ARCTIC FUTURE

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In this issue...

Lapland Gathering of Circumpolar Young Leaders

CYL interns join Arctic education experts

By Harry Borlase

Despite being separated by thousands of kilometres of ice and snow, the 2007–2008 Circumpolar Young Leaders congregated for the University of the Arctic's Second Rectors' Forum in Rovaniemi, Finland, from February 27 to 29, 2008. Not only were the three young leaders requested to participate in the Forum, but they were also an integral part of the Forum's organizing team, helping with registration and note-taking. The Forum, which featured 33 university leaders from the Circumpolar North and over 35 invited experts and observers in Arctic education, was a wonderful opportunity for the young leaders to network and meet some of the North's most influential enthusiasts. Carolee Buckler, Project Manager for the International Institute for Sustainable Development (IISD), was also on hand for the conference, participating as an observer.

The Forum featured a number of events, including a joint seminar on climate change and a discussion on the access to the Arctic Sea, which was held in conjunction with the Standing Committee of Arctic Parliamentarians. The interns were also welcome to participate in a number of extra-curricular events, including luncheons hosted by the University of Lapland and a tour of the world-renowned Arctic Centre Museum. However, the highlight of the three-day event came when the group was invited to meet with Mary Simon, President of the Inuit Tapiriit Kanatami and former President of the Inuit Circumpolar Council, for a one-hour informal session. President Simon gave a very inspiring account of her life and spoke of the importance of Northerners getting involved in

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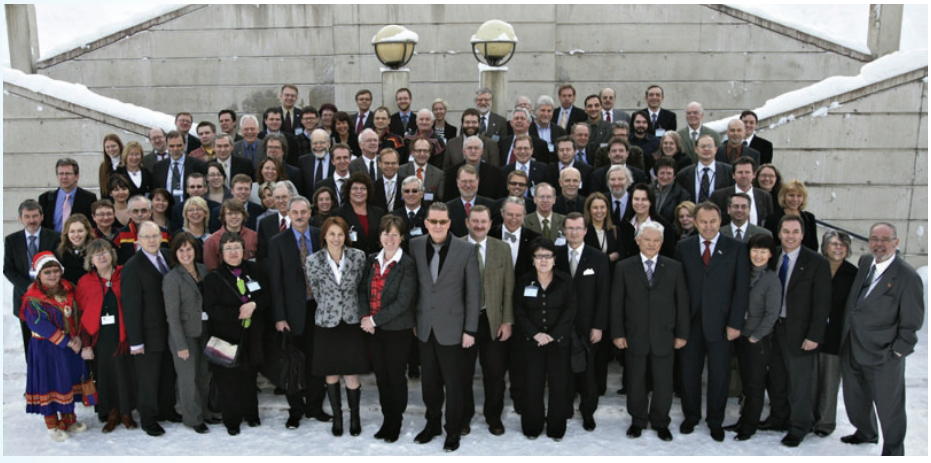
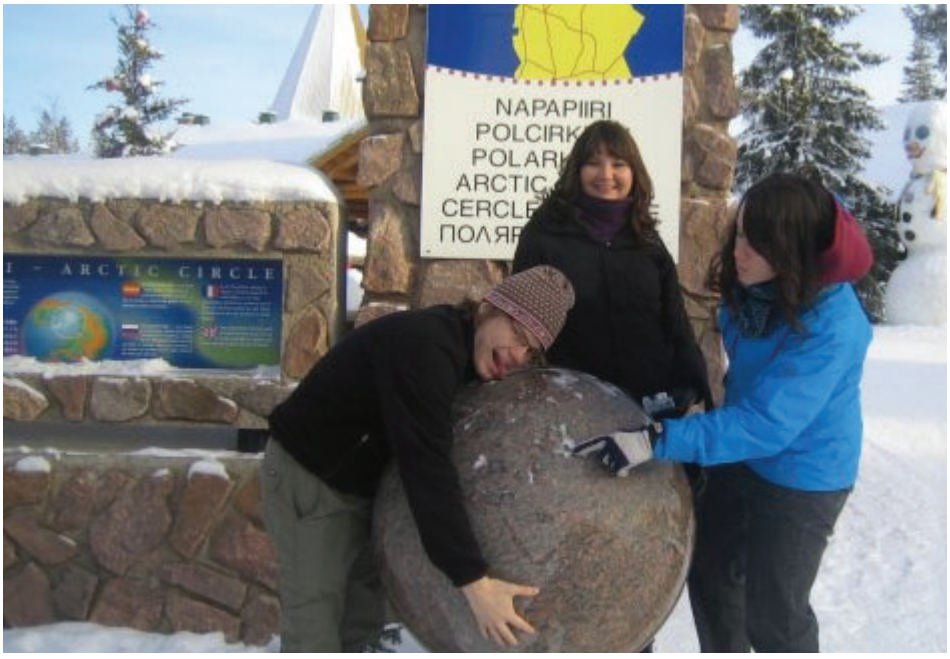


The University of the Arctic's Second Rectors' Forum in Finland was attended by 33 northern university leaders and over 35 Arctic education experts and observers.



Circumpolar Young Leaders had a ball in Rovaniemi, Finland.

Lapland Gathering of Circumpolar Young Leaders

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organizations that affect their communities and environments.

Following the Forum, the three Circumpolar Young Leaders and Carolee Buckler debriefed at the University of Lapland. The group participated in a variety of exercises that helped them reflect on their experiences of their internship placements over the past several months, as well as the positives and challenges associated with living in a new country or region. Each intern was asked to give a PowerPoint presentation (which typically included fun anecdotes and pictures that illustrated their internship experiences). An interesting Russian presentation of Sami Life was offered by Dr. Leif Rantala of the University of Lapland's Education Faculty. The presentation showcased some of the difficulties of being a Sami minority in Russia's Kola Peninsula. The debriefing was a very critical experience for all the young leaders, as their accomplishments and some frustrations could be shared among a sympathetic crowd.

Needless to say, there was also time for fun! Following the hectic days of the Forum, the Circumpolar Young Leaders were treated to a few local cultural events, such as an afternoon reindeer safari exploring Lapland's woods, as well as night-time visits to some of Rovaniemi's social establishments. Perhaps the most unexpected moment came when the group accidentally locked itself out of the guesthouse sauna. Without much choice, they trudged through the snow for over half a kilometre in bare feet to a neighbouring building. Following a rather comical instance of having to contact the police to re-open the chalet, the group slept soundly with swollen toes.

Harry Borlase is a former CYL intern placed with the University of the Arctic in Finland.

Former CYL intern Harry Borlase.

In Depth

Meet Linda Wright, One of the Circumpolar Young Leaders

Making contacts; discovering networks

My name is Linda Wright, I am from Inuvik, Northwest Territories, and I just completed my placement in IISD's Circumpolar Young Leaders Program.

