# 2003 Yukon North Slope Conference

"Meeting the Challenges of Conservation and Beaufort Development on the Yukon North Slope"

SUMMARY REPORT

November18–20th, 2003
Inuvik, Northwest Territories

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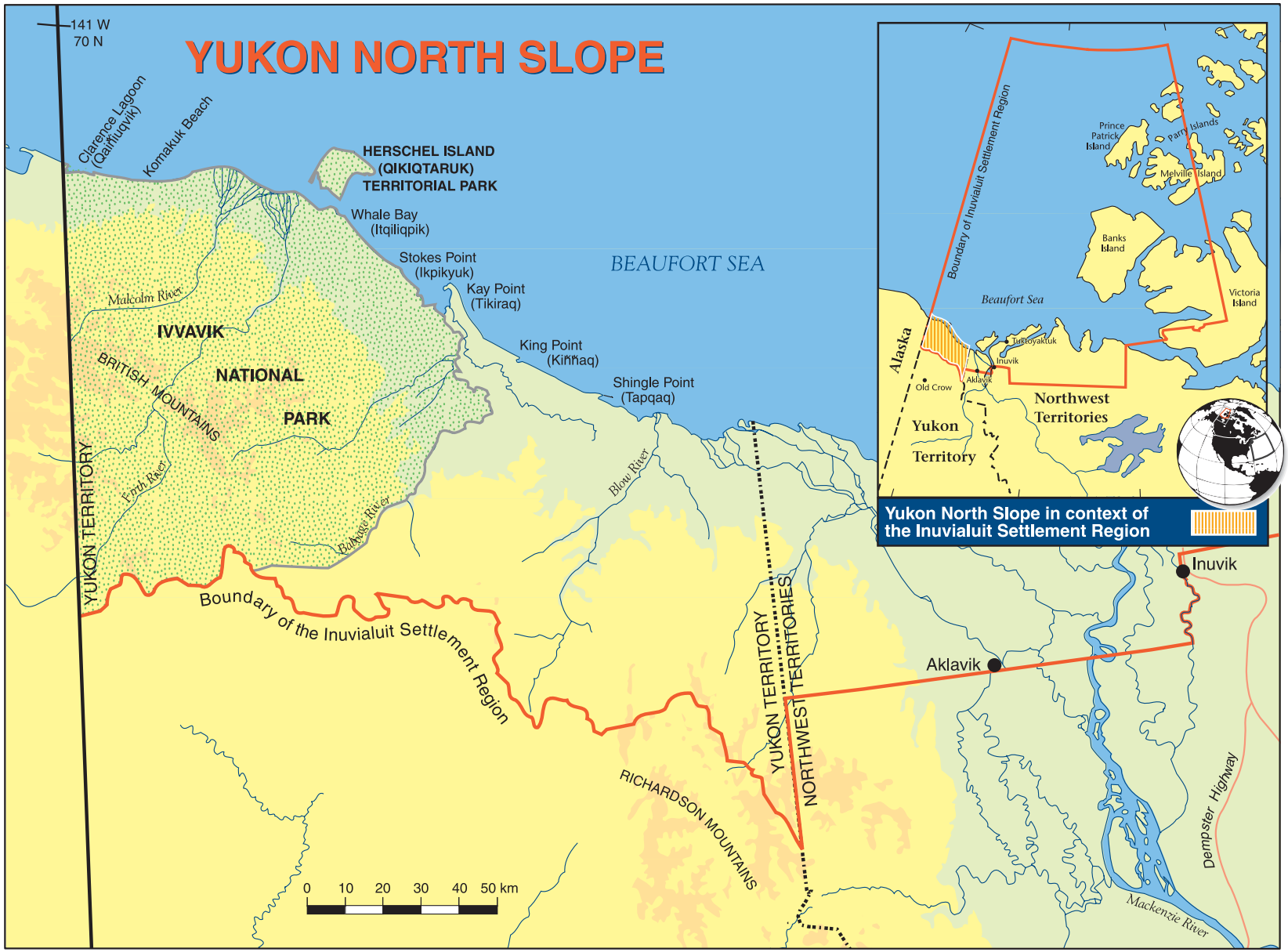
YUKON NORTH SLOPE
141 W
70 N
Clarence Lagoon (Qaiñiluqvik)
Komakuk Beach
HERSCHEL ISLAND (QIKIQTARUK) TERRITORIAL PARK
Whale Bay (Itqiliqpik)
Stokes Point (Ikpikyuk)
Kay Point (Tikiraq)
King Point (Kiñnaq)
Shingle Point (Tapqaq)
BEAUFORT SEA
Malcolm River
IVVAVIK
NATIONAL
PARK
BRITISH MOUNTAINS
Firth River
Babbage River
Blow River
YUKON TERRITORY
Boundary of the Inuvialuit Settlement Region
YUKON TERRITORY
NORTHWEST TERRITORIES
RICHARDSON MOUNTAINS
Inuvik
Aklavik
Dempster Highway
Mackenzie River
0 10 20 30 40 50 km
Boundary of Inuvialuit Settlement Region
Prince Patrick Island
Parry Islands
Melville Island
Banks Island
Victoria Island
Beaufort Sea
Alaska
Tuktoyaktuk
Inuvik
Aklavik
Old Crow
Yukon Territory
Northwest Territories
Yukon North Slope in context of the Inuvialuit Settlement Region

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# Foreword

In 1984, the Inuvialuit Final Agreement (IFA) was proclaimed.

It provided new mechanisms for protecting the environment of the Yukon North Slope. Section 12 of the Agreement led to the creation of Ivvavik National Park and Herschel Island - Qikiqtaruk Territorial Park. It also established the Wildlife Management Advisory Council (North Slope). The entire Yukon North Slope is designated as having a special conservation regime, with protection of wildlife, habitat and traditional native use considered paramount.

As an explicit part of the new management regime, section 12(57) of the IFA calls for a Yukon North Slope Conference, to promote public discussion among native organizations, government and the private sector with respect to management coordination for the North Slope.

This report summarizes the proceedings of the seventh Yukon North Slope Conference, which was held in Inuvik, NWT, from November 18 - 20, 2003. It is not intended to serve as an official or formal record of proceedings. This report is based on transcripts and workshop reports. Where necessary, the material has been edited for clarification.

Appendix I is the conference agenda. Appendix II is a list of conference participants. Appendix III is a copy of section 12 of the Inuvialuit Final Agreement. Appendix IV is a list of acronyms. Appendix V is a list of related websites.

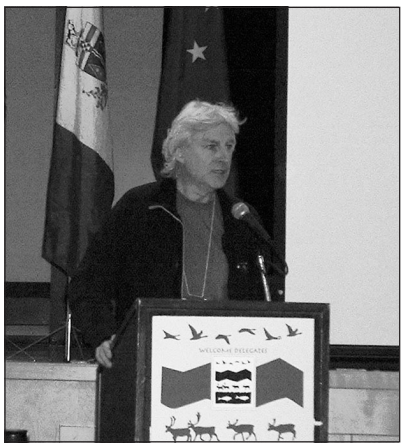
As stipulated in the Inuvialuit Final Agreement, the Yukon Government hosted the Yukon North Slope Conference. A very special thanks to Mr. Robert Blair, who generously agreed to chair the conference. Appreciation is also extended to the Wildlife Management Advisory Council (North Slope), and the many other people whose help made the conference a success.

# Welcoming Remarks

**Lindsay Staples**
Chair, Wildlife Management Advisory Council (North Slope)

This is the first Yukon North Slope Conference in Inuvik and I think that's something to celebrate. Thank you all very much for coming.

I'd like to call on the Minister of the Environment for the Yukon, Jim Kenyon, to open the proceedings and introduce the conference chair.



*Yukon Government photo*

**Honourable Jim Kenyon**
*Minister of Environment, Government of Yukon*

As Minister of the Department of Environment for the Government of Yukon, it is a pleasure for me to be in Inuvik to welcome all participants to the 2003 Yukon North Slope Conference.

This is the seventh Yukon North Slope Conference, and the first that we have held within the Inuvialuit Settlement Region. These conferences reflect a commitment to ensure ongoing public discussion on coordinating management initiatives on the Yukon North Slope. They also provide a valuable opportunity to share information and perspectives that may help to meet shared management objectives.

As many of you know, these conferences are provided for in the Inuvialuit Final Agreement, or IFA. This land claim agreement sets out a co-operative management regime for the Yukon North Slope that involves the Inuvialuit, Canada and the Yukon.

One of the requirements of the Yukon North Slope management regime is the development of a "Yukon North Slope Wildlife Conservation and Management Plan." I was very pleased to receive a copy of this Plan late last week.

While I haven't had a chance to sit down and go through the Plan in detail yet, I can see that it is going to be a very useful document. The Plan will be used to assist future decision-making in a manner that is consistent with the objectives of the IFA and respectful of the conservation interests of this very special area. I would like to take this opportunity to commend the Wildlife Management Advisory Council (North Slope) for their hard work; we appreciate their efforts over the years in bringing this plan to completion.

The theme of this year's conference, "Meeting the Challenges of Conservation and Beaufort Development on the Yukon North Slope," is a timely one. The environmental conservation regimes in the area have evolved dramatically since the signing of the IFA in 1984, and there is now a renewed interest in hydrocarbon exploration and development in the Beaufort Sea region.

In your workshops and discussions over the next two and a half days, you will examine many different aspects of the Yukon North Slope's changing physical, social and economic environment. Various people and organizations interested in the Yukon North Slope, and the issues associated with it, were invited to be here. I trust this will translate into some interesting discussions that reflect traditional, local and scientific thought. The discussions that take place over the next couple of days will contribute to the overall management of the Yukon North Slope.

Once again I would like to welcome everyone to the conference and I wish you all success in your deliberations.

# Introduction of Conference Chair

**Honourable Jim Kenyon**
Minister of Environment,
Government of Yukon

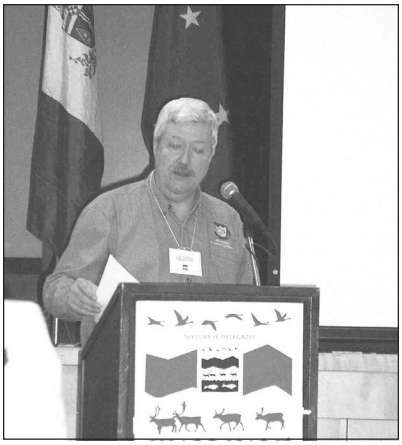
It is now my pleasure to introduce Dr. Robert Blair, the Chair of the 2003 Yukon North Slope Conference.

Dr. Blair came to the Western Arctic about 30 years ago as President and CEO of Foothills Pipeline. He was an active and well-known participant in the Mackenzie Valley Pipeline Inquiry on behalf of his company. Dr. Blair is the past Chair of Nova Corporation, Husky Petroleum and Foothills Pipeline, as well as others in a multinational group of companies that he built. Dr. Blair is currently the Executive Chair and President of Photon Control Inc.

Dr. Blair has received numerous awards, honorary degrees and honours, including an appointment as an Officer of the Order of Canada in 1980, and as a Companion of the Order of Canada in 1985. The Orders of Canada were for building engineering and industry in Canada and fighting for Canadian industry and Canadian ownership and control.

Dr. Blair has a long and mutually rewarding history of working with native people in the provinces and certainly with northerners.

It gives me very great pleasure to introduce Dr. Robert Blair.



*Yukon Government photo*

# Opening Remarks by Conference Chair

**Dr. Robert Blair**
Conference Chair

Thank you, Minister Kenyon. I would like to use the traditional opening

"Hello This Place". Hello this wonderful centre, new to me, with so many things to so many people – the Midnight Sun building. Hello all you people in this room. Hello to the others who will join us in the next two days. Hello to the Elders who chose this meeting and the people in it. Hello to the kids who will benefit for a long time to come out of the work you do. And some of them, the older ones, are here. Hello to the governments that had the nerve to do the right thing and put the IFA into place, which I think wasn't always the easiest thing for the territorial government or the federal government to do. But hello to them, I acknowledge them. And hello to the Berger Inquiry, which had more than enough to do with the way things turned out. And to the other one, which I don't hear mentioned so much, the Lysyk Inquiry. Under tremendous pressure of time, with everyone shouting at them about routes and where the Alaskan gas would go – they were in an enormous hurry to get that Alaskan gas going – Lysyk and his colleagues, on behalf of the Yukon, did a much shorter and less publicised job than Justice Berger. Hello to them!

Hello to the whole works.

Being brand new to this process and being told to give some remarks, I'm not going to give many remarks. I'm going to do some listening first for a day or two, and then we'll get to some remarks, see what contribution I can make. I don't expect to be able to make any real contribution about any environmental studies because they have probably progressed farther through this series of meetings than they have anywhere else that I have known in any jurisdiction, in North America or elsewhere in the world.

What I may make some remarks about, a little while later in the conference, is the one side part of this – the Minister alluded to it – the economy. My interest is in jobs – good, high-level, highly rewarding employment for the local people. That has become woven into my life in a lot of different places and I see a lot of ideas, I've read a lot of materials that I have been sent. And boy, did I ever get materials! It was terrific what the Yukon Department of Environment has provided to me, in all the documents and the past reports. And one part that I think it might help to expand on is how you use northern expertise and northern competence to build really highly rewarding, highly effective employment. Not necessarily just in your own jurisdiction. This has become

very much an international demand for the kind of northern expertise that exists here and I've got some ideas about that, when at the right time we can work them in. In the meantime, I'm mostly going to listen.

There was one thing that I thought I would say in the opening. When I started reading some of the names of the people who have worked in past sessions, their names jumped off the page and reminded me of something. I'll tell you a little short story and then I'll connect it to these names.

Once we built an oil upgrader – an upgrader to take heavy oil, low value oil, and turn it into high value, what the industry would call refinery charge stock, not that different really from gasoline. I say "we" and "once we built it"; actually three or four thousand people built it, the engineers and construction workers built it. But I was a little bit like the minister; I was in the role then of chief executive of the sponsoring organization. And so if anything went wrong, it was my career on the line – in many ways as happens with the minister. And it wasn't always the most popular project because the company leading it was something of an upstart, a little medium-sized company, setting up to do something very big. This was about a two-billion dollar project. It exists today near Lloydminster, which is on the border of Alberta and Saskatchewan, and it could be said that it is the best upgrader in North America, and it makes a lot of money, it is a big success.

When it started, we had to face a bit of music about all this, partly because it was a medium-sized and Canadian company doing this, and the biggest oil companies said they wouldn't come in, they wouldn't participate. They didn't think that the country was ready for it and they didn't think it was needed and so they wouldn't do it. And because the really big guys said they wouldn't do it, the writers and some of the financial people took it up, and we got quite a lot of ink, quite a lot of coverage. I remember the Globe and Mail favoured us with a whole article opposite the editorial page, saying why this thing shouldn't be built. It was out of line because Imperial Oil said they wouldn't join. And so I had to listen to some of those things and then eventually I thought that we would get it financed, well built, built by Canadian engineering firms throughout. And it's the pride of Lloydminster now.

And on the occasion on which this thing was eventually commissioned, a tough old guy from Lloydminster thumped me on the chest a few times and said, "Blair, don't get sticking your chest out there. Leadership is really nothing but an underdeveloped sense of fear."

That was what stayed in my mind as I looked at some of the names on the list. I had to think for a minute: was that a compliment or an insult? And I thought, if you said that leadership was anything less than an undeveloped sense of risk, it would be a criticism, because leaders have got to understand risk and warn their people about it. But fear is sometimes an unnecessary and delaying and destructive thing, and I think saying real leadership is an underdeveloped sense of fear is probably not a bad thing to have said.

And then I looked at the list. I looked at George Manuel. I knew him well, and I knew what fights he'd been through in his life, physical as well as intelligence. And I looked at Justice Berger's name. He was ready to stand up for what he really cared about, even when there was a certain amount of criticism around. And I sure thought of Nellie Cournoyea, who I first saw in action thirty years ago, and saw regularly through all the years that followed. And I thought of what those people had to work with, and of the Committee for Original Peoples' Entitlement (COPE) standing up for their people. To me, it's become kind of a special term, that leadership is an underdeveloped sense of fear. And I think it has been particularly well displayed through all the work that I've seen for this.

So that's as far as I intend to go in opening remarks. I appreciate your listening to my little story. I hope to make some contribution over the next three days and I'm thankful to whoever got me into this. I'm going to enjoy it. It's very interesting, very impressive. So now it's my turn to pass the business to Lindsay and his events on the agenda.

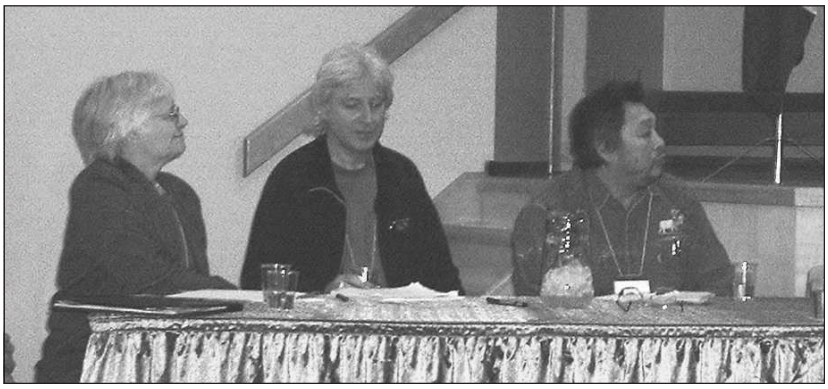
# Plenary Session — Setting the Context: The Coastal Plain and Offshore

**Lindsay Staples**
*Chair, Wildlife Management Advisory Council (North Slope)*

Thank you very much. I'd like to begin by putting the work of this conference and the theme of this conference into some context. What we really wanted to accomplish this afternoon was to set some context for those of us who have come from far and wide and for some people who have never been to the region before. There are people within the region, to the east, who have never been to the North Slope. For those who are beneficiaries of the Inuvialuit Final Agreement, they have certainly read their agreement and have seen what is referred to in it.

We wanted to take a bit of time to set the physical and geographical context and also talk a little bit about the issues and themes that we're going to be talking through over the conference. Furthermore, I'd like to talk a little bit about the history of the conference as well.

