'in Elders on an ethnobotany project to record the use of Traditional Knowledge about plants important to the Gwich'in people.

2002 - Present
NWT Wind Energy Studies

In partnership with Environment and Natural Resources, the Aurora Research Institute conducted a series of wind energy feasibility studies for various NWT communities. The technical reports and plain-language summaries can be found on ARI's website.

2005 - Present
NWT Native Seed Development Program

The NWT Native Seed Development Program was started by ARI in order to address the lack of native seed commercially available in the territories for revegetation work. From 2005-2010, seeds were collected from across the NWT. Since then, ARI has partnered with several organizations in order to conduct germination trials.

2006 - 2008
Mallik

The Mallik project was conducted to evaluate the natural properties of gas hydrates, and to measure and monitor their long-term production for the first time. The objective of the Mallik project was to determine whether gas hydrate extraction was an economically and environmentally feasible form of energy for development.

2007 - 2009
International Polar Year

The International Polar Year (IPY) officially took place from 2007 to 2009. Thousands of researchers from more than 60 nations took part in this program, which focused on both the Arctic and Antarctic regions, and ARI saw more research conducted in the Inuvik region (and the NWT as a whole) as a result. One of Canada's four northern coordination offices was located in the ARI headquarters in Inuvik.

2010
Inuvialuit Ethnobotany Book Published

The Inuvialuit Cultural Resource Centre worked with support from the Aurora Research Institute and Parks Canada to develop a collection of Traditional Knowledge on the use of plants from the Inuvialuit Elders of the region.

2011
The Grand Opening of the Western Arctic Research Centre

The Western Arctic Research Centre opened it doors in May 2011 to provide support for the summer research season. WARC, did not however celebrate its grand opening celebrations until several months later. This multi-purpose research centre contains facilities and equipment to support scientific research in a wide variety of disciplines.

50th

INUVIK RESEARCH CENTRE, continued

Mallik gas hydrate research and development studies

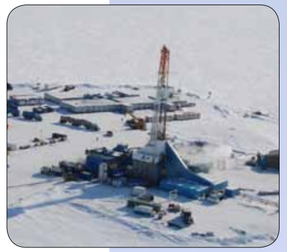
Andrew Applejohn, Past Aurora Research Institute Director
Scott Dallimore, Geological Survey of Canada, Natural Resources Canada

During the winter of 2008, the eyes of energy scientists from around the world were focussed on a small bay on the west side of Richards Island NWT known as Mallik. The hydrates production tests carried out that winter represented the culmination of over ten years of scientific effort to unlock the energy potential of that form of natural gas. The Inuvik Research Center was the logistics headquarters for the 2008 Mallik Gas Hydrates research program, as it had been for major field-based research in 1998, 2002 and 2007. During these complex field endeavours, more than 300 researchers from around the world worked out of ARI facilities and travelled to the Mallik research site, which is located 200 kilometres north of Inuvik by ice road. Mallik became a well-recognized place in the field of unconventional energy research, synonymous with cutting edge, world-class science, delivering proof that gas hydrates could someday be a clean hydrocarbon fuel for an energy hungry world.

Gas hydrates are truly amazing geologic occurrences. They are ice-like in character, being composed of water and natural gas molecules that are contained in a crystal lattice. They are a solid form of natural gas. They are thought to be one of the most abundant hydrocarbon sources on the planet, but are not stable at the earth's surface. They occur in nature only in cold geologic environments where there is relatively high pressure. One of these environments is in deep water around the world and the other is under a thick layer of permafrost. The scientists came to Mallik because some of the thickest permafrost occurrences in the world, with some of the most concentrated deposits of gas hydrates, are found in the Mackenzie Delta. Indeed, the Mallik site is perhaps the most famous gas hydrate site in the world!

From the start, the Mallik research programs were based on advancing the scientific understanding of gas hydrates, both at a fundamental level and also from an applied perspective. The studies evaluated their energy potential as a vast global resource of natural gas. These programs were amazing examples of collaboration, team work, problem solving and ultimately, accomplishment. Each field program lasted about three months and involved the construction and maintenance of an ice road, as well as operating an exploration drilling rig, which was used to penetrate through 600 metres of permafrost to access the gas hydrate deposits that were at about 1000 metres below the surface.