When I applied to the program, I initially wanted to work with the Center for International Climate Change Research in Norway, but the placement fell through, which was fine because then I wouldn't have had this great opportunity to learn first-hand about sustainable development, in Winnipeg, Manitoba. I enjoyed the IISD office environment; the people were very friendly and helpful. I had a view of the windiest corner (Portage and Main) in the world, so I've heard.

During my time at IISD, my responsibilities included, updating the Ookpik Calendar of Events (http://www.ookpik.org/calendar.aspx) and adding new cultural and Arctic relevant links to the Web site. I interviewed and profiled Jessica Simpson, a young indigenous leader from Yellowknife, NWT, who is currently profiled on Ookpik – Your Peers and Mentors section of the Web site (http://www.ookpik.org/peers/). I also wrote articles for the *Arctic Future* newsletter.

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Former CYL intern Linda Wright.

Linda Wright's home town of Inuvik, NWT.

Meet Linda Wright, One of the Circumpolar Young Leaders

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However, one of the most exciting projects I worked on is a scoping study to see who is doing what in terms of capacity building of young Northerners. In connection to IISD's International Polar Year (IPY) proposal to expand the Circumpolar Young Leaders Program, this research information will be used to determine what training programs exist for young Northerners once they have finished their formal education and identify what essential components are still missing. It is often said that the next generation will be decisive in whether we achieve sustainability or not.

As part of our research, we interviewed past CYL interns about their internships, their experiences living and working abroad, and about their current lives. I have learned that many of the CYL alumni are still working (directly and indirectly) on sustainability issues and most of them are currently living and working in the North. I have received supportive and informative feedback from past interns concerning the skills and experience needed to move into leadership positions and what traits are essential in maintaining these leadership roles.

We also contacted current capacity building programs, to inquire about the essential components they use to build the capacity in Northern youth and how their organizations help youth define and attain their goals. Their responses will be used to support the paper. Some of the organizations interviewed include: Northern Youth Abroad; Students on Ice; Schools on Board; Gwich'in International; and the Arctic Athabaskan Council. Through this research, I have learned that capacity building is much more than training; it is a process of developing and strengthening the skills, instincts, abilities, processes and resources that organizations and communities need to survive, adapt and thrive in the fast-changing world.

At the end of February, I travelled to Rovaniemi, Finland, to attend the Circumpolar Young Leaders debriefing with two other Arctic interns (working in Finland and Norway) and the CYL Project Manager, Carolee Buckler. While in Finland, we stayed at the University of Lapland and participated in the University of the Arctic Rectors' Forum. We also took time to explore some of the outdoor activities; such as the reindeer sledding and a visit with Santa Claus! The trip to Finland was my first trip outside of Canada—it gave me a new, more global perspective.

As a student I have lived in other Canadian cities, but I found living and working in Winnipeg as an intern much different than going to school every day. Here I had a chance to learn in a more professional, hands-on way. Here I am making contacts and discovering networks that will definitely be useful in the future. This internship experience has taught me to manage my time; and it has increased my confidence to approach projects and to communicate more effectively. I have also been learning a lot about sustainable development. This field is very rewarding and I predict this experience will benefit me in the future. During this placement I really aspired to do a good job and I believe that this opportunity was a great step in the direction my life is taking me. I am certain to carry these new skills and experiences into my future endeavours.

When I was offered the internship, my accommodation options were to either live on my own or with a family. I decided to stay with a lovely family of three. This wonderful family welcomed me into their warm and comfortable home and we have made such a connection. We spent time together, swimming, shopping and visiting with each other. I am so grateful to have had an active, warm family to stay with. They were my greatest contacts in Winnipeg and I am sure we will stay in close contact

Garbage in the North: What to do about it

Assessing recycling in Canada's Arctic

By Nancianne Grey-Gardiner

I live in Northern Canada and cherish the land, the people and the cultures that thrive in this country's diverse Arctic. Although I have spent much time living in Southern Canadian rural areas and cities, I've realized that Canadian Arctic remote communities have a responsibility to address current growing waste management problems and the serious lack of recycling programs. In the past few years, I have become acutely aware of domestic recycling because I've experienced, witnessed and unintentionally committed environmental atrocities to our beloved Arctic.

Long ago when I was a little girl, I lived in the South for a number of years and I developed this habit to separate and rinse juice boxes, egg cartons, pizza boxes, newspapers, tin cans and plastics before putting them into a "blue" box. Now as a young adult woman, I live in Northern Quebec in a region known as Nunavik. My ancestors roamed this land and followed the seasonal migrations of Arctic wildlife. Nowadays, Inuit don't live that traditional nomadic lifestyle, but instead they work "9 to 5" jobs and drive SUVs. Today, I raise my own family and I'm sad to admit that my children aren't learning domestic recycling rituals like other Southern Canadian kids do. I have no place to put my domestic recyclable materials, except into my garbage can. I can easily say that it's an atrocity that Nunavik's standard of garbage disposal is to throw whatever you use—and however much you use—into one big heap and forget about it.

Baled recyclables bound for Alberta over NWT's ice roads.

I am surrounded by beautiful land and breathtaking, picturesque mountains and rivers. Yet, in the summer months, there are some Inuit communities that aren't quite pleasant to one's eye because garbage is scattered all over the town. Factors such as poverty, and serious social and health issues do become reflected in a town's landscape, but the main cause is that there's no domestic recycling infrastructure in Nunavik. You have to literally stuff recyclable materials into a plastic garbage bag, along with the unwanted solid and liquefied foods. This is inexcusable, environmentally speaking, yet it is normal in Northern Quebec.

This is a very evident problem that pushed me to investigate other northern regions of Canada, and see what other Northerners are doing about waste site and recycling management. I had the opportunity in late 2007 to travel to the Yukon and the Northwest Territories and visit remote places. I went to Whitehorse, Yukon, to visit Raven Recycling, which is a monster recycling plant in the heart of the Yukon's capital. I also went to Inuvik, NWT, and visited a fantastic little family-run business that processes the entire Inuvialuit and Gwich'in regions' recyclables. And, finally, I visited Tuktoyaktuk, which turned out to be more similar in municipal infrastructure and geographic remoteness to my home community of Kangirsuk.

All of these communities in the western Canadian Arctic gave me a better understanding and insight about environmental consciousness within the psyche of Northern Canadians. I met dedicated individuals within the territorial governments and private businesses, who want to stay up to par with Southern Canadian environmental standards.

I strictly inquired about domestic recycling in the North. I am aware that used tires, oils, lubricants, batteries, antifreeze and other hazardous materials are recyclable and common in remote Arctic communities. But my focus was about the Northern individual's use of garbage. When I visited the various places in Whitehorse, Inuvik and Tuktoyaktuk, I caught a glimpse of how the western Arctic developed creative and practical ideas in reducing, recycling and reusing materials used in private homes.

