HOUSE OF COMMONS
CHAMBRE DES COMMUNES
CANADA

Standing Committee on Foreign Affairs and International Development

FAAE • NUMBER 061 • 1st SESSION • 41st PARLIAMENT

EVIDENCE

Tuesday, December 11, 2012

Chair

Mr. Dean Allison

Standing Committee on Foreign Affairs and International Development

Tuesday, December 11, 2012

● (0850)

[*English*]

The Chair (Mr. Dean Allison (Niagara West—Glanbrook, CPC)): Good morning, everyone.

Pursuant to Standing Order 108(2), our study of Canada's Arctic foreign policy will get under way.

With us here is James Manicom, research fellow, global security, with the Centre for International Governance Innovation. Mr. Manicom, thank you, and welcome.

We have a colleague from Yukon College via video conference from Whitehorse, Yukon. He is Stephen Mooney, director of cold climate innovation.

There's a three-hour time difference, right?

Mr. Stephen Mooney (Director, Cold Climate Innovation, Yukon Research Centre, Yukon College): Yes, so I am wearing my pyjamas.

The Chair: It's a quarter to six, right?

Thank you very much for being on the call with us this morning. We realize that three hours is quite a difference at this time of the day.

I'm going to start with you, Mr. Mooney. We'll have you present your opening statement for about 10 minutes, and then we'll go to Mr. Manicom, who is here. After that we'll go back and forth around the room to follow up with questions for the next 55 minutes.

Mr. Mooney, thank you very much for being here. I'll turn it over to you, and you can give us your opening statement.

Mr. Stephen Mooney: Thank you for letting me share my perspective on opportunities and interests today.

First, I'll give you a little about myself and my background. I have called the Yukon my home for 42 years. I grew up in Whitehorse. I graduated from high school in Whitehorse. Like most Yukon students, I had to leave the Yukon for post-secondary education. But I have returned. I am an industrial engineer with a computer science background. I have been certified as a project management professional. Prior to my role with Cold Climate Innovation, I spent seven years working in the field of telecommunications across northern Canada in product development, project management, and marketing. I have also spent seven years developing and implementing computer software throughout the United States.

Now I'll speak about our centre. The Yukon Research Centre, located at Yukon College in Whitehorse, is Canada's largest research and innovation facility north of 60. The YRC provides a broad array of programs and services with multi-year public and private funding. The YRC is poised to support Canada's chairmanship of the Arctic Council. I would like to share a few examples of our contribution for today's discussion.

The YRC integrates itself into all aspects of the pursuit of resources and sustainable development in the Yukon and the Arctic region. We are involved with information communication technology, mining, alternative energies, agriculture, housing construction, industrial applications, transportation systems, permafrost engineering, waste reduction, and synthetic fuels. In essence, the YRC initiatives can be pursued in a manner that improves the health and well-being of people who deliver northern economies. A recent example is our resource and sustainable development for the Arctic program, or ReSDA. ReSDA is designed to find ways to ensure that a larger share of the benefits of resource development in the Arctic stay in the region with fewer costs to northern communities.

I would like now to profile two major programs within the YRC. For the past 12 years, the YRC's northern climate exchange has been a leader in the north at building the capacity of northern communities to identify hazards such as permafrost and flooding for adaptation to climate change. Several rural communities in the Yukon have benefited from these climate change-related reports, and the city council of Whitehorse has adapted these findings into their future community planning. Since 95% of Yukon's electrical generation comes from hydro that is distributed through a stranded grid, we also partnered with a local energy provider to study the effects of climate change on the glacier-fed Yukon River.

Recently, Cold Climate Innovation, or CCI, under my leadership, was established through financial support of the Yukon government economic development branch. We are focused on the development, commercialization, and export of sustainable cold climate technologies and related solutions for northern regions around the world. CCI supports the partnership between applied scientific researchers, industry, and government dedicated to addressing cold climate and technical issues affecting northerners. The mandate of the CCI is to stimulate economic development in the Yukon through cold climate innovation and technologies. We focus on these two statements to build an economy in the north, by the north, and for the north.

I have come to understand that the CCI business model, an innovation sector that I represent today, does not fit into the traditional or standard definition of economic development in the north. In building the CCI, I have come to believe that innovation is the biggest opportunity space in the Arctic economies. As an example, with Prime Minister Harper's announcement of the Canadian High Arctic Research Station in Cambridge Bay, we assessed this opportunity and offered support with four separate initiatives, which include: using our proven methodology to conduct a community energy audit that will establish a comprehensive baseline on the energy usage within Cambridge Bay; new technologies for wind power installation in remote communities; wind and solar monitoring; and a very important heat recovery ventilation study that will place up to 10 HRV units from three Canadian manufacturers in various communities within all three territories.

● (0855)

The project goal is to develop specifications for the most effective and efficient HRV and to challenge Canadian HRV manufacturers to build the best-of-class HRV. It will be used in the new CHARS facility and sold globally.

It surprises some to learn that CCI is also active internationally. The Department of Foreign Affairs and International Trade has been a great partner to the Canadian International Centre for the Arctic Region in circumpolar affairs. We partnered with DFAIT on a mission to Scandinavia in 2010 and developed a joint initiative with a Danish technical university for joint research projects. It has resulted in their students attending a Yukon-based master's and doctoral-level course on advanced highway design through permafrost. It is delivered each spring in Whitehorse and includes a valuable field trip to the Alaska highway permafrost test facility, where students and professional engineers learn adaptive techniques. Through our partnership with the University of Laval in Montreal, this permafrost course has earned the attention of Russian and Chinese interests, whose students will likely attend the May 2013 course.

I would also like to highlight our efforts to bring the first continuous feed plastics-to-fuel machine in North America to Whitehorse. In partnership with Blest Co., in Japan, and with financial contributions from the Canadian Northern Economic Development Agency, we are developing a ruggedized machine that can convert 10 kilograms of plastic to 10 litres of fuel every hour. This fuel will be used to heat buildings while reducing landfill requirements in northern communities.

Yukon College is also proud to be the first institute in the Canadian north to be eligible for grants through the Natural Sciences and Engineering Research Council of Canada. We have been successful in receiving funding for a three-year study on mine remediation using biochar and for a five-year industrial chair on the mining life cycle.

Since wild-harvested foods represent a large portion of northern diets, the Arctic Council may also be interested to know that we have submitted an NSERC application, under the college-university Idea to Innovation fund, to work jointly with the University of Toronto and an industry partner to develop an airborne mercury measuring device. It is our goal to have this product developed, tested, and commercialized prior to the United Nations making it mandatory for countries to monitor airborne mercury particulates.

These are just a few of the 27 projects, totalling $1.8 million in public and private funds, that Cold Climate Innovation completed last year.

It has always been our goal to have an industry partner and a post-secondary master's or doctoral student involved in all of our projects. By doing this, we help solve industry problems while supporting the retention of our knowledge economy.

I would like to highlight again that innovation is the untapped opportunity space in northern economies. The YRC can help showcase Canadian expertise and can collaborate with other circumpolar communities on an exchange of tools and technologies to prepare for a changing Arctic.

Thank you very much.

● (0900)

The Chair: Thank you very much, Mr. Mooney.

We will now turn it over to Dr. Manicom, who is here with us. You have 10 minutes, sir.

Dr. James Manicom (Research Fellow, Global Security, Centre for International Governance Innovation): And now for something completely different.

Voices: Oh, oh!

Dr. James Manicom: Thank you very much for having me, and thanks for the invitation.

I'm relatively new to the study of the Arctic, certainly compared to some of the other speakers who have come already. My own background is in the study of East Asian territorial politics and East Asian foreign policy—East China Sea, South China Sea—Chinese foreign policy, and Japanese foreign policy, which is actually what drew me to Arctic studies in the first place.

I work at the Centre for International Governance Innovation, or CIGI. We basically have two Arctic projects on the go. One looks at East Asian states and their interests in the Arctic and Arctic governance, particularly the Arctic Council. The other one relates to capacity-building in the North American Arctic, so Arctic corridors, a project that's supervised by John Higginbotham, who used to be in government.

I have recently travelled to Asia as part of the former project, so I'll talk to you today about those issues. I'll talk about East Asian states, the Arctic Council, and their interests, which is what I meant by “something completely different”. I'll start with their interests in the Arctic, their perceptions of Arctic geopolitics, their views on the permanent participants in the Arctic Council, and I'll try to touch on what this might mean for their bids for permanent observership.

As far as I can tell, there is no hidden Arctic agenda in China, Japan, and South Korea. Their interests are consistent with those of what you would call maritime states. They are predominantly commercial in orientation. They are export-oriented economies, so they obviously have an interest in the savings associated with Arctic shipping. The Northern Sea route is particularly appealing, not only for liquefied natural gas imports from Norway, as was recently reported in the media, but also for exports with the EU and improved trade relations with the EU. Furthermore, all three have very large and very competitive global shipbuilding industries. They are thus interested in Arctic shipping because it portends a greater demand for ice-strengthened vessels and also a new class of vessels entirely.

The prospect for LNG imports from Europe brings me to the second interest of East Asian states: energy and resources. Japan and South Korea are the world's largest two importers of liquefied natural gas. Japan's imports will continue to grow dramatically, as long as its nuclear reactors remain shut down, and that appears to be the case for the medium term. China is likewise interested in resource and mineral exploitation. All three East Asian states have similar energy security strategies that rely on a close relationship between the state energy companies, which may or may not be state owned, to procure access to resources worldwide. At the same time, they have diversified both energy type and the geographic location of their imports—diversifying from the Middle East to Latin America to Africa to the Arctic. The Arctic is important for that reason.