Having said that, I think that what I would like to say by way of background in these conferences is that, as the Minister and as the Chair of the conference pointed out, this is the seventh one. The first conference was held in 1989. As the Minister pointed out, these conferences are a requirement of the Inuvialuit Final Agreement. And those who negotiated the agreement understood that requirement, given the significance of the area to aboriginal peoples who have a long and important association with the area, as well as to conservation interests and development interests, and given the resource potential – hydrocarbon and natural resources, particularly wildlife and the habitat that wildlife depend on. Certainly, in terms of Northern Canada, it is in a very diverse physical environment that wildlife occurs in this part of the North.



*Yukon Government photo*

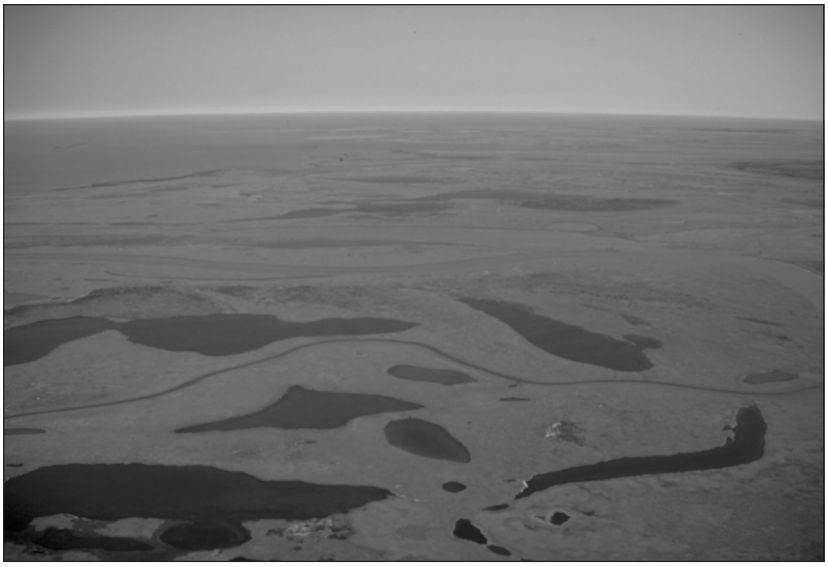
The first conference was in 1989. The late Andy Thompson chaired that conference. Andy had a long association with the North Slope and the Arctic National Wildlife Refuge. Andy's contribution to that conference was really to assist all of our organizations, which were newly minted at the time, to have an opportunity to meet one another and to make governments more aware of these new creatures that had been created under the new land claims agreement.

And I recall that, in many ways, that first conference in Dawson was sort of a three-day "group grope" of people essentially trying to figure out who they were, what their job was, what the tasks before them were and so on. As you know it's almost fifteen years ago now since that conference occurred.

We've tried to have chairs for these conferences that have a sense of history, a sense of connection to people and to issues of the day. And certainly with respect to the council I chair, the Wildlife Management Advisory Council (North Slope), we've taken a strong interest in trying to identify and recommend chairs to the Yukon government, which is responsible for appointing them. The government would consider appointing chairs who, one way or another, have a physical relationship with this area or adjacent areas.

The second conference in 1990 was chaired by Justice Tom Berger. He was able to take us beyond the first conference, which really focused on who we were and what our job was, to really scope out the issues of the day that we had to be turning our minds toward.

In the third conference in 1991, Bob Weeden was the conference chair. Bob lived in Alaska at the time, working as a scientist and academic at the University of Alaska Fairbanks. He worked with the Inupiat throughout the period of development in Alaska. He wrote a wonderful book called "Promises to Keep." When we think about the North Slope, we think of it as an area that extends from east to west, from the Yukon/NWT border to well into Alaska. We thought that it was important to start building bridges to the west, and in particular to take the opportunity to learn from the experiences of the companies, the Inupiat, the Gwich'in, the people from the communities in Alaska. It was a chance to learn from our neighbours in Alaska. The exciting thing about that conference was recognising that when we talk about the Yukon North Slope, we're thinking much bigger than just a small and narrow geographical area.



*Yukon Government photo*

After the first three annual conferences, the IFA required the parties to get together to decide whether or not they wanted to proceed with future conferences and, if they did, on what basis they would do so. The parties agreed that it would be useful to meet.

Since 1991, the conference has been held every three years. In 1994, John Naysmith, the federal negotiator who negotiated the Inuvialuit Agreement-In-Principle, was the chair. John was a federal government civil servant who launched the whole concept of land use planning in Northern Canada. For those of you who have any history with land use planning, you know that he wrote a major work under the moniker of the federal government called "Land Use Planning in Northern Canada" that went a long way toward really setting the concepts for land use planning. The principles of land use planning were then entrenched in and negotiated into the land claims agreements.

Later then, in 1997, Hugh Faulkner chaired the conference. Hugh was the federal Minister of Indian and Northern Affairs at the time of the Agreement-In-Principle for the Inuvialuit. He was also the minister who at the time established the withdrawal order that applied in the Northern Yukon, an action that was met with a diverse response. I think, though, that from the perspective of the aboriginal people, the Gwich'in and the Inupiat, it bought those people the time that they required to negotiate the appropriate provisions into their land claim agreements without the fear and the anxiety that resource rights were essentially being granted during the periods of their negotiation. This conference looked at transboundary interests: how we work with people and organizations across borders, how we could work better with each other.

Then, in 2000, we invited Tom Berger back to chair the conference. With the return of hydrocarbon activity to the area, we thought that it would be interesting to have Justice Berger come back and reflect on what had happened over that twenty-five year period since he had tabled his report. And in addition to the Inuvialuit agreement, there was the Gwich'in agreement in NWT, agreements up the Mackenzie Valley, and those in the Yukon, most importantly the Vuntut Gwitchin in Old Crow. In that last conference, we spent a lot of time talking about what had changed and how far we had come, and what institutions have changed in that time. You heard Bob Blair speak to his memories of when he was here last, and that the organizational landscape that he saw then is really quite different from the one we see here today. I think for someone like Dr. Blair and for those of us who have lived through these years, we would observe the tremendous amount of development in the organizations and institutions at the local and regional level that were just a dream thirty years ago and that are with us today, and that have now developed quite a record of achievement and success over that period of time.

So that brings us up to the current conference of 2003 and our interest in focusing this conference on the theme of meeting the challenges of conservation and development on the Yukon North Slope. This particular theme was one that was arrived at through discussions that our Inuvialuit co-management bodies held about looking back over the last three years and the type of development activity that is occurring here. For many communities here in the region, there is certainly the promise of some economic opportunities as well as some issues regarding how we manage development in a way that will help the environment, maintain a traditional way of life, and at the same time allow those communities to enjoy the benefits of large-scale development, locally and regionally. These are matters that are worth exploring further, especially in light of the fact that so much had changed in the last conference.

The legal definition of the Yukon North Slope is the Yukon-NWT border to Yukon-Alaska border, from the height of land to the nearshore and the near offshore. This includes the traditional territories of the Vuntut Gwich'in, the Inuvialuit, and the Gwich'in and the Inupiat. When we talk about the Yukon North Slope, we are also very interested in the Alaska North Slope and the Mackenzie Delta/Shallow Bay.

A lot of work has been going on in the last two years at Shallow Bay. The SSDC drilling rig is near Pauline Cove, Herschel Island. There is hydrocarbon activity. Devon has an interest in the offshore.

I am delighted that we're enjoying the participation of some folks from Alaska here today. The Delta is also well-represented. There is excellent representation of Yukon Territorial Government civil servants. This is an excellent opportunity to see the region and make contacts. There is a tremendous amount of work that goes on in the Yukon by Government of the Northwest Territories researchers. Many federal departments are represented here as well. We appreciate their involvement here too.

The meat of the conference comes out of the workshops held tomorrow and on Thursday. There is a small change in our program. Louis Fortier, who is with Laval University in Montreal, is not able to be here with us this week. Dr. Fortier has been working on thinning sea ice and the ocean environment.

# Plenary Session — Setting the Context: The Coastal Plain and Offshore

**Frank Pokiak**
*Chair, Inuvialuit Game Council*

Before the arrival of the Europeans, Inuvialuit people lived and hunted all along the Yukon North Slope.

Some elders tell how bowhead whales were traditionally harvested before the commercial whaling period began in the late 1800s. It is told how big umiaqs that were paddled by several men would have a log placed in front of the boat with a harpoon attached to the front of it. They would paddle it into a bowhead, injuring the whale. They would then follow it, sometimes for days, until it slowed enough for them to approach it and kill it. However, most of the traditional whaling was for beluga whales. In some locations they herded belugas into shallow areas where they could more easily harvest them. Air was blown into the whale to make it float and thus easier to tow while paddling.

Seals were harvested along the Yukon coast, mainly in the spring and fall. They were harvested with nets or by using bleached sealskin to approach seals by their breathing holes. Walrus were occasionally taken around Herschel Island. Polar bears were hunted along the Yukon coast. The skin was traditionally used for clothing, mattresses and doors for sod houses.

Fishing was an important subsistence activity for Inuit living along the coast. Sweeping, setting nets under the ice and hooking were some of the methods used. Hunting birds was also a source of food. Ptarmigan were hunted with nets. Geese were taken during moulting and slings were used to take birds in flight. People also picked eggs. Caribou were hunted for food and clothing, mainly during their spring and fall migrations, and they were sometimes present year round. Berries and plants were also collected along the coast. All of these activities were taking place before the whalers arrived in the late 1800s.

With the arrival of the European whalers, the lives of the Inuvialuit were dramatically changed. Our diets changed in that we now had available flour, sugar and tea. Some started working for the whaling boats by hunting for them and eventually working onboard. They traded meat for goods from whalers and other independent traders. The Hudson's Bay Company established a trading post at Herschel Island in 1915 and at Shingle Point in 1920. Many Inuvialuit started trapping for a living, selling furs to the Bay and the other traders.

The Anglican missionaries arrived in the 1890s on Herschel Island and introduced Christianity and schooling. Many Inuvialuit women married whalers and raised families.

With Europeans also came diseases such as the measles, influenza, and smallpox which many Inuvialuit died from.

Then there was the construction of the Distant Early Warning Line (DEW Line) during the 1950s, which brought a lot of employment to the area along with other influences and changes. And then there was the first round of oil and gas exploration from the sixties to the early eighties.

In the area I was raised, many families kept dog teams. The fall run of herring was an important food source for dogs and people. Before the oil and gas development in Tuktoyaktuk, one sweep would fill two to three boats. Sometimes the net would be so full that some fish would have to be released before we could pull it in.

When industry arrived they dredged the harbour and after that the herring never came back the way they did before. Even today, sweeping will only fill about one tub. Industry also kept a channel open through the harbour, some years as late as December. This had an impact on trappers as they could not cross the channel to access their trap lines. Also, geese used to migrate through the mouth of the Mackenzie River, which they don't do now.

Throughout all of these changes, the Inuvialuit have adapted and have continued to pursue their traditional harvesting activities. There are no longer Inuvialuit living year round along the Yukon coast, but there are still several sites such as Herschel Island and Shingle Point which are critically important areas for seasonal harvesting and other traditional activities.

*Yukon Government photo*

# Plenary Session — Setting the Context: The Coastal Plain and Offshore

**Pete Cott**
*Area Habitat Biologist, Department of Fisheries and Oceans, Inuvik*

The productive waters of the Beaufort Sea near the Yukon North Slope are home to a variety of fish and marine mammal species. Species such as flounder, herring, inconnu, whitefish, cisco, char, beluga, bowhead and seals are important sources of food for people living in the Western Arctic. Despite not being used as food by people, many marine animals are critically important to the marine and terrestrial ecosystem. Examples are Arctic cod, zooplankton, and other marine organisms.

*1) Char*
The main spawning rivers for Dolly Varden are the Firth, Babbage, Big Fish, and Rat Rivers. This species is used by both the Alaskans and the folks from the delta. Fishery Management Plans are in place for the Rat and Big Fish River fisheries.

*2) Bowhead*
The areas around Herschel Island are highly productive due to upwelling. Abundant plankton attracts many fish and marine mammals, including bowhead. Bowhead whales travel for great distances to feed off the Yukon North Slope, often congregating in large numbers between Shingle and Kay points. These areas change from year to year depending on ocean and wind currents. A bowhead carcass washed up on the Alaskan North Slope near the Yukon clearly shows the ecological linkage between marine and terrestrial ecosystems. Nutrients and energy are transferred from the sea to land.

*3) Belugas*
Beluga are extremely important to the Inuvialuit people and are hunted off the Yukon North Slope. The beluga migrate from Alaska with the pack ice, spending the summer throughout the Canadian Beaufort Sea. They congregate in Shallow Bay, Kugmallit Bay and off Kendal Island (the Beluga 1A Zones).

*4) Seals*
Winter – Ringed seals and bearded seals are resident around the Yukon North Slope year round, despite it not being prime winter habitat.

Summer – During open water, ringed and bearded seals are fairly common. Bearded seals are commonly seen off Seagull Island and are reported to DFO by Aklavik harvesters. Ringed seals feed in areas of dense zooplankton alongside bowheads.

Fall – The Yukon coastal waters are a migration route for ringed seal juveniles that migrate westward by the thousands. Local observations and tagging have revealed that they go as far as Russia and through the Bering Strait.

*5) Cisco*
Cisco spawn in tributaries of the Mackenzie. There is passive drift of larvae either over the Tuktoyaktuk Peninsula or across the Yukon North Slope to the Colville River Delta in Alaska (depending on the prevailing wind). A workshop is currently underway between Alaskans and Canadians to discuss cisco issues and management.

*6) Pacific Salmon*
All species of Pacific salmon have been captured in NWT waters. They likely migrate along the Yukon North Slope to and down the Mackenzie River. With the exception of chum salmon, incidents of Pacific salmon in the Canadian Beaufort Sea are rare.

*Commercial Fisheries*
There has been some interest expressed in commercial marine fishing (emphasis on crabs). Some exploratory fishing licenses have been issued by DFO, but fishing has not been undertaken yet. DFO is not allowing commercial gillnet fisheries at this time.

*Environmental Assessment and Regulatory Environment*
DFO Western Arctic Area is responsible for environmental assessment and regulation in the NWT and the Yukon North Slope. If projects are proposed in the Yukon North Slope, they will be regulated by DFO in the same way as those in the Mackenzie Delta/ Beaufort Region. The regulatory regime is much more stringent today than during the last oil and gas boom. Environmental assessment under the CEAA and IFA is required. The main federal players are Indian and Northern Affairs Canada (INAC), National Energy Board (NEB), Fisheries and Oceans Canada (DFO), Environment Canada (EC), and Parks Canada.

*Types of Oil and Gas Projects in the Mackenzie Delta/ Beaufort Region*
The oil and gas projects in the Mackenzie Delta/Beaufort Region in recent years include:

- 3-D marine (offshore) using airguns
- 2-D riverine using airguns
- Geotechnical investigations
- Road construction
- Land-based seismic
- Exploratory wells (including proposed offshore)

The mooring of the Single Steel Drilling Caisson (SSDC) off Herschel Island is the only oil and gas project off the Yukon North Slope that DFO has had to regulate this decade.

*Marine-based Developments*
*Standard Mitigation*
- Avoidance of traditional harvest areas
- Timing to avoid migrations
- Make sure footprint isn't over important habitat
- Pre-, during and post-development monitoring
- Shutdown zones and/or shutdown times
- Spill plans
- Winter work

*Land-Based Activities*
*Standard Mitigation*
- Project setback from waterbodies
- Avoid use of explosives over areas of waterbodies not frozen to the bottom
- Fish screens
- Proper winter stream crossing construction
- Limits on water withdrawal
- Proper fuel storage and spill plans
- Protocols for water withdrawal and winter access for oil and gas developments

When the Mackenzie Valley Pipeline goes through, the Yukon North Slope may become a target for oil and gas exploration. It is critical that all parties work together to ensure that development does not compromise the ecological integrity of the area.

# Plenary Session — Setting the Context: The Coastal Plain and Offshore

**Don Dowler**
*Vice-chair, Fisheries Joint Management Committee*

I have been a member of the Fisheries Joint Management Committee since it was established in 1986. It is nice to see so many people here participating in this conference. It indicates the importance of what we are going to be talking about in the next few days. The waters off the North Slope support marine mammals and fish that live and migrate through this area and that are of particular importance to the people of Aklavik and Inuvik.

I am not going to talk very much about the FJMC as there are booklets available that give a good idea of what we do. They are available at the back. One of our main priorities is assisting in the establishment of community-based fisheries management plans. The West Side Working Group has been established and is now in the process of developing a management plan for the west side of the Mackenzie Delta and the Yukon North Slope. It is well underway and should be finished soon. There are already fishing plans for Paulatuk and Holman that are working very well.

Good clean suitable habitat is essential for maintaining any wildlife populations. I am sure that over the next few days we will all get a better idea of how we can ensure that good habitat remains over the Yukon North Slope.

*Photo courtesy of Norman Barichello*

# Plenary Session — Setting the Context: The Coastal Plain and Offshore

**Joan Eamer**
*Environment Canada, Whitehorse*

I am pleased to be able to make this presentation today on behalf of my colleague Paul Egginton, who is the Director of the Climate Change Impacts and Adaptation Program at Natural Resources Canada. The focus of this presentation is on taking the next step beyond understanding the impacts of climate change, to examining ways in which northerners can adapt to minimize the resulting social, economic and environmental impacts.

Now we'll move out of the perspective of the Yukon North Slope and look at the global science. Worldwide, the 1990s were the warmest decade in the past 1000 years. However, the warming is not evenly distributed. There is good evidence that most of the warming in the past 50 years is from human activities. Greenhouse gases, mainly from burning fossil fuels, are increasing rapidly in the earth's atmosphere. The overall climate has been very stable until the industrial era, and since then, there has been rapid temperature increase. How are we going to use this information? How will we adapt to changing conditions?

Of course the reality of climate change, and the reason that it is a priority issue, is that it will impact almost every aspect of northern environments. Physical changes include changes in snow cover, sea ice and permafrost distribution, enhanced coastal erosion owing to rising sea levels and increased open water, and changes in the hydrologic system, including changes in the timing and magnitude of runoff, water temperatures, and many others.