I was impressed with Raven Recycling in Whitehorse because it's a non-profit society run by a volunteer board of directors that handles all of the recyclable materials from communities and towns throughout the entire Yukon. The plant was launched in 1992 by the Yukon Conservation Society, a group of lobbyists who pushed the NDP government of the day to make the Yukon more environmentally friendly. Raven Recycling employs approximately 20 people to sort, bail and manage the material. It's a 24-hour recycling program, and the place was buzzing with environmentally conscious people when I visited.

It started with a simple beverage can refund (BCR) procedure, in which a person would buy a canned beverage with a 10-cent surcharge included in the price. So if one returns that can back to Raven Recycling, five cents is paid back to the individual. Sounds like peanuts, right? Actually, to my surprise, I learned you can make a bundle of cash from your box of recyclables. That BCR concept grew into a booming business, and expanded into

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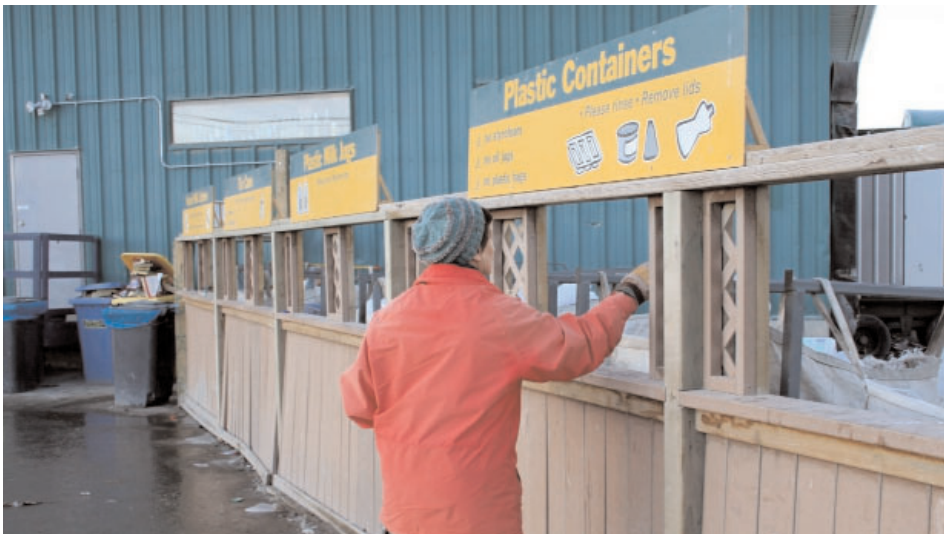
cardboard, plastics and metal materials which are collected, condensed, baled and trucked to neighbouring British Colombia. Raven Recycling has accomplished innovative ways to keep the Yukon's waste sites cleaner, and even drives around to Whitehorse's governmental offices and private businesses to pick up recyclable paper.

I sensed that Yukoners are more environmentally conscious than people in my native Quebec region, which sits almost the same latitude. The Yukon is the complete opposite of Nunavik in terms of economic, social and health issues. All Yukon communities, except Old Crow, are accessible by road thanks to the American built Alaskan Highway. In Nunavik there are no roads and the closest city to my hometown is Montreal—that's just 1,000 km away! Due to the Yukon's road accessibility, and more temperate climate, as opposed to the harsh and treeless land of my eastern Arctic, there appear to be more businesses and people than in Nunavik. The Yukon has organized and funded waste site management systems that support an environmentally conscious society, one toward which the Nunavummiut (people of Arctic Quebec) should aspire to become.

Yukoners are supported in environmental friendliness through plenty of flyers and brochures printed by the government to educate people about procedures and rules to maintain good recycling behaviour. In the territory's stores, there is a choice among environmentally friendly bags, such as cloth, compostable and paper. Yukoners also focus on developing environmental consciousness among their youth. Initiatives include contests for the best art piece made with recyclable materials in school; and awarding points (that can be exchanged for prizes) for gathering the most recyclables.

Once I arrived to Inuvik, NWT, I felt closer to what I was seeking on my journey to discover Northern recycling. As I travelled north of Whitehorse, environmentalism dwindled, and recycling was considered more for making money than for making a difference for the environment



An enthusiastic recycler visits Raven Recycling in Whitehorse.

I was delighted to see that domestic recycling in Inuvik was happening, and I found a small family business running a depot called Wrangling River Supply. It had everything from furniture, antiques to a medium-sized compactor and baler in their warehouse. This small company was contracted by the Government of the Northwest Territories to collect recyclable materials from the entire Inuvialuit region of the Western Arctic. This means that in the summer months, when the Arctic Ocean is ice-free along the coastline of the communities of Uluhaktok, Sachs Harbour, Tuktoyaktuk and Paulatuk, they'd send their recyclables to Inuvik. There, the materials are then separated into plastics, metals and Tetra Pak materials, baled and finally trucked down to Alberta on the ice roads of the NWT.

I found that residents of Inuvik are not as environmentally conscious as the Yukoners I visited. In this Northern town, recycling was more about profit than environment. While I was there, I heard a story about a local man who searched high and low in Inuvik's dump for anything that was recyclable. This person would rake in several hundreds of dollars each week at Wrangling River Supply, which delighted the owners as well as the collector. He was picking through people's garbage to make a buck for himself. He even called it his job. But, the town's municipal council got word of the untaxed income this local man was making, and the idea of someone going through personal garbage bags at the dump was not agreeable to many residents. As a result, stricter rules were enforced and only garbage dump employees were allowed to visit and manage the site. I could see a similar thing happen in my community if there were a domestic cash-return recycling program. There are many people who do not have work, and will find the most creative ways to get a buck or two.

In Tuktoyaktuk, I was pleasantly surprised to find a youth centre that had taken complete control of the town's domestic recycling. Kids were being paid to sort through the plastics, metals, cans, Tetra Pak containers and cardboard. There was an organized, but messy, cashier's desk in a stark building where each week children and teenagers come in with bag loads of recyclables. I was told by the youth centre's director that some kids could reach up to a couple of hundred dollars per week with their cash-returnable materials. I also was impressed to have a blue box at my guesthouse, even though I'm much further north than my home community of Kangirsuk.

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A view of Kangirsuk, Nancianne Grey-Gardiner's hometown.

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I though that it was creative that Tuktoyaktuk reused their town's original Hudson's Bay Company building, and restored it as a recycling warehouse. They wait until every summer to sealift containers full of sorted recyclables and send them by a marine cargo shipping company called the Northern Transportation Company Ltd., for free. Despite this positive use of municipal buildings, and youth work capacity, the Tuktoyaktuk Corporate Council (municipality) mentioned that there may be a possible future shut down of the youth centre's recycle project. The maintenance expenses to run the depot building (heating, electricity, salaries, reimbursement of recycling refunds) were over budget. It would be too bad if they did decide to close because the director of the project said that their town was cleaner and had no cans or waste products in the ditches or roads.

When I returned to Nunavik, I came home to a fully-loaded garbage can. I had to retrain myself to accept that I had no domestic recycle bin. I couldn't help myself but put recyclables in a giant orange bag and watched how fast it filled within a few days. This fast build-up is due to the food I buy at my local store: frozen meats, processed food and beverage products packaged in cardboard material layered with wax or plastic.