A final commercial interest relates to fisheries. These three East Asian states are the world's leading distant water fishery states, along with the EU and the United States, and demand for fish products in these states is strong. Furthermore, there is considerable overcapacity in their domestic fishing industries, particularly in China, so the opening of a new fishing ground in the Arctic would obviously be of interest.

In a non-commercial sense, their main interest is climate change and climate change science. The Arctic is perceived not only as a place to learn about the effect of and rate of climate change, but also a place to learn about the source of climatic events in East Asia. One Chinese scholar I spoke to drew a link between the then-lowest recorded ice level in the Arctic, in 2007, and the ensuing particularly cold winter in southern China in 2008.

When it comes to Arctic science, it's important to recognize that these states consider themselves to be polar states, not Arctic states. They all have considerable research expertise in polar research and in Antarctica. Furthermore, they see themselves as in some ways being more capable at polar research than Arctic states. One Korean scientist told me there are things they can do up there that we Canadians can't do.

Scientific research is seen to be a collaborative effort. They're all parties to the Svalbard Treaty. They all have research stations at Spitsbergen, and they have considerable experience in Antarctic research. One telling figure is that both China's and South Korea's polar research budgets are weighted 80:20 in favour of the Antarctic.

Turning to their perceptions of Arctic geopolitics, East Asian scholars of Arctic politics, who then in turn report to their governments, have done their homework. They have read their Scott Borgerson, their Rob Huebert, who was supposed to be here, and their Michael Byers. They are all aware of that “resource race/militarization of the Arctic” perspective that was so popular for three or four years. I think they recognized that much of that was overblown. They have read the Government of Canada's Arctic policy documents. They find them reassuring. The Russian flagpole incident in 2007 stands out, but they recognize Arctic geopolitics as being largely cooperative. As one South Korean colleague pointed out, Arctic geopolitics is nothing compared to their neighbourhood.

● (0905)

I would also point out that East Asian scholars are as entrepreneurial as their North American counterparts—including me—which means that scholarship is sometimes actually punditry, designed to attract attention rather than inform.

I raise this because I want to talk about the statement by Admiral Yin Zhuo in the Chinese navy in 2010. He made a statement to the effect that the Arctic was the common heritage of all mankind. That remark was quickly picked up by another pundit in North America, who turned that remark into a Chinese claim to the Arctic. That misperception has, unfortunately, endured.

Admiral Yin is retired. He doesn't speak for the Chinese government, any more than Lewis MacKenzie does for the Canadian government at least. Chinese scholars I spoke with raised concerns about the effect that remark had on North American academic treatments of China's Arctic interests.

I think Zhuo's statement, though, does reveal a concern on the part of East Asian states. East Asian states see the Arctic as an ocean, one from which user states cannot be excluded as a matter of international law. This concern about exclusion colours their interpretation of governance in the Arctic.

I suspect that's really through a disconnect between what we mean when we say “Arctic” and what they hear. When we say “Arctic”, we often mean Canada's northern lands and Canada's claimed waters. East Asian states hear “Arctic Ocean”. They are focused on Arctic waters. Issues to do with Arctic land in their perspective are bilateral issues, whereas Arctic Ocean issues are multilateral issues.

Serious concern exists in East Asia that non-Arctic states are entitled to a say in Arctic governance, since as user states they will be among the governed. The fact that the Arctic is an ocean means that these states are entitled to use ocean space for navigation, military research, and intelligence gathering. In the area beyond the exclusive economic zone, they are entitled to fish, and in the area beyond national jurisdiction, beyond the extended continental shelf, they are entitled to conduct marine scientific research and resource extraction.

As the final point, I would point out that both China and Japan are leading states in deep-sea mining. China, in particular, is seeking greater influence at the International Seabed Authority, which regulates mining in the area beyond national jurisdiction. East Asian states may view efforts by Arctic states to regulate the area beyond their national jurisdiction as totally inconsistent with international maritime law.

When it comes to governance, some East Asian scholars believe that Arctic Council permanent observership may be irrelevant. They recognize the relative impotence of the status, and suggest that it will be tough to actually convince their governments to make the bid again if rejected this time around. All three states have considerable capacity and are, in their view, not used to sitting at the back of the room without a microphone.

This doesn't tell us much about what would happen if their bids for permanent observership were rejected in the spring. One scientist I spoke with was confident that even if they were not a permanent observer, he could still do the work that he needed to do to engage in and collaborate with Arctic research. But there are other forums for that—at the International Arctic Science Committee, at the Pacific Arctic Group, and so forth. There are other institutions in which they can engage in Arctic science.

In contrast, others point out that they have quite legitimate Arctic interests, which I outlined above, and that they will pursue these regardless of whether or not they gain permanent observership at the Arctic Council. They argue that there are other forums available to pursue these interests, including the International Maritime Organization, the International Seabed Authority, the Food and Agriculture Organization, the Commission on the Limits of the Continental Shelf, and even the UN.

Finally, I think the concept of the permanent participants is not well understood in East Asia. There is a growing recognition in East Asia that permanent participants in the Arctic Council...the transnational indigenous groups are an important part of Arctic governance. That understanding is strongest amongst East Asian scholars and scientists who have attended Arctic Council meetings and/or working group meetings. I don't think, though, East Asian states have a clear idea of how to engage with the permanent participants.

This is probably an experience thing. Governance in East Asia is very heavily state-based. Regional states make a point of not commenting on the internal affairs of other states. But of course in the Arctic Council, permanent participants are at the table. They represent transnational peoples, oftentimes, and have tremendous moral authority.

● (0910)

I say that PPs are not well understood because my discussions in East Asia suggest very little research capacity is allocated to understanding how they work, what their role is, and how East Asian states might engage with them. But I think that will change in the very near future.

What does all this mean for these states' bids for permanent observership in the Arctic Council? My opinion is that they should be welcomed. Functionally, they bring capacity, such as money and polar research expertise. Conceptually, if a body is going to make rules about an area, it makes sense to have users in the room. Given the lack of capacity of Arctic states to enforce the rules they make in the Arctic, engagement with the users might be the best way to ensure compliance.

I have two final comments on the implications for Canada's Arctic foreign policy. First, I think there's a need to get ahead of the curve on some issues. I echo the statements of Michael Byers when he was here a couple of weeks ago that we need to get ahead of the fisheries issue before it emerges. This means engaging with the countries that will do the fishing, including East Asian states. There's nothing terribly dissimilar, as far as I understand it, about Arctic fisheries that would make their emergence as an unregulated fishery different from any other fishery in the world, meaning they would be overfished to the point of collapse in the absence of regulation.

Second, I think it's worth making the Arctic Council an inclusive organization for the reasons I outlined above. This does mean asking tough questions, such as who should not be a member of the Arctic Council. Does India have a place, for instance? What about flag-of-convenience states such as the Marshall Islands or Liberia? Does Liberia have a place in the Arctic Council?

The alternative option to exclude non-Arctic states that have Arctic interests risks alienating those states that have other institutional means at their disposal to pursue these interests. The Arctic Council does not have a monopoly on Arctic governance.

Thanks for your time. I look forward to the questions.

The Chair: Thank you very much.

We're going to start the first round. Mr. Dewar and Mr. Bevington, you have seven minutes.

Mr. Paul Dewar (Ottawa Centre, NDP): Thank you, Chair, and thank you to both of our witnesses today.

I will kick off with a question to Mr. Manicom, and then I will hand it over to my colleague, Mr. Bevington.

You have been fairly explicit. You think it's a good idea to have the EU and China as permanent observers at the Arctic Council. For the record, is that correct?

Dr. James Manicom: Yes.

Mr. Paul Dewar: I'm tempted to ask you some questions about the South China Sea issues, because they're very current and we haven't examined them, but that will be for another time perhaps.

One of the things I think is important to put on the record is to have everyone in, so we have engagement in a multilateral approach. That's why we think it's a good idea to invite them as permanent observers.

The other issue is that it has to be put in context. Recently Canada was shut out of the East Asia Summit.

Given that you're an expert in this area, could you explain your belief that we should be engaged with China and the EU on the Arctic? If we are seen as engaging more multilaterally with Asian countries—obviously China has a role here—would this also benefit further engagement that would help us gain a seat at the table at other forums, in particular the East Asia Summit?

Dr. James Manicom: That's a very good question.

I think the shortest route to joining the East Asia Summit is to engage with East Asian states, particularly the ASEAN states. ASEAN drives the pace of regionalism in East Asia. The way into the East Asia Summit is to engage ASEAN, not so much China, Japan, and South Korea. ASEAN has the normative veto on who gets in and who doesn't.

With that understanding, very few ASEAN states, with the exception of Singapore, have made an argument about becoming Arctic states. I don't think that being conciliatory or welcoming on the Arctic Council side advances us very far in the East Asia Summit.

The ASEAN chair was clear that what he wants from us is more regional engagement. Whether or not we could trade Arctic Council support for support in the EAS is a separate question. Possibly; I don't know. That might be worth exploring, although we'd be getting more than they would because a permanent observer on the Arctic Council doesn't get to do or say much, whereas as a member of EAS, you do have a bit more say.

I'll make one quick point on the South China Sea. It's not worth comparing China in the Arctic and China in the South China Sea. China has a territorial claim in the South China Sea, making the South China Sea a priority for the Chinese government. The Politburo Standing Committee does not discuss the Arctic, so China does not perceive the Arctic and the South China Sea through the same lens.

● (0915)

Mr. Paul Dewar: That's very helpful.

I'm going to pass it on to my colleague.

Mr. Dennis Bevington (Western Arctic, NDP): Thank you to the witnesses. I appreciate you being here and also coming by video conferencing, which is a great medium for northerners.