*Photo courtesy of Catherine Kennedy*

The potential impacts on terrestrial and aquatic ecosystems are significant, especially given that many of these systems are currently under stress. Changes in thermal conditions, snow and ice cover and other factors will undoubtedly result in shifts of species ranges, with consequences throughout the food web.

These changes will directly affect the sustainability of our northern communities and northern cultures. Besides impacts resulting from changes in the biophysical environment, there are significant concerns about the potential health of and social impacts on northern communities.

*Arctic: Major Impacts from Warming Trend*

- Snow cover in the spring is getting less
- Sea ice is getting thinner and less extensive

*Observations of Climate Impacts in the Beaufort Region*

- Coastal erosion and permafrost degradation
- Duration and maintenance costs for ice roads
- Changing distributions of fish and birds

*Observations of Climate Impacts in Freshwater and Marine Ecosystems*

- Changes in water temperature, ocean currents, ice cover, and nutrient supply

*Observations of Climate Impacts in Terrestrial Ecosystems*

- Timing of migrations, changes in where animals and plants are, and changes in fire patterns

Northern infrastructure is an example of where significant expertise already exists with respect to adaptation. We have many decades of experience developing methods to minimize disruption of frozen ground and, when this does occur, to maintain the integrity of the surface infrastructure. Many current practices will continue to serve us well in addressing these issues in future, such as the above-ground pipeline and multi-point foundations on buildings.

Of course it is difficult to predict the magnitude of permafrost degradation and thaw settlement. Significant warming can be partially, or indeed fully, offset by a reduction in winter snow cover. One of the simplest adaptation strategies to climate change in some communities could be enhanced snow removal, which will allow greater penetration of the winter cold and preserve the integrity of the permafrost.

Other infrastructure concerns are not so easily addressed. Ice roads represent critical transportation links between many Arctic communities, and yet the viability of this network has been steadily reduced over the past decades. Alternative all-season road networks represent significant capital investment and higher maintenance costs. Ice roads are an example of where it is possible to define a threshold, a minimum time that the road must be operational to be economically viable. Knowledge of climate trends and future projections allow estimation of when such a threshold will be crossed consistently, and when adaptation measures will have to be implemented.

*There are new challenges in the framework of climate change:*

- Slow the rate of climate change – reduce greenhouse gas production
- Observe and understand what changes are happening
- Think to the future – plan and adapt to a changing world

By 2090, winter temperatures in most of Canada could rise by 5 to 15 degrees or more. Looking ahead, this area is looking at a 10-15 degree C. increase in winter temperatures.

*Yukon Government photo*

# Plenary Session — Setting the Context: History and Lessons Learned: Coastal Zone and Offshore Development

**Giles Morrell**
*Senior Geologist, Northern Oil and Gas Directorate, DIAND, Government of Canada*

The Northern Oil and Gas Directorate of the federal Department of Indian Affairs and Northern Development manages oil and gas resources on behalf of the Crown in the Northwest Territories, Nunavut and the Northern Offshore. The principal responsibilities entail the issuance and administration of exploration and production rights and associated requirements under the Canada Petroleum Resources Act. The Directorate web site can be accessed at www.inac-ainc.gc.ca/oil.

Lindsay made the mistake of asking a geologist to give a brief history. I'll start with the Pre-Cambrian .... The sedimentary basins which have petroleum potential are shown on this map in yellow and green. These – the so-called soft rocks – wrap around the ancient core of Canada, the Canadian Shield, which is definitely hard rock, and where the only fossil carbon you find is in the form of diamond.

Together, the Beaufort Sea and the Mackenzie Delta form a single basin with some 66% of overall potential. Although the first phase of gas development envisaged for a Mackenzie Valley gas project will focus on discovered fields on the Mackenzie Delta, two-thirds of the overall potential of the basin lies offshore. Incidentally, the northern gas potential is about 34% of Canada's ultimate resource of remaining conventional natural gas.

I think it was in the mid-1950s that the oil industry and governments around the world suddenly clicked to the oil and gas potential of the continental shelves and started looking to new frontiers of exploration. Governments responded by passing legislation which paved the way for extensive exploration. In Canada, the Canada Oil and Gas Lands Regulations, passed by Parliament in 1961, led to a permitting rush which saw most of the northern sedimentary basins and offshore continental shelves of Canada taken up by companies who could then hold lands with modest issuance fees and per-acre deposits, refundable with exploratory work undertaken.

For good or ill, this issuance of permits set the stage for the next 30 years of exploration in Canada's North and offshore. Much of the lands originally permitted were surrendered in due course, often after minimal work. Under later legislation, permits were regrouped into exploration agreements, which represented a

more modern form of licence-with-work program. In 1987 the most recent Act governing the issuance of oil and gas rights was passed. This is the current regime under the Canada Petroleum Resources Act (governing rights and tenure), and is complemented by the Canada Oil and Gas Operations Act (governing petroleum operations).

The Mackenzie Gas Project is focusing on natural gas reserves which have already been discovered. There are significant on-going exploration activities as well. Exploration licences (ELs) are held for a maximum term of nine years, so failing issuance of new ELs, most of the yellow areas on the map will return to the Crown by the end of this decade. The exception will be areas overlying any new discoveries which companies may retain under Significant Discovery Licences (SDLs). One anomaly on this map is the large areas held by companies in the west Beaufort. These ELs are not being actively explored and are subject to a work prohibition order dating back to 1987.

Offshore drilling began in the mid-1970s, spurred by encouraging economics for oil. In fact oil was the main target of offshore exploration over this period and the concept of a Mackenzie Valley oil pipeline appeared to be a possibility. In the offshore, the total numbers of wells per year was constrained by availability of equipment, operating season and expense. The last few years of drilling were largely if not entirely offshore. The Isserk E-27 well, for instance, was spudded in 1989 and drilled in 1990.

The result of exploration activities and the drilling of 239 wells to the end of 2000 (83 of them offshore) has been the discovery of some 53 geological structures containing accumulations of oil and/or gas.

*Recent Operations – Exploration Drilling*

The last few years have seen increasing levels of drilling activity north of 60. In February 2001, the first new exploratory well in more than a decade was commenced on the Mackenzie Delta by Petro-Canada (EL395 - Kurk M-15). The winter 2001-02 season saw operations on this well completed and three other wells drilled, two on Inuvialuit concessions and one on EL395 (later consolidated to EL419). Not included in this chart are three shallow research wells which were drilled close to the Mallik discovery on Richards Island. These were part of an international research program investigating gas hydrates as a possible natural gas resource.

Drilling levels in winter 2002-03 were sustained with three wells drilled on Crown lands. One of these, Chevron's North Langley well, was announced as a gas discovery by Chevron. Looking forward to the coming winter, we can project two, possibly three, wells. These are planned by EnCana for the Burnt Lake area (EL384), and by Chevron for the Ellice area – both onshore wells on the outer fringes of the Mackenzie Delta.

No offshore wells have been drilled, although interestingly the Chevron North Langley well was drilled to an offshore location in the subsurface, although offshore by only a matter of tens of metres. The start of offshore drilling on the almost exclusively offshore acreage held by Devon in EL420 is anticipated for winter 2004-05, and is likely to be paced to ensure a minimum of four wells in the four succeeding years.

This slide of the MGP gas fields, gathering system, and pipeline shows schematically the onshore gas development with gathering lines linking the three fields at Taglu and Niglintgak on Richards Island, and at Parsons Lake on the Tuktoyaktuk Peninsula.

The recent success at North Langley is highlighted on the map. Its close proximity to Niglintgak is significant from an economic viewpoint. The approximate locations of next season's drilling are also shown.

*Life Cycle of Exploration Licences*

This chart shows the life cycle of exploration licences which have been issued in the region. The term (a maximum of nine years) is divided into two periods. One well must be drilled in Period 1 to win the rights to continue the licence to full term. This work program requirement forces

companies to undertake seismic programs to identify drilling targets early in the term of the licence. In this chart, the seismic programs have typically been commenced in the first and second winters of the licences with a view to drilling in subsequent years.

*Today's Optimism*

Interest in finally 'monetizing' existing gas discoveries on Mackenzie Delta after 30 years has prompted preliminary proposals for a Mackenzie Valley gas pipeline. This has also spurred Beaufort-Mackenzie exploration investment since 1999, on both Crown and Inuvialuit lands – about $1 billion in exploration expenditures over five years.

Offshore has since been reactivated in response to high market prices for natural gas and the prospect of a sustained 'structural' increase in gas price. This has led to companies with a large existing discovered resource on the Mackenzie Delta to consider construction of a Mackenzie Valley gas pipeline. This in turn has spurred new exploration investment to find additional gas; this in turn could potentially reduce unit costs on the pipeline (by increasing throughput) and extend working life.

*Today's Reality*

Today's petroleum exploration and development exists in a different world. The higher costs are only partly offset by new technology and efficiencies. There is no public subsidy, unlike the 1970s and 1980s where public investment in northern exploration peaked under the Petroleum Incentives Program. Today, return on investment is key, and a clear, unambiguous, and reasonably certain (particularly in terms of time frames) path to development is important for investment decisions. Environmental regulation is more exacting because of more awareness of environmental sensitivities and compliance with environmental legislation, balanced by corporate philosophy more 'in tune' with such considerations. Empowerment and political development in the North now require greater emphasis on consultation and involvement at a local/regional level. Finally, a more integrated global economy creates more investment alternatives for petroleum companies.

*How Prepared Are We?*

The signal of renewed investment by industry has spurred governments and agencies to examine the preparedness of the regulatory apparatus, in particular for the renewal of offshore activities. The workshops on Emergency Preparedness (as part of the Federal Preparedness initiative begun in June 2001) and similar federal initiatives form an important tool in demonstrating that government has its house in order. Some of the products which have emerged from these activities have been the regulatory road maps, which map out for proponents the regulatory path that project proposals are required to follow, and, secondly, clarification of agency response to oil spills set out in a recently published booklet.

Today, in summary, there are higher costs, no public subsidy, more exacting environmental regulations, an expanded "stakeholder horizon," empowerment and public development in the North, and a more integrated global economy.

One final thought: nearly six billion dollars has been spent on exploration in the Beaufort/Delta Region, and an additional one billion dollars is now being spent. This has created a large pool of knowledge which could be used.

*Photo courtesy of James Hawkings*

# Plenary Session — Setting the Context: History and Lessons Learned: Coastal Zone and Offshore Development

**Nellie Cournoyea**
*Chair, Inuvialuit Regional Corporation*

Good afternoon. I'm sorry; I don't have any pictures or music. I am here under the corporate entity of the Inuvialuit Regional Corporation. I am the Chair and Chief Executive Officer of that organization. I'm pleased to see that we have very many distinguished Inuvialuit here to carry on the conference with you. And, as much as I have to say, I'm sure in very many ways they will say the same things.

I would like to recognize the Honourable Jim Kenyon, Minister of the Environment with the Yukon Government. We're very close but sometimes we don't see a lot of each other. Larry Bagnell, Member of Parliament for the Yukon. Mr. Bob Blair, the conference chair. And I would also like to acknowledge and recognize that this is the first time the Yukon North Slope Conference has been held in Inuvik or the Northwest Territories.

There are many things happening, so we recognize the importance of decisions that are made in this very important time of what is taking place. Those of us who have lived here, we learn from the past, and we get very excited about learning and challenging the future.

*Photo courtesy of Hans Blohm*

To go a little bit into the past, the Inuvialuit Final Agreement was the first aboriginal peoples' settlement in the Northwest Territories, and that was a time when the eastern Arctic was included in the NWT. We were the first to conclude a comprehensive land claims settlement agreement with the Government of Canada. Our determination to reach a settlement was motivated in part by our experience with the first round of oil and gas exploration and development in the 1970s. Although many Inuvialuit and other northerners participated in these activities, it was clear that the control was entirely out of our hands and indifferent to our interests, driven by remote-control decisions of

regulators in Ottawa and corporate decisions from head offices all over the continent.

The Inuvialuit Final Agreement (IFA) of 1984 provided us with the tools to assert our interest within a specific region, with three particular goals set. These goals were:

1. To preserve Inuvialuit cultural identity and values within a changing northern society;

2. To enable Inuvialuit to be equal and meaningful participants in the northern and national economy and society; and

3. To protect and preserve the Arctic wildlife, environment and biological productivity.

The IFA requires that Inuvialuit be consulted on decisions that will affect the Inuvialuit Settlement Region, through direct ownership of certain lands, a guaranteed role in co-management institutions, and requirements for participation agreements to assure employment, training and business opportunities as well as financial compensation. The IFA set out terms for our relationship with the government and with developers wishing to work in our region and set the foundation for our future. Having dedicated so much time and sweat to forging this legacy, you can understand how the Inuvialuit are concerned that we are here to protect it.

Canada's North is back on the national public policy agenda. For the past three decades the focus of federal public policy has been on constitutional matters, as well as on the growth of the state versus freer trade and deregulations on fiscal restructuring. In this context, the North has been a side issue of fiscal transfers, gradual progress on settlement of aboriginal land claims, and a splash of devolution to the territorial governments from time to time. There has been no coherent attention to northern public policy for several years. As important as the NWT's economic, political and social priorities may have seemed to northern political leaders such as myself, they were far down the list of concerns on the federal cabinet agenda. Even with developments that attracted international attention, notably the establishment of a new diamond production and processing industry, we barely registered in Ottawa. It amazes all of us who live here in the Beaufort Delta to encounter Canadians who still wonder if the rumours about diamonds and a pipeline can possibly be true.

*Yukon Government photo*

This indifference may be changing. With stronger continental energy markets and prices, natural gas producers are again looking north, and as they do, so does Ottawa. It is not as simple as federal bureaucrats just dusting off all the old briefs and speeches from the 1970s. Much has changed since the last time northern resource development received national attention.

It is in the context of revived interest in northern resource development that I speak to you today. Northern Canada has changed dramatically over the past three decades since the days of the Berger Commission and the moratorium on pipeline development. There are new leaders, new governance structures, and extensive demographic and societal changes. We have made real progress on land claims, as well as in setting up institutions to prevent long-term

environmental damage from development and to ensure that our people have full opportunity to participate in resource development. Vast areas of the north have been set aside for protection of wildlife, for representation and for biodiversity.

The scope and character of the northern economy has also been transformed. In the 1970s the Berger Commission concluded that the north could manage without oil and gas resource activity, that the renewable resource economy would meet northern economic needs. But thanks to the destruction of the fur-trapping industry caused by Greenpeace and other southern-based organizations, we have learned that the renewable resource economy alone cannot meet the expectations of a young and rapidly growing population. The land and wildlife remain vital to our culture and way of life, but a wage-based economy is also needed. While many families still rely heavily on the land and wildlife for food and for spiritual strength, others are seeking a balance between a land-based way of life and wage activities. This balance is difficult to achieve with an economic cycle of 'boom and busts' starting as long ago as the whaling industry, later DEW Line construction, the fur industry, and the Beaufort/Delta mine construction in the 1970s.

Much more important to a northerner, and I think to a Canadian perspective, is the potential for development of Canadian frontier natural gas reserves. It is field development rather than simply pipeline construction that offers the opportunity for long-term benefits from local, regional, territorial, and national economic development. The Beaufort/Mackenzie Basin represents one of the last major underdeveloped hydrocarbon basins in North America, containing what is estimated to be 64 TCF of Canadian natural gas reserves, plus additional and significant oil reserves of about 40 TCF. The reserves in the Beaufort/Delta occupy both federal Crown lands as well as lands owned privately by aboriginal people pursuant to settlement of land claims. Included in this total is 6 TCF of already proven reserves of natural gas in the Delta. Field development would offer more lasting return both in revenues and employment. Mackenzie field development has been estimated to yield 7,000 person years of employment in the NWT and three times that for Canada as whole.

The challenge this time around is the challenge of the regulatory environment, and of accountability for regulatory clarity, risk and performance. Major resource projects in northern Canada face an extremely complicated constellation of

*Yukon Government photo*

regulatory requirements, the result of two decades of consecutive (and typically uncoordinated) legislative initiatives, including requirements based on commitments undertaken in various land claim agreements. This is an especially acute problem for oil and gas activities, for which authorities and mandates were rearranged in the early 1990s with the dismantling of the Canada Oil and Gas Lands Administration (COGLA). The activities now coming forward are testing this framework and processes are being developed on the fly. It does not help that geology is no respecter of jurisdictional boundaries, with the result that widely different frameworks apply to similar activities in adjacent areas.

It is not so unreasonable to demand regulatory clarity. Northerners need a regulatory process that is fair, consistent, transparent, effective, enforceable and, most of all, workable, one that can provide in a reasonable time frame answers to questions of whether and how a project should proceed.

*Yukon Government photo*

We have a challenge of sustainable development. No single entity, even one as large as the federal government, can deliver 'sustainable development.' But the federal government has a commitment to the goal, and an obligation to ensure that regulatory processes are consistent with the principles of sustainable development, and that decisions are made in a balanced way that considers the northern and Canadian public interests.

Aboriginal people and other northerners are more confident today about making companies understand priorities. We feel better equipped to assess and to manage the consequences of development. The territorial government has also learnt from dealing with the new diamond projects that it is possible to manage resource development both to protect the environment and to retain benefits in the North.

We are seeing that the oil and gas industry today has changed. It is spending its own money this time, in a deregulated and highly competitive marketplace. Companies are leaner, more prudent and also much better equipped with expertise and less intrusive technology. We have made it clear that our expectations are high. We welcome development, but not at a cost to the land and resources that have sustained us over past generations. We have challenged the industry to make this project an example to the world of what sustained resource development can be, using the best technologies and practices possible to protect the land and wildlife.

We also need to build capacity. We must ensure that the institutions and processes established pursuant to land claim agreements work effectively. We must ensure that the rights to lands and resources that we worked so many years ago to negotiate produce real and lasting benefits to our people. We must forge a true partnership among ourselves and with industry, one that not only shares rewards, but that will weather the disagreements, that will stay at the table, and that will work through the difficult points. We must work to keep perspective to make the process work, to be reasonable about expectations and costs, and to compromise. As northern and aboriginal people, we must work to define a vision of sustainable northern resource development, a vision of economically, socially healthy communities in an economically rich and healthy environment.