The Mallik programs were not just about drilling an oil and gas exploration well, they were also about discovery. In 1998 few people in the world had ever seen a natural gas hydrate sample, let alone studied the unique properties of gas hydrates and how they occur in nature. The research team for the Mallik science programs was a collaboration between Natural Resources Canada's Geologic Survey of Canada and the Japanese Oil, Gas and Metals Corporation. The early programs involved an expanded participant list, with the 2002 program including eight organizations from five countries (Canada, Japan, USA, Germany and India). ARI was a constant throughout each program, providing the logistics base and support to mount the field work, enabling the scientists to undertake state-of-the-art laboratory work, and assisting with northern engagement and education. For the 2007/08 programs ARI stepped up as an instrumental player, acting as the designated operator responsible for all field operations and financial management. This was the first time a northern science agency had ever undertaken responsibility for a research program of such magnitude.

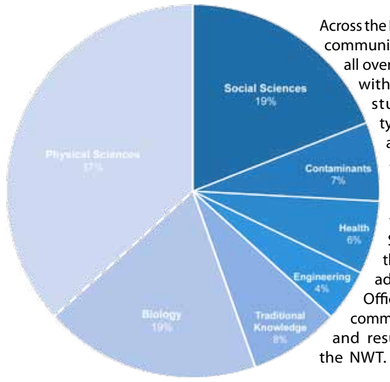


Research activities at the Mallik site. The successful flaring of methyl hydrate was a significant achievement for the program.

The legacy of the Mallik research programs is perhaps best illustrated by the many scientific outputs that have been generated in the past decade, including 150 peer-reviewed publications. Many of these have been new contributions to science, including documentation of the physical properties, microbiology and geophysics of a permafrost gas hydrates. Others consider the environmental context of gas hydrates, such as the sensitivity of Arctic gas hydrates to climate change. Perhaps the most lasting contribution, however, has been in the field of oil and gas technology. As recognised in expert reports by the Canadian Council Academies and the United Nations Environmental Program, the Mallik programs were the first in the world to tackle and overcome the technical challenges of safely producing gas hydrates. Indeed the 2007/08 program established proof of concept that gas hydrates can be produced using a simple production method using conventional oil and gas recovery techniques to lower the pressure of the deposits at depth. ⬣

Forty years of research licensing

Jonathon Michel
Manager Scientific Services, Aurora Research Institute



Distribution of research types over the past 10 years

Across the NWT there is an active scientific community that sees researchers from all over the world come and research within our borders. Before any study begins, researchers typically start working with staff at the Aurora Research Institute and community organizations to discuss their proposed research activities as part of the NWT licensing process. Since passing into law in 1974, the NWT Scientists Act has been administered out of the Inuvik Office. This process supports the communication of research activities and results to communities across the NWT. Its central intent is to help communities remain informed about research that affects their region.

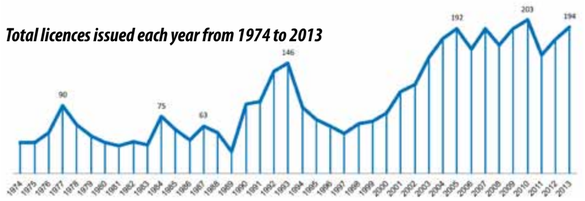
All research that happens within the NWT must be licensed; most obtain a Scientific Research Licence through ARI. To get a Scientific Research Licence, a researcher will provide an application that describes their research activities. This application is sent on to community organizations within the region of the proposed research for review and feedback. Once licences are issued, they are each valid for a given calendar year. At the finish of each year, the research team submits summaries of that year's work which are made available to everybody in the NWT in the Compendium of Research.

As the administrator of the Scientist Act, the Aurora Research Institute has built a large collection of information about research activities across the Northwest Territories and Nunavut (prior to its creation in 1999). Our database contains over 4000 licences spanning 40 years of service. In past years, an average of about 100 licences were issued across the Territories, but in more recent years, we have seen up to 203 licences in a year. Over half of these projects have been in and around the Beaufort Delta region, which has historically been the busiest region for research in the Territories. In the past, the majority of projects have focused on physical and biological sciences, including studies look at permafrost and climate change. Over time, there has been an increase of researchers interested in studying Traditional Knowledge and social themes. ⬣

If you are ever interested in a research project, go to ***data.nwtresearch.com*** *to explore our database!*

NWT RESEARCH DATABASE

Total licences issued each year from 1974 to 2013



Q&A Meet Dick Hill

Dick Hill was the first Manager of the Inuvik Research laboratory from 1963 - 1975. We sat down with Dick and asked him about his memories of working at the Lab and the early days of Inuvik. Here are a few of his answers.