The regional administrative government that I know is closest to making recycling a reality is called the Kativik Regional Government (KRG). This is a public organization created 30 years ago following the Act respecting Northern Villages, the Kativik Regional Government (Kativik Act) and the James Bay and Northern Quebec Agreement. The KRG distributes monies to 13 other Inuit community municipalities to run their towns accordingly.

The Government of Quebec's Minister of Sustainable Development, Environment and Parks had passed a resolution to make all Quebec municipalities commit to environmentally friendly procedures in waste site management, and given at least $120,000 funding for such municipal expenses. Yet, Nunavik's 14 Inuit communities and its 10,000 people did not have access to this funding.

The KRG's Department of Renewable Resources wrote letters for two years in attempt to receive such funding, but nothing became of it. The reasons for this rejection of much needed funds to begin a recycling program in Nunavik are vague. In response to this provincial funding rejection, the KRG formed the Kativik Regional Government Environmental Committee, which became responsible for campaigning for funding from the Minister of Sustainable Development, Environment and Parks. This committee is hopeful to have future monies to advance waste management in Nunavik, but I feel this region has a long way to go, even if such funding was finally approved. Education is the key because younger generations in Nunavik are not aware of environmentalism. The local school board hasn't made any significant progress in terms of recycling and waste management education for Nunavik's ever increasing youth population.

That said, the Northern Villages of Nunavik do indeed send sealift containers full of dead tires, batteries, hazardous materials like oils, lubricants, paints and antifreeze on ships that travel down to the ports of Montreal. There has also been regional progress in cleaning up abandoned mining sites scattered along the coastlines of Nunavik. There are rumours of a new pilot project that will begin in 2008 or 2009, about paper recycling in all Nunavik municipality offices. Yet, there still remains a question about the 10,000 Inuit who dump all their garbage in one place, and continue to support a growing population with no education about environmental awareness.

From my living room window, I can see weekly cargo planes flying in with groceries for Inuit to buy at the store. These planes leave empty back to southern airports. Could the local airline send recyclable materials southward in empty planes? The cost and logistics of transporting recyclables is a major problem for this region. The approximate cost of sending one sealift container full of hazardous materials to a private recovery centre in Southern Quebec, is $10,000.

The province of Quebec is supposedly a leader in environmental awareness in Canada, and indeed subsidizes municipalities and cities to continue with environmentally healthy waste management systems. Could it be that Quebec's Arctic is forgotten?

I witness more consumption of cardboard-packaged frozen food products by Northerners than by Southerners, and this particular type of packaging pollutes our Arctic land. I hope to see transport organizations like marine transportation companies, and Northern airlines work with Northerners to solve this huge environmental problem.

I hope that my children will be aware of recycling someday, and live in a northern environment where the blue box is just

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Exploring Nature-based Tourism with Professor Patrick Maher

By Shannon Mallory

It's a vibrant time for polar tourism research and especially for Patrick Maher, an Outdoor Recreation and Tourism professor at the University of Northern British Columbia (UNBC). With the combination of his polar tourism research and field work in some of the most pristine areas in the world during the International Polar Year, Dr. Maher might have the best job around.

I met Maher while skiing on the local trails around Prince George, where he has been teaching Outdoor Recreation and Tourism Management at UNBC for the past two and a half years. We talked about his recent field work consisting of epic canoe trips down major river systems in Northern Canada, and evaluating tourist orientation programs in beautiful Gwaii Haanas off the west coast of British Columbia. I moved away from Prince George and headed for Northern Canada, but that wasn't the last I saw of Maher. His trips throughout the circumpolar world allowed our paths to cross again, so I decided to investigate what he was up to and how his research fits into the International Polar Year and the polar research community.

The International Polar Year has incorporated human dimensions and components into its research efforts as never before. Issues concerning global change are currently being researched to capture and disseminate information from those who live in these areas. Maher's research takes into account tourism's impacts on the physical environment in the polar regions, but also looks at the connections people have with their environments and the interrelationships between culture and tourism. The goal of Maher's IPY research on polar tourism is to build capacity within communities by providing useful research and consultation for tourism-related issues and opportunities. Maher is also currently involved in a project focused on ambassadorship for conservation of Antarctic wilderness. The researchers involved are located in France, the Netherlands, the U.S. and Canada. They are identifying ways to engage those who may never visit the polar regions to give their opinions about the protection of such areas.

I am sure that Maher is busy coordinating another adventurous field season in some amazing parts of the world. But beyond the glamorous lifestyle he leads, he is also making significant contributions to communities

Former CYL intern Shauna Mallory.

where tourism is increasing as well as connecting researchers, students and tourism operators in Arctic and Antarctic tourism sectors during the International Polar Year.

UNBC offers a Bachelor of Science in Natural Resource Management with a focus on Outdoor Recreation and Conservation, and a Bachelor of Arts in Nature-based Tourism. These programs provide students with dynamic training opportunities in environment and tourism.

Shannon Mallory is a former CYL intern placed with UNEP-GRID Arendal and the University of the Arctic in Norway.

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as normal as the garbage can. The attitude towards garbage needs to change for the better and our Arctic's children need to be taught to reduce, reuse and recycle.

Recycling is necessary and it can create win-win situations. It creates jobs, promotes cleaner waste sites, helps the environment and can help people earn money. I saw that Western Arctic communities are making a difference by contributing to a cleaner world, and commend their governments for making this an environmental priority. A future dream of mine is to see a recycling depot in Kuujjuaq or Puvirnituq, two of Nunavik's largest towns, by obtaining a contract with the provincial government to stop burning garbage and properly manage the waste sites. An alliance of private, non-private and governmental bodies in all Eastern Arctic communities would benefit everyone. Domestic recycling is possible in my Arctic region of Quebec, it is just a matter of education and awareness of the need.

Nancianne Grey-Gardiner is former CYL intern who was placed with the International Institute for Sustainable Development in Winnipeg, Manitoba.

Former CYL intern Nancianne Grey-Gardiner.