We must also work to define the environmental issues – now, while the opportunity presents itself, not later. After all, it is residents of the Mackenzie Valley and the Western Arctic, the Inuvialuit, and not bureaucrats in Calgary or Ottawa, who will bear the risks and costs of the environmental, economic, and social disruption that development may bring. The definition of environmental issues is a job for northerners and aboriginal people, not for southern or international environmentalists, nor the corporate or government bureaucrats whose families are thousands of miles away from the impacts.

These are our traditional lands – not an empty wilderness. We are not just a quaint artefact of a past way of life to be photographed by tourists. Northerners have already allowed vast areas to be set aside as protected areas, areas several times the size of some Canadians provinces. It is time to come to terms with decisions on our future. The time has come for aboriginal people and other northerners to decide whether there should be a change of land use, for small percentages of our land, from wilderness to industrial use. We will have to work hard to understand the issues and technical options, and to work with regulatory processes to achieve the best possible result. We must also work to understand the risks involved. We need companies to be clear and honest about the risks related to field development and construction and operation of the Pipeline, but we must also work to achieve a fair assessment of those risks and a perspective on the short-term and long-term risks of disruption.

These are the challenges we face today. We look forward with you to meeting them. The Inuvialuit are a brave and conscientious people, and we do not shy away from decisions and finding workable solutions. We invite you to the North Slope, as the North Slope is a valuable lifeline for many Inuvialuit. And it has gone beyond boundaries. Just as there are no geological boundaries to the Inuvialuit, there are no provincial boundaries that separate the Yukon and Alaska and the Northwest Territories.

Thank you very much.

*Yukon Government photo*

# Plenary Session — Setting the Context: History and Lessons Learned: Coastal Zone and Offshore Development

**Bill Livingstone**
*Environmental Regulatory Coordinator, Devon Canada*

We see participation in the Yukon North Slope Conference as part of our consultation process. For a look at the history of Beaufort Sea exploration, there was an excellent book that came out a few years ago: Breaking Ice with Finesse. The book gives an excellent history of the offshore exploration in the Canadian Beaufort.

*History and Lessons Learned*
In August of 2000, Anderson acquired explorations rights in the Beaufort Sea (EL420). Seismic surveys were completed in 2001 and 2002. The data from that program is still being analysed from the seismic work. We are defining ten targets. The difference between current offshore exploration and historical offshore exploration (pre-1990s) is that the petroleum industry is now looking for gas instead of oil.

During the development stage, Devon intends to work in the winter only, on landfast ice. The ice fields form each year and are fairly stable. The benefits of winter drilling include:

- A stable, well known operating environment.
- A lengthy drilling season (120-150 days) that will accommodate a full and proper evaluation of Devon's drill targets.
- The winter drilling period presents limited impact to certain migratory species, i.e., beluga whales.
- In the unlikely event of an accidental spill, the landfast ice provides an excellent surface on which to conduct clean-up operations.

Devon's base plan is based on a conventional relief well scenario. However, we are also looking at other 'equivalent' options. The project schedule includes drilling the first well in the 2005/06 winter season, and then drilling one per year to end of licence (on or before August 2009). The technical/environmental/regulatory challenges include drilling system availability, infrastructure availability, changing ice conditions within the landfast ice zone, revisions to relief well drilling regulations, regulatory processes, and costs, competition and expertise.

Drilling system options range from islands to caissons to floating rig systems.

1. *Islands*
   Sacrificial Beach Islands (SBI's)
   Spray Ice Islands
2. *Shallow caissons*
   Tarsuit Concrete Caissons
   CRI (Caisson Retained Island)
3. *Deep caissons*
   Molikpaq Deep Drilling Caisson
   SSDC (Single Steel Drilling Caisson)
   CIDS (Concrete Island Drilling Structure)
4. *Floating systems*
   Explorer Series Ice Strengthened Drill ships
   Kulluk Ice Class MODU

Infrastructure availability is another challenge. Tuktoyaktuk has some infrastructure, including:

- An active offshore oil and gas exploration base since the late 1970s
- IFR-rated gravel airstrip capable of handling a Boeing 737
- Base facilities capable of housing several hundred people
- Extensive warehousing and fuel storage facilities
- A shallow draft marine port which receives summer resupply via the Mackenzie River barge system
- Helicopter facilities capable of supporting S-61 operation

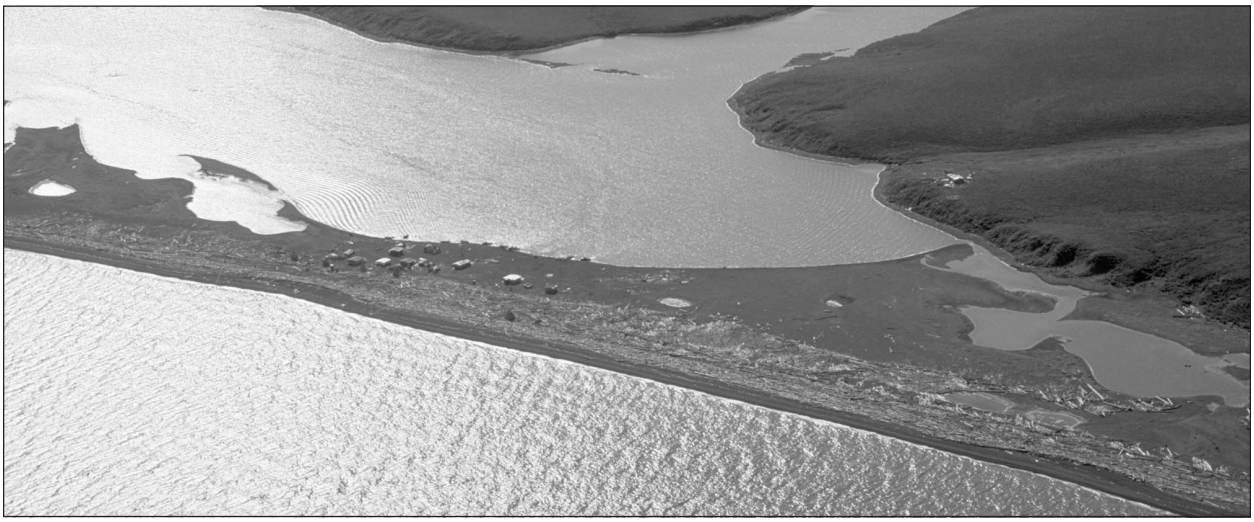
However, there is a significant lack of marine support services:

- No marine vessel maintenance facilities (i.e., dry docks)
- No major offshore oil spill capability
- Need to reinstate ice reconnaissance/weather monitoring capability
- Very limited offshore resupply capability
- No offshore dredging support

The challenge is to find a drilling strategy that is cost-effective and minimizes the need to redevelop significant infrastructure for a four-well program.

On advice from local stakeholders, Devon completed an 11-year hind-cast ice study to ascertain the current status of landfast ice conditions across the Devon acreage. This work showed that landfast ice is forming later and breaking up slightly earlier than during the last drilling cycle. The 11 year hind-cast ice study data has been directly incorporated into Devon's operational planning, thus ensuring that Devon's operations are completely in step with the current environmental conditions in the Beaufort Sea.

Today there are no equivalent financial incentives ('at cost'); operators require partners to share financial risk; there is competition for 'frontier' funds; there is competition with the American Beaufort offshore drilling activities; and industry and government offshore expertise is more restricted.



*Yukon Government photo*

# Plenary Session — Setting the Context: History and Lessons Learned: Coastal Zone and Offshore Development

**Jim Hawkins**
*Pipeline Regulatory Manager, Imperial Oil*

Thank you, Mr. Chairman. My name is Jim Hawkins and I'm here representing Imperial Oil. In the 1970s, I was a construction and drilling engineer, and in the 1980s, I was Imperial's drilling operations manager, looking after the drilling operations in the Mackenzie Delta and Beaufort Sea. The chair did a great job of recognizing and thanking everybody in attendance, and I can't begin to duplicate that, other than to add to the chair's opening remarks and say that I am delighted that the people here in Inuvik have not only allowed us to come into their homeland, but have welcomed us to their homeland, and I thank you very much for that.

The previous speakers have done a great job of, in Giles' case, describing the resource base, and in Ms. Cournoyea's case, describing the need for sustainable development and the expectations of the people in the North to control their own destiny, both the non-renewable and renewable resource bases for their lifestyles. Bill has done a great job of talking about drilling systems, so I don't really have that much more to say; a lot of it's been covered. But I'll take a run at it nonetheless and see if I can add a few new things.

The first slide I will show is a bit of a historical picture, drawn from a few different spots. This is a slide that appeared in a special anniversary edition of the journal Arctic. You've seen this information presented in a slightly different way by Giles. What am I trying to demonstrate here? I think the main thing I'm trying to demonstrate is that we've been at this for over forty years now: drilling wells, investing money, both on the onshore and the offshore. And, as has been mentioned, we don't have an awful lot to show for that investment yet. There's been a couple of cargos that Gulf took out. They're not shown here, but in the high Arctic, the Pan-Arctic Consortium took a couple of cargos out. And of course the Ikhil development on the Delta represents some commercial exploitation. But by and large, after all this investment, we've got nothing to show for it in terms of return on investment.

We've got a great inventory. We know what's there. But it's not been a great investment.

The chair started out by talking about leadership requiring an underdeveloped sense of fear. Well, wildcat geologists either have an underdeveloped sense of pessimism or an over-developed sense of optimism. Because we keep coming back. Nonetheless.

One of the other points here that I want to demonstrate is that, as you look at this, it's a cyclical activity. There are a whole bunch of drivers for that: land sales, oil price fluctuations, expiries of leases. Oil and gas exploration seems to be intrinsically a cyclical type of business, not a uniform, sustainable one. Basins get hot, explorers come in, they drill some wells. If they don't find anything, they leave for a while. A second generation of explorers comes in. They take another run at it. Sometimes they're successful, sometimes they're not. But the pattern goes over and over again. I think that's what we're continuing to see and can continue to expect, that cyclical activity in the Beaufort Sea and the Mackenzie Delta.

For me, an interesting touchpoint was in 1982. In 1982, Esso, Gulf, and Dome, with the support of many of the other acreage holders in the Beaufort Sea, filed the Beaufort Environmental Impact Statement. This was nine volumes of material. That's a stack of paper about that high [~1 m]. And in addition to the stack of paper that high, there were back-up reports that were more than I could carry, and almost more than my truck could carry. This represented a snapshot of our preparedness for development during the peak of offshore exploration. As you can see from some of the dates on the slide, this was a four-year process. Four years to do an environmental impact assessment, without even an actual application in front of the regulators.

There were many findings. This is one of them. This one in particular seemed to sum it up.

"Beaufort Sea oil and gas production and transportation is environmentally and socio-economically acceptable if subjected to certain terms and conditions and carried out in a small-scale and phased manner."

*Photo courtesy of Catherine Kennedy*

Well, that sounds pretty good on the face of it. And we can certainly take heart at a little bit of that. On the other hand, it's a little bit like getting permission to jump your motorcycle over the Mackenzie River at the Ramparts as long as you do it in three small jumps. It just doesn't work that way. The economies of scale are such that you have to have a sufficient-sized project in order to pay the bills. And so, while we were delighted that the findings of the Beaufort Environmental Impact Statement were that oil and gas production and transportation could go ahead, the means whereby it was proposed that we do it were just not practical. I'm going to touch on a few of them here.

First and foremost are the costs. We learned that it costs an awful lot of money to do anything in the North. And that shouldn't be news. Certainly Bill talked about some of the costs associated with that. Well, at that time, we went and we did all of those things. We brought the vessels in, we brought the dredges in, we brought the marine infrastructure in, and we brought the bases in. None of that existed before we started. And it was very, very expensive. I drilled quite a few wells there whose price tag was north of one hundred million dollars.

There were frequent weather-related set-backs. Again, this is not news to anybody who has lived and operated in the North. This slide is one of our sacrificial beach islands. We had it completed; we were ready to start the rig move onto the island. The day before the rig moved, a storm blew in and we had half an island left. Ice roads, same thing – sometimes the

roads cracked, sometimes cranes fell into the water. These are very, very difficult conditions. And they are unpredictable environmental conditions. If you're brining in something from the Pacific, you have to bring it around Point Barrow. You don't know if Point Barrow's going to be open this year. Or next year. If you're building spray ice islands, you don't really know if it's going to get cold enough.

Nellie alluded to a very important experience from the seventies and eighties: federal regulatory processes and agencies. The airplanes between Calgary and Ottawa were always full; you could never get a seat. The traffic was all that way. Very seldom was the traffic north. Coming up here last Monday, the flight to Inuvik was full.

I wrote the word 'distortion' of the fiscal regime, recognising that that might be a bit inflammatory. But it really was. At the time, there was a major federal initiative which took an inventory of oil and gas reserves on Canada lands, and which required funding. And the means whereby that funding occurred was, in part, by imposing the Petroleum Gas and Revenue Tax levy on Alberta and Alberta producers, and by diverting a portion of that money, through the taxpayer system, into the PIP grants. So at that time, those $100 million-plus wells that I was drilling were being funded more by the taxpayers of Canada than by the shareholders of the companies participating in the drilling.

And the federal government wasn't the only one. We had some pretty optimistic predictions of what oil prices were going to do, too. Sixty, seventy, eighty, a hundred bucks a barrel. Extrapolation of what is happening today to the future is always somewhat hazardous.

We learned about the importance of logistics. Exploration in the Beaufort Sea and the Mackenzie Delta is all about logistics. A couple of these slides of concrete drilling caissons show a very, very large infrastructure operation, which led to a very real need for collaboration, particularly in the area of environmental design criteria measurement. How big are the waves, how hard does the wind blow, what kinds of loads do ice sheets generate when they fall against the side of a caisson? At the time, the Arctic Petroleum Operators Association did an awful lot of excellent work, collecting environmental data in collaboration. We ended up with a pretty good record of biophysical data as a result of that.

It's interesting to note the contrast with Alaska. They couldn't bring in the offshore dredges from Holland that we did on the Canadian side. They built their islands using trucked gravel from onshore, and as a consequence, some of their offshore islands were even more expensive than ours. There was one in particular that I remember. By the time they had finished buying

*Yukon Government photo*

the lease, building the island, drilling the well, etcetera, they were just a little shy of one billion dollars. A staggering amount.

What were the impacts on northern communities? I think Nellie mentioned the evolution of different types of activities, going from whaling to fur trapping to DEW-Line construction and then oil and gas. Well, we were projects. We needed a lot of activity in a short period of time. And it causes disruption, no doubt about that. It also underlines the need for the development of transferable skills. It's kind of hard to get your head around exactly what types of skills (those types you have in a whaling operation, or fur trapping, or oil and gas) might be transferable. But to rely on any one sector to provide sustained employment across a couple of generations of workers is of course very difficult.

And again, at the risk of being an occasional visitor, who doesn't really understand, my last point is that we had effective environmental protection. Now one of the speakers in the earlier plenary had some views that will cause me to perhaps rethink that a little bit. But by and large, I think our view is that the mitigations we put in place were reasonably successful.

Well, what stopped us from producing in the 1980s? Like the real estate slogan "location, location, location," in our case, it was costs, costs, costs. High predevelopment costs – drilling the exploration wells, going through the regulatory process; high development costs – drilling the production wells, putting the drilling platforms in place; and high operating costs – producing the wells and getting the product to market either through a pipeline or through a tanker system. It was very, very expensive. About the same time, of course, oil dropped to about nine dollars per barrel, and revenue streams were challenging as well. So, again, we had a great inventory, but we were a long way from having production.

Regulatory structures were just beginning to emerge. COGLA was evolving. We saw the Newfoundland Offshore Petroleum Board and the Nova Scotia Offshore Petroleum Board formed. The Inuvialuit Final Agreement and all the different agencies which would protect the environment in the North were just coming about at that stage. Nobody really knew how to navigate their way through all of that. Then there was a lack of northern infrastructure. At that time, if the operators didn't bring it in, it wasn't there: transportation, community capacity, business structures, the construction equipment. You heard Bill mention some of that as well.

We hadn't really tested the level of support from the First Nations. And certainly there were many unresolved land claims at that time. I use the word "untested" because really that was the way it was. We hadn't put a real development scenario, a development proposal, in front of the people who owned the land and asked them to comment on it in any great extent. I hope they would have been supportive, but we didn't know. And we had limited northern and offshore operating experience, in Canada in particular. We didn't have any northern operations at that time, and we certainly didn't have any offshore operations at that time.

So it was pretty tough for us to say "we're great at this." We hadn't been able to show anyone. And to a certain extent, while we'd done a lot of good work, our database of biophysical baseline information – what the climate is like, what the different harvested species are, what the baseline information is that we can use to measure any impacts we might be having – was fairly modest. And we were needing to extrapolate from 10 to 15 years of good data to 150-year return periods. So we did the best with what we could, but we really did have a fairly modest database at the time.

What has changed? Well, in the 2000s, there are still a few impediments. Costs haven't changed a lot. Technology's gotten a lot better; we can drill wells more cheaply. But the costs and the needs for economies of scale remain our number one. Some of the other speakers have talked about the regulatory regime. It's not getting any easier; it's getting more complex. With the settling of land claims and the devolution of powers, we have multiple overlapping regulatory processes and agencies now. It's becoming very, very difficult to see our way through these things.

I've gone from untested to uneven. Certainly the sentiments that Nellie expressed – the desire on the part of many First Nations peoples to have both a life and a culture based on sustainable and non-sustainable resources – are there. But, as with any people, with any culture, there are folks on both sides of that spectrum.

The impact of socio-economic activity peaks on the communities hasn't changed either. These projects are big, but they have peak loads. A lot of people come into a northern community to develop a project. They're there for a short time; they have an impact on the communities. And then they're gone. What we're left with is the operations phase which typically does not have a big impact on a community. While it generates sustainable jobs, it's certainly many fewer than in the development phase.

One of the legacies – we've heard this mentioned before – is that while there certainly are other opportunities out there for investment, we've already heard of and seen the export of Canadian jobs and Canadian royalties and northern jobs and northern royalties to Russia, Chad, Angola, Indonesia, etc. There are a lot of Canadian companies, a lot of Canadian citizens, working on those projects around the world. There aren't very many Canadians working on offshore development.