Mr. Manicom, I'm interested in your views on the development of the Chinese icebreaker fleet. They've been successful this summer in picking a route across the North Pole for taking their ship through there, but they've also got plans for a much larger fleet. I'm also interested in Korea and Japan and what they're building right now for capacity, for use in the Arctic.

Dr. James Manicom: I don't have the actual numbers for you. The main difference between the Chinese icebreaker fleet and the South Korean and Japanese icebreaker fleet is that the South Korean and Japanese icebreaker building capacity can be allocated for private use. When companies want to build Arctic ships to do, say, LNG shipping in the north, they will likely task a South Korean company because South Korea makes the best ships. Chinese icebreakers, by contrast, are likely to be used either for Chinese government research purposes or will be flagged by China, so they will be shipping Chinese goods on a Chinese ship, Chinese crude, across the Arctic.

As to what China intends to do with the fleet, I suspect it's related to improving research capacity and the transportation of goods.

Mr. Dennis Bevington: Okay. Good.

On resource development, right now in Canada's Beaufort, which is the most likely area for oil and gas development, we've given out a number of leases to various large companies and extremely small, speculative companies. Interestingly enough, Canadian leasing policy has no qualifications on transfers of a lease. Leases can be transferred from those that take the lease to another company really just by notification of the minister.

Do you see that as something we should be looking at for the future? Is there going to be great interest by these countries in perhaps pursuing leases in the Arctic in our waters?

Dr. James Manicom: I was told by a Chinese Arctic academic that there is considerable interest by small Chinese mining companies, so not government-owned but privately owned Chinese mining companies, in Arctic resource exploitation.

Mr. Dennis Bevington: I'm talking about offshore oil and gas.

Dr. James Manicom: Yes. He didn't specify whether it was offshore or not, but this is in the context of discussing who makes Arctic policy in China, if in fact there is a Chinese Arctic policy, which I don't think there is. I was interested in asking about big state-owned companies. He said yes, they're interested, but the small Chinese mining companies are actually more eager, because from their point of view they confront similar incentives to small western oil companies. They need to lock in reserves. They need to be a bit more risk-accepted. I wouldn't be surprised if there was interest from small Chinese mining companies in those leases.

Mr. Dennis Bevington: Here's another question. If we see the Canadian agenda on the Arctic Council focusing on national issues —it's also very interesting, and for northerners, it's fascinating— would that mean that the Arctic Council would lose its impetus to deal with the larger international issues of shipping, fisheries, pollution prevention, those things that are really international in scope?

This is a key question right now because there are two points of view in terms of the direction we should be taking with our chairmanship.

● (0920)

The Chair: That's all the time we have, but I'll ask you for a quick response, if you could, Mr. Manicom.

Dr. James Manicom: It's an interesting debate. I would assume that Canada's Arctic Council chairmanship would be focused on the agenda of the Arctic Council, which are the international aspects of the Arctic, and that our domestic policy would focus on the domestic aspects.

The Chair: Thank you very much.

We'll turn it over to Mr. Dechert. You have seven minutes.

Mr. Bob Dechert (Mississauga—Erindale, CPC): Thank you, Mr. Chair, and thank you, gentlemen, for being here today and sharing your expertise with us.

Thank you very much, Mr. Mooney, for getting up so early in the morning.

You've spent most of your life, I think you said, in the north. You've returned there and are using your expertise to focus on technological issues in the north, which I think is very interesting. As you no doubt know, because you're one of them, northerners have contributed greatly to Canada's economy and to the economy of that region. You'd probably also know that Minister Aglukkaq, who will be chairing the Arctic Council for Canada, has spent a considerable amount of time in recent months meeting with northern community groups to ensure that northern communities are being listened to and that it's their issues and their thoughts and concerns that are being carried forward to the Arctic Council and become part of Canada's Arctic policy.

Can you tell us in your opinion how important the views of the northern community are with regard to Canada's Arctic policy?

Mr. Stephen Mooney: First of all, northerners are a different breed. I think we're a little hardier. Climate change has affected us and we are the contributors to it, so we're taken aback by that, but we have to adapt.

The policy that is coming forward on the Arctic Council does affect northerners. We know that. The northern communities—and I'll speak globally, but regionally they all have different interests. For the northern communities the number one interest, I believe, is their concern about climate change, how the north is changing, and the way they can adapt.

I do believe we're going to adapt, but it's the consequences around that adaptation....

Mr. Bob Dechert: Thank you very much.

As you probably know, in our government's 2011 Speech from the Throne, the Prime Minister made a statement that Canada's north is a cornerstone of the government's agenda. As part of that, the Canadian Northern Economic Development Agency was created, and also an amount of $40 million was earmarked for scientific research over four years.

I wonder if you could give us your views on that scientific research budget and what you think it can be used for.

Mr. Stephen Mooney: I have been a recipient, and the Yukon Research Centre has been a recipient, of CanNor's funds.

I think it is necessary. The north is the future for Canada, and that money has gone to some very interesting and great projects that have not only helped northern Canada, but the circumpolar countries.

In terms of the distribution of those funds, I thank CanNor for having a regional office in Whitehorse so that we can deal with them directly. These funds have been spent to good use, and I would like to see more coming to the north, because northerners know what it takes to live up here. We are innovative, and we can develop technologies and innovative ideas and solutions that we can sell globally. That money from CanNor has helped those efforts.

Mr. Bob Dechert: If you had free rein to design a scientific research study for the north, what would be on your Christmas wish list for scientific research in the north?

Mr. Stephen Mooney: Everything that I've read about in the blues regarding the witnesses coming up I think is very important. The oil and gas exploration, the alternative energies, are all important, so I can't pick one in general.

But this is where I say that innovation and the knowledge economy.... I think Dr. Karen Barnes will speak to this in the next few hours—about education in the north and the knowledge economy. Keeping that knowledge in the north is a key to the success of the north. Smart people develop smart ideas and keep that economy going. Without the people, you don't have that. The resources will come and go, but those....

To place money, I would say put money in the people. Put money in the north and in the people and we will be successful.

● (0925)

Mr. Bob Dechert: Okay, fair enough. You've certainly outlined for us in your earlier comments some of the interesting scientific research that's being carried on now and some of the interesting innovations that have flowed from that.

As you know, our government has been trying to encourage exploration and development in the north by improving the regulatory systems and also by investing in critical infrastructure to attract investors and developers to the north. Can you describe the current economic climate in your region and in the high Arctic region?

Mr. Stephen Mooney: In the Yukon, I think we have been very fortunate over the last years. While there is a downturn in the economy in certain areas of the world, the Yukon has been resilient in regard to that, and we have constant growth. We are spoiled up here.

The transfer payments from Ottawa to keep us going are great. I think we've used those well. For our mining regime, our environmental permitting program I think is very receptive to mining. We have a great process of how mining and oil and gas companies can come in and educate the government and the communities on how they want to extract those resources. Under the Yukon socio-economic assessment branch, we have a great process that is very effective.

I can only speak for the Yukon and what I've seen, and working with the mining industry to help solve their problems.... You may have heard, I know, that in the last year the Yukon had a peak year for exploration. It dropped a little this year, but we have five to six mines that are coming on line, and that is not going to stop. The Yukon is the home of some world-class ore bodies that will be extracted over time. I think we are in position to look at innovation and to try to make that footprint smaller.

I'd like to start with a quote that says “I'd like to close the mine before it opens.” By that, I mean working with the mining companies to look at how we are going to abandon that mine before they drop the shovel to start digging.

The Chair: Thank you very much.

We're now going to turn it over to Mr. Eyking, please, for seven minutes.

Hon. Mark Eyking (Sydney—Victoria, Lib.): Thank you, Chair.

Thank you to our guests.

I'm going to start off with you, James. It's a very interesting conversation that you've had with us here. On your statements on the importance of us chairing the Arctic Council, that has been noted by many of our witnesses. Many of our witnesses so far recommend that we don't use it as a bit of soapbox, that we don't be self-promoting, and that we're not divisive there, but that we unite other countries. Also, you recommended inclusiveness, which is very important, so that we bring people into the tent.

That being said, if China is going to be brought into the tent more, China is going to be one of the biggest polluters, especially with the coal-fired plants. A lot of the dust particles go up to the north. That's going to have even more effect on it, so not only might they see the opportunities in being in the Arctic Council, but I think we're going to have to encourage them to see that they have a responsibility.

My first question deals with new protocols. There are many in place now, such as the 200-mile limit for fisheries. There are some international laws out there, I guess, like the sea laws. Do you see Canada maybe taking the lead in the next couple of years in setting up new protocols dealing especially with transportation in the Arctic and with fisheries? Do you see Canada taking the lead on pushing for new protocols in that area?

Dr. James Manicom: That's a good question.

Obviously, I think, the chairmanship at the Arctic Council provides that opportunity. As a function of the Arctic Council and the way it works, the way international law works, and the way the other institutions I mentioned work—the International Maritime Organization in particular—there's very little we can do on our own. If we're going to set new protocols, they need to be done in consultation with the countries that are going to follow those rules.

Some of the Chinese I spoke to simply stated that China is not going to follow rules that it wasn't invited to write. That's partly a function of a general.... The Chinese government does view the international system as one that it did not make, right? It has been emerging into the world over the last 30 years. It's learning the rules. It's following most of the rules. It's changing some of the rules. They are very cognizant of who writes the rules. They want to help make those rules.

I concede that they have responsibilities that they need to be more aware of, particularly on pollution, but if we try to hand them something a *fait accompli*, they'll simply ignore it. The scale of what I suspect they will be trying to achieve up there will be such that if they ignore it, the rules won't be worth the paper they're printed on, if they're printed at all.