University of Manitoba Plays a Leading Role in Arctic Research

A view from a Canadian Coast Guard ship

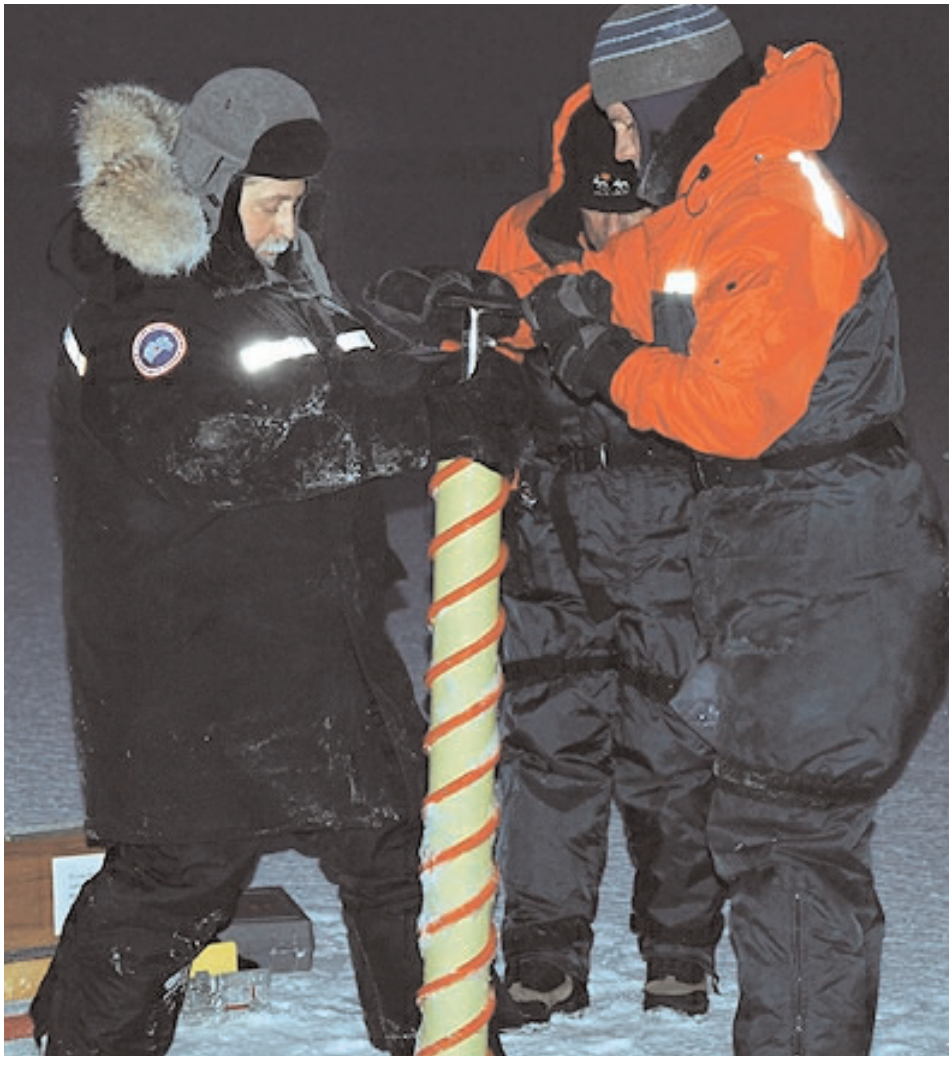
By Leah Janzen

The University of Manitoba is playing a leading role in Northern research. Over the next year, that role will be showcased on the Canadian Coat Guard Ship Amundsen as it patrols the edge of the Arctic ice-pack providing researchers with a floating research platform.

U. of M. Communications Manager Leah Janzen was on board the Amundsen in December 2007 to see first-hand what the researchers are discovering and what it means for Canada's North and the world.

Minutes after our twin otter takes off from the Inuvik airport, the mid-day sun gives up its half-hearted attempt to climb over the horizon and sinks back down into its winter hibernation. The sky is now little more than a grey smudge and the spindly, stunted pines that had dotted the landscape below a moment before have also surrendered to the increasingly harsh and inhospitable climate and terrain. There is nothing now but ice and snow.

Eventually, the land drops away and we are now flying over the Amundsen Gulf in the Arctic Ocean. It is mostly frozen, but from the air it's possible to see massive cracks in the ice which sometimes gape open to expose the sea beneath. In spots it looks like fine, bone china which has been shattered into shards. In areas where the water is visible through the cracks, steam rises from the open fissures. I can only imagine what it will look like at my final destination, at least another hour further north.



Researchers test the Arctic ice.

I am on my way to visit the CCGS Amundsen—a research ice breaker being used by the University of Manitoba-led Circumpolar Flaw Lead System Study (CFL). David Barber, Canada Research Chair in Arctic System Science and Director of the Centre for Earth Observation Science at the University of Manitoba, is the principal investigator of the CFL study.

Over a 10-month period which began in October 2007, the Amundsen will be home to a rotating team of scientists from around the world. About 200 researchers from 15 countries will be on board at some point to study a number of Arctic areas including sea ice, oceanography, food webs, gas fluxes, sea mammals, contaminants and traditional Inuit knowledge of the Arctic climate.

Five of the 10 research components of the project are being lead by University of Manitoba professors. A large number of University of Manitoba graduate students will also have the opportunity to take part in the research on board the ship. High school students from Canada and a number of other countries will also be invited on to the Amundsen during the project to participate in the research as part of the Schools on Board program, also led by the University of Manitoba.

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The CFL project began in October and is expected to continue non-stop until mid- to late August 2008. It is part of International Polar Year (IPY), an intensive international program of coordinated, interdisciplinary science research and observations over a 24-month period. The CFL project is the largest IPY project in Canada and is possibly the largest IPY project in the world.

In July, the federal government contributed $25.5 million to the $40 million project.

At present, the ship is drifting in the sea ice in the Amundsen Gulf in the Arctic Ocean just south of Banks Island. The area is desolate and hostile, but it has become a region of intense interest on the part of climate change researchers. Canada's high Arctic has been called the canary in the coal mine of climate change. What happens here has serious implications for the rest of the world. Faster melting means eventual sea ice level rise and more immediate changes in winter weather because of the smaller amount of sea ice. White sea ice reflects about 80 per cent of the sun's heat off the earth. When there is no sea ice, about 90 per cent of the heat goes into the ocean which then warms everything else up. Warmer oceans lead to more melting. What scientists are seeing in the Arctic now is not encouraging.

An already alarming decrease in sea ice greatly accelerated this summer, prompting some scientists to estimate that the Arctic could now be ice-free in the summer as early as 2012. Just last year, that estimate was pegged at 2040.

"The changes we've seen in the amount of sea ice, even in the last year, have been dramatic," said Gary Stern, co-lead investigator of the CFL and an adjunct professor in the Clayton H. Riddell Faculty of Environment, Earth, and Resources. "We're also seeing an increase in mercury levels in mammals and a variety of other things which suggest the impact is already being felt at all levels."

The Amundsen began its Arctic assignment in October 2007.

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Stephane Julien, the Coast Guard Captain of the Amundsen, said the decrease in multi-year sea ice has been so rapid and dramatic that it's fair to now call the ice "an endangered species."

The last hour of the flight to the ship feels much longer. The twin otter is loud—sounding a bit like a massive blender set to "purée"—and incredibly hot inside. The pilot explains that the plane has two settings, deep freeze or broil, and he's clearly opted for the latter. After what seems like hours in the air, the pilot turns to his passengers and gives us the thumbs up. Craning my neck to peer out my small porthole window, I see the lights of the Amundsen twinkling in the inky darkness. We land on an improvised air strip which has been carved out of the sea ice just metres from the approximately 100-metre-long ship. Total flying time from Winnipeg to the ship—nine hours.