We now have, however, a solid track record of safe, responsible development and operation, both northern and offshore. We've extended the biophysical baseline data. And we've done a pretty good job of confirming what the environmental design criteria are. We've reduced facility site footprints extensively, and have developed extended-reach drilling technologies. Finally, the community capacity and the business structures in the North have improved. We now have contractors who are quite capable of fulfilling a wide range of business activities. We don't have to rely exclusively on the operator to bring it all in.

As a final thought, a few things. We need sustainable technology, things that represent a better way to do the job, but that don't result in negative impacts on the environment or the people. Sometimes this takes a long time. I mentioned at the outset that in some cases it's been fifty years since we did some of the exploration activities. Well, if you look at some of the oil sands developments, it took fifty years to get that technology into production.

So maybe it is time for a changing of the guard. We've heard a lament that some of the expertise is dying off. Maybe it is time for people who are unburdened by experience to take a fresh look at some of the techniques and technologies for developing the offshore Beaufort Sea.

I thank you very much for your attention and look forward very much to the rest of the conference.

*Photo courtesy of James Hawkings*

# Plenary Session — Setting the Context: History and Lessons Learned: Coastal Zone and Offshore Development

**Perry Diamond**
*Senior Oil and Gas Policy Analyst, Department of Energy, Mines & Resources, Government of Yukon*

Today I would like to provide a Yukon Government perspective on oil and gas development in the Yukon North Slope and Beaufort Sea region. As I was listening to Giles' and Jim's presentations, when they referenced the Hibernia offshore program, I was reminded of one of the first major development proposals that I worked on as an environmental consultant. The firm I worked for carried out the environmental assessment of the coastal site in Newfoundland that was used for the construction of this platform. Environmental conservation was key to environmental approval in that case. And just as conservation was key in that particular case, I am sure that the same is true for current and future development in the North Yukon and Beaufort Sea region. The previous speakers in this session spoke mainly about developments in the Beaufort Sea. I will also speak to developments in the offshore, but will focus a little bit more on onshore developments.

I will provide a brief history of oil and gas activity in the Yukon Territory, where we've been, a brief summary of our accomplishments over the last five years, and a snapshot of the current status of oil and gas development in the Yukon: where we are now. And I'll outline our best prediction of oil and gas development in the Yukon with a particular focus on the North Yukon and Beaufort Sea region: where we are going.

Let me begin with a brief history of oil and gas development in the Yukon up to 1998. I'll give you a snapshot of the exploration and development, identify the locations of various northern pipeline proposals, and identify some of the Yukon's key milestones from an oil and gas perspective. Highlights of the Yukon's recent oil and gas history include:

- Canada's commitment to transfer province-like responsibilities to the Territory
- Yukon/NWT Memorandum of Agreement
- Canada/Yukon Oil and Gas Accord
- Yukon Common Oil and Gas Regime
- Devolution, Yukon Oil and Gas Act

Since 1998, some of our major accomplishments include onshore oil and gas resource assessments and three new rights issuances, including two near Eagle Plains and one in the Peel Plateau. Important recent Yukon policy decisions include:

- support for both Mackenzie Valley and Alaska Highway Pipelines
- support for a 'northern' cooperative approach to oil and gas development
- Yukon/NWT Intergovernmental Relations Accord (March 2003)
- Northern Cooperation Accord with NWT and Nunavut (September 2003)
- Yukon/NWT Sub-Agreement on Northern Oil and Gas Development
- Alaska/Yukon Intergovernmental Relations Accord

The Yukon Oil and Gas Directorate's purpose is to undertake cooperative measures to support O&G development, and ensure all Yukon/NWT residents receive significant benefits from development. The key principles underlying our policy include the following:

- Environmental protection is fundamental
- Mackenzie Valley pipeline is essential for future development
- Sharing of geoscience information
- Reciprocal access to business and employment opportunities (the 1991 Memorandum of Agreement is to be a guide in this)

Where are we now? Some of the ongoing issues that we will continue to deal with include: the future of the North Yukon Withdrawal Order, and the possibility of stranded gas (the need for pipelines); negotiations with Canada on a shared offshore management regime; and the Canada/US border dispute.

Where are we going? We know where the potential is and where the activity is. We know what the land issues are. In order to move from exploration to production, pipelines will be needed. Continued exploration is expected. The challenge is to ensure that future developments occur in a sustainable way.

Thank you very much.

# Plenary Session — Planning for the Future: Requirements and Challenges in the Coastal Zone and Offshore

**Lindsay Staples**
*Chair, Wildlife Management Advisory Council (North Slope)*

These types of conferences typically focus on the future. They attempt to identify the key issues that we are facing over three to ten years and beyond. With this conference occurring every three years, it is an opportunity for communities, government, industry, non-government organizations, and the public to take stock of where we are with existing issues, outstanding issues and those that are emerging. Do we need to re-direct our energy and resources and priorities? The workshops will help re-define the working agendas of many organizations.

I would like to provide you with an overview of the Yukon North Slope Wildlife Conservation and Management Plan, developed by the Wildlife Management Advisory Council (North Slope). There are copies at the back of the room. The Plan is broad in scope and attempts to provide an umbrella planning framework for issues and activities on the North Slope and also for areas of influence to the east and west.

There are four volumes to the Plan. The first is an environmental overview. Volume Two, which took ten years to develop, provides a series of goals and actions for how activities should be guided in this area. Volume Three is the wildlife population status reports, which look at 30+ species of wildlife and fish that live part of their life-cycle in this area. Volume Four is an implementation plan that is a work-in-progress. The implementation plan takes the actions and assigns timelines and priorities to them.

The goals of the Plan are:

1. Conservation of wildlife and habitat
2. Protection of the North Slope Environment
3. Enhanced inter-jurisdictional cooperation
4. Involvement of user groups in management decisions
5. Development within environmental limits
6. Implementation of the Plan (this conference is an important part)

The information contained in the wildlife population status reports in Volume Three has been developed over the last decade and is compiled from many sources. The last two years have seen the inclusion of traditional knowledge-based assessments of key species by the community of Aklavik. We worked with 10 community experts with strong on-the-land knowledge. This approach is relevant for the new federal Species at Risk legislation.

One of the significant tasks coming out of the Plan was to develop a Yukon North Slope Long-Term Research and Monitoring Plan. It is a web-based document for all people active in the Yukon North Slope to help guide their research. This document is complete and looks at 10 different areas:

1. Coastal and marine ecosystems
2. Land and freshwater ecosystems
3. Traditional knowledge
4. Human use and impact
5. Cultural resources
6. Contaminants
7. Coastal and marine wildlife
8. Land and freshwater ecosystems wildlife
9. Data management
10. Mapping

The Wildlife Management Advisory Council (North Slope) also compiled a Yukon North Slope Land Use and Wildlife Atlas. We gathered together all the cartographic information we could find regarding the Yukon North Slope over the last 30 years.

There are three basic questions that face us at this conference. What have we learned from the past? What are the future challenges? What can be done to meet these challenges? We are well equipped to look at these questions. The various partners who also have roles to play in the Yukon North Slope have supported this initiative by taking it into account in their own planning documents. These groups have included Parks Canada (Ivvavik), Yukon Territorial Government (Herschel Island) and Aklavik (Community Conservation Plan).

We have had the opportunity to plan with little pressure and interest from industry and government, but that has now changed. Fortunately there has been a tremendous amount of research done to date by industry, government and academia. How do we ensure that there is sharing and communication within the various research communities?

The final challenge to remain aware of is the relationship between environmental conservation and economic development/benefits. I am encouraged by the progress made in understanding how to assess environmental impacts. I am dismayed by the lack of progress towards understanding socio-economic impacts. Under the Canadian Environmental Assessment Act there is a requirement to consider socio-economic impacts that arise due to environmental impacts. The goal is stable, diversified local economies, and traditional land use is part of that goal. Expectations must be kept realistic, especially if involving a cyclical industry like oil and gas.

*Yukon Government photo*

# Plenary Session — Planning for the Future: Requirements and Challenges in the Coastal Zone and Offshore

**Norm Snow**
*Executive Director, Joint Secretariat*

I will focus my talk on challenges and the requirements will become self-evident. I hope that many of these challenges will be explored in more detail in the workshops as well.

The Arctic has always been a challenge, largely because of the climate and the remoteness. It will likely remain a challenge. One of the areas is research, whether for offshore development or rational management of the coastal zone. There is a need for more research, particularly with possible climate change scenarios. We shouldn't overlook previous work and research. Much has been done, for a great deal of money. This research is often related to a project which is then lost when the project ends. The Northern Oil and Gas Action Program (NOGAP) work is a good example of good work not written up. We have to make sure we don't re-invent the wheel because there are only limited funds available for research. There was a data gaps workshop here a couple of years ago. It is important to identify the gaps, but then focus on the next important step which is to support the relevant research. We should focus on identifying these research needs in the workshops later today and tomorrow.

We need to build human resource capacity to do research and other activities at community and government levels. Government staff need be closer to where the action is and not in Ottawa. There is a risk of losing a great deal of research knowledge that was gained during the last cycle of petroleum interest in the Delta as the people who conducted the research retire. The capacity requirements are obvious at the regional level.

Infrastructure is also required. For example, for years the Polar Continental Shelf Project provided logistical research support, and I don't understand why it is not being revitalized, given the level of industrial interest in the Beaufort. The Aurora Research Institute is doing the best it can.

Industrial development also creates opportunities for education and training. The tourism industry could also provide some, but likely not at the same level as government and the petroleum industry. Some good examples are the Nahidik and CASES programs where training could be a positive part. One of the challenges is to adjust procedures and policies to maximize these opportunities. Incentives are now being developed through scholarships to pursue post-secondary education.

Industrial activity has obvious challenges. In the past they were very well met, with Canada leading the world in innovative technology for drilling and operating in northern offshore climates. Much of that technology is now in use around the world. Bill Livingstone mentioned that some of that innovative Arctic R&D is being contemplated again.

Oil spill response is still going to be a challenge. Experience as well as research and development knowledge still remain in Ottawa and elsewhere, and standards are currently being developed. Hopefully, with their special skills, we will be able to rebuild that response capacity when it is needed. There is a risk of becoming complacent over time when emergencies don't happen.

There will be other challenges associated with other aspects of the Mackenzie Gas Project (MGP). Bringing in very large barges will likely involve dredging. This will be challenging for industry, Inuvialuit and other users, as it will likely be during a season when belugas are in the area.

The Mackenzie Gas Project will have challenges and opportunities as it moves through the regulatory system. We currently have much more knowledge of the environmental component of the process compared with the socio-economic impact assessment; I don't think we understand it as well. There is a great deal of focus on the potential impacts of the MGP moving ahead, while little effort is being made to understand the impacts of it not going forward.

Climate change is perhaps the ultimate cumulative effect and greatest challenge. It is a drape over everything that happens. This area is experiencing the most rapid change. It appears that this rate of change is accelerating. Just off the North Slope there is a "hot spot" with thinner ice and less ice that will clearly have a major effect on how anyone conducts their activities in the offshore. The Canadian Climate Impacts and Adaptation Research Network (C-CAIRN) is planning a workshop to look at the potential impacts of this phenomenon in the next fiscal year. People will inevitably adapt, but the communities will need additional support if they have to relocate. If there is less Arctic ice then there could be more shipping through the Northwest Passage. Already the United States is constructing ice-breaking cargo carriers and other countries have ice-capable warships. The threat will be from the substandard ships, rather than these ice-class vessels causing potential environmental problems.

Coastal zone management will have challenges. As the amount of activity increases in an area, the potential conflict between those activities increases. There is a cautious possibility of a commercial fishery in the Beaufort, petroleum development, marine protected areas, and other possibilities.

Governmental jurisdictional issues will arise, including the role of YTG in the offshore. Oil and gas is largely taken care of. What about wildlife management with both GNWT and federal mandates? There is the final issue of sovereignty and the disputed area between the United States and Canada. The area is part of the ISR, regardless of whether it is judged part of Canada or not. Doing more research in the area is a good way of establishing sovereignty.

*Photo couresy of James Hawkings*

# Plenary Session — Jurisdictional Issues in the Yukon North Slope Coastal Zone

**Lindsay Staples**
*Chair, Wildlife Management Advisory Council (North Slope)*

Jurisdiction is about certainty and about working together, knowing who you're working with and under which rules. It is the ability to make laws and decisions. Documents like the IFA and the YNS Management Plan set out specific objectives for jurisdictional clarity. The North Slope is a complex area that may require innovative and informal solutions to resolve large problems, such as developing the ability to influence those whose jurisdiction affects us.

Jurisdiction can be exclusive (e.g., heads of state), concurrent and/or overlapping (e.g., the environment), or shared (e.g., co-management bodies). When jurisdiction is either shared or concurrent, what happens when there is conflict? How are decisions made? It often leads to negotiation, litigation and arbitration. Some solutions include international law, voluntary agreements, regional agreements, bilateral agreements and land claim agreements. Less formal agreements such as cooperation agreements have also been used for linear development projects that cross multiple jurisdictions. These tools have often been challenging to apply successfully.

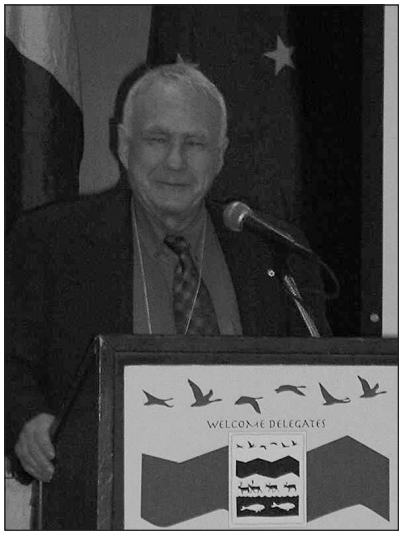
While the jurisdictional issues facing the North Slope can be complex, as we look at definitions of onshore/nearshore/offshore, the Northwest Passage, over-the-top pipelines and so on, we should not be intimidated by them. The largest and least tractable challenges are ozone depletion and climate change.

# Keynote Address by Conference Chair

**Dr. Robert Blair**
Conference Chair

I'd like to share with you five little short stories, 'Power Stories,' of my personal experiences dating back from Calgary in 2002 to Fort Good Hope in 1976. They explore personal expectations from communities affected by development.

*Calgary 2002*
I was invited to be a director of a new drilling contracting company. This new contractor hired a lot of local First Nations workers and went into partnership with local First Nations in rig ownership as well. In 2002 this company had some of the top rigs in terms of productivity, with top rig-teams. This company is also now one of the fastest growing contractors with operations in Alberta and B.C. They created a situation where communities get profits and employment, whether regionally or on their own lands. By the way, it's Western Lakota Energy Services Ltd. The point of this story is that some oil people like to tell you how they can work anywhere. You can tell them that you can choose your developer!



*Yukon Government photo*

*North Thompson Valley*
Let's flash back a few years to central B.C. The chief of the North Shuswap Band had a big problem. The North Shuswap have a 600-acre land claim in the North Thompson Valley. A big electrical utilities company in the state of Washington had come north to promote diverting the North Thompson into the Columbia River. They had offered over $50 million in cash bonuses and had the support of some B.C. MLAs. The chief called me and said to come on over so we could figure this out, because the Band was upset.

I hopped on the next plane to Kamloops and the chief set up an electronic and telecommunications centre. Then we called all the media we knew in western Canada. We held a press conference with expert opinions on engineering and economics and talked about legal action. The point is that the chief followed his instincts and committed the few resources available to get the telecommunications setup he believed he needed to get the message out.

*Sunshine Coast*
A few years before that, I met a successful New York City investment banker who had lost his appetite for his job. He relocated to the Sunshine Coast to work as a specialized environmental consultant for Northern and Eastern Europe! We often think of power being concentrated in the cities, but with today's technologies you can build, and do, what you want, where you want.

*"Abandon hope! Dene Territory. Law of Canada does not protect violators."*
About 27 years ago, in Fort Good Hope, pipeline proposal proponents were invited to a Berger Commission community hearing. The Petroleum Association reported a 'Security Alert' and many of the proposal proponents cancelled their attendance. A bush plane dropped me off on the strip with my security – my 12-year-old son. The pilot said he would come in for coffee. At that point, we noticed two tough-looking dudes erecting something at the end of the strip: a big heavy post with a crossbar on top and a rope at the end of the bar. The pilot changed his mind and took off cross-wind! The guys then hung a sign at the end of the rope that read something like (I forget the exact wording): "Abandon hope! Dene Territory. Law of Canada does not protect violators."

We then went into the gym for a feast. I chose a seat in the back row. When I sat down, the neighbouring folks got up and moved ten places or so away from me. At this point my son had a fever of 105 and I heard that the local Mountie had booked the weekend off! I also learned that two full CBC-TV crews were in town. The next day CBC sends out a national news story from Good Hope in which Chief Frank Tselie 'cleans my clock,' calling me General Custer, there to eliminate the Dene. I mumble and the tough dudes all applaud the Chief. It added to the broad public support across Canada for the Dene cause! I did get out of town safely, hearing the words, "Why hit a guy with a sick kid?"

Moving forward to last summer, Chief Tselie and I are still good friends. I thought I recognized (maybe) the guy who was putting up the post on the airstrip and his buddy who was hanging the sign. They were Berger Commission counsel.

The moral of this story is to organize carefully and not to forget the CBC.

*Northerners Pipeline Training*
There was a northern pipeline training facility started to provide on-the-job-training to northerners for the pipeline and oil and gas industry. The goal was to have all the foremen and chief pipeline operators be northerners. The dream was to staff the entire pipeline with northerners when it opened for operation, people who want to be in the north and stay in the north. These same people won the contract to build a pipeline in Malaysia. Every operating job on the pipeline was filled with a Malaysian. It can be done.

*Remember:*

You can get a lot done from home.

Get the best air service you can negotiate.

Have faith; there are a lot of good people on your side.

And don't forget the CBC.

# Plenary Session — Workshop Reports

Summaries of the major points of discussion from each workshop were presented in this session. One or two of the presenters or facilitators from each workshop gave a brief report on the purpose of the workshop, the topics covered in the presentations and any comments or recommendations.