● (0930)

Hon. Mark Eyking: I have a second question. I think you alluded to Korea and Japan being more interested in the Antarctic. What's the deal down there?

Dr. James Manicom: They're all more interested. I suppose they all have longer scientific research histories in the Antarctic than they do in the Arctic. They all signed the Treaty of Svalbard when it came up in the 1920s and 1930s. China signed as the Republic of China, and that was one of the treaties that the People's Republic of China kept when they took over from the Republic of China when it went to Taiwan.

They all have different interests. Korea is one of the leading countries in the world on meteorite research, and 85% of the world's meteorites hit the Antarctic. Japan and China are both there, again on polar research questions. I'm not a physical scientist; I can't comment on what the nature of the research is. But if you look at the numbers, that is where their money is allocated.

I think they would argue that experience has given them expertise, and capacity in particular—icebreaker capacity is the easiest example—to do things in the Arctic. The Japanese are particularly adamant about this. They argue that they were the first of the East Asian countries in the Antarctic; they were the first of the East Asian countries into the Arctic. They have expressed particular sensitivity at being lumped in with these other countries because they perceive themselves to have earned more than that.

Hon. Mark Eyking: A recent book I read is called China 1421.

I don't know if you have ever read it.

Dr. James Manicom: No.

Hon. Mark Eyking: It states that China, in 1421, went all around the Americas, all the way up into the Arctic.

Dr. James Manicom: Jeepers.

Hon. Mark Eyking: Anyway, if you haven't read it, I would suggest you read it.

Dr. James Manicom: Thank you.

Hon. Mark Eyking: My next question will go over to Mr. Mooney, in the Yukon.

Are there many resources in the Yukon?

We often talk about Alberta and the prairie provinces and a lot of the other Arctic areas having tremendous resources. What are the big resources in the Yukon that have potential? I know there's gold there, but where's the—

Mr. Stephen Mooney: It started with the gold rush in 1898. There was $40 million of placer gold a year that was taken out of the Yukon.

The biggest resources are the mineral resources. West of Dawson City is a new goldfield discovery. This is hard rock, not quartz mining. The Snake River has one of the world's largest deposits of iron ore. There's a large coal deposit just south of that. With regard to tungsten and platinum palladium, the Yukon has quite a few.... We have an active copper mine. We have an active lead-zinc mine. There's a new copper mine coming on, with a heap leaching gold deposit as well.

Hon. Mark Eyking: Thank you.

I'm a vegetable farmer from Cape Breton. We have a challenge growing vegetables there. You mentioned you're growing crops in your neck of the woods, and I guess with climate change...what are some of the things you're finding? What crops are there, and how are you going to grow them?

I know you have hot summers, but—

Mr. Stephen Mooney: Exactly.

During the gold rush, in a town of 40,000 at the turn of the century, they fed the people of Dawson from the local fields with large cabbages, things like that.

Where we're focusing our research is on greenhousing. We've built a year-round greenhouse that's off grid. When people from down south think of agriculture.... We do not have the agricultural land that Saskatchewan, Alberta, and the Prairies have. We just do not.

But there are frost-free days. In Dawson it used to be that if a placer miner got almost 100 frost-free days, he was a happy guy. Now they're getting 120, 130 days. So climate change is affecting us. Our shoulder seasons are getting longer. We believe that around our food security in the modern era, not hunting caribou and moose and picking berries, but our technology, we will be able to extend the shoulder seasons using greenhouse technology.

● (0935)

The Chair: Thank you very much, Mr. Mooney.

We're now going to start our second round, which will be for five minutes for questions and answers. I think we have time for one intervention from two members.

We'll start with Mr. Van Kesteren, and then Ms. Grewal.

Mr. Dave Van Kesteren (Chatham-Kent—Essex, CPC): Thank you, Chair.

Thank you all for being here this morning.

I want to go to Mr. Manicom.

You spoke about China and you touched on their interest in fishing in the Arctic. I think a lot of us—I think most of us—are concerned about that. All of our oceans are fragile, but I'd have to think that Arctic waters must really have some challenges as far as bringing back stocks.

Do the Chinese recognize that? If and when the ice starts to break up so that commercial fishing can really expand in the north, is there an understanding by the Chinese and the Koreans of the ecology of our Arctic waters? Is there much work being done at the international level to set some rules and guidelines for that possibility of expansion of fishing?

Dr. James Manicom: That's a good question. I'd be speculating on just what their knowledge of the ecology of the Arctic is. They're all literate in Arctic research, and if there's collaborative science being done, I'm sure they're part of it.

As to what's being done at the global level, as far as I know, there's not a great deal. I think the silver bullet people talk about is setting up a regional fisheries management organization and having a moratorium. I know that in the United States they have had differences of opinion on moratoriums.

It's the coastal states that will have to lead efforts to limit Arctic fishing. The way to do that is to use the agreement on straddling fish stocks to try to push coastal state jurisdiction farther out beyond our EEZ, which of course we have done off the coast of Newfoundland and in other areas as well.

We are a member of I think four or five of these different agreements. In many of these regional fisheries management organizations in which we are a party, Japan, South Korea, and in many cases China are also members. So there is already a dialogue ongoing with these countries, at least on fisheries management.

That's certainly the place to start.

Mr. Dave Van Kesteren: You also spoke about commercial shipping. Realistically, what can we expect in the next, say, 10 years in the increase in commercial shipping? And what will the impact be on northern communities? Are there some real economic benefits that can be captured with that type of expansion?

Dr. James Manicom: I think the benefit to northern communities arises from whether there are ports available so that ships can come and go. Otherwise, ships just drive right by. Obviously, the effect on the northern communities would be a function of discharge and all kinds of other things. Of course, pollution from ships is more than just exhaust. There are also the things they bring along with them on the bottom—barnacles and whatnot. But there are also rules under MARPOL and SOLAS. There are a bunch of international conventions that regulate the quality of ship and what it's allowed to emit. The issue is how strict we can make those and whether the countries flagging the ships will follow those rules.

Mr. Dave Van Kesteren: Finally, you touched on the difference in spending by the Chinese, and I think you said the Koreans as well. It was 20:80 for Arctic and Antarctic. Why are they so interested in the Antarctic?

Dr. James Manicom: Yes, the Antarctic has 80% of their budget.

Mr. Dave Van Kesteren: What is it in the Antarctic that interests them?

Dr. James Manicom: For the Chinese, it's resources, which puts them at odds with every other Antarctic country. That's my understanding. I'm not an expert on the Antarctic, by any stretch. My understanding is that most Antarctic countries are interested in freezing territorial claims and in doing science down there—polar science. The Chinese, as I understand it, are alone in their interest in resource exploration and mining, and that raises questions. How far can they push that along and still abide by all the legal instruments down there.

In Korea, the interests relate to meteorites, particularly, but also to general climate science and the lessons that can be learned from that. These are countries that experience climate change. We don't often think of them as experiencing climate change, but they do. The Chinese government is aware that the Gobi Desert advances on Beijing a couple of feet every year, and it's less than 100 kilometres away now.

The Chinese government, in particular, is aware of climate change, and it's aware that it's a problem. It's reluctant to sign up to binding international commitments on emissions and things, because it doesn't think anybody else is going to follow the rules. But that is a government that is concerned about climate change. They lack the capacity to implement a lot of their own legislation, which relates to a centre-periphery disconnect that is as old as China itself. It's from long before the People's Republic. The Chinese government is worried about climate change, as are Japan and South Korea, and that relates a lot to what their polar research agenda is.

● (0940)

The Chair: Thank you very much. That's all the time we have.

We're going to move over to Mr. Bevington to wrap up the first round today.

Mr. Dennis Bevington: Thank you, Mr. Chair.

To Mr. Mooney, being a northerner myself all my life, and having had to deal with the high cost of living and the energy issues, I feel that the work you're doing there is extremely important. I congratulate you on it.

This week there's a very large meeting of ArcticNet. Do you have direct involvement with that organization? Perhaps you could explain to people what it does internationally.

Mr. Stephen Mooney: Sure. The Yukon Research Centre does have a booth down there. I spoke about the Northern Climate ExChange. Our team works down there because we have worked with the ArcticNet countries, and the ArcticNet is interesting. It is more a course in basic science, not the applied research. I have helped sponsor a dual-penetrating radar system that is used in glaciation exploration and research; it is down there and being shown off. The ArcticNet is interesting because it focuses on the sciences and it is global.

In Canada, I could say ArcticNet has mostly been in the eastern Arctic, and the Yukon Research Centre has been involved in some of that, especially through our ReSDA program. But I think that ties in with the Arctic Council, because it's where the researchers hang out. When those partnerships are formed in the ArcticNet, that information can be transposed and the Arctic Council can use that as potential policy-making. So it is vital. I don't play in that area as much, because I like building things and making things happen and helping industry, but I do see it as a vital research and communications tool. An exchange-of-information conference is going on right now.

Mr. Dennis Bevington: Would you see that the model for sustainable development would be to look at the organization, such as ArcticNet, to see how we could tie together internationally those institutions that are working on research on real issues? I'm with you there. What's the platform that is going to work for you long term?

Mr. Stephen Mooney: It is those partnerships that you speak of. ArcticNet has brought those researchers together globally. I think it's a great venue, but one thing: without ArcticNet, communication around the globe is simple now, and we are forming our own partnerships. This is an added venue, but I think when good researchers, smart people, get together, they think of smart projects, and through communications and technology those partnerships are getting tighter and closer together.

Mr. Dennis Bevington: Another subject—it's an international subject on education. Of course, it's UArctic. I'm sure you're familiar with that. Over the last few years, the Government of Canada has backed off from some of the support it provided to UArctic, which is a virtual circumpolar university. It's still going strong in the other countries. Do you think we should be upping our game with UArctic and opening that up in a better fashion for our students in individual communities right across the north?