Dick Hill at WARC's opening ceremony

Q: How did you originally get your job at the Lab in Inuvik?
A: In early 1963 we were living in Toronto with a new family. As I was not happy spending half of my time behind a wheel, we decided to move to the 'good life' in a small rural community. At that time I saw an advertisement in the Toronto Globe and Mail for an Inuvik Research Station manager at the magnificent annual salary of $7,950 to $9,150. I jokingly said to me wife "How would you like to live in the Arctic?" Much to my surprise she said "yes" and twisted my arm to fill out all the government application papers. The rest is history.

Q: What were the early days like working at the Inuvik Research Laboratory (IRL)?
A: The original Lab building was constructed in 1963 for $292,000 by Poole Construction of Edmonton. It had a pre-war Ottawa design when it was thought that Arctic research was done only by chemists. In reality most northern research, then and now, is field orientated and a research centre's role is that of support for parties working away from Inuvik. The new lab nicely accommodates this realty. I'm retroactively jealous of the design and quality of these new facilities.

When I first arrived at Lab there was an elegant sign on the building reading Scientific Research Laboratory. This bothered me as all three words meant the same thing and didn't convey much. I asked Ottawa for permission to change the name but was bluntly refused, but I just started calling it the Inuvik Research Lab and found the name stuck.

When I arrived at the Lab in December 1963, there was a large pile of boxes and pallets stacked with lead bars sitting by the front door. With very basic Ikea-like instruction sheets for assembling the neutron monitor, Ernie Moore and I moved the 20 tons of lead by hand and assembled the monitor. This heavy work was not in my nonexistent job description but was the normal multitasking required for successful lab operation. Maybe the monitor building is still standing today is because nobody took responsibility for moving the 20 tons of lead.

Q: What was some of the research that happened while you were the Manager?
A :The National Research Council's Division of Building Research in Ottawa were active in the Inuvik construction and set up a program to monitor the effect of the community on the underlying permafrost. There were 60 thermocouple strings inserted throughout the town site, near buildings, roads and in open areas. The Lab made weekly temperature recordings and sent the data on to Ottawa.

With the extensive Mackenzie Valley and Beaufort Sea resource developments there were many research projects carried out by industry scientists using Lab facilities, such as the pipeline research facility on Navy Road and seismic lines on permafrost in the Delta. Although there was no requirement to make their research results public, the data was readily available, as compared to most government and university researchers who tended to guard their information and keep it in the South.

Q. Any reflection on your Inuvik experience?
A. I learned much from working with local residents and visiting researchers since I arrived as a big city technical type with training in chemistry and physics and became a more sensitive citizen with understanding of social differences and community development opportunities. My experience broadened to all sciences from anthropology to zoology and led to my becoming a community activist and being elected as Inuvik's first Mayor.

Q: Did you ever have a questions surprise you while working at the Lab?
A: Local people often brought 'gold'-showing rocks in for my comment. I would take out my pocket knife and show that the 'gold' was hard iron pyrite. Once around 1965 I offered a prospector from west of Good Hope a ride into town from the Inuvik airport. When we arrived at the Lab he proudly showed a fist sized rock with considerable yellow showings. I did my usual scrapping with a pocket knife and much to my surprise it was real gold that was soft and peeled. ⬣

RESEARCHERS' STORIES

Crossing the Arctic islands one camp at a time

John England
University of Alberta

Next May marks 50 years since I stood at the side of the runway in Ottawa, waiting to board a DC-3 for Baffin Island. Long before Nunavut was born, I was setting off into the undivided Northwest Territories, thousands of kilometres away. Compared to a modern jet, we may as well have had oars sticking out of every window of that noble DC-3, rowing through the clouds to help propel us along!

The purpose of my years of work across the Arctic has been to find out how it has come to be the way we see it today. It is like putting together a big jigsaw puzzle of the past or, better still, making a movie of the Arctic covering the past many thousands of years right up to the present. What did the last great ice sheets look like, when did they form and disappear? Understanding what has happened in the past allows us to better understand the changes we are seeing today in nature, including glaciers, sea ice, sea level and permafrost. Studying the causes of these changes is part of a world-wide effort, especially important in the Canadian north where the impact of global warming is well recognized.