*Workshop 1 – Corporate Stewardship and Best Practices in Hydrocarbon Exploration and Development*

*Workshop 2 – The Invisible North Slope - Research Issues and Questions in the Marine Biosphere and Physical Ocean Environment*

*Workshop 3 – The State of Wildlife Science and Research - What's Known, What's Needed and New Approaches for Getting It*

*Workshop 4 – Marine Environmental Quality (MEQ) - Measuring the Health of Ecosystems and Developing a Common Approach to Monitoring MEQ*

*Workshop 5 – Community-based Research Initiatives, Accomplishments and Future Directions*

*Workshop 6 – Coastal Zone Development - Lessons Learned and Future Challenges from Community and Regional Perspectives*

*Workshop 7 – Meeting the Challenge of Conservation and Development in Regional Planning*

*Workshop 8 – Traditional Knowledge - Methods and Applications*

*Workshop 9 – Adequacy of Regulatory Regimes and Regulatory Certainty in the North Slope Coastal Zone*

*Workshop 10 – Community and Regional Planning for Conservation and Development in the North Slope Coastal Zone*

**Further detail on workshop presentations, discussions and recommendations can be found at www.taiga.net/wmac/northslopeproceedings/workshop_summary_03.html**

## Workshop 1 — Corporate Stewardship and Best Practices in Hydrocarbon Exploration and Development

**Purpose:** *This workshop examined the role of corporate stewardship in the application of best management practices, and what are the pro's and con's for the oil and gas industry to go beyond the bottom line minimum standards in the application of voluntary practices vs. regulatory requirements. This workshop also explored species specific measures (e.g. caribou), activity specific measures (e.g. seismic and pipelines), and cooperative arrangements between competing resources users.*

**Presentations:**

Bill Livingstone – Environmental Regulatory Coordinator, Devon Canada

Peter Zimmerman – Best Practices Initiative Project Manager, Canadian Parks and Wilderness Society

Doug Mead – Environmental Advisor, Shell Canada

Jess Dunford – Boreal Caribou Committee Scientist

Kirstie Simpson – Integrated Resource Management Coordinator, Oil and Gas Management Branch, Department of Energy, Mines and Resources, Government of Yukon

*Yukon Government photo*

**Workshop Summary:** We identified a need for collaboration between resource managers and resource users and across political and jurisdiction borders. Many lessons have already been learned across a variety of borders and these lessons include many examples of successes and failures. Let's not 're-invent the wheel'.

- Good stewardship does not occur by accident; it requires long-term commitment by industries, governments, academia and communities.
- Voluntary practices should be part of good project planning.
- The benefits of voluntary actions include flexibility to determine the best solutions.
- Voluntary practices involve reasonable people making reasonable decisions, but they should not necessarily be precedent-setting as unique problems require unique solutions.
- Development of best management practices using any model requires stakeholder buy-in at all levels.

## *Workshop 2 — The Invisible North Slope - Research Issues and Questions in the Marine Biosphere and Physical Ocean Environment*

**Purpose:** *This workshop focused on several important research programs and activities that are working to improve our understanding of the nearshore and offshore environment, and the dynamic changes occurring here.*

**Presentations:**

Mike Papst – Division Manager, Arctic Research, Department of Fisheries and Oceans

Gavin Manson – Coastal Geoscientist, Geological Survey of Canada, Atlantic Region

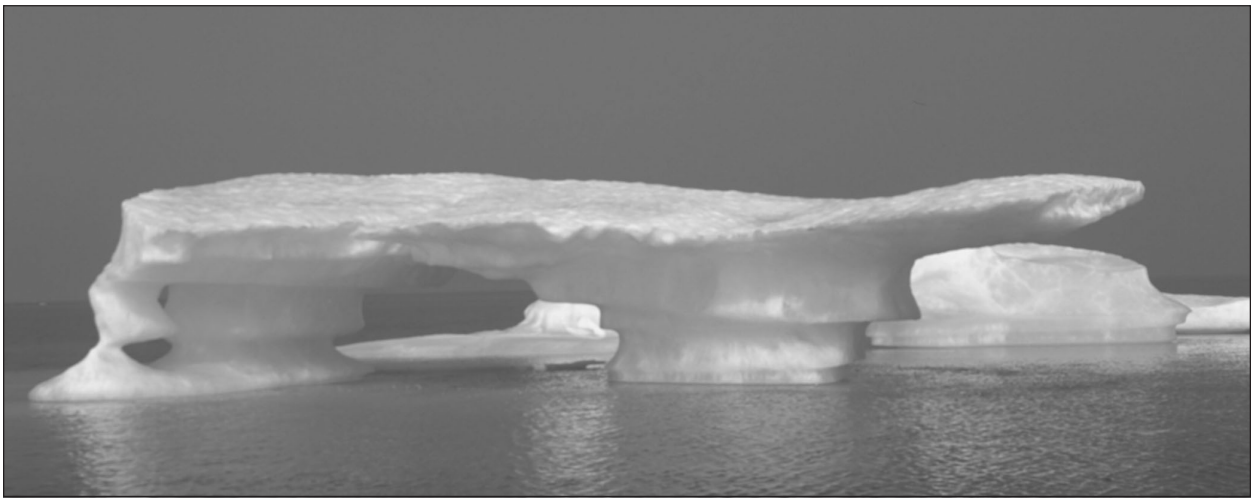
Don Cobb – Marine Environmental Quality Coordinator, Department of Fisheries and Oceans

**Workshop Summary:** Priority research areas identified were:

1. Areas of coastal erosion, especially those that are inhabited in the summer;
2. Coastal hydrographic data (bathymetric maps), especially in shallow areas and if barging activity and barge size increases;
3. Changes in ice conditions, including thickness and extent, growth and decay of nearshore ice, and the link to climate change;
4. Tide gauging.

We also identified alternative research techniques, including modelling and satellite/remote sensing techniques for storm surge modelling along the North Slope and nearshore remote ice monitoring.

We need to secure suitable infrastructure (i.e., research ice-breaker) for marine research on a more permanent basis. We need to encourage interdisciplinary projects in order to coordinate resource sharing and raise the profile of Arctic research. We also need to incorporate more community-based monitoring in research projects. Such monitoring has been valuable and actively involves the communities. It can be useful for ground-truthing models and remotely-sensed information.



*Yukon Government photo*

## Workshop 3 — The State of Wildlife Science and Research - What's Known, What's Needed and New Approaches for Getting It

**Purpose:** *To provide an overview of species and habitat research recently conducted by the Yukon Government, the Canadian Wildlife Service, Parks Canada, and the Government of the Northwest Territories on the Yukon North Slope and adjacent territorial areas.*

**Presentations:**

Martin Raillard – Manager, Environmental Conservation Branch, Environment Canada, Whitehorse

Dorothy Cooley – Regional Biologist, Yukon Department of Environment

Catherine Kennedy – Vegetation Ecologist, Yukon Department of Environment

Ian McDonald – Ecosystem Secretariat, Parks Canada, Inuvik

John Nagy – Department of Resources, Wildlife and Economic Development, GNWT

*Yukon Government photo*

**Workshop Summary:** It was primarily an information session, though without much time for discussion and debate. The challenges and future work include:

1. Species at Risk legislation;
2. NatureServe database;
3. Ongoing and long-term monitoring for almost all species in the Yukon, with primary interest in those that are being harvested;
4. Ecological studies, including parasites in sheep/muskox;
5. The bringing together of traditional and scientific knowledge ;
6. Behavioural studies between muskox and caribou populations.

Priorities should be set by boards and councils and communities.

## *Workshop 4 — Marine Environmental Quality (MEQ) - Measuring the Health of Ecosystems and Developing a Common Approach to Monitoring MEQ*

**Purpose:** *This workshop examined opportunities for Marine Environmental Quality monitoring along the Yukon North Slope. It is very difficult for single organizations to monitor the health of coastal and marine environments. Only through partnerships can the necessary monitoring be carried out and can information be analyzed, shared, and communicated appropriately. Partnerships need to be built between agencies, communities, land claim organizations, etc. A panel discussed the following questions with participants:*

- How can different agencies and different jurisdictions partner for marine environmental quality related monitoring?
- How can marine environmental quality monitoring results be shared and communicated effectively?

**Presentations:**

Don Cobb – Marine Environmental Quality Coordinator, Department of Fisheries and Oceans

Ed McLean – A/Chief of Resource Conservation, Parks Canada,Western Arctic Field Unit

Billy Day – Fisheries Joint Management Committee

Don Dowler – Fisheries Joint Management Committee

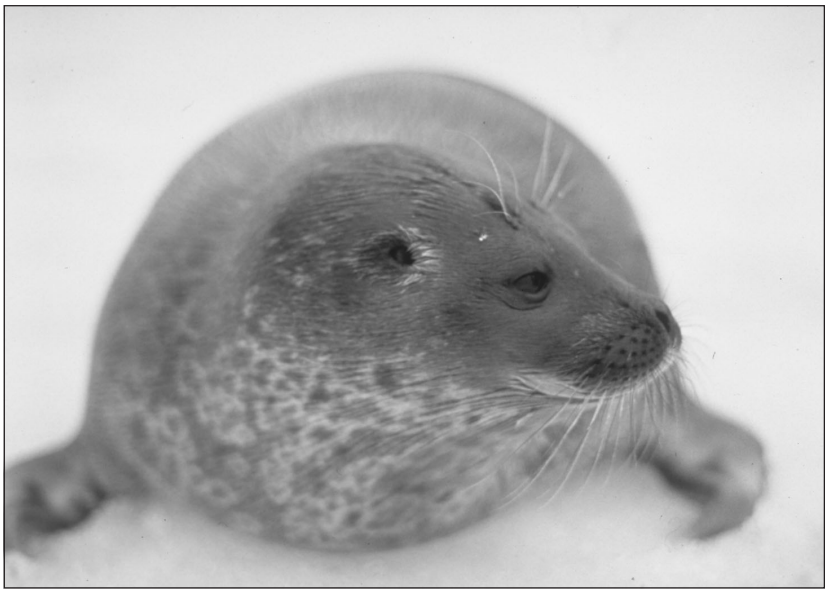
Donald Aviugana – Aklavik Hunters and Trappers Committee

***Workshop Summary:*** We tried to answer two questions:

1. How can different agencies and jurisdictions partner for MEQ monitoring?
2. How can MEQ monitoring results be shared and communicated effectively?

Our recommendations were:

1. We need an organization or person to coordinate needs and activities such as data storage, communication and compilation.
2. We need to understand what measurements should be monitored.
3. We need to communicate between organizations and monitoring programs.
4. We need better understanding of industry's technological changes and innovations.
5. We looked toward an integrated management workshop for a framework to focus MEQ.



*Yukon Government photo*

## Workshop 5 — Community-based Research Initiatives, Accomplishments and Future Directions

**Purpose:** *Northern community residents are working in partnership with the Arctic Borderlands Ecological Knowledge Co-op, the Sustainability of Arctic Communities Project, and the Westside Working Group to learn about changing environmental, social and/or economic conditions in their areas. This workshop provided information on the ways local community experts and researchers have been contributing to these projects and how information gathered is being used to inform decisions about resource management.*

*Yukon Government photo*

**Presentations:**

Randall Tetlichi and Joan Eamer – Arctic Borderlands Ecological Knowledge Co-op

Sharman Haley – Sustainability of Arctic Communities Project

Carol Arey – Chair, Westside Working Group

**Workshop Summary:** The gaps are generally minimized by existing community-driven organizations like the Arctic Borderlands Co-op. Issues identified included the following:

1. Information identified through community-based research needs to be integrated into management actions.

2. Funding needs to be secured for the long-term sustainability of these research projects.

3. In order to be able to capture local traditional knowledge, local people need to go out on the land. The price of gas and travelling can remove these opportunities.

## *Workshop 6 — Coastal Zone Development - Lessons Learned and Future Challenges from Community and Regional Perspectives*

**Purpose:** *This workshop considered the experiences of communities in responding to the discovery and development of oil and gas resources. Benefits for community members from resource development and the managing of impacts were discussed. A regional perspective on the preparation needed to meet future environmental and social change was considered.*

**Presentations:**

Gary Wheeler – Assistant Refuge Manager, Arctic National Wildlife Refuge

George Hegmann – Senior Environmental Scientist, Axys Environmental Consulting

Richard Binder – Member, Inuvialuit Game Council

Sharman Haley – Associate Professor of Public Policy, Institute of Social and Economic Research, University of Alaska Anchorage

*Yukon Government photo*

***Workshop Summary:*** There has been a lot of experience with this issue in Alaska. Development is not just a wildlife problem and can affect many different parts of the natural and social environment. We identified some of the key environmental issues, then suggested that the following can be done:

- Control the pace and magnitude of change;
- Anticipate social and cultural effects;
- Ensure impact aid is available to local communities;
- Hire guardians responsible for culture;
- Better understand historical, cultural and subsistence resources;
- Perpetuate traditional activities.

## *Workshop 7 — Meeting the Challenge of Conservation and Development in Regional Planning*

**Purpose:** *This workshop examined experiences, issues and opportunities associated with balancing conservation and development in regional contexts from around the world and with managing protected areas in the context of interconnected and dynamic ecosystems.*

**Presentations:**

Peter Ewins - Director, Arctic Conservation, World Wildlife Canada

Ed McLean - A/Chief of Resource Conservation, Parks Canada, Western Arctic Field Unit

Carol Arey - President, Aklavik Community Corporation

*Yukon Government photo*

**Workshop Summary:** We heard three presentations and came up with the following general recommendations:

1. Develop a strategy to provide a framework for decisions and process.
2. Establish a core advisory group for regional planning.
3. Select and use indicators for sustainable development.
4. Recognize current and upcoming challenges (e.g., climate change, increased ship traffic).

## *Workshop 8 — Traditional Knowledge - Methods and Applications*

**Purpose:** *The participants considered five questions that were current and relevant to this issue.*

**Presentations:**

There were no formal presentations during the workshop. Different members of the workshop discussed the questions posed by the facilitator. This was a well-attended workshop, people really contributed (after days of PowerPoint presentations), and many community people were there. It began and ended with a prayer and there was a door prize.

**Facilitators:**

Evelyn Storr – President, Aklavik Hunters and Trappers Committee

Barney Smith – Department of Environment, Government of Yukon

Johnny Lennie – Member, Environmental Impact Screening Committee

Leslie McCartney – Gwich'in Social and Cultural Institute

Michael Fabijan – Kavik Axys Ltd.

*Yukon Government photo*

**Workshop Summary:** We asked five questions in our workshop.

1. How do developers know what is reasonable in obligations for the use of traditional knowledge in project descriptions?

   Next steps would be good examples of traditional knowledge integration: making sure concerns are raised in consultations, ensure there is HTC review, keep communications current in addition to past reports, and feed ongoing information back to the community.

2. How can we best apply the experience and knowledge of the Inuvialuit and Gwich'in to the design and development of proposed projects?

   We need to set guidelines for interviewing in communities. They can vary by community. Meetings should be with the appropriate groups and the right people in the community. It's important to build direct links between engineers and community members.

3. How do we include traditional and cultural values?

   Develop a policy that can vary by community and that would give direction to industry regarding who to speak with. Incorporate trails, stories and values. We need to understand why something is locally important so that it can be communicated to developers. Landmarks can be regionally important, but that may not be understood from the point of view of the proponent.

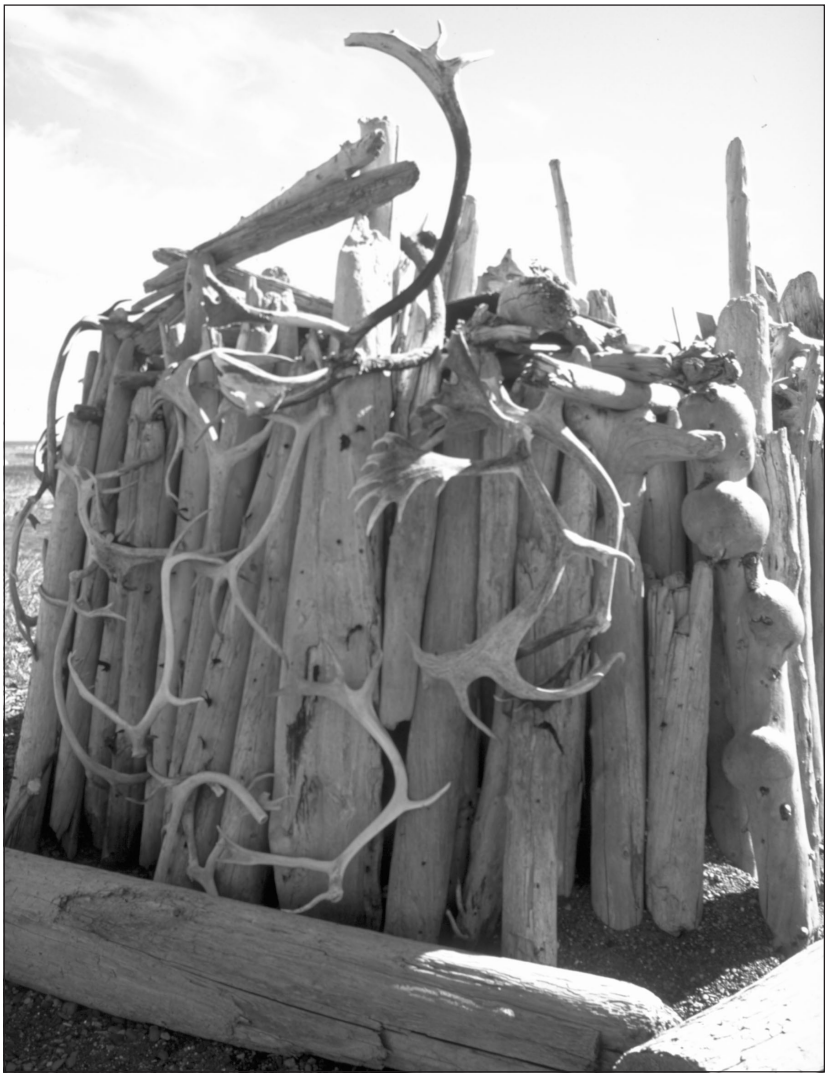
4. How do we best apply earlier oral history information and/or earlier interviews to project assessments?

   There are databases already, but they need updating. We need additional policy as to who controls the information and we need to involve people with archival skills. We need to ensure that the tapes and records are not disappearing or being destroyed.

5. How do we deal with disagreements between community experts?

   Always go back to the history of the situation, and bring the conflict to the HTC (working with the community). A delay in the decision may be needed in some cases until the community reaches agreement. We can learn a lot from disagreements.