After piling our gear onto snow machines we are driven to the gangway and brought inside the Amundsen. The ship is a confusing maze of laboratories, sleeping cabins, lounges, eating areas, storage and steep staircase after steep staircase that carry you up and down the numerous levels. I spend the first two days just trying to figure out where I was relative to my sleeping berth.

There are about 40 Coast Guard crew members and 26 scientists aboard the ship on this leg of the project. There is

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also space for media on each leg. At this time, there is a writer from Oregon working on a book as well as two U.S. documentary filmmakers hoping to turn their experience on the Amundsen into a feature film. I arrived with Peter Mansbridge, anchor of the CBC National News, who travelled to the ship with a camera operator and two producers to do a number of stories about the project and Arctic climate change.

Stern welcomes the interest of the media and said it's crucial the project be open to such scrutiny if the message of climate change is to get out to the general public.

"As scientists we can write all the papers we want," he explained. "But it needs to get into the mainstream media if our work is going to have any impact at all with the general public."

After dinner—the food, prepared by the Coast Guard chefs, is amazing—the scientists aboard the ship meet each evening to discuss their work and make plans for the following day. Organizing who is doing what and balancing the needs of a number of different researchers is a difficult task that falls to the chief scientist on board. On this leg, it's Stern. Some researchers need the ship to move to get the samples they need, others wish the vessel to remain in place for a number of days to complete their work.

Fuel, which has to last until the summer, is a precious commodity so any decisions to move the ship must be made carefully. Right now, the ship is only moved if the ice pack surrounding it threatens to push its back up against the hull of the ship and trap it there long-term. Julien makes regular trips aboard the ship's helicopter to assess the ice pack and determine when the ship needs to move. The ship eats up about 6,000 litres of fuel a day when stationary. That can increase by 10 times if the ship needs to blast through the thick ice around it.

On my first evening at the Amundsen, I join a pair of researchers from China who leave the ship to conduct some testing on the ice. They are using a bright fluorescent light to test the permeability of the ice's surface to light. Within moments of leaving the warmth of the ship, I see a pure, white Arctic fox scurry past. It has no tail—perhaps the result of a run-in with another fox. A strip of green northern lights zig zags across the sky and a brilliant shooting star dashes past for effect.

Massive floodlights from the ship sweep across the surface of the ice to protect the scientists from predators. It's the only light in the darkness. Away from the beams of the floodlights, it is completely black and nearly silent. It feels like if you walked beyond the lights' beam you'd drop right off the end of the earth. At this time of year, the moon hovers along the low edge of the sky. On this night it's little more than a crescent balancing on the horizon. It's bright red.

Anytime anyone leaves the ship, they must be accompanied by a wildlife monitor who joins the excursion with a shotgun across his back. On this leg of the trip the monitor is Trevor Lucas, an Inuit from the wee village of Sachs Harbour about 30 kilometres north of the ship on Banks Island. Lucas tells me that despite the wide open spaces, a polar bear can sneak up to within about 25 feet without being noticed. I stick close to Lucas.

The circumpolar flaw lead is a perennial characteristic of the Arctic. The CFL system is formed when the central ice pack moves away from coastal fast ice, opening a flaw lead which occurs throughout the winter season. Due to reduced ice cover, these regions are very sensitive to any changes in climate and provide a unique laboratory from which scientists can gain insights into the changing polar marine ecosystem. The Amundsen will spend its time travelling in these flaw leads. It's the first time any icebreaker has overwintered in the system and Stern believes the research done here will be invaluable to the larger body of climate change data. Stern is proud that the University of Manitoba is taking such a leadership role in one of the most serious issues of our time.

"We are at the forefront of climate change issues in the Arctic," he said of the University of Manitoba. "I tell all my students and prospective students, if you're looking to do cutting-edge research in the Arctic, this is where it's happening."

While the CFL project and others like it are garnering increased media and public attention and support, that wasn't always the case, said Stern.

He attributes the change of heart to a general awakening of interest in global climate change on the part of the general public. He said people in more southerly climes are beginning to feel the impact of climate change and that has helped fuel additional interest.

"People in the mid-latitudes are starting to feel the effect," he said, pointing to unusually high numbers of forest fires in Southern California and droughts in the southeast this year as examples. "That's why I think it's made its way to the forefront. It's not because people really care about the Arctic, which is too bad; it's because people are really feeling it."

Things are changing quickly. In 2005, the Arctic experienced the lowest minimum ice extent ever with 750,000 square kilometres lost that year. In 2007, that figure jumped to 1.3 million square kilometres. Now, projections of an ice-free Arctic in the summer have gone from sometime between 2020 and 2050 to possibly 2013 or 2012.

This article originally appeared on the University of Manitoba Web site and is reproduced here with permission.

International Polar Year: Focus on Youth

Youth and the International Polar Year

By Linda Wright

The International Polar Year (IPY) is a unique occasion when a wave of heightened scientific interest will be focused on the important polar regions. IPY is an international program of science and research in both the Arctic and Antarctic. It is an opportunity to advance knowledge and information on the polar regions, develop science capacity and increase awareness of issues facing the polar regions and the people of the Arctic.

The polar regions span many countries' borders—Canada, the U.S., Sweden, Finland, Denmark, Russia, Norway and Iceland. The polar regions, particularly the Arctic, are gaining importance geopolitically and economically. Polar regions are an integral part of the Earth system, closely linked to changes in climate change, sea levels, biogeochemical cycles, ecosystems and human activities. These regions respond, amplify and drive changes globally.

As a major polar nation and guardian of the Arctic islands, Canada is naturally positioned to take a lead role in the global IPY effort. The Canadian IPY effort is very broad in scientific generation of Canada's Northern researchers. With a range of IPY projects being initiated, there is something for everyone! Below are just a few youth-focused IPY projects currently in the works and there are many more still to come.

Canadian Youth Steering Committee of IPY

I had the unique opportunity to interview Alexis Schafer about her experience with the Canadian Youth Steering Committee (CYSC) of IPY. The CYSC is a group of highly motivated Canadian university students passionate about our planet's polar regions. The CYSC involves youth in the International Polar Year in order to help build the next generation of Northern Canadian scientists and leaders. The CYSC also aims to create channels for Northern youth to voice their concerns about the changes occurring in their regions and provide them with educational and training opportunities.

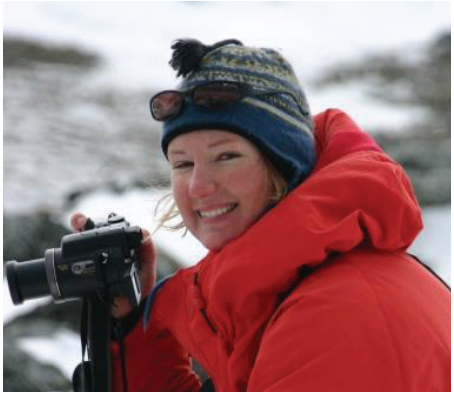
Alexis is a graduate student at the University of Saskatchewan, studying in the interdisciplinary program in Toxicology, through the Department of Soil Sciences. She has been the Co-chair of the IPY Canadian Youth Steering Committee since 2005. Working with the IPY, Alexis describes the CYSC involvement in the International Polar Year and their initiatives to get students across Canada more involved in Arctic Science research.