When I first started fieldwork in 1965, all we had were 12 horse-powered skidoos, single Beaver and Otter aircraft and piston-driven Bell G-2A helicopters that hardly had enough room for three people. Those little helicopters would move our entire camp with all the gear piled up on top of the floats, tied on with ropes! In our small, remote camps of two or three, we ate bland dehydrated food, and due to our remoteness, never had any visitors. We worked long hours and surveyed by foot across vast, scenic landscapes. Captivated by the silence and emptiness, I knew I would return year after year to what one book called "The Unbelievable Land."

A slump

EYNRP students on Kendall Island

Polygons formations

My first five years in the Arctic were spent largely in the eastern region, spending long summers on Baffin Island surveying the Barnes Ice Cap (the final leftover of the ancient Laurentide Ice Sheet) and later traveling through the island's inspiring fiords with cliffs of granite a thousand metres high. Come 1972, I headed much farther north, working southward from the tip of Ellesmere Island, only 600 kilometres away from the North Pole. For the next 35 years, my graduate students and I crossed a landmass the size of Great Britain without a single road. I walked a lot of it, through remarkable mountains, plateaus and fiords, watching muskoxen, Peary caribou and even wolves so curious they would walk up to you. I found notes from several explorers still sitting in cairns left a century earlier. One was from Sir George Nares (1876) and several were from the Americans led by Adolphus Greely during the very first International Polar Year (1881-1883). During my time on Ellesmere Island, I visited the Ellesmere Island Ice Shelf, a vast apron of thick sea ice attached to the island's north coast that has floated in the Arctic Ocean for the last 5000 years. This amazing sheet of ice is the oldest sea ice in the Northern Hemisphere. When I was there in 1987, it extended ten kilometres from land and covered several thousands of square kilometres. Now, almost 30 years later, it has mostly broken up and floated away, leaving a few tiny fragments clinging to the coast and about to disappear. By the late 1990s, I moved from Ellesmere Island and continued southwest, crossing Axel Heiberg, Ellef Rignes and Melville islands. I finally reached Banks Island in 2005, working there ever since and planning to return in 2015.

When I left the isolation of the high arctic to work on Banks Island, my connection with northern communities blossomed beyond all my expectations. As I prepared to start this work, I came to Inuvik and quickly joined up with Joel McAllister, senior instructor in the Environmental and Natural Resource Technology Program (ENRTP) at Aurora College. Sharing my research experiences with its students continues to be a highlight of my career. My visits to Inuvik have given me the chance to work with some remarkable students, especially "in the field" on Banks Island that can only be described as a joyful sharing.

My scientific discoveries made during a long career crossing the Arctic islands have gone far beyond what I could ever have imagined when I first stood by the airfield in Ottawa. But, as rewarding as all this science may be, the greatest joy comes from sharing what I have learned with others whose friendships tower above everything else. Through these friendships - amidst countless storms, adventures and aircraft tribulations - the north has taught me a zillion life lessons that I wouldn't trade for anything else in the world. The greatest gift is my respect and thankfulness for the sacredness of friends and community, and the sacredness of the land. Knowledge will change and pass away, that won't. ⬣

Ross Mackay standing by the Geological Survey of Canada's research vessel the M.V. J. Ross Mackay, which was designed for geophysical surveys in the Mackenzie delta. For many years it was operated out of Inuvik, but is now in Ontario. **(Photo Credit: Chris Burn)**

Ross Mackay's legacy in the western Arctic

Chris Burn
Carleton University

Very little scientific material is read and reread 50 years after it was written. In Canadian Arctic science, Ross Mackay's book on the Mackenzie Delta area, published in 1963, remains a benchmark and is still widely quoted. Ross studied permafrost in the Western Arctic for over 60 years (1951 to 2011). His findings about permafrost were some of the most important discoveries in the field. As we celebrate the 50th Anniversary of the Inuvik Research Laboratory, we also celebrate the long tradition of permafrost research in the region started by Ross and his colleagues in the 1950s.

(Top) The late Joe Thrasher of Paulatuk, J. Keith Fraser, and pack dogs, taken during their journey from Paulatuk towards the Horton River in 1951. **(Photo Credit: Chris Burn)**

(Bottom) Illisarvik research station.