Evelyn Storr: A comment that I made to our group was that, as landowners, it is very important that we let industry know why we do the things we do. We cannot allow them to pressure us into doing only the right things for their developments. Our resource people are our elders and I ask industry to be patient with us as we make our decisions. We need to decide on our own community traditional knowledge policies.



*Yukon Government photo*

## *Workshop 9 — Adequacy of Regulatory Regimes and Regulatory Certainty in the North Slope Coastal Zone*

**Purpose:** *To allow stakeholders and regulators to discuss the complex regulatory environment over the Yukon North Slope and nearshore.*

**Presentations:**

There were no formal presentations during this workshop. Facilitators presented questions for discussion to the group.

**Facilitators:**

Bill Klassen – Chair, Environmental Impact Screening Committee

Robert Hornal – Chair, Environmental Impact Review Board

**Workshop Summary:** We discussed the status of the Yukon North Slope Withdrawal Order. The YTG Minister of the Environment committed to consultation. We then focused on the environmental screening and review process and talked about trying to avoid duplication between environmental assessment processes, as well as ensuring clarity in the offshore.

Monitoring capacities onshore and offshore are limited, with the regulatory agencies not having the capacity to meet expectations. Local monitors are involved in oil and gas projects. One suggestion was to escalate enforcement based on past corporate history, or have companies commit to self-monitoring and reporting.

A concern was expressed about the number of processes requiring compliance. Jurisdictional issues should not be allowed to get in the way.

*Yukon Government photo*

## Workshop 10 — Community and Regional Planning for Conservation and Development in the North Slope Coastal Zone

**Purpose:** *To bring together stakeholders and regulators to discuss planning options for the North Slope Coastal Zone.*

**Presentations:**

Larry Carpenter – Chair, Wildlife Management Advisory Council (NWT)

Doug Chiperzak – ISR Oceans Program Coordinator/Head, BSIMPI Secretariat, Department of Fisheries and Oceans

Helen Fast– Integrated Management Coordinator, Department of Fisheries and Oceans

**Workshop Summary:** The main theme was that there already exist a large number of plans. As these plans are being developed, people need to be aware of others in existence. We need to have some sort of network (e.g., a website) to link these plans together. It would be useful to have a one-to-two day workshop for all people working on plans as opposed to working through issues. Finally, it would be nice if the plans could be supported through legislation.

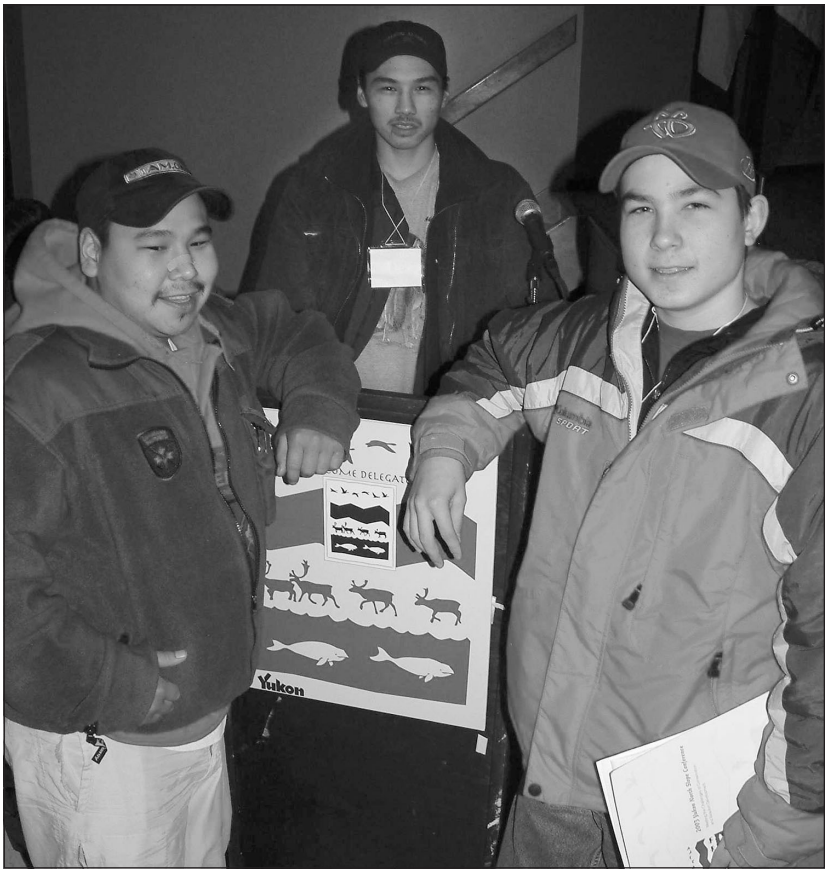



*Photo courtesy of Northern News Service*

# Appendix 1

## 2003 Yukon North Slope Conference

# AGENDA

**Tuesday, November 18th**

**9:00 a.m. – 1:00 p.m.** **Registration and Poster Set-up**
Midnight Sun Recreation Complex

**1:30 p.m. – 1:50 p.m.** **Plenary Session — Welcome to Delegates and Introduction of Conference Chair**
- Honourable Jim Kenyon – Minister, Department of Environment, Yukon Government

**1:50 p.m. – 2:10 p.m.** **Plenary Session — Opening Remarks by Conference Chair**
- Dr. Robert Blair

**2:10 p.m. – 3:00 p.m.** **Plenary Session — Setting the Context: The Coastal Plain and Offshore**
- Lindsay Staples – Chair, Wildlife Management Advisory Council (North Slope)
- Frank Pokiak – Chair, Inuvialuit Game Council
- Pete Cott – Area Habitat Biologist, Department of Fisheries and Oceans, Inuvik
- Joan Eamer – Environment Canada
- Don Dowler – Vice-chair, Fisheries Joint Management Committee.

**3:00 p.m. – 3:30 p.m.** **Break**

**3:30 p.m. – 5:00 p.m.** **Plenary Session — Setting the Context: History and Lessons Learned Coastal Zone and Offshore Development**
- Giles Morrell – Senior Geologist, Northern Oil and Gas Directorate, DIAND
- Perry Diamond – Senior Oil and Gas Policy Analyst, Oil & Gas Business Development & Pipeline Branch, Yukon Government
- Nellie Cournoyea – Chair, Inuvialuit Regional Corporation
- Bill Livingstone – Environmental Regulatory Coordinator, Devon Canada
- Jim Hawkins – Pipeline Regulatory Manager, Imperial Oil

**5:00 p.m. – 5:15 p.m.** **Plenary Session**
- Wrap-up of day one's activities and concluding remarks by Conference Chair

**Wednesday, November 19th**

| | |
|---|---|
| **8:30 a.m. – 9:45 a.m.** | **Plenary Session — Planning for the Future: Requirements and Challenges in the Coastal Zone and Offshore**<br>➢ Lindsay Staples – Chair, Wildlife Management Advisory Council (North Slope)<br>➢ Norm Snow – Executive Director, Joint Secretariat |
| **9:45 a.m. – 10:00 a.m.** | **Introduction to Workshops** |
| **10:00 a.m. – 10:30 a.m.** | **Break** |
| **10:30 a.m. – 12:00 p.m.** | **Morning workshops** |
| | **Workshop 1 — Corporate Stewardship and Best Practices in Hydrocarbon Exploration and Development**<br>➢ Kirstie Simpson – Integrated Resource Management Coordinator, Oil and Gas Management Branch, Government of Yukon, Department of Energy, Mines and Resources<br>➢ Doug Mead – Environmental Advisor, Shell Canada<br>➢ Bill Livingstone – Environmental Regulatory Coordinator, Devon Canada<br>➢ Jess Dunford – Boreal Caribou Committee Scientist<br>➢ Peter Zimmerman – Best Practices Initiative Project Manager, Canadian Parks and Wilderness Society |
| | **Workshop 2 — The Invisible North Slope - Research Issues and Questions in the Marine Biosphere and Physical Ocean Environment**<br>➢ Mike Papst - Division Manager, Arctic Research, Dept. of Fisheries and Oceans<br>➢ Gavin Manson - Coastal Geoscientist, Geological Survey of Canada - Atlantic<br>➢ Don Cobb - Marine Environmental Quality Coordinator, Dept. of Fisheries and Oceans |
| **12:00 p.m. – 1:30 p.m.** | **Lunch Break** |

**Wednesday, November 19th — continued**

**1:30 p.m. – 3:00 p.m.** **Afternoon workshops**

**Workshop 3 — The State of Wildlife Science and Research - What's Known, What's Needed, and New Approaches for Getting It**

- John Nagy – Dept. of Resources, Wildlife and Economic Development, GNWT
- Martin Raillard – Manager, Environmental Conservation Branch, Environment Canada, Whitehorse
- Ian McDonald – Ecosystem Secretariat, Parks Canada, Inuvik
- Dorothy Cooley – Regional Biologist, Yukon Dept. of Environment
- Catherine Kennedy – Vegetation Ecologist, Yukon Dept. of Environment

**Workshop 4 — Marine Environmental Quality (MEQ) - Measuring the Health of Ecosystems and Developing a Common Approach to Monitoring MEQ**

- Don Cobb – Marine Environmental Quality Coordinator, Dept. of Fisheries and Oceans
- Doug Chiperzak – ISR Oceans Program Coordinator/Head BSIMPI Secretariat, Dept. of Fisheries and Oceans

**Workshop 5 — Community-based Research — Initiatives, Accomplishments and Future Directions**

- Randall Tetlichi and Joan Eamer – Arctic Borderlands Ecological Knowledge Co-op
- Sharman Haley – Sustainability of Arctic Communities Project
- Carol Arey – Chair, Westside Working Group

**3:00 p.m. – 3:30 p.m.** **Break**

Website presentation - Arctic Borderlands Ecological Knowledge Co-op

**Wednesday, November 19th — continued**

**3:30 p.m. – 5:00 p.m.** **Afternoon workshops**

**Workshop 6 — Coastal Zone Development: Lessons Learned and Future Challenges from Community and Regional Perspectives**

- Sharman Haley – Associate Professor of Public Policy, Institute of Social and Economic Research, University of Alaska Anchorage
- George Hegmann – Senior Environmental Scientist, Axys Environmental Consulting
- Richard Binder – Member, Inuvialuit Game Council
- Gary Wheeler – Arctic National Wildlife Refuge

**Workshop 7 — Meeting the Challenge of Conservation and Development in Regional Planning**

- Peter Ewins – Director, Arctic Conservation, World Wildlife Canada
- Ed McLean – A/Chief of Resource Conservation, Parks Canada – Western Arctic Field Unit
- Carol Arey – President, Aklavik Community Corporation

**7:00 p.m.** **Conference Feast — Midnight Sun Recreation Complex**

* Keynote address by Conference Chair - Dr. Robert Blair

**Thursday, November 20th**

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| **8:30 a.m. – 9:45 a.m.** | **Plenary Session — Jurisdictional Issues in the Yukon North Slope Coastal Zone**<br>➢ Lindsay Staples – Chair, Wildlife Management Advisory Council (North Slope) |
| **9:45 a.m. – 10:00 a.m.** | **Introduction to Workshops** |
| **10:00 a.m. – 10:30 p.m.** | **Break**<br>Website presentations – Wildlife Management Advisory Council (North Slope)<br>Arctic Borderlands Ecological Knowledge Co-op – Database of Information Sources |
| **10:30 p.m. – 12:00 p.m.** | **Morning Workshops**<br><br>**Workshop 8 — Traditional Knowledge Research - Methods and Applications**<br>➢ Evelyn Storr – President, Aklavik Hunters and Trappers Committee<br>➢ Barney Smith – Dept of Environment, Yukon Government<br>➢ Johnny Lennie – Member, Environmental Impact Screening Committee<br>➢ Leslie McCartney – Gwich'in Social and Cultural Institute<br>➢ Michael Fabijan – Kavik-Axys Environmental Consulting<br><br>**Workshop 9 — Adequacy of Regulatory Regimes and Regulatory Certainty in the North Slope Coastal Zone**<br>➢ Bill Klassen – Chair, Environmental Impact Screening Committee<br>➢ Robert Hornal – Chair, Environmental Impact Review Board<br><br>**Workshop 10 — Community and Regional Planning for Conservation and Development in the Coastal Zone**<br>➢ Lindsay Staples – Chair, Wildlife Management Advisory Council (North Slope)<br>➢ Helen Fast – Integrated Management Coordinator, Dept. of Fisheries and Oceans<br>➢ Doug Chiperzak – ISR Oceans Program Coordinator/Head BSIMPI Secretariat, Dept. of Fisheries and Oceans<br>➢ Larry Carpenter – Chair, Wildlife Management Advisory Council (NWT) |
| **12:00 p.m. – 1:30 p.m.** | **Lunch Break** |
| **1:30 p.m. – 4:00 p.m.** | **Plenary Session — Workshop Reports, Discussion and Questions** |

# Appendix 11

# 2003 Yukon North Slope Conference

## Participants List

Christine Aikens
Parks Canada

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Environmental Impact Review Board

Scott Alexander
GNWT
Ministry of Aboriginal Affairs

John Alikanik
Inuvialuit Game Council

Herbert Allen
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Andrew Applejohn
Aurora Research Institute

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Jerry Arey
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Peter Bannon
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Godin Benoit
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Kevin Bill
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Bak Chauhan
Aurora Research Institute

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Don Cobb
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Nellie Cournoyea
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Mark Dahl
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Neil Firth
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Andrew Gordon Jr.
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Linda Graf
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Chucky Gruben
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University of Alaska, Anchorage

Terry Hall
GNWT
Ministry of Aboriginal Affairs

Joseph Haluksit
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Ian Hamilton
Indian and Northern Affairs Canada
NWT Region

Elizabeth Hansen
Nihtat Gwich'in Council

Charlton Haogak
Sachs Harbour Hunters & Trappers Committee

Roberta Hartman
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James Hawkins
Imperial Oil

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Gord MacRae
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Department of Environment

Gavin Manson
Geological Survey of Canada -
Atlantic

Leslie McCartney
Gwich'in Social & Cultural Institute

James McCormick
Parks Canada

Ian McDonald
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Fred McFarland
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# Appendix III

## Excerpt from the Western Arctic Claim The Inuvialuit Final Agreement

## Section 12, Yukon North Slope

**Yukon North Slope**

**12.(1)** For the purposes of this section, "Yukon North Slope" means all those lands between the jurisdictional boundaries of Alaska and the Yukon Territory and the Northwest Territories, north of the height of land dividing the watersheds of the Porcupine River and the Beaufort Sea, and including adjacent nearshore and offshore waters and islands.

**Principles**

**12.(2)** The Yukon North Slope shall fall under a special conservation regime whose dominant purpose is the conservation of wildlife, habitat and traditional native use.

**12.(3)** Subject to subsections (5) to (15):

(a) all development proposals relating to the Yukon North Slope shall be screened to determine whether they could have a significant negative impact on the wildlife, habitat or ability of the natives to harvest wildlife;

(b) other uses within the Yukon North Slope shall be considered and may be permitted if it is shown that there would be no significant negative impact on wildlife, habitat or native harvesting;

(c) other uses within the Yukon North Slope that may have a significant negative impact on wildlife, habitat or native harvesting shall be permitted if it is decided that public convenience and necessity outweigh conservation or native harvesting interests in the area; and

*As amended January 15, 1987*

(d) development proposals relating to the Yukon North Slope that may have a significant negative impact shall be subject to a public environmental impact assessment and review process.

**Disposal of Land**

**12.(4)** Subject to this section, the withdrawal from disposal under the Territorial Lands Act of certain lands described in the Prohibition and Withdrawal of Certain Lands from Disposal Order (SOR/80-198, 27 March, 1980, as set out in Annex E-1), within the Yukon North Slope shall be maintained.

*As amended January 15, 1987*

**National Park**

**12.(5)** Canada agrees to establish, under the National Parks Act, the Settlement Legislation or such other legislation as may be appropriate or necessary, a National Park comprising the western portion of the Yukon North Slope shown in Annex E and more particularly described as the area bounded to the south by the height of land being the watershed and to the east by the eastern shoreline of the Babbage River.

**12.(6)** The planning for the National Park and the management thereof shall have as their objects to protect the wilderness characteristics of the area, maintaining its present undeveloped state to the greatest extent possible, and to protect and manage the wildlife populations and the wildlife habitat within the area.

**12.(7)** Except as provided in subsection (14), the National Park shall be zoned and managed as a wilderness oriented park.

**12.(8)** Development activities inconsistent with the purposes of the National Park shall be prohibited, and any change in the character of the National Park shall require the consent of the Inuvialuit.

**12.(9)** The Wildlife Management Advisory Council established by subsection (46) shall advise the appropriate minister on park planning and management. The Council shall recommend a management plan for the National Park.

*As amended January 15, 1987*

**12.(10)** No lands forming part of the National Park shall be removed from National Park status without the consent of the Inuvialuit.

**12.(11)** Canada agrees that prior to the establishment of the National Park, the lands comprising it shall be maintained in a manner that recognizes their future use and protects the land and its habitat for this purpose.

**12.(12)** Nothing inconsistent with the provisions of this Agreement shall be permitted between the date of the execution of this Agreement and the coming into force of appropriate legislation creating the Park.

**12.(13)** The rights provided to the Inuvialuit under this Agreement in respect of the National Park shall take effect as of the date of the coming into force of the Settlement Legislation. For greater certainty, the Government of the Yukon Territory shall retain its present jurisdiction until the creation of the National Park.

**12.(14)** If it is determined pursuant to section 11 that an area identified in Annex E as Stokes Point is required for limited scale use and temporary use purposes in support of hydrocarbon development, the use shall be permitted on the following conditions:

(a) the land to be used does not exceed forty (40) acres and any additional land that is required to satisfy the licencing requirements of the Yukon Territorial Water Board;

*As amended January 15, 1987*

(b) the use of the land is such as not to prevent its restoration to the state it was in prior to such use; and

(c) the activity must not be on a scale and of a nature as to significantly derogate from the quality and character of the adjacent Park lands.

**12.(15)** In subsection (14),

(a) "limited scale use" includes the storage of fuel and supplies, emergency repairs and maintenance facilities, transhipment depots, caches and similar uses; and

(b) "temporary use" means a period of active occupation that, in the aggregate, does not exceed six (6) years.