You have 13 campuses in the Yukon. We have 23 learning centres in three campuses in the Northwest Territories, and similarly in Nunavut. We're never going to put them all in one place. We need that virtual connection, just as we have with you today.

● (0945)

Mr. Stephen Mooney: Yes, I don't disagree. I think Dr. Karen Barnes may speak about UArctic in the next session, so you can definitely ask her questions about that, but Yukon College is involved in UArctic. We have one instructor who does the courses online. I think again that innovation and how we can bring these northerners together is a great idea.

In the Yukon we're spoiled. I said it before: 97% of Yukoners have access to high-speed Internet. No other territory or province can match that in Canada. I'd love to see more bandwidth going into these northern communities so we could have things like this, more video distance learning and such. So I think it is coming, and it would be a good idea to help push that envelope. CANARIE and CanNor, or venues like that, could assist in that direction.

The Chair: Dr. Manicom, thank you very much for being here, and Mr. Mooney, thank you for getting up so early to join us this morning.

With that, I will suspend for one minute. We'll get ready for the next witnesses.

● (0945)

(Pause)

● (0945)

The Chair: I want to welcome Dr. Karen Barnes, who is the president of Yukon College. Dr. Barnes, thank you for getting up so early in Whitehorse to join us.

I'm going to turn it over to you for your opening testimony, and then the members of Parliament can ask questions.

Dr. Barnes, thank you again for being here. I will turn the floor over to you, and we'll look forward to your opening statement.

Dr. Karen Barnes (President, Yukon College): Thank you, Mr. Chair.

Good morning, everyone. Thank you very much for the invitation to speak with you today. I congratulate the committee for seeking out northern voices in your deliberations for the Arctic foreign policy study.

First, I will give you a little background. I'm the president of Yukon College, which is located in Whitehorse but serves all of Yukon through its 11 rural campuses. In addition to the robust research centre, which you have just heard about from Stephen Mooney, we deliver 40-plus career programs in skilled trades, technology, heath, education, social services, business, tourism, hospitality, and other areas. We also deliver three baccalaureate degrees and three master's degrees through partnerships with Canadian and Alaskan universities. We serve about 1,200 learners in full-time programs and about 6,800 registrants in workplace-related training and continuing education. We also house the Centre for Northern Innovation in Mining and the Northern Institute of Social Justice, and we are building a northern first nations governance institute, which I'll speak about in a few minutes.

I came to Yukon from Alberta in 2008, and I want to emphasize that despite growing up in the so-called northern city of Edmonton, I had no real understanding of the north until I came to live here. Notwithstanding my short time here, I have become fiercely protective of the place and the people that are Canada's north, and I believe that institutions such as Yukon College play a critical role in ensuring that perspective is heard.

Minister Aglukkaq says she wants the Canadian chair of the Arctic Council to be about northern development occurring through the development of northern people. That is what I want to speak about today: how we build capacity for that to occur. I want to talk about four areas northerners can actively engage in within the circumpolar call to discussion: education and training, labour mobility, governance, and research.

First is education and training, because for me everything starts and ends with education. At Yukon College our slogan is “start here. go anywhere.” This is built on the belief that if you provide people with a sound educational foundation, they will go on to become engaged contributing citizens.

For many northerners it is imperative that we provide that education where they live. We have many examples of individuals who have come to the college to begin a degree and have gone on to universities in the south. Many of those don't return, and the north loses the benefit of their education. But when we are able to deliver the full degree in the north, it is a different story.

This year we'll be graduating our first learners from our Bachelor of Science degree with the University of Alberta. These individuals have already found work in the north and will stay to become researchers or practising scientists, helping to investigate and solve multiple problems and concerns of the north. All three territorial colleges have been graduating nurses, teachers, and social workers for many years. Again, those graduates stay and contribute to the development of the north.

You just heard about the activity at the Yukon Research Centre. Because we are in our infancy, most of the graduate students and researchers involved there grew up and were trained in the south. However, with the Bachelor of Science and other degrees being delivered in Yukon, we'll soon have northern youths from northern communities conducting research and finding answers for the north in the north. In every other northern country in the world, young people have that opportunity. We need it to happen in Canada.

One other example is our new mineral resource technology programs. Thanks to CanNor, which funded the development and the pilot, this new, very rigorous program will produce geological technologists for the mining as well as oil and gas sectors. Already the Geological Survey of Canada is interested in these graduates, as are all of the exploration companies currently working in Yukon, because the graduates are northerners trained in the north.

Yukon College was a founding member of the University of the Arctic and continues to provide instruction in the Bachelor of Circumpolar Studies. Since 2004 we have had 290 students at Yukon College participate in these online courses, part of the group of 566 students who have participated from all over the circumpolar world. As 97% of Yukon is connected to high-speed Internet, access to these courses exists for all Yukoners. The recently terminated north2north program was another opportunity that allowed Canadian northern students to experience and study in another northern country. Yukon College has nine outgoing students from that program who travel to Finland, Sweden, and Russia to study. One of those, a born and bred Yukoner, went on to complete her master's in public administration from the University of Alaska at Yukon College and is now a senior policy analyst in the Yukon government's economic development department.

● (0950)

These are examples of how we can grow the knowledge sector in the north to produce the highly qualified people who are so desperately needed to inform discussion.

Access to high-quality higher learning in the north by northerners is a circumpolar issue.

Labour mobility and workforce development are very real concerns for all northerners. As resource development continues, attracting and retaining the highly qualified people required to conduct exploration geoscience, environmental monitoring and remediation, and mine site development become increasingly challenging. Working together across the circumpolar north to share the expertise and curriculum will produce a considerable advantage and cost savings.

Yukon College's Centre for Northern Innovation in Mining recently signed an agreement with the University of Alaska that will see us immediately exchanging faculty, curriculum, and students, and, hopefully, eventually enabling labour movement from the University of Alaska Southeast to support the mining sector. Our mineral resource technologist program should soon be ready to articulate directly into the mine engineering program at the University of Alaska Fairbanks. This will create a new workforce of experts who are ready, willing, and able to work within the challenging and unique environment north of 60. We are also working closely together with the University of Alaska Fairbanks to develop training for justice and corrections workers in rural or remote communities through our Northern Institute of Social Justice. Yukon College has been involved with the Pacific NorthWest Economic Region discussions for the past year as well. In this way we are exploring other possible partnerships with our American counterparts in Alaska.

The movement of skilled labour and highly qualified people across the global north is a circumpolar issue.

Governance is another area that is critical across the global north. Yukon, with 11 settled land claims, is a leader in the negotiation and implementation of modern treaties. At Yukon College we are working hard to capture the knowledge and expertise among the first nations and government negotiators and turn it into training. With our partners at the University of Saskatchewan, we are developing a degree in first nations governance, and we have already delivered the first year to two cohorts of students, all individuals currently working within their own first nations governments. The knowledge these learners can share with other indigenous groups across the global north is valuable and timely as they grapple with issues such as environmental protection, resource development, food security, and, most importantly, how to build a satisfying and fruitful relationship with other governments locally, nationally, and internationally to meet development goals. We are currently in the beginning stages of building the infrastructure to house this expertise in a northern first nations governance institute.

The implementation of land treaties is a circumpolar issue.

My fourth item is research, which you have already heard about from Stephen Mooney. I will not add anything more, other than to say that I hope his presentation has convinced you that Canada's north is ready to join the rest of the circumpolar world in groundbreaking research to find solutions to the unique challenges of the north. We have a lot to offer, and the three northern colleges are the places to build that expertise.

Canada can also look to other countries to find examples of how northern communities have created sustainable businesses and enterprise opportunities to keep northerners in their communities while maintaining healthy lifestyles and contributing to meaningful employment. Very often these communities draw support for these activities from local colleges and universities, which can train locals in addition to bringing in outside experts who have fresh ideas and innovations. Through our extensive networks with other post-secondary institutions across the global north, Yukon College can help find this expertise and share it in the north.

Access to high-quality higher learning and the movement of skilled labour and highly qualified people, the implementation of land treaties, and the sustainability of northern communities are circumpolar issues that should be of interest to the Arctic Council.

Thank you, Mr. Chair. I will stop now, and I look forward to hearing your questions and comments.

● (0955)

The Chair: Thank you, Dr. Barnes.

We're going to start with Mr. Dewar.

Sir, you have seven minutes.

Mr. Paul Dewar: Thank you.

Thank you very much for joining us today.

I think it goes without saying that the witness testimony we're hearing from the north is exceptionally important for us. My colleague, Mr. Bevington, constantly reminds our caucus that if you're going to talk about the north, you need to talk to people from the north. So your witness testimony is very important.

I also wanted to note that the “solutions in the north for the north” idea means that you have to be present. We heard from your colleague about the importance of investing in education. You underlined the University of the Arctic. It goes without saying that you would probably like to see more investment there.

Dr. Karen Barnes: I was one of the people who actually advocated that we step back a little bit from the University of the Arctic. The reason was that I felt it was very important that we invest in infrastructure in Canada. Those networks and the foundation we built here, through the network of the University of the Arctic, were actually fundamental for us. But right now we're trying to focus on building university programs and degrees right here in the north that we can deliver. We're always focused on cyber delivery, virtual delivery, because that will be the only way we can do that in the north. But we're trying to do that from here with our own experts.

● (1000)

Mr. Paul Dewar: It's your own physical presence, is what you're saying, that can be built upon.

Dr. Karen Barnes: We have to have a hub, obviously, probably in the capital. But we already have access to all of our communities through virtual learning.