Ross's first summer in the Arctic was in 1951. He, Joe Thrasher and Keith Fraser travelled with pack dogs from Paulatuk, south to the Horton River and east to the Brock and Hornaday rivers. They had no radios or maps to guide them, just newly taken aerial photographs and Joe's knowledge of the land. Ross's observations of the landscape they walked through became the focus of his first book, which was about the Darnley Bay area. His time with Joe Thrasher led to a life-long friendship with the family and with the people of Paulatuk.

Before Inuvik was built, Ross's journey from the University of British Columbia to the delta involved a train ride to Edmonton, a flight by DC-3 to Norman Wells, and then transfer to a Norseman to reach Aklavik. Once in the delta, travel was by freighter canoe or schooner. Everywhere he and his assistant travelled, they camped. The kickers were small in those days, so a journey to town from the outer delta might take two days. In the 1960s Ross came several times by canoe from Fort Providence, where he used to meet up for the summer with Albert Oliver of Aklavik. Like everyone else, they had to carry everything they needed. They usually went out for over six weeks at a time. Research is now unlike those early days, with helicopters, larger outboard motors, and satellite phones common in all fieldwork. People often only go out for a few days at a time. I sometimes wonder how many scientists could do what he and his team did in those early years.

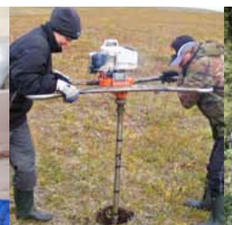
From 1954 to 2011, Ross did not miss a summer in the Western Arctic, returning each year to study the permafrost. His field sites spanned the coast from Darnley Bay to Herschel Island, and inland along the Mackenzie River from Fort Providence to the delta. His most long-running project began in August 1978, when he drained a small lake on Richards Island. For 35 years this research site, called Illisarvik (a place of learning), has been carefully observed, to study both conditions in the drained lake and on the surrounding undisturbed tundra. At Illisarvik, we have learned about the freezing of large bodies of ground and the frost heaving that then occurs. We have learned about ice-wedge cracking from its very beginning and the growth of ice in newly formed permafrost. We have studied the impact of climate change on permafrost, and how the ground is warming up. Most recently we have seen how climate change is now melting ice wedges on hill slopes. It is Ross's legacy to create a place where we can conduct research and answer questions permafrost poses to us.

Ross received many awards for his research, including Canada's first Northern Science Award. He gave the medal to the Aurora Research Institute. The award was for the many discoveries Ross made, such as the identification of offshore permafrost beneath the Beaufort Sea, the origin of pingos, the development of hummocks, and the nature of ice-wedge cracking. But to some of us, it was a recognition that key ideas often come from examining years and years of carefully collected observations. In memory of Ross Mackay who passed away in Kelowna on October 28, 2014. ⬣

The early days in the field

Gerry Kisoun

I believe in my 17th year, I was once again employed as a student, working for the Research Lab. This time I was assisting a university student, by the name of Cliff Beattie, I think he may have been studying at the University of Saskatchewan, and studying the weather. We were at YaYa Lake, on the east side of the lake just in from the intake from the Delta to the south, and a couple of kilometres in, inside a sheltered bay. We stayed in an orange trailer there, up on the hill. Our job was to set up a weather station, complete with rain water gauge, wind speed gauge, and so on. At the end of the season, my friend became quite ill, we had him transported back to Inuvik by airplane and I basically took the camp down on my own, and returned it to Inuvik. I remember, that summer, because, not only did I have a most enjoyable time, I was busy getting ready for our summer of Northern Games and I used Cliff as my training partner, especially in the strength games. He was of great assistance to me, for sure. At this camp, I also recall Dr. Ross Mackay and his team, returning from Garry Island, stopping in, on their way, I believe to Inuvik. They stopped in for tea. Dr. Mackay was studying the pingos of the area. Albert Oliver was Dr. Mackay's traveling assistant. This may have been one of the first times I also met Dr. Don Gill, who was working, I thought, with Dr. Mackay. ⬣



Traditional Knowledge research in a changing North

Brenda Parlee
University of Alberta

Twenty years ago, the Government of the Northwest Territories developed a Traditional Knowledge Policy that challenged policy makers to "incorporate Traditional Knowledge into government decisions where appropriate." The development of this policy was followed by the passing of the *Mackenzie Valley Resource Management Act* in 1998 by federal parliament. This Act mandated that co-management boards consider Traditional Knowledge in many kinds of decisions about communities and ecosystems. Both the Policy and the Act are precedent setting in Canada because of the legal control they give Aboriginal peoples in the territories to influence resource management decision-making. Realization of these opportunities, however, has been complicated over the last two decades. But there are also many exciting stories of success.