Linda: What are the goals and objectives of CYSC?

Alexis: To follow the CYSC mandate, which is to involve youth in IPY to create a channel for Northern youth to raise their voices and to help build the next generation of Northern Canadian scientists and leaders. Not to exclude youth from Southern Canada, but there is a special emphasis on Northern youth.

Linda: Can you please give me a brief history of the CYSC?

Alexis: We were established in the winter of 2005 by two young people—Amber Church and Tyler Kuhn. Since then they have been actively recruiting members. In 2006, the CYSC was readily established with graduate and undergraduate students involved. There are members from every province and territory. They communicate through teleconferences, e-mail and meet at various events.



Alexis Schafer, Co-chair of the IPY Canadian Youth Steering Committee.

Linda: How many staff and volunteers work with the IPY CYSC?

Alexis: The IPY CYSC is a group of highly motivated Canadian university students passionate about our planet's polar regions. There are 46 members to date, and we applied for some seed funding to possibly hire someone to provide administrative assistance for their projects and we've hired someone to take care of our Web site (http://www.ipycanada.ca/YSC/index.html).

Linda: How did you get involved in CYSC?

Alexis: I was very interested and applied to become part of the committee and after an outreach opportunity focusing on science and polar research, which is a passion of mine, I was invited to get more involved and became the Co-chair of the CYSC.

Linda: Can you tell me about the three main projects CYSC is working on?

Alexis: The first is a preparation of a series of classroom presentations. The "Outreach Up North" project will focus on sending young scientists/graduate students into both southern and Northern classrooms to educate youth

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about polar science. These classroom visits will be customized to the teacher's interests, provincial and territorial curricula and to IPY-related science themes. This initiative is in partnership with Let's Talk Science, Actua Science Camps and the Youth Science Foundation.

The second project is the construction of an IPY time capsule which will act as a legacy piece for IPY. This time capsule project has been working to engage Canadian youth in creating a snap-shot of the Canadian North through data surveys, photos and other physical items made and collected by high schools students. The time capsule will eventually include a travelling art exhibit and then be "buried" and reopened during then next IPY. The physical and social surveys are posted at http://timecapsule.edublogs.org/

Finally, our grassroots initiative aims to provide funding to support youth-led projects that will benefit the social and environmental health of their Northern communities. Priority will be given to projects led by youth that would engage larger groups of youth who will work together to improve their social and environmental surroundings.

Linda: Why should youth get involved? Why are polar issues important for youth to understand?

Alexis: The polar regions is a hot topic. The youth in the North should be aware of climate change and what is going on in their own back yard. Northern youth need to recognize that their culture is important to the rest of the world. We hope to stimulate life-long learners who will be able to understand what is happening around them in their North.

Linda: How can youth get involved in CYSC or the in various projects and initiatives you are undertaking?

Alexis: Youth can get involved by becoming a high school ambassador, where you can help in communicating our projects to other students in your community. Youth can participate in our projects through submissions to the time capsule or if they have an idea for a grassroots project, they can apply for funding for a project that would be led by youth in their community.

Linda: What kind of challenges have you experienced and what lessons have you learned with your activities?

Alexis: The CYSC is a wide-spread group and most of the communication happens over the phone, which can lead to some language difficulties. Another constant challenge is to advertise and market what the CYSC is all about, what its initiatives are and how to make the youth more aware of IPY and issues that are affecting the North.

Linda: How has working on the Youth Steering Committee helped you in any way (i.e., new skills, network, etc)?

Alexis: Being part of the CYSC has allowed me to meet a lot of people across Canada who share the same passion for polar research. Participating in the CYSC has given me motivation to continue raising awareness about the North and it has also provided me with increased leadership skills. I have also become a better communicator and have a new appreciation for volunteering.

Linda: What kind of message do you want to give to youth on polar issues?

Alexis: Become involved, especially high school students. Check out the Web site for the opportunities available.

Linda: What kind of success have you experienced so far with youth involvement?

Alexis: Since 2005, the CYSC has been bringing together all these enthusiastic youth to give back to their community and the greatest success is just how much we continue to grow as a group.

Linda: What kind of legacy do you want to leave for IPY?

Alexis: We hope the students will continue the projects they've established through the grassroots initiative. We hope that they will bring science into the classroom and involve other youth to assist in the success of their community projects.

Polar Perspectives

The Canadian Museum of Nature, through the Alliance of Natural History Museums of Canada (ANHMC) and Students on Ice have partnered together to announce "Polar Perspectives," a coast-to-coast-to-coast program of IPY Speakers and Youth Forums. The speaker series will take place in the Spring and Fall 2008 at 15 venues across the country, reaching each of Canada's provinces and territories. Prominent scientists, writers, artists, filmmakers, adventurers and leaders will provide for interesting insight into the latest knowledge on Arctic issues and their impact on both the Northern and Southern Canadian population. Along with this will be a number of youth forums which will provide secondary school students with a unique opportunity to learn about the Arctic ecosystem, Northern issues, IPY, Climate Change, Antarctica and much more. For more information about this initiative, contact Tim Straka at tim@studentsonice.com or 1-866-336-6423.

Students on Ice – International Polar Year Expeditions Series (2007–09)

The Students on Ice – International Polar Year Youth Expeditions Series has been endorsed by the IPY Joint Committee as a prominent and valued component of the IPY program. These special IPY-themed voyages to the Arctic and Antarctic offer once-in-a-lifetime opportunities to over 500 youth to explore the polar regions!

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These unique educational expeditions are designed for international high school and university youth. Participants will travel together with teams of polar scientists, experts and educators. The ice-strengthened, ship-based expeditions will be unparalleled platforms for polar and environmental education and outreach for the International Polar Year. Each expedition will have approximately 80 participating youth, and 35 polar scientists, experts and educators. Participating youth will be between the ages of 14 and 19 years old, and there are also a number of positions available on each expedition for university students. The goal is to have youth participating from countries all around the world.

Students will participate in a world-class, multi-disciplinary education and research program prior to and during each expedition. The education program will weave together elements of experiential, expeditionary and problem-based learning, and will focus on critical dialogue and leadership development skills that engage youth with the challenges and opportunities of this century. The educational benefits of SOI-IPY will be shared with thousands of youth and the general public around the world via live video-conferencing, the SOI-IPY Web site, presentations, media attention and conferences. Partnerships with schools and other educational organizations will bring the SOI-IPY directly to classrooms around the world.