Mr. Paul Dewar: One of the things you brought up was the north2north program.

One of the things the NDP wants to see is that we take this opportunity to engage in a multilateral approach when we take over the chair of the council. We want to work with all of our partners to go beyond just our two years, working in the areas that have been mentioned, whether it's climate change, fisheries, or resource development.

The north2north program you were underlining is an important opportunity to have people of the north able to work with and have experience with other people in other northern countries. Simply put, would you recommend that we reinvest in that?

Dr. Karen Barnes: Absolutely. We had students this year actually apply to go over, and we had no way to fund them, so they were unable to go to Finland. They had hoped to go to Finland. I know that recently, in the last round of the north2north funding, Nunavut Arctic College sent 12 nurses over to northern Scandinavian countries to work with the Sami people.

I think there's so much to be shared across the north by students. It also builds that understanding and the global relationships that will, going forward, I think, do nothing but good, not just for the north but for all of Canada. So it's really important, in every area, not just in science but in the humanities and social sciences, that we give students the opportunity to move to other institutions and that the northern Canadian students receive students here. We've had a number of students from Scandinavia and Russia come here. They just love being part of the student life here. Of course, the language is a wonderful thing. They also have the opportunity to visit many of our communities during their periods here.

Mr. Paul Dewar: The other issue I think is important for all of us, and I thought you were going to miss out on underlining it, but you captured it near the end of your presentation; that is, of course, the engagement with first peoples and Inuit. You mentioned the 11 land claim settlements that are in place.

We're very interested in how the voices of the first peoples and Inuit are actually heard. We had someone who is a Danish Canadian talk about how, in their representation, they actually have, right next to the official representatives, someone who is representing the first peoples' opinions and ideas. Our government says that we fund them and that they're at the table for input.

Can you give us any idea, from your perspective, of how we can ensure that they will be fully represented structurally, and not just by way of coming to meetings, so to speak? Do you have any ideas as to how we can ensure that the concerns, particularly of Inuit, are going to be reflected at the table at the Arctic Council?

Dr. Karen Barnes: I think one way, and this is the long-term vision, is if we educate the young northern first people, children from all across the north, Inuit as well as Athabaskan, so that we will have people in place in our government who will be the parliamentarians. Not only will they be the political voice, but they will be the indigenous voice. That's the long-term vision.

The short-term vision is that we need to locate the discussions that take place around the Arctic Council in northern Canada. It's often the case that we are working with Ottawa, as we are today. If these discussions were taking place in Whitehorse or Yellowknife or Iqaluit, you would have those people at the table much more substantively, I think, and in greater numbers. If you went into the communities, I think the understanding of where they come from would be much greater by all at the table.

● (1005)

Mr. Paul Dewar: Thank you.

The Chair: Thank you very much.

We're going to move over to Ms. Brown, for seven minutes, please.

Ms. Lois Brown (Newmarket—Aurora, CPC): Thank you very much, Mr. Chair.

Thank you, Dr. Barnes, for being with us today. This is outstanding to have you here.

I am a huge advocate of ongoing education and online access to education. I did my first degree at the University of Toronto. I was in the situation there with professors and classes. I have gone on, and I continue to do courses through ongoing education opportunities. I know that in actual fact my professors are far more accessible through online education, because they give you times when they're going to be in their offices, or they'll take your e-mails and respond almost instantaneously. It has been a wonderful opportunity. I've actually used courses from two different Canadian universities just because of the courses and the professors that I wanted access to. I have had a marvellous time; I really have.

You raise an interesting comment, though. My constituency is about 30 kilometres north of Toronto. Because we have no post-secondary education facility in my riding, we have no access to the CANARIE. We can't get access. We are appealing for some project money. The region is very interested in bringing the access in, and the CANARIE system would give us the opportunity to build post-secondary education. Here I am, driving distance to Toronto, with no post-secondary education. Students from my riding have to leave to go elsewhere so they can get their post-secondary education. We're facing some very similar circumstances—perhaps a little different, because we do have proximity. But I understand the need for post-secondary education and the opportunity.

I applaud you for pursuing that online education. I am fascinated to hear that 97% of people in the Yukon have access to Internet, which means there is a whole different need in the curriculum of primary and secondary students to educate them toward the possibilities of online education.

Is that happening in the primary and secondary education levels so that students have in their minds that online education is available, and that it is accessible to them in the comfort of their own home?

Dr. Karen Barnes: It's good to hear we have support in Ontario.

We work very closely with our public schools branch, in our community particularly, where we are often housed right inside the high schools. I would say that in the last five years since I've arrived here there has been a huge shift in the thinking around online learning. When I arrived we were still connecting students to the B. C. curriculum through correspondence models, where we were sending paper back and forth through the mail. They have now put "smart" classrooms in every school. They have connected students to the B.C. system through online learning. They're now building hubs out of Whitehorse so that the high schools can get access to some of the higher-level science courses particularly, but English and social sciences as well, at the grade 11 and grade 12 levels.

It's not perfect, but I would say there has been a very fundamental shift. This last year they gave iPads to all of the grade 2 students in the Yukon. The idea was not only to help the kids become engaged with that environment, but also the teachers. That's also part of the shift, of course. You have to also build that mind shift in teachers.

Ms. Lois Brown: Well, I think that's very exciting and hugely innovative. There are a lot of things we can learn, in Ontario particularly, from the model you're establishing.

I wanted to ask about labour mobility. You said that's one of the four issues you're dealing with. Right now across Canada, because of our Constitution, we deal with about 450 different organizations that give a licence to practise. It's a challenge across Canada.

You talked about your initiative, “start here. go anywhere.” I wonder what you would recommend for how we could break down these barriers to labour mobility for young people who are trained in the north. Let me say that my son-in-law is from Ghana. He's building a business there, but the likelihood of him going back and living there is very small. You're facing the same problems with people departing. You want to establish people to be there, so you're kind of in a situation where you want to train people with the expertise to go anywhere, but really you want to train people to stay in the north and keep their expertise there. So you have this conundrum. Can you give us some of your thoughts on how this might work through?

● (1010)

Dr. Karen Barnes: Certainly one of the things that post-secondary educators often say is that the British North America Act did a disservice by making education provincial, because it has hampered us. We know that now more than ever we see kids moving across provincial lines and trying to transfer credits. I come from western Canada, where we've had transfer councils in place for a long time. Yukon College is a member of both Alberta and B.C. councils, so our students can move fairly easily into the western universities.

As far as associations go, we also work very closely with associations in those two provinces and, where possible, with national associations. We try to make sure all of our programs are accredited as much as possible so students can move. But just with simple little things like trades, we're having a lot of difficulty. My counterparts at post-secondary institutions across this country are having a lot of problems with the apprenticeship system the way it works today. We're trying very hard to create innovative opportunities for students, again so they can move out of apprenticeship and into any jurisdiction in Canada.

Mining is a very migratory occupation. So is oil and gas. Those people need to be able to move. This is what we started the discussions with Alaska about, because even a simple thing like safety training is different 50 miles across the border in Alaska. We're hoping to have curriculum that will allow students to meet the safety standards across both jurisdictions and be able to move from one mining company to another. We have mining companies in Yukon that are operating mines in southeast Alaska, or in the lower 48, in Colorado and other places. They want to be able to move their labour across the border.

Ms. Lois Brown: Thank you.

The Chair: We're going to move over to Mr. Eyking for seven minutes.

Hon. Mark Eyking: Thank you, Mr. Chair.

Thank you, Ms. Barnes, for being here.

A few years ago I spent a week in Yukon with Larry Bagnell. You have a beautiful place and a very vibrant crew up there. They're tough.

You seem to have a good international grasp on the Arctic, especially with all the students coming in, and also in your dealings with the U.S. When you're dealing with Alaska, do you get the sense that it is about the state itself, or do you sense that it is more in an international context—the U.S. as a whole looking at how the changes in the Arctic are going to change its sovereignty and shipping?

A previous guest talked about the South China Sea. We know the Americans are very interested in what's happening there. But since you are close to Alaska, tell me about the perspective on the U.S. side, with regard to Alaska as a state, but also with regard to the country itself. What are you hearing?

Dr. Karen Barnes: Being from the prairie provinces, I don't have a lot of understanding of the maritime issues. In Yukon, we have to rely on our access to American coasts, for example, right now the harbour at Skagway, to get minerals out. Those conversations are tied mostly to terrestrial issues. The biggest conversations I have with Alaskan counterparts—and certainly I've been here only a short time and I don't have that many conversations—are with the universities. We talk a lot about the need to connect experts, highly qualified people, across the north, and how doing that should not be bound by international boundaries or laws. That would be the one place where I'd say the conversation happens at the universities, around just being able to move scientists and faculty and researchers around the world as easily as possible. But I'm sorry, I don't have many other conversations about the lower 48.

● (1015)

Hon. Mark Eyking: What are you hearing from your international students when they come to the north? It's interesting to see that a lot of students from other countries are interested in the north. Of course, they have a vested interest, but do they have a different perspective, maybe, than Canadian students do? What's your sense of it?

Dr. Karen Barnes: I would have to say that the most common comment.... It's certainly the thing we hear most, particularly from Asians. We have a lot of students coming from Japan and Korea in particular, because we have partnerships there. We also get a lot of students from Scandinavia and northern Europe, from Germany in particular. They are so awed by our wilderness and the fact that we have access to these beautiful areas of northern Canada.

They talk about how wonderful it is that our country has protected those places, how important it is to the quality of life that we have, and they say that if we do nothing else, we should make sure that we fight hard to protect that. Whether or not we develop.... Of course, we will eventually develop, and we need to do it in a way that protects those places for future generations. If nothing else, this is something that we hear over and over again.