Definitions of Traditional Knowledge vary significantly among First Nations, Inuit and Métis communities. Many people in universities have spent a great deal of time dealing with the basic question of 'What is Traditional Knowledge?' There have also been a lot of questions raised about how much influence Traditional Knowledge actually has in processes such as land use planning, wildlife management, environmental assessment and cumulative effects monitoring. In the Northwest Territories, there are significant differences in the capacity of Aboriginal governments to ensure their knowledge is meaningfully considered. Some people would say that those with settled land claims are at greater advantage than those in areas where land claim agreements and treaty entitlement negotiations have yet to be completed.

Despite challenges, there is important Traditional Knowledge research ongoing across the Canadian north. The work being done in the Northwest Territories stands out as some of the most exciting and valuable nationally as well as internationally. Decades of community and co-management work as well as community-university collaborations have resulted in valuable insights about such key issues as can be found on many themes such as wildlife health, the social-cultural significance of water, cultural site protection, climate change and resource development impacts. Detailed oral history work in many communities is helping to educate people locally and globally about the importance of Aboriginal history and culture. Place name work by the Gwich'in Social and Cultural Institute, for example, honours the many hundreds of years of ecological knowledge held about cultural landscapes, how they are changing and why they matter. Many projects, such as youth-elder camps held with Lutsel K'e Dene First Nation, offer opportunities for Traditional Knowledge to be passed on to younger generations. They also provide unique opportunities to understand how traditional knowledge and scientific methods can be useful in answering key questions of concern to communities (*e.g.* is mining affecting the migration route of caribou?). The internet as well as digital communication technologies are also creating new ways for youth to be involved in rethinking the way that Traditional Knowledge matters in our increasingly global society.

Research is constantly bringing new ideas and methods forward. Oral history research has been important to understanding the history of changing climate in the north; new methods such as photo-voice (taking photos and telling stories about photos) have also been useful in tracking changes on the land such as slumping of permafrost and sea ice melt. Traditional Knowledge research, particularly about wildlife and fish, has been important in many parts of the north. Equally important is ethnobotany research, which has helped uncover knowledge about medicine and healing practices held by many Aboriginal women. Academics have much to learn from Elders, community organizations and co-management boards that are immersed in creating, documenting or learning from Traditional Knowledge on a day-to-day basis.

Researchers often like to run around and write things down in notebooks and computers; many elders strongly emphasize that learning from Traditional Knowledge is far more involved. It is about trust, relationships and respect for where the knowledge came from and why it is still important. It is a lifelong way of living and being which is important now and in the future. ⬣

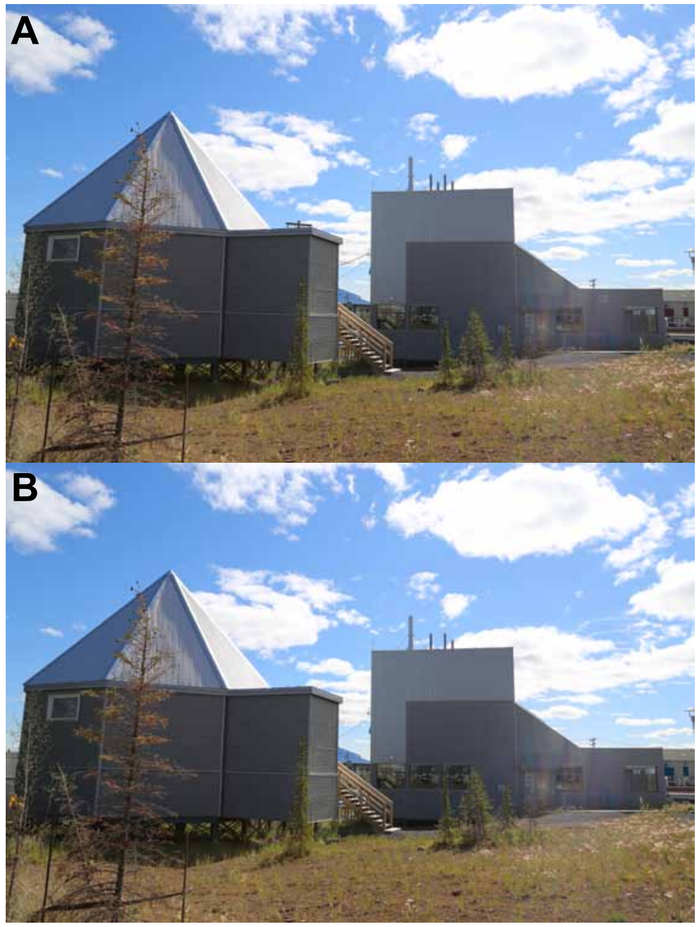
Long term relationships between people and the land are fundamental to Traditional Knowledge. Brenda Parlee and Ernest Boucher at Great Slave Lake in 2012. **(Photo Credit: Brenda Parlee)**