For further information, visit http://www.studentsonice.com/ipy/

IPY Discovery Conference and Polar Fair

As well, work is under way for preparations of a unique and exciting international conference highlighting International Polar Year (IPY) science, scholarship and outreach activities. The conference is being organized by the Association of Polar Early Career Scientists which is an international and interdisciplinary organization for undergraduate and graduate students, post-doctoral, researchers, early faculty members and educators with an interest in polar regions. Conference themes will include: new advances/discoveries in the sciences; climate change; resource use; health and well-being of Northern communities; socio-economic, political status and governance of the polar regions; and new methods of conducting and disseminating research in collaboration with polar communities. The focus of the conference is on early-career researchers and youth involvement at an international level, conveying the excitement and urgency of polar issues. The conference is slated to take place in April/May 2009. For further information contact APECS at apecsinfo@gmail.com

There are many exciting initiatives taking place around the world. To find out what is going on in your part of the world go to http://www.ookpik.org/ipy/involved.aspx

North3

North3 Submission

The following is a submission to North3 from a youth from Northern Canada. North3 is a project to encourage youth across the circumpolar region to share their views of their region via the Ookpik Web site at http://www.ookpik.org/north3/

Name: Brandon Kyikavichik
City/town/community: Old Crow, Yukon Territory
Country: Canada

Why are my community and its people special?

Old Crow is one of the few isolated communities left in Canada. No highways, no roads in or out of town. So we get accustomed to flying....and snowmobiles....and boats...oh yeah, and four-wheelers too. We still rely a lot on subsistence living. That's why we are so devoted to the porcupine caribou herd, our main source of food for the winter. We have been trying to stop oil exploration in the calving grounds of the porcupine caribou herd for about 15 to 20 years now. It's a shame that some day big oil companies will get in there and destroy one of the most pristine ecosystems in the circumpolar world, and thus, disrupt the natural order of the entire planet, but we'll keep fighting 'til the end. We're a gallant bunch of people to say the least. We've been surviving in one of the harshest climates in the world for thousands of years. My people strapped on their snowshoes and snow plowed into the twenty-first century with the absolute minimum of resources. From about 23,600 years ago, up to about 150 years ago, we did the best we could with what we had and we were happy. We had antler wedges to cut down trees more efficiently, we built caches out of stone and rock to keep the winter supply safe, we had warriors and scouts that made up the bulk of our military. We killed animals with bows and arrows, spears and bone clubs. There were stone tools for the tedious jobs and the remarkable caribou fences for the biggest job of all—getting enough meat for the winter. The caribou

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North3 Submission

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fences were an incredible feat of engineering and construction, considering the extreme climate my people lived in, and the resources we thrived off of, or lack thereof. The fences were usually constructed in a valley; they would start at the bottom of a hill, or small mountain and gradually climb up the side of the hill. They were oval shaped and had an open corridor that guided the caribou into the fence at the bottom of the hill. All of the people would stand around the outside of the fence with bows and spears. The fence would also have snares set all around the inside. The fences could be up to twenty miles long and hundreds of caribou could be harvested at one time. It must have been amazing to see. The fences were usually surrounded by caches to store the meat. Our shelters were round and had caribou or moose skin walls. They were incredibly strong and cozy.

So the people of Old Crow have been fighting since the beginning, and we don't plan to stop. But even though we've lived a tough life, we are generally happy, and actually kind of sensitive. (I may be the only person you'll ever know to even suggest that we are a sensitive people at heart but whatever, call me a pioneer, I guess.) We are innovative, accepting and, given the circumstances, incredibly adaptive to the outside world.

What do regions of the circumpolar world share in common? How is my region like northern regions in other countries?

All circumpolar regions are extreme, and because of this, full of innovative and clever people. We are tough yet sensitive, and we share the same issues when it comes to climate change and exploration in the North.

Youth photo contribution to Ookpik Web site.

What can be done to improve the lives and environment of northern residents in my community and elsewhere?

The issue of socio-economics is big right now. Especially in the North, and in indigenous communities all over the world. How does development affect the social fabric of Northern and indigenous people? Why is it important to know? Well, I gave an example of this in the Council of Yukon First Nations general assembly. Whenever there's development, especially on lands occupied by First Nations, it affects the society as a whole. It's a well-known fact that First Nations lands and societies are fragile; let's just slow down a bit on exploration in the North, and if not we need to take every initiative possible to ensure that no more of our traditional lands are desecrated. Let's start investing in the companies that want long-term, low-intensity drilling. Companies that will give First Nations and long time residents in the North every opportunity to advance and succeed. We need to build capacity in the North and the human resources must come from First Nations, or long-time residents of the North.

Is there anything else you would like to share with us?

Now, just another issue I brought up at the general assembly, and other commissions and meetings. I hear this term "sustainable development" a lot. And in my perspective, it's been used merely as political jargon by political representatives and CEOs of wealthy companies for too long. It's just a facade, a blanket of security draped over us to make us feel safe about the future; it's all just a lie until they (or even we) do something drastic. We can't stop the influx of big oil companies in the

North, but we can choose the companies that operate under the most ethical of systems, and we can also push our respective governments to take a true and progressive look at sustainable development. The world is becoming more and more dependent on oil and the inflation of gas prices proves it. We can't let this phenomenon take over the North, too. We must find alternatives.

Announcements

2008 Summit on Inuit Education

During the week of April 14–18, 2008 Inuit leaders, education leaders, policy makers and educators will gather in Inuvik, Northwest Territories, to map a future course for Inuit Education in Canada. The Summit will feature discussion on six core themes in Education:

- Building Capacity
- Graduating Bilingual Students
- Mobilizing our Partners in Education
- Building our Curriculum and Teaching Practices
- Research in Education
- Building Post-Secondary Success

To register for this unprecedented event, please fill in the registration form http://www.itk.ca/200803-Summit-on-Inuit-Education.html or for more information on the summit, contact Rosmary Cooper at cooper@itk.ca

Planning for Climate Change: Weathering Uncertainty

July 20–23, 2008 symposium in Iqaluit, Nunavut

The City of Iqaluit has joined forces with the Canadian Institute of Planners (CIP) and the Alberta Association, CIP, to host a groundbreaking symposium on planning for climate change mitigation and adaptation. We invite you to join a group of leading-edge thinkers, researchers and practitioners on an interdisciplinary journey of discovery and mutual learning. What planning strategies are communities implementing to mitigate climate change and deal with its impacts? What can planners learn from scientists to help them prepare for changes to our land, air, and sea? How do communities plan for the next 100 years? Focused debates, workshops and spontaneous discussions on these and other issues will create a legacy for Northern and Southern communities alike.

This is also a unique opportunity to experience the Arctic in the capital city of Canada's newest territory! We have organized numerous opportunities to experience the local culture through traditional food, dress, dancing and Inuit throat singing. We will also take you out on the land and bay to experience this area's natural and cultural history. Let us engage your intellect and indulge your senses, while treating you to an unforgettable arctic experience!

For more information contact:

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