Hon. Mark Eyking: You mentioned that maybe our committee should get out of Ottawa. If we had a chance to go north.... You mentioned the three main communities, Whitehorse, Iqaluit.... Where do you think we should go besides northern Canada? Are there any other countries that maybe are leading the curve on studying the Arctic? Is Norway one of the countries that comes to mind? Where do you think we should go? If you were planning our trip for one week...?

Dr. Karen Barnes: I would go to Norway, certainly, because institutions like Tromsø or Svalbard have really shown us that you can have good solid education and research happening north of even the 76th parallel, but I would also go to Greenland. I say that because they have been able to establish a university in Greenland to educate local people on local issues, and at that institute they are able to conduct research that is really valuable, particularly in the area of climate change and climate change adaptability.

Then I think I would go over to some of the indigenous institutions in Russia. I think they've done a wonderful job in places like Yakutsk in capturing cultural significance and how to capture traditional knowledge. Fairbanks as well, I think, has had a wonderful experience in doing the same; they're able to capture the language and, through that, some of the traditional knowledge that exists in the north.

I'm hoping to do one of those tours this year myself.

Hon. Mark Eyking: Thank you.

Is that it, Chair?

The Chair: You have one and a half minutes.

Hon. Mark Eyking: No, that's all.

The Chair: Okay. That's great.

We're going to start the next round.

For five minutes, we have Mr. Dechert.

Mr. Bob Dechert: Thank you, Mr. Chair.

Thank you, Dr. Barnes, for joining us.

You've mentioned that businesses operating in the Arctic, and in the northern parts of Canada that aren't in the Arctic, have a lot of on-the-ground experience. What do you think of the idea of creating a circumpolar business forum for those businesses to share best practices, both from a business perspective and with respect to responsible resource development? Do you think that would be useful?

Dr. Karen Barnes: I think it is absolutely essential. In particular, I recently had a conversation in Ottawa with Patrick Borbey, the president of CanNor, who was asking me why we're focusing on governance and not on the business side of the implementation of the modern treaties.

Of course, we are doing that in some way by helping people achieve an education, but one of the aspects of the implementation of the treaties that we really need to start focusing on is how to build sustainable business opportunities so that people can stay in the north and govern the north. I think there's a lot to be learned. I was in Kiruna, Sweden. As you know, it's at the 70th or 76th parallel. It's a vibrant community with many small businesses, many homes, and a lot of people living there.

I think some of the issues facing us that could be addressed at such a forum are transportation, and the transport of goods in particular, if we do produce in the north, and also housing. Housing is an issue facing us every single day here. It has actually slowed down the exploration industry in mining, and it's preventing some of the mines from expanding. It is an issue that's probably facing everyone, every community in northern Canada, and, I suspect, most countries that are in the north. It's something that we should be looking at seriously as part of that business development discussion.

● (1020)

Mr. Bob Dechert: That's very interesting. Thank you.

Dr. Barnes, you're an educator. We've had discussions here today, and in our other sessions on the study of the Arctic, about the knowledge of people in the rest of Canada about the issues and challenges facing the Arctic region and about the opportunities there. There's a good general level of knowledge, but there's a lot that's not understood by Canadians in other parts of Canada.

As an educator, how would you suggest we educate the rest of Canada about the opportunities and challenges facing our Arctic region?

Dr. Karen Barnes: I would say there are a couple of things. One is that in the public school system we probably need to do a much better job of writing the curriculum and producing materials, and those probably need to be done in the north. They need to be produced in the north and perhaps taught from the north, now that we have that ability.

The second thing is the University of the Arctic. The one legacy from this that I think is critical is that there are 29 member institutions in Canada of the University of the Arctic, and those are southern universities primarily. In each of those universities there is a robust Canadian studies, northern studies, circumpolar studies programming. Those institutions have the ability to be part of that education, so there probably need to be some resources allocated to try to bring together those groups.

ArcticNet is another good example. The problem with ArcticNet is that it's focused primarily on maritime issues, so it doesn't always talk about the other terrestrial issues. But for all of those organizations, if there was resourcing just to allow the dissemination of their findings and their studies—and not just to other academics, but to Canadians in general—I think that would be very valuable.

We have a fairly good film industry in northern Canada. The Yukon film industry produces films frequently, and I think there needs to be some distribution of those films in a more robust way.

Mr. Bob Dechert: Very good.

You may know there's a proposal to create something called Polar House, probably based in the national capital region, which would be both a think tank and have some kind of a museum of the Arctic region that would be available to all Canadians. What do you think of that idea?

Dr. Karen Barnes: I think it's brilliant. Just recently we talked about perhaps building a policy think tank up here, because there is that need to have people in the north be able to debate and discuss their own issues in a really good organized way.

This summer I was at the University of Alaska Museum of the North in Fairbanks. It is an outstanding example of what could happen as far as a museum is concerned. Of course, one of the things that frustrates Yukoners is that when people think of the north, they often think of a treeless, barren, frozen landscape, and if you know anything about the Yukon, it's a huge part of the boreal forest. In fact, we don't hit the tundra until much further north at the Old Crow district.

I think those kinds of activities will help Canadians understand how diverse the north is.

Mr. Bob Dechert: Just briefly, if you were advising Minister Aglukkaq, what would you advise her to be the top three to five priorities of Canada's chairmanship of the Arctic Council?

The Chair: That's all the time for Mr. Dechert, but I'll ask you to answer the question.

● (1025)

Dr. Karen Barnes: I would say that education, obviously, is one, and I think it's about access and making sure that all northerners have access to good quality education right up through higher learning. I think the discussion about business that was mentioned and the economic development of the region is critical in helping people understand what that means and how they are going to implement business practices and enterprise opportunities.

I think research needs to be continued on climate change; we've heard that a lot in your deliberations already. It is real. If you live up here, you see it constantly, and it's facing people in terms of food security, transportation, and other issues like that.

I think we have to think about what the whole issue of resource development and resource extraction means in the north. The environment is so fragile and so vulnerable, and we need to do it differently if we're going to do it in cold climates, and we need to really focus on that as a northern global entity.

The Chair: Thank you very much.

Madame Péclet, five minutes, please.

[*Translation*]

Ms. Ève Péclet (La Pointe-de-l'Île, NDP): Thank you, Mr. Chair.

I am very pleased to hear all the success stories you have told us about. It is very refreshing.

I would just like us to bear in mind that we are talking about international policy, the policy that Canada should have with its international partners. Last week, I asked the government a question about the fact that Canada's agenda includes many more domestic issues.

For example, most of your speech talked about the access to education, resource development and business opportunities in the north. But I would just like to point out that the Arctic Council mandate includes none of those three issues.

You mentioned research and climate change. I would just like to ask you to tell us what you think about the fact that, in its Arctic policies, Canada has not currently raised the issue of climate change at the Arctic Council.

In 2010, the Minister of Foreign Affairs talked about the Arctic strategy being based on the Canadian government's four pillars; he did not ever mention climate change. Could you comment on the fact that Canada has completely abandoned the environment as an international issue?

[*English*]

Dr. Karen Barnes: It's a very good question.

I would have to say, from the standpoint of a northerner, it is a big gap for us. As I just mentioned, when you live in the north you see the impact of climate change every single day. Certainly the elders—their people have lived here for millennia—tell us that they are seeing rapid change that is not predictable. It's impacting people everywhere.

I think it is an issue that will face governments across the north, particularly when we look at resource extraction. The disappearance of the permafrost is just one example of where we're seeing difficulties in mining and oil and gas extraction, and in the ability to build roads. We have highways in the Yukon that we spend millions on every year because of permafrost issues.

So although it may not be named, it certainly is, I think, on everyone's radar. We'll certainly be at the table. When the ambassador from Norway was here recently and visited the college, she implored us to make sure that we continued to talk about climate change and the adaptation of our communities.

We will continue to do that from the college's perspective.

[*Translation*]

Ms. Ève Péclet: In your opinion, the government should make climate change one of its priorities at the Arctic Council.

[*English*]

Dr. Karen Barnes: I would say it would be a good idea going forward.

[*Translation*]

Ms. Ève Péclet: Do you think that the Arctic Council is the place for Canada to discuss its national policies on education and resource development? Do you believe that it really is the appropriate forum to discuss national and domestic issues and policies, as well as the challenges faced every day by indigenous communities? Do you think that the Arctic Council is the appropriate forum at which to discuss the problems of Canada's indigenous communities?

● (1030)

[*English*]

Dr. Karen Barnes: As I said at the beginning of my presentation, everything begins and ends with education. To me, the Arctic Council is about providing a forum for us to learn what others in the north have learned ahead of us. Whether there are good, sustainable practices that we can learn from in the north to inform our domestic policy—that's where I see the value of the Arctic Council.

If you talk to indigenous peoples in the north, they don't see the boundaries that we do. They consider the north to be a place that is shared by all indigenous peoples north of 60 or north of wherever. For them, it's not a political discussion; it's a discussion about the land and how we're going to protect it.

The Chair: Thank you very much.

Are there any more interventions over here?

Did you have a quick question?

Ms. Lois Brown: I would ask a question about governance, if I may.

The Chair: Sure.

Ms. Lois Brown: Dr. Barnes, you talked about governance. You talked about having people trained in the north to be leaders in negotiations of land treaties, and hopefully we would see young people who are going through the education system at the college become young people who would take on responsibilities in the north as parliamentarians, as members of the legislature.

First of all, how is that course being accepted? Are you seeing great uptake on that? What are the processes for building those negotiations? Are they doing research first that can then be parlayed into some of those negotiations?

You have young people who are first nations people who have grown up with the issues. They have an internal, intrinsic understanding of some of these things. Because they are cross-border as well, are these studies then able to go into international fora?