KIDS ONLY

Can you colour the Aurora Research Institute Logo?
If you live in Inuvik, bring your drawing to our community celebration on November 19th to win a prize!

Name:_____

Can you spot the 7 differences between the Western Arctic Research Centre?
All the answers are on the last page



Can you help researcher Ashley unscramble her list and remember what to bring to study the Delta in the winter?

1. eerthmrmteo
2. kbetonoo
3. itelhpocre
4. gruae
5. gairmsnue ptea
6. dlse
7. aeethrw tstaoin

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

HINTS
1. It measures temperature
2. Something you write in
3. Used to fly into hard to reach places
4. Drills through ice
5. Used to look at distance
6. Winter transportation
7. Collects information about the weather

Looking forward to the next 50 years

Pippa Seccombe-Hett
Director, Aurora Research Institute

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Inuvik, NT X0E 0T0
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Yellowknife, NT X1A 2R3

We live in a dynamic region of global importance. The Northwest Territories is an essential place to study a range of environmental, economic, social, health and cultural questions. For over 50 years, local, national and international researchers have been coming to the Western Arctic to build a collective understanding of our region, country and world. Significant advances have been made in many fields of study because of the research which takes place in the Inuvik region. It has been out intent, through this publication, to highlight some of those exciting moments from our past, which have improved the understanding of our home. We also seek to celebrate the people and the places in the region that have been central to these discoveries over the years.

In celebrating our past, we must also look to our future. Moving forward, the outlook for research at the Inuvik Research Centre and in the Northwest Territories, as a whole, is promising. Every year we have seen more and more researchers come to the region to examine an ever increasing amount of research questions. Within Inuvik, the Aurora Research Institute is now housed in a brand new research facility that is being used by local groups and national and international researchers alike. We have built a strong staff, dedicated to supporting, facilitating and undertaking northern-based research that is not just in Inuvik, but territory-wide from additional offices in Fort Smith and Yellowknife. At Aurora College, we have recently become eligible to manage federal research funding from the national research councils that focus on both natural and engineering sciences and social sciences and humanities. This new funding opportunity increases our ability to pursue questions relevant to northerners. Within the Delta, we have seen the expansion of the Inuvik Satellite Station Facility to include national and international dishes. This new facility allows, among other things, for the growth of remote sensing and imagery for studying the NWT. With such a large land mass, this type of data can provide essential information about the changes happening in remote corners of our territory.

Fifty years of continuous research service in Inuvik shows just how important the Beaufort Delta region is to studying the big questions that impact everyone.

Fifty years of continuous research service in Inuvik shows just how important the Beaufort Delta region is to studying the big questions that impact everyone. Our Territory is ever changing, and will continue to be an important place to study many environmental, social and cultural issues. We are committed to serving this region and the NWT by supporting the research needs of Northerners. Doing research can be a long and winding journey, that often brings people to places and results that are surprising. We celebrate in this journey, and look forward to all the new discoveries to come. ⬣

50th Anniversary BBQ at WARC with many of Aurora Research Institute's staff.

Answers
Word Jumble: 1. thermometer 2. notebook 3. helicopter 4. auger 5. measuring tape 6. sled 7. weather station

Spot the differences in picture B
1. No light above the door at WARC
2. One chimney is missing
3. There is an extra window in WARC
4. Under the windows on the building in the background is blue
5. A cloud is missing in the right top corner
6. Electrical pole above the Cosmic Ray building is gone
7. The wires are missing