*As amended January 15, 1987*

**Territorial Park**

**12.(16)** The parties agree that Herschel Island is to be established as the Herschel Island Territorial park and, in establishing that Park, the Government of the Yukon Territory will consult the Inuvialuit.

**12.(17)** Except for the lands adjacent to Pauline Cove, the park regime on Herschel Island shall be no less stringent than that of the National Park pursuant to subsections (5) to (13).

*As amended January 15, 1987*

**12.(18)** Within the lands adjacent to Pauline Cove, the historic resources shall be protected in a manner no less stringent than that of the regime of a National Historic Park as set out in the National Parks Act.

**12.(19)** Any development activity proposed within the lands adjacent to Pauline Cove shall be subject to:

(a) the screening and review process set out in section 11; and

(b) the criteria set out in subsection (23) shall apply; and

(c) the terms and conditions governing such development shall be no less stringent than those under the Territorial Land Use Regulations in force at the time.

*Subsection as amended January 15, 1987*

**Area East of the Babbage River**

**12.(20)** The parties agree that the area east of the Babbage River extending to the jurisdictional boundary between the Yukon Territory and the Northwest Territories, but not including the adjacent nearshore and offshore waters, shall be designated as an area in which controlled development may take place, subject to the provisions of this Agreement and to laws of general application.

**12.(21)** Any development activity proposed for the area referred to in subsection (20) shall be subject to the screening and review process set out in section 11.

**12.(22)** Any development activity proposed for the adjacent nearshore and offshore waters shall be subject to the normal government process and the wildlife compensation provisions of section 13.

**12.(23)** The appropriate review board shall take into account the following criteria in its consideration of any development proposal:

(a) analysis of the significance of the part or parts of the Yukon North Slope proposed for development use from the standpoint of conservation and harvesting interests;

(b) evaluation of practical alternative locations and of the relative commercial and economic merits of and environmental impact on such locations compared to the part or parts of the area proposed for utilisation in the application;

(c) evaluation of the environmental and social impacts of the proposed development;

(d) weighing of the interests of users, conservationists and harvesters in the Yukon North Slope against public convenience and necessity for development;

(e) evaluation of the ability of the applicant to demonstrate that he has, or will acquire, the proven capability to carry out the project in accordance with established standards of performance, safeguards and other requirements and to carry out the necessary environmental mitigation and restoration; and

(f) requirements for effective machinery to ensure that the development proceeds in accordance with any established terms and conditions.

**Inuvialuit Harvesting Rights**

**12.(24)** Subject to the laws of general application respecting public safety and conservation, the Inuvialuit right to harvest on the Yukon North Slope includes:

(a) subject to the collective harvesting rights in favour of all native peoples under the Porcupine Caribou Management Agreement referred to in Annex L, the preferential right to harvest all species of wildlife, except migratory non-game birds and migratory insectivorous birds, for subsistence usage throughout the Yukon North Slope;

(b) the exclusive right to harvest furbearers and polar bear; and

(c) the exclusive right to harvest game within the National Park, the Territorial Park and adjacent islands.

**12.(25)** Where harvesting rights are extended to other native peoples pursuant to subsection (33) and subsections 14(17) and (18), their requirements as to subsistence usage shall be taken into account in setting subsistence quotas and the subsistence requirements of all native peoples shall be accommodated within conservation limits.

**12.(26)** Sport fishing shall be permitted throughout the Yukon North Slope including the National Park and the Territorial Park.

**12.(27)** Where, in the exercise of their exclusive right to harvest game within the National Park and the Territorial Park, the Inuvialuit wish to permit:

(a) persons who are not beneficiaries of the Settlement or adjacent land claims settlements to harvest any such game, prior approval of the appropriate minister is required and that minister may grant the privilege on any terms and conditions he stipulates; and

*As amended January 15, 1987*

(b) persons who are beneficiaries of adjacent land claims settlements to harvest any such game, those persons, if so permitted, may harvest game on the same basis as the Inuvialuit.

**12.(28)** Where, in the exercise of their exclusive right to harvest polar bear in the Yukon North Slope outside the National Park, the Inuvialuit permit persons who are not beneficiaries of the Inuvialuit Settlement or adjacent land claims settlements to harvest any such polar bear, the harvesting shall be regulated by the competent authority under the laws of general application.

**12.(29)** Where, in the exercise of their exclusive right to harvest furbearers in the Yukon North Slope outside the National Park, the Inuvialuit permit non-Inuvialuit to harvest any such furbearers, the harvesting shall be subject to any approval or notification required by the appropriate government and shall be regulated by the competent authority under the laws of general application.

**12.(30)** For greater certainty, the Inuvialuit shall make no gain or profit from the granting of permission to non-Inuvialuit to harvest furbearers except where it is part of a reciprocal arrangement with beneficiaries from an adjacent land claims settlement.

**12.(31)** The Inuvialuit may trade and barter game products with other Inuvialuit beneficiaries in the Yukon North Slope.

**12.(32)** Subject to the provisions of the Migratory Birds Convention Act and any regulations thereunder, the Inuvialuit may for subsistence usage sell game products to other Inuvialuit beneficiaries in the National Park.

**12.(33)** Where native beneficiaries in adjacent land claims settlements acquire rights to game resources within the Yukon North Slope on the basis of traditional use and occupancy, those beneficiaries shall be entitled to exchange game products with the Inuvialuit on the same basis as that provided for the Inuvialuit under this Agreement.

**12.(34)** Where, in the final settlement of the land claims of adjacent native groups, provision is made for the exchange of game products with the Inuvialuit, the right of the Inuvialuit to exchange amongst themselves shall be extended to those other native beneficiaries.

**12.(35)** Subject to the provisions of the Migratory Birds Convention Act, any regulations thereunder and other similar laws of general application, the right to harvest includes the right to sell the non-edible products of legally harvested game.

**12.(36)** The right to harvest game includes the right to use present and traditional methods of harvesting and the right to possess and use all equipment reasonably needed to exercise that right, subject to international agreements to which Canada is a party and to laws of general application respecting public safety and conservation. The right to harvest game includes the right to possess and transport legally harvested game within and between the Yukon Territory and the Northwest Territories.

**12.(37)** Subject to subsection (38), the right to harvest game includes the right to travel and establish camps as necessary to exercise that right.

**12.(38)** In the National Park referred to in subsection (5) and the Territorial Park referred to in subsection (16) the Inuvialuit have the right to use existing hunting, fishing and trapping facilities associated with their game harvesting activities and to establish new facilities after consultation with the management authority. The location of new facilities shall be determined on the basis of the management objectives for these parks.

*As amended January 15, 1987*

**12.(39)** The Inuvialuit need not obtain permits, licences or other authorization to harvest wildlife but may be required to show proof of status as Inuvialuit beneficiaries. Where, for the purpose of conservation, permits, licences or other authorizations are required by the appropriate minister or on the recommendation of the Wildlife Management Advisory Council, Fisheries Joint Management Committee, or the Porcupine Caribou Management Board, the Inuvialuit shall have the right to receive such permits, licences or other authorizations from the local authority at no cost.

*As amended January 15, 1987*

**12.(40)** Nothing in this Agreement or the Settlement Legislation shall prevent any person from taking game for survival in an emergency.

**12.(41)** Within their respective jurisdictions, governments shall determine the harvestable quotas for wildlife species based on the principles of conservation and the following procedures:

(a) the Wildlife Management Advisory Council (North Slope) established by subsection (46) shall determine the total allowable harvest for game according to conservation criteria and such other factors as it considers appropriate. The Council shall make its recommendations to the appropriate minister, who shall, if he differs in opinion with the Council, set forth to the Council his reasons and afford the Council a further consideration of the matter;

(b) in determining the total allowable harvest, conservation shall be the only consideration. For greater certainty, where the Inuvialuit have the exclusive right to harvest, they shall be entitled to harvest the total allowable harvest;

(c) for the purposes of management and in order to protect the interest of the Inuvialuit harvesters, subsistence quotas for the wildlife referred to in paragraph (24)(a) shall be jointly established by the Inuvialuit and the governments having jurisdiction over species or species groups of subsistence value, as follows:

(i) within the total allowable harvest for game, the Wildlife Management Advisory Council (North Slope) shall determine the subsistence quotas according to the criteria and factors it considers appropriate in addition to those referred to in subparagraph (ii). The Council shall make its recommendations to the appropriate minister, who shall, if he differs in opinion from the Council, set forth to the Council his reasons and afford the Council further consideration of the matter, and

(ii) in determining the subsistence quota, the following criteria shall be taken into account by the Council or, where appropriate, by the Porcupine Caribou Management Board, and the appropriate minister:

(A) the food and clothing requirements of the Inuvialuit,

(B) the usage patterns and levels of harvest of the Inuvialuit,

(C) the requirements for particular wildlife species for subsistence usage,

(D) the availability of wildlife populations to meet subsistence usage requirements including the availability of species from time to time,

(E) the projections for changes in wildlife populations, and

(F) the national and international obligations of Canada with respect to migratory game birds;

(F) as amended January 15, 1987

(d) the allocation of the Inuvialuit quotas amongst themselves shall be the responsibility of the Inuvialuit.

**Economic Benefits**

**12.(42)** The parties agree that the predominant number of persons employed in the operation and management of the parks referred to in subsections (5) and (16) should be Inuvialuit. The appropriate government shall provide training to assist the Inuvialuit in qualifying for such employment.

**12.(43)** To the extent that the management regime of the said parks provides for economic activities, the parties agree that opportunities should be provided to the Inuvialuit on a preferred basis.

*As amended January 15, 1987*

**12.(44)** The Inuvialuit shall be invited to participate in the planning process for any development on the lands available for development adjacent to Pauline Cove on Herschel Island, and in the economic opportunities arising out of such development. Subject to all applicable laws, the Inuvialuit shall have the right of first refusal with respect to any activities in the nature of guiding related to wildlife within the Yukon North Slope.

**12.(45)** The Inuvialuit and the Council for Yukon Indians may enter into bilateral agreements such as the agreement dated March 15, 1984 between the Council for Yukon Indians and the Inuvialuit, whereby the native groups may share in the rights, privileges and benefits afforded Inuvialuit beneficiaries in the Yukon North Slope.

**Wildlife Management Advisory Council (North Slope)**

**12.(46)** In order to provide for joint planning by the native people and the governments in the Yukon North Slope with respect to the principles set out in subsections (2) and (3), a Wildlife Management Advisory Council shall be established as soon after the execution of this Agreement as is practicable.

**12.(47)** The Council shall have as permanent members a Chairman and an equal number of native and government members.

**12.(48)** The permanent members of the Council shall include at least one person designated by the Government of the Yukon Territory and one person designated by the Minister of the Environment of Canada.

**12.(49)** In addition to permanent members of the Council representing government, temporary members may be co-opted from government departments as they may be required from time to time.

**12.(50)** The permanent members of the Council appointed to represent the native interests shall include persons designated by the Inuvialuit, and, subject to agreements, by other native groups that have acquired harvesting rights in the Yukon North Slope under their land claims settlements.

**12.(51)** The Chairman of the Council shall be appointed by the Government of the Yukon Territory, with the consent of the native members and Canada.

**12.(52)** The permanent members of the Council shall each have one (1) vote. The Chairman shall have a vote only in case of a deadlock. Temporary members shall not have a vote.

**12.(53)** The Council may establish rules and adopt by-laws regulating its procedures.

**12.(54)** The Government of the Yukon Territory agrees to provide a secretariat to assist in meeting the administrative needs of the Council.

**12.(55)** Each party shall pay the remuneration and expenses of the members of the Council that it appoints or designates.

**12.(56)** The Council shall provide advice to the appropriate minister on all matters relating to wildlife policy and the management, regulation and administration of wildlife, habitat and harvesting for the Yukon North Slope and, without restricting the generality of the foregoing, the Council shall:

(a) provide advice on issues pertaining to the Yukon North Slope to the Porcupine Caribou Management Board, the Yukon Land Use Planning Commission, the Review Board and other appropriate groups;

(b) prepare a wildlife conservation and management plan for the Yukon North Slope for recommendation to the appropriate authorities as a means for achieving and maintaining the principles of conservation set out in subsections (2) and (3);

(c) determine and recommend appropriate quotas for Inuvialuit harvesting of game in the Yukon North Slope; and

(d) advise on measures required to protect habitat that is critical for wildlife or harvesting including those referred to in subsection 14(3).

*As amended January 15, 1987*

**Yukon North Slope Annual Conference**

**12.(57)** There shall be a Yukon North Slope Annual Conference, to be held once a year in the Yukon Territory, to promote public discussion among natives, governments, and the private sector with respect to management co-ordination for the Yukon North Slope.

**12.(58)** Each Yukon North Slope Annual Conference shall be attended by representatives of native groups with an interest in the Yukon North Slope, at least one senior official from each appropriate government department and representatives of other interested parties, as selected by the Chairman, including industry and special interest groups.

**12.(59)** A Chairman shall be named at each Yukon North Slope Annual Conference to hold office until the next Annual Conference. The first Chairman shall be appointed by the Government of the Yukon Territory, the second Chairman shall be appointed by the native groups that have an interest in the Yukon North Slope and, thereafter, the Chairman shall be appointed by those parties on an alternative basis.

**12.(60)** The Government of the Yukon Territory agrees to provide administrative support services for the Yukon North Slope Annual Conference.

**12.(61)** During the third Yukon North Slope Annual Conference, Canada, the Government of the Yukon Territory and the Inuvialuit shall collectively review the proceedings and results of past Conferences and determine whether the objective in having such Conferences warrants their continuation and, where the Conferences are continued, such a review shall be carried out every three years thereafter.

# Appendix IV

## List of Acronyms

| | |
|---|---|
| ABEKC | Arctic Borderlands Ecological Knowledge Coop |
| ANWR | Arctic National Wildlife Refuge |
| BMP | Best Management Practices |
| BSIMPI | Beaufort Sea Integrated Management Planning Initiative |
| C-CAIRN | Canadian Climate Impacts and Adaptation Research Network |
| CARC | Canadian Arctic Resources Committee |
| CEAA | Canadian Environmental Assessment Act |
| COPE | Committee for Original Peoples' Entitlement |
| CWS | Canadian Wildlife Service |
| CYFN | Council of Yukon First Nations |
| DAP | Development Assessment Process |
| DFO | Department of Fisheries and Oceans |
| DIAND | Department of Indian Affairs and Northern Development |
| DND | Department of National Defense |
| EC | Environment Canada |
| EIRB | Environmental Impact Review Board |
| EISC | Environmental Impact Screening Committee |
| EMAN | Ecosystem Monitoring Assessment Network |
| FJMC | Fisheries Joint Management Committee |
| GNWT | Government of the Northwest Territories |
| HTC | Hunters and Trappers Committee |
| IFA | Inuvialuit Final Agreement |
| IGC | Inuvialuit Game Council |
| INAC | Indian and Northern Affairs Canada |
| IRC | Inuvialuit Regional Corporation |
| ISR | Inuvialuit Settlement Region |
| MEQ | Marine Environmental Quality |
| MPA | Marine Protected Area |
| NEB | National Energy Board |
| NOGAP | Northern Oil and Gas Action Program |
| PCMB | Porcupine Caribou Management Board |
| RRC | Renewable Resources Council |
| SSDC | Single Steel Drilling Caisson |
| WMAC (NS) | Wildlife Management Advisory Council (North Slope) |
| WMAC (NWT) | Wildlife Management Advisory Council (Northwest Territories) |
| YFWMB | Yukon Fish and Wildlife Management Board |
| YTG | Yukon Territorial Government |

# Appendix V

## Where on the Web

**The Wildlife Management Advisory Council (North Slope)**
www.taiga.net/wmac

**Yukon North Slope Wildlife Conservation and Management Plan**
www.taiga.net/wmac/wcandmplans.html

- Volume 1: Environmental Overview
  www.taiga.net/wmac/consandmanagementplan_volume1/index.html
- Volume 2: Goals and Actions
  www.taiga.net/wmac/consandmanagementplan_volume2/index.html
- Volume 3: Yukon North Slope Wildlife Population Status Reports
  www.taiga.net/wmac/consandmanagementplan_volume3/index.html
- Volume 4: Implementation Plan (pending completion)
  www.taiga.net/wmac/consandmanagementplan_volume4/index.html

**Yukon North Slope Long-term Research Plan**
www.taiga.net/wmac/researchplan/index.html

- Issues and Actions
  www.taiga.net/wmac/researchplan/issuesandations.pdf
- Guide for Researchers
  www.taiga.net/wmac/researchplan/researchguide.pdf

**WMAC(NS) Publications (newsletters, fact sheets, term reports)**
www.taiga.net/wmac/publications.html

**Aklavik Traditional Knowledge Report - "Aklavik Inuvialuit Describe the Status of Certain Birds and Animals"**
www.taiga.net/wmac/aklavikreport/index.html

**Arctic Borderlands Ecological Knowledge Co-op**
www.taiga.net/coop

- Community-based Monitoring Program
  www.taiga.net/coop/community/index.html
- Indicators
  www.taiga.net/coop/indics/index.html

**Database of Information Sources**
yukon.taiga.net/borderlands

**Database of Documented Traditional Knowledge**
yukon.taiga.net/northslope

**Herschel Island Territorial Park**
www.environmentyukon.gov.yk.ca/parks/herschel.shtml

**Ivvavik National Park of Canada**
www.pc.gc.ca/pn-np/yt/ivvavik/index_E.asp

**Inuvialuit Final Agreement**
www.taiga.net/wmac/ifa/index.html

**Aklavik Community Conservation Plan**
www.bmmda.nt.ca/outgoing/Aklavik%20CCP%20-%20Final.pdf

**Sustainability of Arctic Communities**
www.taiga.net/sustain/index.html

**Fisheries Joint Management Committee**
www.fjmc.ca

**Porcupine Caribou Management Board**
www.pcmb.yk.ca/pcmb.html

**Porcupine Caribou Herd Satellite Collar Project**
www.taiga.net/satellite/index.html

**Northern Climate Exchange**
www.taiga.net/nce/index.html

**Beaufort Region Bibliography- A Yukon Perspective**
www.btc.gov.yk.ca/archives/findingaids/beaufort_v4.pdf