Dr. Karen Barnes: To answer the first part of your question, we are seeing the uptake increasing rapidly. I think you would be very impressed to come into our communities in the Yukon and see how many of the young people are going on and completing degrees and post-graduate degrees. And many of them are returning. We have first nations lawyers from our communities, first nations engineers, and first nations geoscientists who are coming back and really participating in those negotiations—the drawing of maps and boundaries, the issues of mineral rights, etc.

You ask about cross-boundary. I'm not as familiar with land treaty negotiations outside of Canada and Alaska, but certainly just yesterday I was talking to one of the Yukon negotiators. He used to be a chancellor at our college. He has recently returned from Alaska, because they continue to seek input from the Alaska experience, particularly around oil and gas. It is further ahead than we are, so we can learn from not only its successes, but also its mistakes. We will certainly incorporate some of that research into our programming.

Ms. Lois Brown: You talked about three baccalaureate and three master's degrees. I think one of them was a baccalaureate in science, in mining engineering.

Dr. Karen Barnes: Yes.

Ms. Lois Brown: Can you tell us what the others are—

Dr. Karen Barnes: We have a bachelor of science in conservation sciences, we have a bachelor of education and a bachelor of social work, we have a master's in educational leadership, a master's in education curriculum, and a master's in public administration.

Ms. Lois Brown: So for any of the engineering courses, the students are likely to have to go out of province to get that right now. Is that correct?

Dr. Karen Barnes: That's correct.

We have articulation agreements with southern universities that students can go into for sciences and engineering, and we're building an articulation with the university mining school in Fairbanks.

● (1035)

Ms. Lois Brown: That's very interesting. I'm very interested to hear about the governance issues particularly and to see that the students are able to take that information, because I'm sure that is something the Arctic Council is going to be able to call on, as we move forward in Canada to have that expertise and that research behind them and to have those young people participate. Thank you very much for doing that.

The Chair: Thank you, Ms. Brown.

We'll finish up with Mr. Bevington, for five minutes.

Mr. Dennis Bevington: Thank you, Mr. Chair.

And thank you to President Barnes.

I'm very interested in what you had to say. I sat as chair of the Aurora College board of governors for a number of years in the Northwest Territories. I certainly could spend a little time bragging about our college system as well. However, this is an international discussion, and I have to keep it on that basis, because it's very important that we understand how these issues are going to play out.

Having said that, there was a very large meeting of UArctic in Winnipeg a month or so ago. Did you attend that? Could you give us some details of that?

Dr. Karen Barnes: Unfortunately, we had our student awards that night, which I always feel is very important to attend. We did send our vice-president of research and academics. Dr. Chris Hawkins did attend the meetings.

I think we have attended almost all of the rectors' meeting. That was a rectors' meeting, which includes all of the presidents and vice-presidents of all the participating universities and colleges.

From what I understand, there was a lot of discussion about the northern provinces. That was interesting to hear, because that's always been a bit of a tension in the University of the Arctic and the northern Canadian provinces.

Of course, the real value now for the University of the Arctic is primarily around the research networks. I think there was also a lot of discussion on how we're going to continue to resource our researcher community so that members can travel and continue to work together across the north.

Mr. Dennis Bevington: So you would say that U of Arctic is something we should be promoting in Canada.

I know you had a different point of view once you took over your position in Whitehorse a number of years ago. Is it safe to say you're on side with UArctic now in Canada, as a larger partner?

Dr. Karen Barnes: I've never said that it wasn't important. What I said was that with limited resources I would prefer to build our colleges to provide better and more options for students in the north. However, what I've always said is that the value of UArctic is the network of professionals and academics across the circumpolar north, and I still support that strongly.

Mr. Dennis Bevington: Wouldn't you say, though, that the UArctic model is the better place to share experiences on northern education than the Arctic Council, which has to deal with so many international issues surrounding the opening of the Arctic Ocean—primarily environmental issues and issues surrounding the movement of ships and the opening of a new fishery in the world? These are things that have no other home in which to be discussed—none at all—as previous people have mentioned. By focusing on something where you have other international bodies that are already established to provide that connection, wouldn't you think that is a formula for not getting things done that we really need to do on an international basis?

We don't have much time. The Arctic Ocean is opening up very quickly. Climate change is making a huge difference, not only to the north but through southern Canada and the rest of the world. We need to focus on those international issues.

Could you not see a better way to deal with education internationally through the existing structures that have been established?

Dr. Karen Barnes: I would say that it's not an either/or situation. To me, the value of the University of the Arctic is that it does connect the learning and research that is happening across the north. That informs the Arctic Council, where parliamentarians can have the discussions that need to happen. The value of education by northerners is that those issues will be addressed by the people who are actually experiencing them.

I think the University of the Arctic is critical to provide that knowledge, but it is probably not the place for those conversations.

● (1040)

The Chair: Thank you very much.

Mr. Williamson, you had a quick question before we wrap up.

Mr. John Williamson (New Brunswick Southwest, CPC): I've enjoyed listening to the comments today. I certainly hope to have the opportunity, either through this committee or on my own, to visit the north at some point in the future. I've found, as a member, that it helps when you meet people and experience their day-to-day living and activities. I think it shapes our opinions as lawmakers when it comes time to making recommendations.

I have a question. I want to follow up, because sometimes when we say we have to keep talking about climate change, it's kind of left out there. I'm curious to get your thinking about "beyond adaptation", which I can see as a challenge as the environment warms—and I assumes it's mostly warming in the case of the north—but what else did you have in mind? When foreign dignitaries come and say "Keep talking about it", what are they talking about, or are you really focused on the adaptation, that we need to ensure that communities and the territories are able to meet the challenges of what I think is a warming trend in the north?

Dr. Karen Barnes: Adaptation can mean many things. We have contaminants that are emerging from the soils as permafrost disappears. Those contaminants are getting into our food sources. They're affecting people's health. We have very high incidences of certain diseases and cancers because of that. So that's our health perspective.

There are some wonderful cultural artifacts that are emerging out of the permafrost. You've probably heard about the ice patches and how we're starting to find things in the ice that are telling us stories from about 15,000 years or 20,000 years ago that we didn't know before. It's reshaping how we think about how the north was formed.

It's not entirely about adaptation, but it all affects how we live up here, so that is adaptation.

Mr. John Williamson: I raise that because one of the concerns I have, when we have people who suggest we do something.... I'd be curious to have your comments on this. I've always found it odd that under the Kyoto Protocol, Canada was the only country in all the Americas, north and south, that was required to reduce emissions. You might appreciate this; our climate is so cold, our emissions are high, yet that deal came along, and in the Americas, just our country was required to do something.

You might have a comment and you might not, but given our cold environment and the need to burn fossil fuels just so we can keep warm in the winter, it was an unusual agreement that put so much emphasis on our efforts and very little on those of other countries, whether it was in the southern U.S., where they're piling into their SUVs, or in Mexico, where they're burning fuel with a two-stroke engine, for example, and causing emissions left, right, and centre.

That was more of a comment. You're welcome to comment as well if you like. It's up to you.

Dr. Karen Barnes: I don't have much of a comment. Kyoto was signed before I moved north, so it wasn't on my radar. We see contaminants in the north more directly than you do in the south. Certainly it has an immediate impact here.

From a personal perspective, we face energy issues every day. We just came out of a stretch of minus 30 for three weeks. Energy is a big concern here. I think it's imperative that we start to seek alternatives and not be so dependent on one source, which is very expensive to get up into our area.

Mr. John Williamson: Thank you.

The Chair: Dr. Barnes, thank you very much for participating in our committee today.

Dr. Karen Barnes: Thank you.

The Chair: Members, we don't have any witnesses for Thursday. I think there's a consensus that we cancel the meeting on Thursday. Is that all right?

Mr. Bob Dechert: Agreed.

Ms. Lois Brown: I'll have to tell the health minister.

Mr. Bob Dechert: David agrees.

The Chair: Okay.

Paul.

Mr. Paul Dewar: I'm fine with that, Chair.

I have one final thing. I want to thank our staff and you as chair, and I wish everyone a restful holiday—Happy Hanukkah, Happy Kwanza, Merry Christmas, and Happy New Year.

The Chair: And those wishes go to our translators and all the staff here.

Our work plan has been circulated. We're going to continue to work through that work plan, unless we have any concerns. That was drafted by the researchers, and we'll continue to move forward on that when we come back in the new year. We'll discuss what we're doing with the rest of the Arctic as well as other studies.

Everyone have a good holiday.

Published under the authority of the Speaker of the House of Commons

SPEAKER'S PERMISSION

Additional copies may be obtained from: Publishing and Depository Services
Public Works and Government Services Canada
Ottawa, Ontario K1A 0S5
Telephone: 613-941-5995 or 1-800-635-7943
Fax: 613-954-5779 or 1-800-565-7757
publications@tpsgc-pwgsc.gc.ca
http://publications.gc.ca

Also available on the Parliament of Canada Web Site at the following address: http://www.parl.gc.ca

Publié en conformité de l'autorité du Président de la Chambre des communes

PERMISSION DU PRÉSIDENT

On peut obtenir des copies supplémentaires en écrivant à : Les Éditions et Services de dépôt
Travaux publics et Services gouvernementaux Canada
Ottawa (Ontario) K1A 0S5
Téléphone : 613-941-5995 ou 1-800-635-7943
Télécopieur : 613-954-5779 ou 1-800-565-7757
publications@tpsgc-pwgsc.gc.ca
http://publications.gc.ca

Aussi disponible sur le site Web du Parlement du Canada à l'adresse suivante : http://www.parl.gc.ca